Motors

Automation

Energy

Transmission & Distribution

WEG Automation Catalog

Power and Control Products

Driving efficiency and sustainability

US300.Power.Controls.03.2025:50104422

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Terminology Reference

Abbreviation

Ω = Ohm
A = Amps (amperes)
AC = Alternating Current
AUX = Auxiliary
BB = Busbars
cm = Centimeter
DC = Direct Current
ft = Feet
GND = Ground
HP = horsepower
hr = hours
Hz = Hertz
I = Current
Ie = Rated operational current
in = Inches
in-lb = Inch-pound
Icm = Rated short circuit-making capacity
Ics = Rated service short circuit breaking capacity
Icw = Rated short time withstand current
Is = Selectivity limit current
Ith = Conventional free air thermal current
Ithe = Conventional enclosed thermal current
kA = Kiloampere (1 kA = 1000 A)
kg = Kilogram
kHz = Kilohertz (1 kHz = 1000 Hz)
kV = Kilovolts (1 kV = 1000 V)
kVAr = Kilovolt-amperes reactive
kW = Kilowatt (1 kW = 1000 W)
kΩ = Kilo-ohm (1 kΩ = 1000 Ω)
lb = Pound
m = Meters
mm = Millimeter
m^2 = Square meter
m^3 = Cubic meter
mA = Milliampere = (1000 mA = 1 A)
Max = Maximum
mg = Milligram
MHz = Megahertz (1 MHz = 1,000,000 Hz)
Min = Minimum
min. = Minutes
mm = Millimeters
ms = Milliseconds
mV = Millivolts (1000 mV = 1 V)
mW = Milliwatt (1000 mW = 1 W)
MW = Megawatt (1 MW = 1,000,000 W)
MΩ = Megaohm (1 MΩ = 1,000,000 Ω)
NC = Normally Closed
NO = Normally Open
O/P = Output Current
ops = Operation
qty = Quantity
sec. = Seconds
U = Rated Voltage
Ue = Operational Voltage
Ui = Rated insulation voltage
V = Volt
VA = Volt Amp
VAC = Alternating Current Voltage
VDC = Direct Current Voltage
V/f = Volts per frequency
V/Hz = Volts-per-Hertz
W = Watt

Acronyms

AC3 (Audio Codec 3)
DB (Database)
DOL (Direct On Line)
DP (Decentralized Peripherals)
DSP (Digital Signal Processors)
EMC (Electromagnetic Compatibility)
FTC (Flexible Torque Control)
G2 (Generation 2)
HMI (Human Machine Interface)
HOA (Hand-Off-Auto)
I/O (Input/Output)
IGBT (Insulated-Gate Bipolar Transistor)
IoT (Internet of Things)
IP20 (Ingress Protection Two Zero)
LV (low voltage)
Modbus RTU (Remote Terminal Unit)
MQTT (Message Queuing Telemetry Transport)
MV (Medium Voltage)
NPN (Negative-Positive-Negative)
OEM (Original Equipment Manufacturer)
PLC (Programmable Logic Controller)
PLC SoftPLC (Programmable Logic Controller Soft)
PNP (Positive-Negative-Positive)
Profibus (Process Field Bus)
PID (Proportional-Integral-Derivative)
PTC (Positive Temperature Coefficient)
PWM (Pulse Width Modulation)
RFI (Radio Frequency Interference)
RTD (Resistance Temperature Detector)
SCR (Silicon-Controlled Rectifier)
SS1-t (Safe Stop 1 with time control)
STO (Safe Torque Off)
TCP/IP (Transmission Control Protocol and Internet Protocol)
UL (Underwriters Laboratories)
VFD (Variable Frequency Drive)
VVW (Voltage Vector WEG)
WPS (Wi-Fi Protected Setup)

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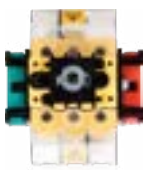

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Notes:

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DWB Series – Molded Case Circuit Breakers

UL489 Listed

Introducing the New WEG DWB Series Molded Case Circuit Breakers. With its compact frame the DWB provides an economical circuit protection solution for Commercial and Industrial machinery applications. The DWB Series ranges from 20 to 600 A and is available in 80% Standard and 100% premium ratings.

Standard Features

- Compact size
- Thermal-magnetic trip unit
- Complete line of field installable accessories
- Rotary handle and mechanism
- Lugs included

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c UL us

UL File No. E310239

DWB Catalog Number Sequence

DWB	100	J	E	100	-	3	DX

Frame Size
100: 20-100A
250: 80-250A
400: 160-400A
600: 228-600A

Short-Circuit Current Rating
C: 10 kA
J: 14 kA
P: 35 kA

Application Rating
E: 80% Standard
H: 100% Rated

Amperage
DWB100
20,25,30,40,50,60,70,80,90,100
DWB250
100, 125, 150, 200, 250
DWB400
200, 225, 250, 275, 300, 325, 350, 400
DWB600
325, 350, 400, 450, 500, 550, 600

Power Poles
3: Three Poles

Trip Unit
DX: Fixed Thermal Fixed Magnetic
DF: Adjustable Thermal & Fixed Magnetic
DA: Adjustable Thermal & Magnetic

Chart intended as reference only and not to create part numbers.

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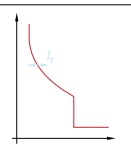
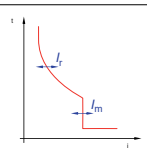
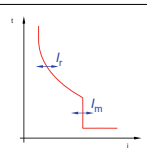
Current Ratings and Trip Units

Catalog Number	Rated Current In (A)	Trip Unit		Curve
DWB100	20, 25, 30, 40, 50, 60, 70, 80, 90, 100	Fixed thermal	Fixed magnetic[1)] (10 x In)	
DWB250	80-100, 100-125, 120-150, 160-200, 200-250	Adjustable thermal (0.8...1 x In)	Fixed magnetic (10 x In)	
DWB400	160-200, 180-225, 200-250, 220-275, 240-300, 260-325, 280-350, 320-400	Adjustable thermal (0.8...1 x In)	Adjustable magnetic (5...10 x In)	
DWB600	228-325, 245-350, 280-400, 315-450, 350-500, 385-550, 420-600	Adjustable thermal (0.7...1 x In)	Adjustable magnetic (5...10 x In)	

Notes:
1) Circuit breakers with rated currents of 20 and 25 A, the magnetic trip point is 300 A.

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Circuit Protection

DWB Series

Selection Guide

DWB100 for Distribution – Standard 80% Rated – Fixed Thermal and Fixed Magnetic Trip Unit

Rated Current (A)	Magnetic Trip Point (A)	Interrupting Ratings (kA)		Catalog Number	List Price	Multiplier
		240 VAC	480Y / 277 VAC	3 Poles		
DWB100CE						
20	300	25	10	DWB100CE20-3DX	$495	Z10
25	300	25	10	DWB100CE25-3DX	$495	
30	300	25	10	DWB100CE30-3DX	$495	
40	400	25	10	DWB100CE40-3DX	$495	
50	500	25	10	DWB100CE50-3DX	$495	
60	600	25	10	DWB100CE60-3DX	$495	
70	700	25	10	DWB100CE70-3DX	$495	
80	800	25	10	DWB100CE80-3DX	$511	
90	900	25	10	DWB100CE90-3DX	$511	
100	1000	25	10	DWB100CE100-3DX	$511	
DWB100JE						
20	300	50	14	DWB100JE20-3DX	$558	Z10
25	300	50	14	DWB100JE25-3DX	$558	
30	300	50	14	DWB100JE30-3DX	$558	
40	400	50	14	DWB100JE40-3DX	$558	
50	500	50	14	DWB100JE50-3DX	$558	
60	600	50	14	DWB100JE60-3DX	$558	
70	700	50	14	DWB100JE70-3DX	$558	
80	800	50	14	DWB100JE80-3DX	$579	
90	900	50	14	DWB100JE90-3DX	$579	
100	1000	50	14	DWB100JE100-3DX	$579	

DWB250 for Distribution – Standard 80% Rated – Adjustable Thermal and Fixed Magnetic Trip Unit

Current Range (A)	Magnetic Trip Point (A)	Interrupting Ratings (kA)		Catalog Number	List Price	Multiplier
		240 VAC	480Y / 277 VAC	3 Poles		
DWB250JE						
80-100	1000	50	14	DWB250JE100-3DF	$1,170	Z10
100-125	1250	50	14	DWB250JE125-3DF	$1,170	
120-150	1500	50	14	DWB250JE150-3DF	$1,170	
160-200	2000	50	14	DWB250JE200-3DF	$1,170	
200-250	2500	50	14	DWB250JE250-3DF	$1,170	
DWB250PE						
80-100	1000	80	35	DWB250PE100-3DF	$1,490	Z10
100-125	1250	80	35	DWB250PE125-3DF	$1,490	
120-150	1500	80	35	DWB250PE150-3DF	$1,490	
160-200	2000	80	35	DWB250PE200-3DF	$1,490	
200-250	2500	80	35	DWB250PE250-3DF	$1,490	

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DWB400 for Distribution – Standard 80% Rated – Adjustable Thermal and Magnetic Trip Unit						
Current Range (A)	Magnetic Trip Point (A)	Interrupting Ratings (kA)		Catalog Number	List Price	Multiplier
		240 VAC	480 VAC	3 Poles		
DWB400JE						
160-200	1600-2000	50	18	DWB400JE200-3DA	$2,350	Z10
180-225	1800-2250	50	18	DWB400JE225-3DA	$2,350	
200-250	2000-2500	50	18	DWB400JE250-3DA	$2,350	
220-275	2200-2750	50	18	DWB400JE275-3DA	$2,350	
240-300	2400-3000	50	18	DWB400JE300-3DA	$2,350	
260-325	2600-3250	50	18	DWB400JE325-3DA	$2,350	
280-350	2800-3500	50	18	DWB400JE350-3DA	$2,350	
320-400	3200-4000	50	18	DWB400JE400-3DA	$2,350	
DWB400PE						
160-200	1600-2000	80	35	DWB400PE200-3DA	$2,610	Z10
180-225	1800-2250	80	35	DWB400PE225-3DA	$2,610	
200-250	2000-2500	80	35	DWB400PE250-3DA	$2,610	
220-275	2200-2750	80	35	DWB400PE275-3DA	$2,610	
240-300	2400-3000	80	35	DWB400PE300-3DA	$2,610	
260-325	2600-3250	80	35	DWB400PE325-3DA	$2,610	
280-350	2800-3500	80	35	DWB400PE350-3DA	$2,610	
320-400	3200-4000	80	35	DWB400PE400-3DA	$2,610	

DWB600 for Distribution – Standard 80% Rated – Adjustable Thermal and Magnetic Trip Unit						
Current Range (A)	Magnetic Trip Point (A)	Interrupting Ratings (kA)		Catalog Number	List Price	Multiplier
		240 VAC	480 VAC	3 Poles		
DWB600PE						
228-325	1625-3250	80	35	DWB600PE325-3DA	$4,350	Z10
245-350	1750-3500	80	35	DWB600PE350-3DA	$4,350	
280-400	2000-4000	80	35	DWB600PE400-3DA	$4,350	
315-450	2250-4500	80	35	DWB600PE450-3DA	$4,350	
350-500	2500-5000	80	35	DWB600PE500-3DA	$4,350	
385-550	2750-5500	80	35	DWB600PE550-3DA	$4,350	
420-600	3000-6000	80	35	DWB600PE600-3DA	$4,350	

Notes:
- *Wiring terminals (lugs) built-in for DWB100 and supplied as standard with DWB250, DWB400 and DWB600. Lugs are also available as an accessory for DWB250, DWB400 and DWB600, see the section Accessories.*

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Circuit Protection

DWB Series

Selection Guide

DWB100 for Distribution – Premium 100% Rated – Fixed Thermal and Fixed Magnetic Trip Unit

Rated Current (A)	Magnetic Trip Point (A)	Interrupting Ratings (kA)		Catalog Number	List Price	Multiplier
		240 VAC	480Y / 277 VAC	3 Poles		
DWB100CH						
20	300	25	10	DWB100CH20-3DX	$591	Z10
25	300	25	10	DWB100CH25-3DX	$591	
30	300	25	10	DWB100CH30-3DX	$591	
40	400	25	10	DWB100CH40-3DX	$591	
50	500	25	10	DWB100CH50-3DX	$591	
60	600	25	10	DWB100CH60-3DX	$591	
70	700	25	10	DWB100CH70-3DX	$591	
80	800	25	10	DWB100CH80-3DX	$622	
90	900	25	10	DWB100CH90-3DX	$622	
100	1000	25	10	DWB100CH100-3DX	$622	
DWB100JH						
20	300	50	14	DWB100JH20-3DX	$640	Z10
25	300	50	14	DWB100JH25-3DX	$640	
30	300	50	14	DWB100JH30-3DX	$640	
40	400	50	14	DWB100JH40-3DX	$640	
50	500	50	14	DWB100JH50-3DX	$640	
60	600	50	14	DWB100JH60-3DX	$640	
70	700	50	14	DWB100JH70-3DX	$640	
80	800	50	14	DWB100JH80-3DX	$697	
90	900	50	14	DWB100JH90-3DX	$697	
100	1000	50	14	DWB100JH100-3DX	$697	

DWB250 for Distribution – Premium 100% Rated – Adjustable Thermal and Fixed Magnetic Trip Unit

Current Range (A)	Magnetic Trip Point (A)	Interrupting Ratings (kA)		Catalog Number	List Price	Multiplier
		240 VAC	480Y / 277 VAC	3 Poles		
DWB250JH						
80-100	1000	50	14	DWB250JH100-3DF	$1,402	Z10
100-125	1250	50	14	DWB250JH125-3DF	$1,402	
120-150	1500	50	14	DWB250JH150-3DF	$1,402	
160-200	2000	50	14	DWB250JH200-3DF	$1,402	
200-250	2500	50	14	DWB250JH250-3DF	$1,402	
DWB250PH						
80-100	1000	80	35	DWB250PH100-3DF	$1,598	Z10
100-125	1250	80	35	DWB250PH125-3DF	$1,598	
120-150	1500	80	35	DWB250PH150-3DF	$1,598	
160-200	2000	80	35	DWB250PH200-3DF	$1,598	
200-250	2500	80	35	DWB250PH250-3DF	$1,598	

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DWB400 for Distribution – Premium 100% Rated – Adjustable Thermal and Magnetic Trip Unit						
Current Range (A)	Magnetic Trip Point (A)	Interrupting Ratings (kA)		Catalog Number	List Price	Multiplier
		240 VAC	480 VAC	3 Poles		
DWB400JH						
160-200	1600-2000	50	18	DWB400JH200-3DA	$2,585	Z10
180-225	1800-2250	50	18	DWB400JH225-3DA	$2,585	
200-250	2000-2500	50	18	DWB400JH250-3DA	$2,585	
220-275	2200-2750	50	18	DWB400JH275-3DA	$2,585	
240-300	2400-3000	50	18	DWB400JH300-3DA	$2,585	
260-325	2600-3250	50	18	DWB400JH325-3DA	$2,585	
280-350	2800-3500	50	18	DWB400JH350-3DA	$2,585	
320-400	3200-4000	50	18	DWB400JH400-3DA	$2,585	
DWB400PH						
160-200	1600-2000	80	35	DWB400PH200-3DA	$2,870	Z10
180-225	1800-2250	80	35	DWB400PH225-3DA	$2,870	
200-250	2000-2500	80	35	DWB400PH250-3DA	$2,870	
220-275	2200-2750	80	35	DWB400PH275-3DA	$2,870	
240-300	2400-3000	80	35	DWB400PH300-3DA	$2,870	
260-325	2600-3250	80	35	DWB400PH325-3DA	$2,870	
280-350	2800-3500	80	35	DWB400PH350-3DA	$2,870	
320-400	3200-4000	80	35	DWB400PH400-3DA	$2,870	

DWB600 for Distribution – Premium 100% Rated – Adjustable Thermal and Magnetic Trip Unit						
Current Range (A)	Magnetic Trip Point (A)	Interrupting Ratings (kA)		Catalog Number	List Price	Multiplier
		240 VAC	480 VAC	3 Poles		
DWB600PH						
228-325	1625-3250	80	35	DWB600PH325-3DA	$4,785	Z10
245-350	1750-3500	80	35	DWB600PH350-3DA	$4,785	
280-400	2000-4000	80	35	DWB600PH400-3DA	$4,785	
315-450	2250-4500	80	35	DWB600PH450-3DA	$4,785	
350-500	2500-5000	80	35	DWB600PH500-3DA	$4,785	
385-550	2750-5500	80	35	DWB600PH550-3DA	$4,785	
420-600	3000-6000	80	35	DWB600PH600-3DA	$4,785	

Notes:
- *Wiring terminals (lugs) built-in for DWB100 and supplied as standard with DWB250, DWB400 and DWB600. Lugs are also available as an accessory for DWB250, DWB400 and DWB600, see the section Accessories.*

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DWB Series

DWB – Internal Accessories

Auxiliary and Alarm Switches

Frame Size	Internal Accessory	Number of Contacts	Catalog Number	List Price	Multiplier
DWB100 - 600	Aux Switch BC	1	BC-1 DWB	$98	Z10
		2	BC-2 DWB	$160	
	Alarm Switch AL	1	AL-1 DWB	$98	
	Aux Switch & Alarm Switch BCAL	1BC + 1AL	BCAL-2 DWB	$160	

Electrical Characteristics

Rated Voltage	Type of Load	Switching Capacity (A)
125 VAC	Resistive	6
250 VAC	Resistive	6

BC Auxiliary Switch

- Indicates remote circuit breaker status “open” (OFF) or “closed” (ON) through SPDT form C contacts.

AL Alarm Switch

- Indicates circuit breaker has tripped due to overload, short-circuit, shunt trip or undervoltage-trip release conditions through SPDT form C contact.
- Contact opens when circuit breaker is reset
- Offers provision for audio and visual indication of tripped breaker due to conditions described above

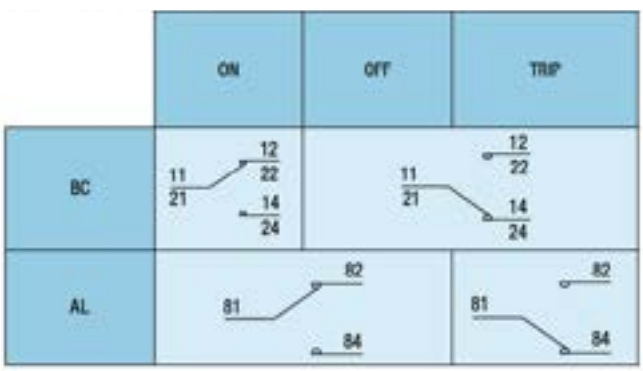
BCAL Auxiliary and Alarm Switch

- Auxiliary and alarm switch incorporated into one unit

BC, AL & BCAL

- All come with built-in terminal blocks. These terminal blocks will accept 20 to 16 AWG (0.5 to 1.5 mm^2). Tightening torque of 6.9 in-lb (0.8 Nm).

Wiring Diagrams



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DWB – Internal Accessories

Shunt and Undervoltage Release

Frame Size	Internal Accessory	Rated Voltage Ue	Catalog Number [1]	List Price	Multiplier
DWB100 DWB250	Undervoltage Release BS	24/48/60/110-130/220-250 VAC/DC	BS DWB160-250 *	$220	Z10
	Shunt Release BD		BD DWB160-250 *	$198	
DWB400	Undervoltage release BS		BS DWB400 *	$300	
	Shunt release BD		BD DWB400 *	$300	
DWB600	Undervoltage release BD		BS DWB600 *	$375	
	Shunt release BD		BD DWB600 *	$375	

To complete catalog number, replace * with appropriate coil voltage code.

Voltage Codes

E26	E27	E10	E15
24 VAC/DC	48 VAC/DC	110-130 VAC/DC	220-250 VAC/DC

BD Shunt Release

- When energized by a pulse or maintained signal of voltage, the shunt release trips breaker (trip position). Shunt release works from 70 to 110% of rated voltage (0.70 x Un < Ue < 1.1 Un).
- Features a device to keep unenergized after tripping pulse.

BS Undervoltage Release

- Trips breaker when the voltage drops below 35% of the rated voltage (Ue < 0.35 x Un)
- When voltage is between 35 to 70% of rated voltage, it may open the circuit breaker (0.35 x Un < Ue <0.7 x Un)
- After the operation of BS release, circuit breaker can only be closed if supply voltage is above 85% of the rated voltage (Ue > 0.85 x Un)
- The BS undervoltage release along with an emergency stop push button makes possible for fail-safe operation of the circuit breaker

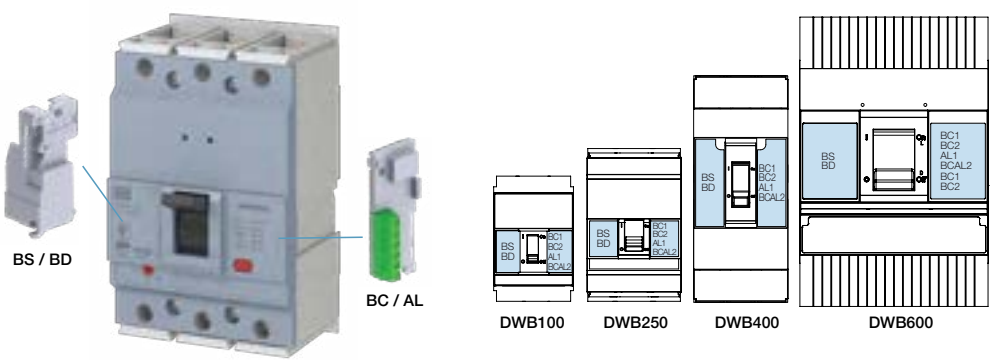
BD & BS Release

- All come with built-in terminal blocks. These terminal blocks will accept 20 to 16 AWG (0.5 to 1.5 mm^2). Tightening torque of 6.9 in-lb (0.8 Nm). After BD or BS operation the circuit breaker has to be reset before being closed again.

Maximum Combinations of Internal Accessories

Catalog Number	DWB160[1]				DWB250[1]				DWB400[1]				DWB600			
	3P				3P				3P				3P			
Auxiliary contacts BC[2]	2	1	2	1	2	1	2	1	2	1	2	1	4	3	4	3
Alarm contact AL[2]	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
Shunt trip BD	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0
Undervoltage release BS	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1

Assembly Position of the Internal Accessories



Notes:
1) Sold separately only. It is not sold assembled on the circuit breaker.
2) For combination of BC + AL, always consider the BC/AL block. It is not possible to assemble individual blocks on the circuit breaker. BC1 + AL1, replace this combination by the BC/AL2 block.

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Circuit Protection

DWB Series

External Accessories

Panel Door Operating Handles

Handle (IP66)

- When in ON position, panel door cannot be opened, unless a tool is used to bypass the panel door locking system, allowing thermometry of the panel.
- Circuit breaker and panel door padlocking in OFF position using one to 3 padlocks.

DWB Catalog Number Sequence

MRX | S | A | DWB250 | BU

MRX: Panel door operating handle type 4X and IP66

S: Selector type (DWB100 and DWB250)
L: Pistol type

A: Handle + Shaft + Mechanism
B: Handle + Shaft

Handle Color
BU: Blue
R: Red and yellow

"A" Set (handle + shaft + mechanism)
DWB160: For circuit breaker DWB100
DWB250: For circuit breaker DWB250
DWB400: For circuit breaker DWB400
DWB600: For circuit breaker DWB600

"B" Set (handle + shaft)
1: Selector type handle for circuit breaker DWB100 or DWB250
2: Pistol type handle for circuit breaker DWB100 or DWB250
3: Pistol type handle for circuit breaker DWB400
4: Pistol type handle for circuit breaker DWB600

Panel Door Operating Handles (IP66)

"A" Set: Handle + Shaft + Mechanism[1) 2)]

MRXS

MRXL

MRXL

Catalog Number	Circuit Breaker	Shaft (mm)	Length of Handle (mm)	Handle Color	List Price	Multiplier
MRXS-A-DWB160-R	DWB100	460	-	Red and yellow	$310	Z10
MRXS-A-DWB250-R	DWB250	460	-	Red and yellow	$310	
MRXL-A-DWB160-R	DWB100	460	105	Red and yellow	$350	
MRXL-A-DWB250-R	DWB250	460	105	Red and yellow	$350	
MRXL-A-DWB400-R	DWB400	460	105	Red and yellow	$420	
MRXL-A-DWB1000-R	DWB600	460	158	Red and yellow	$525	
MRXS-A-DWB160-BU	DWB100	460	-	Blue	$310	
MRXS-A-DWB250-BU	DWB250	460	-	Blue	$310	
MRXL-A-DWB160-BU	DWB100	460	105	Blue	$350	
MRXL-A-DWB250-BU	DWB250	460	105	Blue	$350	
MRXL-A-DWB400-BU	DWB400	460	105	Blue	$420	
MRXL-A-DWB1000-BU	DWB600	460	158	Blue	$525	

MRXS

MRXL

MRXL

Notes:
1) Padlocks 4 up to 8 mm may be fit to the handles.
2) Sold separately only. It is not sold assembled on the circuit breaker.

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External Accessories

Panel Door Operating Handles (IP66)

"B" Set: Handle + Shaft[1)2)]

Catalog Number	Circuit Breaker	Shaft (mm)	Length of Handle (mm)	Handle Color	List Price	Multiplier
MRXS-B-1-R	DWB100 / DWB250	460	-	Red and yellow	$175	Z10
MRXL-B-2-R	DWB100 / DWB250	460	105	Red and yellow	$200	
MRXL-B-3-R	DWB400	460	105	Red and yellow	$240	
MRXL-B-4-R	DWB600	460	158	Red and yellow	$275	
MRXS-B-1-BU	DWB100 / DWB250	460	-	Blue	$175	
MRXL-B-2-BU	DWB100 / DWB250	460	105	Blue	$200	
MRXL-B-3-BU	DWB400	460	105	Blue	$240	
MRXL-B-4-BU	DWB600	460	158	Blue	$275	

Only Mechanism[3)]

Catalog Number	Circuit Breaker	List Price	Multiplier
MRH DWB160	DWB100	$150	Z10
MRH DWB250	DWB250	$160	
MRH DWB400	DWB400	$200	
MRH DWB1000	DWB600	$250	

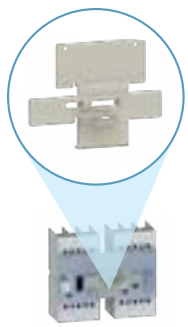
Shaft Support

- Recommended when the shaft length is more than indicated in next table.

Catalog Number[4)]	Circuit Breaker	Shaft Length to Use of Support	List Price	Multiplier
MR DWB400	DWB400	> 380 mm	$45	Z10
MR DWB800-1600	DWB600	> 320 mm	$50	

Changeover Device

Manual-operated changeovers are used to make safe switching of two different circuits.



BLIM Mechanical Interlock

- Provides safe operation in a manual-operated changeover system
- Makes the mechanical interlock of two (2) circuit breakers of the same frame size, preventing both MCCBs to be in ON position
- Interlock is assembled directly to the front cover of the circuit breakers
- It can be padlocked in two positions: MCCB1 ON and MCCB2 OFF, MCCB1 OFF and MCCB2 ON
- BLIM allows padlocks with diameters of Ø0.16...0.31 inches (4...8 mm)
- It is possible to interlock 3 MCCBs side-by-side using two (2) BLIMs
- Padlocks are not supplied

External Accessory	MCCB	Catalog Number	List Price	Multiplier
Mechanical interlock BLIM	DWB160	BLIM DWB160 3P	$338	Z10
	DWB250	BLIM DWB250 3P	$377	
	DWB400	BLIM DWB400 3P	$425	
	DWB600	BLIM DWB800-1600 3P	$425	

Notes:
1) Padlocks 4 up to 8 mm may be fit to the handles.
2) Sold separately only. It is not sold assembled on the circuit breaker.
3) Sold separately only. It is not sold assembled on the circuit breaker.
4) Sold separately only. It is not sold assembled on the circuit breaker. Accessory may be used on frames 3P and 4P.

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Circuit Protection

DWB Series

External Accessories

Accessory for Connection and Installation

Depending on the application and local standards, the MCCB may be installed and connected through busbars or cables. Given these requirements, the DWB range of circuit breakers have the specific connection accessory to comply with.

PC Wiring Terminals (Lugs)

Provides the means for connecting the circuit breaker to the power source and the load

- PC is supplied with 3 pieces that are suitable for either line or load terminals
- Built-in on DWB100 in the 6 terminals
- Lugs are supplied with 6 units for DWB250, DWB400 and DWB600 (supplied as standard)
- Pack with 3 units for spare parts

External Accessory	Spare Part (units)	MCCB	Minimum Cross-Section (AWG/mm²)	Maximum Cross-Section (AWG/mm²)	Tightening Torque (in-lb/Nm)	Catalog Number	List Price	Multiplier
Wiring terminal PC	3	DWB250	4 / 25 (1 cable)	250 kcmil / 120 (1 cable)	220 / 25	PC DWB250	$87	Z10
		DWB400	3/0 / 95 (1 cable)	500 kcmil / 240 (1 cable)	265 / 35	PC DWB400	$140	
		DWB600	400 kcmil/240 (1 cable) or 3/0/95 (2 cables)	350 kcmil / 185 (2 cables)	310 / 55	PC DWB800-1000	$250	

DIN Rail Base

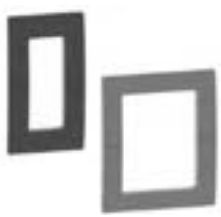
- Quick assembly of DWB100 on 35 mm DIN rails
- Fast replacement when panel is under maintenance

External Accessory	MCCB	Catalog Number	List Price	Multiplier
DIN rail base	DWB100	BFR DWB160 3P UL	$25	Z10

Escutcheons and Lock-OFF Devices

MP Escutcheons

- Escutcheons are frames for cutouts in panel doors
- It makes possible the external switching of the MCCB through the front door when the circuit breaker is installed close to the panel door, maintaining the degree of protection
- Degree of protection IP40
- See section Dimensions for cutout details



External Accessory	MCCB	Catalog Number	List Price	Multiplier
Escutcheon MP	DWB100	MP DWB160	$12	Z10
	DWB250	MP DWB250	$14	
	DWB400	MP DWB400	$15	
	DWB600	MP DWB800-1600	$15	

Notes: Degree of protection rating (IP) according to IEC. 60529.

PLW Lock-OFF Devices

- The PLW is a fixed-type device that is installed on the front of the MCCB ensuring the MCCB locking in OFF position
- It can be padlocked using one to 3 padlocks. PLW allows padlocks with diameters of Ø0.16...0.31 inches (4...8 mm)
- Padlocks are not supplied

External Accessory	MCCB	Catalog Number	List Price	Multiplier
Lock-OFF device PLW	DWB100	PL DWB160 3P	$65	Z10
	DWB250	PL DWB250	$71	
	DWB400	PL DWB400	$150	
	DWB600	PL DWB800-1600	$150	

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Technical Data

Catalog Number			DWB100		DWB250		DWB400		DWB600
Frame size			100		250		400		600
Electrical Characteristics According to UL 489									
Rated operational voltage – Eu	VAC (60 Hz)		480Y/277		480Y/277		480		480
Maximum rated continuous current – In (40°C)		A	100		250		400		600
MCCB rating design			80%, 100%[1]						
Rated current – In (40°C)		A	20, 25, 30, 40, 50, 60, 70, 80, 90, 100		80-100, 100-125, 120-150,160-200, 200-250		160-200, 180-225, 200-250, 220-275, 240-300, 260-325, 280-350, 320-400		227.5-325, 245-350, 280-400, 315-450, 350-500, 385-550, 420-600
Number of poles			3		3		3		3
Short-circuit breaking capacity levels			C	J	J	P	J	P	P
UL interrupting rating – max RMS symmetrical	kA rms		-		-		-		-
	240 VAC		35	50	50	80	50	80	80
	480Y/277 VAC		10	14	14	35	-		-
	480 VAC		-		-		18	35	35
Mechanical lifespan (C-O)	Number of operations		10,000		6,000		6,000		6,000
	Operations per hour		360		240		240		240
Electrical lifespan (C-O) @ 480 VAC	Number of operations		6,000		1,000		1,000		1,000
	Operations per hour		360		240		240		240
Protection									
Against short-circuit and overload (fixed thermomagnetic)			Yes		No		No		No
Against short-circuit and overload (adjustable thermal and fixed magnetic)			No		Yes		No		No
Against short-circuit and overload (adjustable thermal and magnetic)			No		No		Yes		Yes
Accessories									
Internal	Auxiliary switch BC		Yes		Yes		Yes		Yes
	Alarm switch AL		Yes		Yes		Yes		Yes
	Auxiliary and alarm switches BCAL		Yes		Yes		Yes		Yes
	Shunt trip release BD		Yes		Yes		Yes		Yes
	Undervoltage-trip release BS		Yes		Yes		Yes		Yes
External	Mechanical interlock BLIM		Yes		Yes		Yes		Yes
	Lock-OFF device PLW		Yes		Yes		Yes		Yes
	Escutcheons MP		Yes		Yes		Yes		Yes
	Wiring terminal (lug) PC		Built-in		Standard		Standard		Standard
Handles	Panel door rotary operating handle		Yes		Yes		Yes		Yes
Installation and Connections									
Suitable for reverse connection			Yes		Yes		Yes		Yes
Cables – Cu[2]	Maximum cross-section		3 AWG		250 kcmil		500 kcmil		400 kcmil
	Minimum cross-section		10 AWG		4 AWG		3/0 AWG		3/0 AWG
	Tightening torque in-lb (Nm)		57.5 (6.5)		220 (25)		265 (35)		310 (55)
Busbar	Tightening torque in-lb (Nm)		-		70 (8)		175 (20)		175 (20)
Dimensions (W x D x H)	Inches (mm)		3.07 x 2.87 x 6.30 (78 x 73 x 160)		4.13 x 3.15 x 7.87 (105 x 80 x 200)		4.22 x 3.9 x 12.72 (107 x 99 x 323)		8.27 x 3.9 x 12.72 (210 x 99 x 323)
Weight	3 poles	Pounds (kg)	2.09 (0.95)		3.97 (1.8)		7.85 (3.56)		16.31 (7.4)

Notes:
1) For DWB100: suitable for continuous operation at 100 percent of rating only if used in a circuit breaker enclosure in a cubicle space 23.6 by 15.7 by 7.9 inches (600 by 400 by 200 mm) or equivalent. For DWB250: suitable for continuous operation at 100 percent of rating only if used in a circuit breaker enclosure in a cubicle space 31.5 by 23.6 by 11.8 inches (800 by 600 by 300 mm) or equivalent. For DWB400 and DWB600: suitable for continuous operation at 100 percent of rating only if used in a circuit breaker enclosure in a cubicle space 47.2 by 23.6 by 15.8 inches (1,200 by 600 by 400 mm) or equivalent.
2) Use only 90ºC rated wire with ampacity based on 75°C rated conductors.

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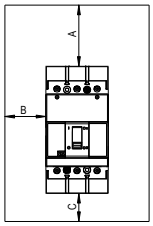
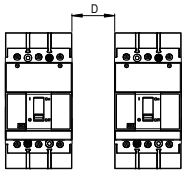
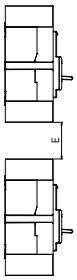
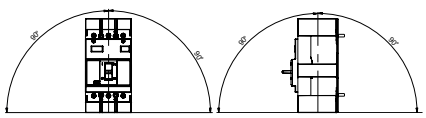
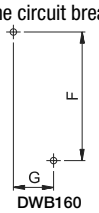
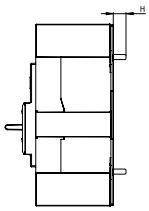
DWB Series

Installation and Connections

Minimum Mounting Distances: DWB

Recommended mounting distances – inch (mm) 	A	1.97 (50)
	B	0.79 (20)
	C	0.79 (20)
Recommended distances between circuit breakers for side by side assembly – inch (mm) 	D	0.394 (10)
Recommended distances between circuit breakers for vertical assembly – inch (mm) 	E	3.54 (90)
Mounting position		
Drilling for fixing the circuit breakers – inch (mm)  DWB160	F G	See section dimensions
Dimensions of fixing screw to the plate – inch (mm)		M4 x 2.99 (76) – 2 pieces
Surpass of the fixing screw in relation to the circuit breaker – inch (mm) 	H	0.315 (8)
Tightening torque – fixing screw – in-lb (Nm)		35.2 (4)

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Installation and Connections

Thermal Dissipation

Distribution MCCB											
Rated current – In	A	20	25	30	40	50	60	70	80	90	100
Power loss		Watts / Pole									
	DWB160	1	2	4	4	5	8	4	5	6	7

Deratings

Temperature Derating	50°F 10°C	59°F 15°C	68°F 20°C	77°F 25°C	86°F 30°C	95°F 35°C	104°F 40°C	113°F 45°C	122°F 50°C	131°F 55°C	140°F 60°C
DWB (x In)	1.16	1.12	1.09	1.07	1.02	1.02	1	0.97	0.95	0.91	0.88

Altitude Derating		6500 ft / 2000 m	9800 ft / 3000 m	13100 ft / 4000 m	16400 ft / 5000 m
Rated current – In	%	100	98	93	90
Rated operational voltage – Ue	VAC	480Y/277	480Y/277	480Y/277	400Y/230

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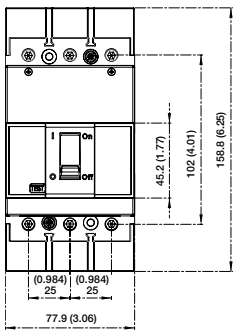
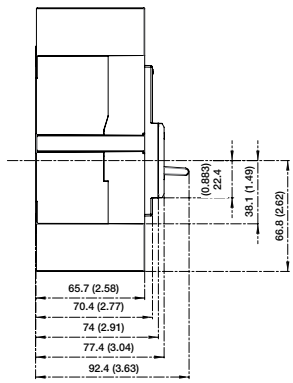
DWB Series

Dimensions – mm (inch)

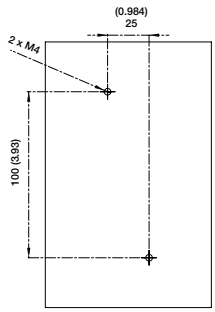
Circuit Breakers

DWB100

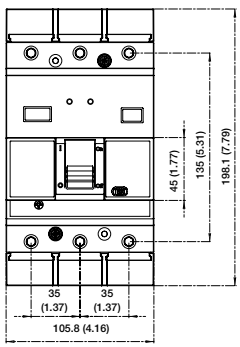


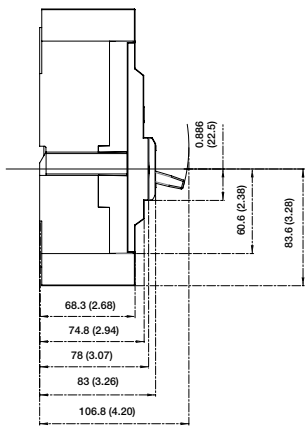


Drilling for Fixing

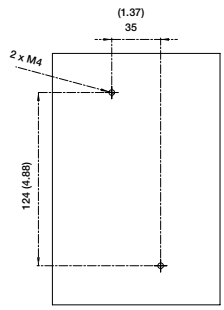


DWB250

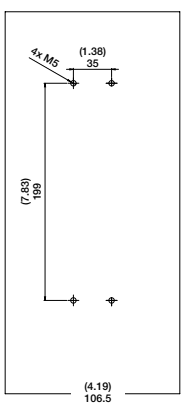


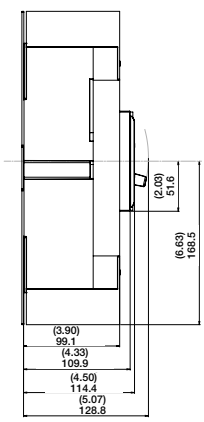


Drilling for Fixing

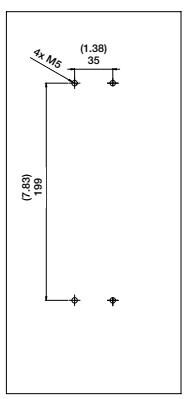


DWB400

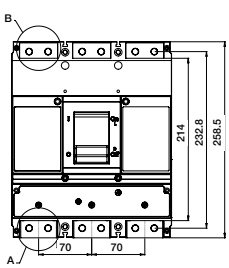


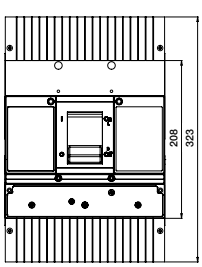


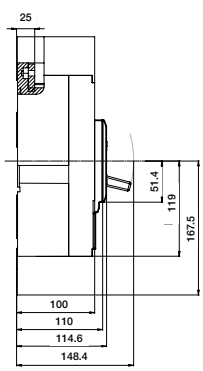
Drilling for Fixing

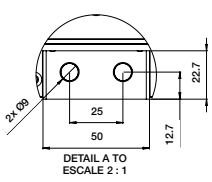


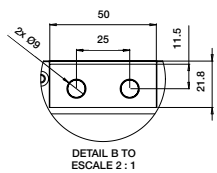
DWB600

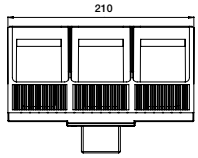












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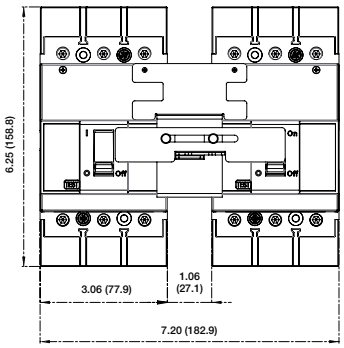
Dimensions – mm (inch)

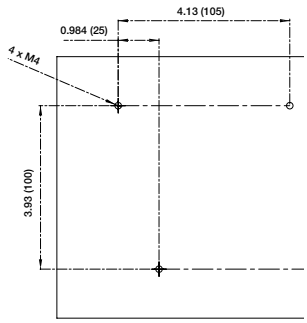
Accessories

BLIM – Mechanical Interlock

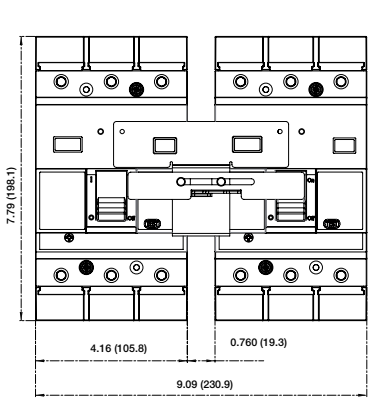
2 x Frame 100 + BLIM DWB100 3P



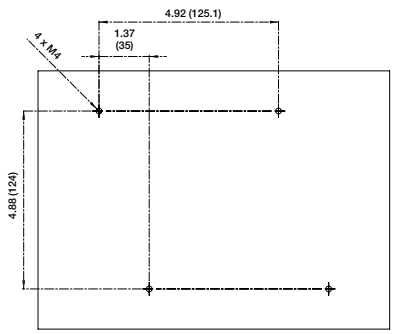
Drilling for Fixing



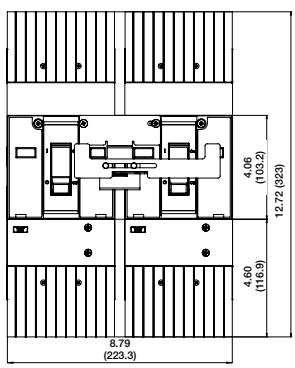
2 x Frame 250 + BLIM DWB250 3P



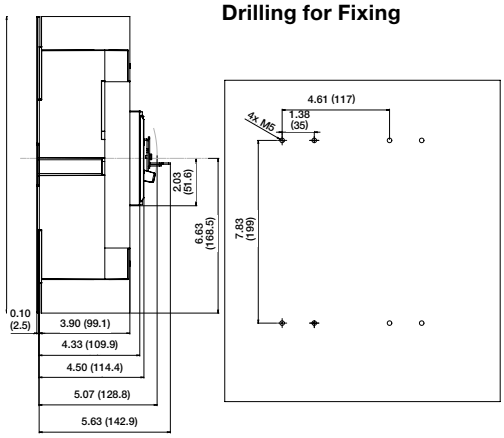
Drilling for Fixing



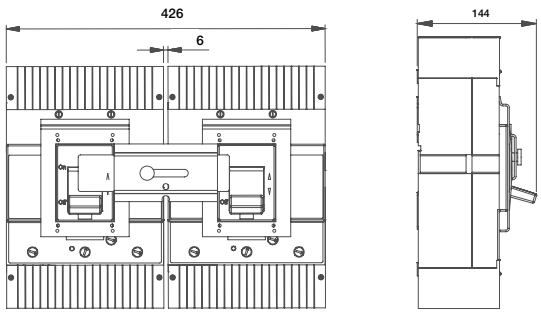
2 x Frame 400 + BLIM DWB400 3P



Drilling for Fixing



2 x Frame 600 + BLIM DWB600 3P



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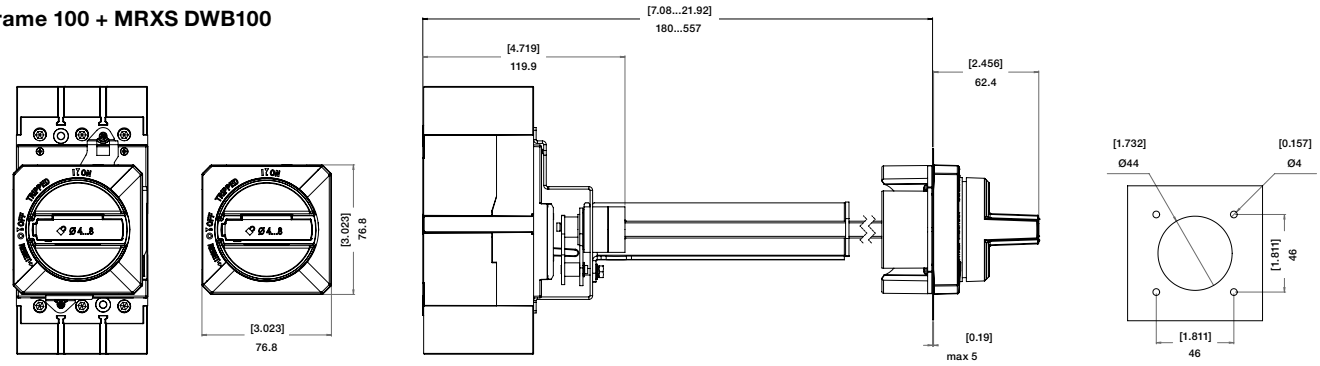
DWB Series

Dimensions – mm (inch)

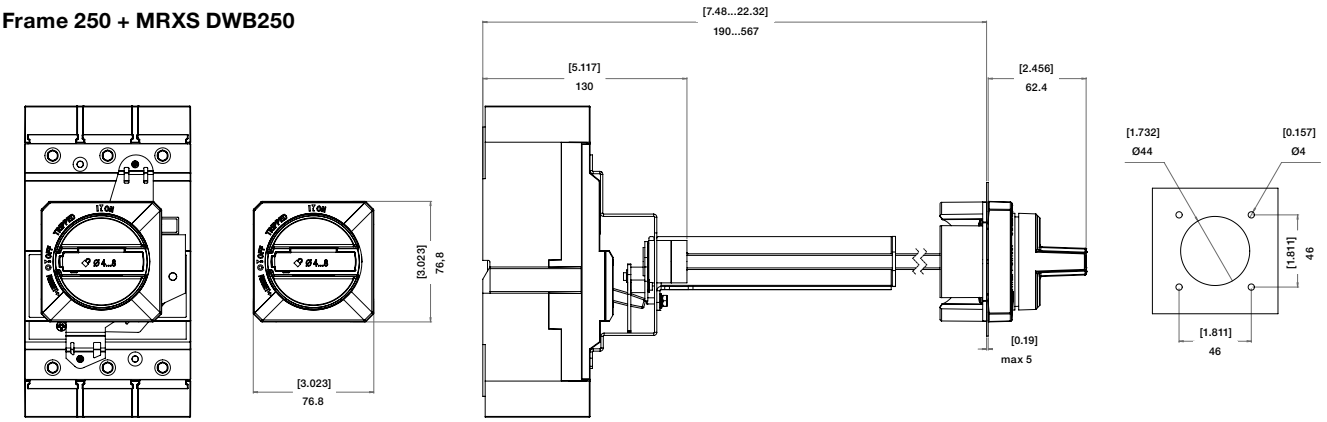
Accessories

MRX – Panel Door Rotary Operating Handles

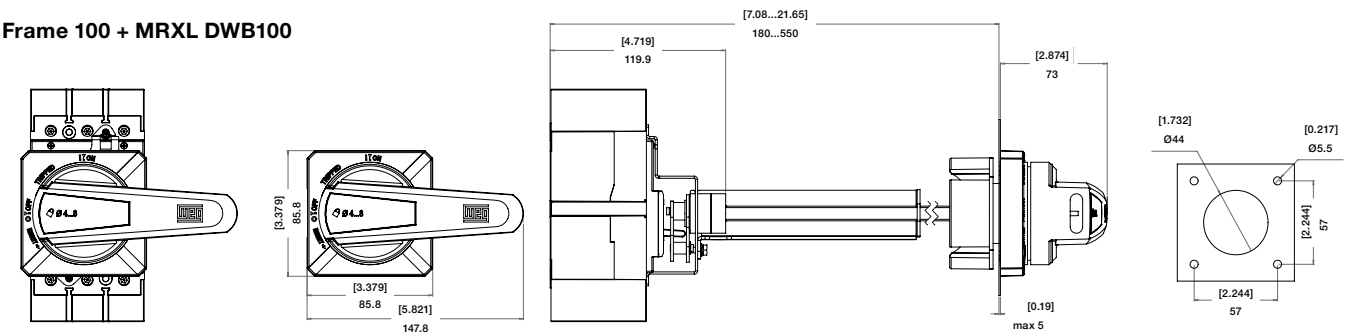
Frame 100 + MRXS DWB100



Frame 250 + MRXS DWB250



Frame 100 + MRXL DWB100



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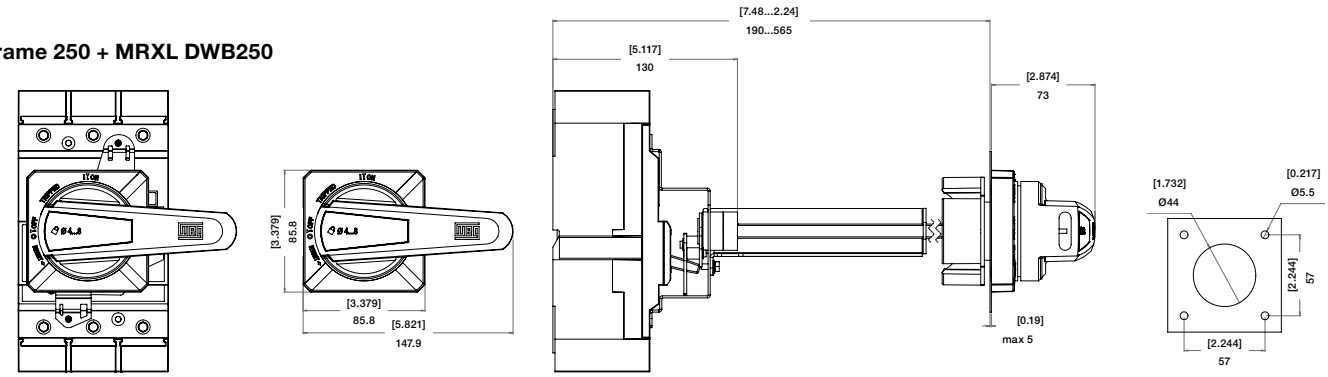
Dimensions – mm (inch)

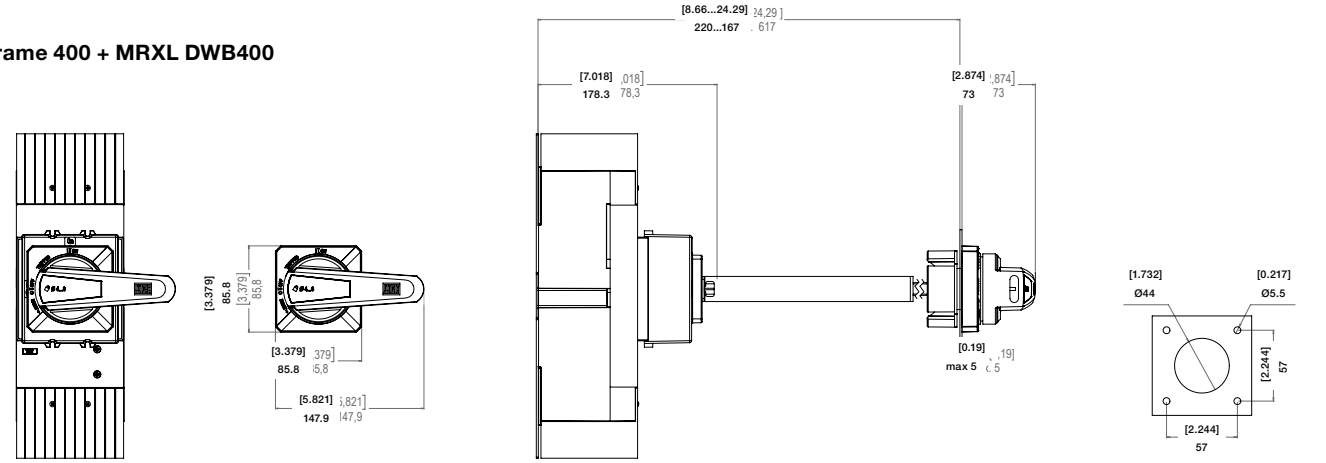
Accessories

MRX – Panel Door Rotary Operating Handles

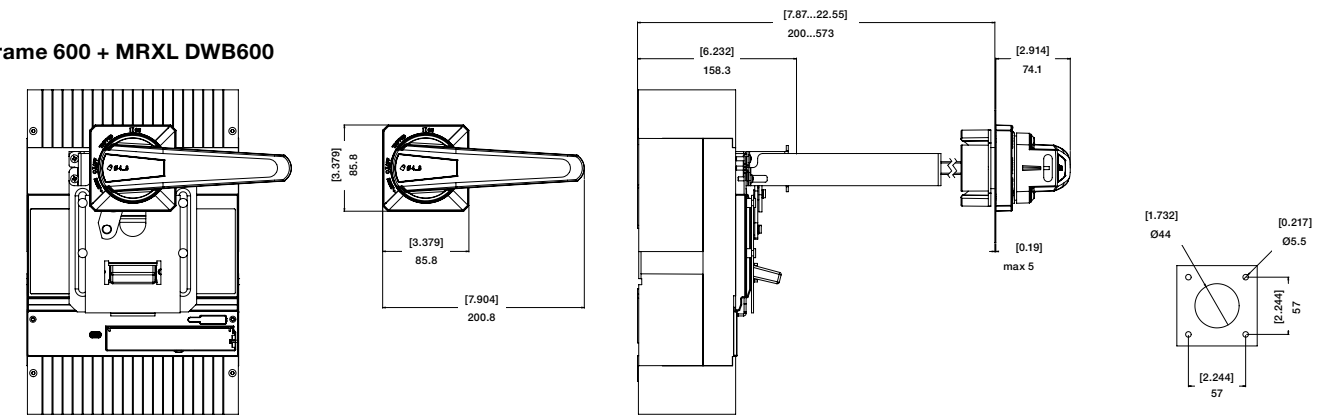
Frame 250 + MRXL DWB250



Frame 400 + MRXL DWB400



Frame 600 + MRXL DWB600



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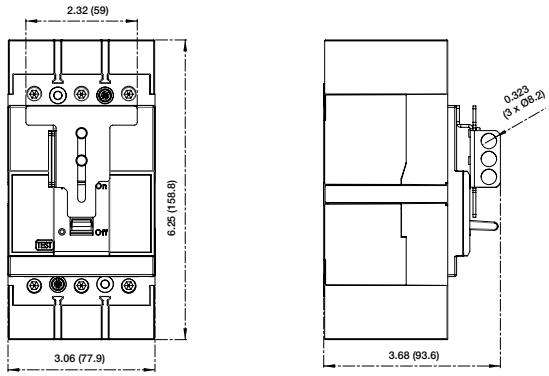
DWB Series

Dimensions – mm (inch)

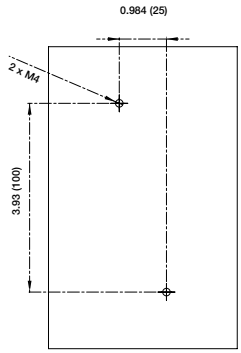
Accessories

PLW – Lock-OFF Devices

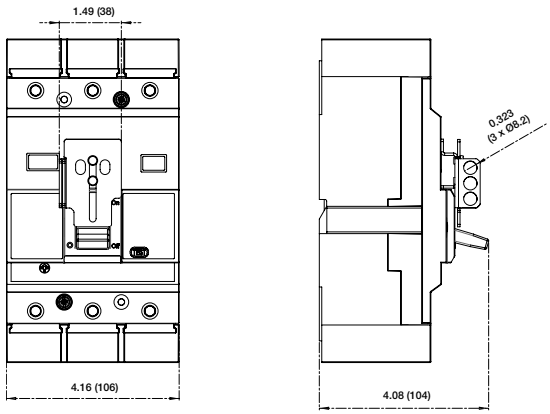
Frame 100 + PLW DWB100 3P



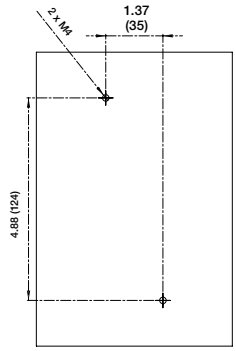
Panel Door Cutout



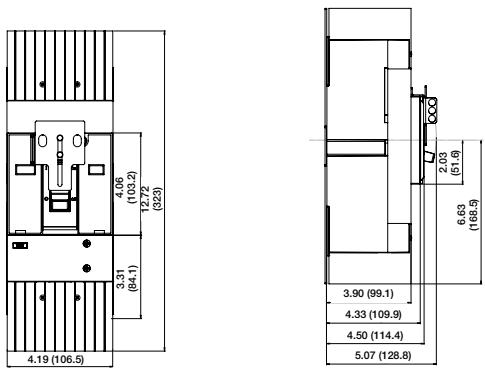
Frame 250 + PLW DWB250



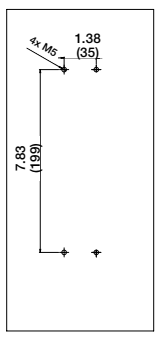
Panel Door Cutout



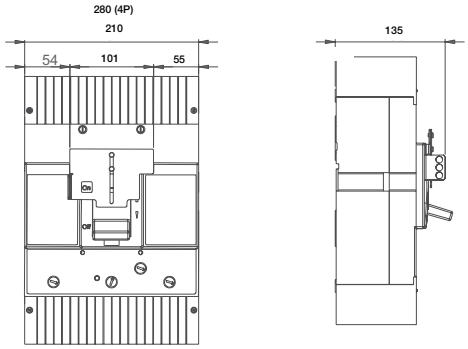
Frame 400 + PLW DWB400



Panel Door Cutout



Frame 600 + PLW DWB600



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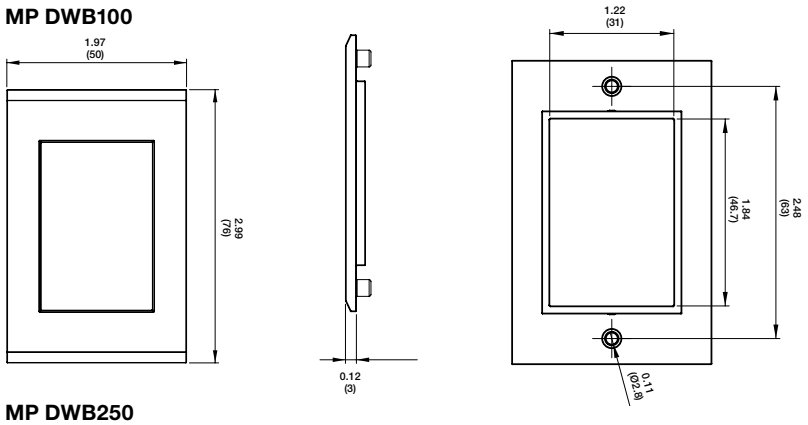
Dimensions – mm (inch)

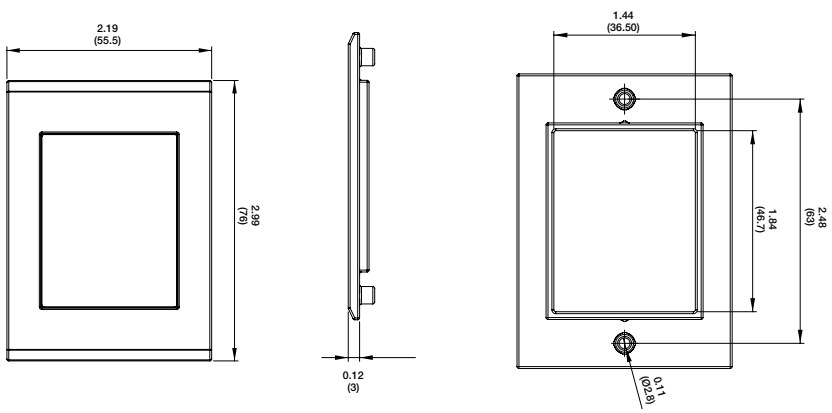
Accessories

MP – Escutcheons

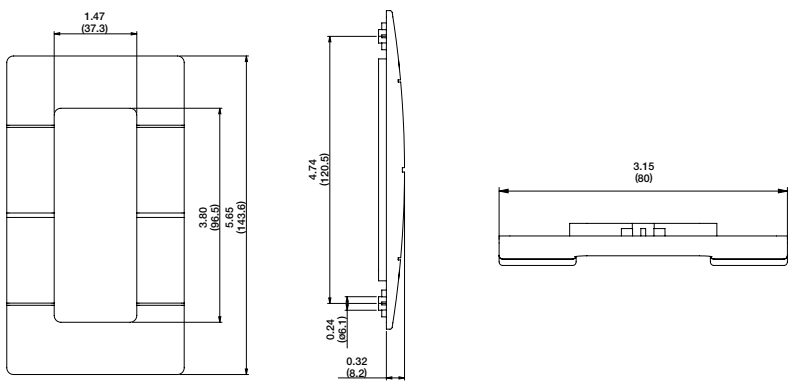
MP DWB100



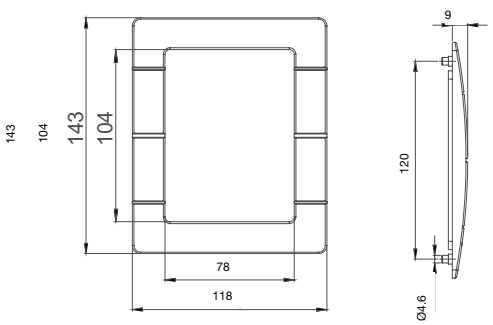
MP DWB250



MP DWB400



MP DWB600



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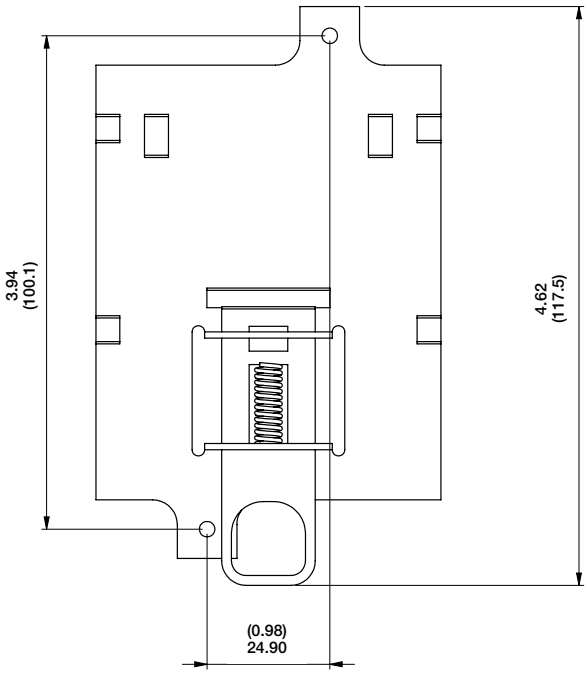
DWB Series

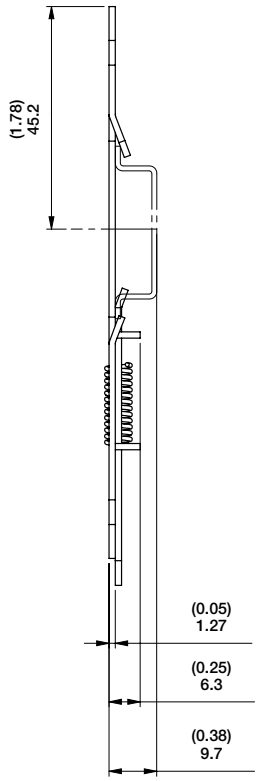
Dimensions – mm (inch)

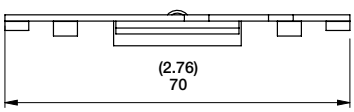
Accessories

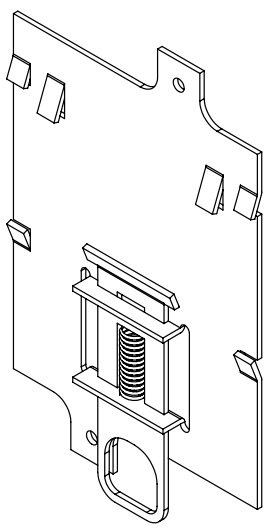
BFR – DIN Rail Base

BFR DWB100 3P UL









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UBW Series – Molded Case Circuit Breakers

Molded-Case Circuit Breaker
UL 489 Listed

The WEG UBW Series of Molded Case Circuit Breakers are designed to provide short-circuit and thermal protection for industrial electrical equipment. The UBW product line ranges from 15 A to 2500 A and SCCR ratings for 35-100 KAIC to meet more of your application requirements. The UBW line offers the quality, reliability and uncompromising protection that you have come to expect from WEG.

UL File No. E310239

Standard Features

- Broad product offering up to 2500A
- Multiple SCCR ratings up to 100 KIAC ratings
- 80% rated for standard UL application
- Maintenance mode for superior Arc Flash Protection
- Field or factory installed options
- Optional multi-conductor load side lugs
- Panel mount only
- Ambient temperature compensation -4...+158°F (-20...+70°C)

Learn More Online

UBW Catalog Number Sequence

UBW	225	N	-	FTU	15	3A

WEG UBW
Breaker Series

Frame Size
225, 250, 400, 600, 800, 1000, 2000, 2500

kAIC@480V
N: 35 kAIC
S: 50 kAIC
H: 65 kAIC
L: 100 kAIC
(Call for other ratings.)

FTU: Thermal and Magnetic

or

ELS: Electronic Trip

or

ELSI: Electronic Trip with Maintenance Mode

Breaker Amps (Max)
15, 20, 30, 40, 50, 60, 70, 80, 100, 125, 200, 225, 250, 400, 600, 800, 1000, 2000, 2500
(Amps subject to frame size.)

Power Poles
3A: Three Poles

Chart intended as reference only and not to create part numbers. If ordering with factory installed options, add alpha numeric option code sequence after "3A." See page 33 for more information.

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Circuit Protection

UBW Series

225 Frame – Line and load side lugs included

UBW225 Frame – Fixed Thermal / Fixed Magnetic

Thermal Setting (A)	Short-Circuit Interrupting Capacity		Catalog Number	List Price	Multiplier
	480 VAC	600 VAC			
15	35 kA	18 kA	UBW225N-FTU15-3A	$665	Z10
20			UBW225N-FTU20-3A	$665	Z10
30			UBW225N-FTU30-3A	$665	Z10
40			UBW225N-FTU40-3A	$665	Z10
50			UBW225N-FTU50-3A	$665	Z10
60			UBW225N-FTU60-3A	$665	Z10
70			UBW225N-FTU70-3A	$665	Z10
80			UBW225N-FTU80-3A	$728	Z10
100			UBW225N-FTU100-3A	$728	Z10
125			UBW225N-FTU125-3A	$1,100	Z10
150			UBW225N-FTU150-3A	$1,550	Z10
200			UBW225N-FTU200-3A	$1,550	Z10
225			UBW225N-FTU225-3A	$1,550	Z10
15	65 kA	25 kA	UBW225H-FTU15-3A	$965	Z10
20			UBW225H-FTU20-3A	$965	Z10
30			UBW225H-FTU30-3A	$965	Z10
40			UBW225H-FTU40-3A	$965	Z10
50			UBW225H-FTU50-3A	$965	Z10
60			UBW225H-FTU60-3A	$965	Z10
70			UBW225H-FTU70-3A	$965	Z10
80			UBW225H-FTU80-3A	$1,055	Z10
100			UBW225H-FTU100-3A	$1,055	Z10
125			UBW225H-FTU125-3A	$1,450	Z10
150			UBW225H-FTU150-3A	$2,050	Z10
200			UBW225H-FTU200-3A	$2,050	Z10
225			UBW225H-FTU225-3A	$2,050	Z1 0
15	100 kA	35 kA	UBW225L-FTU15-3A	$1,200	Z10
20			UBW225L-FTU20-3A	$1,200	Z10
30			UBW225L-FTU30-3A	$1,200	Z10
40			UBW225L-FTU40-3A	$1,200	Z10
50			UBW225L-FTU50-3A	$1,200	Z10
60			UBW225L-FTU60-3A	$1,200	Z10
70			UBW225L-FTU70-3A	$1,200	Z10
80			UBW225L-FTU80-3A	$1,200	Z10
100			UBW225L-FTU100-3A	$1,350	Z10
125			UBW225L-FTU125-3A	$1,350	Z10
150			UBW225L-FTU150-3A	$2,400	Z10
200			UBW225L-FTU200-3A	$2,400	Z10
225			UBW225L-FTU225-3A	$2,400	Z10

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UBW 250 400 600 800 Frame – Line and load side lugs included

Frame 250 – Fixed Thermal / Adjustable Magnetic

Thermal Setting	kA Rating at 480VAC	Catalog Number	List Price	Multiplier
250	35	UBW250N-FTU250-3A	$1,550	Z10
250	65	UBW250H-FTU250-3A	$2,050	Z10
250	100	UBW250L-FTU250-3A	$2,400	Z10
Frame 400 – Fixed Thermal / Adjustable Magnetic				
300	35	UBW400N-FTU300-3A	$3,000	Z10
400	35	UBW400N-FTU400-3A	$3,000	Z10
300	65	UBW400H-FTU300-3A	$3,700	Z10
400	65	UBW400H-FTU400-3A	$3,700	Z10
300	100	UBW400L-FTU300-3A	$4,700	Z10
400	100	UBW400L-FTU400-3A	$4,700	Z10
Frame 600 – Fixed Thermal / Adjustable Magnetic				
500	35	UBW600N-FTU500-3A	$5,000	Z10
600	35	UBW600N-FTU600-3A	$5,000	Z10
500	65	UBW600H-FTU500-3A	$7,000	Z10
600	65	UBW600H-FTU600-3A	$7,000	Z10
500	100	UBW600L-FTU500-3A	$8,300	Z10
600	100	UBW600L-FTU600-3A	$8,300	Z10
Frame 800 – Fixed Thermal / Adjustable Magnetic				
800	50	UBW800S-FTU800-3A	$6,000	Z10
800	65	UBW800H-FTU800-3A	$8,000	Z10
Frame 1200 with Electronic Trip – Not supplied with lugs				
800	50	UBW1200S-ELS800-3A	$14,000	Z10
800	65	UBW1200H-ELS800-3A	$17,950	Z10
800	100	UBW1200L-ELS800-3A	$21,950	Z10
1200	50	UBW1200S-ELS1200-3A	$21,300	Z10
1200	65	UBW1200H-ELS1200-3A	$22,200	Z10
1200	100	UBW1200L-ELS1200-3A	$23,500	Z10
Frame 1200 with Electronic Trip and Maintenance Mode – Not supplied with lugs				
800	50	UBW1200S-ELSI800-3A	$21,950	Z10
800	65	UBW1200H-ELSI800-3A	$21,950	Z10
800	100	UBW1200L-ELSI800-3A	$24,600	Z10
1200	50	UBW1200S-ELSI1200-3A	$22,000	Z10
1200	65	UBW1200H-ELSI1200-3A	$24,500	Z10
1200	100	UBW1200L-ELSI1200-3A	$25,800	Z10

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Circuit Protection

UBW Series

UBW 2500 Frame

Frame 2500 with Electronic Trip – not supplied with lugs

Thermal Setting	kA Rating at 480 VAC	Catalog Number	List Price	Multiplier
1600	65	UBW2500H-ELS1600-3A	$29,600	Z10
1600	100	UBW2500L-ELS1600-3A	$32,200	Z10
2000	65	UBW2500H-ELS2000-3A	$30,700	Z10
2000	100	UBW2500L-ELS2000-3A	$33,300	Z10
2500	65	UBW2500H-ELS2500-3A	$32,400	Z10
2500	100	UBW2500L-ELS2500-3A	$35,200	Z10

Frame 2500 with Electronic Trip and Maintenance Mode

Thermal Setting	kA Rating at 480 VAC	Catalog Number	List Price	Multiplier
1600	65	UBW2500H-ELSI1600-3A	$32,300	Z10
1600	100	UBW2500L-ELSI1600-3A	$34,900	Z10
2000	65	UBW2500H-ELSI2000-3A	$33,300	Z10
2000	100	UBW2500L-ELSI2000-3A	$36,000	Z10
2500	65	UBW2500H-ELSI2500-3A	$35,000	Z10
2500	100	UBW2500L-ELSI2500-3A	$37,900	Z10

Notes:
WEG's position currently, is that for voltage and interrupting capacity MCCB operation should be de-rated 2.5% for every 1000 ft. increase in elevation above 3000 ft. De-rating for current carrying capacity at increased altitude should be calculated in a manner equivalent to a 3°C increase in ambient temperature for each 1000 ft. increase in elevation above 3000 ft. This is in addition to any thermal de-rating that may apply at altitude.

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UBW Breaker Accessories

225 Frame Factory Installed only

HOW TO ORDER – EXAMPLE

UBW225H-FTU25-3A List $965.00	Ex: UBW225N-FTU15-3A-A1 $965 + $699.50 = $1664.50	Use Z10 Multiplier	
Suffix for Factory Installation	**Description**	**List Price**	**Multiplier**
A1	AUXILIARY SWITCH[1]	**$699.05**	Z10
A2	ALARM SWITCH[2]	**$699.05**	
A3	AUX/ALARM SWTICH[3]	**$782.00**	
S	SHUNT TRIP 12-24 VAC/VDC	**$787.14**	
SS	SHUNT TRIP 48-120 VAC / 48-60 VDC	**$787.14**	
S0	SHUNT TRIP 208-380 VAC / 110-127 VDC	**$787.14**	
11	UNDERVOLTAGE RELEASE 24 VDC	**$787.14**	
12	UNDERVOLTAGE RELEASE 110-125 VAC	**$787.14**	
13	UNDERVOLTAGE RELEASE 208-240 VAC	**$787.14**	

250-2500 Frame with Options

HOW TO ORDER – EXAMPLE

UBW250 – 2500 Frame List $	AX-UBW250 – 2500 List $	Installation Charge List $ (optional)	List Prices Totaled	Apply Z10 Multiplier for Final Price

UBW250 Frame Options

Suffix for Factory Installation	Catalog Number	Description	List Price	Install List	Multiplier
A1	**AX-UBW250**	AUXILIARY SWITCH[1]	**$445.71**	**$350**	Z10
A2	**AL-UBW250**	ALARM SWITCH[2]	**$445.71**	**$350**	
A3	**AXAL-UBW250**	AUX / ALARM SWTICH[3]	**$527.14**	**$350**	
S1	**SHT-UBW250-E59**	SHUNT TRIP 12-24 VAC/VDC	**$587.14**	**$350**	
S2	**SHT-UBW250-E61**	SHUNT TRIP 100-240 VAC / 110-125 VDC	**$587.14**	**$350**	
21	**UVT-UBW250-C03**	UNDERVOLTAGE RELEASE 24 VDC	**$587.14**	**$350**	
22	**UVT-UBW250-D60**	UNDERVOLTAGE RELEASE 110-125 VAC	**$587.14**	**$350**	
23	**UVT-UBW250-D96**	UNDERVOLTAGE RELEASE 208-240 VAC	**$587.14**	**$350**	

UBW400 Frame Options – See above for How to Order

Suffix for Factory Installation	Catalog Number	Description	List Price	Install List	Multiplier
A1	**AX-UBW400**	AUXILIARY SWITCH[1]	**$557.41**	**$350**	Z10
A2	**AL-UBW400**	ALARM SWITCH[2]	**$557.41**	**$350**	
A3	**AXAL-UBW400**	AUX / ALARM SWTICH[3]	**$628.29**	**$350**	
S1	**SHT-UBW400-E59**	SHUNT TRIP 12-24 VAC/VDC	**$627.43**	**$350**	
S2	**SHT-UBW400-E61**	SHUNT TRIP 100-240 VAC / 110-125 VDC	**$627.43**	**$350**	
21	**UVT-UBW400-C03**	UNDERVOLTAGE RELEASE 24 VDC	**$627.43**	**$350**	
22	**UVT-UBW400-D60**	UNDERVOLTAGE RELEASE 110-125 VAC	**$627.43**	**$350**	
23	**UVT-UBW400-D96**	UNDERVOLTAGE RELEASE 208-240 VAC	**$627.43**	**$350**	

Example of factory installed catalog number: UBW225N-FTU20-3A-A1. Refer to page 62 for possible accessory combinations.

Notes:
1) Auxiliary Contact consist of 1NO and 1NC Contact.
2) Alarm Contact consist of 1NO Early Make and 1NC Late Break Contact.
3) Aux/Alarm Contact consist of 1NO and 1NC/1NO Early Make and 1NC > Late Break Contact.

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Circuit Protection

UBW Series

UBW800 Frame Options – See Previous Page for How to Order

Suffix for Factory Installation	Catalog Number	Description	List Price	Install List	Multiplier
A1	AX-UBW800[4]	AUXILIARY SWITCH[1)]	$698.67	$450	Z10
A2	AL-UBW800[4]	ALARM SWITCH[2)]	$698.67	$450	
A3	AXAL-UBW800[4]	AUX/ALARM SWTICH[3)]	$772.29	$450	
S5	SHT-UBW800-E60[4]	SHUNT TRIP 12-24 VAC/VDC	$873.24	$450	
S6	SHT-UBW800-D9 5[4]	SHUNT TRIP 100-240 VAC	$873.24	$450	
41	UVT-UBW800-C03[4]	UNDERVOLTAGE RELEASE 24 VDC	$873.24	$450	
42	UVT-UBW800-D60[4]	UNDERVOLTAGE RELEASE 110-127 VAC	$873.24	$450	
43	UVT-UBW800-D96[4]	UNDERVOLTAGE RELEASE 208-240 VAC	$873.24	$450	

UBW1200 Frame Options – See Previous Page for How to Order

Suffix for Factory Installation	Catalog Number	Description	List Price	Install List	Multiplier
A1	AX-UBW1200	AUXILIARY SWITCH[1)]	$771.43	$650	Z10
A2	AL-UBW1200	ALARM SWITCH[2)]	$771.43	$650	
A3	AXAL-UBW1200	AUX/ALARM SWTICH[3)]	$865.71	$650	
S7	SHT-UBW1200-E60	SHUNT TRIP 12-24 VAC/VDC	$964.29	$650	
S8	SHT-UBW1200-D95	SHUNT TRIP 100-240 VAC	$964.29	$650	
51	UVT-UBW1200-C03	UNDERVOLTAGE RELEASE 24 VDC	$964.29	$650	
52	UVT-UBW1200-D60	UNDERVOLTAGE RELEASE 110-127 VAC	$964.29	$650	
53	UVT-UBW1200-D96	UNDERVOLTAGE RELEASE 208-240 VAC	$964.29	$650	

UBW2500 Frame Options – See Previous Page for How to Order

Suffix for Factory Installation	WEG Catalog Number	Description	List Price	Install List	Multiplier
A1	AX-UBW2500	AUXILIARY SWITCH (1NO & 1NC)	$1,034.19	$650	Z10
A2	AL-UBW2500	ALARM SWITCH	$1,034.19	$650	
S9	SHT-UBW2500-E26	SHUNT TRIP 24 VAC/VDC	$1,157.14	$650	
S10	SHT-UBW2500-D95	SHUNT TRIP 100-240 VAC	$1,157.14	$650	
61	UVT-UBW2500-C03	UNDERVOLTAGE RELEASE 24 VDC	$1,157.14	$650	
62	UVT-UBW2500-D60	UNDERVOLTAGE RELEASE 110-127 VAC	$1,157.14	$650	
63	UVT-UBW2500-D96	UNDERVOLTAGE RELEASE 208-240 VAC	$1,157.14	$650	

Example of factory installed catalog number: UBW225N-FTU20-3A-A1. Refer to page 62 for possible accessory combinations.

Notes:
1) Auxiliary Contact consist of 1NO and 1NC Contact.
2) Alarm Contact consist of 1NO Early Make and 1NC Late Break Contact.
3) Aux/Alarm Contact consist of 1NO and 1NC/1NO Early Make and 1NC > Late Break Contact.
4) UBW800 options are also compatible with the UBW600.

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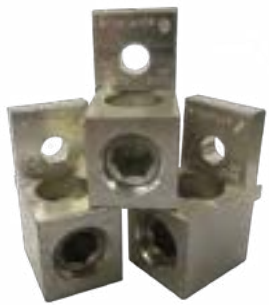
Lugs

UBW Circuit Breaker supplied with Line/Load Lugs up to 800 amp frame



	FRAME	PART NUMBER	CONDUCTOR PER PHASE	WIRE SIZE RANGE	PACKAGE COUNT	LIST PRICE	MULTIPLIER
Standard Lugs Included	225	LT3-UBW225 [1]	1	4-4/0	3	$274.29	Z10
		LT3B-UBW225 [2]	1	4-4/0	3	$274.29	Z10
	250	LT1-UBW250	1	4-350	1	$73.09	Z10
	400 (350A)	LT1-UBW400	1	250-500	1	$65.52	Z10
	400 (400A)	LT3-UBW400	2	3/0-250	3	$196.57	Z10
	600 (500A)	LT3D-UBW500	2	3/0-350	3	$310.86	Z10
	600 (600A)	LT3D-UBW600	2	400-500	3	$310.86	Z10
	800	LT1A2-UBW800	3	3/0-400	1	$172.19	Z10
Load Side Only [3]	225	WT3-UBW225	3	14-2	3	$212.10	Z10
	225	WT6-UBW225	6	14-6	3	$212.10	Z10
	250	WT3-UBW250	3	14-2	3	$370.76	Z10
	250	WT6-UBW250	6	14-6	3	$370.76	Z10
	400	WT3-UBW400	3	14-2/0	3	$382.29	Z10
	400	WT6-UBW400	6	14-3	3	$382.29	Z10
Optional Lugs Line and Load Side	600 (400A)	LT3D-UBW400	1	4/0-600	3	$252.95	Z10
	600 (450A)	LT1D-UBW450	2	4-4/0	1	$156.95	Z10
	800 (700A)	LT1A1-UBW700	2	1-500	1	$126.48	Z10
	800	LT1A-UBW800	2	500-750	1	$219.63	Z10
	1200 (700A)	LT1B2-UBW700	2	1-500	1	$121.50	Z10
	1200 (1000A)	LT1B3-UBW1000	3	3/0-400	1	$163.79	Z10
	1200	LT1B4-UBW1200	4	4/0-500	1	$230.14	Z10
	1200	LT1B3-UBW1200	3	500-750	1	$243.00	Z10
	2500 (1600A)	LT1A-UBW1600	4	500-1000	1	$333.71	Z10
	2500 (1600A)	LT1C-UBW1600	4	1-600	1	$530.29	Z10
	2500 (2000A)	LT3-UBW2000	6	2-600	9	$3,771.43	Z10
Rear Connection Kits	2500 (2000A)	RT1-UBW2000	N/A	N/A	1	$299.57	Z10
	2500	RT1-UBW2500	N/A	N/A	1	$641.14	Z10

Notes:
1) Slot Head Lug for 15-100A.
2) 3/16 Socket Head Lug for 100-225A.
3) Power distribution lugs for installation on load side only.

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Circuit Protection

UBW Series

Handle/Mechanism/Shafts NEMA 1/3R/12

Part Number	Description	List Price	Multiplier
EHC6-UBW225	Handle + Mechanism + Shaft 6"	$372.86	Z10
EHC12-UBW225	Handle + Mechanism + Shaft 12"	$384.29	Z10
EHC16-UBW225	Handle + Mechanism + Shaft 16"	$410.00	Z10
EHC24-UBW225	Handle + Mechanism + Shaft 24"	$437.33	Z10
EHC6-UBW250	Handle + Mechanism + Shaft 6"	$285.71	Z10
EHC12-UBW250	Handle + Mechanism + Shaft 12"	$397.24	Z10
EHC16-UBW250	Handle + Mechanism + Shaft 16"	$497.90	Z10
EHC24-UBW250	Handle + Mechanism + Shaft 24"	$517.43	Z10
EHC6-UBW400	Handle + Mechanism + Shaft 6"	$393.33	Z10
EHC12-UBW400	Handle + Mechanism + Shaft 12"	$407.71	Z10
EHC16-UBW400	Handle + Mechanism + Shaft 16"	$482.29	Z10
EHC24-UBW400	Handle + Mechanism + Shaft 24"	$530.95	Z10
EHC6-UBW800 ^	Handle + Mechanism + Shaft 6"	$544.76	Z10
EHC12-UBW800 ^	Handle + Mechanism + Shaft 12"	$557.05	Z10
EHC16-UBW800 ^	Handle + Mechanism + Shaft 16"	$650.19	Z10
EHC24-UBW800 ^	Handle + Mechanism + Shaft 24"	$679.43	Z10
EHG6-UBW1200	Handle + Mechanism + Shaft 6"	$656.33	Z10
EHG12-UBW1200	Handle + Mechanism + Shaft 12"	$573.05	Z10
EHG16-UBW1200	Handle + Mechanism + Shaft 16"	$679.43	Z10
EHG24-UBW1200	Handle + Mechanism + Shaft 24"	$709.76	Z10

^ For both UBW600 and UBW800 products

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Notes: UBW 2500 utilizes flange mount mechanism only. Rotary handle is not available.

Handle/Mechanism/Shafts NEMA 4/4X

Part Number	Description	List Price	Multiplier
EHC6X-UBW225	Handle + Mechanism + Shaft 6"	$468.57	Z10
EHC12X-UBW225	Handle + Mechanism + Shaft 12"	$482.29	Z10
EHC16X-UBW225	Handle + Mechanism + Shaft 16"	$536.95	Z10
EHC24X-UBW225	Handle + Mechanism + Shaft 24"	$548.67	Z10
EHC6X-UBW250	Handle + Mechanism + Shaft 6"	$548.67	Z10
EHC12X-UBW250	Handle + Mechanism + Shaft 12"	$577.90	Z10
EHC16X-UBW250	Handle + Mechanism + Shaft 16"	$613.05	Z10
EHC24X-UBW250	Handle + Mechanism + Shaft 24"	$634.57	Z10
EHC6X-UBW400	Handle + Mechanism + Shaft 6"	$549.67	Z10
EHC12X-UBW400	Handle + Mechanism + Shaft 12"	$587.43	Z10
EHC16X-UBW400	Handle + Mechanism + Shaft 16"	$622.57	Z10
EHC24X-UBW400	Handle + Mechanism + Shaft 24"	$644.10	Z10
EHC6X-UBW800 ^	Handle + Mechanism + Shaft 6"	$736.10	Z10
EHC12X-UBW800 ^	Handle + Mechanism + Shaft 12"	$765.33	Z10
EHC16X-UBW800 ^	Handle + Mechanism + Shaft 16"	$804.38	Z10
EHC24X-UBW800 ^	Handle + Mechanism + Shaft 24"	$804.38	Z10
EHG6X-UBW1200	Handle + Mechanism + Shaft 6"	$765.33	Z10
EHG12X-UBW1200	Handle + Mechanism + Shaft 12"	$784.86	Z10
EHG16X-UBW1200	Handle + Mechanism + Shaft 16"	$833.71	Z10
EHG24X-UBW1200	Handle + Mechanism + Shaft 24"	$833.71	Z10

Notes: UBW 2500 utilizes flange mount mechanism only. Rotary handle is not available.
^ For both UBW600 and UBW800 products

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Circuit Protection

UBW Series

Flange Handle/Mechanism/Shaft Cable NEMA 1/3R/12

Part Number	Description	List Price	Multiplier
FHP3-UBW225	Flexible Shaft 3' Cable	$871.11	Z10
FHP5-UBW225	Flexible Shaft 5' Cable	$906.67	Z10
FHP6-UBW225	Flexible Shaft 6' Cable	$933.33	Z10
FHP3-UBW250	Flexible Shaft 3' Cable	$1,022.22	Z10
FHP5-UBW250	Flexible Shaft 5' Cable	$1,056.00	Z10
FHP6-UBW250	Flexible Shaft 6' Cable	$1,073.60	Z10
FHP3-UBW400	Flexible Shaft 3' Cable	$1,102.22	Z10
FHP5-UBW400	Flexible Shaft 5' Cable	$1,144.00	Z10
FHP6-UBW400	Flexible Shaft 6' Cable	$1,160.44	Z10
FHP5-UBW800^	Flexible Shaft 5' Cable	$1,379.92	Z10
FHP6-UBW800^	Flexible Shaft 6' Cable	$1,442.04	Z10
FHP5-UBW1200	Flexible Shaft 5' Cable	$1,426.76	Z10
FHP6-UBW1200	Flexible Shaft 6' Cable	$1,591.11	Z10
FHP5-UBW2500	Flexible Shaft 5' Cable	$1,608.62	Z10
FHP6-UBW2500	Flexible Shaft 6' Cable	$1,648.71	Z10

^ For both UBW600 and UBW800 products

Flange Handle/Mechanism/Shaft Cable NEMA 4/4X

Part Number	Description	List Price	Multiplier
FHP3X-UBW225	Flexible Shaft 3' Cable	$945.78	Z10
FHP5X-UBW225	Flexible Shaft 5' Cable	$1,057.76	Z10
FHP6X-UBW225	Flexible Shaft 6' Cable	$1,070.22	Z10
FHP3X-UBW250	Flexible Shaft 3' Cable	$1,141.07	Z10
FHP5X-UBW250	Flexible Shaft 5' Cable	$1,186.04	Z10
FHP6X-UBW250	Flexible Shaft 6' Cable	$1,191.47	Z10
FHP3X-UBW400	Flexible Shaft 3' Cable	$1,228.71	Z10
FHP5X-UBW400	Flexible Shaft 5' Cable	$1,259.28	Z10
FHP6X-UBW400	Flexible Shaft 6' Cable	$1,264.89	Z10
FHP5X-UBW800^	Flexible Shaft 5' Cable	$1,508.00	Z10
FHP6X-UBW800^	Flexible Shaft 6' Cable	$1,536.44	Z10
FHP5X-UBW1200	Flexible Shaft 5' Cable	$1,608.71	Z10
FHP6X-UBW1200	Flexible Shaft 6' Cable	$1,626.22	Z10
FHP5X-UBW2500	Flexible Shaft 5' Cable	$1,720.44	Z10
FHP6X-UBW2500	Flexible Shaft 6' Cable	$1,763.11	Z10

^ For both UBW600 and UBW800 products

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WEG – On/Off Locking Mechanisms

Frame	Part Number	Padlock Style	List Price	Multiplier
225	HL-UBW225	HASP	$106.76	Z10
250/400	HL-UBW400	HASP	$118.19	
600	PL-UBW600	HASP	$173.24	
800	PL-UBW800	HASP	$188.43	
1200	HL-UBW1200	HASP	$229.00	
2500	PL-UBW2500	HASP	$314.10	

WEG Padlock – PL and HL

Direct Mount Handle

Frame	Part Number	List Price	Multiplier
225	DHI-UBW225	$321.43	Z10
250	DHI-UBW250	$321.43	
400	DHI-UBW400	$347.14	
600 (500/600AMP)	DHI-UBW600	$330.00	
600/800AMP	DHI-UBW800	$330.00	
600/800AMP	EDHI-UBW800	$53.81	
1200	EDHI-UBW1200	$78.10	
2500	EDHI-UBW2500	$104.10	

DHI Style

EDHI Style

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Circuit Protection

UBW Series

Technical Data

Frame Size	225	250	400	600	800	1200	2500
Rated Current – In 40°C	15,20,30,40,50,60,70,80, 100,125,200,225	250	300,400	500,600	800	800,1200	1600,2000,2500
Number of Poles	3	3	3	3	3	3	3
Rated operational voltage Ue	600	600	600	600	600	600	600
Maximum Options	2*	2**	2**	2**	2**	2**	3***
Reference Standard	UL489	UL489	UL489	UL489	UL489	UL489	UL489

Factory Installed Only ** one Option-Right, 1 Option Left * All Options Right Side Only*

UL Interrupting Rating – Icu		N	H	L
Frame 225	120 VAC	65 kA	100 kA	200 kA
	240 VAC	65 kA	100 kA	200 kA
	480 VAC	35 kA	65 kA	100 kA
	600 VAC	18 kA	25 kA	35 kA
Frame 250	120 VAC	65 kA	100 kA	200 kA
	240 VAC	65 kA	100 kA	200 kA
	480 VAC	35 kA	65 kA	100 kA
	600 VAC	18 kA	25 kA	35 kA
Frame 400	120 VAC	65 kA	100 kA	200 kA
	240 VAC	65 kA	100 kA	200 kA
	480 VAC	35 ka	65 kA	100 kA
	600 VAC	25 kA	35 kA	65 kA
Frame 600	120 VAC	65 kA	100 kA	200 kA
	240 VAC	65 kA	100 kA	200 kA
	480 VAC	35 kA	65 kA	100 kA
	600 VAC	25 kA	35 kA	50 kA
Frame 800		S	H	L
	120 VAC	65 kA	100 kA	-
	240 VAC	65 kA	100 kA	-
	480 VAC	50 kA	65 kA	-
	600 VAC	25 kA	35 kA	-
Frame 1200		S	H	L
	120 VAC	85 kA	100 kA	200 kA
	240 VAC	85 kA	100 kA	200 kA
	480 VAC	50 kA	65 kA	100 kA
	600 VAC	25 kA	35 kA	45 kA
Frame 2500		S	H	L
	120 VAC	-	125 kA	200 kA
	240 VAC	-	125 kA	200 kA
	480 VAC	-	65 kA	100 kA
	600 VAC	-	50 kA	65 kA

Options available for all :

Frame Sizes:
Auxiliary Contacts*
Alarm Contacts*
Shunt Trip Units *
Undervoltage Trip Units*

* 225 Frame must be Factory Installed

UL File No. E310239 for all frame sizes

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UBW Quick View Dimensions

Outside Dimensions

Frames 225, 250, 400, 600, 800, 1200, 2500

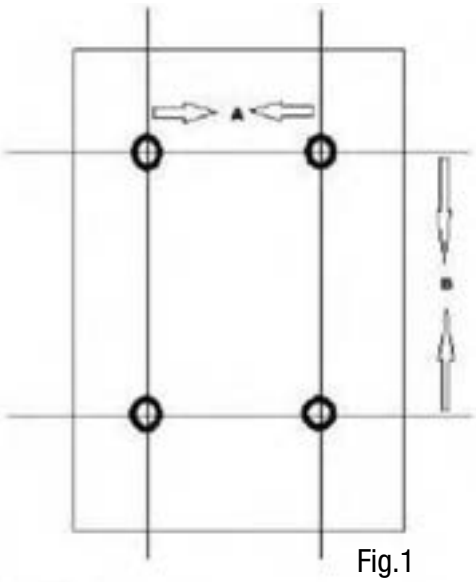

Fig.1

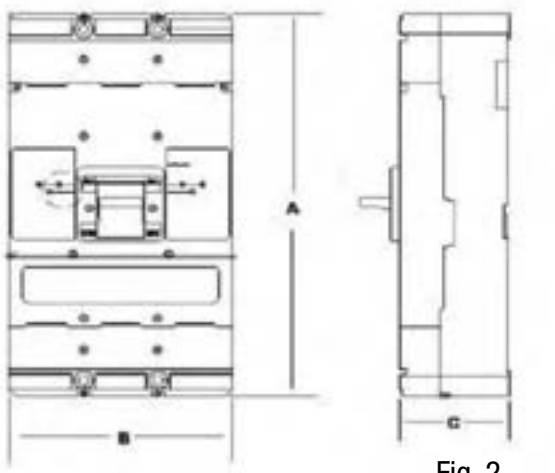

Fig. 2

Frame Size	Mounting Hole Dimensions (Fig.1)	
	A (W)	B (H)
	inches/mm	inches/mm
225	1.375/34.93	4.3/114.30
250	1.375/34.37	7.25/184.15
400	1.71/43.66	8.438/214.12
600	2.75/69.85	9.53/242.09
800	2.75/69.85	14.75/374.65
1200	2.75/69.85	18.43/374.65
2500	14.50/368.30	15.00/381.22

Frame Size	Overall Dimensions (Fig. 2)		
	A (H)	B (W)	C (D)
	inches/mm	inches/mm	inches/mm
225	6/152	4.1/104	3.5/89
250	10/254	4.1/104	4.3/110
400	10.12/257	5.49/139	4.3/110
600	10.75/253.05	8.25/209.6	4/110
800	16/406.4	8.22/208.74	4.06/103.18
1200	16/406.4	8.25/209.55	5.5/139.7
2500	16/406.4	15.5/393.7	9/228.6

Mounting Hardware			
Frame Size	Qty.	Std. Bolt Size	Metric Bolt Size
225	4	5/32-32	M4-0.70
250	4	1/4-20	M6-1.0
400	4	1/4-20	M6-1.0
600	4	1/4-20	M6-1.0
800	4	1/4-20	M6-1.0
1200*	4	5/16-18	M8-1.25
2500*	4	3/8-16	M11-150

** Supplied with Breakers*

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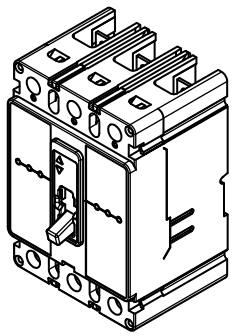
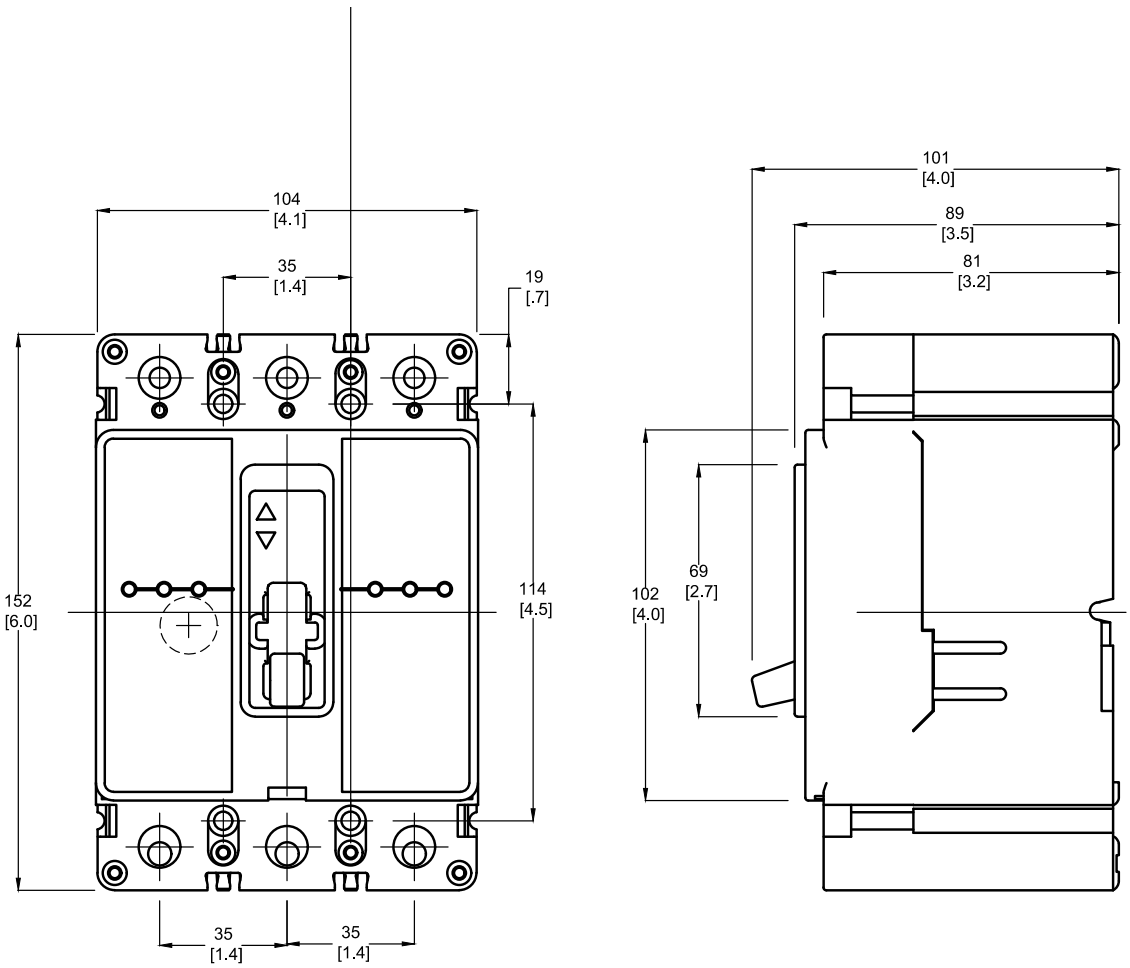
UBW Series

Dimensions – mm (inch)

Frame 225





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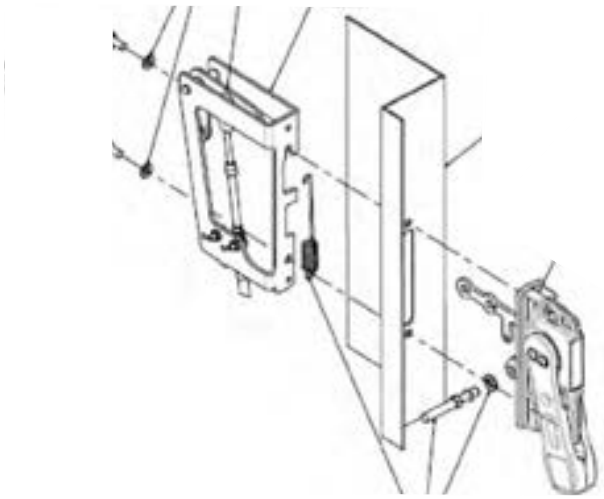
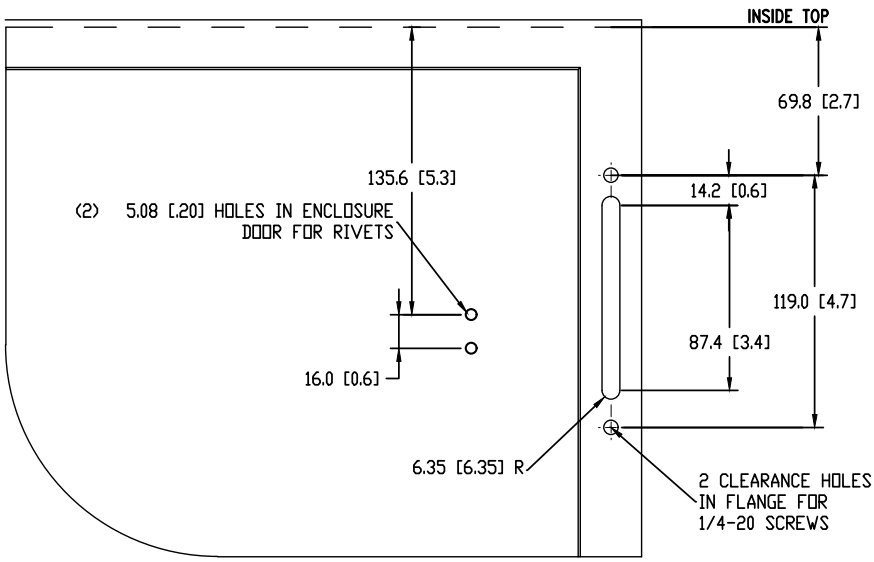
Dimensions – mm (inch)

Frame 225 – Flange Handle





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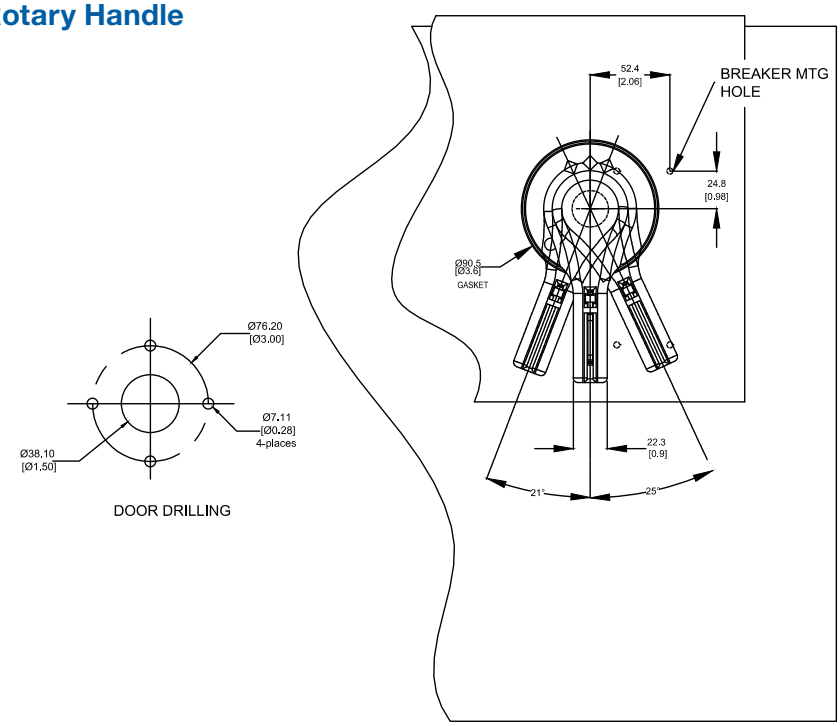
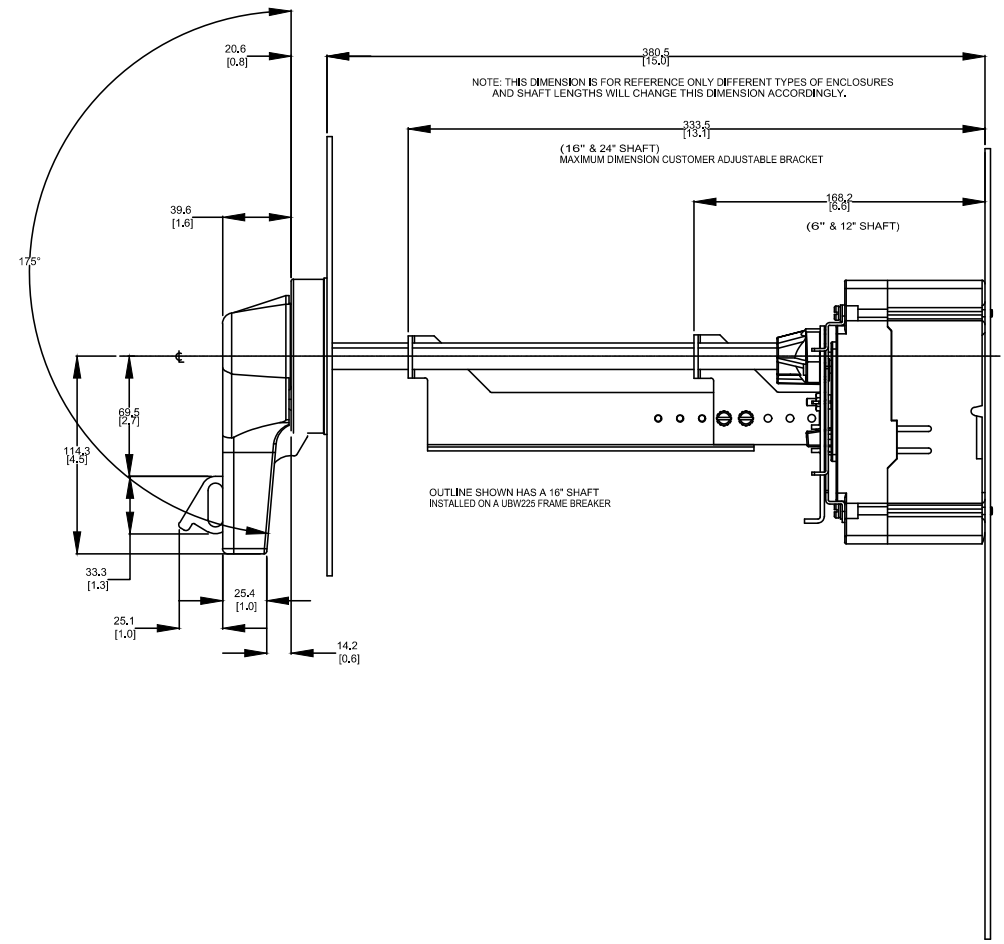
UBW Series

Dimensions – mm (inch)

Frame 225 – Rotary Handle





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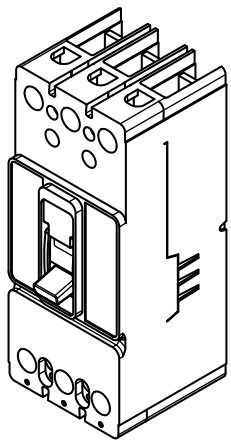
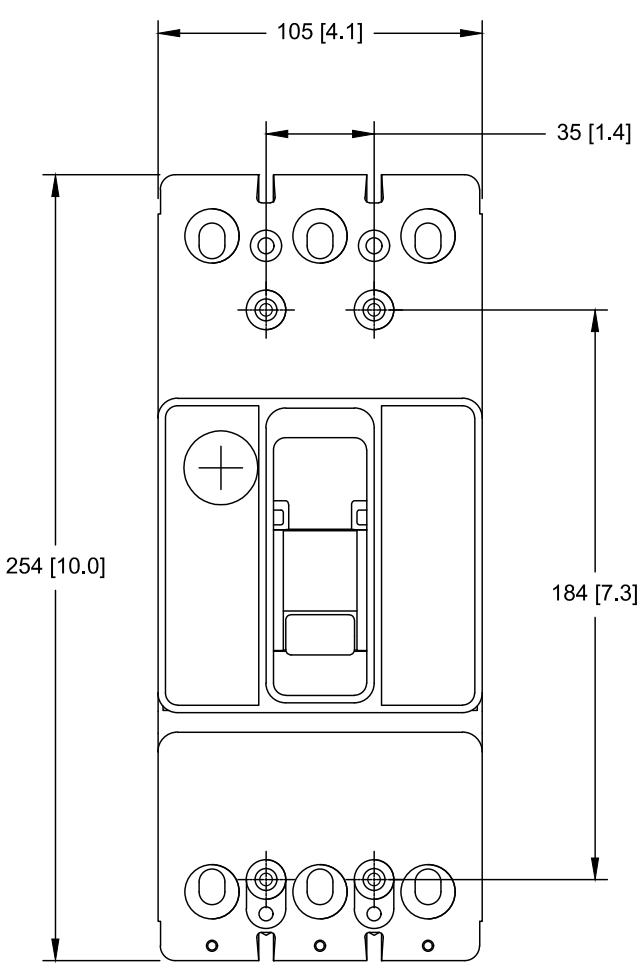
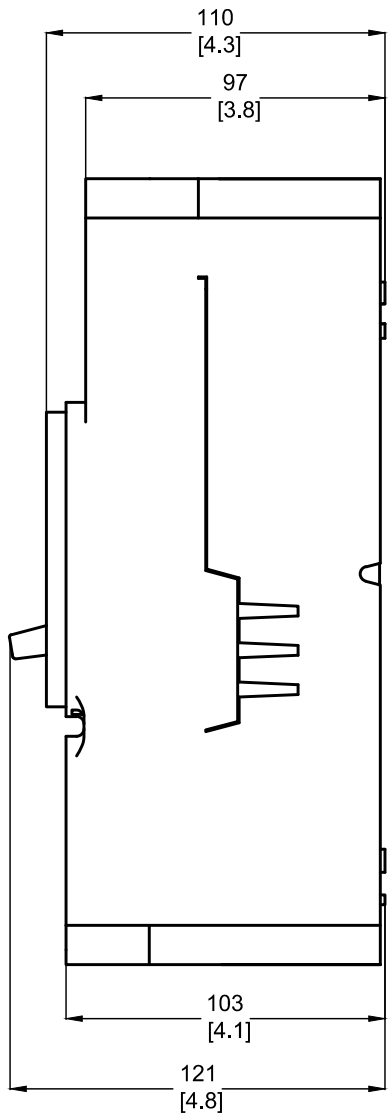
Dimensions – mm (inch)

Frame 250







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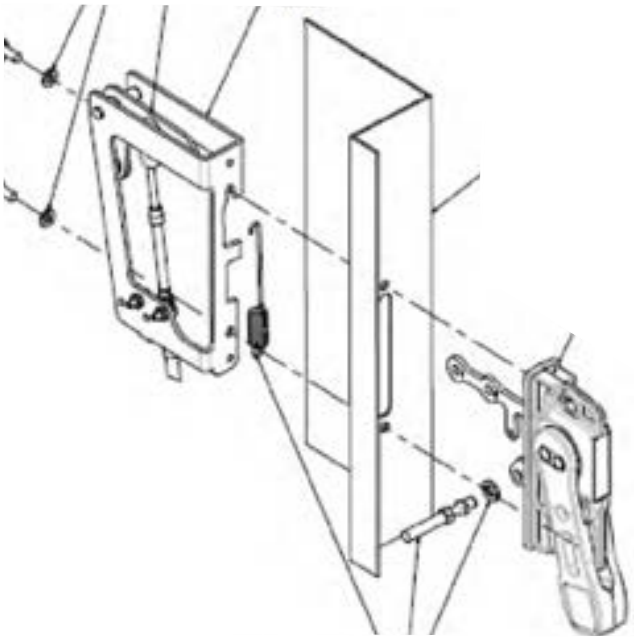
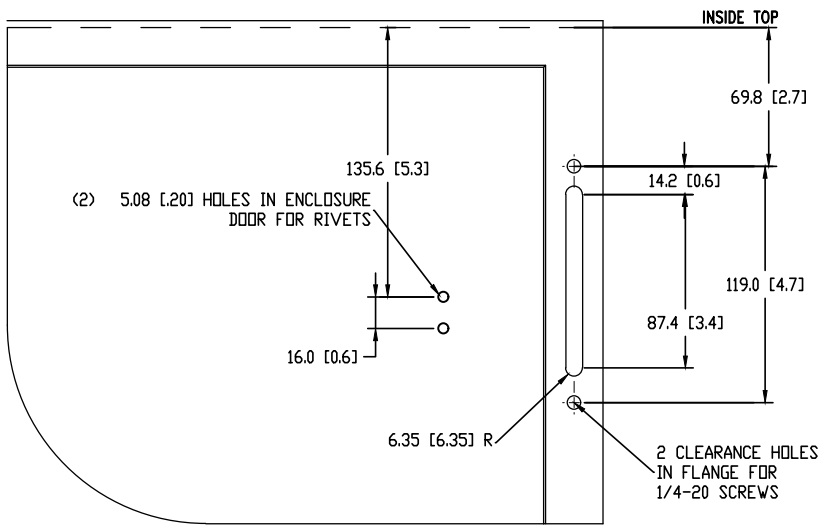
UBW Series

Dimensions – mm (inch)

Frame 250 – Flange Handle





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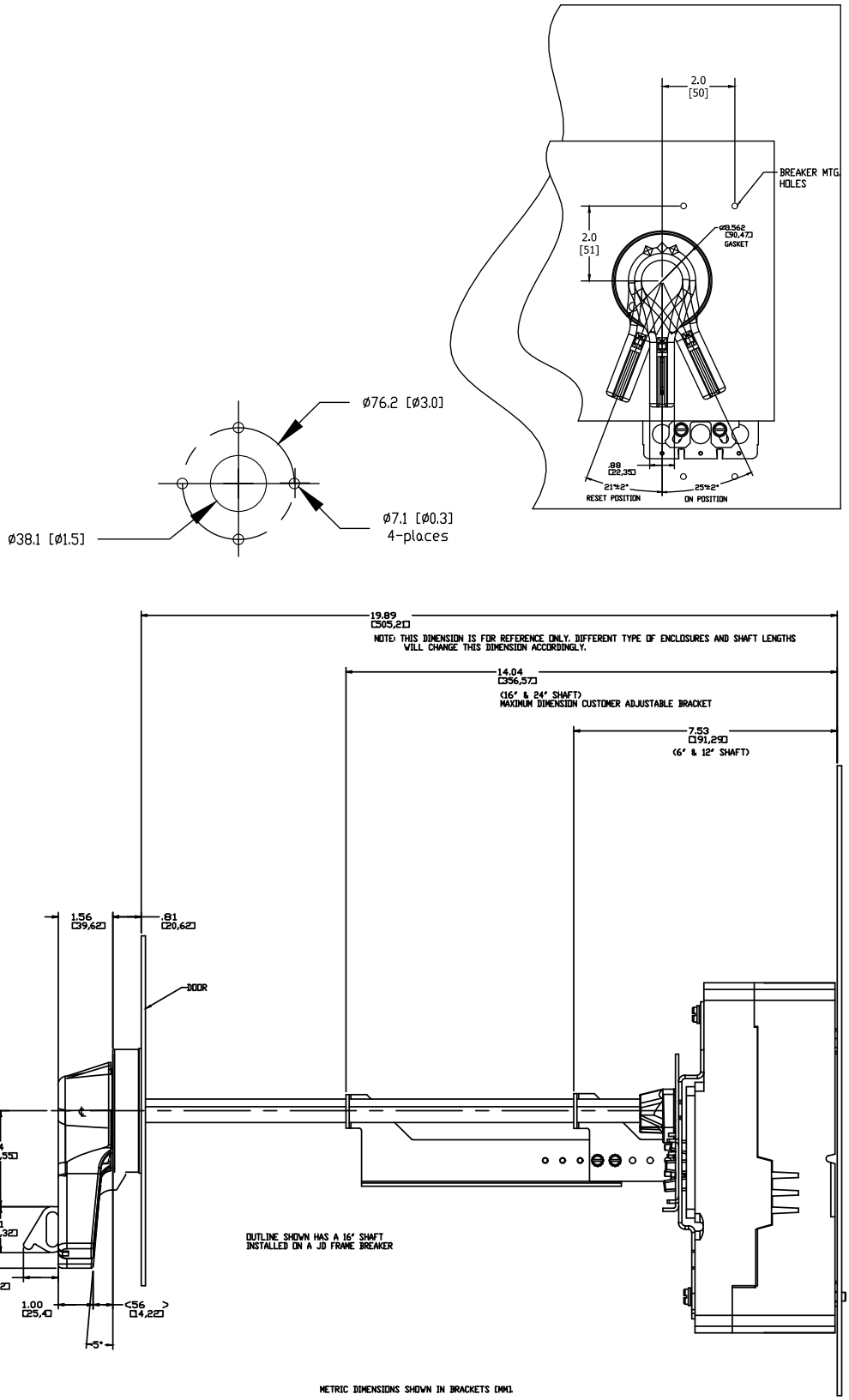
Dimensions – mm (inch)

Frame 250 – Rotary Handle



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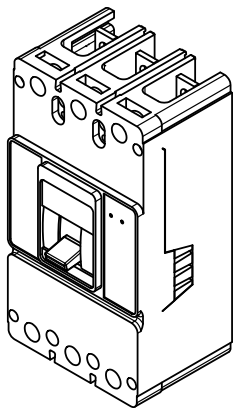
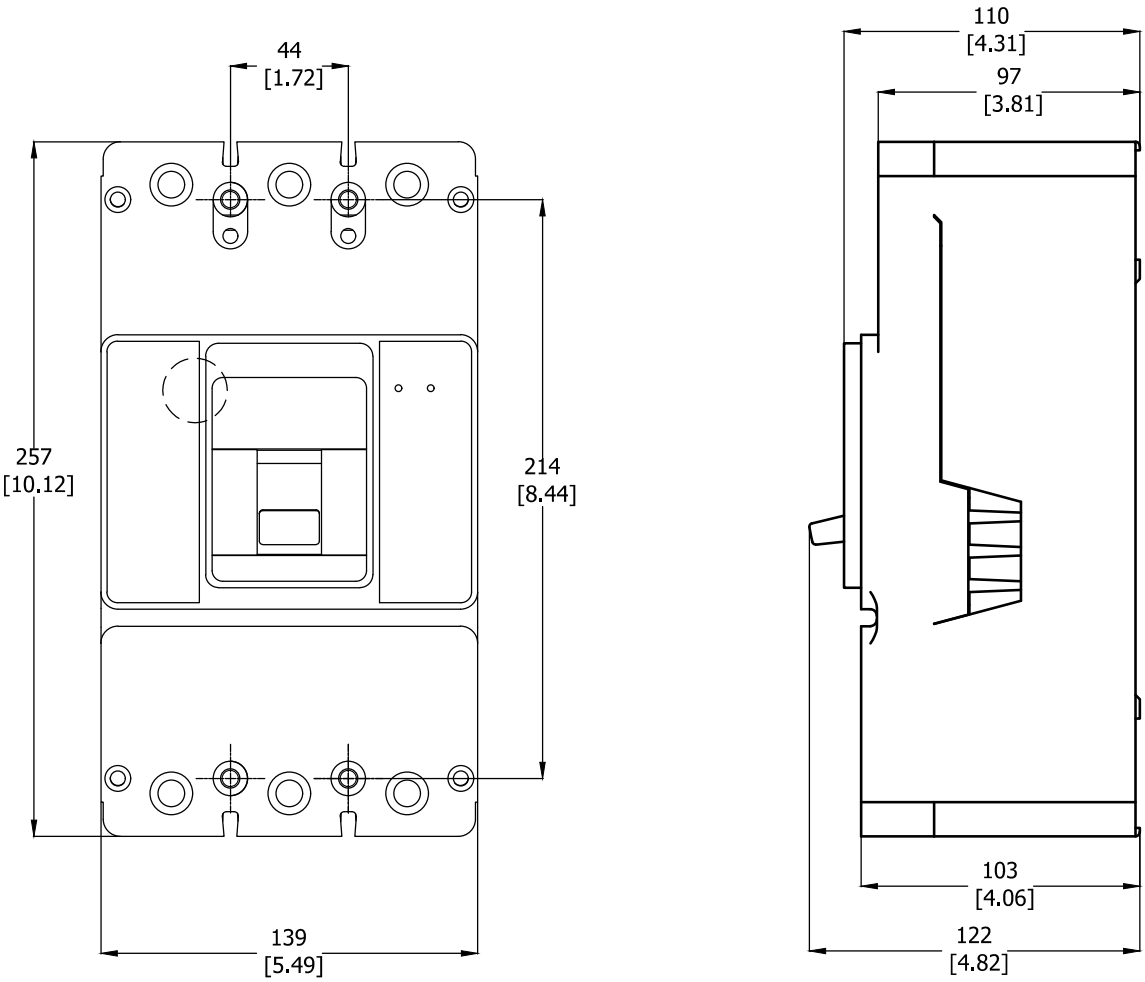
UBW Series

Dimensions – mm (inch)

Frame 400





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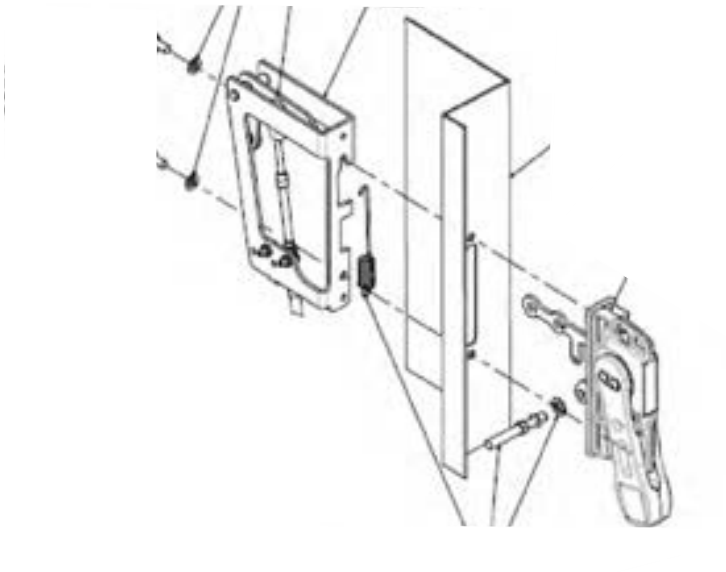
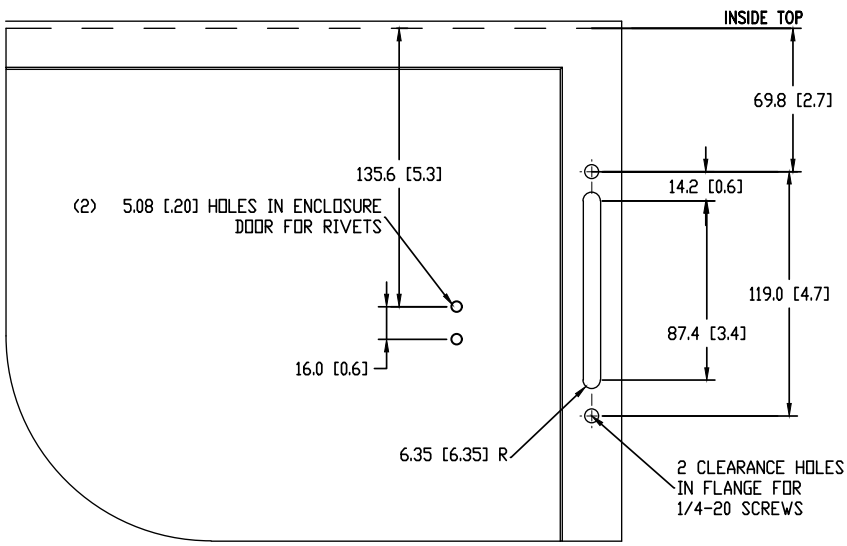
Dimensions – mm (inch)

Frame 400 – Flange Handle





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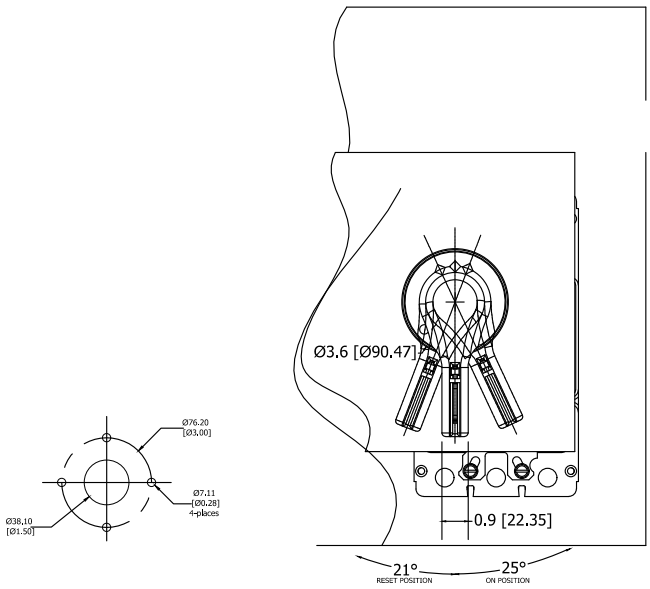
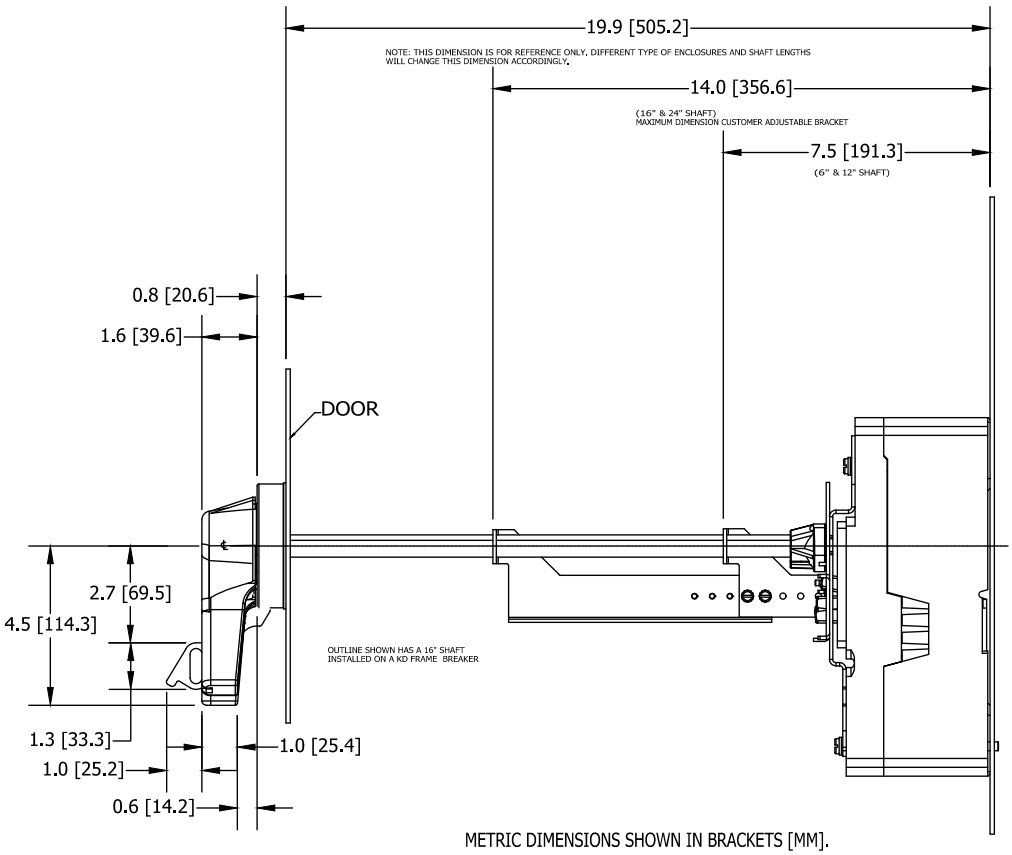
UBW Series

Dimensions – mm (inch)

Frame 400 – Rotary Handle





METRIC DIMENSIONS SHOWN IN BRACKETS [MM].

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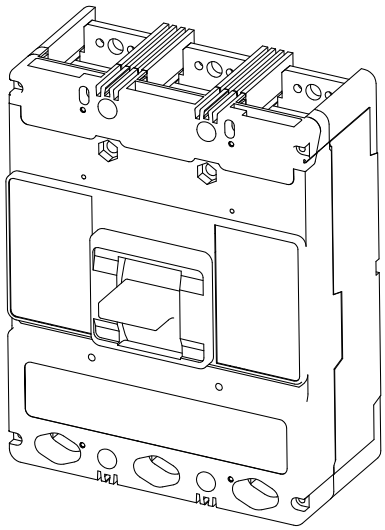
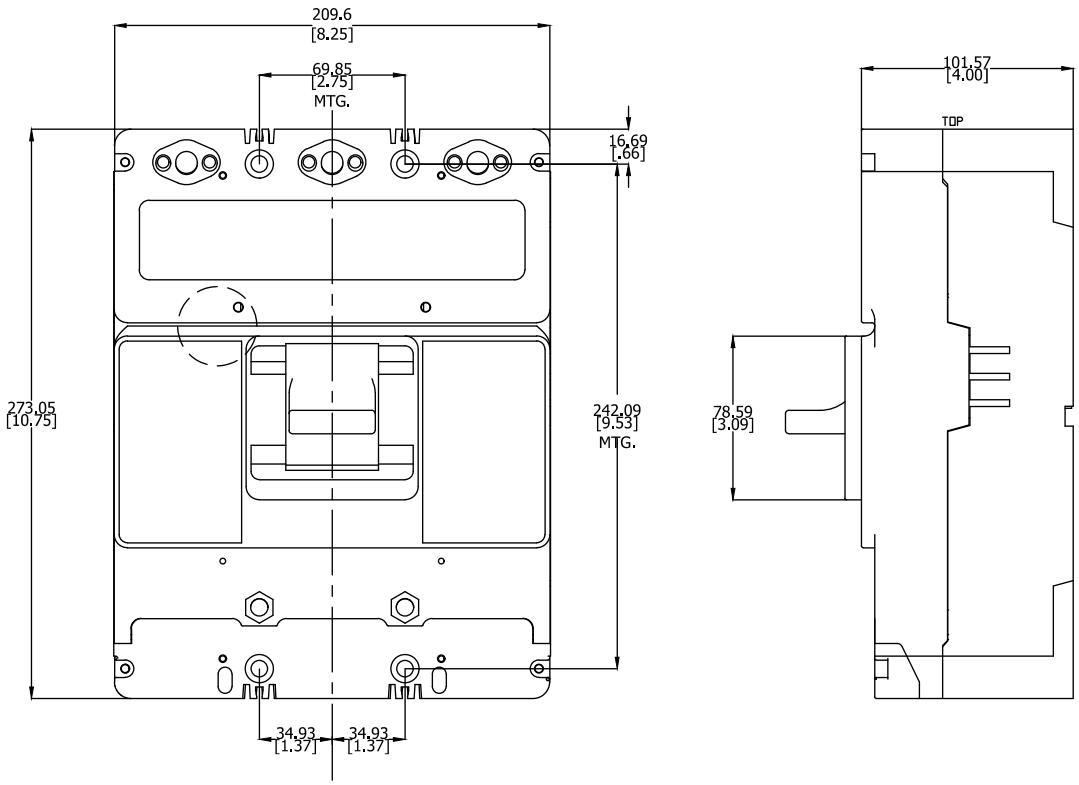
Dimensions – mm (inch)

Frame 600





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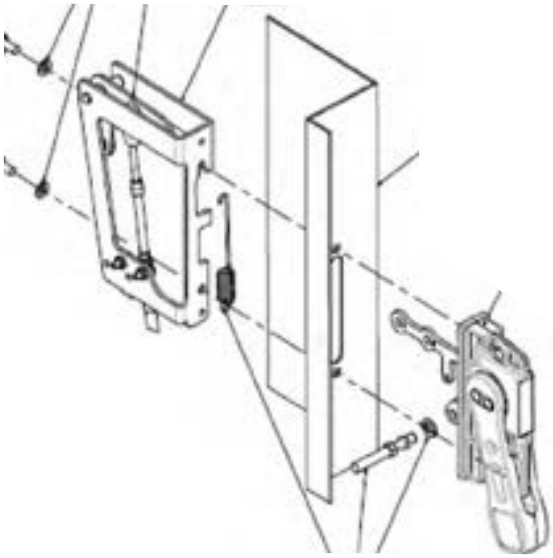
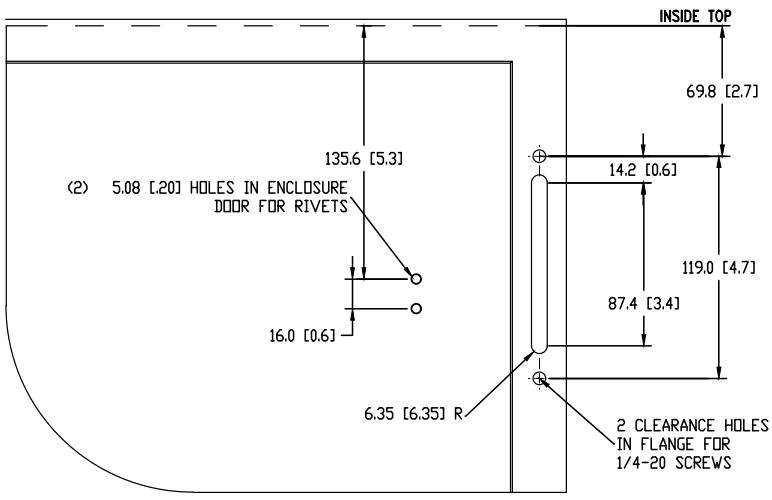
UBW Series

Dimensions – mm (inch)

Frame 600 – Flange Handle





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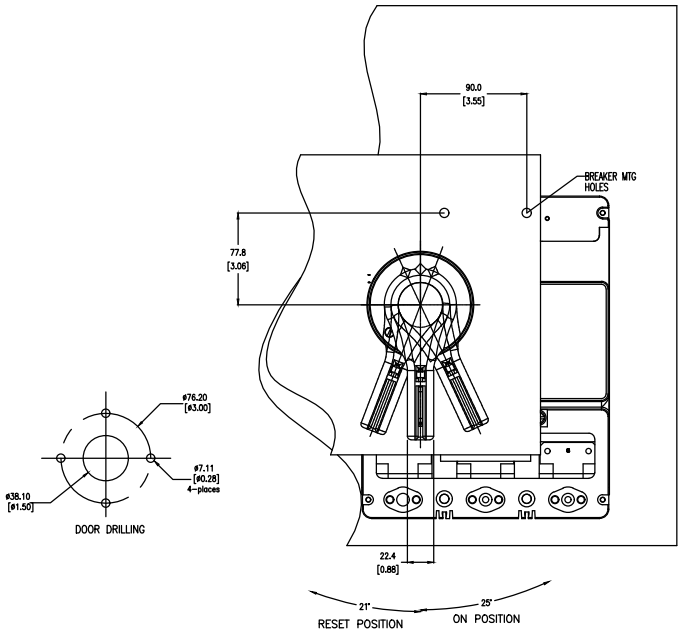
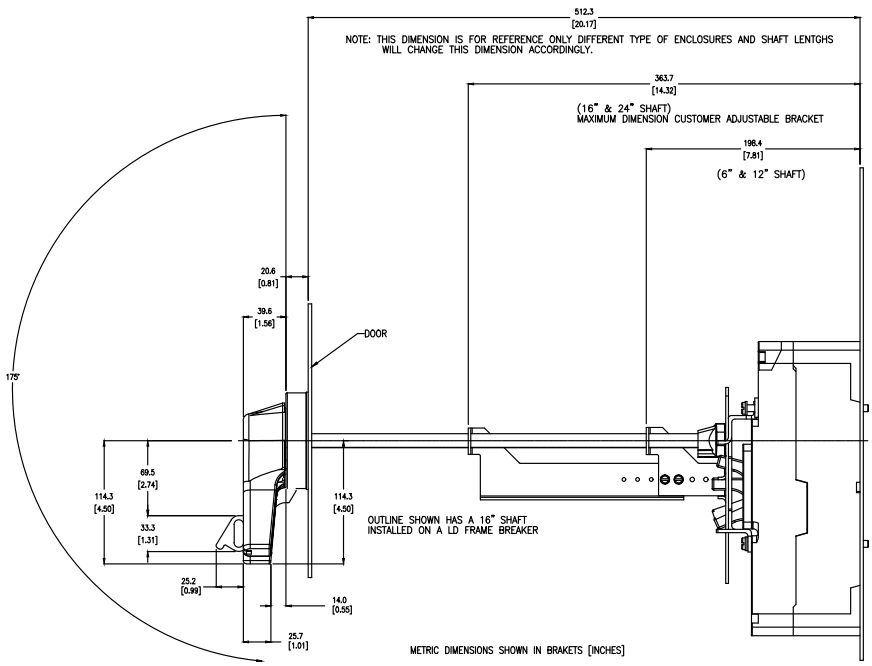
Dimensions – mm (inch)

Frame 600 – Rotary Handle





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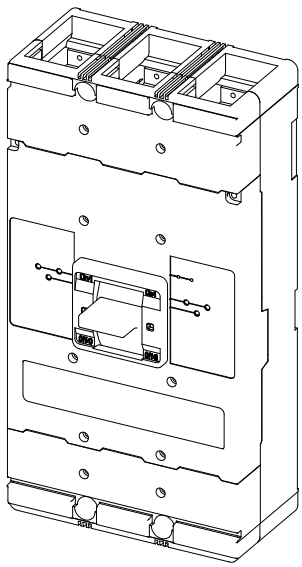
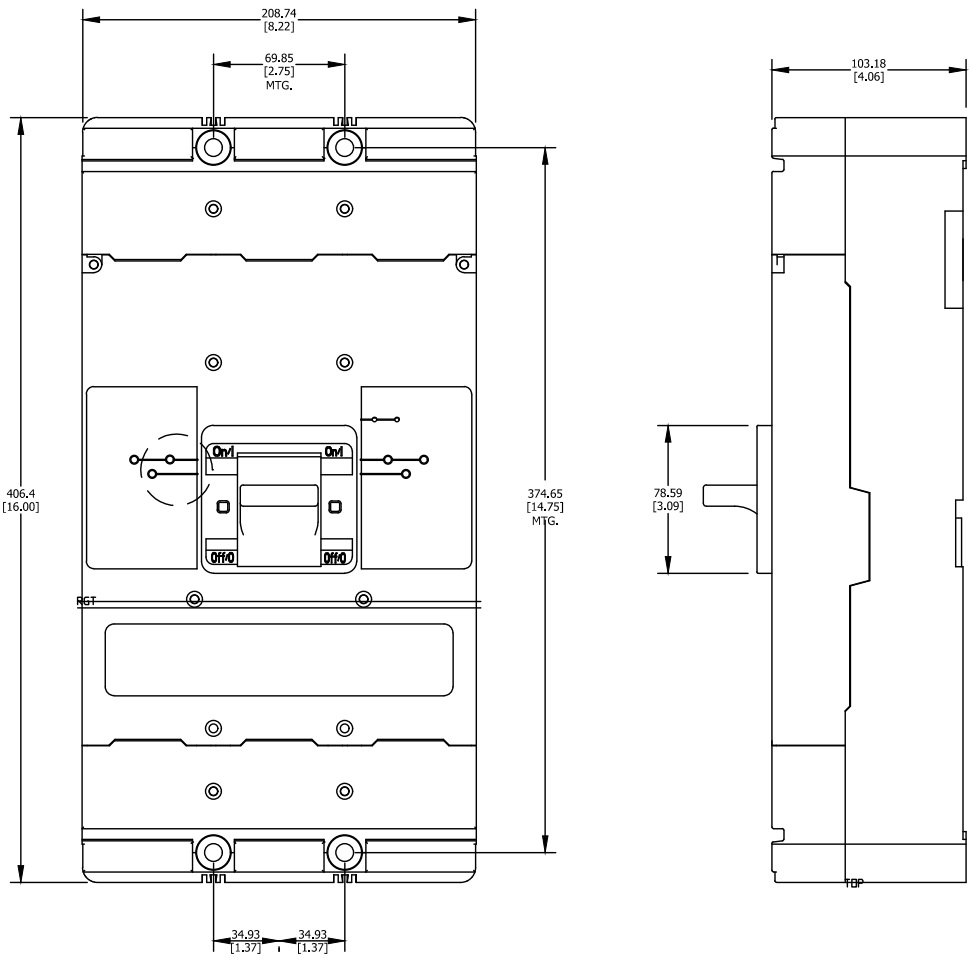
UBW Series

Dimensions – mm (inch)

Frame 800





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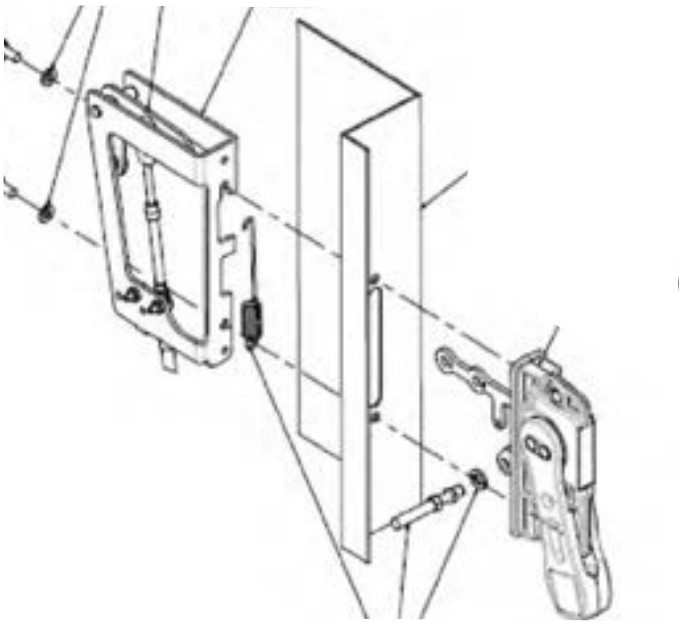
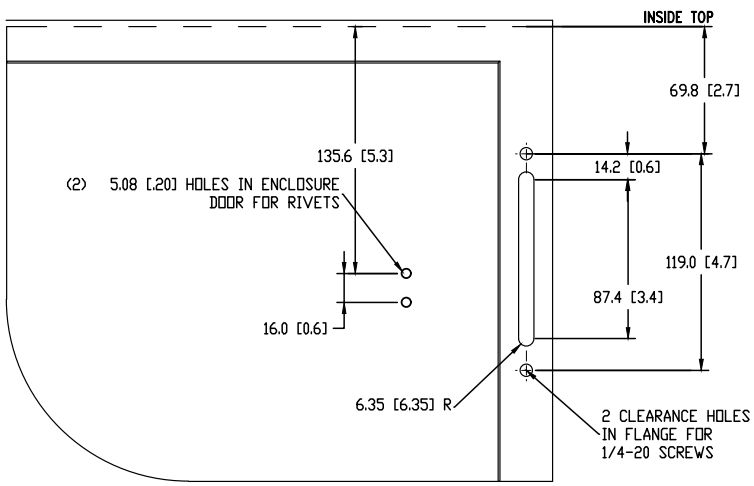
Dimensions – mm (inch)

Frame 800 – Flange Handle





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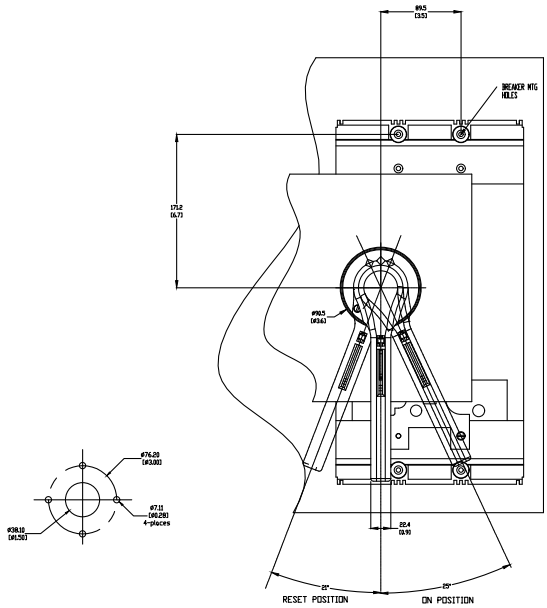
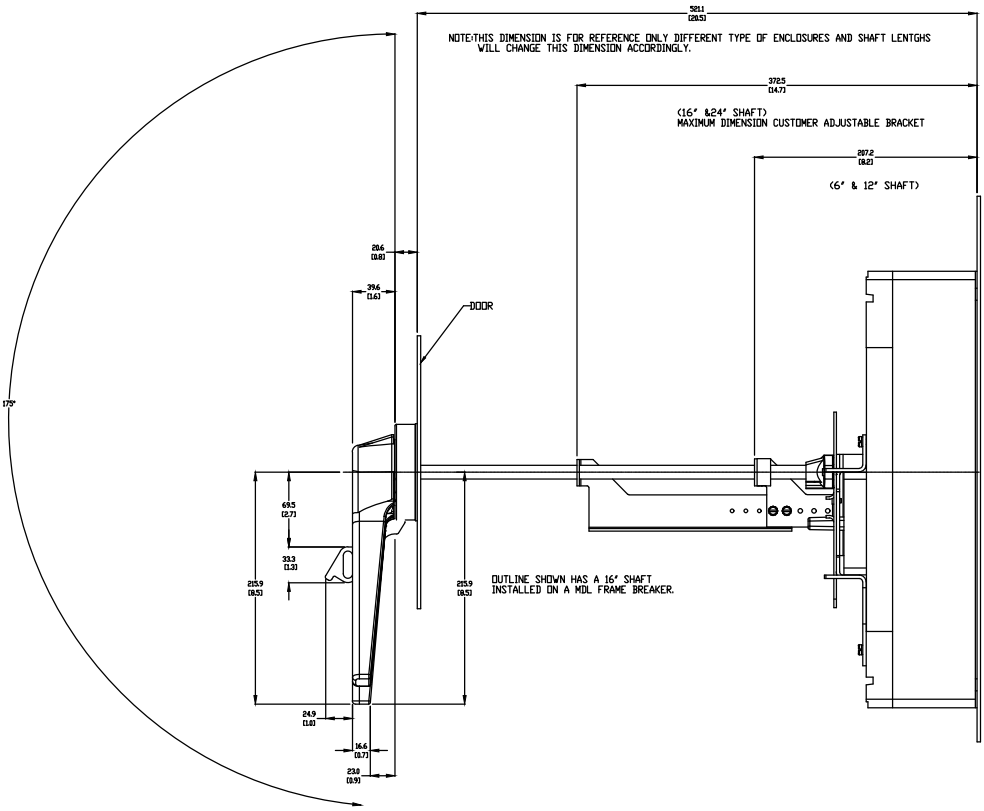
UBW Series

Dimensions – mm (inch)

Frame 800 – Rotary Handle





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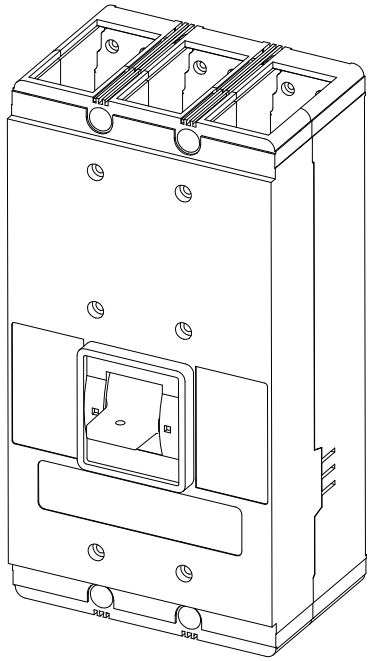
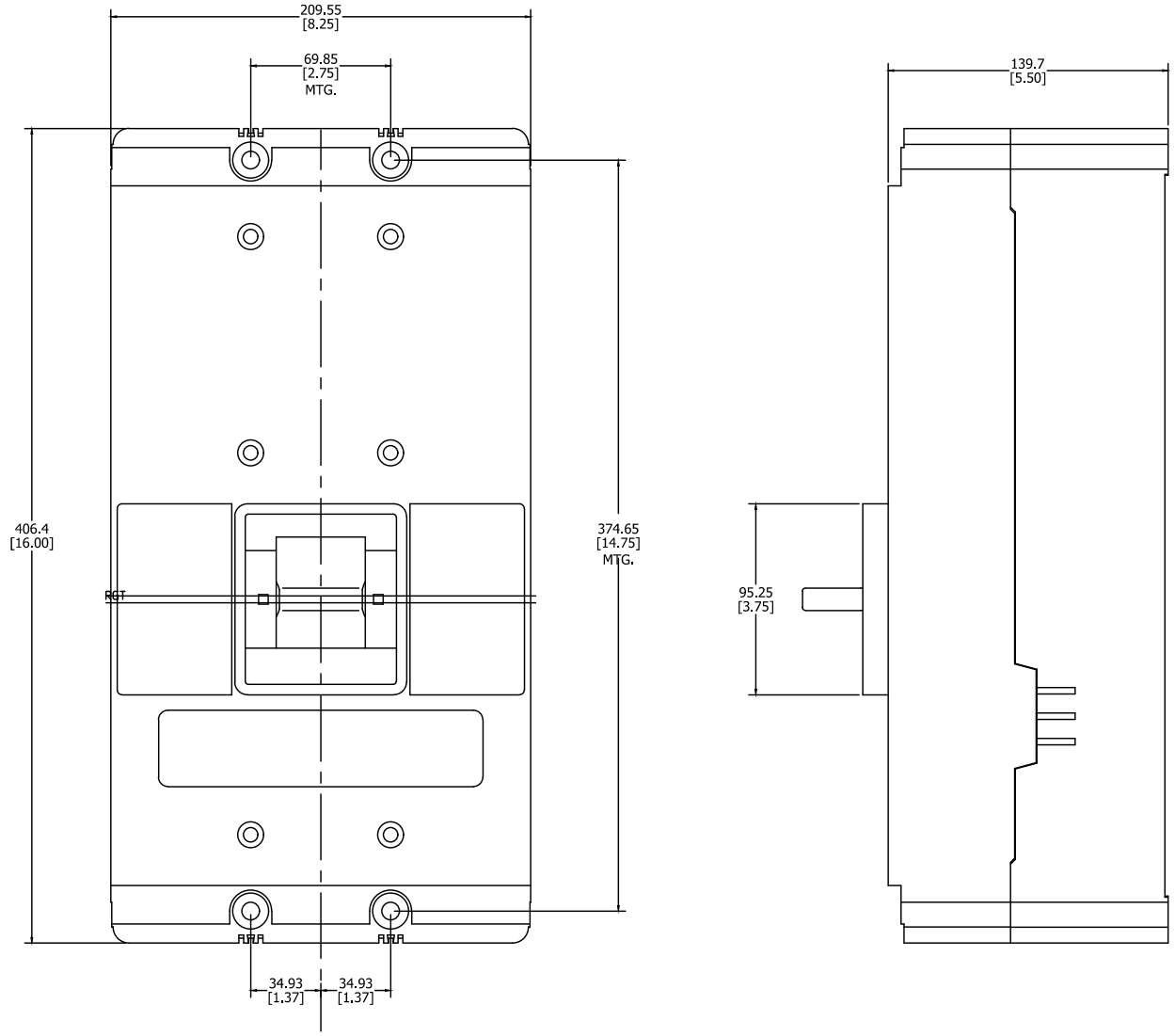
Dimensions – mm (inch)

Frame 1200





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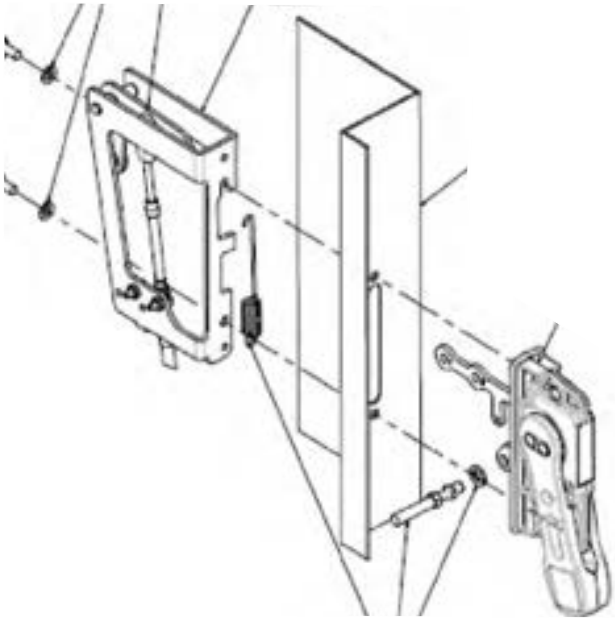
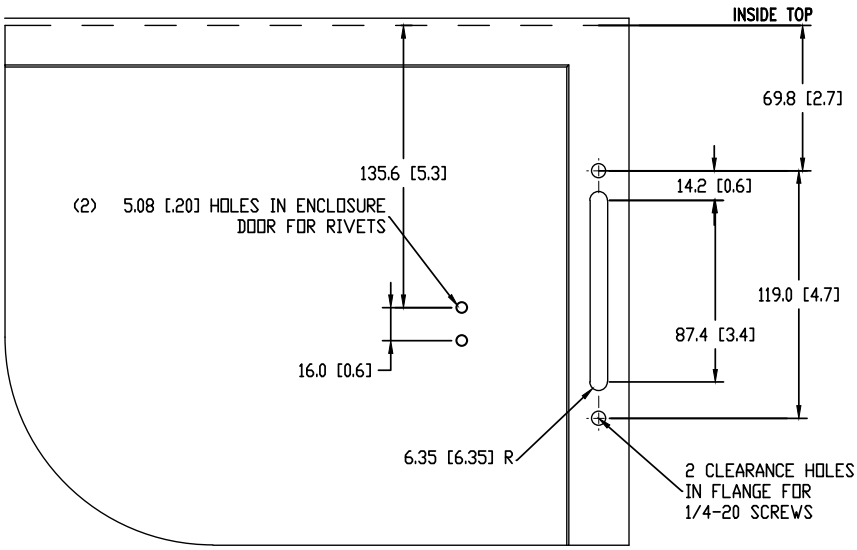
Circuit Protection

UBW Series

Dimensions – mm (inch)

Frame 1200 – Flange Handle





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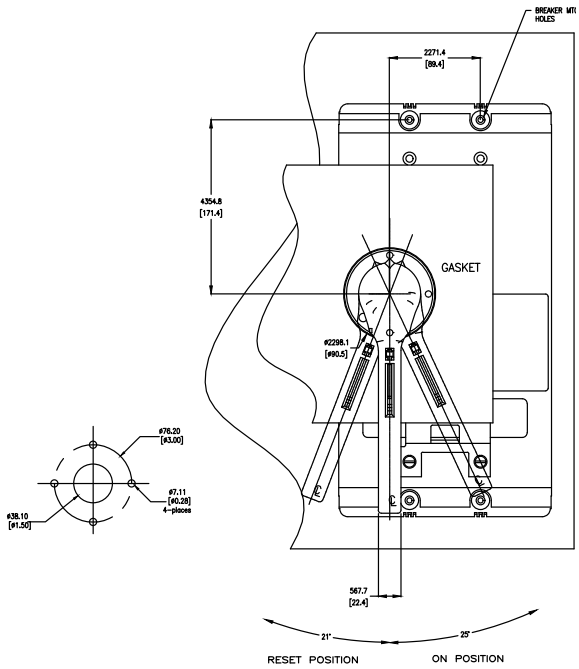
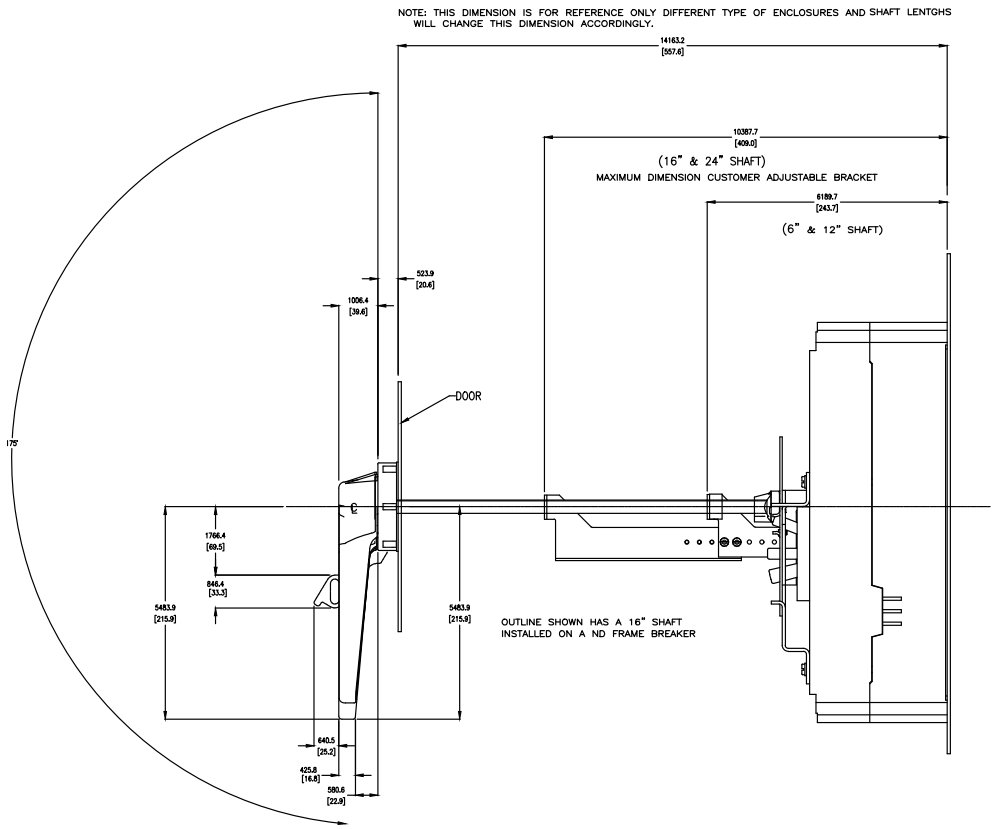
Dimensions – mm (inch)

Frame 1200 – Rotary Handle





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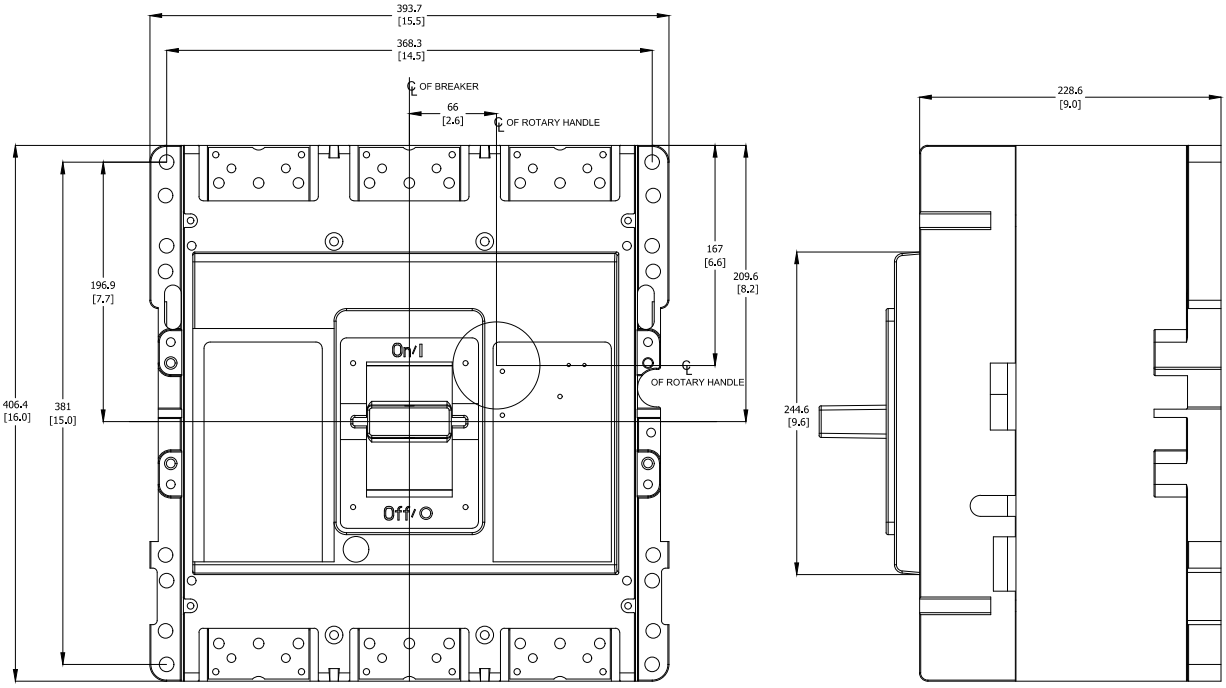
UBW Series

Dimensions – mm (inch)

Frame 2500



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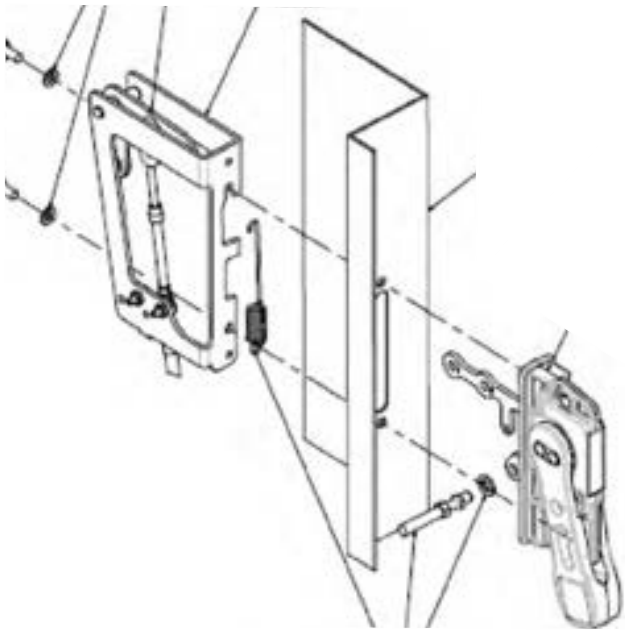
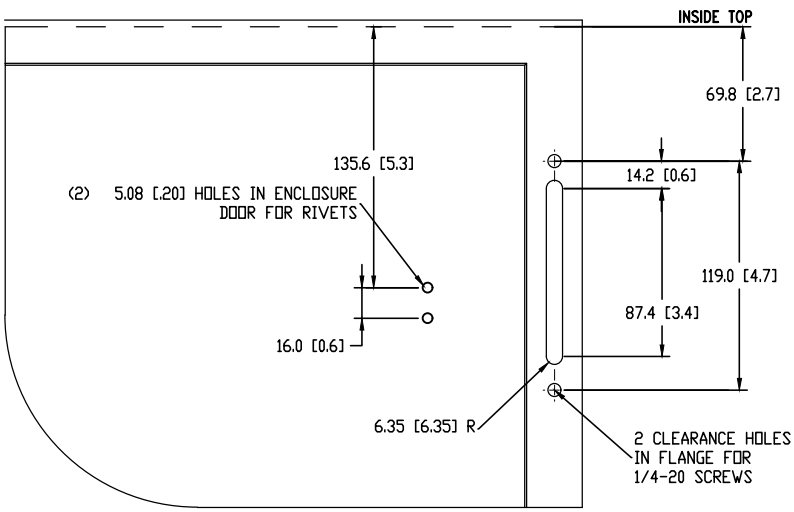
Dimensions – mm (inch)

Frame 2500 – Handle





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Circuit Protection

UBW Series

Internal Locations for Breaker Options

Frame 225

	Left	Center	Right
Auxiliary Alarm	■		■
Alarm	□		□
Auxiliary/Alarm	□		□
Shunt Trip	■		■
Undervoltage Release	■		■

■ Applicable in indicated pole position

□ May be mounted left or right (not both)

Frame 250

	Left	Center	Right
Auxiliary Alarm	■		■
Alarm	□		□
Auxiliary/Alarm	□		□
Shunt Trip	■		■
Undervoltage Release	■		■

■ Applicable in indicated pole position

□ May be mounted left or right (not both)

Frame 400

	Left	Center	Right
Auxiliary Alarm	■		■
Alarm	□		□
Auxiliary/Alarm	□		□
Shunt Trip	■		■
Undervoltage Release	■		■

■ Applicable in indicated pole position

□ May be mounted left or right (not both)

Frame 600

	Left	Center	Right
Auxiliary Alarm	■		■
Alarm	■		■
Auxiliary/Alarm	■		■
Shunt Trip	■		■
Undervoltage Release	■		■

■ Applicable in indicated pole position

□ May be mounted left or right (not both)

Frame 800

	Left	Center	Right
Auxiliary Alarm	■		■
Alarm	■		■
Auxiliary/Alarm	■		■
Shunt Trip	■		■
Undervoltage Release	■		■

■ Applicable in indicated pole position

□ May be mounted left or right (not both)

Frame 1200

	Left	Center	Right
Auxiliary Alarm	■		■
Alarm	■		■
Auxiliary/Alarm	■		■
Shunt Trip	■		
Undervoltage Release	■		

■ Applicable in indicated pole position

□ May be mounted left or right (not both)

Frame 2500

	Left	Center	Right
Auxiliary Alarm			■
Alarm			■
Auxiliary/Alarm	N/A	N/A	N/A
Shunt Trip			■
Undervoltage Release			■

■ Applicable in indicated pole position

□ May be mounted left or right (not both)

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UMBW Series – Miniature Circuit Breakers

UMBW-UL489 and UL1077 Listed

Introducing the New WEG UMBW Series Thermal-Magnetic Miniature Circuit Breakers. This new offering includes both UL489 and UL1077 approvals to provide a solution for circuit and equipment protection in Industrial Electrical equipment. The UMBW has a range from 1 to 60 A, available in 1, 2 and 3 poles, and B, C, D trip curves.

Standard Features

- AC and DC voltages available in one series
- UL489 branch circuit protective device
- UL1077 equipment protection
- 17.5 mm width per pole
- Visual status indication
- Positive trip-free snap action mechanism to ensure reliable switching
- Cuttable busbar connecting system

UL489 UL File No. E468810
UL1077 UL File No. E468808

Learn More Online

UMBW Catalog Number Sequence

UMBW	-	1	B	1	-	1

UL Approval
1: UL1077
4: UL489

Trip Curve
B: 4xIn (+/-20%) Magnetic Trip Current
C: 8xIn (+/-20%) Magnetic Trip Current
D: 12xIn (+/-20%) Magnetic Trip Current

Power Poles
1: One Pole
2: Two Poles
3: Three Poles

Current Rating

1: 1A	**10**: 10A
1.2: 1.2A	**13**: 13A
1.5: 1.5A	**15**: 15A
1.6: 1.6A	**20**: 20A
2: 2A	**25**: 25A
3: 3A	**30**: 30A
4: 4A	**35**: 35A
5: 5A	**40**: 40A
6: 6A	**50**: 50A
8: 8A	**60**: 60A

Chart intended as reference only and not to create part numbers.

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Circuit Protection

UMBW Series - UL1077

Number of Poles	Ampacity	Catalog Number			Maximum Voltage	List Price	Multiplier
		B CURVE	C CURVE	D CURVE			
1 Pole	1	UMBW-1B1-1	UMBW-1C1-1	UMBW-1D1-1	277 VAC or 60 VDC (1-pole)	$25	Z12
	1.2	UMBW-1B1-1.2	UMBW-1C1-1.2	UMBW-1D1-1.2			
	1.5	UMBW-1B1-1.5	UMBW-1C1-1.5	UMBW-1D1-1.5			
	1.6	UMBW-1B1-1.6	UMBW-1C1-1.6	UMBW-1D1-1.6			
	2	UMBW-1B1-2	UMBW-1C1-2	UMBW-1D1-2			
	3	UMBW-1B1-3	UMBW-1C1-3	UMBW-1D1-3			
	4	UMBW-1B1-4	UMBW-1C1-4	UMBW-1D1-4			
	5	UMBW-1B1-5	UMBW-1C1-5	UMBW-1D1-5			
	6	UMBW-1B1-6	UMBW-1C1-6	UMBW-1D1-6			
	8	UMBW-1B1-8	UMBW-1C1-8	UMBW-1D1-8			
	10	UMBW-1B1-10	UMBW-1C1-10	UMBW-1D1-10			
	13	UMBW-1B1-13	UMBW-1C1-13	UMBW-1D1-13			
	15	UMBW-1B1-15	UMBW-1C1-15	UMBW-1D1-15			
	20	UMBW-1B1-20	UMBW-1C1-20	UMBW-1D1-20			
	25	UMBW-1B1-25	UMBW-1C1-25	UMBW-1D1-25			
	30	UMBW-1B1-30	UMBW-1C1-30	UMBW-1D1-30			
	35	UMBW-1B1-35	UMBW-1C1-35	UMBW-1D1-35			
	40	UMBW-1B1-40	UMBW-1C1-40	UMBW-1D1-40			
	50	UMBW-1B1-50	UMBW-1C1-50	UMBW-1D1-50			
	60	UMBW-1B1-60	UMBW-1C1-60	UMBW-1D1-60			
2 Pole	1	--	UMBW-1C2-1	UMBW-1D2-1	480Y/277 VAC or 125 VDC (2-poles in series)	$48	Z12
	1.2	--	UMBW-1C2-1.2	UMBW-1D2-1.2			
	1.5	--	UMBW-1C2-1.5	UMBW-1D2-1.5			
	1.6	--	UMBW-1C2-1.6	UMBW-1D2-1.6			
	2	--	UMBW-1C2-2	UMBW-1D2-2			
	3	--	UMBW-1C2-3	UMBW-1D2-3			
	4	--	UMBW-1C2-4	UMBW-1D2-4			
	5	--	UMBW-1C2-5	UMBW-1D2-5			
	6	--	UMBW-1C2-6	UMBW-1D2-6			
	8	--	UMBW-1C2-8	UMBW-1D2-8			
	10	--	UMBW-1C2-10	UMBW-1D2-10			
	13	--	UMBW-1C2-13	UMBW-1D2-13			
	15	--	UMBW-1C2-15	UMBW-1D2-15			
	20	--	UMBW-1C2-20	UMBW-1D2-20			
	25	--	UMBW-1C2-25	UMBW-1D2-25			
	30	--	UMBW-1C2-30	UMBW-1D2-30			
	35	--	UMBW-1C2-35	UMBW-1D2-35			
	40	--	UMBW-1C2-40	UMBW-1D2-40			
	50	--	UMBW-1C2-50	UMBW-1D2-50			
	60	--	UMBW-1C2-60	UMBW-1D2-60			

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Number of Poles	Ampacity	Catalog Number		Maximum Voltage	List Price	Multiplier
		C CURVE	D CURVE			
3 Pole	1	UMBW-1C3-1	UMBW-1D3-1	480Y/277 VAC or 125 VDC (2-poles in series)	$65	Z12
	1.2	UMBW-1C3-1.2	UMBW-1D3-1.2			
	1.5	UMBW-1C3-1.5	UMBW-1D3-1.5			
	1.6	UMBW-1C3-1.6	UMBW-1C3-1.6			
	2	UMBW-1C3-2	UMBW-1D3-2			
	3	UMBW-1C3-3	UMBW-1D3-3			
	4	UMBW-1C3-4	UMBW-1D3-4			
	5	UMBW-1C3-5	UMBW-1D3-5			
	6	UMBW-1C3-6	UMBW-1D3-6			
	8	UMBW-1C3-8	UMBW-1D3-8			
	10	UMBW-1C3-10	UMBW-1D3-10			
	13	UMBW-1C3-13	UMBW-1D3-13			
	15	UMBW-1C3-15	UMBW-1D3-15			
	20	UMBW-1C3-20	UMBW-1D3-20			
	25	UMBW-1C3-25	UMBW-1D3-25			
	30	UMBW-1C3-30	UMBW-1D3-30			
	35	UMBW-1C3-35	UMBW-1D3-35			
	40	UMBW-1C3-40	UMBW-1D3-40			
	50	UMBW-1C3-50	UMBW-1D3-50			
	60	UMBW-1C3-60	UMBW-1D3-60			

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Circuit Protection

UMBW Series - UL489

Number of Poles	Ampacity	Catalog Number		Maximum Voltage	List Price	Multiplier
		C CURVE	D CURVE			
1 Pole	1	UMBW-4C1-1	UMBW-4D1-1	277 VAC or 60 VDC (1-pole)	$53	Z12
	1.2	UMBW-4C1-1.2	UMBW-4D1-1.2			
	1.5	UMBW-4C1-1.5	UMBW-4D1-1.5			
	1.6	UMBW-4C1-1.6	UMBW-4D1-1.6			
	2	UMBW-4C1-2	UMBW-4D1-2			
	3	UMBW-4C1-3	UMBW-4D1-3			
	4	UMBW-4C1-4	UMBW-4D1-4			
	5	UMBW-4C1-5	UMBW-4D1-5			
	6	UMBW-4C1-6	UMBW-4D1-6			
	8	UMBW-4C1-8	UMBW-4D1-8			
	10	UMBW-4C1-10	UMBW-4D1-10			
	13	UMBW-4C1-13	UMBW-4D1-13			
	15	UMBW-4C1-15	UMBW-4D1-15			
	20	UMBW-4C1-20	UMBW-4D1-20			
	25	UMBW-4C1-25	UMBW-4D1-25			
	30	UMBW-4C1-30	UMBW-4D1-30			
	35	UMBW-4C1-35	UMBW-4D1-35	240 VAC or 60 VDC (1-pole)	$53	Z12
	40	UMBW-4C1-40	UMBW-4D1-40			
	50	UMBW-4C1-50	UMBW-4D1-50			
	60	UMBW-4C1-60	UMBW-4D1-60			
2 Pole	1	UMBW-4C2-1	UMBW-4D2-1	480Y/277 VAC or 125 VDC (2-poles in series)	$107	Z12
	1.2	UMBW-4C2-1.2	UMBW-4D2-1.2			
	1.5	UMBW-4C2-1.5	UMBW-4D2-1.5			
	1.6	UMBW-4C2-1.6	UMBW-4D2-1.6			
	2	UMBW-4C2-2	UMBW-4D2-2			
	3	UMBW-4C2-3	UMBW-4D2-3			
	4	UMBW-4C2-4	UMBW-4D2-4			
	5	UMBW-4C2-5	UMBW-4D2-5			
	6	UMBW-4C2-6	UMBW-4D2-6			
	8	UMBW-4C2-8	UMBW-4D2-8			
	10	UMBW-4C2-10	UMBW-4D2-10			
	13	UMBW-4C2-13	UMBW-4D2-13			
	15	UMBW-4C2-15	UMBW-4D2-15			
	20	UMBW-4C2-20	UMBW-4D2-20			
	25	UMBW-4C2-25	UMBW-4D2-25			
	30	UMBW-4C2-30	UMBW-4D2-30			
	35	UMBW-4C2-35	UMBW-4D2-35	240 VAC or 125 VDC (2-poles in series)	$107	Z12
	40	UMBW-4C2-40	UMBW-4D2-40			
	50	UMBW-4C2-50	UMBW-4D2-50			
	60	UMBW-4C2-60	UMBW-4D2-60			

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Number of Poles	Ampacity	Catalog Number		Maximum Voltage	List Price	Multiplier
		C CURVE	D CURVE			
3 Pole	1	UMBW-4C3-1	UMBW-4D3-1	480 Y/277 VAC or 125 VDC (2-poles in series)	$158	Z12
	1.2	UMBW-4C3-1.2	UMBW-4D3-1.2			
	1.5	UMBW-4C3-1.5	UMBW-4D3-1.5			
	1.6	UMBW-4C3-1.6	UMBW-4D3-1.6			
	2	UMBW-4C3-2	UMBW-4D3-2			
	3	UMBW-4C3-3	UMBW-4D3-3			
	4	UMBW-4C3-4	UMBW-4D3-4			
	5	UMBW-4C3-5	UMBW-4D3-5			
	6	UMBW-4C3-6	UMBW-4D3-6			
	8	UMBW-4C3-8	UMBW-4D3-8			
	10	UMBW-4C3-10	UMBW-4D3-10			
	13	UMBW-4C3-13	UMBW-4D3-13			
	15	UMBW-4C3-15	UMBW-4D3-15			
	20	UMBW-4C3-20	UMBW-4D3-20			
	25	UMBW-4C3-25	UMBW-4D3-25			
	30	UMBW-4C3-30	UMBW-4D3-30			
	35	UMBW-4C3-35	UMBW-4D3-35	240 VAC or 125 VDC (2-poles in series)	$158	Z12
	40	UMBW-4C3-40	UMBW-4D3-40			
	50	UMBW-4C3-50	UMBW-4D3-50			
	60	UMBW-4C3-60	UMBW-4D3-60			

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Circuit Protection

UMBW Series

Miniature Circuit Breakers Accessories

Auxiliary Contacts

Signaling contacts that open and close with the breaker. Provide remote status indicating ON and OFF only.

For Use With	Catalog Number	Operating Voltage	Operating Amperage	Contacts	Mounting/Dims (mm)	Mechanical Operations	Torque	Mass	QTY	List Price	Multiplier
UMBW-1 UMBW-4	UMBW-AUX	12-240 VAC	6A	1NO/1NC	Field Mountable Left Side / 9 mm	20,000	1 N-m, .74 Ft-lbs.	29g	1	$55	Z12
		277 VAC	3A								
		12-24 VDC	6A								
		48 VDC	3A								
		110-220 VDC	1.5A								

Bell Alarm

Provides provisions for visual and alarm indication when the breaker in the Tripped status, due to Short-circuit, Overload or Undervoltage. Breaker must be re-set to open contacts.

For Use With	Catalog Number	Operating Voltage	Operating Amperage	Contacts	Mounting/Dims (mm)	Mechanical Operations	Torque	Mass	QTY	List Price	Multiplier
UMBW-1 UMBW-4	UMBW-BAC	12-240 VAC	6A	1NO/1NC	Field Mountable..Left Side/ 9 mm	10,000	1 N-m, .74 Ft-lbs.	29g	1	$68	Z12
		277 VAC	3A								
		12-24 VDC	6A								
		48 VDC	3A								
		110-220 VDC	1.5A								

Shunt Trip

Provides ability to trip breaker from remote location when power is applied.

For Use With	Catalog Number	Voltage/Min Trip Voltage	Amperage/ Power Consumption	Contacts	Mounting/Dims (mm)	Mechanical Operations	Torque	Mass	QTY	List Price	Multiplier
UMBW-1 UMBW-4	UMBW-ST12DC	12 VDC/ 8 VDC	6A/ 200W	1NO/1NC	Field Mountable..Left Side/18 mm	20,000	1 N-m, .74 Ft-lbs.	60g	1	$95	Z12
	UMBW-ST24DC	24 VDC/ 16 VDC	6A/ 200W							$95	
	UMBW-ST48DC	48 VDC/ 24 VDC	2A/ 200W							$95	
	UMBW-ST125DC	125 VDC/ 80 VDC	1.5A/ 200W							$95	
	UMBW-ST120AC	120 VAC/ 80 VAC	6A/ 200W							$95	
	UMBW-ST240AC	240 VAC/ 160 VAC	6A/ 200W							$95	
	UMBW-ST277AC	277 VAC/ 160 VAC	3A/ 200W							$95	

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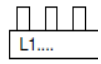
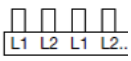
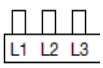
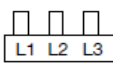
Miniature Circuit Breakers

Busbar Accessories

For Use With	Catalog Number	AMP Rating End/ Center	Number of Poles	Max Voltage	Length (mm)	QTY	List Price	End Cap Catalog Number (sold as separate item)	QTY	List Price	Multiplier
1 Pole											
UMBW-1	UMBW-BB-1-1 	80A/160A	57	600 AC /1000 DC	1009	1	$125	UMBW-BB-1-1P-END CAP	10 (Sets of 2pcs)	$30	Z12
UMBW-4	UMBW-BB-4-1	80A/160A	57	1000 AC/DC	1031	1	$500	UMBW-BB-4-END CAP	10	$35	
1 Pole with Auxiliary											
UMBW-1	UMBW-BB-1-1A	80A/160A	37	600 AC /1000 DC	985	1	$135	UMBW-BB-1-1P-END CAP	10 (Sets of 2pcs)	$30	Z12
UMBW-4	UMBW-BB-4-1A	80A/160A	37	1000 AC/DC	972	1	$570	UMBW-BB-4-END CAP	10	$35	
2 Pole											
UMBW-1	UMBW-BB-1-2 	80A/160A	56	600 AC/DC	991	1	$285	UMBW-BB-1-2/3P-E CAP	10 (Sets of 2pcs)	$30	Z12
UMBW-4	UMBW-BB-4-2	80A/160A	56	600 AC/DC	979	1	$575	UMBW-BB-4-END CAP	10	$35	
2 Pole with Auxiliary											
UMBW-1	UMBW-BB-1-2A	80A/160A	46	600 AC/DC	1009	1	$295	UMBW-BB-1-2/3P-E CAP	10 (Sets of 2pcs)	$30	Z12
UMBW-4	UMBW-BB-4-2A	80A/160A	46	600 AC/DC	981	1	$645	UMBW-BB-4-END CAP	10	$35	
3 Pole											
UMBW-1	UMBW-BB-1-3 	80A/160A	57	600 AC/DC	1009	1	$340	UMBW-BB-1-2/3P-E CAP	10 (Sets of 2pcs)	$30	Z12
UMBW-4	UMBW-BB-4-3	80A/160A	57	600 AC/DC	997	1	$650	UMBW-BB-4-END CAP	10	$35	
3 Pole with Auxiliary											
UMBW-1	UMBW-BB-1-3A 	80A/160A	48	600 AC/DC	982	1	$345	UMBW-BB-1-2/3P-E CAP	10 (Sets of 2pcs)	$30	Z12
UMBW-4	UMBW-BB-4-3A	80A/160A	48	600 AC/DC	936	1	$720	UMBW-BB-4-END CAP	10	$35	

Notes: Busbars may be center fed to increase ampacity to double rated value.

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Circuit Protection

UMBW Series

Miniature Circuit Breakers

Busbar Accessories

For Use With	Catalog Number	AMP Rating	Number of Poles	Maximum Voltage	Conductor Range Min/Max	Tightening Torque	QTY	List Price	Multiplier
UMBW-1	UMBW-BB-1-1P-END CAP	N/A	1	N/A	N/A	N/A	10	$30	Z12
UMBW-1	UMBW-BB-1-2/3-E-CAP	N/A	2 or 3	N/A	N/A	N/A	10 (Sets of 2 pcs)	$35	Z12
UMBW-1	UMBW-BB-1-1P-TERM	115A	1	1000 VAC/DC	10AWG/1AWG	50 in-lb	10	$320	Z12
UMBW-1	UMBW-BB-1-2/3P-TERM	115A	2 or 3	1000 VAC/DC	10AWG/1AWG	50 in-lb	10	$330	Z12
UMBW-1	UMBW-BB-1-BUS CAP-Y	N/A	5	N/A	N/A	N/A	10 (Sets of 5 pcs)	$115	Z12

For Use With	Catalog Number	AMP Rating	Number of Poles	Maximum Voltage	Conductor Range Min/Max	Tightening Torque	QTY	List Price	Multiplier
UMBW-4	UMBW-BB-4-END CAP	N/A	N/A	N/A	N/A	N/A	10	$40	Z12
UMBW-4	UMBW-BB-4-1P-TERM	115A	1	1000 VAC/DC	14AWG/2AWG	50 in-lb	10	$350	Z12
UMBW-4	UMBW-BB-4-BUS CAP-Y	N/A	3	N/A	N/A	N/A	10 (Sets of 3 pcs)	$45	Z12

UMBW-BB-1-1-TERM

UMBW-BB-1-2/3P-TERM

UMBW-BB-1-BUS CAP-Y

UMBW-BB-4-1P-TERM

UMBW-BB-4-BUS CAP-Y

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Breaker Technical Data

Electrical Ratings

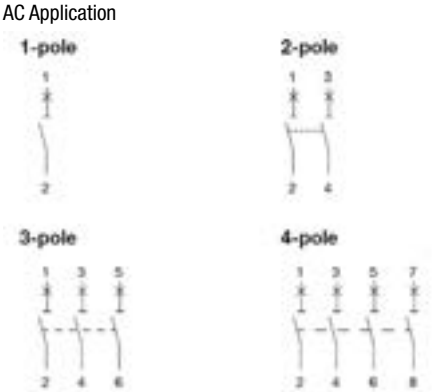
Approval	Poles	Voltage	Ampacity	Interrupting
UL1077 E468808	1 Pole	240 VAC	1A - 60A	7.5 kA
	1 Pole	277 VAC	1A - 60A	5 kA
	2, 3 Pole	240 VAC	1A - 60A	5 kA
	2, 3 Pole	277/480Y VAC	1A - 60A	5 kA
	1 Pole	60 VDC	1A - 60A	7.5 kA
	2 Pole	125 VDC	1A - 60A	7.5 kA
UL489 E468810	1 Pole	120 VAC	1A - 60A	10 kA
	2, 3 Pole	240 VAC	1A - 60A	10 kA
	1 Pole	277 VAC	1A - 30A	10 kA
	2, 3 Pole	277/480Y VAC	1A - 30A	10 kA
	1 Pole	60 VDC	1A - 60A	10 kA
	2 Pole	125 VDC	1A - 60A	10 kA
IEC 60947-2	1 Pole	230 VAC	1A - 60A	10 kA
	2, 3 Pole	400 VAC	1A - 60A	10 kA

Mechanical Ratings

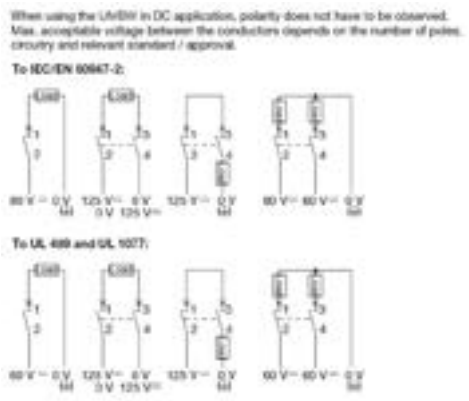
Tripping Curves	B,C,D
Number of Poles	1,2,3
Mounting Position	Vertical, Horizontal
Torque	2 Nm, 1.48 ft lbs Maximum
Cable Cross Section	35 mm sq, 2 AWG Maximum
Ambient Temperature	-35°C to +70°C
Mass	UL1077 - 116 grams per pole
	UL489 - 131 grams per pole
Protection Class	IP20
Mechanical Operations	10,000
Vibration (sinusoidal) Test to IEC 60060-2-6 Test to FC	+/- .38 mm (10-57 Hz), 5g (57-500 Hz) 10 frequency cycles per axis
Shock Test to IEC60068-2-27, Test Ea	30g (11 ms)
Corrosion Test to IEC60068-2-11 Test Ka	96hrs in 5% salt mist
Humidity Test to IEC60068-2-78 Test Cab	48hrs at 95% RH, temperature +40°C
Terminals	Screw with busbar connections

Schematic Diagrams

AC Application



DC Application



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Circuit Protection

UMBW Series

Operating Ampacity Based on Ambient Temperature (Degree Celsius)

Amps	-35°C	-30°C	-25°C	-20°C	-15°C	-10°C	-5°C	0°C	+5°C	+10°C	+15°C
1	1.27	1.25	1.23	1.21	1.19	1.17	1.15	1.13	1.10	1.08	1.06
2	2.87	2.81	2.74	2.68	2.62	2.55	2.48	2.42	2.35	2.28	2.20
3	3.89	3.83	3.76	3.70	3.64	3.57	3.50	3.44	3.37	3.30	3.22
4	4.91	4.83	4.76	4.70	4.64	4.57	4.50	4.44	4.37	4.30	4.22
5	6.68	6.56	6.44	6.32	6.19	6.07	5.94	5.81	5.68	5.54	5.40
6	7.70	7.58	7.46	7.34	7.21	7.09	6.96	6.83	6.70	6.56	6.42
8	9.80	9.68	9.56	9.44	9.31	9.19	9.06	8.93	9.80	8.66	8.52
10	13.89	13.62	13.35	13.07	12.81	12.53	12.23	11.93	11.63	11.33	11.01
13	16.92	16.65	16.38	16.10	15.84	15.56	15.26	14.96	14.66	14.36	14.04
15	19.77	19.42	19.07	18.74	18.39	18.04	17.69	17.32	16.95	16.57	16.19
20	25.67	25.28	24.88	24.47	24.06	23.64	23.22	22.78	22.34	21.89	21.43
25	32.21	31.72	31.22	30.70	30.18	29.65	29.10	28.55	27.98	27.41	26.82
30	39.00	38.42	37.78	37.13	36.47	35.80	35.11	34.43	33.71	32.99	32.26
35	44.08	43.50	42.86	42.21	41.55	40.88	40.19	39.51	38.79	38.07	37.34
40	51.63	50.86	50.04	49.21	48.37	47.51	46.63	45.74	44.83	43.90	42.95
50	64.92	63.97	62.92	61.86	60.77	59.67	58.54	57.40	56.23	55.05	53.81
60	80.45	79.03	77.61	76.16	74.69	73.19	71.67	70.11	68.51	66.88	65.21

Operating Ampacity Based on Ambient Temperature (Degree Celsius)

Amps	+20°C	+25°C	+30°C	+35°C	+40°C	+45°C	+50°C	+55°C	+60°C	+65°C	+70°C
1	1.05	1.02	1.00	0.97	0.94	0.91	0.89	0.86	0.83	0.80	0.77
2	2.12	2.04	2.00	1.90	1.82	1.74	1.65	1.56	1.47	1.36	1.25
3	3.14	3.06	3.00	2.92	2.84	2.76	2.67	2.58	2.49	2.38	2.27
4	4.14	4.06	4.00	3.92	3.84	3.76	3.67	3.58	3.49	3.38	3.27
5	5.25	5.12	5.00	4.82	4.66	4.50	4.34	4.17	3.99	3.81	3.62
6	6.27	6.14	6.00	5.84	5.68	5.52	5.36	5.19	5.01	4.83	4.64
8	8.37	8.24	8.00	7.94	7.78	7.62	7.46	7.29	7.11	6.93	6.74
10	10.67	10.34	10.00	9.63	9.24	8.85	8.45	8.01	7.55	7.06	6.55
13	13.70	13.37	13.00	12.66	12.27	11.61	11.48	11.04	10.58	10.09	9.58
15	15.79	15.39	15.00	14.54	14.10	13.65	13.19	12.70	12.20	11.69	11.64
20	20.96	20.47	20.00	19.47	18.95	18.42	17.87	17.30	16.71	16.10	15.47
25	26.22	25.61	25.00	24.33	23.67	23.00	22.28	21.56	20.80	20.02	19.21
30	31.50	30.73	30.00	29.13	28.30	27.44	26.56	25.65	24.71	23.74	22.73
35	36.58	35.81	35.00	34.21	33.38	32.52	31.64	30.73	29.79	28.82	27.81
40	41.98	40.99	40.00	38.93	37.85	36.75	35.61	34.43	33.21	31.95	30.63
50	52.56	51.28	50.00	47.82	46.24	44.81	43.33	41.81	40.23	38.58	35.77
60	63.50	61.75	60.00	57.08	55.16	53.18	51.13	49.00	46.78	44.47	40.47

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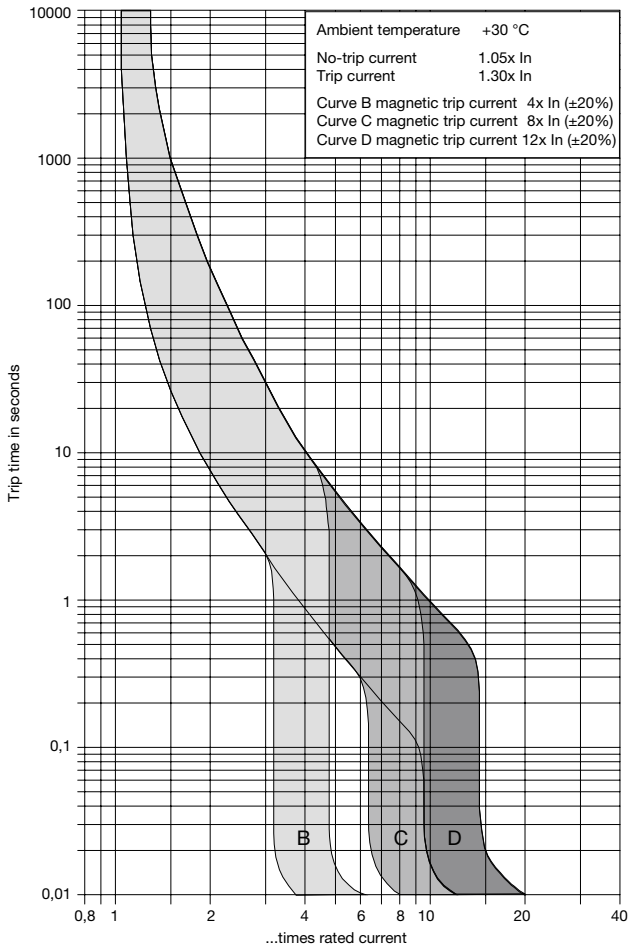
Curves Data



Magnetic tripping currents are increased by 30 % on DC supplies.

B CURVE – Tripping Characteristics:
Calibrated for resistive or non/low inductive loads.
Applications: Lighting, Control Circuits

C CURVE – Tripping Characteristics:
Calibrated for general purpose inductive loads.
Applications: Fluorescent lighting, midrange inductive motors

D CURVE – Tripping Characteristics:
Calibrated for inductive loads with high inrush currents

Applications: Motors, Transformers

Notes: When mounted side by side, the breakers can only carry up to 80% of their rated current or a higher rating has to be selected (see technical data information).

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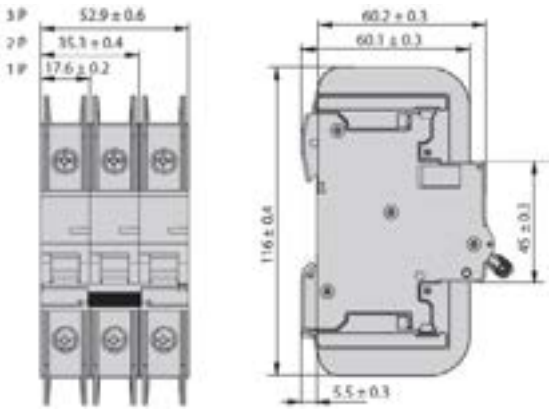
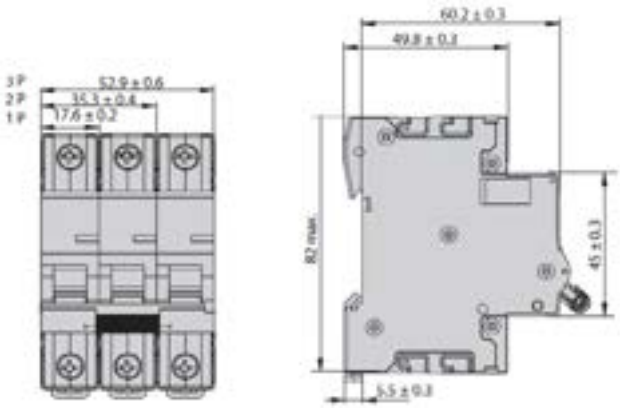
UMBW Series

Dimensions – mm

UMBW-4 (UL489)



UMBW – 1 (UL1077)



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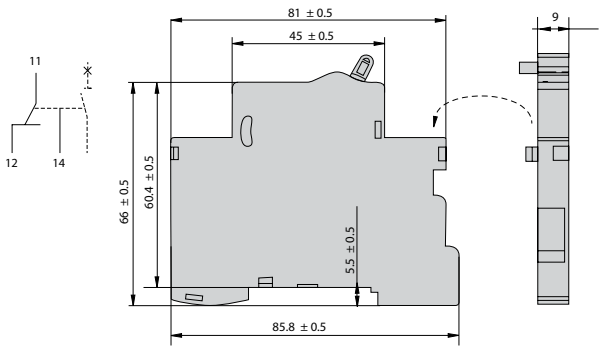
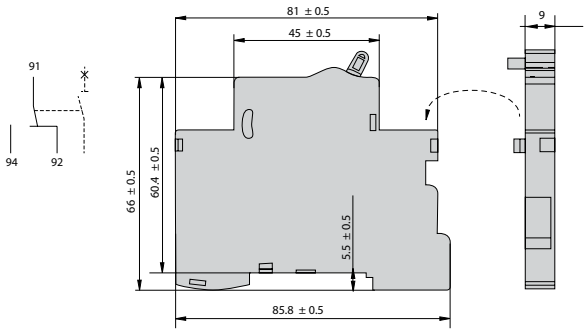
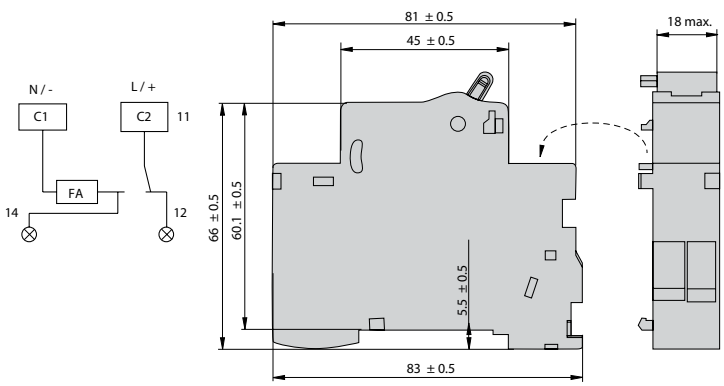


UMBW – BAC



UMBW – ST



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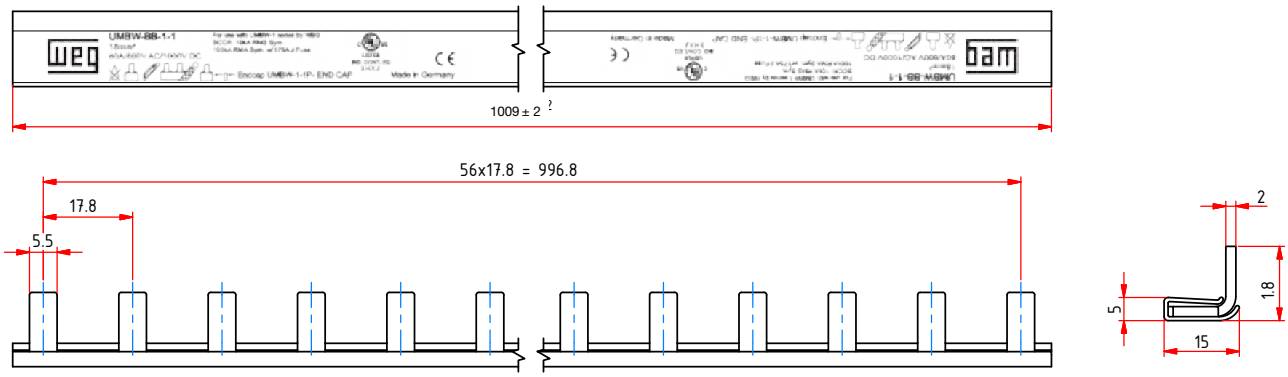
Dimensions – mm

UMBW-BB-1-1



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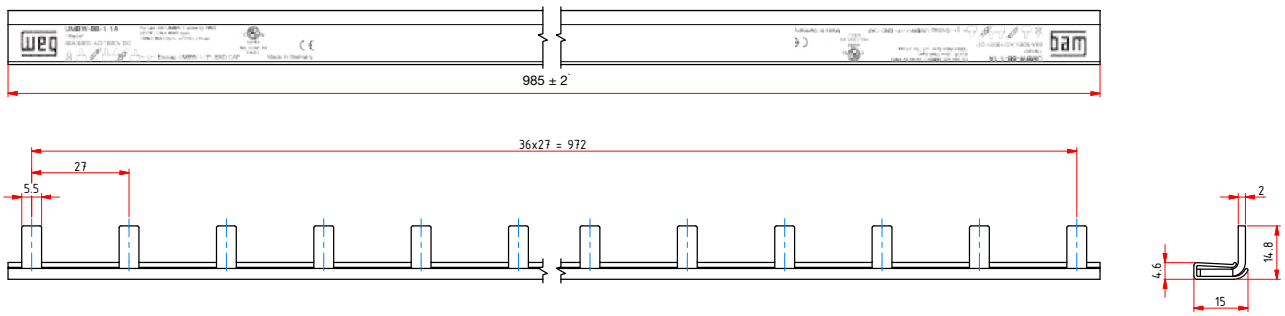
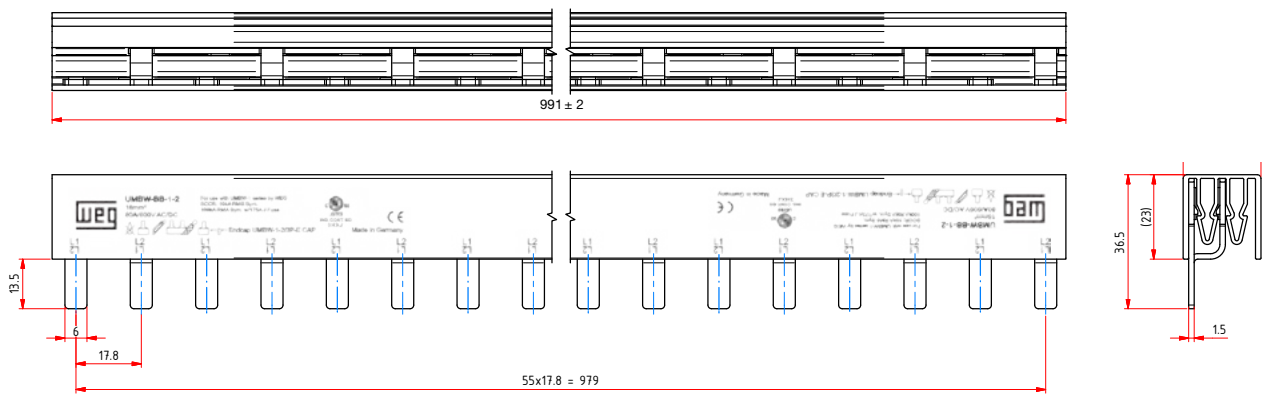
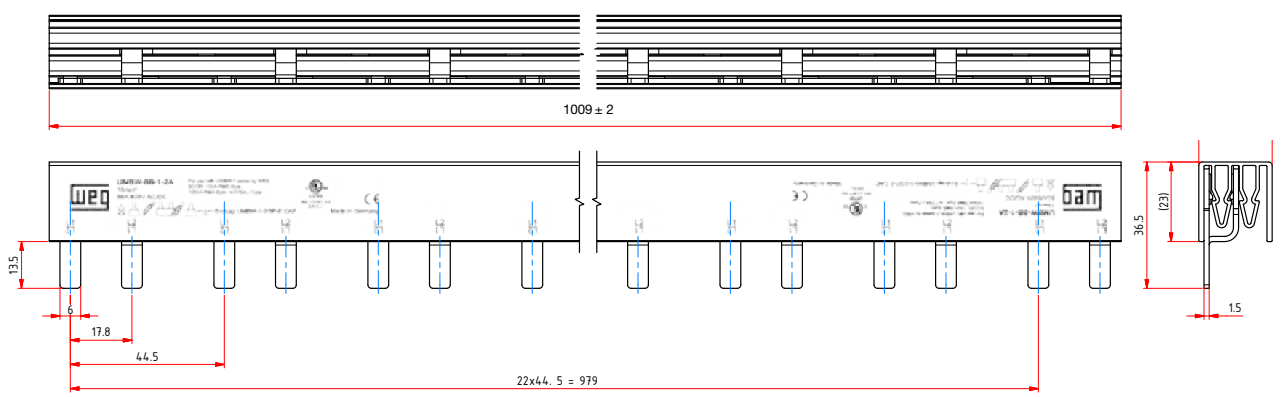


UMBW-BB-1-2



UMBW-BB-1-2A



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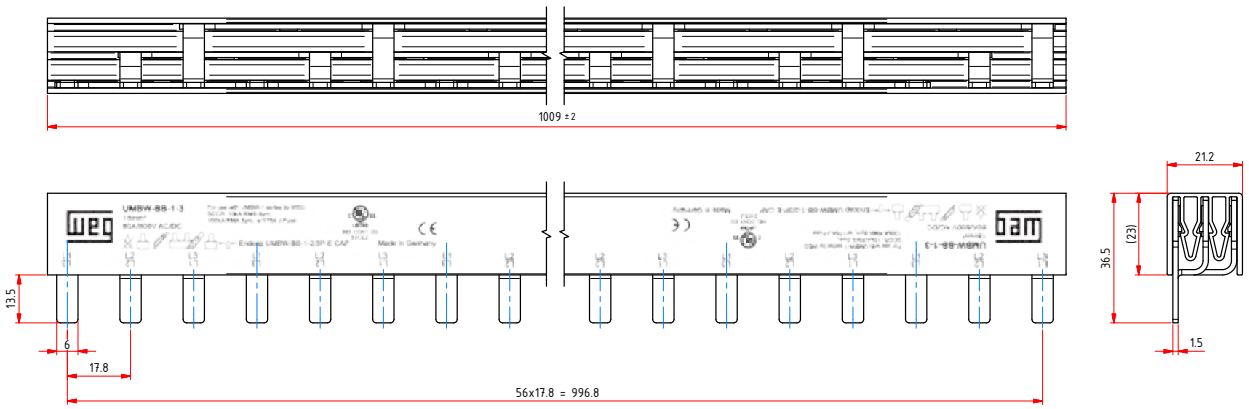
Circuit Protection

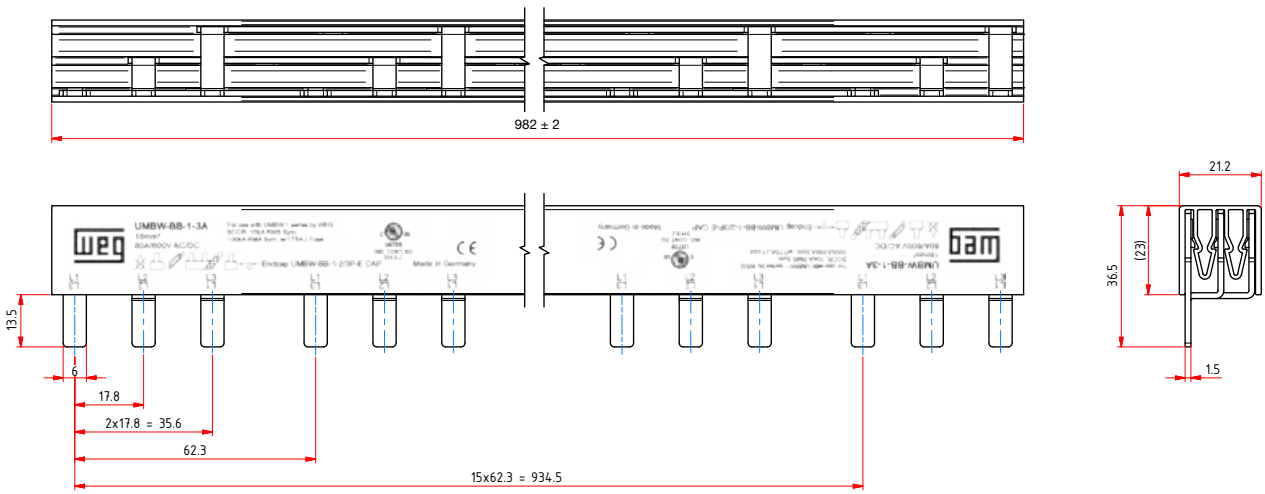
UMBW Series

Dimensions – mm

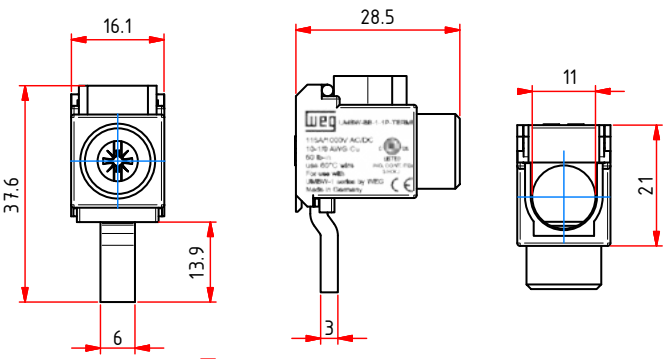
UMBW-BB-1-3



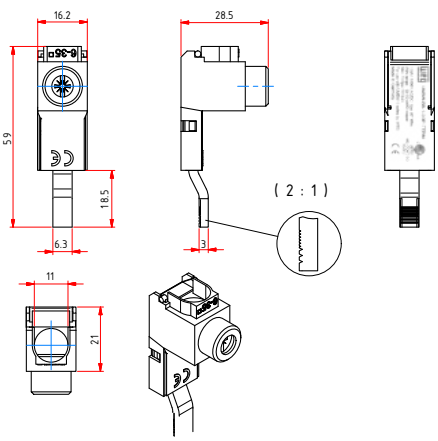
UMBW-BB-1-3A



UMBW-BB-1-1P-TERM



UMBW-BB-1-2/3P-TERM



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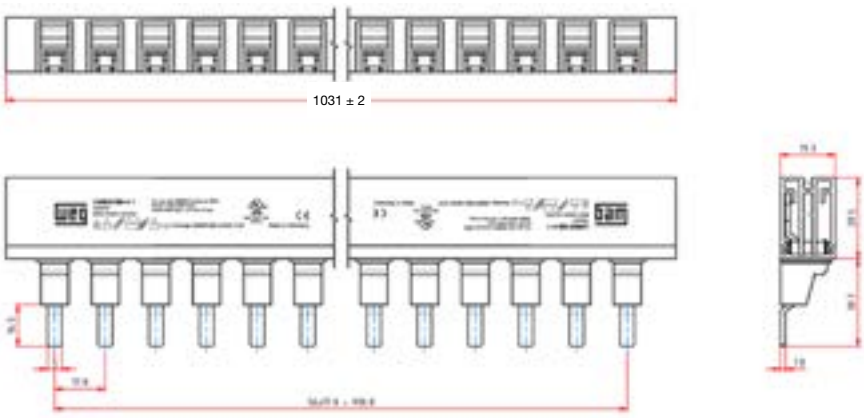
Dimensions – mm

UMBW-BB-4-1



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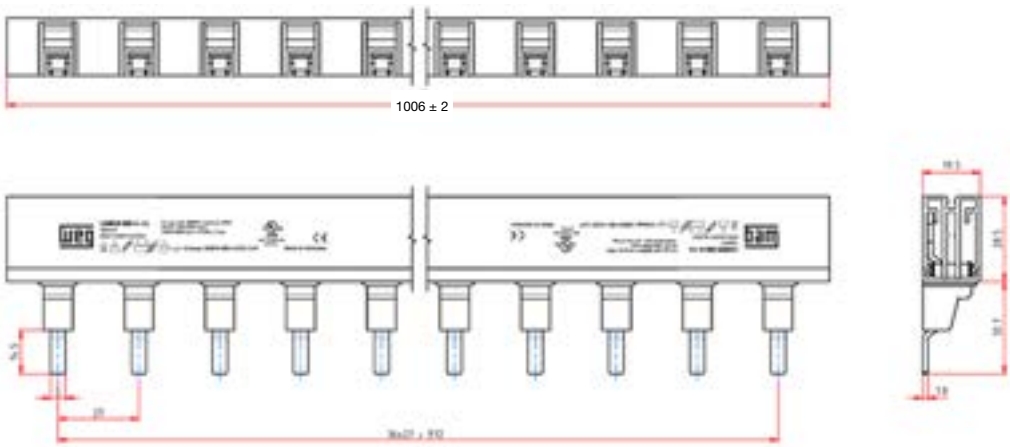

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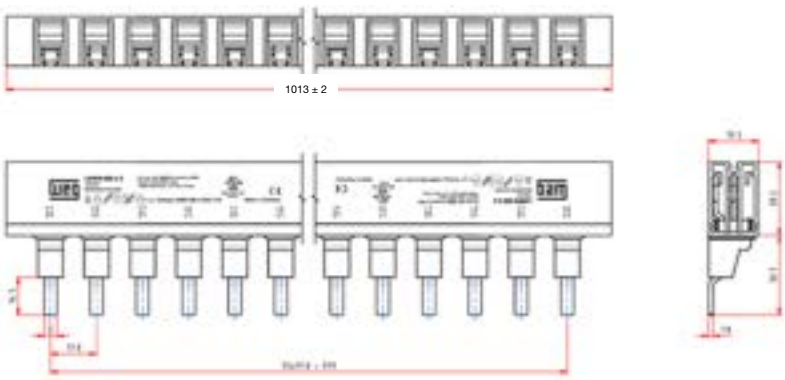

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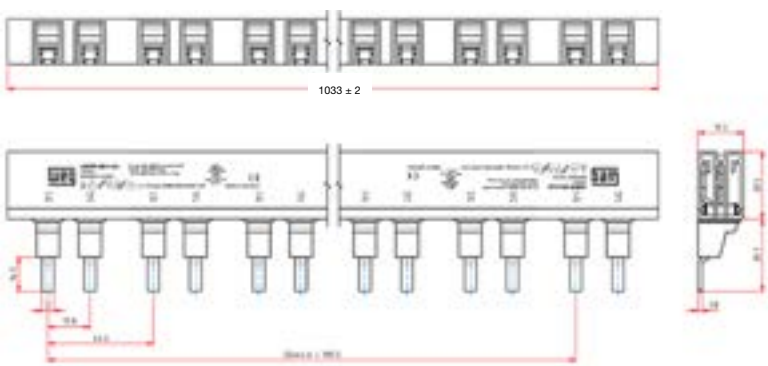

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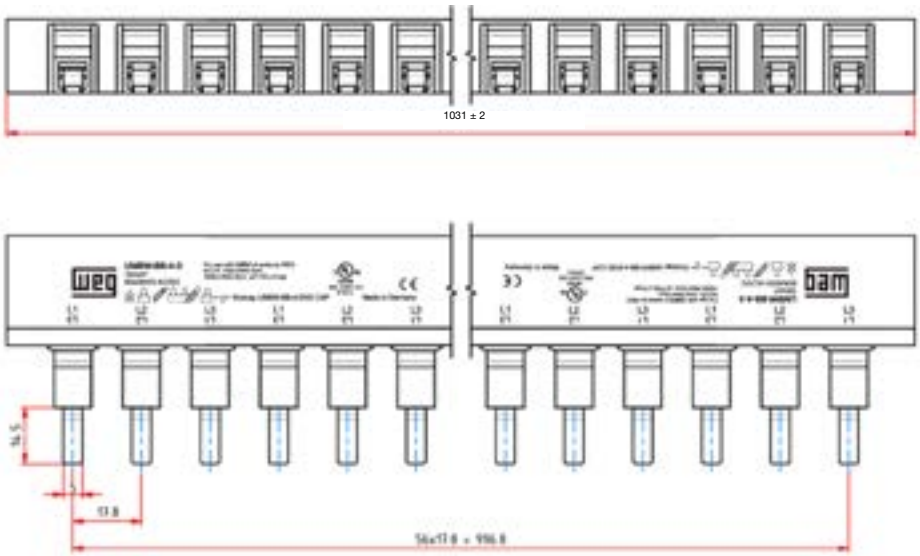
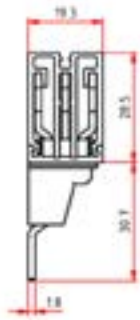
UMBW Series

Dimensions – mm

UMBW-BB-4-3





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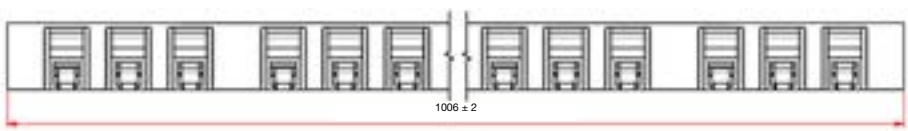
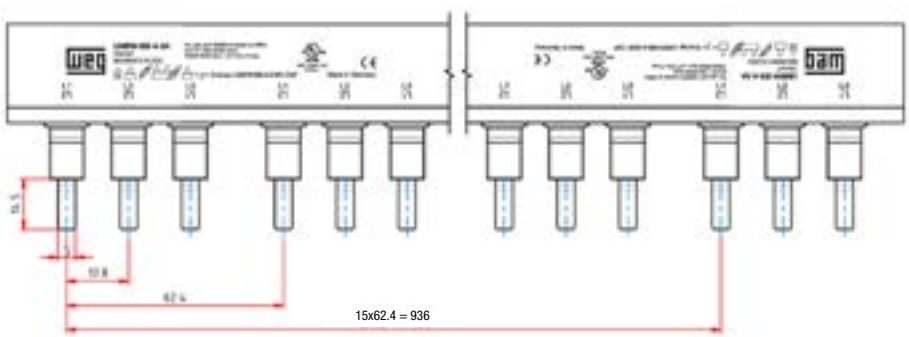
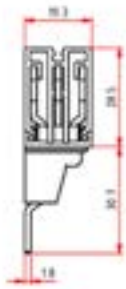
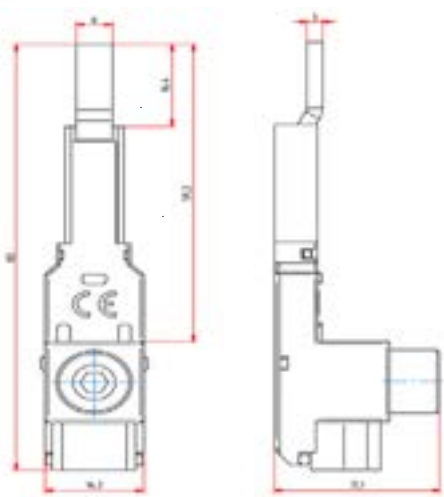






UMBW-BB-4-1P-TERM



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MSW Series – Disconnect Switches

WEG MSW Series Disconnect Switches were developed according to IEC 60947-3 and UL 508. The compact, reliable design of the MSW allows the operator to safely disconnect power and isolate the circuit within the panel. The MSW has a range of 25 A to 160 A, comes in base or panel door mount options, and offers a variety of accessories.

UL File No. E172121

Standard Features

- Suitable as Motor Disconnect
- Base or panel door mounting options
- Base mounting with screws or on 35 mm DIN rail
- Handles accommodate up to three padlocks
- IP65 rated handles

Learn More Online

MSW Catalog Number Sequence

MSW	25	B	3	H

Frame Rating/Accessory Type
Door Mount: 25A, 40A, 63A, 80A,100A
Base Mount: 25A, 40A, 63A, 80A, 125A, 160A
AP: Neutral Pole
AC: Auxiliary Contact
TS: Terminal Cover

Mounting
P: Panel Door Mount
B: Base Mount

Power Poles
3: Three poles

Accessories
H: Red/Yellow Handle, + Shaft (Base Mount)
B: Black/Grey Handle, + Shaft (Base Mount)
NA: Neutral Pole
1NO: Auxiliary Contact
1NC: Auxiliary Contact

Chart intended as reference only and not to create part numbers.

Overview

Mounting	Current (A)	Handle		Shaft Length (mm)			Neutral Pole	Auxiliary Contact			Terminal Cover
		Red/Yellow	Black/Gray	85	185	300		1NO	1NC	1NO / 1NC	
Panel door	32	●	■				■	■	■		■
	40	●	■				■	■	■		■
	63	●	■				■	■	■		■
	80	●	■				■	■	■		■
	100	●									■
Base	32	●	■	◆	■	■	■	■	■		■
	40	●	■	◆	■	■	■	■	■		■
	63	●	■	◆	■	■	■	■	■		■
	80	●	■	◆	■	■	■	■	■		■
	125	●			■	●				■	■
	160	●			■	●				■	■

LEGEND:
◆ Only available as part of the standard configuration.
● Available as part of the standard configuration or it can be supplied separately.
■ Only available to be supplied separately.

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Disconnect Switches

MSW Series - Disconnect Switches

Disconnect Switches for Panel Door Mounting

Standard Configuration (Disconnect Switch + Handle Red/Yellow)

Catalog Number	Ith (A)	Ie (A)			Poles	List Price	Multiplier
		AC21 (690V)	AC22 (690V)	AC23 (690V)			
MSW 25 P3 N-H	32	32	25	16	3	$80	Z13
MSW 40 P3 N-H	40	40	32	20		$85	
MSW 63 P-3 H	63	63	63	26		$137	
MSW 80 P-3 H	80	80	80	32		$148	
MSW 100 P-3 H	100	100	86	38		$185	

Disconnect Switch

Catalog Number	Ith (A)	Ie (A)			Poles	List Price	Multiplier
		AC21 (690V)	AC22 (690V)	AC23 (690V)			
MSW 25 P3 N	32	32	25	16	3	$56	Z13
MSW 40 P3 N	40	40	32	20		$65	
MSW 63 P-3	63	63	63	26		$110	
MSW 80 P-3	80	80	80	32		$122	
MSW 100 P-3	100	100	86	38		$158	

Rotary Handle

Catalog Number	Disconnect Switch	Color	List Price	Multiplier
MSW H 40-P-N-R	MSW25/MSW40	Red/Yellow	$43	Z13
MSW H 100 P	MSW63/MSW80/MSW100	Red/Yellow	$30	
MSW H 40-P-N-B	MSW25/MSW40	Black/Gray	$43	
MSW H 100-P-B	MSW63/MSW80/MSW100	Black/Gray	$30	

Neutral Pole

Catalog Number	Disconnect Switch	Contact	List Price	Multiplier
MSW AP 25-P-1 NA	MSW25	1NO early make	$42	Z13
MSW AP 40-P-1 NA	MSW40	1NO early make	$42	
MSW AP 63-P-1 NA	MSW63	1NO early make	$49	
MSW AP 80-P-1 NA	MSW80	1NO early make	$49	

Auxiliary Contact [1)]

Catalog Number	Disconnect Switch	Contact State in "OFF" Position	Contact Color	List Price	Multiplier
MSW AC-40 P 1NC	MSW25/MSW40	1NC	Green	$35	Z13
MSW AC-40 P 1NO	MSW25/MSW40	1NO	Red	$35	
MSW AC-80 P 1NC	MSW63/MSW80	1NC	Green	$37	
MSW AC-80 P 1NO	MSW63/MSW80	1NO	Red	$37	

Terminal Cover [2)]

Catalog Number	Disconnect Switch	Poles	List Price	Multiplier
MSW TS-40 P	MSW25/MSW40	3	$14	Z13
MSW TS-80 B/P	MSW63/MSW80		$28	
MSW TS-100 P	MSW100	2	$70	

Notes:
1) Panel door mount disconnect switches hold in Auxiliary Contact actuators while the disconnect handle is in the "OFF" position. Auxiliary Contact actuators are released when the disconnect handle is in the "ON" position. Color of contact block is opposite to typical understanding of NO and NC contacts due to this actuation behavior. Auxiliary Contacts will operate as indicated in the Catalog Number and Contact columns when installed onto a panel mount disconnect switch.
2) Terminal Covers are sold in single pieces. Two (2) pieces of MSW TS-100P are necessary to cover three (3) poles.

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Disconnect Switch for Base Mounting (Screw or Din Rail)

Standard Configuration (Disconnect Switch + Handle Red/Yellow + Shaft)

Catalog Number	Ith (A)	Ie (A)			Shaft Length (mm)	Poles	List Price	Multiplier
		AC21 (690V)	AC22 (690V)	AC23 (690V)				
MSW 25 B-3 H	32	32	25	16	85	3	$96	Z13
MSW 40 B-3 H	40	40	32	20	85		$102	
MSW 63 B-3 H	63	63	63	26	85		$156	
MSW 80 B-3 H	80	80	80	32	85		$167	
MSW 125 B-3 H	125	125	125	80	300		$352	
	160	160	160	100	300		$490	

Disconnect Switches

Catalog Number	Ith (A)	Ie (A)			Poles	List Price	Multiplier
		AC21 (690V)	AC22 (690V)	AC23 (690V)			
MSW 25 B-3	32	32	25	16	3	$53	dZ13
MSW 40 B-3	40	40	32	20		$59	
MSW 63 B-3	63	63	63	26		$112	
MSW 80 B-3	80	80	80	32		$124	
MSW 125 B-3	125	125	125	80		$286	
MSW 160 B-3	160	160	160	100		$435	

Rotary Handle + Shaft

Catalog Number	Disconnect Switch	Color	Shaft Length (mm)	List Price	Multiplier
MSW H 40 B	MSW25/MSW40	Red/Yellow	85	$42	Z13
MSW H 80 B	MSW63/MSW80	Red/Yellow	85	$45	
MSW H 160 B	MSW125/MSW160	Red/Yellow	300	$65	
MSW H 40-B-B	MSW25/MSW40	Black/Gray	85	$42	
MSW H 80-B-B	MSW63/MSW80	Black/Gray	85	$45	
MSW H 160-B-B	MSW125/MSW160	Black/Gray	300	$65	

Shaft

Catalog Number	Disconnect Switch	Shaft Length (mm)	List Price	Multiplier
MSW HS 185-40	MSW25/MSW40	185	$12	Z13
MSW HS 300-40	MSW25/MSW40	300	$17	
MSW HS 185-160	MSW63/MSW80/MSW125/MSW160	185	$20	
MSW HS 300-160	MSW63/MSW80/MSW125/MSW160	300	$26	

Neutral Pole

Catalog Number	Disconnect Switch	Contact	List Price	Multiplier
MSW AP 25-B-1 NA	MSW25	1NO early make	$42	Z13
MSW AP 40-B-1 NA	MSW40	1NO early make	$42	
MSW AP 63-B-1 NA	MSW63	1NO early make	$49	
MSW AP 80-B-1 NA	MSW80	1NO early make	$49	
MSW AP 160-B-1 NA	MSW125 MSW160	1NO early make	$49	

Auxiliary Contact

Catalog Number	Disconnect Switch	Contact	Contact Color	List Price	Multiplier
MSW AC-40 B 1NC	MSW25/MSW40	1NC	Red	$35	Z13
MSW AC-40 B 1NO	MSW25/MSW40	1NO	Green	$35	
MSW AC-80 B 1NC	MSW63/MSW80	1NC	Red	$37	
MSW AC-80 B 1NO	MSW63/MSW80	1NO	Green	$37	
MSW AC-160 B 1NC	MSW125/MSW160	1NC	Red	$70	
MSW AC-160 B 1NO	MSW125/MSW160	1NO	Green	$70	

Terminal Cover[1)]

Catalog Number	Disconnect Switch	Poles	List Price	Multiplier
MSW TS-40 B	MSW25/MSW40	3	$16	Z13
MSW TS-80 B/P	MSW63/MSW80		$32	
MSW TS-160 B	MSW125/MSW160		$78	

Notes:
1) Terminal covers are sold in single pieces.

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Disconnect Switches

MSW Series - Disconnect Switches

Technical Data

Models				MSW 25	MSW 40	MSW 63	MSW 80	MSW 100	MSW 125	MSW 160	Auxiliary Contact
IEC 60947-3 Characteristics											
Rated operating voltage Ue			V	690							
Rated insulation voltage Ui			V	690	690	690	690	690	800	800	690
Rated impulse withstand voltage Uimp (sectionable)			kV	8	8	8	8	8	8	8	4
Rated thermal current Ith			A	32	40	63	80	100	125	160	16
Rated thermal current Ith (enclosed)			A	32	40	63	80	86	125	160	10
Frequency			Hz	50/60							
Rated Operating Current Ie: Alternating Current											
AC-21A switching resistive loads		690 V	A	32	40	63	80	100	125	160	AC-15 500 V - 4A
AC-22A switching mixed resistive and inductive loads		500 V	A	-	-	-	-	100	125	160	DC-13 250 V - 0.4A
		690 V	A	25	32	63	80	86	125	160	-
AC-23A periodic switching of motors	Three-phase 3 poles	230 V	A/kW	25/7.5	32/10	63/20	80/25	70/22	125/30	160/45	-
		400 V	A/kW	25/15	32/18.5	50/28	75/42	67/37	125/55	160/75	-
		500 V	A/kW	22/15	27/18.5	50/35	75/52	67/45	100/63	125/80	-
		690 V	A/kW	16/15	20/18.5	26/25	32/31	38/37	80/75	100/90	-
AC-3 starting of cage motors (interruption while running)	Three-phase 3 poles	230 V	A/kW	22/5.5	27/7.5	45/14	60/19	60/18.5	-	-	-
		400 V	A/kW	22/11	27/15	40/22	55/30	55/30	-	-	-
		500 V	A/kW	22/11	22/15	35/24	45/31	55/37	-	-	-
		690 V	A/kW	16/11	16/15	22/21	25/24	32/30	-	-	-
Rated interruption current AC-23A (CosU 0.45)		230 V	A	200	256	360	600	560	-	-	-
		400 V	A	200	256	320	536	536	1,000	1,280	-
		500 V	A	176	216	280	536	536	-	-	-
		690 V	A	128	160	176	256	304	800	800	-
Short-Circuit Characteristics											
Rated short-time short-circuit withstand current Icw (1s)			A	800	800	1,200	1,500	1,500	3,000	3,000	-
Rated short-circuit making capacity Icm			A	1,500	1,500	2,200	2,800	2,840	4,500	4,500	-
Conditional rated short-circuit withstand current			kA	10	10	10/5	10/5	10	15	15	1
Fuse rating gG		500 V	A	-	-	-	-	100	125	125	10
		690 V	A	40	40	63/80	63/80	-	-	-	-
UL 508 Characteristics – UL File E172121											
General use		600 VAC	A	32	40	60	80	100	125	160	HD A600 AC Q600 DC
Standard motors load	Single-phase 2 poles	120 VAC	HP (FLA)	1.5 (20)	2 (24)	2	3	3 (34)	20 (108)	20 (108)	-
		240 VAC	HP (FLA)	3 (17)	5 (28)	5	7.5	10 (50)	40 (104)	40 (104)	-
	Three-phase 3 poles	240 VAC	HP (FLA)	7.5 (22)	10 (28)	10	15	10 (28)	25 (68)	25 (68)	-
		480 VAC	HP (FLA)	10 (14)	15 (21)	25	30	25 (34)	50 (65)	50 (65)	-
		600 VAC	HP (FLA)	15 (17)	20 (22)	30	40	30 (32)	60 (62)	60 (62)	-
General Characteristics											
Protection degree		Handle	EN 60529/ UL 50	IP65 / Type 1-4-4X-NEMA 4X							-
		Terminals	EN 60529	IP20							
Material group		EN 60947-1	-	II					IIIa	IIIa	II
Pollution grade		EN 60947-1	-	3							
Flammability		UL 94	-	V0							
Ambient temperature		Operation	°C	-25°C +55°C							
		Storage	°C	-30°C +70°C							
Climate withstand		IEC 68 part 2-3	-	Hot damp							
		IEC 68 part 2-30	-	Unsetted hot damp							
Switching force (3 poles)		-	-	0.8 Nm (7.1 in-lb)		1 Nm (8.85 in-lb)		1.5 Nm (13.28 in-lb)	2.6 (23 in-lb)		-
Connections		EN 60947-1	-	-		-			-	-	-
Terminal block caliber		-	-	A6		A8			-	-	A2
Terminal screw		-	-	M4		M5			M8	M8	M3.5
Tightening torque		EN 60947-1	-	1.2 Nm		3 Nm			6 Nm	6 Nm	0.8 Nm
		UL 508	-	10.6 in-lb (1.2 Nm)		32 in-lb (3.6 Nm)			53 in-lb (6 Nm)		7.1 in-lb (0.8 Nm)
Main terminal capacity		-	mm²	1.5-10		6-25			10-70	10-70	1-2.5
Flexible conductors		-	AWG	12-8		10-2			3/0-6	3/0-6	18-12
		-	mm²	1.5-16		10-35			10-70	10-70	1-2.5
Solid conductors		-	AWG	12-8		10-2			3/0-6	3/0-6	18-12
Opening angles				90°							-

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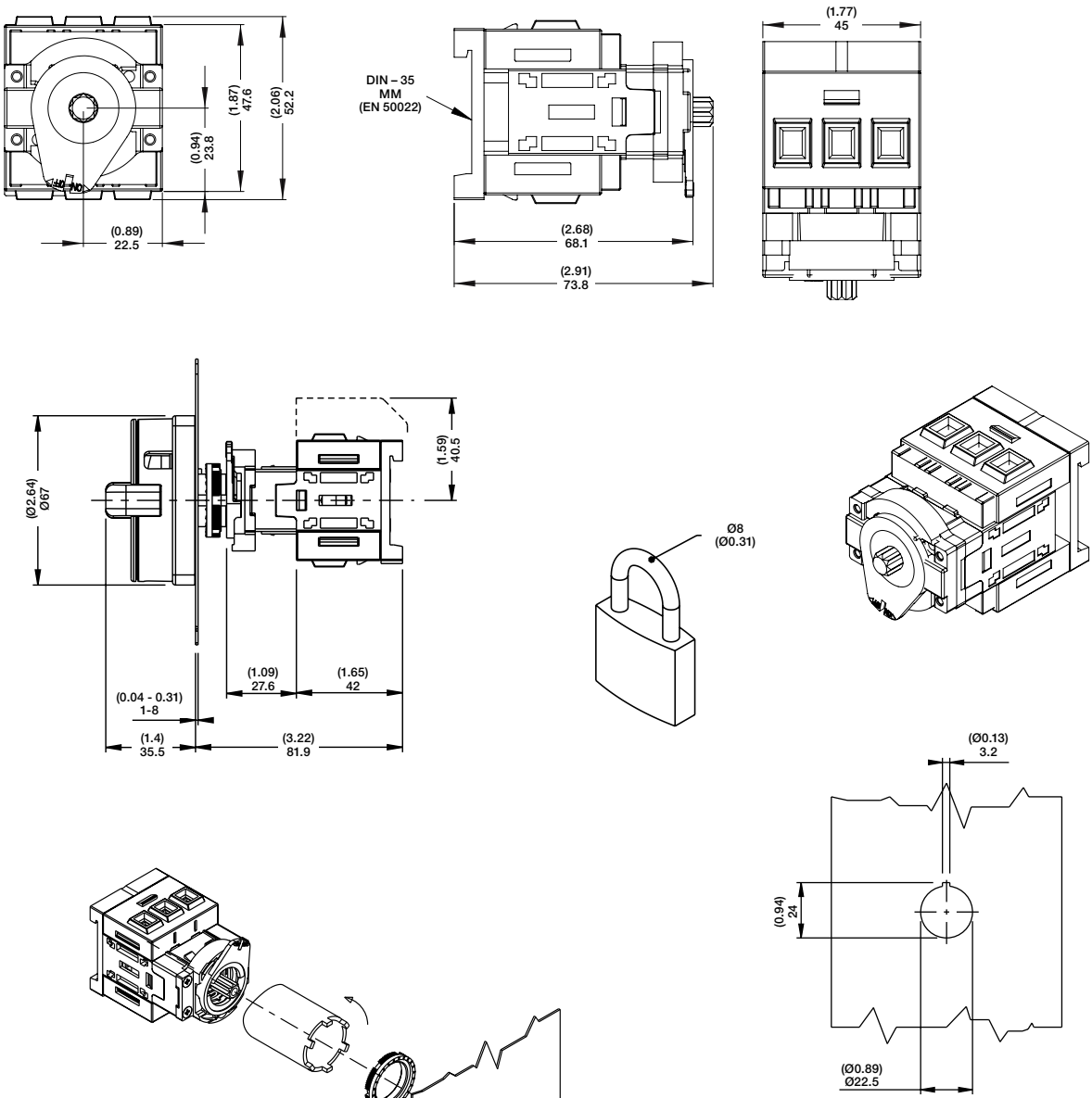
Dimensions – mm (inch)

Disconnect Switches for Panel Door Mounting

MSW25...40-P3



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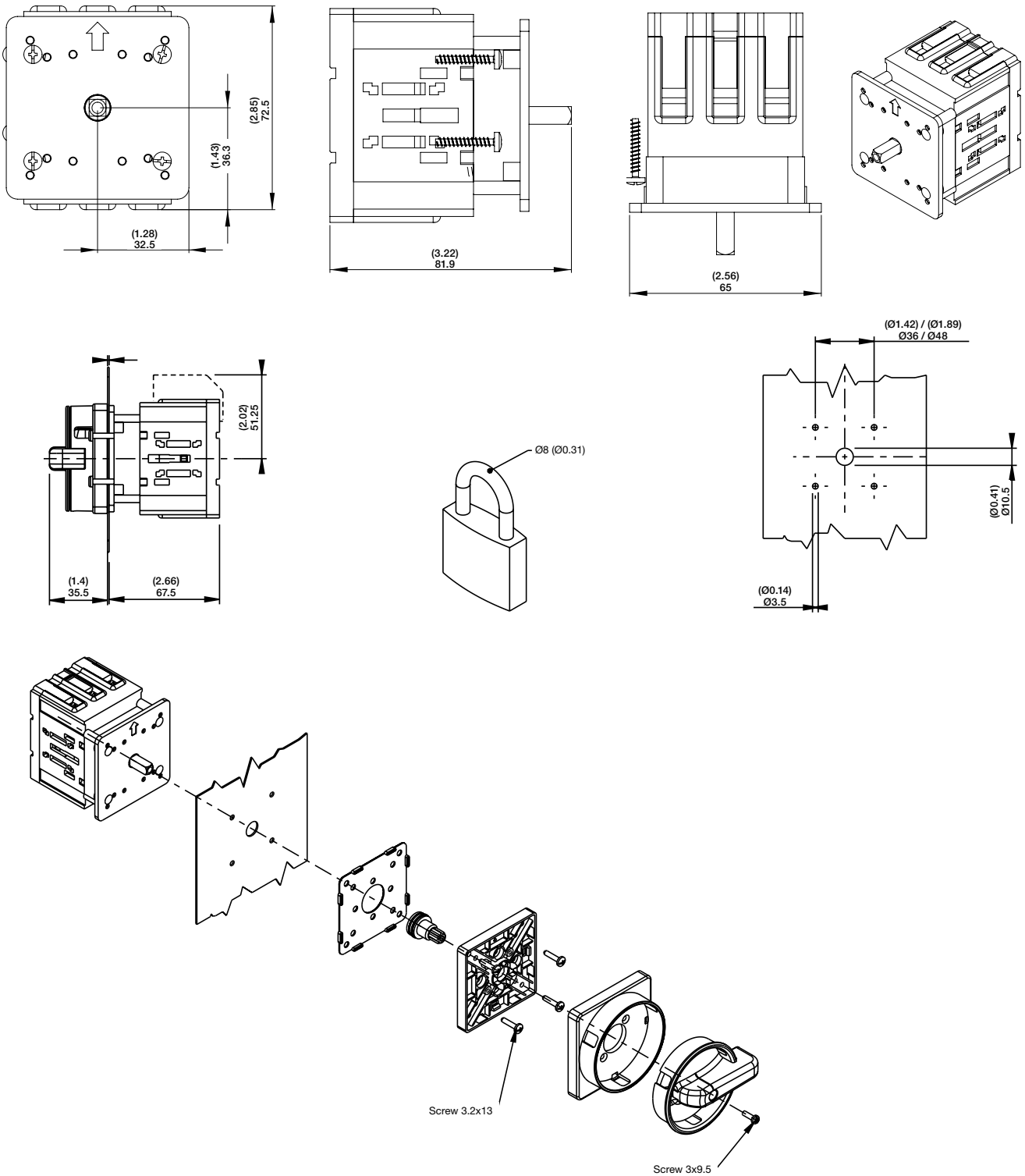
MSW Series - Disconnect Switches

Dimensions – mm (inch)

MSW63...80-P3



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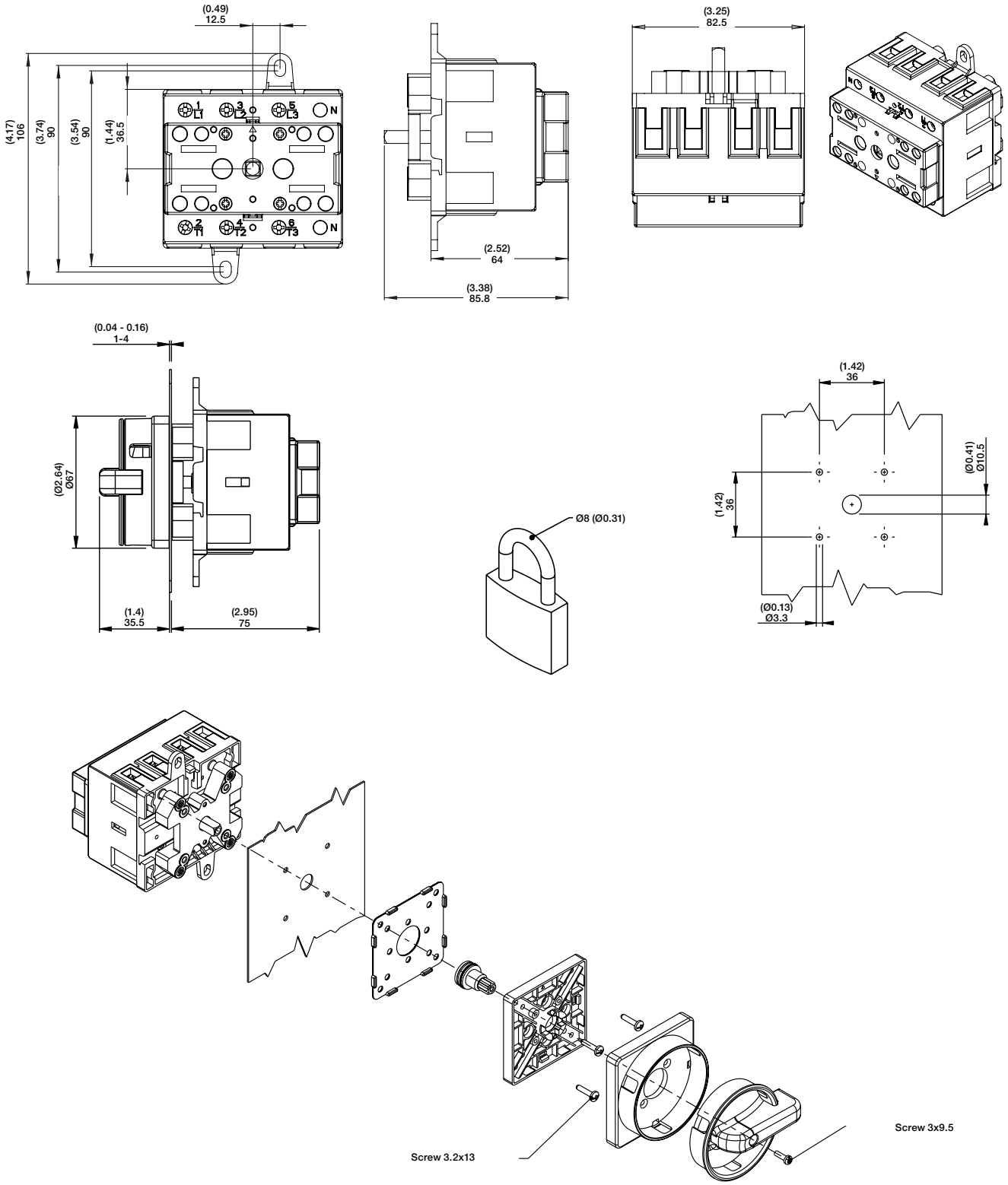
Dimensions – mm (inch)

MSW100-P3



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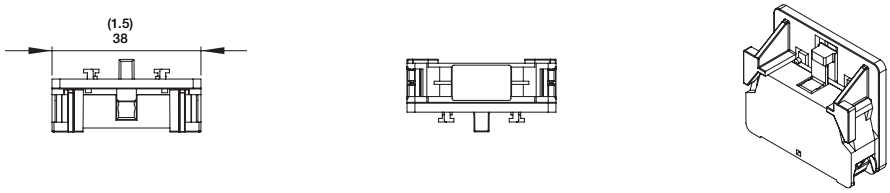
MSW Series - Disconnect Switches

Dimensions – mm (inch)

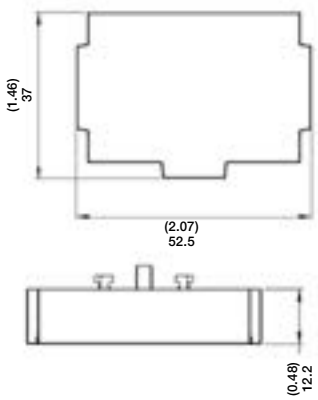
Auxiliary Contact

MSW AC-40...80 P 1NC / MSW AC-40...80 P 1NO

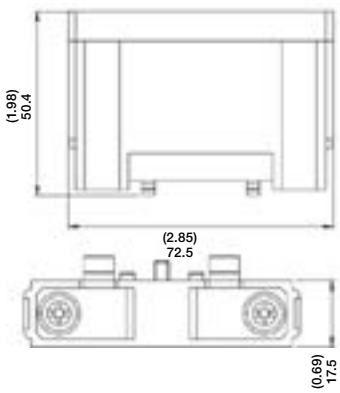


Neutral Pole Contact

MSW AP-25...40 P 1NA



MSW AP-63...80 P 1NA



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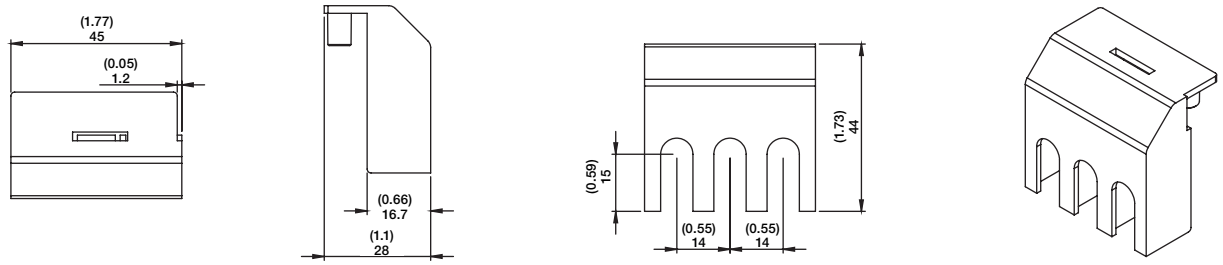
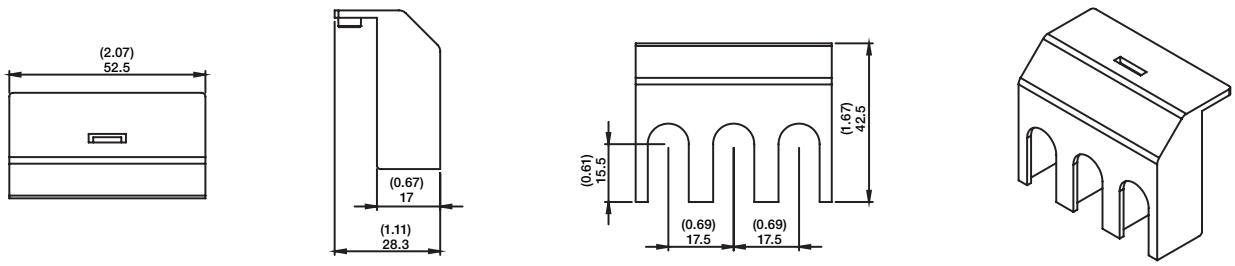
Dimensions – mm (inch)

Terminal Cover

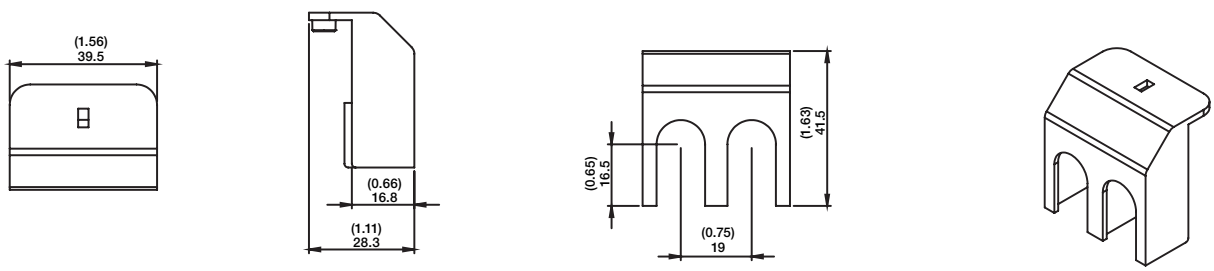
MSW TS-40P



MSW TS-80 B/P



MSW TS-100 P



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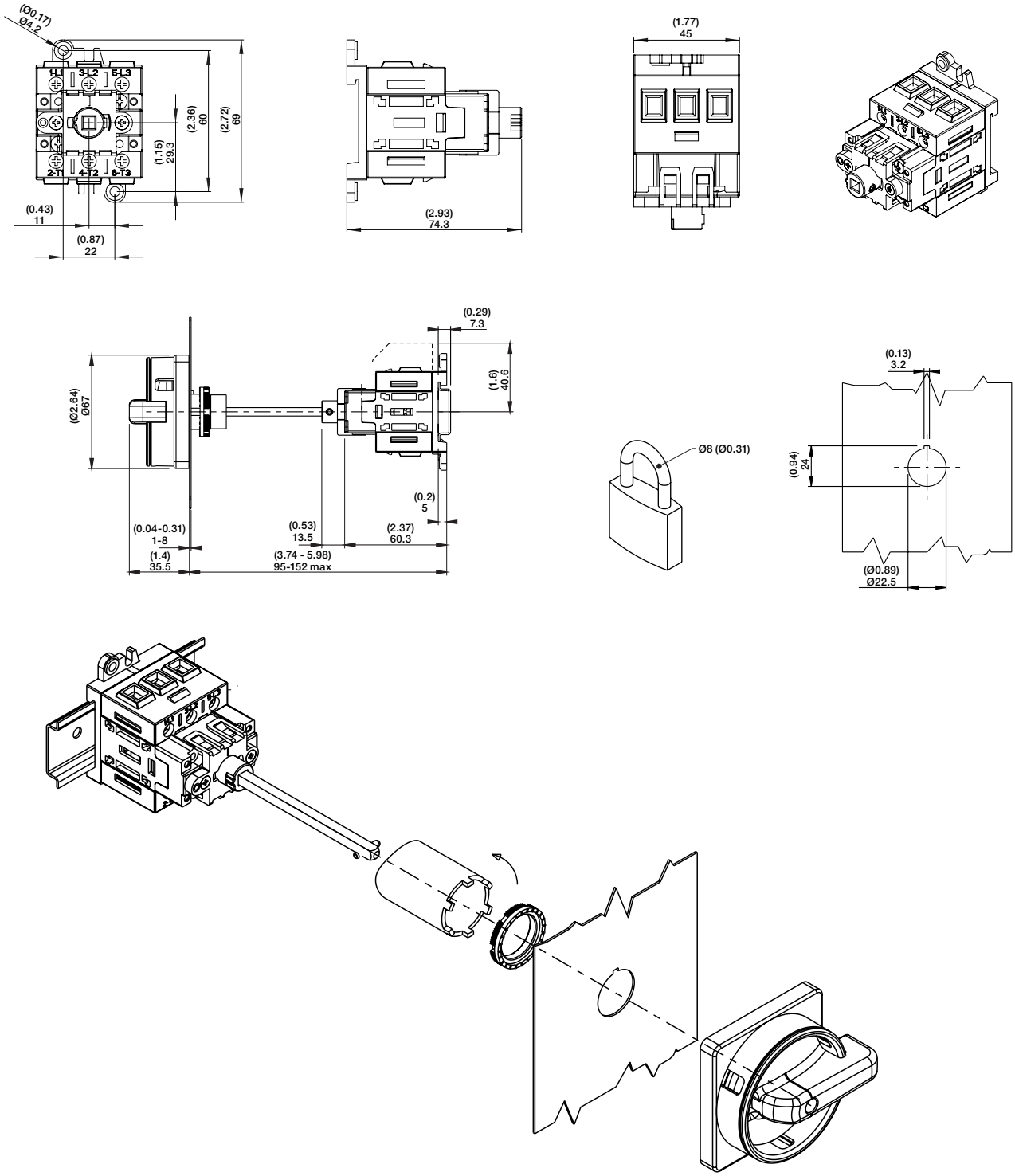
Disconnect Switches

MSW Series - Disconnect Switches

Dimensions – mm (inch)

Disconnect Switches for Base Mounting

MSW 25...40 B-3



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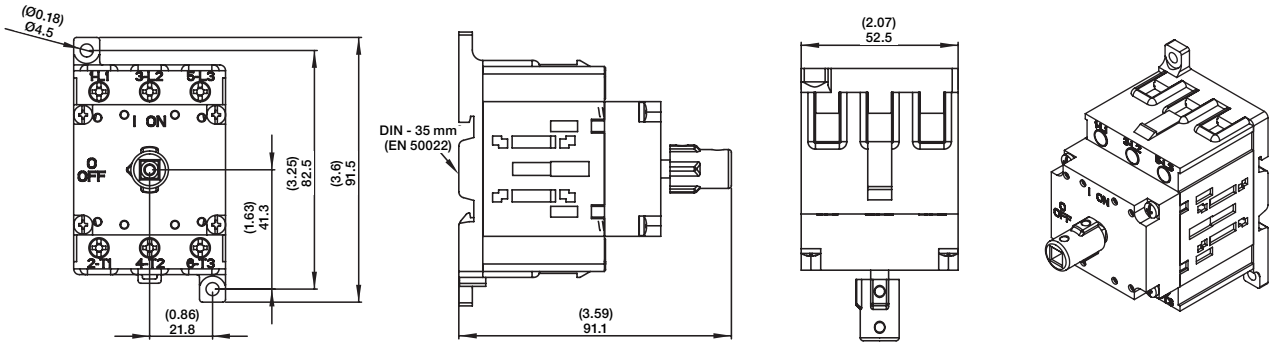
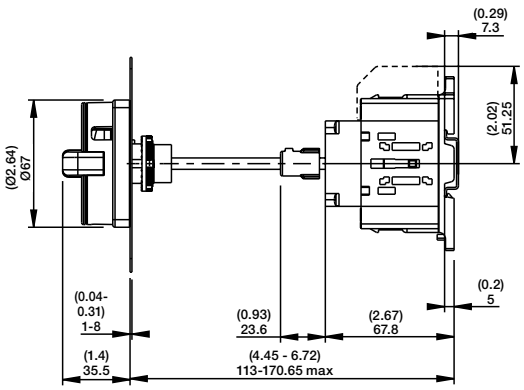
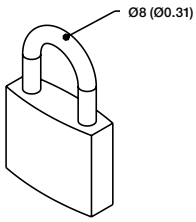
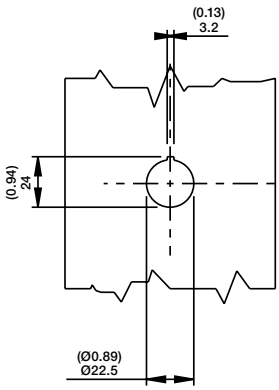
Dimensions – mm (inch)

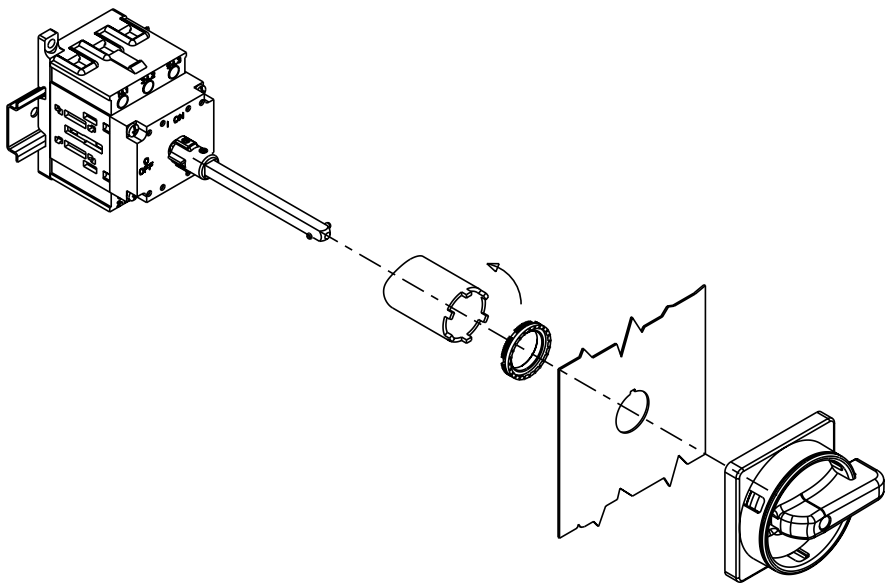
MSW 63...80 B-3











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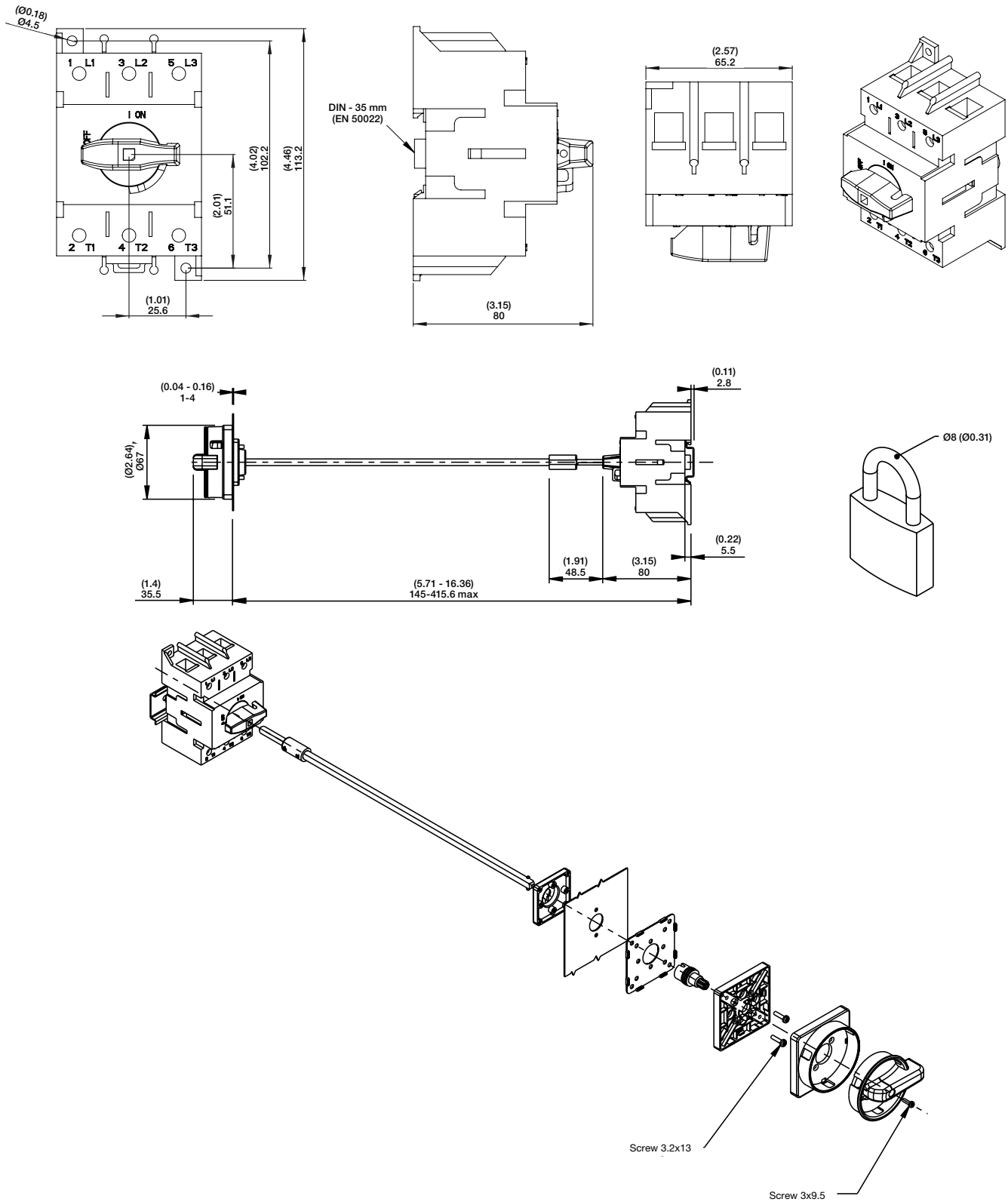
MSW Series - Disconnect Switches

Dimensions – mm (inch)

MSW 125...160 B-3



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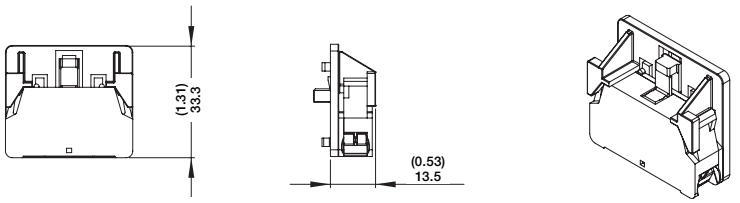
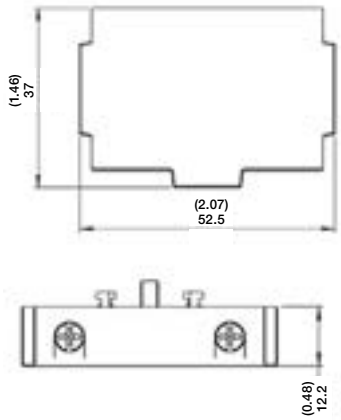
Dimensions – mm (inch)

Auxiliary Contact

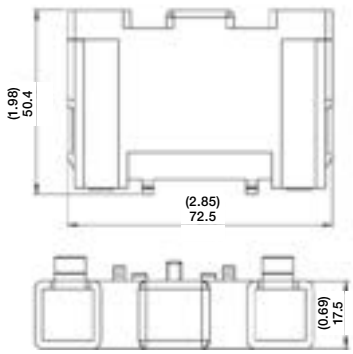
MSW AC-40...80 B 1NC / MSW AC-40...80 B 1NO



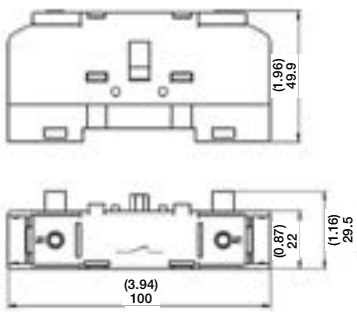
MSW AP 25...40-B-1 NA



MSW AP 63...80-B-1 NA



MSW AP 160-B-1 NA



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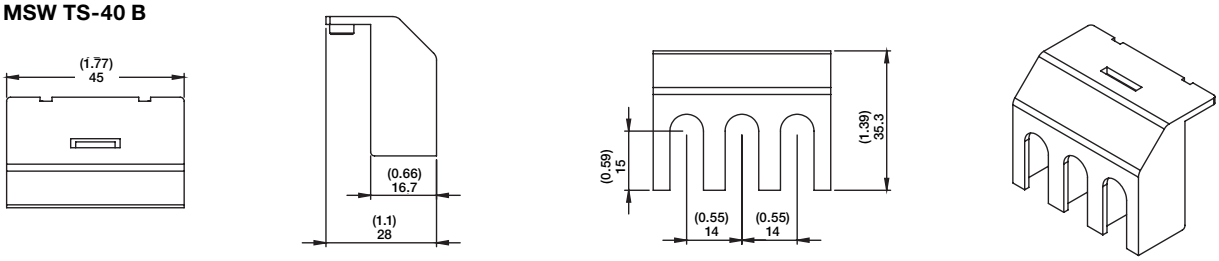
MSW Series - Disconnect Switches

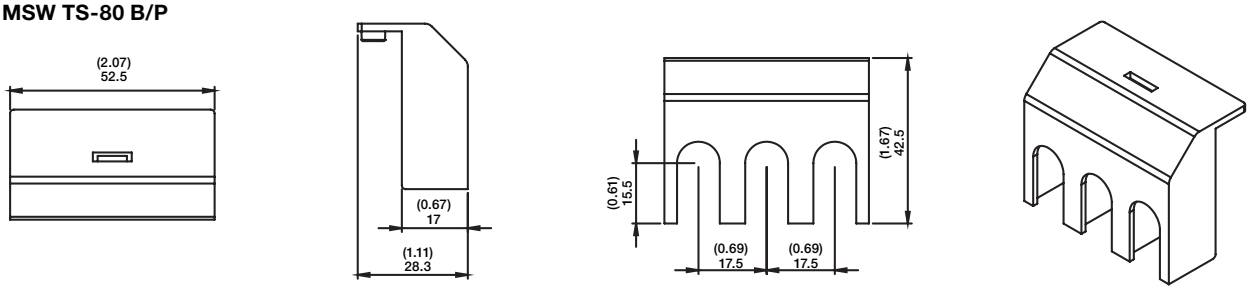
Dimensions – mm (inch)

Terminal Cover

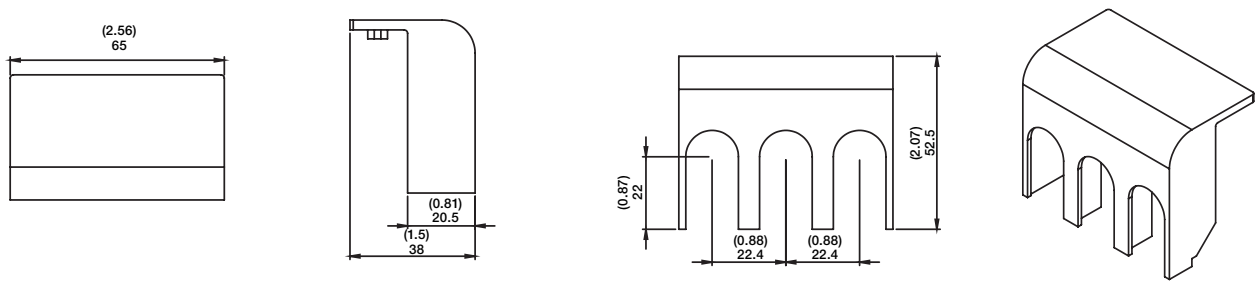
MSW TS-40 B



MSW TS-80 B/P



MSW TS-160 B



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MSWB Series – Enclosed Disconnect Switches

Introducing the WEG MSWB Series Enclosed Disconnect Switches, compact switching solutions for AC power applications. The MSWB was developed according to IEC 60947-3 and UL508. It is used for manually isolating or interrupting electrical circuits under load conditions. Often used as a means for secondary lock-out/tag-out scenarios. The switches are available in 3 poles up to 80 A for resistive loads and up to 42 A for inductive applications.

UL File No. E172121

Standard Features

- Suitable as Motor Disconnect
- Surface mounting
- Two color options:
  - Yellow cover with red handle
  - Gray cover with black handle
- Thermoplastic and robust Type 1, 4, 4X (IP65) enclosure with black enclosure base
- Protection ratings:
  - IP65 protection rating for handles allowing up to 3 padlocks in “OFF” position
  - IP20 protection rating for internal terminals
- Knock-outs for cable gland provides flexibility for cable entry/exit on the top, bottom, and rear of the box

Learn More Online

MSWB Catalog Number Sequence

MSWB	25	B	3	H

Frame Rating/Accessory Type
Base/Surface Mount: 25A, 40A, 63A, 80A

AP: Neutral Pole
AC: Auxiliary Contact

Mounting
B: Base/Surface

Power Poles
3: Three poles

Accessories
H: Yellow Cover / Red Handle
HB: Gray Cover / Black Handle
NA: NO Early Make Auxiliary Contact
1NO: NO Auxiliary Contact
1NC: NC Auxiliary Contact

Chart intended as reference only and not to create part numbers.

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Enclosed Disconnect Switches

MSWB Series – Enclosed Disconnect Switches

Enclosed Disconnect Switches for Base/Surface

Disconnect Switches in Type 1, 4, 4X (IP65) Enclosure [1)]

Catalog Number	AC-21 UL508 General Use at 600 VAC (FLA)	UL508 Motor Load HP (FLA)			Mounting	Poles	Front Part Color	List Price	Multiplier
		240 VAC	480 VAC	600 VAC					
MSWB 25 B3 H	32	7.5 (22)	10 (14)	15 (17)	Surface	3	Yellow cover / Red handle	$190	Z13
MSWB 40 B3 H	40	10 (28)	15 (21)	20 (22)				$235	
MSWB 63 B3 H	63	10 (28)	25 (34)	30 (32)				$340	
MSWB 80 B3 H	80	15 (42)	30 (40)	40 (41)				$400	
MSWB 25 B3 HB	32	7.5 (22)	10 (14)	15 (17)			Gray cover / Black handle	$190	
MSWB 40 B3 HB	40	10 (28)	15 (21)	20 (22)				$235	
MSWB 63 B3 HB	63	10 (28)	25 (34)	30 (32)				$340	
MSWB 80 B3 HB	80	15 (42)	30 (40)	40 (41)				$400	

Neutral Pole [2) 3)]

Catalog Number	Enclosed Disconnect Switch	Contact	List Price	Multiplier
MSW AP 25-B-1-NA	MSWB25	1NO early make	$42	Z13
MSW AP 40-B-1-NA	MSWB40	1NO early make	$42	
MSW AP 63-B-1-NA	MSWB63	1NO early make	$49	
MSW AP 80-B-1-NA	MSWB80	1NO early make	$49	

Auxiliary Contact [4) 5) 6)]

Catalog Number	Enclosed Disconnect Switch	Contact	List Price	Multiplier
MSW AC-40 B 1NC	MSWB25 / MSWB40	1NC	$35	Z13
MSW AC-40 B 1NO	MSWB25 / MSWB40	1NO	$35	
MSW AC-80 B 1NC	MSWB63 / MSWB80	1NC	$37	
MSW AC-80 B 1NO	MSWB63 / MSWB80	1NO	$37	

Notes:
1) Black enclosure base.
2) The same neutral pole for the base-mount MSW disconnect switches.
3) Only one neutral pole per one enclosed disconnect switch and can be installed on either side.
4) Same as the base-mount MSW's auxiliary contact.
5) Direct side mounting on the disconnect switch.
6) Up to two auxiliary contacts can be installed per one enclosed disconnect switch (one contact block on each side of the disconnect switch).

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Technical Data

Catalog Number				MSW 25 / MSWB 25	MSW 40 / MSWB 40	MSW 63 / MSWB 63	MSW 80 / MSWB 80	Auxiliary Contacts
IEC 60947-3 Characteristics								
Rated operating voltage Ue			V	690				
Rated insulation voltage Ui			V	690				
Rated impulse withstand voltage Uimp			kV	8	8	8	8	4
Rated thermal current Ith = Iu			A	32	40	63	80	16
Rated thermal current in enclosed Ithe			A	32	40	63	80	10
Frequency			Hz	50 / 60				
Rated Operating Current Ie: Alternating Current								
AC-21 A		690 V	A	32	40	63	80	AC-15 500 V – 4 A
AC-22 A		500 V	A	-	-	-	-	DC-13 250 V – 0.4 A
		690 V	A	25	32	63	80	-
AC-22 A		230 V	A / kW	25 / 7.5	32 / 10	63 / 20	80 / 25	-
	Three-phase	400 V	A / kW	25 / 15	32 / 18.5	50 / 28	75 / 42	-
	3 poles	500 V	A / kW	25 / 15	32 / 22	50 / 35	75 / 52	-
		690 V	A / kW	16 / 15	20 / 18.5	26 / 25	32 / 31	-
AC-3	Single-phase	110 V	A / kW	-	-	-	-	-
	2 poles	230 V	A / kW	-	-	-	-	-
		230 V	A / kW	22 / 5.5	27 / 7.5	45 / 14	60 / 19	-
	Three-phase	400 V	A / kW	22 / 11	27 / 15	40 / 22	60 / 30	-
	3 poles	500 V	A / kW	22 / 11	27 / 18.5	35 / 24	45 / 31	-
		690 V	A / kW	16 / 11	20 / 15	22 / 21	25 / 24	-
Rated interruption current AC-23 A (cos-θ 0.45)		230 V	A	200	256	360	600	-
		400 V	A	200	256	360	536	-
		500 V	A	200	256	280	536	-
		690 V	A	128	160	176	256	-
Rated short-time short-circuit withstand current – Icw (1s)			A	800	800	1,200	1,500	-
Short-circuit making capacity (peak value) – Icm			A	1,500	1,500	2,200	2,800	-
Conditional rated short-circuit withstand current			kA	10	10	10	10	1
Fuse rating gG /gL		500 V	A	-	-	-	-	10
		690 V	A	40	40	63 / 80	63 / 80	-
UL 508 Characteristics								
General use								HD
		600 VAC	A	32	40	60	80	A600 AC Q600 DC
Standard motors load	Single-phase 2 poles	120 VAC	HP (FLA)	1.5 (20)	2 (24)	2 (24)	3 (34)	-
		240 VAC	HP (FLA)	3 (17)	5 (28)	5 (28)	7.5 (40)	-
	Three-phase 3 poles	240 VAC	HP (FLA)	7.5 (22)	10 (28)	10 (28)	15 (42)	-
		480 VAC	HP (FLA)	10 (14)	15 (21)	25 (34)	30 (40)	-
		600 VAC	HP (FLA)	15 (17)	20 (22)	30 (32)	40 (41)	-
Protection degree		Handle	EN 60529 (UL 50)	IP65 (Type 1 - 4 - 4X - NEMA 4X)				-
		Terminals	EN 60529	IP20				
Material group		EN 60947-1		II				
Pollution grade		EN 60947-1		3				
Flammability		UL 94		V0				
Ambient temperature		Operation	°C	-25°C + 55°C				
		Storage	°C	-30°C + 70°C				
Switching force (3 poles)				0.8 Nm (7.1 in-lb)		1 Nm (8.85 in-lb)		-
Connection								
Terminal block caliber		EN 60947-1		A6		A8		A2
Terminal screw				M4		M5		
Tightening torque		EN 60947-1		1.2 Nm		3 Nm		0.8 Nm
		UL 508		7 in-lb (0.8 Nm)		32 in-lb (3.6 Nm)		12 in-lb (1.3 Nm)
Connection Cross-section								
Flexible conductors		mm^2		1.5-10		6-25		1-2.5
		AWG		12-8		10-2		18-12
Solid conductors		mm^2		1.5-10		10-25		1-2.5
		AWG		12-8		10-2		18-12
Opening angles				90°				-
Mechanical life 120 operations per hour mil/cl				100,000				1,500,000

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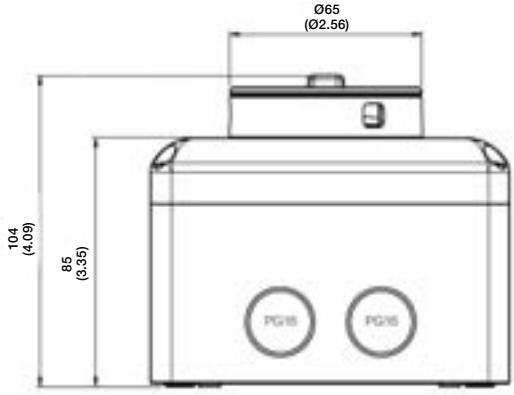
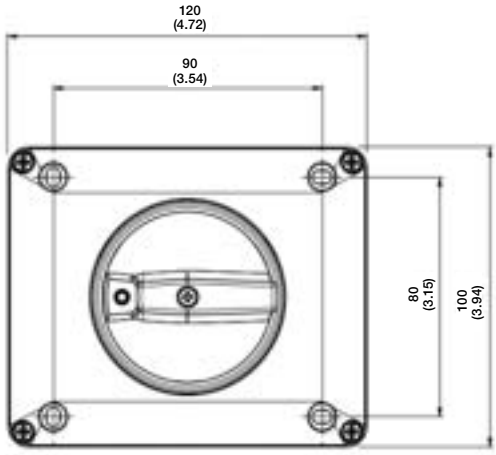
Enclosed Disconnect Switches

MSWB Series – Enclosed Disconnect Switches

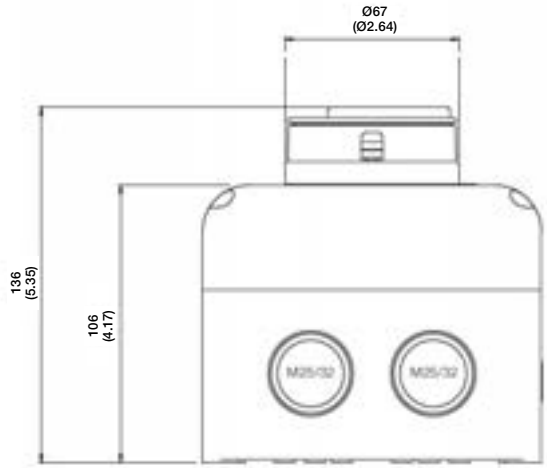
Dimensions – mm (inch)

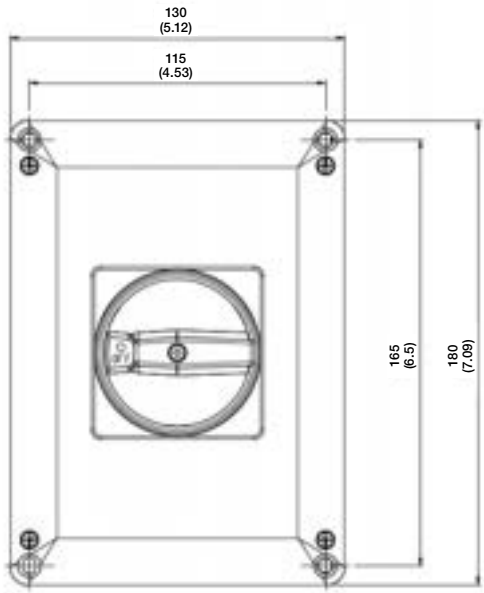
MSWB 25 B3 / MSWB 40 B3





MSWB 63 B3 / MSWB 80 B3





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MPW Series – Manual Motor Protectors

The WEG MPW Series Manual Motor Protectors provide a very compact solution for operation and protection in motor control applications. The NEC requires four functions to be considered a combination motor starter: Motor Disconnect, Branch Circuit Protection, Motor Controller and Motor Overload Protection. The WEG MPW meets all of these requirements, and the requirements of UL for Self-Protected Motor Controllers to be used in Type E and Type F applications. With worldwide approvals the WEG MPW can be used in a variety of applications all over the world.

UL File No. E172121

Standard Features

- Short-circuit interrupt ratings up to 50 kA at 480V (100 kA with accessory)
- Phase loss protection
- Adjustable thermal trip setting
- Suitable for motor disconnect applications
- Group motor installations (per NEC Article 430)
- Wide variety of accessories
- Rated for DC applications

Learn More Online

MPW Catalog Number Sequence

MPW	18	-	3	-	U004

Manual Motor Protector Series
MPW: Manual Motor Protectors

Frame Size
18: to use with CWC07...025, CWM9...18 & CWB9...18
40: to use with CWC07...025, CWM9...40 & CWB9...40
80: to use with CWM50...80 & CWB50...80
100: to use with CWM80...105 & CWB80...110

Power Poles
3: Three Power Poles

Overload Current Setting

C016: 0.10 - 0.16 A	**U018**: 12 - 18 A
C025: 0.16 - 0.25 A	**U020**: 16 - 20 A
D004: 0.25 - 0.40 A	**U025**: 20 - 25 A
C063: 0.40 - 0.63 A	**U032**: 25 - 32 A
U001: 0.63 - 1.0 A	**U040**: 32 - 40 A
D016: 1.0 - 1.6 A	**U050**: 40 - 50 A
D025: 1.6 - 2.5 A	**U065**: 50 - 65 A
U004: 2.5 - 4.0 A	**U075**: 55 - 75 A
D063: 4.0 - 6.3 A	**U090**: 70 - 90 A
U010: 6.3 - 10 A	**U100**: 80 - 100 A
U016: 10 - 16 A	

Chart intended as reference only and not to create part numbers.
For more details refer to selection table for each frame size.

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Motor Protectors

MPW Series – Manual Motor Protectors

MPW18 – Product Selection

- Suitable for manual motor controller and group installation
- Built-in protection: disconnect means, short-circuit protection, motor-control and overload protection
- Short-circuit interrupting capacity up to 50 kA at 480 VAC (10 kA at 600 VAC)
- Fixed short-circuit release 13 x Iu
- Phase loss sensitivity
- Ambient temperature compensation -40...+140°F (-20...+60°C)

Maximum UL Horsepower						Thermal Setting (A)	Short-Circuit Interruption Capacity		Catalog Number	List Price	Multiplier
Single-Phase		Three-Phase									
115V	230V	200V	230V	460V	575V		480V	600V			
-	-	-	-	-	-	0.10 - 0.16	50 kA	10 kA	MPW18-3-C016	$97	Z4
-	-	-	-	-	-	0.16 - 0.25	50 kA	10 kA	MPW18-3-C025	$97	
-	-	-		-	-	0.25 - 0.40	50 kA	10 kA	MPW18-3-D004	$97	
-	-	-	-	-	-	0.40 - 0.63	50 kA	10 kA	MPW18-3-C063	$105	
-	-	-	-	-	1/2	0.63 - 1.0	50 kA	10 kA	MPW18-3-U001	$105	
-	1/10	-	-	3/4	3/4	1.0 - 1.6	50 kA	10 kA	MPW18-3-D016	$105	
-	1/6	1/2	1/2	1	1 1/2	1.6 - 2.5	50 kA	10 kA	MPW18-3-D025	$105	
1/8	1/3	3/4	3/4	2	3	2.5 - 4.0	50 kA	10 kA	MPW18-3-U004	$105	
1/4	1/2	1	1 1/2	3	5	4.0 - 6.3	50 kA	10 kA	MPW18-3-D063	$105	
1/2	1 1/2	2	3	5	7 1/2	6.3 - 10	50 kA	5 kA	MPW18-3-U010	$125	
1	2	3	5	10	10	10 - 16	30 kA	5 kA	MPW18-3-U016	$125	
1	3	5	5	10	15	12 - 18	30 kA	5 kA	MPW18-3-U018	$145	

Notes: Horsepower ratings shown in the table are for reference only. Please refer to the Full Load Amps of the Motor for final selection.

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Accessories for MPW18 – Summary

Description	Catalog Number	List Price	Multiplier
Auxiliary Contact Blocks			
1NO & 1NC auxiliary contact block front mounting – 250V max	ACBF-11	$20	Z4
1NO & 1NC auxiliary contact block left side mounting – 600V max	ACBS-11	$22	
2NO Auxiliary contact block left side mounting – 600V max	ACBS-20	$22	
2NC Auxiliary contact block left side mounting – 600V max	ACBS-02	$22	
Link Modules			
Mechanical and electrical link module for CWB9...38 AC coil	ECCMP-18B38	$20	Z4
Mechanical and electrical link module for CWC07...16 AC coil	ECCMP-C016	$20	
Mechanical and electrical link module for CWC025 miniature contactor series	ECCMP-C025	$20	
Accessories for Group Motor Installation [1]			
Three-Phase Line Side Feeder Terminal	FTBBSP	$35	Z4
Busbar system 45 mm (for 2 MPW without side mounting auxiliary contacts)	BBSP45-2	$32	
Busbar system 45 mm (for 3 MPW without side mounting auxiliary contacts)	BBSP45-3	$35	
Busbar system 45 mm (for 4 MPW without side mounting auxiliary contacts)	BBSP45-4	$45	
Busbar system 45 mm (for 5 MPW without side mounting auxiliary contacts)	BBSP45-5	$60	
Busbar system 54 mm (for 2 MPW with side mounting auxiliary contacts)	BBSP54-2	$32	
Busbar system 54 mm (for 3 MPW with side mounting auxiliary contacts)	BBSP54-3	$35	
Busbar system 54 mm (for 4 MPW with side mounting auxiliary contacts)	BBSP54-4	$45	
Busbar system 54 mm (for 5 MPW with side mounting auxiliary contacts)	BBSP54-5	$60	
Shroud for unused terminals of BBS bars	CSDP	$10 [2]	
Undervoltage and Shunt Release Blocks			
Shunt release block right side mounting – 20-24V 50/60 Hz	SRMP D51	$56	Z4
Shunt release block right side mounting – 100-127V 50/60 Hz	SRMP D59	$56	
Shunt release block right side mounting – 200-240V 50/60 Hz	SRMP D65	$56	
Undervoltage release block right side mounting – 24V 60 Hz	URMP V05	$56	
Undervoltage release block right side mounting – 120V 60 Hz	URMP V18	$56	
Undervoltage release block right side mounting – 208V 60 Hz	URMP V23	$56	
Undervoltage release block right side mounting – 240V 60 Hz	URMP V30	$56	
Undervoltage release block right side mounting – 480V 60 Hz	URMP V47	$56	
Other Accessories			
Scale cover protection for the current range adjustment – package with 5 units	SCMP	$5	Z4
Lugs for panel mounting – package with 2 pieces (one MPW mounting)	PLMP	$0.50	

Notes:
1) Maximum amps of each busbar system (BBS) must not be exceeded by adding multiple MPW. Busbar capacity is 63A.
2) List price is for packaged quantity. Product sold in packages of 10 pieces.

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Motor Protectors

MPW Series – Manual Motor Protectors

MPW40 – Product Selection

- Suitable for manual motor controller, group installation, tap conductor and combination starters* Type E and Type F
- Built-in protection: disconnect means, short-circuit protection, motor control and overload protection
- Short-circuit interrupting capacity up to 50 kA at 480 VAC (25 kA at 600 VAC)
- Fixed short-circuit release 13 x Iu
- Phase loss sensitivity
- Ambient temperature compensation -4…+140°F (-20…+60°C)

** When associated with line side terminal (LST25) and trip indicator (TSB).*

Maximum UL Horsepower						Thermal Setting (A)	Short-Circuit Ratings for Group Installation		Catalog Number	List Price	Multiplier
Single-Phase		Three-Phase									
115V	230V	200V	230V	460V	575V		480V	600V			
-	-	-	-	-	-	0.10 - 0.16	50 kA	25 kA	MPW40-3-C016	$116	
-	-	-	-	-	-	0.16 - 0.25	50 kA	25 kA	MPW40-3-C025	$116	
-	-	-	-	-	-	0.25 - 0.40	50 kA	25 kA	MPW40-3-D004	$116	
-	-	-	-	-	1/4	0.40 - 0.63	50 kA	25 kA	MPW40-3-C063	$137	
-	-	-	-	1/2	1/2	0.63 - 1.0	50 kA	25 kA	MPW40-3-U001	$137	
-	1/10	1/4	1/3	3/4	1	1.0 - 1.6	50 kA	25 kA	MPW40-3-D016	$137	
-	1/6	1/2	1/2	1 1/2	1 1/2	1.6 - 2.5	50 kA	25 kA	MPW40-3-D025	$137	
1/8	1/3	3/4	1	2	3	2.5 - 4.0	50 kA	25 kA	MPW40-3-U004	$137	Z4
-	3/4	1 1/2	1 1/2	5	5	4.0 - 6.3	50 kA	25 kA	MPW40-3-D063	$137	
1/2	1 1/2	3	3	7 1/2	10	6.3 - 10	50 kA	25 kA	MPW40-3-U010	$137	
1	3	5	5	10	15	10 - 16	50 kA	25 kA	MPW40-3-U016	$150	
1 1/2	3	5	7 1/2	15	20	16 - 20	50 kA	25 kA	MPW40-3-U020	$165	
2	3	7 1/2	7 1/2	15	20	20 - 25	50 kA	25 kA	MPW40-3-U025	$195	
-	5	10	10	20	25	25 - 32	42 kA	25 kA	MPW40-3-U032	$210	
-	5	10	10	25	30	32 - 40	20 kA	--	MPW40-3-U040	$250	

Notes: Horsepower ratings shown in the table are for reference only. Please refer to the Full Load Amps of the Motor for final selection.

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MPW40 with Current Limiter – Product Selection

- Suitable for manual motor controller, group installation, tap conductor and combination starters* Type E and Type F
- Built-in protection: disconnect means, short-circuit protection, motor control and overload protection
- Short-circuit interrupting capacity up to 100 kA at 480 VAC (50 kA at 600 VAC)
- Fixed short-circuit release 13 x Iu
- Phase loss sensitivity
- Ambient temperature compensation -4…+140°F (-20…+60°C)

** When associated with line side terminal (LST25) and trip indicator (TSB).*

Maximum UL Horsepower						Thermal Setting	Short-Circuit Interrupting Capacity		Individual Component Catalog Number [1]				Multiplier
Single-Phase		Three-Phase							Manual Motor Protector	List Price	Current Limiter	List Price	
115V	230V	200V	230V	460V	575V	(A)	480V	600V					
-	-	-	-	-	-	0.10 - 0.16	100 kA	50 kA	MPW40-3-C016	$116	CLT32 MPW40	$100	Z4
-	-	-	-	-	-	0.16 - 0.25	100 kA	50 kA	MPW40-3-C025	$116	CLT32 MPW40	$100	
-	-	-	-	-	-	0.25 - 0.40	100 kA	50 kA	MPW40-3-D004	$116	CLT32 MPW40	$100	
-	-	-	-	-	1/4	0.40 - 0.63	100 kA	50 kA	MPW40-3-C063	$137	CLT32 MPW40	$100	
-	-	-	-	1/2	1/2	0.63 - 1.0	100 kA	50 kA	MPW40-3-U001	$137	CLT32 MPW40	$100	
-	1/10	1/4	1/3	3/4	1	1.0 - 1.6	100 kA	50 kA	MPW40-3-D016	$137	CLT32 MPW40	$100	
-	1/6	1/2	1/2	1 1/2	1 1/2	1.6 - 2.5	100 kA	50 kA	MPW40-3-D025	$137	CLT32 MPW40	$100	
1/8	1/3	3/4	1	2	3	2.5 - 4.0	100 kA	50 kA	MPW40-3-U004	$137	CLT32 MPW40	$100	
1/4	3/4	1 1/2	1 1/2	5	5	4.0 - 6.3	100 kA	50 kA	MPW40-3-D063	$137	CLT32 MPW40	$100	
1/2	1 1/2	3	3	7 1/2	10	6.3 - 10	100 kA	50 kA	MPW40-3-U010	$137	CLT32 MPW40	$100	
1	3	5	5	10	15	10 - 16	100 kA	50 kA	MPW40-3-U016	$150	CLT32 MPW40	$100	
1 1/2	3	5	7 1/2	15	20	16 - 20	100 kA	50 kA	MPW40-3-U020	$165	CLT32 MPW40	$100	
2	3	7 1/2	7 1/2	15	20	20 - 25	100 kA	50 kA	MPW40-3-U025	$195	CLT32 MPW40	$100	
-	5	10	10	20	25	25 - 32	100 kA	50 kA	MPW40-3-U032	$210	CLT32 MPW40	$100	

Horsepower ratings shown in the table are for reference only. Please refer to the Full Load Amps of the Motor for final selection. For components for an E or F style starter see pages 106 and 107.

Notes:
1) Individual Component Catalog Numbers are ordered separately.

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Motor Protectors

MPW Series – Manual Motor Protectors

Accessories for MPW40 – Summary

Description	Catalog Number	List Price	Multiplier
Auxiliary Contact Blocks			
1NO & 1NC auxiliary contact block front mounting – 250V max	ACBF-11	$20	Z4
1NO & 1NC auxiliary contact block left side mounting – 600V max	ACBS-11	$22	
2NO Auxiliary contact block left side mounting – 600V max	ACBS-20	$22	
2NC Auxiliary contact block left side mounting – 600V max	ACBS-02	$22	
Accessories for Combination Type E Construction			
Line power terminal	LST25	$42	Z4
Trip Signaling and Alarm Contact Block (1NO & 1NC for Short-circuit and 1NO & 1NC for Overload)	TSB	$38	
Current Limiter			
Current Limiter	CLT32 MPW40	$100	Z4
Link Modules			
Mechanical and electrical link module for CWC07... CWC016 miniature contactor series	ECCMP-C0	$20	Z4
Mechanical and electrical link module for CWM9…CWM25 contactor series	ECCMP-25	$20	
Mechanical and electrical link module for CWM32…CWM40 contactor series	ECCMP-32	$25	
Mechanical and electrical link module for CWB9…CWB38 contactor series	ECCMP-40B38	$25	
Mechanical and electrical link module for CWB9…CWB38 DC coil contactor series	ECCMP-40B38DC	$25	
Accessories for Group Motor Installation[1]			
Income power terminal for busbar system	FTBBSP	$35	Z4
Busbar system 45 mm (for 2 MPW without side mounting auxiliary contacts)	BBSP45-2	$32	
Busbar system 45 mm (for 3 MPW without side mounting auxiliary contacts)	BBSP45-3	$35	
Busbar system 45 mm (for 4 MPW without side mounting auxiliary contacts)	BBSP45-4	$45	
Busbar system 45 mm (for 5 MPW without side mounting auxiliary contacts)	BBSP45-5	$60	
Busbar system 54 mm (for 2 MPW with side mounting auxiliary contacts)	BBSP54-2	$32	
Busbar system 54 mm (for 3 MPW with side mounting auxiliary contacts)	BBSP54-3	$40	
Busbar system 54 mm (for 4 MPW with side mounting auxiliary contacts)	BBSP54-4	$45	
Busbar system 54 mm (for 5 MPW with side mounting auxiliary contacts)	BBSP54-5	$60	
Shroud for unused terminals of BBS bars	CSDP	$10[2]	
Through-the-door Rotary Mechanisms			
Rotary NEMA 1 Through the Door Mechanism – gray / black handle with 130 mm shaft	RMMP-130	$70	Z4
Rotary NEMA 1 Through the Door Mechanism – yellow / red handle with 130 mm shaft	RMMP-130E	$70	
Rotary NEMA 1 Through the Door Mechanism – gray / black handle with 330 mm shaft	RMMP-330	$85	
Rotary NEMA 1 Through the Door Mechanism – yellow / red handle with 330 mm shaft	RMMP-330E	$85	
Rotary NEMA 4X Through the Door Mechanism – gray / black handle with 130 mm shaft	MRX-130	$105	
Rotary NEMA 4X Through the Door Mechanism – yellow / red handle with 130 mm shaft	MRX-130E	$105	
Rotary NEMA 4X Through the Door Mechanism – gray / black handle with 330 mm shaft	MRX-330	$115	
Rotary NEMA 4X Through the Door Mechanism – yellow / red handle with 330 mm shaft	MRX-330E	$115	
Undervoltage and Shunt Release Blocks			
Shunt release block right side mounting – 20-24V 50/60 Hz	SRMP D51	$56	Z4
Shunt release block right side mounting – 100-127V 50/60 Hz	SRMP D59	$56	
Shunt release block right side mounting – 200-240V 50/60 Hz	SRMP D65	$56	
Undervoltage release block right side mounting – 24V 60 Hz	URMP V05	$56	
Undervoltage release block right side mounting – 120V 60 Hz	URMP V18	$56	
Undervoltage release block right side mounting – 208V 60 Hz	URMP V23	$56	
Undervoltage release block right side mounting – 240V 60 Hz	URMP V30	$56	
Undervoltage release block right side mounting – 480V 60 Hz	URMP V47	$56	
IEC Enclosures			
IEC IP55 enclosure yellow / red handle (non-UL)	PE55GN-E	$45	Z4
IEC IP55 enclosure + lateral auxiliary device yellow / red handle (non-UL)	LPE55GN-E	$55	
IEC IP55 enclosure gray / black handle (non-UL)	PE55GN	$45	
IEC IP55 enclosure + lateral auxiliary device gray / black handle (non-UL)	LPE55GN	$55	
Other Accessories			
Scale cover protection for the current range adjustment – package with 5 units	SCMP	$5	Z4
Lugs for panel mounting – package with 2 pieces (one MPW mounting)	PLMP	$0.50	

Notes:
1) Maximum amps of each busbar system (BBS) must not be exceeded by adding multiple MPW. Busbar capacity is 63A.
2) List price is for packaged quantity. Product sold in packages of 10 pieces.

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MPW80 – Product Selection

- Suitable for manual motor controller, group installation, tap conductor and combination starters* Type E and Type F
- Built-in protection: disconnect means, short-circuit protection, motor control and overload protection
- Short-circuit interrupting capacity up to 35 kA at 480 VAC (10 kA at 600 VAC)
- Fixed short-circuit release 13 x Iu
- Phase loss sensitivity
- Ambient temperature compensation -4…+140°F (-20…+60°C)

**When associated with line side terminal (LST65) and Trip indicator (TSB)*

Maximum UL Horsepower						Thermal Setting (A)	Short-Circuit Interrupting Capacity		Catalog Number	List Price	Multiplier
Single-Phase		Three-Phase									
115V	230V	200V	230V	460V	575V		480V	600V			
3	7 1/2	-	15	25	30	32 ... 40	35 kA	10 kA	MPW80-3-U040	$380	
-	10	15	15	30	40	40 ... 50	35 kA	10 kA	MPW80-3-U050	$380	Z4
5	10	20	20	50	60	50 ... 65	35 kA	10 kA	MPW80-3-U065	$380	

Horsepower ratings shown in the table are for reference only. Please refer to the Full Load Amps of the Motor for final selection.
For components for an E or F style starter see pages 106 and 107.

MPW100 – Product Selection

- Suitable for manual motor controller, group installation, tap conductor and combination starters* Type E and Type F
- Built-in protection: disconnect means, short-circuit protection, motor control and overload protection
- Short-circuit interrupting capacity up to 50 kA at 480 VAC (10 kA at 600 VAC)
- Fixed short-circuit release 13 x Iu
- Phase loss sensitivity
- Ambient temperature compensation -4…+140°F (-20…+60°C)

**When associated with line side terminal (IB MPW100) and Trip indicator (TSB AT11 MPW100)*

Maximum UL Horsepower [3]						Thermal Setting (A)	Short-Circuit Interrupting Capacity		Catalog Number	List Price	Multiplier
Single-Phase		Three-Phase									
115V	230V	200V	230V	460V	575V		480V	600V			
5	15	20	25	50	60	55 ... 75	50 kA	10 kA	MPW100-3-U075	$665	
7 1/2	20	25	30	60	75	70 ... 90	50 kA	10 kA	MPW100-3-U090	$720	Z4
10	20	30	30	75	100	80 ... 100	50 kA	10 kA	MPW100-3-U100	$720	

Horsepower ratings shown in the table are for reference only. Please refer to the Full Load Amps of the Motor for final selection.
For components for an E or F style starter see pages 106 and 107.

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Motor Protectors

MPW Series – Manual Motor Protectors

Accessories for MPW80 – Summary

Description	Catalog Number	List Price	Multiplier
Auxiliary Contact Blocks			
1NO & 1NC auxiliary contact block front mounting – 250V max	ACBF-11	$20	Z4
1NO & 1NC auxiliary contact block left side mounting – 600V max	ACBS-11	$22	
2NO Auxiliary contact block left side mounting – 600V max	ACBS-20	$22	
2NC Auxiliary contact block left side mounting – 600V max	ACBS-02	$22	
Accessories for Combination Type E Construction			
Line power terminal (for MPW80-3-U040 to MPW80-3-U065)	LST65	$85	Z4
Trip Signaling and Alarm Contact Block (1NO & 1NC for Short-circuit and 1NO & 1NC)	TSB	$38	
Trip Signaling and Alarm Contact Block (1NO & 1NC for Short-circuit or Overload)	TSB AT-11 MPW100	$38	
Through-the-door Rotary Mechanisms			
Rotary NEMA 4X Through the Door Mechanism – black / red handle with 130 mm shaft	MRX65-130	$120	Z4
Rotary NEMA 4X Through the Door Mechanism – yellow / red handle with 130 mm shaft	MRX65-130E	$120	
Rotary NEMA 4X Through the Door Mechanism – black / red handle with 330 mm shaft	MRX65-330	$130	
Rotary NEMA 4X Through the Door Mechanism – yellow / red handle with 330 mm shaft	MRX65-330E	$130	
Undervoltage and Shunt Release Blocks			
Shunt release block right side mounting – 20-24V 50/60 Hz	SRMP D51	$56	Z4
Shunt release block right side mounting – 100-127V 50/60 Hz	SRMP D59	$56	
Shunt release block right side mounting – 200-240V 50/60 Hz	SRMP D65	$56	
Undervoltage release block right side mounting – 24V 60 Hz	URMP V05	$56	
Undervoltage release block right side mounting – 120V 60 Hz	URMP V18	$56	
Undervoltage release block right side mounting – 208V 60 Hz	URMP V23	$56	
Undervoltage release block right side mounting – 240V 60 Hz	URMP V30	$56	
Undervoltage release block right side mounting – 480V 60 Hz	URMP V47	$56	
Other Accessories			
Scale cover protection for the current range adjustment – package with 5 units	SCMP	$5	Z4
Lugs for panel mounting – package with 2 pieces (one MPW mounting)	PLMP	$0.50	

Accessories for MPW100 – Summary

Description	Catalog Number	List Price	Multiplier
Auxiliary Contact Blocks			
1NO & 1NC auxiliary contact block front mounting – 250V max	ACBF-11 MPW100	$35	Z4
1NO & 1NC auxiliary contact block left side mounting – 600V max	ACBS-11 MPW100	$27	
2NO Auxiliary contact block left side mounting – 600V max	ACBS-20 MPW100	$27	
2NC Auxiliary contact block left side mounting – 600V max	ACBS-02 MPW100	$27	
Accessories for Combination Type E Construction			
Insulators	IB MPW100	$30	Z4
Trip Signaling and Alarm Contact Block (1NO & 1NC for Short-circuit)	TSB SC-11 MPW100	$38	
Trip Signaling and Alarm Contact Block (1 NO& 1NC for Short-circuit or Overload)	TSB AT-11 MPW100	$38	
Through-the-door Rotary Mechanisms			
Rotary NEMA 1 Through the Door Mechanism – gray / black handle with 115 mm shaft	MR MPW100-115	$100	Z4
Rotary NEMA 1 Through the Door Mechanism – gray / black handle with 315 mm shaft	MR MPW100-315	$115	
Rotary NEMA 4X Through the Door Mechanism – gray / black handle with 130 mm shaft	MRX100-130	$130	
Rotary NEMA 4X Through the Door Mechanism – yellow / red handle with 130 mm shaft	MRX100-130E	$130	
Undervoltage and Shunt Release Blocks			
Shunt release block right side mounting – 120V 50/60 Hz	SRMP V18 MPW100	$56	Z4
Shunt release block right side mounting – 240-260V 60 Hz	SRMP V33 MPW100	$56	
Undervoltage release block right side mounting – 120V 60 Hz	URMP V18 MPW100	$56	
Undervoltage release block right side mounting – 240V 60 Hz	URMP V33 MPW100	$56	
Undervoltage release block right side mounting – 460V 60 Hz	URMP V43 MPW100	$56	

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WEG's Combination Motor Controllers

Combination motor controllers are devices or assemblies of components which perform the functions required by the US National Electric Code (NEC) for motor protection and control. These required functions are motor disconnect, short-circuit protection, control means, and overload protection. UL has established standards for the construction of various combination motor controllers which meet these requirements. When used in these tested configurations, specified ratings (such as the short-circuit rating) of the combined components may be used as an alternative to the individual ratings of each component.

The original standard which governed combination motor controllers was UL 508. UL 60947-4-1 was released in 2007 to harmonize with the international IEC 60947-4-1 standard. Since 2017, all new combination motor controllers must be tested according to UL 60947-4-1 in place of UL 508. Configurations tested to UL 508 standards prior to 2017 retain their certifications granted that no changes have been made that would necessitate re-evaluation. The current evaluations for WEG combination motor controllers were performed to the standards set by UL 508.

Construction Types A through D are traditional starters that use either a listed disconnect switch and fuses or a listed circuit breaker as the disconnect means and short circuit protection. Each type uses a separate UL 60947-4-1 or UL 508 listed motor controller and overload relay for a total of three or four discrete components per combination.

Type E starters are self-protected combination motor controllers that combine all the required functions of a combination starter and eliminates any additional requirements for upstream fuses or circuit breakers. These starters clear faults within their rating without sustaining damage to themselves or the rest of the system. Type E configurations without a magnetic controller function are referred to as manual self-protected combination motor controllers.

The WEG Manual Self-Protected Combination Motor Controller Type E is composed of a MPW Manual Motor Protector, a LST Line Side Terminal, and a TSB Tripping Indicator. Extra-high interruption capacity combinations also include the CLT Current Limiter. The LST line side terminals are required to meet the spacing requirements for line side terminations. The TSB tripping indicator is required to meet the UL 508 requirements for differentiation between thermal and magnetic trip.

Type F starter consists of a listed manual Type E combined with a UL 60947-4-1 or UL 508 listed contactor. Type F has softened required test sequences compared to the Type E which allows for damage to the contactor after a fault.

The WEG Combination Motor Controller Type F includes the same materials as a tested Type E combination along with a CWB or CWM contactor for remote operation. The ECCMP connector modules are permissible in the combination but not required. This combination motor controller is also available as an enclosed product in our ESWE line.

Included in the WEG line of UL enclosed starters is a NEMA 4X enclosed Type E Starter – ESWE – featuring as standard a handle for disconnect means through the door and a contactor for remote operation. Provisions for control circuit transformer installation as well as pilot lights are also included.

<table>
<tr><th rowspan="2">Combination Motor Controller Type</th><th colspan="4">Device Used for Component Function</th></tr>
<tr><th>Disconnect</th><th>Branch Circuit Protection</th><th>Motor Controller</th><th>Motor Overload Protection</th></tr>
<tr><td>A</td><td>UL 98 or UL 489 Manual Disconnect</td><td>UL 248 Fuses</td><td rowspan="3">UL 508 / UL 60947-4-1 Magnetic or Solid State Controller</td><td rowspan="3">UL 508 / UL 60947-4-1 Motor Overload Relay</td></tr>
<tr><td>C</td><td colspan="2">UL 489 Inverse Time Circuit Breaker</td></tr>
<tr><td>D</td><td colspan="2">UL 489 Instantaneous Trip Circuit Breaker</td></tr>
<tr><td>E</td><td colspan="4">UL 508 / UL 60947-4-1 Self-protected Combination Controller</td></tr>
<tr><td>F</td><td colspan="2">UL 508 / UL 60947-4-1 Manual Self-protected Combination Controller</td><td>UL 508 / UL 60947-4-1 Magnetic or Solid State Controller</td><td>UL 508 / UL 60947-4-1 Manual Self-protected Combination Controller</td></tr>
</table>

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Motor Protectors

MPW Series – Manual Motor Protectors

Manual Self-Protected Combination Motor Controller Type E

- No need of upstream protective devices such as UL489 MCCB or UL248 fuses
- Built-in protections: disconnect means, short-circuit protection, motor control and over load protection
- Short-circuit interrupting capacity up to 100 kA at 480 VAC (50 kA at 600 VAC)
- Compact combination starter
- Phase loss sensitivity
- Ambient temperature compensation -4…+140°F (-20…+60°C)

High Interruption Capacity

Maximum UL Horsepower						Thermal Setting (A)	Short-Circuit Interruption Capacity	Individual Component Catalog Number[1]				
Single-Phase		Three-Phase						Manual Motor Protector	Line Side Terminal	Tripping Indicator	List Price	Multiplier
115V	230V	200V	230V	460V	575V		480V					
-	-	-	-	-	-	0.10 - 0.16	65 kA	MPW40-3-C016	LST25	TSB		
-	-	-	-	-	-	0.16 - 0.25	65 kA	MPW40-3-C025	LST25	TSB	$192	
-	-	-	-	-	-	0.25 - 0.40	65 kA	MPW40-3-D004	LST25	TSB		
-	-	-	-	-	1/4	0.40 - 0.63	65 kA	MPW40-3-C063	LST25	TSB		
-	-	-	-	1/2	1/2	0.63 - 1.0	65 kA	MPW40-3-U001	LST25	TSB		
-	1/10	1/4	1/3	3/4	1	1.0 - 1.6	65 kA	MPW40-3-D016	LST25	TSB		
-	1/6	1/2	1/2	1 1/2	1 1/2	1.6 - 2.5	65 kA	MPW40-3-D025	LST25	TSB	$213	
1/8	1/3	3/4	1	2	3	2.5 - 4.0	65 kA	MPW40-3-U004	LST25	TSB		
1/4	3/4	1 1/2	1 1/2	5	5	4.0 - 6.3	65 kA	MPW40-3-D063	LST25	TSB		
1/2	1 1/2	3	3	7 1/2	10	6.3 - 10	65 kA	MPW40-3-U010	LST25	TSB		
1	3	5	5	10	15	10 - 16	65 kA	MPW40-3-U016	LST25	TSB	$245	Z4
1 1/2	3	5	7 1/2	15	20	16 - 20	50 kA	MPW40-3-U020	LST25	TSB		
2	3	7 1/2	7 1/2	15	20	20 - 25	50 kA	MPW40-3-U025	LST25	TSB	$275	
-	5	10	10	20	25	25 - 32	42 kA	MPW40-3-U032	LST25	TSB	$290	
3	7 1/2	-	15	25	30	32 - 40	30 kA	MPW80-3-U040	LST25	TSB		
-	10	15	15	30	40	40 - 50	30 kA	MPW80-3-U050	LST25	TSB	$503	
5	10	20	20	50	60	50 - 65	30 kA	MPW80-3-U065	LST25	TSB		
5	15	20	25	50	60	55 - 75	50 kA	MPW100-3-U075	IB MPW100	TSB SC-11 MPW100	$733	
7 1/2	20	25	30	60	75	70 - 90	50 kA	MPW100-3-U090	IB MPW100	TSB SC-11 MPW100	$788	
10	20	30	30	75	100	80 - 100	50 kA	MPW100-3-U100	IB MPW100	TSB SC-11 MPW100		

Extra-High Interruption Capacity

Maximum UL Horsepower						Thermal Setting (A)	Short-Circuit Interruption Capacity	Individual Component Catalog Number[1]					
Single-Phase		Three-Phase						Manual Motor Protector	Current Limiter	Line Side Terminal	Tripping Indicator	List Price	Multiplier
115V	230V	200V	230V	460V	575V		480V						
-	-	-	-	-	-	0.10 - 0.16	100 kA	MPW40-3-C016	CLT32 MPW40	LST25	TSB		
-	-	-	-	-	-	0.16 - 0.25	100 kA	MPW40-3-C025	CLT32 MPW40	LST25	TSB	$292	
-	-	-	-	-	-	0.25 - 0.40	100 kA	MPW40-3-D004	CLT32 MPW40	LST25	TSB		
-	-	-	-	-	1/4	0.40 - 0.63	100 kA	MPW40-3-C063	CLT32 MPW40	LST25	TSB		
-	-	-	-	1/2	1/2	0.63 - 1.0	100 kA	MPW40-3-U001	CLT32 MPW40	LST25	TSB		
-	1/10	1/4	1/3	3/4	1	1.0 - 1.6	100 kA	MPW40-3-D016	CLT32 MPW40	LST25	TSB		
-	1/6	1/2	1/2	1 1/2	1 1/2	1.6 - 2.5	100 kA	MPW40-3-D025	CLT32 MPW40	LST25	TSB	$313	
1/8	1/3	3/4	1	2	3	2.5 - 4.0	100 kA	MPW40-3-U004	CLT32 MPW40	LST25	TSB		
1/4	3/4	1 1/2	1 1/2	5	5	4.0 - 6.3	100 kA	MPW40-3-D063	CLT32 MPW40	LST25	TSB		
1/2	1 1/2	3	3	7 1/2	10	6.3 - 10	100 kA	MPW40-3-U010	CLT32 MPW40	LST25	TSB		
1	3	5	5	10	15	10 - 16	100 kA	MPW40-3-U016	CLT32 MPW40	LST25	TSB	$345	Z4
1 1/2	3	5	7 1/2	15	20	16 - 20	100 kA	MPW40-3-U020	CLT32 MPW40	LST25	TSB		
2	3	7 1/2	7 1/2	15	20	20 - 25	100 kA	MPW40-3-U025	CLT32 MPW40	LST25	TSB	$375	
-	5	10	10	20	25	25 - 32	100 kA	MPW40-3-U032	CLT32 MPW40	LST25	TSB	$390	

Horsepower ratings shown in the table are for reference only. Please refer to the Full Load Amps of the Motor for final selection.

Notes:
1) Individual Component Catalog Numbers are ordered separately. Multiplier Z4.

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Combination Motor Controller Type-F

- No need of upstream protective devices such as UL489 MCCB or UL248 fuses
- Built-in protections: disconnect means, short-circuit protection, motor control and overload protection
- Short-circuit interrupting capacity up to 100 kA at 480 VAC (50 kA at 600 VAC)
- Compact combination starter
- Phase loss sensitivity
- Ambient temperature compensation -4…+140ºF (-20…+60ºC)
- Remote operation

High Interruption Capacity

Maximum UL Horsepower						Thermal Setting (A)	Short-Circuit Interruption Capacity	Individual Component Catalog Number[1]						
Single-Phase		Three-Phase						Manual Motor Protector	Line Side Terminal	Tripping Indicator	Connector Module	List Price[2]	Contactor	List Price
115V	230V	200V	230V	460V	575V		480V							
-	-	-	-	-	-	0.10 -0.16	65 kA	MPW40-3-C016	LST25	TSB	ECCMP-40B38		CWB9	
-	-	-	-	-	-	0.16 - 0.25	65 kA	MPW40-3-C025	LST25	TSB	ECCMP-40B38	$221	CWB9	
-	-	-	-	-	-	0.25 - 0.40	65 kA	MPW40-3-D004	LST25	TSB	ECCMP-40B38		CWB9	
-	-	-	-	-	1/4	0.40 - 0.63	65 kA	MPW40-3-C063	LST25	TSB	ECCMP-40B38		CWB9	
-	-	-	-	1/2	1/2	0.63 - 1.0	65 kA	MPW40-3-U001	LST25	TSB	ECCMP-40B38		CWB9	
-	1/10	1/4	1/3	3/4	1	1.0 - 1.6	65 kA	MPW40-3-D016	LST25	TSB	ECCMP-40B38		CWB9	$72[3]
-	1/6	1/2	1/2	1 1/2	1 1/2	1.6 - 2.5	65 kA	MPW40-3-D025	LST25	TSB	ECCMP-40B38	$242	CWB9	
1/8	1/3	3/4	1	2	3	2.5 - 4.0	65 kA	MPW40-3-U004	LST25	TSB	ECCMP-40B38		CWB9	
1/4	3/4	1 1/2	1 1/2	5	5	4.0 - 6.3	65 kA	MPW40-3-D063	LST25	TSB	ECCMP-40B38		CWB9	
1/2	1 1/2	3	3	7 1/2	10	6.3 - 10	65 kA	MPW40-3-U010	LST25	TSB	ECCMP-40B38		CWB9	
1	3	5	5	10	15	10 - 16	65 kA	MPW40-3-U016	LST25	TSB	ECCMP-40B38	$255	CWB18	$103[3]
1 1/2	3	5	7 1/2	15	20	16 - 20	50 kA	MPW40-3-U020	LST25	TSB	ECCMP-40B38	$270	CWB18	
2	3	7 1/2	7 1/2	15	20	20 - 25	42 kA	MPW40-3-U025	LST25	TSB	ECCMP-40B38	$300	CWB25	$140[3]
-	5	10	10	20	25	25 - 32	42 kA	MPW40-3-U032	LST25	TSB	ECCMP-40B38	$315	CWB32	$164[3]
3	7 1/2	-	15	25	30	32 - 40	30KA	MPW80-3-U040	LST65	TSB	ECCMP-80B80	$355	CWB50	$174[3]
-	10	15	15	30	40	40 - 50	30 kA	MPW80-3-U050	LST65	TSB	ECCMP-80B80	$503	CWB65	$215[3]
5	10	20	20	50	60	50 - 65	30 kA	MPW80-3-U065	LST65	TSB	ECCMP-80B80		CWB80	$261[3]
5	15	20	25	50	60	55 - 75	50 kA	MPW100-3-U075	IB MPW100	TSB AT-11 MPW100	-	$733	CWM95	$294[4]
7 1/2	20	25	30	60	75	70 - 90	50 kA	MPW100-3-U090	IB MPW100	TSB AT-11 MPW100	-	$708	CWM95	
10	20	30	30	75	100	80 - 100	50 kA	MPW100-3-U100	IB MPW100	TSB AT-11 MPW100	-		CWM105	$393[4]

Extra-High Interruption Capacity

Maximum UL Horsepower						Thermal Setting (A)	Short-Circuit Interruption Capacity	Individual Component Catalog Number[1]						
Single-Phase		Three-Phase						Manual Motor Protector	Current Limiter	Line Side Terminal	Tripping Indicator	List Price[2]	Contactor	List Price[3]
115V	230V	200V	230V	460V	575V		480V							
-	-	-	-	-	-	0.10 - 0.16	100 kA	MPW40-3-C016	CLT32 MPW40	LST25	TSB		CWB9	
-	-	-	-	-	-	0.16 - 0.25	100 kA	MPW40-3-C025	CLT32 MPW40	LST25	TSB	$296	CWB9	
-	-	-	-	-	-	0.25 - 0.40	100 kA	MPW40-3-D004	CLT32 MPW40	LST25	TSB		CWB9	
-	-	-	-	-	1/4	0.40 - 0.63	100 kA	MPW40-3-C063	CLT32 MPW40	LST25	TSB		CWB9	
-	-	-	-	1/2	1/2	0.63 - 1.0	100 kA	MPW40-3-U001	CLT32 MPW40	LST25	TSB		CWB9	
-	1/10	1/4	1/3	3/4	1	1.0 - 1.6	100 kA	MPW40-3-D016	CLT32 MPW40	LST25	TSB		CWB9	$72
-	1/6	1/2	1/2	1 1/2	1 1/2	1.6 - 2.5	100 kA	MPW40-3-D025	CLT32 MPW40	LST25	TSB	$317	CWB9	
1/8	1/3	3/4	1	2	3	2.5 - 4.0	100 kA	MPW40-3-U004	CLT32 MPW40	LST25	TSB		CWB9	
1/4	3/4	1 1/2	1 1/2	5	5	4.0 - 6.3	100 kA	MPW40-3-D063	CLT32 MPW40	LST25	TSB		CWB9	
1/2	1 1/2	3	3	7 1/2	10	6.3 - 10	100 kA	MPW40-3-U010	CLT32 MPW40	LST25	TSB		CWB9	
1	3	5	5	10	15	10 - 16	100 kA	MPW40-3-U016	CLT32 MPW40	LST25	TSB	$330	CWB18	
1 1/2	3	5	7 1/2	15	20	16 - 20	100 kA	MPW40-3-U020	CLT32 MPW40	LST25	TSB	$345	CWB18	$103
2	3	7 1/2	7 1/2	15	20	20 - 25	100 kA	MPW40-3-U025	CLT32 MPW40	LST25	TSB	$375	CWB25	$118
-	5	10	10	20	25	25 - 32	100 kA	MPW40-3-U032	CLT32 MPW40	LST25	TSB	$390	CWB32	$140

Horsepower ratings shown in the table are for reference only. Please refer to the Full Load Amps of the Motor for final selection.

Notes:
1) Individual Component Catalog Numbers are ordered separately.
2) Multiplier Symbol Z4
3) Multiplier Symbol ZB
4) CWM Multiplier Symbol Z1M

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Motor Protectors

MPW Series – Manual Motor Protectors

Accessories

Front Mounting Auxiliary Contact Block

For Use With		Auxiliary Contacts		Catalog Number	List Price	Multiplier
		NO	NC			
MPW18 MPW40 MPW80		1	1	ACBF-11	$20	Z4
MPW100				ACBF-11 MPW100	$35	Z4

Left Side Auxiliary Contact Block

For Use With		Auxiliary Contacts		Catalog Number	List Price	Multiplier
		NO	NC			
MPW18 MPW40 MPW80		1	1	ACBS-11	$22	Z4
		2	-	ACBS-20		
		-	2	ACBS-02		
MPW100		1	1	ACBS-11 MPW100	$27	Z4
		2	-	ACBS-20 MPW100		
		-	2	ACBS-02 MPW100		

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Accessories

Trip Signaling Block[1)]

For Use With		Description	Catalog Number	List Price	Multiplier
MPW40 MPW80		• Equipped with 2 auxiliary contacts (1NO + 1NC) for overload trip signaling and 2 other auxiliary contacts (1NO + 1NC) for short-circuit trip signaling. • To reset the MPW after a short-circuit, the blue flag must be manually reset after the cause of the failure has been solved. • Left side auxiliary contacts can be assembled together with the trip signaling block. • Left side assembly only	TSB	$38	Z4
MPW100		• Equipped with 2 auxiliary contacts (1NO + 1NC) for short-circuit or overload trip signaling • Left side assembly only	TSB AT-11 MPW100	$38	Z4
		• Equipped with 2 auxiliary contacts (1NO + 1NC) for short-circuit trip signaling. • Left side assembly only	TSB SC-11 MPW100	$38	Z4

Undervoltage Release

For Use With		Voltage	Catalog Number	List Price	Multiplier
MPW18 MPW40 MPW80		208V 60 Hz	URMP V23	$56	Z4
		24V 50/60 Hz	URMP D02	$56	Z4
		400-415V 50 Hz / 480V 60 Hz	URMP V47	$56	Z4
		110V 50 Hz / 120V 60 Hz	URMP V18	$56	Z4
		240V 60 Hz	URMP V30	$56	Z4
MPW100	Notes: • Operating voltage > 0.85 x Ue • Non-operating voltage 0.35...0.7 x Ue	110V 50 Hz / 120V 60 Hz	URMP V18 MPW100	$56	Z4
		220-230V 50 Hz / 240V 60 Hz	URMP V33 MPW100	$56	Z4
		380-400V 50 Hz / 460V 60 Hz	URMP V43 MPW100	$56	Z4

Shunt Release

For Use With		Voltage	Catalog Number	List Price	Multiplier
MPW18 MPW40 MPW80		20-24V 50/60 Hz	SRMP D51	$56	Z4
		100-127V 50/60 Hz	SRMP D59	$56	Z4
		200-240V 50/60 Hz	SRMP D65	$56	Z4
MPW100	Notes: • Operating voltage > 0.7 x Ue	110V 50 Hz / 120V 60 Hz	SRMP V18 MPW100	$56	Z4
		220-230V 50 Hz / 240-260V 60 Hz	SRMP V33 MPW100	$56	Z4

Notes:
1) Use of TSB limits the number of auxiliary contact blocks to only 1. Either ACBF or ACBS may be used. Both may not be used simultaneously with the use of a TSB.

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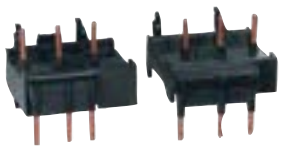
Motor Protectors

MPW Series – Manual Motor Protectors

Accessories

Connector Links for Motor Protectors MPW18 / 40 & Contactors CWC/CWM

For Use With		Description	Contactors	Catalog Number	List Price	Multiplier
MPW18		• For direct connection (electrical and mechanical) of motor circuit breakers to contactors. Notes: Not applicable to CWM contactors with DC coils.	CWC07…16	ECCMP-C016	$20	Z4
			CWC025	ECCMP-C025	$20	Z4
MPW40			CWC07…16	ECCMP-C0	$20	Z4
			CWM9…25	ECCMP-25	$20	Z4
			CWM32...40	ECCMP-32	$20	Z4

Connector Links for Motor Protectors MPW18/40/80 & Contactors CWB

For Use With		Description	Contactors	Catalog Number	List Price	Multiplier
MPW18		• For direct connection (electrical and mechanical) of motor circuit breakers to contactors.	CWB9...38 AC coil	ECCMP-18B38	$20	Z4
MPW40			CWB9...38 AC coil	ECCMP-40B38	$25	Z4
			CWB9...38 DC coil	ECCMP-40B38DC	$25	Z4
MPW80			CWB40...80 AC/ DC coil	ECCMP-80B80	$95	Z4

Standard IEC Enclosure – CE only (not UL)

For Use With		Description	Terminals	Handle Color	Catalog Number	List Price	Multiplier
MPW18		• Degree of protection: IP66 • Two cable entry knockouts, top and bottom • Allows installing: MPW18 + ACBF11/PL lamps + ACBS	With neutral and ground terminals	-	PE66GN	$45	Z4
MPW40		• Degree of protection: IP55 • Allows installing: MPW40 + ACBF11 + ACBS • Two cable entry knockouts, top and bottom • Handle can be locked with up to 3 padlocks at OFF position.	With neutral and ground terminals	Black	PE55GN	$45	Z4
				Red with yellow background	PE55GN-E	$45	Z4

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Accessories

Through-the-door Rotary Handle

For Use With		Description	Handle Color	Catalog Number	Price List	Multiplier
MPW40		• Degree of protection IP55/NEMA1; • Shows MPW position "I"(ON) or "O"(OFF); • Panel door can only be opened in OFF position; • Adjustable shaft length. There are 2 standard shaft sizes: 130-155 mm (Model 130) and 330-355 mm (Model 330). To assemble the handle on the MPW the shaft must have a length of at least 80 mm; • Up to 3 padlocks can be used in the OFF position. This blocks MPW operation and panel door opening; • Handle can be mounted on panels with	Gray/Black	RMMP-130	$70	Z4
				RMMP-330	$85	Z4
			Red/Yellow	RMMP-130E	$70	Z4
				RMMP-330E	$85	Z4
MPW100		• Degree of protection NEMA1; • Shows MPW position "I"(ON) or "O"(OFF); • Panel door can be opened at ON position (thermometry) by defeating mechanism; • Adjustable shaft length. There are 2 standard shaft sizes: 115 mm (Model 115) and 315 mm (Model 315). To assemble the handle to the MPW, the shaft must have a minimum length of at least 80 mm; • Up to 3 padlocks can be used in the OFF position. This blocks the MPW operation and opens panel door.	Gray/Black	MR MPW100-115	$100	Z4
			Gray/Black	MR MPW100-315	$115	Z4
MPW40		• Panel door can be opened in ON position (thermometry) by defeating mechanism. • Degree of protection: IP65/NEMA 4X • Shows MPW position "I"(ON) or "O"(OFF) • Adjustable shaft length. There are 2 standard shaft sizes: 130-155 mm (Model 130) and 330-355 mm (Model 330). To assemble the handle ON the MPW the shaft must have a length of at least 80 mm • Up to 3 padlocks can be used in the OFF position. This blocks MPW operation and opens panel door. Handle can be mounted on panels with thickness of 1 to 5 mm	Gray/Black	MRX-130	$105	Z4
				MRX-330	$115	Z4
			Red/Yellow	MRX-130E	$105	Z4
				MRX-330E	$115	Z4
MPW80			Gray/Black	MRX65-130	$120	Z4
				MRX65-330	$130	Z4
			Red/Yellow	MRX65-130E	$120	Z4
				MRX65-330E	$130	Z4
MPW100			Gray/Black	MRX100-130	$130	Z4
			Red/Yellow	MRX100-130-E	$130	Z4

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Motor Protectors

MPW Series – Manual Motor Protectors

Accessories

Large IEC Enclosure

For Use With		Description	Terminals	Handle Color	Catalog Number	List Price	Multiplier
MPW40		• Degree of protection: IP55 • For Use With MPW40 + URMP/SRMP + ACBF11 + ACBS • Two cable entry knockouts, top and bottom • Handle can be locked with up to 3 padlocks at OFF position.	With neutral and ground terminals	Black	LPE55GN	$55	Z4
				Red with yellow background	LPE55GN-E	$55	Z4

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Accessories

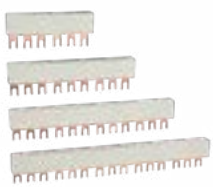
Insulators

For Use With		Description	Catalog Number	List Price	Multiplier
MPW100		• Plastic Insulators for increasing creepage distance and clearances according to UL requirements.	IB MPW100	$30	Z4

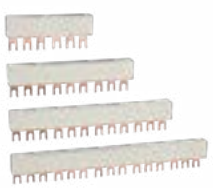
Three-Phase Feeder Terminal

For Use With		Description	Catalog Number	List Price	Multiplier
MPW18 MPW40		• For feeding the feeder terminals; • Rated insulation voltage: 690 VAC; • Rated operational current (Ie): 63A; • Terminals: 6-25 mm^2 rigid wire and 6-16 mm^2 flexible wire with terminal.	FTBBS	$35	Z4
MPW40		• Block module for “Type E” Combination motor Controller” in accordance with UL (LST25+MPW+TSB); • Rated insulation voltage: 690 VAC; • Rated operational current (Ie): 63A; • Terminals: 8-20AWG.	LST25	$42	Z4
MPW80		• Block module for “Type E” according to UL (LST65+MPW up to 65A+TSB); • Rated insulation voltage: 690 VAC; • Rated operational current (Ie): 120A; • Terminals: 4-8 AWG	LST65	$85	Z4

Three-Phase Feeder Terminals for MPW Without Side Auxiliary Contacts

For Use With		Description	Numbers of MPW	Catalog Number	List Price	Multiplier
MPW18 MPW40		• For parallel blocking of side-by-side mounted circuit breakers with screw terminal of the same model without side auxiliary contacts; • Enables the use of frontal auxiliary contact block ACBF-11; • Rated insulation voltage: 690 VAC; • Rated operational current (Ie): 63 A.	2	BBS45-2	$32	Z4
			3	BBS45-3	$35	Z4
			4	BBS45-4	$45	Z4
			5	BBS45-5	$60	Z4

Three-Phase Feeder Terminals for MPW With Side Auxiliary Contacts

For Use With		Description	Numbers of MPW	Catalog Number	List Price	Multiplier
MPW18 MPW40		• For parallel connection of circuit breakers with screw terminals of the same model mounted side-by-side; • Enables the use of side auxiliary contact block ACBS and ACBF mounted on each motor protective circuit breaker; • Rated insulation voltage: 690 VAC; • Rated operational current (Ie): 63 A.	2	BBS54-2	$32	Z4
			3	BBS54-3	$35	Z4
			4	BBS54-4	$45	Z4
			5	BBS54-5	$60	Z4

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Motor Protectors

MPW Series – Manual Motor Protectors

Accessories

Current Limiter

For Use With		Description	Catalog Number	List Price	Multiplier
MPW40		• For protecting electrical circuits where extra-high short- circuit breaking capacity is required: 100 kA at 480 VAC Notes: This accessory must be used together with a MPW motor protector.	CLT32 MPW40	$100	Z4

Shround for Unused Terminals

For Use With		Description	Catalog Number	List Price	Multiplier
BBS45 BBS54		• Protection against direct contact on unused terminals on energized BBS45 and BBS54 three-phase feeder terminals.	CSD	$10 [1)]	Z4

Scale Cover

For Use With		Description	Catalog Number	List Price	Multiplier
MPW18 MPW40 MPW80		• Protects the current adjustment dial against direct contact while enabling the set current to be viewed.	SCMP	$5	Z4

Panel Mounting Kit

For Use With		Description	Catalog Number	List Price	Multiplier
MPW18 MPW40 MPW80		• For direct mounting of manual motor protector onto any surface using screws.	PLMP	$0.50	Z4

Notes:
1) List price is for packaged quantity. Product sold in packages of 10 pieces.

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MPW18 Technical Data

General Ratings

Catalog Number		MPW18-3-C016	MPW18-3-C025	MPW18-3-D004	MPW18-3-C063	MPW18-3-U001	MPW18-3-D016	MPW18-3-D025
Standards		Devices according to International Standards IEC 60947-1 / 60947-4-1, European Standards EN 60947-1 / 60947-4-1, Underwriters Laboratories – UL 508; CSA C.22.2/14; VDE 0660/102						
Current setting range	A	0.10 - 0.16	0.16 - 0.25	0.25 - 0.40	0.40 - 0.63	0.63 - 1.0	1.0 - 1.6	1.6 - 2.5
Rated thermal current Ith	A	0.16	0.25	0.40	0.63	1.0	1.6	2.5
Rated Insulation Voltage Ui								
Acc. IEC; VDE 0660	V	690						
Acc. UL; CSA	V	600						
Rated Operating Voltage Ue								
Acc. IEC; VDE 0660	V	690						
Acc. UL; CSA	V	600						
Rated Impulse Voltage Uimp								
Acc. IEC60947-1	kV	6						
Rated operating frequency	Hz	50/60						
Overvoltage category		III						
Pollution degree		3						
Utilization Category								
IEC 60947-2 (motor protector)		A						
IEC 60947-4-1 (motor starter)		AC-3						
Lifespan								
Mechanical	ops	100,000						
Electrical (Ie max)	ops	100,000						
Switching rate (motor starts) AC-3	ops/hr	15						
Ambient Temperature								
Storage	°C (°F)	-50 to +80 (-58 to +176)						
Operating	°C (°F)	-20 to +60 (-4 to +140)						
Ambient temperature compensation	°C (°F)	-20 to +60 (-4 to +140)						
Climatic proofing		IEC 60068-2-3 / IEC 60068-2-30						
Altitude								
Up to 2,000 m (6,600 ft)		Nominal Values (for higher altitudes refer to page 131)						
Degree of protection		IP20						
Resistance to Shock								
Acc. IEC 60068-2-27	g	15						
Resistance to vibration		IEC 68-2						
Protection Against Direct Contact								
Acc. IEC 536; DIN VDE 0106 Part 100		Finger and back of hand proof						
Phase failure sensitivity protection		Yes						
Overload protection characteristics	x In: A	0.6 - 1						
Magnetic release	x In: A	13						
Overload trip class		10						
Total Power Loss PV								
At rated load operating temperature	W	6	6	6	6	6	6	6
Weight	kg (lb)	0.30 (0.70)						
Type of terminal		Flat Type						
Screwdriver		Philips #2						
Terminal Capacity								
Solid or stranded wire size		Refer to table on page 130						
Tightening torque	Nm (in-lb)	1.2 - 1.7 (11 - 16)						
Mounting position		Any Position						

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Motor Protectors

MPW Series – Manual Motor Protectors

MPW18 Technical Data

General Ratings

Catalog Number		MPW18-3-U004	MPW18-3-D063	MPW18-3-U010	MPW18-3-U016	MPW18-3-U018
Standards		Devices according to International Standards IEC 60947-1 / 60947-4-1, European Standards EN 60947-1 / 60947-4-1, Underwriters Laboratories – UL 508; CSA C.22.2/14; VDE 0660/102				
Current setting range	A	2.5 - 4.0	4.0 - 6.3	6.3 - 10	10 - 16	12 - 18
Rated thermal current Ith	A	4.0	6.3	10	16	18
Rated Insulation Voltage Ui						
Acc. IEC; VDE 0660	V	690				
Acc. UL; CSA	V	600				
Rated Operating Voltage Ue						
Acc. IEC; VDE 0660	V	690				
Acc. UL; CSA	V	600				
Rated Impulse Voltage Uimp						
Acc. IEC60947-1	kV	6				
Rated operating frequency	Hz	50/60				
Overvoltage category		III				
Pollution degree		3				
Utilization Category						
IEC 60947-2 (motor protector)		A				
IEC 60947-4-1 (motor starter)		AC-3				
Lifespan						
Mechanical	ops	100,000				
Electrical (Ie max)	ops	100,000				
Switching rate (motor starts) AC-3	ops/hr	15				
Ambient Temperature						
Storage	°C (°F)	-50 to +80 (-58 to +176)				
Operating	°C (°F)	-20 to +60 (-4 to +140)				
Ambient temperature compensation	°C (°F)	-20 to +60 (-4 to +140)				
Climatic proofing		IEC 60068-2-3 / IEC 60068-2-30				
Altitude						
Up to 2,000 m (6,600 ft)		Nominal Values (for higher altitudes refer to page 131)				
Degree of protection		IP20				
Resistance to Shock						
Acc. IEC 60068-2-27	g	15				
Resistance to vibration		IEC 68-2				
Protection Against Direct Contact						
Acc. IEC 536; DIN VDE 0106 Part 100		Finger and back of hand proof				
Phase failure sensitivity protection		Yes				
Overload protection characteristics	x In: A	0.6 - 1				
Magnetic release	x In: A	12				
Overload trip class		10				
Total Power Loss Pv						
At rated load operating temperature	W	6	6	6	6	6
Weight	kg (lb)	0.3 (0.7)				
Type of terminal		Flat Type				
Screwdriver		Philips #2				
Terminal Capacity						
Solid or stranded wire size		Refer to table on page 130				
Tightening torque	Nm (in-lb)	1.2 - 1.7 (11 - 16)				
Mounting position		Any Position				

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MPW18 Technical Data

Power Contact Ratings

Catalog Number		MPW18-3-C016	MPW18-3-C025	MPW18-3-D004	MPW18-3-C063	MPW18-3-U001	MPW18-3-D016	MPW18-3-D025
UL/CSA Data								
Rated operational current Ie	A	0.16	0.25	0.40	0.63	1.0	1.6	2.5
Magnetic release current	A	2	3	5	8	13	21	33
Maximum Short-Circuit Current								
480V	kA	50						
600V	kA	10						
Motor Load, 1-Phase								
115V	HP	-	-	-	-	-	-	-
230V	HP	-	-	-	-	-	1/10	1/6
Motor Load, 3-Phase								
200V	HP	-	-	-	-	-	1/4	1/2
230V	HP	-	-	-	-	-	1/3	1/2
460V	HP	-	-	-	-	1/2	3/4	1 1/2
575V	HP	-	-	-	1/4	1/2	1	1 1/2
Maximum Rated Current of Protection Device for Group Installation								
Fuse or MCCB	A	125	125	125	125	125	125	125

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Motor Protectors

MPW Series – Manual Motor Protectors

MPW18 Technical Data

Power Contact Ratings

Catalog Number		MPW18-3-U004	MPW18-3-D063	MPW18-3-U010	MPW18-3-U016	MPW18-3-U018
UL/CSA Data						
Rated operational current Ie	A	4.0	6.3	10	16	18
Magnetic release current	A	52	82	130	208	-
Maximum Short-Circuit Current						
480V	kA	50	50	50	30	30
600V	kA	10	10	5	5	5
Motor Load, 1-phase						
115V	HP	1/8	1/4	1/2	1	1
230V	HP	1/3	3/4	1 1/2	3	3
Motor Load, 3-phase						
200V	HP	3/4	1 1/2	3	3	5
230V	HP	1	1 1/2	3	5	5
460V	HP	2	5	7 1/2	10	10
575V	HP	3	5	10	15	15
Maximum Rated Current of Protection Device for Group Installation						
Fuse or MCCB	A	125	125	125	160	160

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MPW40 Technical Data

General Ratings

Catalog Number		MPW40-3-C016	MPW40-3-C025	MPW40-3-D004	MPW40-3-C063	MPW40-3-U001	MPW40-3-D016	MPW40-3-D025
Standards		Devices according to International Standards IEC 60947-1 / 60947-4-1, European Standards EN 60947-1 / 60947-4-1, Underwriters Laboratories – UL 508; CSA C.22.2/14; VDE 0660/102						
Current setting range	A	0.10 - 0.16	0.16 - 0.25	0.25 - 0.40	0.40 - 0.63	0.63 - 1.0	1.0 - 1.6	1.6 - 2.5
Rated thermal current Ith	A	0.16	0.25	0.40	0.63	1.0	1.6	2.5
Rated Insulation Voltage Ui								
Acc. IEC; VDE 0660	V	690						
Acc. UL; CSA	V	600						
Rated Operating Voltage Ue								
Acc. IEC; VDE 0660	V	690						
Acc. UL; CSA	V	600						
Rated Impulse Voltage Uimp								
Acc. IEC60947-1	kV	6						
Rated operating frequency	Hz	50/60						
Overvoltage category		III						
Pollution degree		3						
Utilization Category								
IEC 60947-2 (motor protector)		A						
IEC 60947-4-1 (motor starter)		AC-3						
Lifespan								
Mechanical	ops	100,000						
Electrical (Ie max)	ops	100,000						
Switching rate (motor starts) AC-3	ops/hr	15						
Ambient Temperature								
Storage	°C (°F)	-50 to +80 (-58 to +176)						
Operating	°C (°F)	-20 to +60 (-4 to +140)						
Ambient temperature compensation	°C (°F)	-20 to +60 (-4 to +140)						
Climatic proofing		IEC 60068-2-3 / IEC 60068-2-30						
Altitude								
Up to 2,000 m (6,600 ft)		Nominal Values (for higher altitudes refer to page 130)						
Degree of protection		IP20						
Resistance to shock								
Acc. IEC 60068-2-27	g	15						
Resistance to vibration		IEC 68-2						
Protection Against Direct Contact								
Acc. IEC 536; DIN VDE 0106 Part 100		Finger and back of hand proof						
Phase failure sensitivity protection		Yes						
Overload protection characteristics	x In: A	0.6 - 1						
Magnetic release	x In: A	13						
Overload trip class		10						
Total Power Loss Pv								
At rated load operating temperature	W	6	6	6	6	6	6	6
Weight	kg (lb)	0.32 (0.71)						
Type of terminal		Flat Type						
Screwdriver		Philips #2						
Terminal Capacity								
Solid or stranded wire size		Refer to table on page 131						
Tightening torque	Nm (in-lb)	1.2 - 1.7 (11 - 16)						
Mounting position		Any position						

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Motor Protectors

MPW Series – Manual Motor Protectors

MPW40 Technical Data

General Ratings

Catalog Number		MPW40-3-U004	MPW40-3-D063	MPW40-3-U010	MPW40-3-U016	MPW40-3-U020	MPW40-3-U025	MPW40-3-U032	MPW40-3-U040
Standards		Devices according to International Standards IEC 60947-1 / 60947-4-1, European Standards EN 60947-1 / 60947-4-1, Underwriters Laboratories – UL 508; CSA C.22.2/14; VDE 0660/102							
Current setting range	A	2.5 - 4.0	4.0 - 6.3	6.3 - 10	10 - 16	16 - 20	20 - 25	25 - 32	32 - 40
Rated thermal current Ith	A	4.0	6.3	10	16	20	25	32	40
Rated Insulation Voltage Ui									
Acc. IEC; VDE 0660	V	690							
Acc. UL; CSA	V	600							
Rated Operating Voltage Ue									
Acc. IEC; VDE 0660	V	690							
Acc. UL; CSA	V	600							
Rated Impulse Voltage Uimp									
Acc. IEC60947-1	kV	6							
Rated operating frequency	Hz	50/60							
Overvoltage category		III							
Pollution degree		3							
Utilization Category									
IEC 60947-2 (motor protector)		A							
IEC 60947-4-1 (motor starter)		AC-3							
Lifespan									
Mechanical	ops	100,000							
Electrical (Ie max)	ops	100,000							
Switching rate (motor starts) AC-3	ops/hr	15							
Ambient Temperature									
Storage	°C (°F)	-50 to +80 (-58 to +176)							
Operating	°C (°F)	-20 to +60 (-4 to +140)							
Ambient temperature compensation	°C (°F)	-20 to +60 (-4 to +140)							
Climatic proofing		IEC 60068-2-3 / IEC 60068-2-30							
Altitude									
Up to 2,000 m (6,600 ft)		Nominal Values (for higher altitudes refer to page 131)							
Degree of protection		IP20							
Resistance to Shock									
Acc. IEC 60068-2-27	g	15							
Resistance to vibration		IEC 68-2							
Protection Against Direct Contact									
Acc. IEC 536; DIN VDE 0106 Part 100		Finger and back of hand proof							
Phase failure sensitivity protection		Yes							
Overload protection characteristics	x In: A	0.6 - 1							
Magnetic release	x In: A	13							
Overload trip class		10							
Total Power Loss Pv									
At rated load operating temperature	W	6	6	6	6	8	8	8	8
Weight	kg (lb)	0.32 (0.71)							
Type of terminal		Flat Type							
Screwdriver		Philips #2							
Terminal Capacity									
Solid or stranded wire size		Refer to table on page 130							
Tightening torque	Nm (in-lb)	1.2 - 1.7 (11 - 16)							
Mounting position		Any position							

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MPW40 Technical Data

Power Contact Ratings

Catalog Number		MPW40-3-C016	MPW40-3-C025	MPW40-3-C040	MPW40-3-C063	MPW40-3-U001	MPW40-3-D016	MPW40-3-D025
UL/CSA Data								
Rated operational current Ie	A	0.16	0.25	0.40	0.63	1.0	1.6	2.5
Magnetic release current	A	2	3	5	8	13	21	33
Maximum Short-Circuit Current								
without CLT25								
480V	kA	65						
600V	kA	25						
with CLT25								
480V	kA	100						
600V	kA	50						
Motor Load, 1-phase								
115V	HP	-	-	-	-	-	-	-
230V	HP	-	-	-	-	-	1/10	1/6
Motor Load, 3-phase								
200V	HP	-	-	-	-	-	1/4	1/2
230V	HP	-	-	-	-	-	1/3	1/2
460V	HP	-	-	-	-	1/2	3/4	1 1/2
575V	HP	-	-	-	1/4	1/2	1	1 1/2
Maximum Rated Current of Protection Device for Group Installation								
Fuse or MCCB	A	125	125	125	125	125	125	125

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Motor Protectors

MPW Series – Manual Motor Protectors

MPW40 Technical Data

Power Contact Ratings

Catalog Number		MPW40-3-U004	MPW40-3-D063	MPW40-3-U010	MPW40-3-U016	MPW40-3-U020	MPW40-3-U025	MPW40-3-U032	MPW40-3-U040
UL/CSA Data									
Rated operational current Ie	A	4.0	6.3	10	16	20	25	32	40
Magnetic release current	A	52	82	130	208	260	325	416	520
Maximum Short-Circuit Current									
without CLT25									
480V	kA	65			50				20
600V	kA	25						25	5
with CLT25									
480V	kA	100							
600V	kA	50							
Motor Load, 1-phase									
115V	HP	1/8	1/4	1/2	1	1 1/2	2	-	-
230V	HP	1/3	3/4	1 1/2	3	3	3	5	5
Motor Load, 3-phase									
200V	HP	3/4	1 1/2	3	5	5	7 1/2	10	10
230V	HP	1	1 1/2	3	5	7 1/2	7 1/2	10	10
460V	HP	2	5	7 1/2	10	15	15	20	25
575V	HP	3	5	10	15	20	20	25	30
Maximum Rated Current of Protection Device for Group Installation									
Fuse or MCCB	A	125	125	125	160	250	250	300	300

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MPW80 Technical Data

General Rating

Catalog Number		MPW80-3-U040	MPW80-3-U050	MPW80-3-U065
Standards		Devices according to International Standards IEC 60947-1 / 60947-4-1, European Standards EN 60947-1 / 60947-4-1, Underwriters Laboratories – UL 508; CSA C.22.2/14; VDE 0660/102		
Current setting range	A	32 - 40	40 - 50	50 - 65
Rated thermal current Ith	A	40	50	65
Rated Insulation Voltage Ui				
Acc. IEC; VDE 0660	V	690		
Acc. UL; CSA	V	600		
Rated Operating Voltage Ue				
Acc. IEC; VDE 0660	V	690		
Acc. UL; CSA	V	600		
Rated Impulse Voltage Uimp				
Acc. IEC60947-1	kV	6		
Rated operating frequency	Hz	50/60		
Overvoltage category		III		
Pollution degree		3		
Utilization Category				
IEC 60947-2 (motor protector)		A		
IEC 60947-4-1 (motor starter)		AC-3		
Lifespan				
Mechanical	ops	50,000		
Electrical (Ie max)	ops	25,000		
Switching rate (motor starts) AC-3	ops/hr	15		
Ambient Temperature				
Storage	°C (°F)	-50 to +80 (-58 to +176)		
Operating	°C (°F)	-20 to +60 (-4 to +140)		
Ambient temperature compensation	°C (°F)	-20 to +60 (-4 to +140)		
Climatic proofing		IEC 60068-2-3 / IEC 60068-2-30		
Altitude				
Up to 2,000 m (6,600 ft)		Nominal Values (for higher altitudes refer to page 131)		
Degree of protection		IP20		
Resistance to Shock				
Acc. IEC 60068-2-27	g	15		
Resistance to vibration		IEC 68-2		
Protection Against Direct Contact				
Acc. IEC 536; DIN VDE 0106 Part 100		Finger and back of hand proof		
Phase failure sensitivity protection		Yes		
Overload protection characteristics	x In: A	0.6 - 1		
Magnetic release	x In: A	13		
Overload trip class		10		
Total Power Loss Pv				
At rated load operating temperature	W	13		
Weight	kg (lb)	0.60 (1.42)		
Type of terminal	Nm (in-lb)	Flat Type		
Screwdriver		Allen #4		
Terminal Capacity				
olid or stranded wire size		Refer to table on page 130		
Tightening torque	Nm (in-lb)	1.2 - 1.7 (11 - 16)		
Mounting position		Any Position		

UL File No. E172121

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MPW Series – Manual Motor Protectors

MPW80 Technical Data

Power Contact Ratings

Catalog Number		MPW80-3-U040	MPW80-3-U050	MPW80-3-U065
Maximum Short-Circuit Current				
480V	kA	35		
600V	kA	8		
Motor Load, 1-phase				
115V	HP	3	-	5
230V	HP	7 1/2	10	10
Motor Load, 3-phase				
200V	HP	10	15	20
230V	HP	-	15	20
460V	HP	30	30	50
575V	HP	30	40	60

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MPW100 Technical Data

General Contact Ratings

Catalog Number		MPW100-3-U075	MPW100-3-U090	MPW100-3-U100
Standards		Devices according to International Standards IEC 60947-1 / 60947-4-1, European Standards EN 60947-1 / 60947-4-1, Underwriters Laboratories – UL 508; CSA C.22.2/14; VDE 0660/102		
Current setting range	A	55 - 75	70 - 90	80 - 100
Rated thermal current Ith	A	75	90	100.00
Rated Insulation Voltage Ui				
Acc. IEC; VDE 0660	V	690		
Acc. UL; CSA	V	600		
Rated Operating Voltage Ue				
Acc. IEC; VDE 0660	V	690		
Acc. UL; CSA	V	600		
Rated Impulse Voltage Uimp				
Acc. IEC60947-1	kV	6		
Rated operating frequency	Hz	50/60		
Overvoltage category		III		
Pollution degree		3		
Utilization Category				
IEC 60947-2 (motor protector)		A		
IEC 60947-4-1 (motor starter)		AC-3		
Lifespan				
Mechanical	ops	50,000		
Electrical (Ie max)	ops	25,000		
Switching rate (motor starts) AC-3	ops/hr	15		
Ambient Temperature				
Storage	°C (°F)	-50 to +80 (-58 to +176)		
Operating	°C (°F)	-20 to +60 (-4 to +140)		
Ambient temperature compensation	°C (°F)	-20 to +60 (-4 to +140)		
Climatic proofing		IEC 60068-2-3 / IEC 60068-2-30		
Altitude				
Up to 2,000 m (6,600 ft)		Nominal Values (for higher altitudes refer to page 131)		
Degree of protection		IP20		
Resistance to Shock				
Acc. IEC 60068-2-27	g	15		
Resistance to vibration		IEC 68-2		
Protection Against Direct Contact				
Acc. IEC 536; DIN VDE 0106 Part 100		Finger and back of hand proof		
Phase failure sensitivity protection		Yes		
Overload protection characteristics	x In: A	0.6 - 1		
Magnetic release	x In: A	13		
Overload trip class		10		
Total Power Loss Pv				
At rated load operating temperature	W	10		
Weight	kg (lb)	1.20 (3.00)		
Type of terminal		Flat Type		
Screwdriver		Allen #4		
Terminal Capacity				
Solid or stranded wire size		Refer to table on page 130		
Tightening torque	Nm (in-lb)	4.0 - 4.6 (35 - 55)		
Mounting Position		Any Position		

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Motor Protectors

MPW Series – Manual Motor Protectors

MPW100 Technical Data

Power Contact Ratings

Catalog Number		MPW100-3-U075	MPW100-3-U090	MPW100-3-U100
UL/CSA Data				
Rated operational current Ie	A	75	90	100
Magnetic release current	A	975	1170	1300
Maximum Short-Circuit Current				
480V	kA	50		
600V	kA	10		
Motor Load, 1-phase				
115V	HP	5	7 1/2	10
230V	HP	15	20	20
Motor Load, 3-phase				
200V	HP	20	25	30
230V	HP	25	30	30
460V	HP	50	60	75
575V	HP	60	75	100
Maximum Rated Current of Protection Device for Group Installation				
Fuse or MCCB	A	1000	1000	1000

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Technical Data

Auxiliary Contact Block Ratings

Catalog Number			ACBF-11	ACBF-11 MPW100	ACBS-11	ACBS-20	ACBS-02	ACBS-11 MPW100	ACBS-20 MPW100	ACBS-02 MPW100
Rated Insulation Voltage Ui										
Acc. IEC; VDE 0660		V	300		690					
Acc. UL; CSA		V	240		600					
Rated Operating Voltage Ue										
Acc. IEC; VDE 0660		V	250		690					
Acc. UL; CSA		V	240		600					
Rated Impulse Voltage Uimp										
Acc. IEC60947-1		kV	4		6					
Overvoltage category			III		III					
Pollution degree			3		3					
Life Span										
Mechanical		ops	100,000							
Electrical (Ie max)		ops	100,000							
Rated thermal current Ith		A	2.5		10					
Rated Operating Current Ie										
Acc. IEC 60947-5-1 / AC-15	A @ 24 VAC		2		6					
	A @ 110-127 VAC		0.5		6					
	A @ 220-240 VAC		0.5		6					
	A @ 380-400 VAC		-		3					
	A @ 415-450 VAC		-		1					
	A @ 500 VAC		-		1					
	A @ 660-690 VAC		-		1					
Acc. UL; CSA			C300		A600					
Rated Operating Current Ie										
Acc. IEC 60947-5-1 / DC-13	A @ 24 VDC		1		2					
	A @ 48 VDC		0.3		0.8					
	A @ 60 VDC		0.15		0.5					
	A @ 110 VDC		-		0.5					
	A @ 220 VDC		-		0.25 0.25					
	A @ 440 VDC		-		0.1 0.1					
Acc. UL; CSA			R300		Q600					
Short-Circuit Rating Without Welding										
gL/gG		A	10							
MCB		A	6							
Type of terminal			Screwdriver; Philips #2							
Terminal Capacity										
Solid or stranded		mm^2	1 or 2 x (0.5 to 2.5)							
Solid or stranded		AWG	1 or 2 x (18 to 14)							
Tightening torque		Nm (in-lb)	1.0 - 1.25 (8.85 - 11.06)							

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Motor Protectors

MPW Series – Manual Motor Protectors

Technical Data

Trip Signaling Block

Models			TSB	TSB-11 MPW100
Rated Insulation Voltage Ui				
Acc. IEC; VDE 0660		V	690	
Acc. UL; CSA		V	600	
Rated Operating Voltage Ue				
Acc. IEC; VDE 0660		V	690	
Acc. UL; CSA		V	600	
Rated Impulse Voltage Uimp				
Acc. IEC60947-1		kV	6	
Overvoltage category			III	
Pollution degree			3	
Life Span				
Mechanical		ops	100,000	
Electrical (Ie max)		ops	100,000	
Rated thermal current Ith		A	10	
Rated Operating Current Ie				
Acc. IEC 60947-5-1 / AC-15	A @ 24 VAC		6	
	A @ 110-127 VAC		6	
	A @ 220-240 VAC		6	
	A @ 380-400 VAC		3	
	A @ 415-450 VAC		3	
	A @ 500VACV		2	
	A @ 660-690 VAC		1	
Acc. UL; CSA			A600	
Rated Operating Current Ie				
Acc. IEC 60947-5-1 / DC-13	A @ 24 VDC		2	
	A @ 48 VDC		0.5	
	A @ 60 VDC		0.5	
	A @ 110 VDC		0.5	
	A @ 220 VDC		0.25	
	A @ 440 VDC		0.1	
Acc. UL; CSA			Q600	
Short-Circuit Rating Without Welding				
gL/gG		A	6	
MCB		A	6	
Type of terminal			Screwdriver – Philips #2	
Terminal Capacity				
Solid or stranded		mm^2	1 or 2 x (0.5 to 2.5)	
Solid or stranded		AWG	1 or 2 x (18 to 14)	
Tightening torque		Nm (in-lb)	1.0 - 1.25 (8.85 - 11.06)	

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Technical Data

Shunt Release Block

Models		SRMP	SRMP MPW100
Rated Insulation Voltage Ui			
Acc. IEC; VDE 0660	V	690	
Acc. UL; CSA	V	600	
Rated Operating Voltage Ue			
Acc. IEC; VDE 0660	V	690	
Acc. UL; CSA	V	600	
Rated Impulse Voltage Uimp			
Acc. IEC60947-1	kV	6	
Overvoltage category		III	
Pollution degree		3	
Life Span			
Mechanical	ops	100,000	
Electrical (Ie max)	ops	100,000	
Actuating Voltage	x Us: V	0.7 - 1.1	
Power Consumption			
Pull-In	VA (W)	20.2 (13)	8.5 (6)
Hold	VA (W)	7.2 (2.4)	3 (1.2)
Maximum opening time	ms	20	
Short-Circuit Rating Without Welding			
Fuse gL/gG	A	10	
MCB	A	6	
Type of terminal		Screwdriver – Philips #2	
Terminal Capacity			
Solid or stranded	mm^2	1 or 2 x (0.5 to 2.5)	
Solid or stranded	AWG	1 or 2 x (18 to 14)	
Tightening torque	Nm (in-lb)	1.0 - 1.25 (8.85 - 11.06)	

Undervoltage Release Block

Models		URMP	URMP MPW100
Rated Insulation Voltage Ui			
Acc. IEC; VDE 0660	V	690	
Acc. UL; CSA	V	600	
Rated Operating Voltage Ue			
Acc. IEC; VDE 0660	V	690	
Acc. UL; CSA	V	600	
Rated Impulse Voltage Uimp			
Acc. IEC60947-1	kV	6	
Overvoltage category		III	
Pollution degree		3	
Life Span			
Mechanical	ops	100,000	
Electrical (Ie Max)	ops	100,000	
Pick-up voltage	x Us: V	0.85 - 1.1	
Drop-out voltage	x Us: V	0.7 - 0.35	
Power Consumption			
Pull-in	VA (W)	20.2 (13)	8.5 (6)
Hold	VA (W)	7.2 (2.4)	3 (1.2)
Maximum opening time	ms	20	
Short-Circuit Rating Without Welding			
Fuse gL/gG	A	10	
MCB	A	6	
Type of terminal		Screwdriver – Philips #2	
Terminal Capacity			
Solid or stranded	mm^2	1 or 2 x (0.5 to 2.5)	
Solid or stranded	AWG	1 or 2 x (18 to 14)	
Tightening torque	Nm (in-lb)	1.0 - 1.25 (8.85 - 11.06)	

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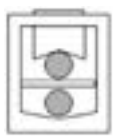
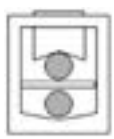
Motor Protectors

MPW Series – Manual Motor Protectors

Technical Data

Main Terminal Capacity

Model	Type	Number of Conductors	Cross-Section
MPW18	Rigid or flexible cable	1 or 2	1...4 mm²
			18...12 AWG
MPW40	Rigid or flexible cable	1 or 2	1...2.5 mm²
			2.5...6 mm²
			14...8 AWG[1)]
MPW80	**Type**	**1 Conductor Connection In Upper Part Only**	**Cross-Section**
	Rigid cable		1...35 mm²
	Cable without terminal		1.5...35 mm²
	Cable with terminal		1...35 mm²
	Flexible cable		1.5...35 mm²
			16...2 AWG
	Type	**1 Conductor Connection In Lower Part Only**	**Cross-Section**
	Rigid cable		2.5...35 mm²
	Cable without terminal		6...35 mm²
	Cable with terminal		2.5...35 mm²
	Flexible cable		6...35 mm²
			12...2 AWG
	Type	**Connection of 2 Conductors – Conductor In Upper Part**	**Cross-Section**
	Rigid cable		1...35 mm²
	Cable without terminal		1.5...35 mm²
	Cable with terminal		1...35 mm²
	Flexible cable		1.5...35 mm²
			16...2 AWG
	Type	**Conductor in Lower Part**	**Cross-Section**
	Rigid cable		2.5...35 mm²
	Cable without terminal		6...35 mm²
	Cable with terminal		2.5...35 mm²
	Flexible cable		6...35 mm²
			12...2 AWG
MPW100	**Type**	**Number of Conductors**	**Cross-Section**
	Rigid cable	1	2.5...70 mm²
			12...2/0 AWG
		h2	2.5...50 mm²
			12...1/0 AWG
	Flexible cable	1	2.5...50 mm²
			12...1/0 AWG
		2	2.5...35 mm²
			10...2 AWG

Notes:
1) 8 AWG for flexible cable only.

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Technical Data

Altitude – Correction Factor

The MPW manual motor protectors do not undergo any change to their specified performance when applied at an altitude of up to 2000 meters above sea level. However, as the altitude increases, the reduced atmospheric pressure produces decreasing dielectric properties. Therefore, current and voltage correction factors must be applied for altitudes exceeding 2000 meters, as shown in the table on the right.

Altitude (above sea level) – h	Rated Operational Voltage Ue	Current Correction Factor Iu
h ≤ 2000 m	690 V	1 x Iu
2000 < h ≤ 3000 m	550 V	0.96 x Iu
3000 < h ≤ 4000 m	480 V	0.93 x Iu
4000 < h ≤ 5000 m	420 V	0.90 x Iu

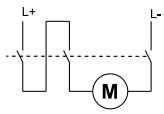
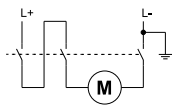
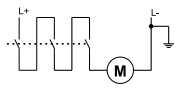
DC Operation

The MPW18, MPW40 and MPW80 motor protective circuit breakers can also be used for operating DC loads. For such operation it is necessary to connect 2 or 3 poles in series.

See recommended circuits and their voltage limits in the table on the right.

Time constant t = 5 ms

Short-circuit breaking capacity Icu = 10 kA for all configurations

Circuits	Maximum VDC	Notes
	150 VDC	System not grounded 2 pole series connected
	300 VDC	System grounded 2 pole series connected
	450 VDC	System grounded 3 pole series connected

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MPW Series – Manual Motor Protectors

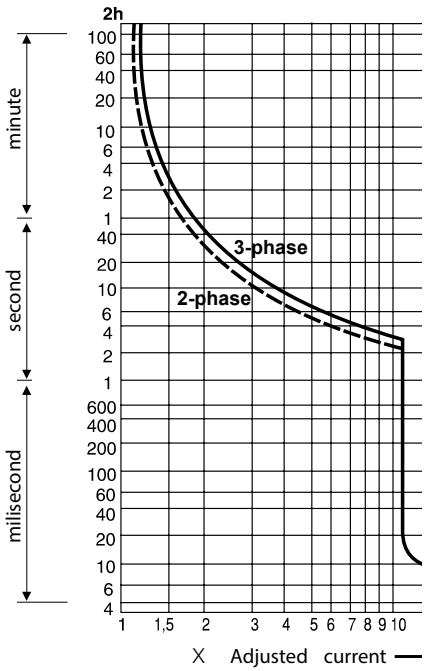
Characteristic Curves

Time Current Characteristic MPW18/40/80/100 Class 10

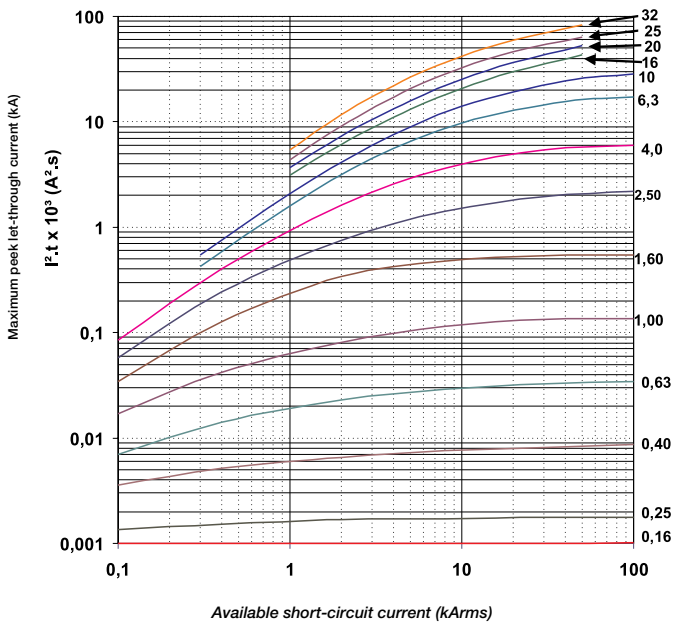
The tripping characteristic indicates the manual motor protector trip time in relation to the rated current.

The curves show average tolerance range values for an ambient temperature of 20ºC (68ºF), starting in cold state. Thermal trip time when working in operating temperature is reduced to around 25% of the listed values. Under normal operating conditions, all three manual motor protector phases must be conducting.

MPW18/40/80



Characteristic I2t at 460V – MPW40



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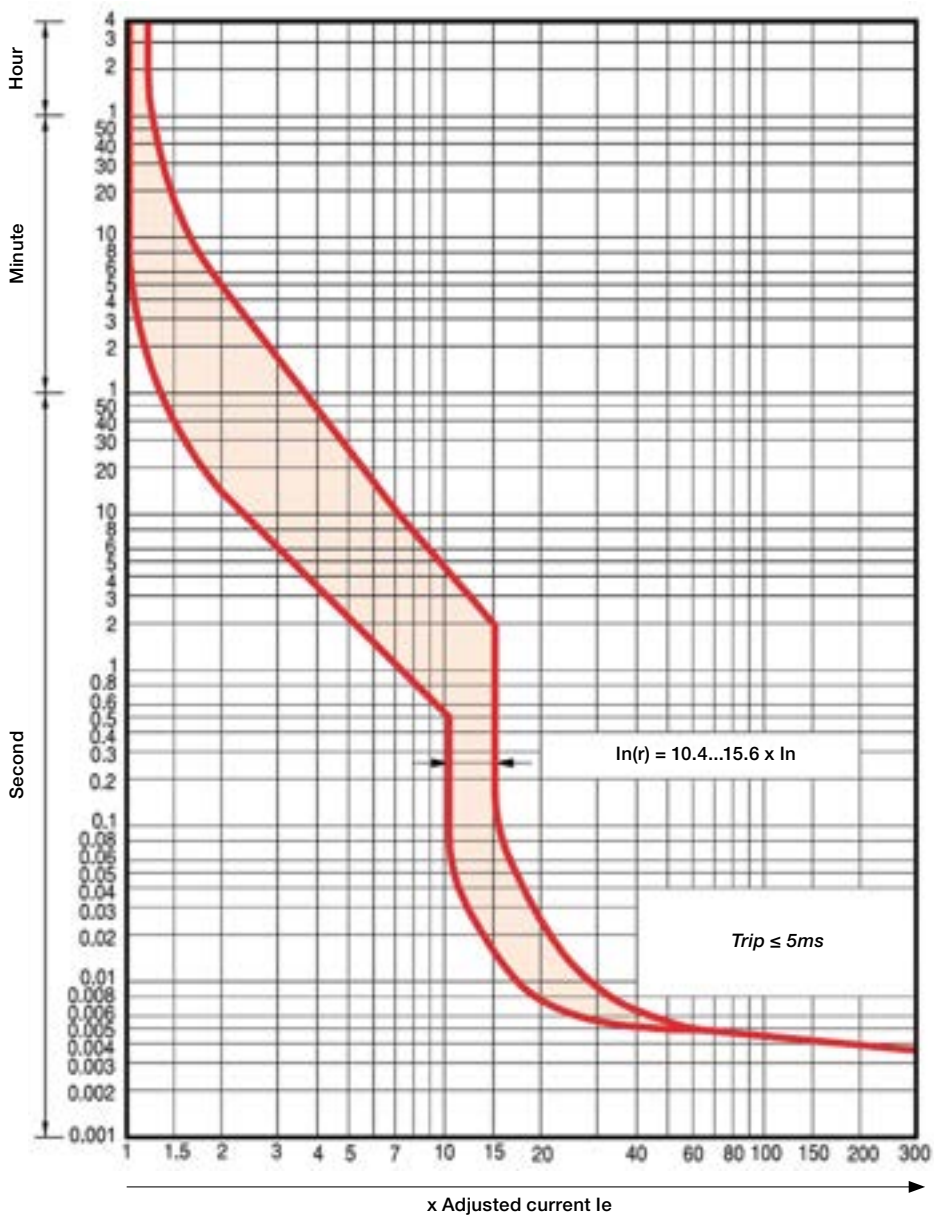
Characteristics Curves

MPW100



Notes: Thermal Tripping current: Curve presented for an ambient temperature of 20ºC (68ºF) starting from cold state.

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Motor Protectors

MPW Series – Manual Motor Protectors

Technical Data

Short-Circuit Interrupting Capacity UL/CSA for MPW18, MPW40, MPW80, MPW100

		Manual Motor Controller High Capacity				Combination Motor Controller (Type E/F) High Capacity				Combination Motor Controller (Type E/F) Extra-High Capacity			
Model	Setting Overload Release (A)	240 VAC	480 VAC Y/277 VAC	600 VAC Y/347 VAC	Max Fuse or MCCB	240 VAC	480 VAC Y/277 VAC	600 VAC Y/347 VAC	Max Fuse or MCCB 1)	240 VAC	480 VAC Y/277 VAC	600 VAC Y/347 VAC	Max Fuse or MCCB 1)
		kA	kA	kA	A	kA	kA	kA	A	kA	kA	kA	A
MPW18	0.10 - 0.16	50	50	10	125	-	-	-	-	-	-	-	-
	0.16 - 0.25	50	50	10	125	-	-	-	-	-	-	-	-
	0.25 - 0.40	50	50	10	125	-	-	-	-	-	-	-	-
	0.40 - 0.63	50	50	10	125	-	-	-	-	-	-	-	-
	0.63 - 1.0	50	50	10	125	-	-	-	-	-	-	-	-
	1.0 - 1.6	50	50	10	125	-	-	-	-	-	-	-	-
	1.6 - 2.5	50	50	10	125	-	-	-	-	-	-	-	-
	2.5 - 4.0	50	50	10	125	-	-	-	-	-	-	-	-
	4.0 - 6.3	50	50	10	125	-	-	-	-	-	-	-	-
	6.3 - 10	50	50	5	125	-	-	-	-	-	-	-	-
	10 - 16	30	30	5	160	-	-	-	-	-	-	-	-
	12 - 18	30	30	5	160	-	-	-	-	-	-	-	-
MPW40	0.10 - 0.16	50	50	25	125	65	50	25	-	100	100	50	-
	0.16 - 0.25	50	50	25	125	65	50	25	-	100	100	50	-
	0.25 - 0.40	50	50	25	125	65	50	25	-	100	100	50	-
	0.40 - 0.63	50	50	25	125	65	50	25	-	100	100	50	-
	0.63 - 1.0	50	50	25	125	65	50	25	-	100	100	50	-
	1.0 - 1.6	50	50	25	125	65	50	25	-	100	100	50	-
	1.6 - 2.5	50	50	25	125	65	50	25	-	100	100	50	-
	2.5 - 4.0	50	50	25	125	65	50	25	-	100	100	50	-
	4.0 - 6.3	50	50	25	125	65	50	25	-	100	100	50	-
	6.3 - 10	50	50	25	125	65	50	25	-	100	100	50	-
	10 - 16	50	50	25	160	50	50	25	-	100	100	50	-
	16 - 20	50	50	25	250	50	50	25	-	100	100	50	-
	20 - 25	50	50	25	250	50	50	25	-	100	100	50	-
	25 - 32	42	42	25	500	50	42	25	-	100	100	50	-
	32 - 40	20	20	5	520	-	-	-	-	-	-	-	-
MPW80	10 ... 16	50	50	30	160	50	50	30	-	-	-	-	-
	16 ... 20	50	50	30	250	50	50	30	-	-	-	-	-
	20 ... 25	50	50	30	250	50	50	30	-	-	-	-	-
	25 ... 32	50	50	30	500	50	50	30	-	-	-	-	-
	32 ... 40	35	35	10	500	35	35	10	-	-	-	-	-
	40 ... 50	35	35	10	750	35	35	10	-	-	-	-	-
	50 ... 65	35	35	10	750	35	35	10	-	-	-	-	-
MPW100	55 ... 75	50	50	10	1250	50	50	10	-	-	-	-	-
	70 ... 90	50	50	10	1250	50	50	10	-	-	-	-	-
	80 ... 100	50	50	10	1250	50	50	10	-	-	-	-	-

Back-up fuse not required.

Notes:
1) Dash (-) in column indicates back-up fuse nor MCCB required.

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Technical Data

Short-Circuit Interrupting Capacity (IEC 60947-2) for MPW18 , MPW40, MPW80, MPW100

Model	Setting Overload Release (A)	220-230 VAC			380-415 VAC			440 VAC			460-500 VAC			630-690 VAC		
		Icu	Ics	Max Fuse[1)] (gL/gG)	Icu	Ics	Max Fuse[1)2)] (gL/gG)	Icu	Ics	Max Fuse[1)2)] (gL/gG)	Icu	Ics	Max Fuse[1)2)] (gL/gG)	Icu	Ics	Max Fuse[1)2)] (gL/gG)
		kA	kA	A	kA	kA	A	kA	kA	A	kA	kA	A	kA	kA	A
MPW18	0.10...0.16	100	100	-	100	100	-	100	100	-	100	100	-	10	10	-
	0.16...0.25	100	100	-	100	100	-	100	100	-	100	100	-	10	10	-
	0.25...0.4	100	100	-	100	100	-	100	100	-	100	100	-	10	10	-
	0.4...0.63	100	100	-	100	100	-	100	100	-	100	100	-	10	10	-
	0.63...1	100	100	-	100	100	-	100	100	-	100	100	-	10	10	-
	1...1.6	100	100	-	100	100	-	100	100	-	100	100	-	10	10	-
	1.6...2.5	100	100	-	100	100	-	100	100	-	100	100	-	8	8	25
	2.5...4	100	100	-	100	100	-	100	100	-	100	100	-	8	8	35
	4...6.3	100	100	-	100	100	-	100	100	-	100	100	-	8	8	50
	6.3...10	100	100	-	50	10	100	50	10	80	10	10	63	5	5	50
	10...16	100	100	-	10	10	100	10	10	80	10	10	80	4	3	63
	12...18	100	100	-	10	10	100	10	10	80	10	10	80	10	10	80
MPW40	0.10...0.16	100	100	-	100	100	-	100	100	-	100	100	-	100	100	-
	0.16...0.25	100	100	-	100	100	-	100	100	-	100	100	-	100	100	-
	0.25...0.4	100	100	-	100	100	-	100	100	-	100	100	-	100	100	-
	0.4...0.63	100	100	-	100	100	-	100	100	-	100	100	-	100	100	-
	0.63...1	100	100	-	100	100	-	100	100	-	100	100	-	100	100	-
	1...1.6	100	100	-	100	100	-	100	100	-	100	100	-	100	100	-
	1.6...2.5	100	100	-	100	100	-	100	100	-	100	100	-	8	8	25
	2.5...4	100	100	-	100	100	-	100	100	-	100	100	-	8	8	32
	4...6.3	100	100	-	100	100	-	100	100	-	100	100	-	8	8	50
	6.3...10	100	100	-	100	100	-	50	25	80	42	21	63	8	8	50
	10...16	100	100	-	50	25	100	50	15	80	10	8	80	5	5	63
	16...20	100	100	-	50	25	125	50	15	80	10	8	80	5	5	63
	20...25	100	100	-	50	25	125	50	15	100	10	8	80	5	5	63
	25...32	100	100	-	50	25	125	25	15	100	10	8	80	5	5	63
	32...40	100	100	-	50	25	125	25	15	100	10	8	80	5	2	63
MPW80	10...16	100	100	-	50	50	100	50	50	80	15	15	80	8	8	63
	16...20	100	100	-	50	50	125	50	50	80	15	15	80	8	8	63
	20...25	100	100	-	50	50	125	50	50	100	15	15	80	8	8	63
	25...32	100	100	-	50	50	125	50	50	100	15	15	80	5	5	63
	32...40	100	100	-	50	50	160	50	50	125	15	10	100	5	5	63
	40...50	100	100	-	50	50	160	50	50	125	15	10	100	5	5	80
	50...65	100	100	-	50	50	160	50	50	125	15	10	100	5	5	80
MPW100	55...75	100	100	-	75	50	-	50	38	200	12	9	160	6	6	125
	70...90	100	100	-	75	50	-	50	38	200	12	9	160	6	6	160
	80...100	100	100	-	75	50	-	50	38	200	12	9	160	6	6	160

LEGEND:

Self protected against short-circuits up to 100 kA.

Notes:
1) Dash (-) in column indicates back-up fuse not required.
2) A value in this column indicates a fuse is required to achieve kA rating.

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Motor Protectors

MPW Series – Manual Motor Protectors

Technical Data

Short-Circuit Interrupting Capacity (IEC 60947-2) Limiter Function MPW40 + CLT25

Model	Setting Overload Release (A)	380-415 VAC			440 VAC			460-500 VAC			630-690 VAC		
		Icu	Ics	Max Fuse[1] (gL/gG)	Icu	Ics	Max Fuse[1] (gL/gG)	Icu	Ics	Max Fuse[1] (gL/gG)	Icu	Ics	Max Fuse[1] (gL/gG)
		kA	kA	A	kA	kA	A	kA	kA	A	kA	kA	A
MPW40 + CLT32 MPW40	0.10...0.16	♦	♦	-	♦	♦	-	♦	♦	-	♦	♦	-
	0.16...0.25	♦	♦	-	♦	♦	-	♦	♦	-	♦	♦	-
	0.25...0.4	♦	♦	-	♦	♦	-	♦	♦	-	♦	♦	-
	0.4...0.63	♦	♦	-	♦	♦	-	♦	♦	-	♦	♦	-
	0.63...1	♦	♦	-	♦	♦	-	♦	♦	-	♦	♦	-
	1...1.6	♦	♦	-	♦	♦	-	♦	♦	-	♦	♦	-
	1.6...2.5	♦	♦	-	♦	♦	-	♦	♦	-	50	50	-
	2.5...4	♦	♦	-	♦	♦	-	♦	♦	-	50	50	-
	4...6.3	♦	♦	-	♦	♦	-	♦	♦	-	50	50	-
	6.3...10	♦	♦	-	100	100	-	100	100	-	50	50	-
	10...16	100	100	-	100	100	-	100	100	-	50	50	-
	16...20	100	100	-	100	100	-	100	100	-	50	50	-
	20...25	100	100	-	100	100	-	100	100	-	10	10	-
	25...32	100	100	-	100	100	-	100	100	-	10	10	-

LEGEND:

Self protected against short-circuits up to 100 kA.

♦ Not applicable due to MPW40 already having 100 kA of Icu / Ics in referred ranges.

Notes:
1) Dash (-) in column indicates back-up fuse nor MCCB required.

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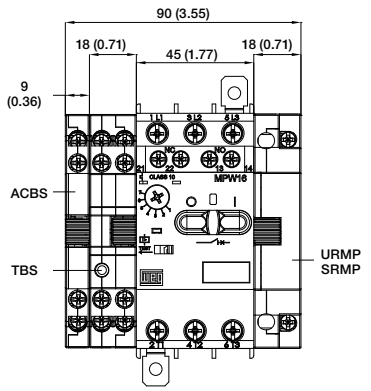
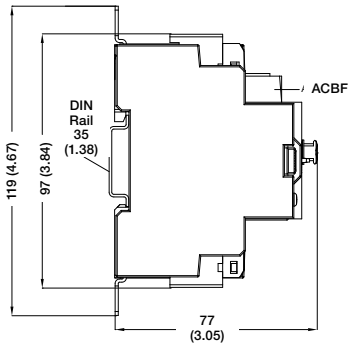
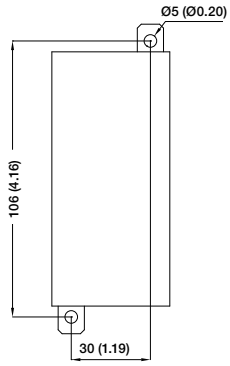
Dimensions – mm (inch)

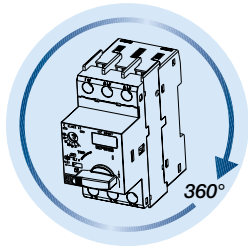
MPW18 + Accessories



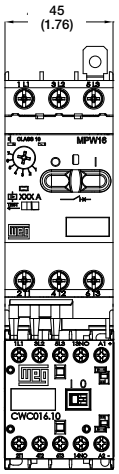


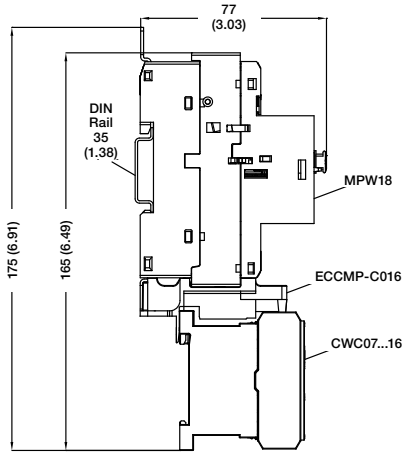


Mounting Position

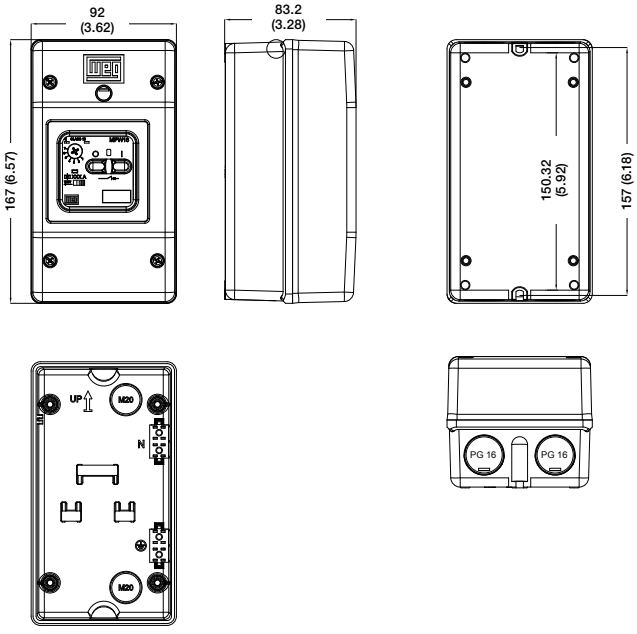


MPW18 + CWC07...16

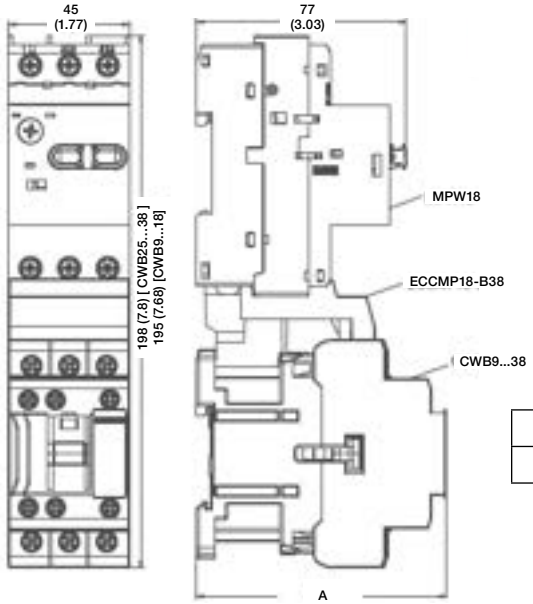




Insulated Enclosure – PE66 (IP66)



MPW18 + CWB9...18 / CWB25...38



A	CWB9...18	CWB25...38
AC coil	89.5 (3.52)	93 (3.66)

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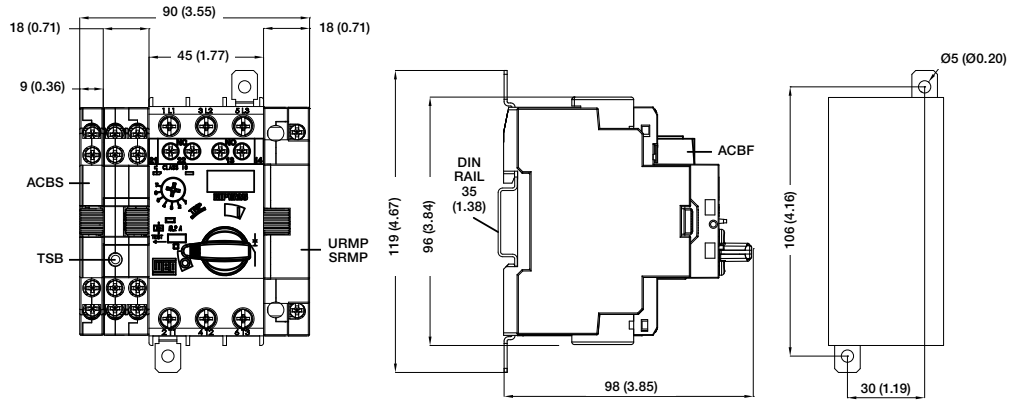
Motor Protectors

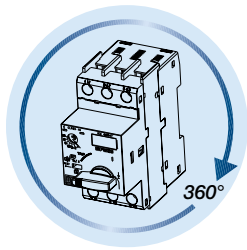
MPW Series – Manual Motor Protectors

Dimensions – mm (inch)

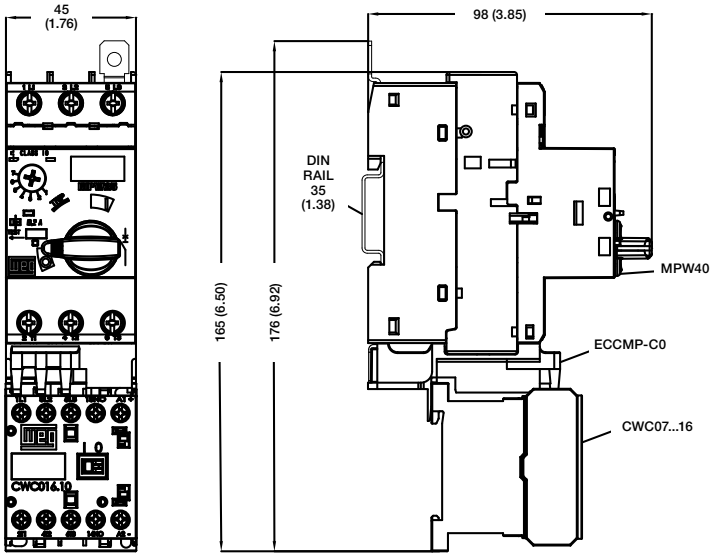
MPW40 + Accessories



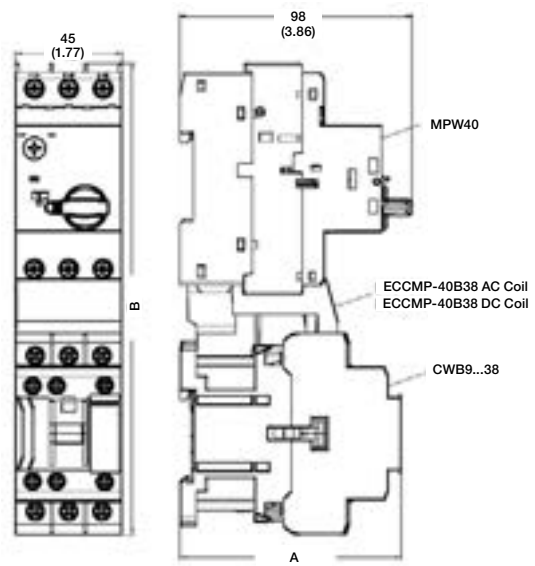
Mounting Position



MPW40 + CWC07...16



MPW40 + CWB9...18 / CWB25...38



A	CWB9...18	CWB25...38
AC coil	89.5 (3.52)	93 (3.66)
DC coil	95.7 (3.77)	102.2 (4.02)

B	CWB9...18	CWB25...38
	196 (7.72)	199 (7.83)

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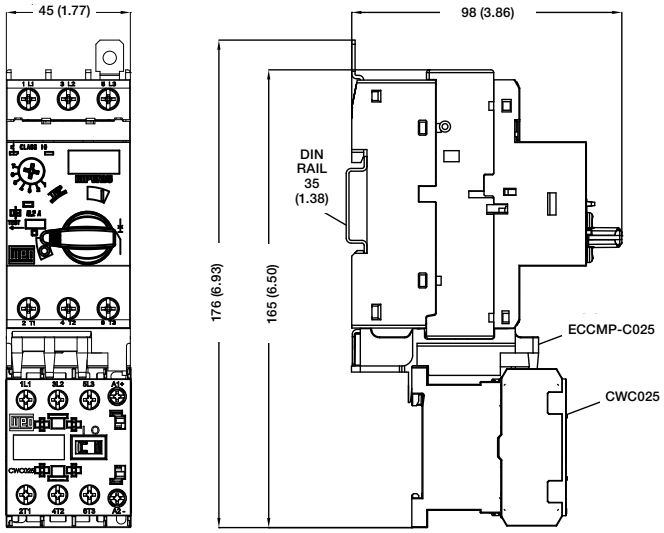
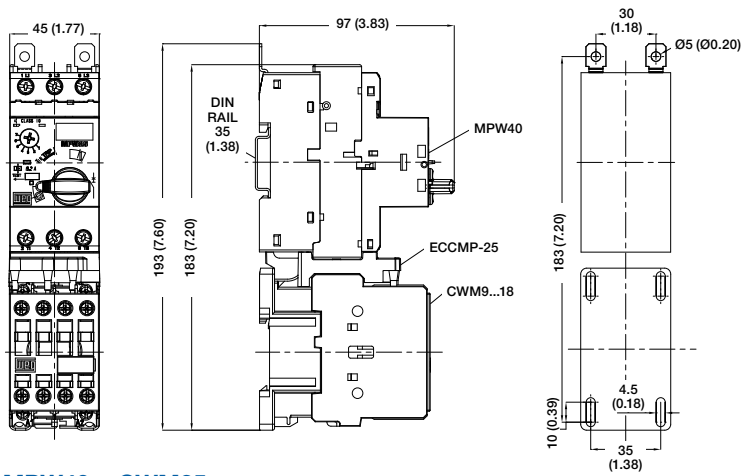
Dimensions – mm (inch)

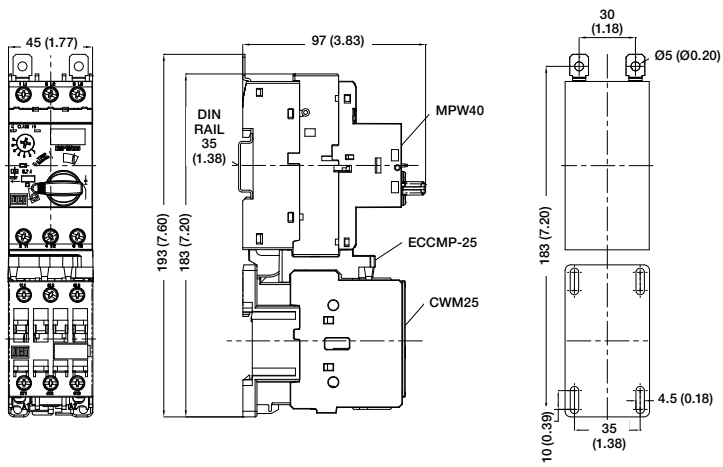
MPW40 + CWC025



MPW40 + CWM9...18



MPW40 + CWM25



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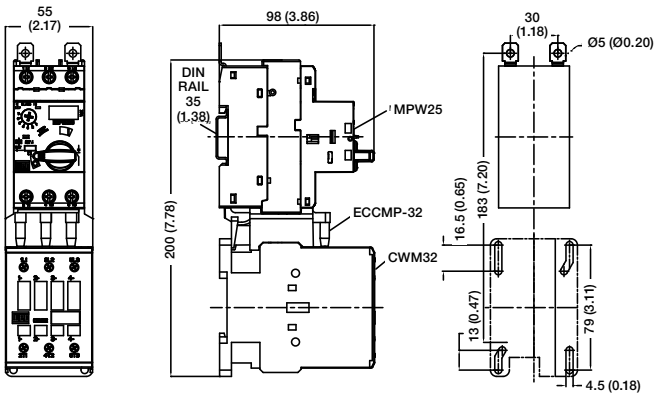
Motor Protectors

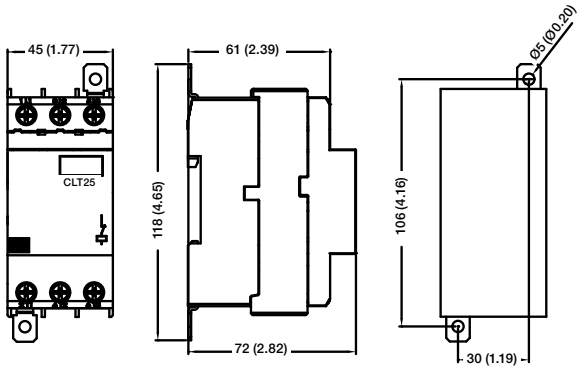
MPW Series – Manual Motor Protectors

Dimensions – mm (inch)

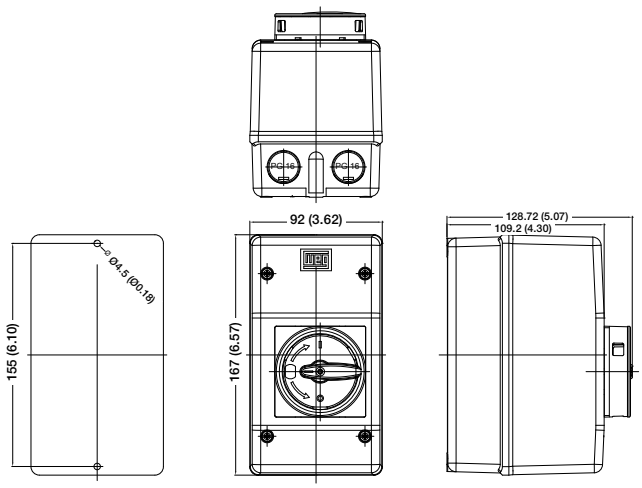
MPW40 + CWM32



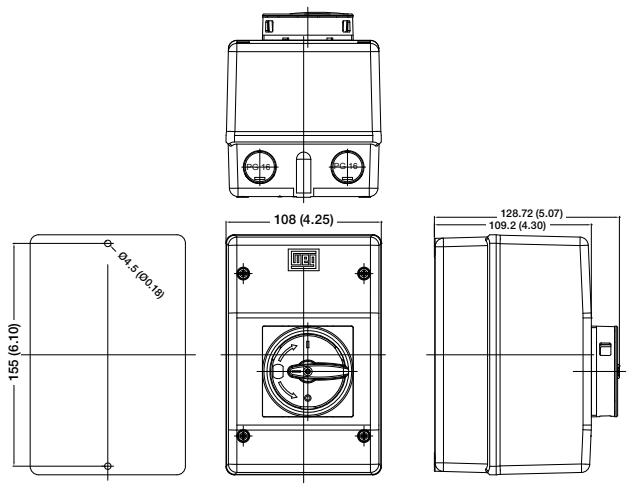
Current limiter – CLT32 MPW40



Insulated Enclosure – PE55 (IP55)



Insulated Enclosure – LPE55 (IP55)



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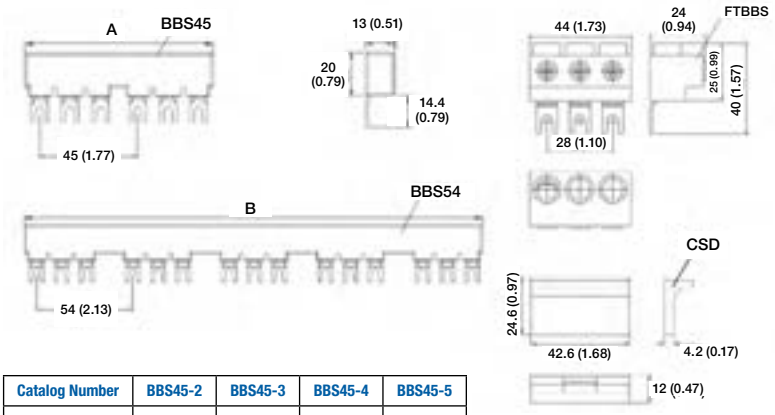
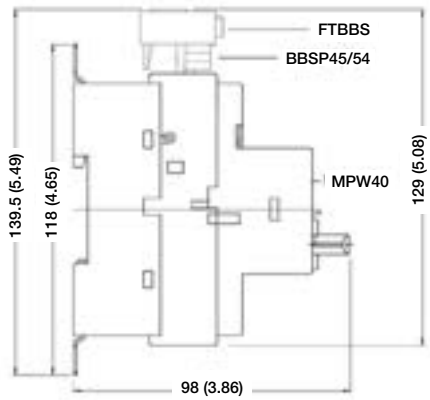
Dimensions – mm (inch)

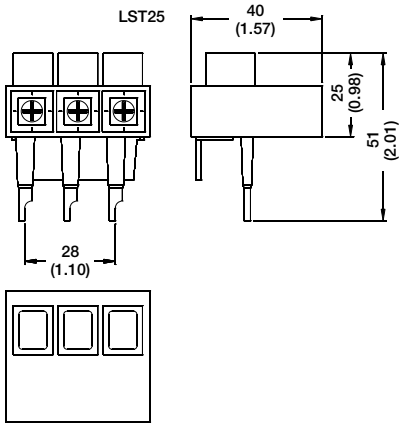
BBS45 / BBS54 / FTBBS / CSD

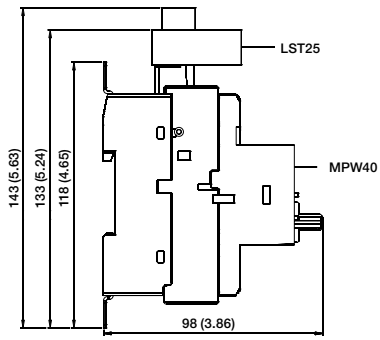




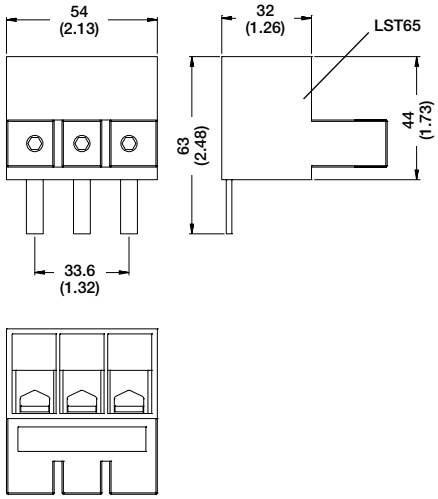
Catalog Number	BBS45-2	BBS45-3	BBS45-4	BBS45-5
A	85 (3.35)	130 (5.12)	175 (6.89)	220 (8.66)
Catalog Number	**BBS54-2**	**BBS54-3**	**BBS54-4**	**BBS54-5**
B	94 (3.70)	149 (5.87)	202 (7.95)	256 (10.08)

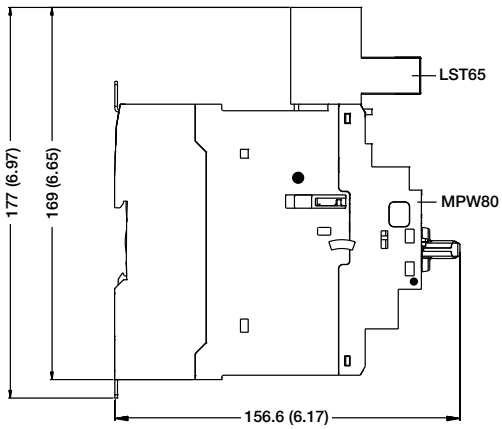
LST25





LST65





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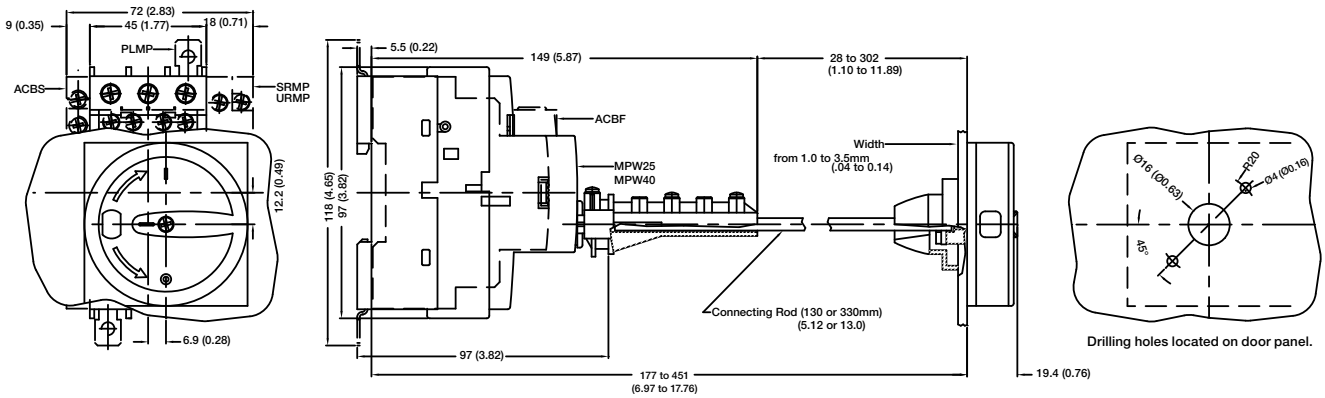
Motor Protectors

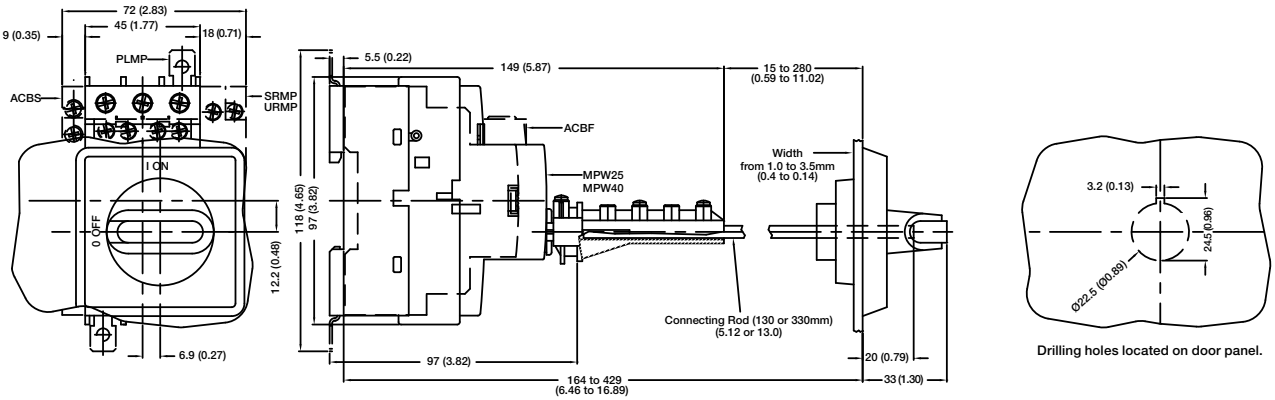
MPW Series – Manual Motor Protectors

Dimensions – mm (inch)

Through the Door Rotary Handle – RMMP



Through the Door Rotary Handle – MR MPW40



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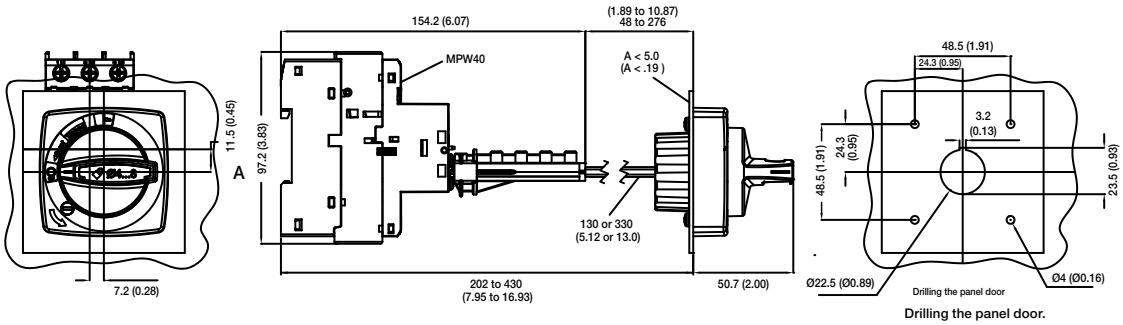
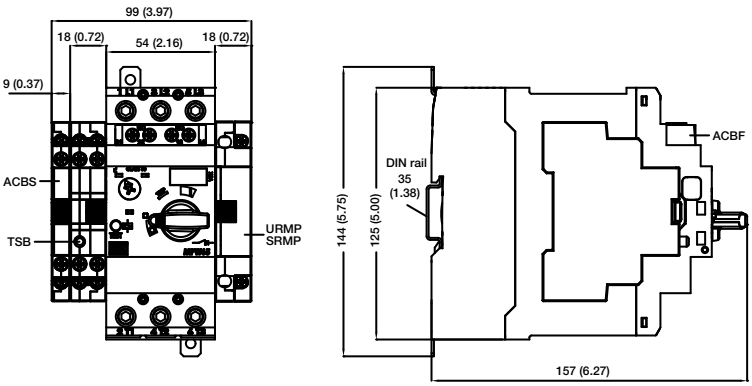
Dimensions – mm (inch)

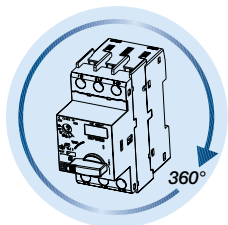
Through the Door Rotary Handle – MRX



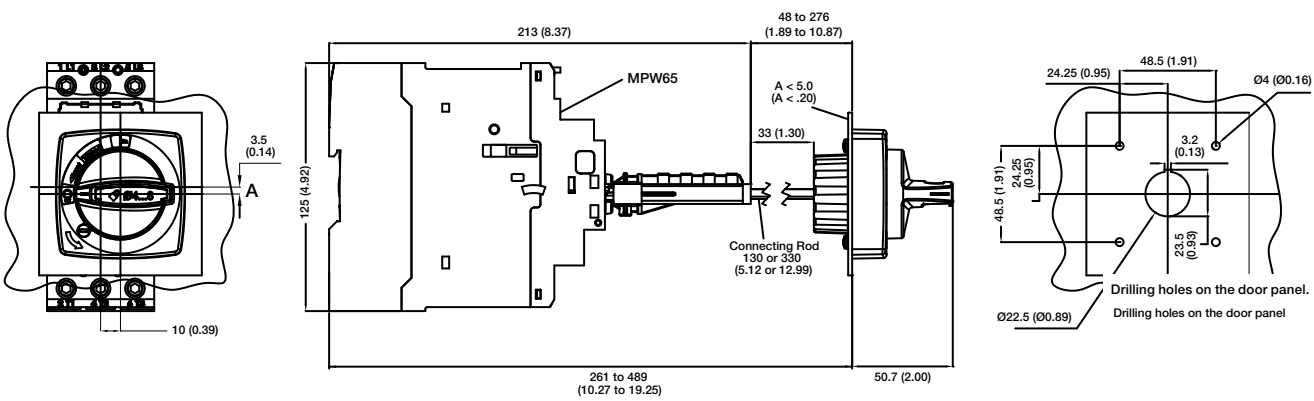
MPW80 + Accessories



Mounting Position



Through the Door Rotary Handle – MRX65



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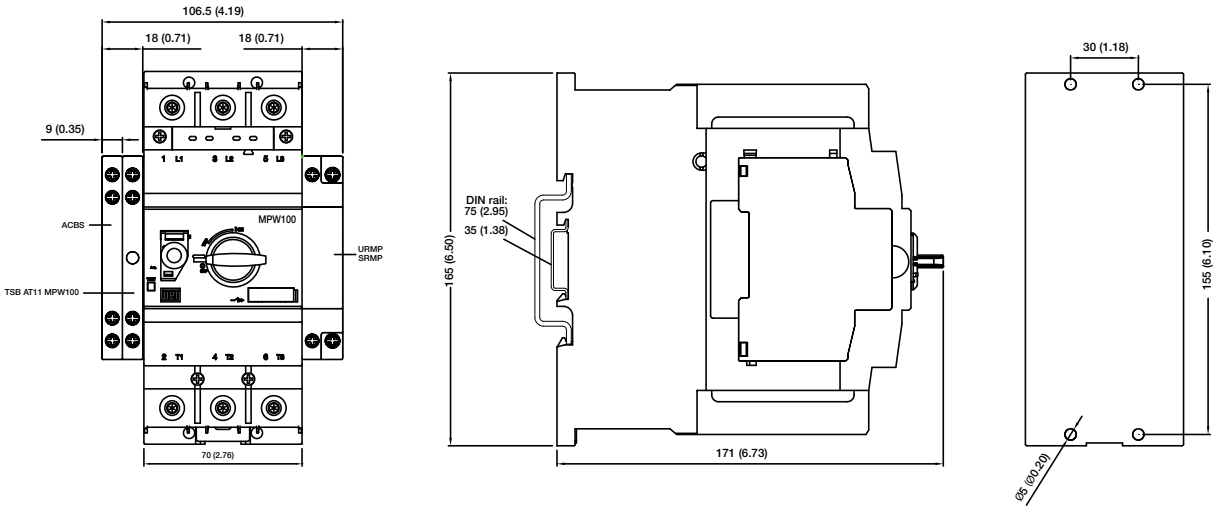
Motor Protectors

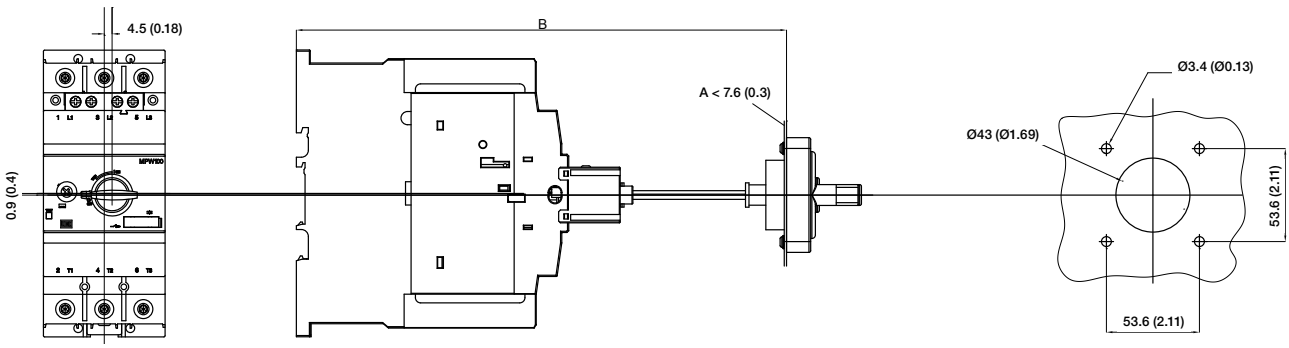
MPW Series – Manual Motor Protectors

Dimensions – mm (inch)

MPW100



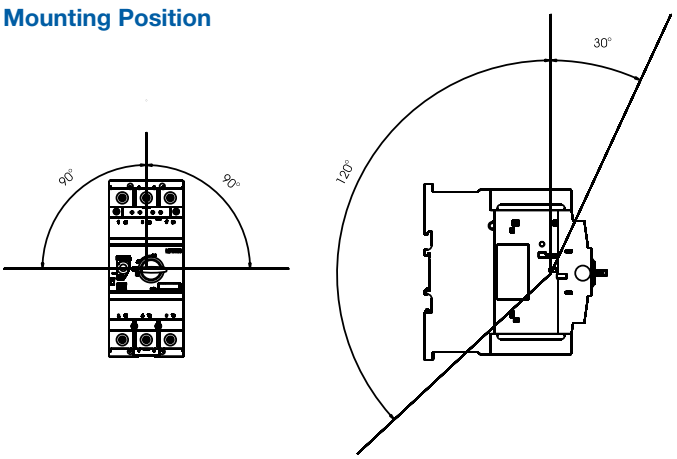
Through the Door Coupling Rotary Handle – MR MPW100



Drilling The Panel Door

Part Number	B
MR MPW100-115	min: 220 (8.66)
	max: 282 (11.10)
MR MPW100-315	min: 220 (8.66)
	max: 482 (18.98)

Mounting Position



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CWC Series – Miniature Contactors

The CWC Series miniature contactor line is a compact solution for the control and operation of circuits. Its extensive lineup of modular and tool-free accessories makes this series the most flexible mini-contactor available today. The CWC Series miniature contactor features more horsepower for its size than any other miniature contactor on the market.

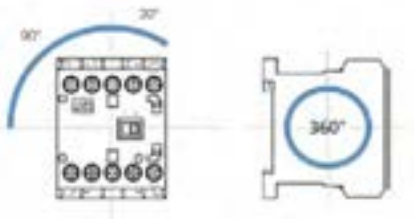
UL File No. E202315

Standard Features

- Direct mounting to RW17D Series Thermal Overload Relays
- Direct mounting to MPW18 and MPW40 Series Manual Motor Protectors
- Low consumption DC coils
- Tool free DIN rail mountable
- Frame size remains the same for AC and DC coil contactors up to 16A
- Complete line of snap-on accessories

Learn More Online

Mounting Position of All Compact Contactors



CWC Catalog Number Sequence

CWC	016	-	10	-	30	V18

Miniature Contactor Series
CWC: Miniature Power Contactor
CWCA: Control Relay

Frame Rating
0: Control Relay
07: 7A
09: 9A
012: 12A
016: 16A
025: 25A

Auxiliary Contacts
For CWC
00: None
10: 1NO
01: 1NC
For CWCA0
22: 2NO + 2NC
31: 3NO + 1NC
13: 1NO + 3NC
40: 4NO
04: 4NC

Power Poles
00: None (CWCA0 Control Relay)
30: CWC0 with 3NO
22: CWC0 with 2NO + 2NC
40: CWC0 with 4NO

Coil Voltage
AC Voltage
V04: 24 V
V18: 120 V
V24: 208 - 240 V
V47: 480V
DC Voltage
(Standard Consumption)
C03 : 24V
C12: 110V
DC Voltage
(Low Consumption)
L03: 24V

Chart intended as reference only and not to create part numbers.

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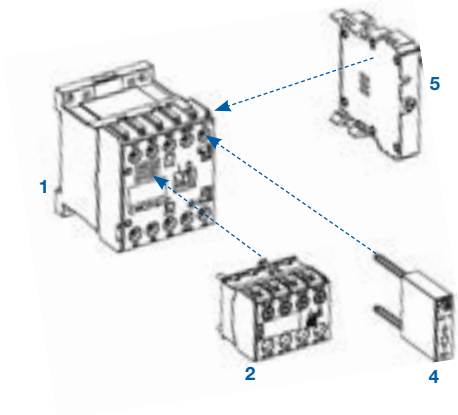
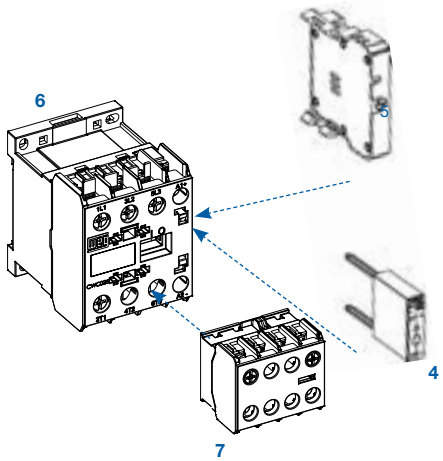
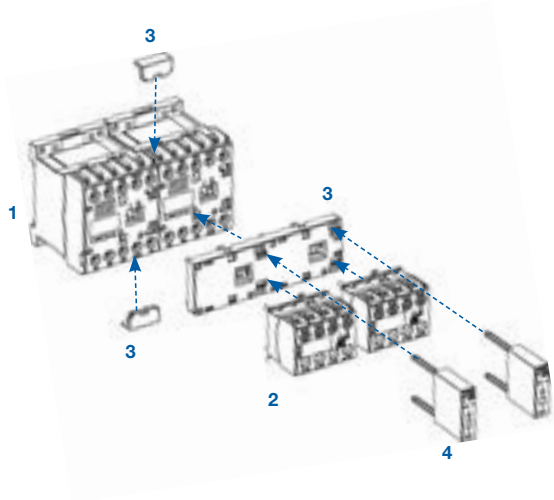
Contactors

CWC Series - Miniature Contactors







1: Miniature contactors CWC07...16
2: Front auxiliary contact block BFC0
3: Mechanical interlock block BIC0
4: Surge suppressor blocks RCC0 (RC), VRC0 (Varistor), DIC0 (Diode)
5: Electronic timers TEC0, TDC0 and TETC0
6: Mini contactor CWC025
7: Front auxiliary contact block BFC025

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Contactors

CWC Series - Miniature Contactors

Models		CWC07	CWC09	CWC012	CWC016	CWC025
Rated Operational Power[1]						
Single-Phase						
115 VAC	HP	1/3	1/3	1/2	1	1 1/2
230 VAC	HP	3/4	1	2	2	3
Three-Phase						
230 VAC	HP	1 1/2	3	3	5	7 1/2
460 VAC	HP	5	5	7 1/2	10	15
575 VAC	HP	5	7 1/2	7 1/2	10	15
General purpose rating (AC-1)	A	18	20	22	22	32
Inductive motor switching (AC-3)		7	9	12	16	22
Overload relay		**RW17-1D**		0.28...0.4A 0.4...0.63A 0.56...0.8A 0.8...1.2A 1.2...1.8A 1.8...2.8A	2.8...4A 4...6.3A 5.6...8A 7...10A 8...12.5A 10...15A 11...17A	**RW17-2D** 7...10A 8...12.5A 10...15A 11...17A 15...23A 22...32A
Auxiliary contact blocks				BFC0-20 (2NO) BFC0-22 (2NO + 2NC) BFC0-11 (1NO + 1NC) BFC0-04 (4NC) BFC0-02 (2NC) BFC0-31 (2NO + 1NC) BFC0-40 (4NO) BFC0-13 (1NO + 3NC)		BFC025-11 (1NO+1NC) BFC025-20 (2NO) BFC025-02 (2NC)
Mechanical interlock				BIC0		–
Timer					ON-Delay (TEC0) OFF-Delay (TDC0) Star-Delta (TETC0)	
Surge suppressor					RC block: RCC0-1 D49 12-24V 50/60 Hz RCC0-2 D53 24-48V 50/60 Hz RCC0-3 D55 50-127V 50/60 Hz RCC0-4 D63 130-250V 50/60 Hz RCC0-5 D84 275-380V 50/60 Hz RCC0-6 D73 400-510V 50/60 Hz Varistor block: VRC0-1 E49 12-48 VAC / 12-60 VDC VRC0-2 E34 50-127 VAC / 60-180 VDC VRC0-3 E38 130-275 VAC / 180-300 VDC VRC0-4 E41 277-380 VAC / 300-510 VDC VRC0-5 D73 400-510V 50/60 Hz Diode block(CWC07-16): DIC0-1 C33 12-600 VDC	

Notes:
1) Some motor characteristics may vary according to each manufacturer.

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Contactors

CWC Series - Miniature Contactors

Selection Table

Three-Pole Miniature Contactor with AC Coil

Maximum UL Horsepower						Auxiliary Contacts		Current Rating (A)	Catalog Number	List Price	Multiplier
Single-Phase		Three-Phase									
115V	230V	200V	230V	460V	575V	NO	NC				
1/3	3/4	1 1/2	1 1/2	5	5	1	0	7	CWC07-10-30*	$48	Z6
						0	1		CWC07-01-30*	$48	
1/3	1	2	3	5	7 1/2	1	0	9	CWC09-10-30*	$52	
						0	1		CWC09-01-30*	$52	
1/2	2	3	3	7 1/2	7 1/2	1	0	12	CWC012-10-30*	$64	
						0	1		CWC012-01-30*	$64	
1	2	3	5	10	10	1	0	16	CWC016-10-30*	$70	
						0	1		CWC016-01-30*	$70	
1 1/2	3	5	7 1/2	15	15	0	0	22	CWC025-00-30*	$80	

To complete the selection, replace "*" with desired coil voltage from AC Coil Voltage Code Selection Table.

*AC Coil Voltage Code Selection				
Code	V04	V18	V24	V47
60 Hz	24V	120V	208-240V	480V
50 Hz	20V	110V	180-208V	400-415V

Three-Pole Miniature Contactors with DC Coil

Maximum UL Horsepower						Auxiliary Contacts		Current Rating (A)	Catalog Number	List Price	Multiplier
Single-Phase		Three-Phase									
115V	230V	200V	230V	460V	575V	NO	NC				
1/3	3/4	1 1/2	1 1/2	5	5	1	0	7	CWC07-10-30+	$62	Z6
						0	1		CWC07-01-30+	$62	
1/3	1	2	3	5	7 1/2	1	0	9	CWC09-10-30+	$68	
						0	1		CWC09-01-30+	$68	
1/2	2	3	3	7 1/2	7 1/2	1	0	12	CWC012-10-30+	$74	
						0	1		CWC012-01-30+	$74	
1	2	3	5	10	10	1	0	16	CWC016-10-30+	$79	
						0	1		CWC016-01-30+	$79	

To complete the selection, replace "+" with desired coil voltage from DC Coil Voltage Code Selection Table.

+DC Coil Voltage Code Selection			
Code	C03	C12	L03
VDC	24V	110V	24V Low Consumption[1)]

Notes:
1) The compact contactor for CWC0 with low consumption coil allows only two additional auxiliary contacts.

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Four-Pole Contactors With AC Coils

Horse Power @460V	Main Contacts		Catalog Number	List Price	Multiplier
	NO	NC			
5	4	0	CWC07-00-40*	$48	Z6
	2	2	CWC07-00-22*		
5	4	0	CWC09-00-40*	$52	
	2	2	CWC09-00-22*		
10	4	0	CWC016-00-40*	$70	
	2	2	CWC016-00-22*		

To complete the selection, replace "*" with desired coil voltage from AC Coil Voltage Code Selection Table.

*AC Coil Voltage Code Selection				
Code	V04	V18	V24	V47
60 Hz	24V	120V	208-240V	480V
50 Hz	20V	110V	180-208V	400-415V

Four-Pole Contactors With DC Coil

Horse Power @460V	Main Contacts		Catalog Number	List Price	Multiplier
	NO	NC			
5	4	0	CWC07-00-40+	$62	Z6
	2	2	CWC07-00-22+		
5	4	0	CWC09-00-40+	$68	
	2	2	CWC09-00-22+		
10	4	0	CWC016-00-40+	$79	
	2	2	CWC016-00-22+		

To complete the selection, replace "+" with desired coil voltage from DC Coil Voltage Code Selection Table.

+DC Coil Voltage Code Selection For CWC0_-00-40+				
Code	C03	C12	L02	L03
VDC	24V	110V	12V Low Consumption[1)]	24V Low Consumption[1)]

+DC Coil Voltage Code Selection For CWC0_-00-22+				
Code	C03	C12	L02	L03
VDC	24V	110V	12V Low Consumption[1)]	24V Low Consumption[1)]

Notes:
1) The compact contactor for CWC0 with low consumption coil allows only two additional auxiliary contacts.

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Contactors

CWC Series - Miniature Contactors

Miniature Control Relay with AC Coil

Current Rating (A)	Rating (UL)	Auxiliary Contacts NO		Auxiliary Contacts NC	Catalog Number	List Price	Multiplier
10	A600, Q600	2		2	CWCA0-22-00*	$45	Z6
		3		1	CWCA0-31-00*	$45	
		4		0	CWCA0-40-00*	$45	

To complete the selection, replace "*" with desired coil voltage from AC Coil Voltage Code Selection Table.

*AC Coil Voltage Code Selection				
Code	V04	V18	V24	V47
60 Hz	24V	120V	208-240V	480V
50 Hz	20V	110V	180-208V	400-415V

Miniature Control Relay with DC Coil

Current Rating (A)	Rating (UL)	Auxiliary Contacts NO		Auxiliary Contacts NC	Catalog Number	List Price	Multiplier
10	A600, Q600	2		2	CWCA0-22-00+	$59	Z6
		3		1	CWCA0-31-00+	$59	
		4		0	CWCA0-40-00+	$59	

To complete the selection, replace "+" with desired coil voltage from DC Coil Voltage Code Selection Table.

+DC Coil Voltage Code Selection			
Code	C03	C12	L03
VDC	24V	110V	24V Low Consumption [1]

Notes:
1) The compact contactor for CWC0 with low consumption coil allows only two additional auxiliary contacts.

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Accessories

Front Auxiliary Contact Block

For Use With	Number of Contacts	Auxiliary Contacts NO	Auxiliary Contacts NC	For Use With CWC0 (3 pole) Terminal Markings	For Use With CWC0 (3 pole) Catalog Number	For Use With CWC0 (4 pole) Terminal Markings	For Use With CWC0 (4 pole) Catalog Number	For Use With CWCA0 Terminal Markings	For Use With CWCA0 Catalog Number	List Price	Multiplier
CWC07...16 CWCA0	2	2	0		BFC0-20		BFC4-20		BFCA-20	$15	Z6
		1	1		BFC0-11		BFC4-11		BFCA-11		
		0	2		BFC0-02		BFC4-02		BFCA-02		
	4 [1]	4	0		BFC0-40 [1]		BFC4-40 [1]		BFCA-40 [1]	$26	
		2	2		BFC0-22 [1]		BFC4-22 [1]		BFCA-22 [1]		
		0	4		BFC0-04 [2]		BFC4-04 [2]		BFCA-04 [2]		
		3	1		BFC0-31 [1]		BFC4-31 [1]		BFCA-31 [1]		
		1	3		BFC0-13 [2]		BFC4-13 [2]		BFCA-13 [2]		
CWC025	2	2	0		BFC025-20	-	-	-	-	$15	
		1	1		BFC025-11	-	-	-	-		
		0	2		BFC025-02	-	-	-	-		

Mechanical Interlock Block

For Use With	Description	Catalog Number	List Price	Multiplier
CWC07...16 CWCA0	• Front mounting • Mechanical interlock without width increase • Allows assembly of auxiliary contact blocks, surge suppressor and timing relay	BIC0	$10	Z6

Notes:
1) The compact contactors with DC low consumption coils allow only two additional auxiliary contacts. For applications that use four auxiliary contacts use CWC0 with standard DC coils.
2) Auxiliary contact blocks with a 4NC or 1NO/3NC configurations may not be used with normal or low-consumption DC coils.

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Contactors

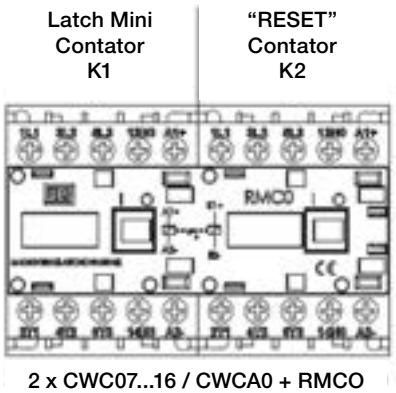
CWC Series - Miniature Contactors

Accessories

Latch Block

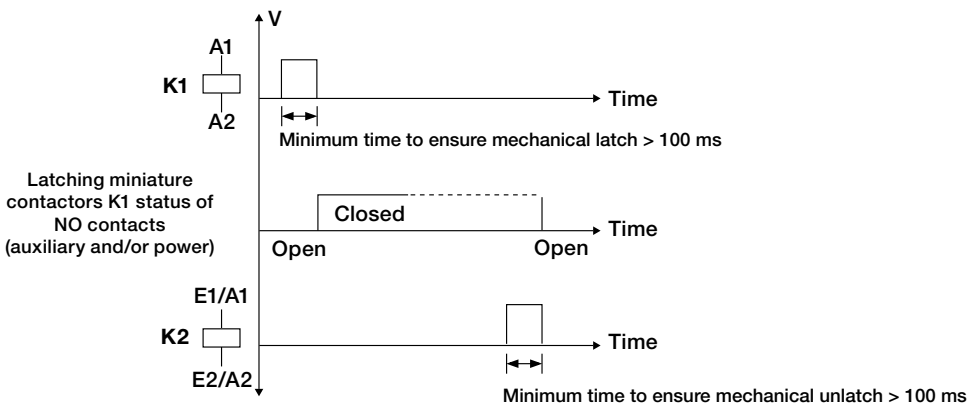
For Use With	Description	Catalog Number	List Price	Multiplier
CWC07...16 CWCA0	• Front mounting • Mechanical interlock using 2 minicontactors (AC or DC coil) • Can be mounted with Auxiliary contact block, surge suppressor, and timer accessories. • Cannot be used with low consumption 24VDC contactors	RMC0	$12	Z6

Operation Description of Latch Block RMCO



2 x CWC07...16 / CWCA0 + RMCO

Functional Diagram



- After a minimum pulse of 100 ms on miniature contactors coil (K1), the RMC0 will keep K1 contacts switched on.
- The miniature contactors K1 will only return to rest position after miniature contactors coil (K2) be energized by a releasing pulse.
- The mechanical latch will always and only happen on miniature contactors (K1).

Notes:
If RESET miniature contactors coil (K2) remains energized, the latching of miniature contactors (K1) is not enabled.

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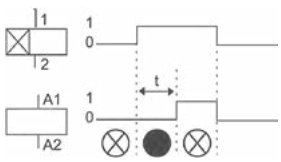
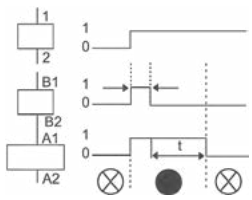
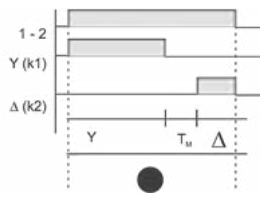
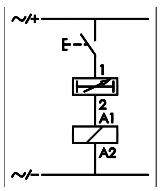
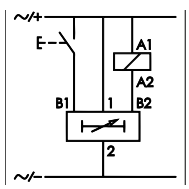
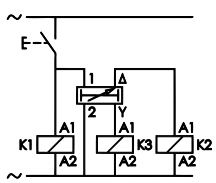
Accessories

Electronic Timing Relays[1)]

Function	Time	Voltages	Catalog Number		List Price	Multiplier
On-Delay (TECO)	3 – 0.3 to 3 seconds	24-240V 50/60 Hz – DC	TECO-U003S-E05		$150	Z6
	10 – 1 to 10 seconds		TECO-U010S-E05			
	30 – 3 to 30 seconds		TECO-U030S-E05			
	60 – 6 to 60 seconds		TECO-U060S-E05			
	100 – 10 to 100 seconds		TECO-U100S-E05			
	300 – 30 to 300 seconds		TECO-U300S-E05			
	1800 – 180 to 1800 seconds		TECO-U030M-E05			
Off-Delay (TDCO)	-	24-60V 50/60 Hz – DC 100-240V 50/60 Hz – DC	24-60 VAC/DC	100-240 VAC/DC	$150	
	3 – 0.3 to 3 seconds		TDCO-U010S-E04	TDCO-U003S-E09		
	10 – 1 to 10 seconds		TDCO-U003S-E04	TDCO-U010S-E09		
	30 – 3 to 30 seconds		TDCO-U030S-E04	TDCO-U030S-E09		
	60 – 6 to 60 seconds		TDCO-U060S-E04	TDCO-U060S-E09		
	100 – 10 to 100 seconds		TDCO-U100S-E04	TDCO-U100S-E09		
	300 – 30 to 300 seconds		TDCO-U300S-E04	TDCO-U300S-E09		
	1800 – 180 to 1800 seconds		TDCO-U030M-E04	TDCO-U030M-E09		
Star-Delta (TETCO)	30 – 3 to 30 seconds	24-28V 50/60 Hz – DC	TETCO-U030S-D52		$130	
		110-130V 50/60 Hz – DC	TETCO-U030S-D61			
		220-240V 50/60 Hz – DC	TETCO-U030S-D66			

Functions	On-Delay TECO	Off-Delay TDCO	Star-Delta TETCO
Functional Diagram Led On Led Off			
Diagrams			

Notes:
1) All timing relays are right-side mounting and include LED status indication.

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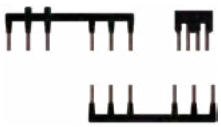
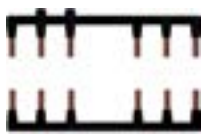
Contactors

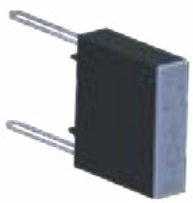
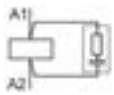
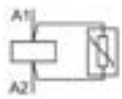
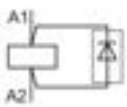
CWC Series - Miniature Contactors

Accessories

Easy Connection Busbar [1)]

Accessories					For Use With	Catalog Number	ListPrice	Multiplier
Wye-Delta								
Rating (HP)			Contactor					
230V	460V	575V	K1=K2	K3				
3	7 1/2	7 1/2	CWC07	CWC07				
5	7 1/2	10	CWC09	CWC07		CWC07...16 CWCA0	ECCO-SD	$34	Z6
5	10	10	CWC012	CWC07				
7 1/2	15	15	CWC016	CWC09				
Reversing								
Rating (HP)			Contactor					
230V	460V	575V	K1=K2					
1 1/2	5	5	CWC07					
3	5	7 1/2	CWC09					
3	7 1/2	7 1/2	CWC012			CWC07...16 CWCA0	ECCO-R	$34	Z6
5	10	10	CWC016					

Surge Suppressors

	For Use With	Circuit Diagram	Voltage	Catalog Number	List Price	Multiplier
	CWC07...25 CWCA0		24-48V 50/60 Hz	RCCO-2 D53	**$18**	Z6
			50-127V 50/60 Hz	RCCO-3 D55		
			130-250V 50/60 Hz	RCCO-4 D63		
			400-510V 50/60 Hz	RCCO-6 D73		
			12-48 VAC / 12-60 VDC	VRCO-1 E49		
			50-127 VAC / 60-180 VDC	VRCO-2 E34		
			130-275 VAC / 180-300 VDC	VRCO-3 E38		
			400-510V 50/60 Hz	VRCO-5 D73		
	CWC07...16 CWCA0		12-600 VDC	DICO-1 C33		

Note:
1) Allows assembly with RW17 overload relays, MPW18 and MPW40 motor circuit breakers and timers.

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Technical Data

General Data

Models			CWCA0	CWC07	CWC09	CWC012	CWC016	CWC025
Standards			IEC 60947 / UL 508					
Rated insulation voltage Ui (pollution degree 3)	IEC/EN 60947-4-1, VDE 0660	V	690					
	UL, CSA	V	600					
Rated impulse withstand voltage Uimp (IEC/EN 60947-1)		kV	4					
Rated operational frequency		Hz	25...400					
Mechanical lifespan	AC coil Ops x 10^6		10					3
	DC coil Ops x 10^6		12					-
Electrical lifespan	Ie AC-3 Ops x 10^6		-	1.4	1.3	1.2	1.1	0.6
Degree of protection (VDE 0160)	Main circuits		IP20					
	Control circuits and auxiliary contacts		IP20					
Mounting			Screw or DIN rail 35 mm					
Coil terminals			2					
Vibration resistance	Contactor open	g	2					
	Contactor closed	g	4					
Mechanical shock resistance (½ sine wave = 11 ms)	Contactor open	g	6					
	Contactor closed	g	10					
Ambient temperature	Operation		-25°C ...+55°C					
	Storage		-55°C ... +80°C					
Normal values			Up to 3,000 m					
Altitude	90% Ie / 80% Ue		3,000 to 4,000 m					
	80% Ie / 75% Ue		4,000 to 5,000 m					

Control Circuit – Alternating Current (AC)

Models			CWCA0, CWC07...16	CWC025
Rated insulation voltage Ui (pollution degree 3)	IEC/EN 60947-4-1, VDE 0660	V	1,000	1,000
	UL, CSA	V	600	600
Coils rated voltage 50 Hz		V	10...550	10...550
Coils rated voltage 60 Hz		V	12...660	12...660
Coils rated voltage 50/60 Hz		V	12...660	12...660
Coils rated voltage				
Coil operating limits		xUs	0.85...1.1	
Coil 60 Hz	Pick up	xUs	0.4...0.76	0.4...0.76
	Drop out	xUs	0.25...0.65	0.25...0.65
Coil 50/60 Hz	Pick up	xUs	0.5...0.8	0.5...0.8
	Drop out	xUs	0.2...0.6	0.2...0.6
Average consumption			1.0 x Us coil cold state	
Coil 60 Hz	Magnetic circuit closed	VA	2.5...3.5	10.8....13.2
	Power factor	cos φ	0.28	0.32
	Power dissipation per pole	W	2.6	-
	Magnetic circuit closing	VA	35	72
	Power factor	cos φ	0.85	0.93
Coil 50/60 Hz	Magnetic circuit closed	VA	2...3	4.56...5.8
	Magnetic circuit closing	VA	30	58
Average time	Closing NO contacts	ms	8...20	13...16
	Opening NO contacts	ms	6...13	13.5...17

Control Circuit – Direct Current (DC)

Models			CWCA0, CWC07...16		CWC07...16
Coil type			Conventional	Low consumption	4P (2P/2R)
Rated insulation voltage Ui (pollution degree 3)	IEC/EN 60947 -4-1, VDE 0660	V	1,000		
	UL, CSA	V	600		
Standard voltages		V	12...440		
Coil operating limits		xUs	0.85...1.1		
	Pick up	xUs	0.4...0.7		
	Drop out	xUs	0.15...0.4		
Power consumption			1.0 x Us coil cold state		
	Magnetic circuit closed	W	2.6...3.7	1.7...2.7	2.9...4
	Magnetic circuit closing	W	2.6...3.7	1.7...2.7	2.9...4
Operation time	Closing NO contacts	ms	35...45		
	Opening NO contacts	ms	7...12		

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Contactors

CWC Series - Miniature Contactors

Technical Data

Power Circuit

Models			CWC07	CWC09	CWC012	CWC016	CWC025
Rated operational current Ie	AC-3 (Ue ≤ 440 V)	A	7	9	12	16	22
	AC-4 (Ue ≤ 440 V)	A	2.8	3.5	4.5	5	9
	AC-1 (θ ≤ 55°C, Ue ≤ 690 V)	A	18	20	22	22	32
Rated operational voltage Ue	IEC/EN 60947-4-1, VDE 0660	V	690				
	UL, CSA[1)]	V	600				
Rated thermal current Ith (θ ≤ 55°C)		A	18	20	22	22	32
Making capacity – IEC/EN 60947		A	70	90	120	160	250
Breaking capacity IEC/EN 60947	(Ue ≤ 400 V)	A	50	72	96	128	200
	(Ue = 500 V)	A	50	72	96	128	200
	(Ue = 690 V)	A	35	54	72	96	150
Short-time current (no current flowing during recovery time of 10 min and θ ≤ 40°C)	1 sec.	A	250	250	250	250	-
	5 sec.	A	125	125	125	125	-
	10 sec.	A	95	95	95	95	-
	30 sec.	A	70	70	70	70	-
	1 minute	A	50	50	50	50	-
	3 min.	A	40	40	40	40	-
Protection against short-circuits with fuses (gL/gG)	@600 V – UL/CSA[1)]	kA	5				
	Coordination type 1	A	35	35	35	35	50
	Coordination type 2	A	20	20	25	25	35
Average impedance per pole		mΩ	6	6	5	5	6
Average power dissipation per pole	AC-1	W	1.9	2.4	2.4	2.4	6.1
	AC-3	W	0.3	0.5	0.7	1.3	3.8
Utilization Category AC-3							
Rated operational current Ie (θ ≤ 55°C)	Ue ≤ 440 V	A	7	9	12	16	22
	Ue ≤ 500 V	A	6.2	7.5	8.8	13	16
	Ue ≤ 690 V	A	4.5	5.5	6.6	10	13
	Ue ≤ 1,000 V	A	Not available				
Rated operational power[1)]	220/230 V	kW	1.5	2.2	3	3.7	5.5
		HP	2	3	4	5	7.5
	380 / V	kW	3	3.7	5.5	7.5	11
		HP	4	5	7.5	10	15
	400/415 V	kW	3	3.7	5.5	7.5	11
		HP	4	5	7.5	10	15
	440 V	kW	3.7	4.5	5.5	7.5	11
		HP	5	6	7.5	10	15
	500 V	kW	3.7	4.5	5.5	7.5	11
		HP	5	6	7.5	10	15
	660/690 V	kW	3	3.7	5.5	7.5	11
		HP	4	5	7.5	10	15
Maximum electrical operational per hour	600 ops/h	%	100	100	100	100	100
	1,200 ops/h	%	75	75	75	75	75
	3,000 ops/h	%	50	50	50	50	50
Utilization Category AC-4							
Rated operational current Ie AC-4 (Ue ≤ 440 V)		A	2.8	3.5	4.5	5	9
Rated operational power[1)] (200,000 operations)	220/230 V	kW	0.55	0.75	0.75	1.1	2.2
		HP	0.7	1	1	1.5	2.9
	380/400 V	kW	1.1	1.1	1.8	2.2	4
		HP	1.5	1.5	2.4	2.9	5.4
	415 V	kW	1.1	1.5	2.2	2.2	4.5
		HP	1.5	2	2.9	2.9	6
	440 V	kW	1.1	1.5	2.2	2.2	4.5
		HP	1.5	2	2.9	2.9	6
	500 V	kW	1.1	1.5	2.2	2.2	4.5
		HP	1.5	2	2.9	2.9	6
	660/690 V	kW	1.1	1.5	2.2	2.2	4.5
		HP	1.5	2	2.9	2.9	6

Notes:
1) For 50/60 Hz three-phase, four poles WEG standard motors. These values are only for reference and may change based on the number of poles and motor design.

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Technical Data

Power Circuit

Models			CWC07	CWC09	CWC012	CWC016	CWC025
Utilization Category AC-1			3P (NO) or 4P (4NO)				3P (NO)
Rated thermal current Ith	θ ≤ 55°C	A	18	20	22	22	32
Maximum operational current (up to 690 V)	θ ≤ 40°C	A	18	20	22	22	32
	θ ≤ 55°C	A	18	20	22	22	32
	θ ≤ 70°C	A	14.4	16	17.6	17.6	25.6
Maximum operational power θ ≤ 55°C 3-phase resistors	220 / 230 V	kW	6.8	7.5	8.3	8.3	12
	380 / 400 V	kW	11.5	13	14.5	14.5	21
	415 / 440 V	kW	13	14.5	16	16	23
	500 V	kW	14.8	16.5	18	18	26
	660 / 690 V	kW	20	22	25	25	36
Current values for connection of	2 poles in parallel		Ie x 1.7				
	3 poles in parallel		Ie x 2.4				
	4 poles in parallel		Ie x 3.2				
Percentage of the maximum operational current at	600 ops/h	%	100				
	1,200 ops/h	%					
	3,000 ops/h	%					
			2P (NO/NC) or 4P (2NO + 2NC)				2P (NO/NC)
Maximum operational power θ ≤ 55°C (resistive load)	220 / 230 V	kW	3.9	4.4	4.8	4.8	6.6
	380 / 400 V	kW	6.8	7.6	8.4	8.4	11.4
	415 / 440 V	kW	7.5	8.4	9.2	9.2	12.5
	500 V	kW	8.6	9.5	10.5	10.5	14.5
	660 / 690 V	kW	11.8	13.1	14.4	14.4	19.5

UL Power Ratings

Models			CWC07	CWC09	CWC012	CWC016	CWC025
General purpose current	600 V	A	18	20	22	22	30
1-phase	110 / 120 V	HP	1/3	1/3	1/2	1	1 1/2
	208 V	HP	3/4	1/2	1/2	2	3
	220 / 240 V	HP	3/4	1/2	2	2	3
3-phase	110 / 120 V	HP	3/4	1	1 1/2	2	3
	200 V	HP	1 1/2	2	3	3	5
	220 / 240 V	HP	1 1/2	3	3	5	7 1/2
	440 / 480 V	HP	5	5	7 1/2	10	15
	550 / 600 V	HP	5	7 1/2	7 1/2	10	15

Built-In Auxiliary Contacts

Models			CWC07...16	CWCA0
Standards			IEC 60947-5-1, IEC 60947-4-1	
Rated insulation voltage Ui (pollution degree 3)	IEC, VDE 0660	V	690	
	UL, CSA	V	600	
Rated operational voltage Ue	IEC, VDE 0660	V	690	
	UL, CSA	V	600	
Rated thermal current Ith	θ ≤ 55°C	A	10	
Rated Operational Current Ie				
AC-15 (IEC 60947-5-1)	Ue ≤ 240 V	A	10	
	380-400 V	A	6	
	415-440 V	A	5	
	500 V	A	4	
	660-690 V	A	2	
UL, CSA			A600	
DC-13 (IEC 60947-5-1)	24 V	A	6	
	48 V	A	4	
	110 V	A	2	
	220 V	A	0.7	
UL, CSA			Q600	
Making capacity (rms)	Ue ≤ 400 V 50/60 Hz – AC-15	A	10 x Ie (AC-15)	
Breaking capacity (rms)	Ue ≤ 400 V 50/60 Hz – AC-15	A	10 x Ie (AC-15)	
Maximum fuse class gL-gG without welding (short-circuit protection) gL/gG		A	10	
Control circuit reliability		V/mA	17 / 5	
Electrical endurance	millions operations		1	
Mechanical endurance	millions operations		10	

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Contactors

CWC Series - Miniature Contactors

Technical Data

Auxiliary Contacts

Models			BFC0 / BFC025
Standards			IEC 60947-5-1, IEC 60947-4-1
Rated insulation voltage Ui (pollution degree 3)	IEC, VDE 0660	V	1,000
	UL, CSA[1)]	V	600
Rated operational voltage Ue	IEC, VDE 0660	V	690
	UL, CSA[1)]	V	600
Rated thermal current Ith (θ ≤ 55°C)		A	10
Rated Operational Current Ie			
AC-15 (IEC 60947-5-1)	Ue ≤ 240 V	A	10
	380-400 V	A	6
	415-440 V	A	6
	500 V	A	4
	660-690 V	A	-
UL, CSA[1)]			A600
DC-13 (IEC 60947-5-1)	24 V	A	1.5
	60 V	A	0.5
	110 V	A	0.4
	220-240 V	A	0.4
UL, CSA[1)]			Q600
Making capacity (rms)	Ue ≤ 400 V 50/60 Hz – AC-15	A	30
Breaking capacity (rms)	Ue ≤ 400 V 50/60 Hz – AC-15	A	3
Maximum fuse class gL-gG without welding (short-circuit protection)		A	10
Control circuit reliability	V/mA		17/5
Electrical endurance	millions operations		1
Mechanical endurance	millions operations		10

Timing Relays

Models			TEC0 / TDC0 / TETC0
Rated insulation voltage Ui		V	300
Supply voltage Ue	1 - 2 terminals		24...240 VDC / VAC 50/60 Hz (TEC0)
			24...60 VDC / VAC 50/60 Hz (TDC0)
			100...240 VDC / VAC 50/60 Hz (TDC0)
			220-240 VAC 50/60 Hz (TETC0)
			110-130 VAC 50/60 Hz (TETC0)
			24-28 VAC 50/60 Hz (TETC0)
Control voltage Uc (only TDC0)	2 - B1 terminals		24...60 VDC / VAC 50/60 Hz (TDC0)
			100...240 VDC / VAC 50/60 Hz (TDC0)
Voltage operational limits			0.85...1.1 x Uc (VAC)
			0.8...1.25 x Uc (VDC)
Consumption		mA	≤ 5
Minimum time for reset (recovery time)		ms	650
Minimum control time (only TDC0)		ms	50
Setting accuracy (% of the full scale value)		%	+/-5
Repeat accuracy		%	+/-1
Changeover time Y – Δ		ms	50

Notes:
1) For 50/60 Hz three-phase, four pole WEG standard motors. These values are only for reference and may change based on the number of poles and motor design.

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Technical Data

Terminal Capacity and Tightening Torque – Power and Built-In Auxiliary Terminals

Models	CWC07...CWC016 / CWCA0			CWC025		
Screw type	M3 x 8 Flat / Phillips			M3.5 x 9 Flat / Phillips		
Power terminal and built-in auxiliary terminal[1)]	Finely stranded with end sleeve	Stranded and finely stranded without end sleeve	Solid	Finely stranded with end sleeve	Stranded and finely stranded without end sleeve	Solid
mm²	1x 0.5...2.5 2x 0.5...1.5	1x 0.75...2.5 2x 0.75...2.5	1x 0.5...2.5 2x 0.5...2.5	1x 1...6 2x 1...2.5 2x 2.5...4	1x 1...6 2x 1...2.5 2x 2.5...6	1x 1...6 2x 1...2.5 2x 2.5...6
AWG (UL)	18...12			18...10		
Tightening torque (Nm)	1.1			1.5		
Tightening torque (in-lb) (UL)	10			13		

Terminal Capacity and Tightening Torque – Coil Terminals

Models	CWC07...CWC025 / CWCA0		
Screw type	M3.5 x 8 Flat / Phillips		
Coil terminals	Finely stranded with end sleeve	Stranded and finely stranded without end sleeve	Solid
mm²	1x 0.5...2.5 2x 0.5...1.5	1x 0.75...2.5 2x 0.75...2.5	1x 0.5...2.5 2x 0.5...2.5
AWG (UL)	22...12		
Tightening torque (Nm)	1.1		
Tightening torque (in-lb) (UL)	10		

Terminal Capacity and Tightening Torque – Auxiliary Contact Blocks

Models	BFC0 / BFCA / BFC4 / BFC025		
Screw type	M3.5 x 9 Flat / Phillips		
Auxiliary contact block	Finely stranded with end sleeve	Stranded and finely stranded without end sleeve	Solid
mm²	1x 0.5...2.5 2x 0.5...1.5	1x 0.75...4 2x 0.75...2.5	1x 0.5...4 2x 0.5...2.5
AWG (UL)	22...14		
Tightening torque (Nm)	1.1		
Tightening torque (in-lb) (UL)	10		

Notes:
1) Built-in auxiliary terminals not available for CWC025.

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Contactors

CWC Series - Miniature Contactors

Technical Data

Utilization Category DC-1, DC-3 and DC-5

DC-1(L/R ≤ 1 ms)

	Models	CWC07	CWC09	CWC012	CWC016	CWC025
Ue	Poles In Series	Rated Operational Current Ie (A)				
≤ 24 V	1	10	10	16	16	18
	2	15	15	20	20	25
	3	15	15	22	22	25
	4	15	15	22	22	-
≤ 48 V	1	10	10	13	13	16
	2	15	15	20	20	25
	3	15	15	22	22	25
	4	15	15	22	22	-
≤ 60 V	1	8	8	10	10	13
	2	15	15	18	18	25
	3	15	15	22	22	25
	4	15	15	22	22	-
≤ 125 V	1	4	4	5	5	6
	2	8	8	10	10	13
	3	12	12	16	16	18
	4	15	15	19	19	-
≤ 220 V	1	0.6	0.6	0.7	0.7	1
	2	5	5	6	6	8
	3	9	9	10	10	14
	4	12	12	15	15	-
≤ 440 V	1	0.2	0.2	0.3	0.3	0.4
	2	0.6	0.6	0.7	0.7	1.5
	3	3.5	3.5	4	4	5
	4	8	8	9	9	-
≤ 600 V	1	-	-	-	-	-
	2	0.2	0.2	0.3	0.3	0.6
	3	1	1	1.5	1.5	2
	4	2	2	4	4	-

DC-3(L/R ≤ 2.5 ms)

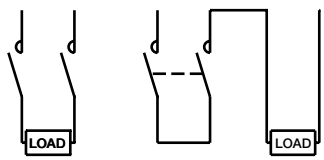
	Models	CWC07	CWC09	CWC012	CWC016	CWC025
Ue	Poles In Series	Rated Operational Current Ie (A)				
≤ 24 V	1	9	9	9	9	10
	2	12	12	12	12	15
	3	15	15	15	15	18
	4	15	15	15	15	-
≤ 48 V	1	8	8	8	8	10
	2	12	12	12	12	15
	3	15	15	15	15	18
	4	15	15	15	15	-
≤ 60 V	1	5	5	5	5	8
	2	10	10	10	10	13
	3	14	14	14	14	18
	4	15	15	15	15	-
≤ 125 V	1	1.5	1.5	1.5	1.5	2
	2	5.5	5.5	5.5	5.5	7
	3	10	10	10	10	13
	4	14	14	14	14	-
≤ 220 V	1	0.4	0.4	0.4	0.4	0.6
	2	1.5	1.5	1.5	1.5	2
	3	7	7	7	7	8
	4	11	11	11	11	-
≤ 440 V	1	-	-	-	-	-
	2	0.2	0.2	0.2	0.2	0.3
	3	1	1	1	1	1.5
	4	3	3	3	3	-
≤ 600 V	1	-	-	-	-	-
	2	-	-	-	-	-
	3	0.6	0.6	0.6	0.6	0.8
	4	1.5	1.5	1.5	1.5	-

DC-5(L/R ≤ 15 ms)

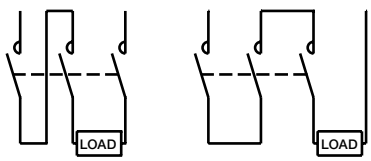
	Models	CW07	CWC07	CWC09	CWC012	CWC016	CWC025
Ue	Poles In Series	Rated Operational Current Ie (A)					
≤ 24 V	1	1.5	8	8	8	8	10
	2	2.5	12	12	12	12	14
	3	3	15	15	15	15	18
	4	3	15	15	15	15	-
≤ 48 V	1	1.5	8	8	8	8	9
	2	2.5	12	12	12	12	14
	3	3	15	15	15	15	18
	4	3	15	15	15	15	-
≤ 60 V	1	1.2	5	5	5	5	7
	2	2.5	10	10	10	10	12
	3	3	14	14	14	14	18
	4	3	15	15	15	15	-
≤ 125 V	1	0.7	1.5	1.5	1.5	1.5	0.8
	2	1.5	5.5	5.5	5.5	5.5	5
	3	2.5	9	9	9	9	12
	4	3	14	14	14	14	-
≤ 220 V	1	0.1	0.4	0.4	0.4	0.4	-
	2	0.5	0.7	0.7	0.7	0.7	0.8
	3	1.5	2.5	2.5	3	3	3
	4	2.2	9	9	9	9	-
≤ 440 V	1	-	-	-	-	-	-
	2	-	-	-	-	-	-
	3	0.1	0.3	0.3	0.3	0.3	0.5
	4	0.3	0.7	0.7	0.7	0.7	-
≤ 600 V	1	-	-	-	-	-	-
	2	-	-	-	-	-	-
	3	-	-	-	-	-	-
	4	-	0.2	0.2	0.2	0.2	-

1 Pole In Series

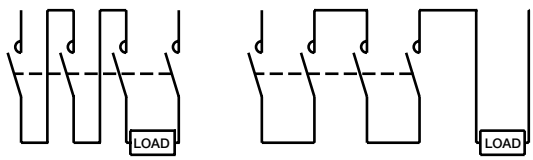
2 Poles In Series



3 Poles In Series



4 Poles In Series



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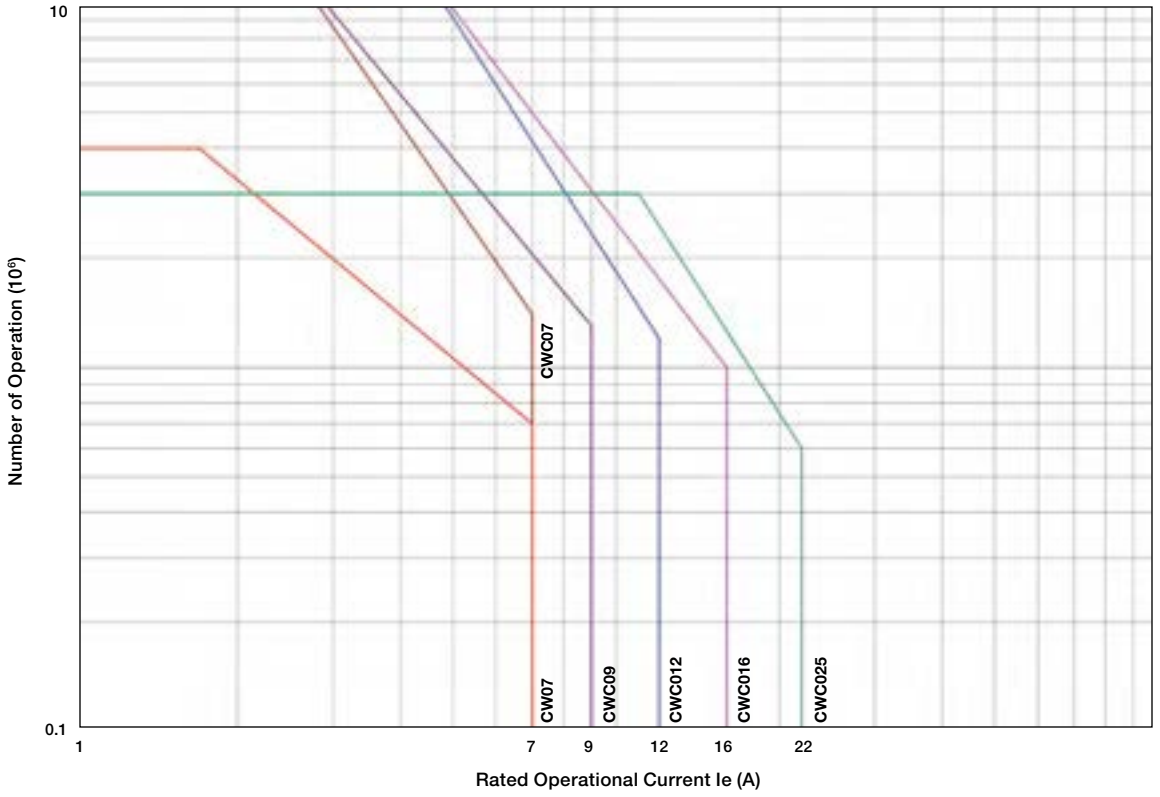
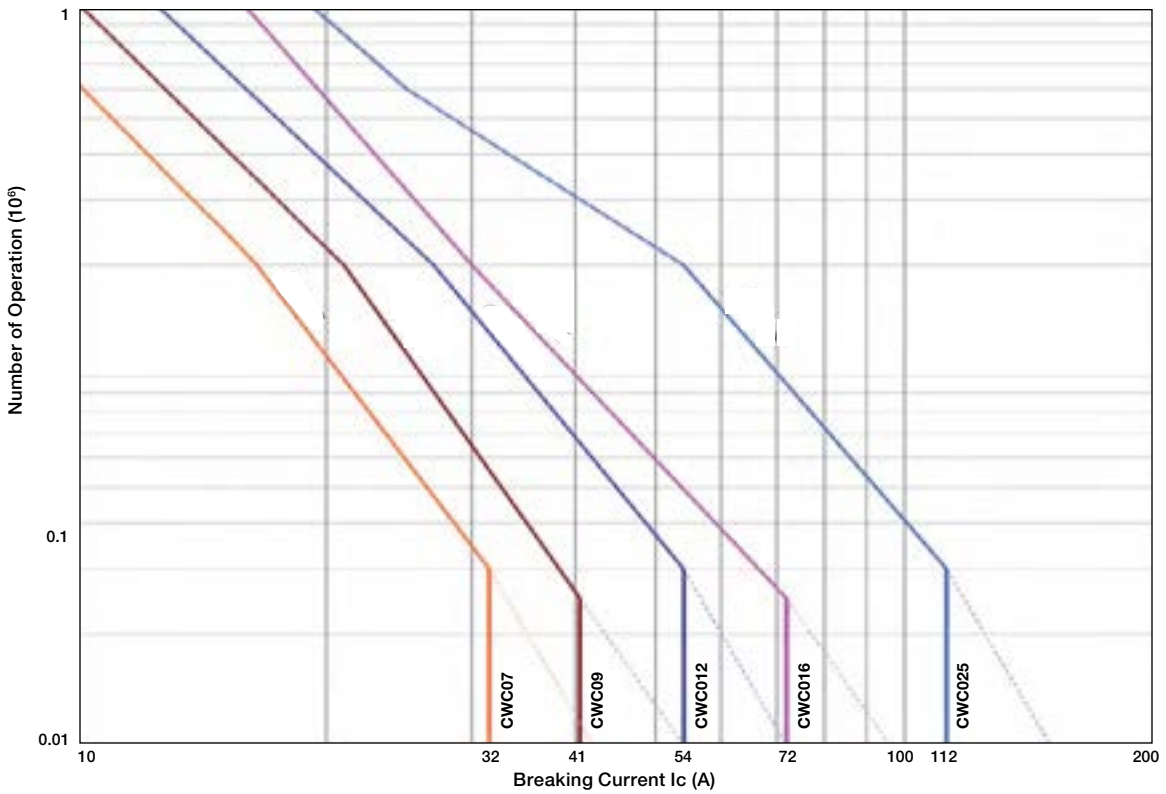
Technical Data

Electrical Lifespan

AC-3 (Ue ≤ 415 VAC and Ue ≤ 440 VAC)



AC-4 (Ue ≤ 440 VAC)



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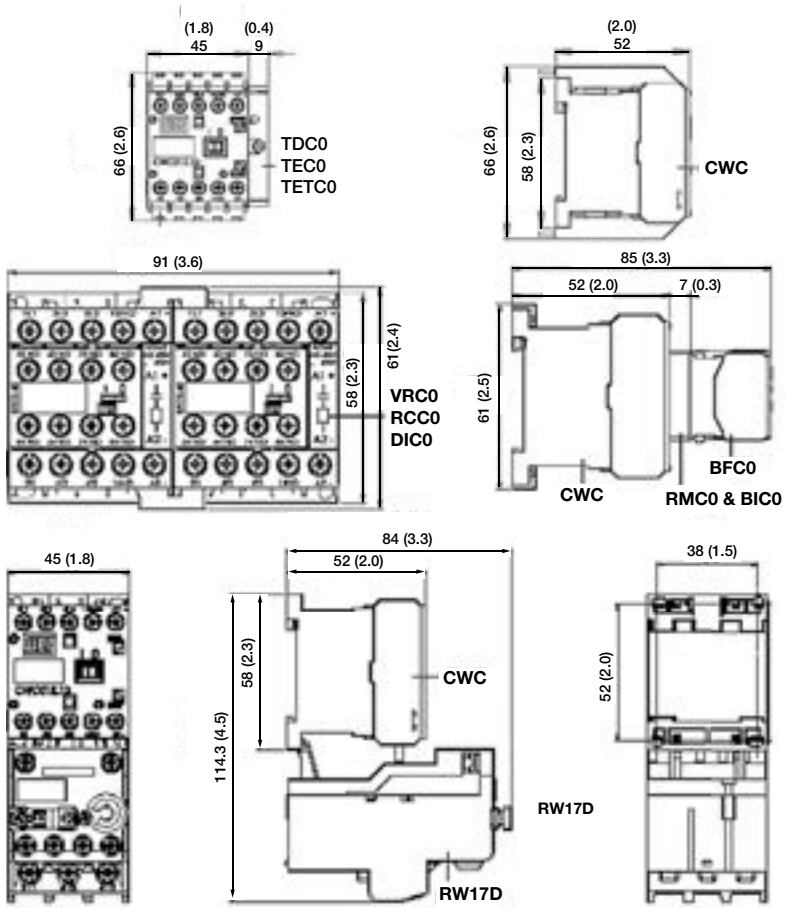
Contactors

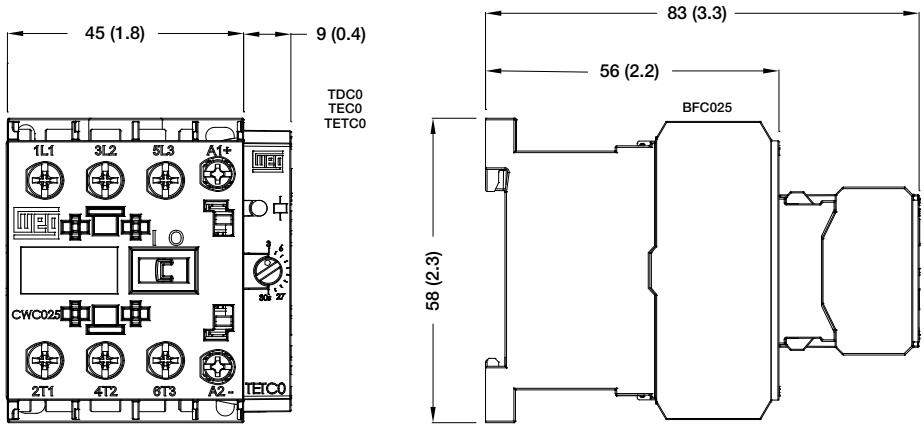
CWC Series - Miniature Contactors

Dimensions – mm (inch)

CWC07...016 & CWCA0



CWC025



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CWB Series – IEC Contactors

Developed according to IEC 60947 and UL 508 international standards, the new WEG CWB line of contactors meets the requirements of a wide range of industrial applications. The CWBs are designed with the visual pattern and identity of WEG, a brand recognized worldwide for its quality.

UL File No. E202315

Standard Features

- "Zero-width" mechanical interlock
- Simple and compact mounting of surge suppressor blocks
- Contactor coil operated on AC or DC
- Simple and organized control circuits
- Additional contact blocks
- Easy access power and control terminals

Learn More Online

CWB Catalog Number Sequence

CWB	12	-	11	-	30	D15

Contactor Series
CWB: IEC
CWBN: NEMA

Frame Rating

IEC	NEMA
9: 9A	00: 9A
12: 12A	0: 18A
18: 18A	1: 25A
25: 25A	2: 50A
32: 32A	3: 95A
38: 38A	
40: 40A	
50: 50A	
65: 65A	
80: 80A	
95: 95A	
110: 110A	
125: 125A	

Auxiliary Contacts
11: 1NO + 1NC

Power Poles
30: 3NO Power Poles

Coil Voltage

AC Voltage
D02: 24V
D15: 120V
V24: 208-240V
D24: 230V
D39: 480V
D45: 600V
D77: 208V
D98: 277V

DC Voltage
C03: 24V
C07: 48V
C13: 125V

AC/DC Voltage with Electronic Module
E04: 24-60V
E65: 110-255V

Chart intended as reference only and not to create part numbers.

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Contactors

CWB Series – IEC Contactors

Selection Table

Three-Pole CWB Contactors from 9 A to 125 A (AC-3)

Ie Max (Ue ≤ 440 V)	Maximum UL Horsepower						Built-in Auxiliary Contacts Per Contactor		Catalog Number	List Price AC Coil	List Price DC Coil	Multiplier New (Old)
AC-3 A	Single-Phase		Three-Phase				•3 \ •4 NO	•1 / •2 NC				
	115V	230V	200V	230V	480V	575V						
9	3/4	1 1/2	3	3	5	7 1/2	1	1	CWB9-11-30*	$75	$88	Z1B (Z1)
12	3/4	2	3	3	7 1/2	10	1	1	CWB12-11-30*	$84.50	$103	
18	1	3	5	5	10	15	1	1	CWB18-11-30*	$103	$123.50	
25	2	5	7 1/2	7 1/2	15	15	1	1	CWB25-11-30*	$118	$128	
32	3	5	10	10	20	25	1	1	CWB32-11-30*	$140	$180	
38	3	7 1/2	10	10	25	25	1	1	CWB38-11-30*	$164	$198	
40	3	7 1/2	10	15	30	30	1	1	CWB40-11-30*	$164	$215	
50	3	10	15	15	40	40	1	1	CWB50-11-30*	$225	$310	
65	5	10	20	20	50	50	1	1	CWB65-11-30*	$255	$350	
80	7 1/2	15	20	25	50	60	1	1	CWB80-11-30*	$270	$417	
95	7 1/2	20	30	30	75	75	1	1	CWB95-11-30*	$365	-	
									CWB95-11-30#	$450	$450	
110	10	25	30	40	75	100	1	1	CWB110-11-30*	$420	-	
									CWB110-11-30#	$550	$550	
125	10	25	40	40	100	125	1	1	CWB125-11-30#	$750	$750	

Three-Pole CWB NEMA Rated Sizes 00 - 3

NEMA Size	Maximum UL Horsepower						Built-In Auxiliary Contacts Per Contactor		Catalog Number	List Price AC Coil	List Price DC Coil	Multiplier New (Old)
	Single-Phase		Three-Phase				•3 \ •4 NO	•1 / •2 NC				
	115V	230V	200V	230V	480V	575V						
00	1/3	1	1 1/2	1 1/2	2	2	1	1	CWBN00-11-30*	$103	$150	Z1B (Z1)
0	1	2	3	3	5	5	1	1	CWBN0-11-30*	$118	$177	
1	2	3	7 1/2	7 1/2	10	10	1	1	CWBN1-11-30*	$164	$220	
2	3	7 1/2	10	15	25	25	1	1	CWBN2-11-30*	$233	$330	
3	7 1/2	15	25	30	50	50	1	1	CWBN3-11-30*#	$420 1)	$550 2)	

Replace "*" with the appropriate coil voltage code.

Alternating Current (for contactor CWB9...110 and CWBN00...3)

Code	D02	D15	V24 3)	D24	D39	D45	D77	D98
V (50/60 Hz)	24	120	180-208V 50 Hz 208-240V 60 Hz	230	480	600	208	277

Direct Current (for contactor CWB9...80 and CWBN00...2)

Code	C03	C07	C13
VDC	24	48	125

Replace "#" with the appropriate coil voltage code.

Alternating Current / Direct Current with Electronic Module (for contactor CWB95...125 and CWBN3)

Code	E04	E65
VAC (50/60 Hz) and VDC	24 - 60	110 - 255

Notes:
1) For AC coil only.
2) For AC/DC coil with Electronic module.
3) V24 Coil only available on CWB9...80 and CWBN00...2.

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Accessories and Spare Parts

Front Mounted Auxiliary Contact Blocks

.063 kg

For Use With	Max Number of Additional Contacts per Contactor	Auxiliary Contacts NO	Auxiliary Contacts NC	Catalog Number	List Price	Multiplier New (Old)
CWB9...125 CWBN00…3	4 / CWB9...125 4 / CWBN00...3	1	1	BFB-11 1)	$20	Z1B (Z1)
		2	0	BFB-20	$20	
		0	2	BFB-02 1)	$20	
		2	2	BFB-22 1)	$32	
		4	0	BFB-40	$32	
		0	4	BFB-04 1)	$32	
		3	1	BFB-31 1)	$32	
		1	3	BFB-13 1)	$32	

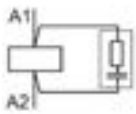
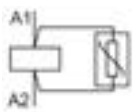
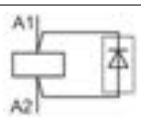
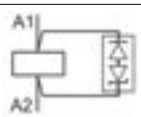
Side Mounted Auxiliary Contact Blocks

.034 kg

For Use With	Max Number of Additional Contacts per Contactor	Auxiliary Contacts NO	Auxiliary Contacts NC	Catalog Number	List Price	Multiplier New (Old)
CWB9...125 CWBN00…3	4 / CWB9...125 3) 4 / CWBN00...3 3)	1	1	BLB-11 1)	$22	Z1B (Z1)
		2	0	BLB-20		
		0	2	BLB-02 1)		
		1	1	BLRB-11 1) 2)		
		2	0	BLRB-20 2)		
		0	2	BLRB-02 1) 2)		

Plug-In Surge Suppressors

.008 kg

For Use With	Voltage	Diagram	Catalog Number	List Price	Multiplier New (Old)
CWB9...110 CWBN00...3	24...48 V 50/60 Hz		RCB D53 5)	$30	Z1B (Z1)
	50...127 V 50/60 Hz		RCB D55 5)		
	130...250 V 50/60 Hz		RCB D63 5)		
	12-48 VAC / 12-60 VDC		VRB E49		
	50-127 VAC / 60-180 VDC		VRB E34		
	130-250 VAC / 180-300 VDC		VRB E50		
	277-380 VAC / 300-510 VDC		VRB E41		
	400...510 V 50/60 Hz		VRB D73		
	12...600 VDC		DIB C33 6)		
	12...250 VDC		DIZB C26 7)		

Notes:
1) The arrangement of the contacts meets IEC 60947-4-1 Annex F (Mirror Contact) and IEC 60947-5-1 Annex L (Mechanically Linked Contact) requirements.
2) Wiring numbers from BLB contact block for a combination of two side-mounted auxiliary contact blocks on the same side of the contactor.
3) CWB contactors allow a maximum of eight auxiliary contacts (four blocks) as long as there are two blocks on each side of the product.
4) Cannot be used with additional contact blocks (front mount or side mount). It can be used with CWB contactor containing built-in auxiliary contacts.
5) Contactors CWB9…110 with DC coils assembled with surge suppressor DIB will increase the opening time by six times. The surge suppressor cannot be used with BLB or BFB auxiliary contact blocks that contain NC contacts.
6) Contactors assembled with surge suppressor DIZB will increase the opening time by four times.

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Contactors

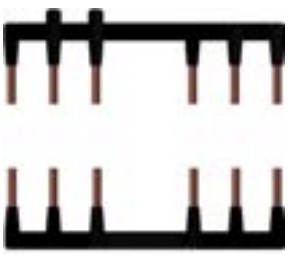
CWB Series – IEC Contactors

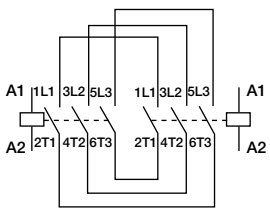
Accessories and Spare Parts

Mechanical Interlock

	For Use With	Description	Catalog Number	List Price	Multiplier New (Old)
	CWB9...38 CWBN00...1	Mounting set for interlocking two contactors with the same frame type. Fitting through snaps without tools.	IM1	$12	Z1B (Z1)
	CWB40...125 CWBN2...3		IM2	$15	

Easy-Connection Setting of the Power Terminals for Reversing Starters

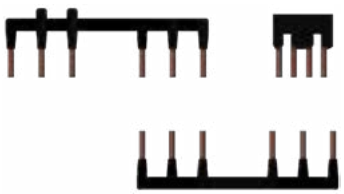


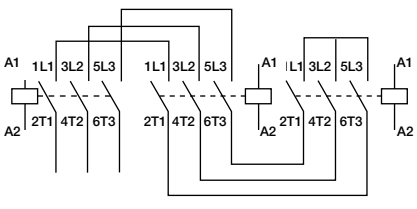


Electric Diagram

For Use With	Orientative Rated Operational Power for Reversing Starters (AC-4 Duty) for Three-Phase Four-Pole Motors – 60 Hz – 1,800 RPM		Catalog Number	List Price	Multiplier New (Old)
K1=K2	230 V kW / HP	400 V kW / HP			
CWB9/CWBN00	1.5 / 2.0	2.2 / 2.9	EC-R1	$60	Z1B (Z1)
CWB12	1.5 / 2.0	3.7 / 5.0			
CWB18/CWBN0	2.2 / 2.9	4 / 5.4			
CWB25/CWBN1	3 / 4.0	5.5 / 7.4			
CWB32	4 / 5.4	7.5 / 10.1			
CWB38	4 / 5.4	7.5 / 10.1			
CWB40	4.5 / 6.0	9.2 / 12.3	EC-R2	$75	
CWB50/CWBN2	5.5 / 7.4	11 / 14.7			
CWB65	7.5 / 10.1	15 / 20.1			
CWB80	11 / 14.7	18.5 / 24.8			
CWB95	11 / 15	30 / 40	EC-R3	$100	
CWB110	15 / 20	30 / 40			
CWB125	18.5 / 25	37 / 50			

Easy-Connection Setting of the Power Terminals for Star-Delta Starters





Electric Diagram

For Use With		Orientative Rated Operational Power in AC-3 Three-Phase Motor – IV poles – 1,800 rpm		Catalog Number	List Price	Multiplier New (Old)
K1=K2	K3	230 V kW / HP	400 V kW / HP			
CWB9	CWB9	4 / 5.4	7.5 / 10	EC-SD1	$75	Z1B (Z1)
CWB12	CWB9	5.5 / 7.5	11 / 15			
CWB18	CWB12	9.2 / 12.5	15 / 20			
CWB25	CWB18	11 / 15	22 / 30			
CWB32	CWB18	15 / 20	-			
CWB38	CWB25	18.5 / 25	30 / 40			
CWB50	CWB40	22 / 30	45 / 61	EC-SD2	$90	
CWB65	CWB40	30 / 40	55 / 75			
CWB80	CWB50	45 / 61	75 / 102			
CWB95	CWB95	45 / 60	90 / 125	EC-SD3	$135	
CWB110	CWB95	55 / 75	110 / 150			
CWB125	CWB95	55 / 75	132 / 175			

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Accessories and Spare Parts

Spare Coils for Contactors

	For Use With	Control Type	Catalog Number to fill in with the Control Voltage	List Price	Multiplier New (old)
	CWB9...38 CWBN00...1	AC	BRB-38♦	$22	Z1B (Z1)
	CWB40...80 CWBN2	AC	BRB-80♦	$40	
	CWB40...80 CWBN2	DC	BRB-80♦	$110	
	CWB95/110 CWBN3	AC	BRB-110♦	$55	
	CWB95…125 CWBN3	AC/DC[1]	BRB-125#	$250	

To complete the part number, replace "♦" with the appropriate coil voltage code.

To complete the part number, replace "#" with the appropriate coil voltage code.

Alternating Current (for contactor CWB9…110 and CWBN00…3)

Code	D02	D15	V24[2]	D24	D39	D45	D77	D98
V (50/60 Hz)	24	120	180-208 V 50 Hz / 208-240 V 60 Hz	230	480	600	208	277

Direct Current (for contactor CWB40…80 and CWBN00…2)

Code	C03	C13
VDC	24	125

Alternating Current / Direct Current with Electronic Module (for contactor CWB95…125 and CWBN3)

Code	E04	E65
VAC (50/60 Hz) and VDC	24 - 60	110 - 255

Notes:
1) Supply with built-in electronic module.
2) V24 Coil only available on CWB9...80 and CWBN00... 2.

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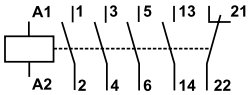
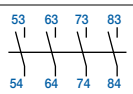
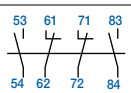
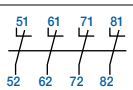
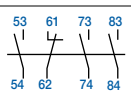
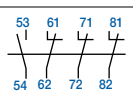
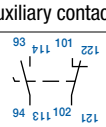
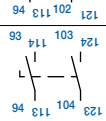
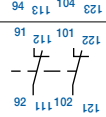
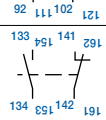
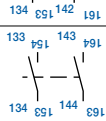
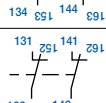
Contactors

CWB Series – IEC Contactors

Technical Data

Terminal Markings According to IEC/EN 60947

Diagram	Configuration	Auxiliary Contacts		Catalog Number
		NO	NC	
Three-Poles contactors with built-in auxiliary contacts				
	11	1	1	CWB9...125 CWBN00...3
Front-mounted auxiliary contact blocks				
	20	2	0	BFB-20
	11	1	1	BFB-11
	02	0	2	BFB-02
	40	4	0	BFB-40
	22	2	2	BFB-22
	04	0	4	BFB-04
	31	3	1	BFB-31
	13	1	3	BFB-13
Side-mounted auxiliary contact blocks				
	11	1	1	BLB11
	20	2	0	BLB20
	02	0	2	BLB02
	11	1	1	BLRB11
	20	2	0	BLRB20
	02	0	2	BLRB02

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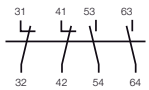
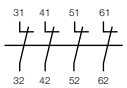
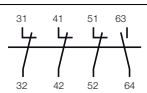
Technical Data

Terminal Markings According to EN 50012

Diagram	Configuration	Auxiliary Contacts		Catalog Number
		NO	NC	
Front mounting auxiliary contact blocks				
	20	2	0	BFB-20 EN
	11	1	1	BFB-11 EN
	02	0	2	BFB-02 EN
	40	4	0	BFB-40 EN
	22	2	2	BFB-22 EN
	04	0	4	BFB-04 EN
	31	3	1	BFB-31EN
	13	1	3	BFB-13 EN

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CWB Series – IEC Contactors

Technical Data

Basic Data

Models			CWB9	CWB12	CWB18	CWB25	CWB32	CWB38
Compliance with the standards			IEC/EN 60947-1 IEC/EN 60947-4-1 IEC/EN 60947-5-1 UL 60947					
Rated insulation voltage Ui (pollution degree 3)	IEC/EN 60947-4-1	V	690					
	UL, CSA	V	600					
Rated impulse-withstand voltage Uimp	IEC/EN 60947-1	kV	6					
Frequency limits		Hz	25...400					
Mechanical lifespan	AC coil (million cycles)		10					
	DC coil (million cycles)		10					
Electrical lifespan	Ie AC-3 (million cycles)		2	2	1.8	1.6	1.6	1.2
Degree of protection (IEC/EN 60529)	Main terminals		IP10 (front)					
	Coil and auxiliary contacts		IP20 (front)					
Mounting			By screws or DIN 35 mm rail (EN 50022)					
Coil connection points	Contactors with AC coil		2					
	Contactors with DC coil		2					
Vibration resistance (IEC/EN 60068-2-6)	Open contactor	g	4					
	Closed contactor	g	4					
Resistance to mechanical shocks (½ sine wave = 11 ms – IEC/EN 60068-2-27)	Open contactor	g	10					
	Closed contactor	g	15					
Ambient temperature	Operating		-25ºC...+55ºC					
	Storage		-55ºC...+80ºC					
Maximum operation altitude without modification in the rated values[1)]			3,000 m					

Models			CWB40	CWB50	CWB65	CWB80	CWB95	CWB110	CWB125
Compliance with the standards			IEC/EN 60947-1 IEC/EN 60947-4-1 IEC/EN 60947-5-1 UL 60947						
Rated insulation voltage Ui (pollution degree 3)	IEC/EN 60947-4-1	V	1,000						
	UL, CSA	V	600						
Rated impulse-withstand voltage Uimp	IEC/EN 60947-1	kV	6						
Frequency limits		Hz	25...400						
Mechanical lifespan	AC coil (million cycles)		6						
	DC coil (million cycles)		6						
Electrical lifespan	Ie AC-3 (million cycles)		1.6	1.6	1.6	1.2	1.1	1	
Degree of protection (IEC/EN 60529)	Main terminals		IP10 (front)						
	Coil and auxiliary contacts		IP20 (front)						
Mounting			By screws or DIN 35 mm rail (EN 50022)						
Coil connection points	Contactors with AC coil		2						
	Contactors with DC coil		2						
Vibration resistance (IEC/EN 60068-2-6)	Open contactor	g	4						
	Closed contactor	g	4						
Resistance to mechanical shocks (½ sine wave = 11 ms – IEC/EN 60068-2-27)	Open contactor	g	10						
	Closed contactor	g	15						
Ambient temperature	Operating		-25ºC...+55ºC						
	Storage		-55ºC...+80ºC						
Maximum operation altitude without modification in the rated values[1)]			3,000 m						

Notes:
1) For altitudes of 3,000...4,000 m (0.90xIe and 0.80 xUi) and of 4,000...5,000 m (0.80xIe and 0.75 xUi).

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Technical Data

Control Circuit – Alternating Current (AC)

Models			CWB9...38	CWB40...80	CWB95/110
Rated insulation voltage Ui (pollution degree 3)	IEC/EN 60947-4-1	V	690	1,000	1,000
	UL, CSA	V	600	600	600
Standard voltages at 50/60 Hz		V	12...500	24...500	24...500
Coil operating limits	At 50 Hz	xUs	0.8...1.1	0.8...1.1	0.8...1.1
	At 60 Hz	xUs	0.8...1.1	0.8...1.1	0.8...1.1
Average consumption Coil 50/60 Hz (60 Hz operation)	Magnetic circuit closed	VA	7.5	17.5	25
	Power factor switched on	cos Θ	0.27	0.28	0.4
	Thermal power dissipation	W	1.5...2.5	4...5.5	9...11
	Closing of the magnetic circuit	VA	75	185	410
	Power factor switching on	cos Θ	0.7	0.55	0.48
Average consumption Coil 50/60 Hz (50 Hz operation)	Magnetic circuit closed	VA	9	27	27
	Power factor switched on	cos Θ	0.24	0.25	0.4
	Thermal power dissipation	W	1.5...2.5	5.5...7.8	11...13.4
	Closing of the magnetic circuit	VA	90	202	426
	Power factor switching on	cos Θ	0.8	0.56	0.5
Average operating time	Closing of the NO contacts	ms	15...25	10...15	8...12.5
	Opening of the NO contacts	ms	8...12	8...12	4...8

Control Circuit – Direct Current (DC)

Models			CWB9...38	CWB40...80	CWB95...125
Rated insulation voltage Ui (pollution degree 3)	IEC/EN 60947-4-1	V	690	1,000	-
	UL, CSA	V	600	600	-
Standard voltages		V	12...500	12...500	-
Coil operating limits		xUs	0.8...1.1	0.8...1.1	-
Average consumption DC coil	Magnetic circuit closed	W	5.8	10.6	-
	Closing of the magnetic circuit	W	5.8	105.5	-
Average operating time	Closing of the NO contacts	ms	35...45	20...30	-
	Opening of the NO contacts	ms	8...12	4...8	-

Control Circuit – Electronic Coils (AC/DC)

Models			CWB9...38	CWB40...80	CWB95...125
Rated insulation voltage Ui (pollution degree 3)	IEC 60947-4-1, VDE 0660	V	-	-	1,000
	UL, CSA	V	-	-	600
Standard voltages		V	-	-	24...500
Coil operating limits	VDC	xUs	-	-	0.8...1.1
	at 50 Hz	xUs	-	-	0.8...1.1
	at 60 Hz	xUs	-	-	0.8...1.1
Average consumption			-	-	1.0 x Us and cold coil
AC power supply (60 Hz)	Magnetic circuit closed	VA	-	-	10.8
	Power factor	cos Θ	-	-	0.47
	Thermal power dissipation	W	-	-	5.1
	Closing of the magnetic circuit	VA	-	-	217
	Power factor	cos Θ	-	-	0.88
DC power supply	Magnetic circuit closed	W	-	-	2...5
	Closing of the magnetic circuit	W	-	-	180...220
Average operating time	Closing of the NO contacts	ms	-	-	32...48
	Opening of the NO contacts	ms	-	-	30...55

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Contactors

CWB Series – IEC Contactors

Technical Data

Main Contacts

Models			CWB9	CWB12	CWB18	CWB25	CWB32	CWB38	CWB40	CWB50	CWB65	CWB80	CWB95	CWB110	CWB125
Rated operational current Ie	AC-3 (Ue ≤ 440 V)	A	9	12	18	25	32	38	40	50	65	80	95	110	125
	AC-4 (Ue ≤ 440 V)	A	4.4	5.8	8.5	10.4	13.7	13.7	18.5	18.5	26	32	52	58	65
	AC-1 (Θ ≤ 55ºC, Ue ≤ 690V)	A	25	25	32	40	50	50	60	90	110	110	140	150	175
Rated operational voltage Ue	IEC/EN 60947-4-1	V	690						1,000						
	UL, CSA	V	600												
Conventional thermal current Ith (Θ ≤ 55ºC)		A	25	25	32	40	50	50	60	90	110	110	140	150	175
Making capacity – IEC/EN 60947		A	250	250	300	450	550	550	550	1,000	1,000	1,000	1,100	1,200	1,375
Breaking capacity IEC/EN 60947	(Ue ≤ 400 V)	A	250	250	300	450	550	550	550	1,000	1,000	1,000	1,100	1,200	1,375
	(Ue = 500 V)	A	220	220	250	350	450	450	480	880	880	880	970	1,000	1,200
	(Ue = 690 V)	A	150	150	180	250	350	350	350	640	640	640	700	765	870
Acceptable short-time current (no current flowing during recovery time of 15 min and Θ ≤ 40ºC)	1s	A	210	210	240	380	400	430	720	820	900	900	1,200	1,350	1,430
	10s	A	105	105	145	240	260	310	320	400	520	640	720	780	860
	1 minute	A	60	60	80	120	130	150	165	230	340	360	410	470	515
	10 minute	A	30	30	40	50	60	60	85	110	130	130	140	150	175
Short-circuit protection of the main contacts Fuse (gL/gG)	at 600 V – UL/CSA	kA	5										-		
	Coordination type 1	A	25	40	50	63	63	63	80	100	125	160	-		
	Coordination type 2	A	20	20	25	35	50	50	63	80	100	125	-		
Impedance per pole		mΩ	2.5	2.5	2.5	2	2	2	1.6	1.6	1.6	1.6	0.7	0.7	0.7
Average power dissipation per pole	AC-1	W	1.5	1.5	2.5	3.2	5	5	6	13	19	19	15	17	21
	AC-3	W	0.2	0.4	0.8	1.2	2	3	3	4	7	10	7	9	11
Minimum switching capacity[1]		V/mA	50/100												

Utilization Category AC-3

Rated operational current Ie (Θ ≤ 55ºC)	Ue ≤ 440 V	A	9	12	18	25	32	38	40	50	65	80	95	110	125
	Ue ≤ 500 V	A	9	12	15.8	23	28.5	28.5	35	45	55	75	84	97	110
	Ue ≤ 690 V	A	7	9	12.8	16.5	21	21	32	35	40	50	61	70	80
Orientative rated operational power three-phase induction motors (50/60 Hz) IV poles – 1,800 rpm	220/240 V	kW	2.2	3	4.5	6.5	7.5	9.2	11	15	18.5	22	22	30	37
		HP	3	4	6	8.7	10	12.5	15	20	25	29	30	40	50
	380/400 V	kW	4	5.5	7.5	12.5	15	18.5	18.5	22	30	37	45	55	55
		HP	5.5	7.5	10	16.8	20	25	25	29	40	50	60	75	75
	415/440 V	kW	4.5	6.5	9.2	12.5	15	18.5	22	30	37	45	55	55	75
		HP	6	8.7	12.5	16.8	20	25	29	40	50	60	75	75	100
	500 V	kW	5.5	7.5	10	15	18.5	18.5	22	30	37	55	55	55	75
		HP	7.5	10	13.4	20	25	25	29	40	50	74	75	75	100
	660/690 V	kW	5.5	7.5	11	15	18.5	18.5	30	33	37	45	55	55	75
		HP	7.5	10	15	20	25	25	40	44	50	60	75	75	100
Maximum percentage	600 ops/h	%	100	100	100	100	100	100	100	100	100	100	100	100	100

Utilization Category AC-4

Rated operational current Ie	(Ue ≤ 440 V)	A	4.4	5.8	8.5	10.4	14	14	18.5	21	27	40	52	58	65
	(Ue ≤ 500 V)	A	3.9	5.1	8	12	13.5	13.5	17.5	17.6	23	33	46	51	57
	(Ue ≤ 690 V)	A	2.8	3.7	5.4	12	12.8	12.8	14	17	22	26	33	37	41
Orientative rated operational power three-phase induction motors (50/60 Hz) IV poles – 1,800 rpm (200,000 operations)	220/240 V	kW	1.5	1.5	2.2	3	4	4	4.5	5.5	7.5	11	15	16.5	18.5
		HP	2	2	3	4	5.4	5.4	6	7.4	10	14.7	20	22	25
	380/400 V	kW	2.2	3.7	4	5.5	7.5	7.5	9.2	11	15	18.5	22	28	30
		HP	3	5	5.4	7.4	10	10	12.3	14.7	20.1	24.8	30	38	40
	415/440 V	kW	2.2	3	3.7	5.5	7.5	7.5	11	11	15	22	30	33	37
		HP	3	4	5	7.4	10	10	14.7	14.7	20.1	30	40	44	50
	500 V	kW	2.2	3	5	7.5	9	9	11	15	18.5	22	30	30	37
		HP	3	4	6.7	10	12	12	14.7	20.1	25	30	40	40	50
	660/690 V	kW	2.2	3	5	10	11	11	12.5	15	20	25	30	30	45
		HP	3	4	6.7	13.4	14.7	14.7	16.8	20.1	26.8	33.5	40	40	60

Notes:
1) In order to achieve acceptable reliability for application and/or continuity test on the power contacts, a minimum voltage and current of 50 V and 100 mA, respectively, must be used. For lower values, the auxiliary contacts must be used.

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Technical Data

Main Contacts

Models			CWB9	CWB12	CWB18	CWB25	CWB32	CWB38	CWB40	CWB50	CWB65	CWB80	CWB95	CWB110	CWB125
Utilization Category AC-1			3P (NO)												
Conventional thermal current Ith	Θ ≤ 55ºC	A	25	25	32	40	50	50	60	90	110	110	140	150	175
	Θ ≤ 65ºC	A	20	20	26	32	40	40	48	72	88	88	112	121	140
	Θ ≤ 75ºC	A	18	18	22	28	35	35	42	63	77	77	98	106	123
Maximum orientative operational current according to the ambient temperature	Θ ≤ 60ºC (Ue ≤ 690 V)	A	25	25	32	40	50	50	60	90	110	110	140	150	175
Maximum operational power Θ ≤ 55ºC (three-phase resistors)	240 V	kW	10.4	10.4	13.3	16.6	20.8	20.8	24.9	37.4	45.7	45.7	58.2	62.4	72.7
	400 V	kW	17.3	17.3	22.2	27.7	34.6	34.6	41.6	62.4	76.2	76.2	97	103.9	121.2
	440 V	kW	19.1	19.1	24.4	30.5	38.1	38.1	45.7	68.6	83.8	83.8	106.7	114.3	133.4
	500 V	kW	21.7	21.7	27.7	34.6	43.3	43.3	52	77.9	95.3	95.3	121.2	129.9	151.6
	690 V	kW	29.9	29.9	38.2	47.8	59.8	59.8	71.7	107.6	131.5	131.5	167.3	179.3	209.1
Current values for connection	2 poles in parallel		Ie x 1.7												
	3 poles in parallel		Ie x 2.4												
	4 poles in parallel		Ie x 3.2			-									
Percentage of maximum operational current	600 ops/h	%	100	100	100	100	100	100	100	100	100	100	100	100	100

Auxiliary Contacts

Models			CWB9...125 (built-in)	BFB (front mounted)	BLB (side mounted)
Compliance with the standards			IEC/EN 60947-5-1		
Rated insulation voltage Ui (pollution degree 3)	IEC/EN 60947-4-1, VDE 0660	V	690		
	UL, CSA	V	600		
Rated operational voltage Ue	IEC/EN 60947-4-1, VDE 0660	V	690		
	UL, CSA	V	600		
Conventional thermal current Ith (Θ ≤ 55ºC)		A	10		
Rated operational current Ie					
AC-15 (IEC/EN 60947-5-1)	220/230 V	A	10		
	380/440 V	A	4		
	500 V	A	2.5		
	660/690 V	A	1.5		
DC-13 (IEC/EN 60947-5-1)	24 V	A	4		
	48 V	A	2		
	110 V	A	0.7		
	220 V	A	0.3		
	440 V	A	0.15		
	600 V	A	0.1		
Making capacity	Ue ≤ 690 V 50/60 Hz – AC-15	A	10 x Ie		
Breaking capacity	Ue ≤ 400 V 50/60 Hz – AC-15	A	1 x Ie		
Short-circuit protection with fuse (gL/gG)		A	10		
Control circuit reliability		V/mA	17 / 5		
Electrical lifespan	(million cycles)		1		
Mechanical lifespan	(million cycles)		10		
Non-overlapping time between NO and NC contacts		ms	1.5		
Impedance of the contacts		mΩ	2.5		

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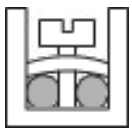
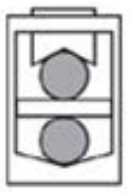
CWB Series – IEC Contactors

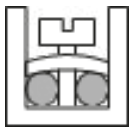
Technical Data

Terminal Capacity and Tightening Torques

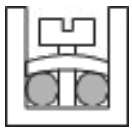
Power Circuit

Models			CWB9...18	CWB25...38	CWB40...80	CWB95...125
Mounting system screw type			Phillips #2	Phillips #2	ALLEN	ALLEN
					4 mm	4 mm
Flexible conductor without terminal	mm²		1 x 1...6	1 x 2.5...10	-	-
			2 x 1...6	2 x 2.5...10		
Flexible conductor with terminal	mm²		1 x 1...6	1 x 1.5...10	-	-
			2 x 1...4	2 x 1.5...6		
Solid wire	mm²		1 x 1...6	1 x 2.5...10	-	-
			2 x 1...6	2 x 2.5...10		
Tightening torque	Nm		1.7	2.5	-	-
Flexible conductor without terminal	mm²		-	-	1 x 2.5...35	1 x 2.5...70
					2 x 2.5...35	2 x 2.5...70
Flexible conductor with terminal	mm²		-	-	1 x 2.5...35	1 x 2.5...70
					2 x 2.5...35	2 x 2.5...70
Solid wire	mm²		-	-	1 x 2.5...35	1 x 2.5...70
					2 x 2.5...35	2 x 2.5...70
Tightening torque	Nm		-	-	5	6

Control and Auxiliary Circuit

Models			CWB9...125
Mounting system screw type			Phillips #2
Flexible conductor without terminal	mm²		1 x 1...4
			2 x 1...4
Flexible conductor with terminal	mm²		1 x 1...4
			2 x 1...2.5
Solid wire	mm²		1 x 1...4
			2 x 1...4
Tightening torque	Nm		1

Auxiliary Contact Blocks

Models			BFB (front)	BLB (side)
Mounting system screw type			Phillips #2	
Flexible conductor without terminal	mm²		1 x 1...2.5	
			2 x 1...2.5	
Flexible conductor with terminal	mm²		1 x 1...2.5	
			2 x 1...2.5	
Solid wire	mm²		1 x 1...2.5	
			2 x 1...2.5	
Tightening torque	Nm		1	

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Technical Data

Basic Data

Models			CWBN00	CWBN0	CWBN1
Compliance with the standards			IEC/EN 60947-1 IEC/EN 60947-4-1 IEC/EN 60947-5-1 UL 60947		
Rated insulation voltage Ui (pollution degree 3)	IEC/EN 60947-4-1	V	690		
	UL, CSA	V	600		
Rated impulse-withstand voltage Uimp	IEC/EN 60947-1	kV	6		
Frequency limits		Hz	25...400		
Mechanical lifespan	AC coil (million cycles)		10		
	DC coil (million cycles)		10		
Electrical lifespan	Ie AC-3 (million cycles)		2	1.8	1.6
Degree of protection (IEC/EN 60529)	Main terminals		IP10 (front)		
	Coil and auxiliary contacts		IP20 (front)		
Mounting			By screws or DIN 35 mm rail (EN 50022)		
Coil connection points	Contactors with AC coil		2		
	Contactors with DC coil		2		
Vibration resistance (IEC/EN 60068-2-6)	Open contactor	g	4		
	Closed contactor	g	4		
Resistance to mechanical shocks (½ sine wave = 11 ms – IEC/EN 60068-2-27)	Open contactor	g	10		
	Closed contactor	g	15		
Ambient temperature	Operating		-25ºC...+55ºC		
	Storage		-55ºC...+80ºC		
Maximum operation altitude without modification in the rated values[1)]			3,000 m		

Models			CWBN2	CWBN3
Compliance with the standards			IEC/EN 60947-1 IEC/EN 60947-4-1 IEC/EN 60947-5-1 UL 60947	
Rated insulation voltage Ui (pollution degree 3)	IEC/EN 60947-4-1	V	1,000	
	UL, CSA	V	600	
Rated impulse-withstand voltage Uimp	IEC/EN 60947-1	kV	6	
Frequency limits		Hz	25...400	
Mechanical lifespan	AC coil (million cycles)		6	
	DC coil (million cycles)		6	
Electrical lifespan	Ie AC-3 (million cycles)		1.6	1.1
Degree of protection (IEC/EN 60529)	Main terminals		IP10 (front)	
	Coil and auxiliary contacts		IP20 (front)	
Mounting			By screws or DIN 35 mm rail (EN 50022)	
Coil connection points	Contactors with AC coil		2	
	Contactors with DC coil		2	
Vibration resistance (IEC/EN 60068-2-6)	Open contactor	g	4	
	Closed contactor	g	4	
Resistance to mechanical shocks (½ sine wave = 11 ms – IEC/EN 60068-2-27)	Open contactor	g	10	
	Closed contactor	g	15	
Ambient temperature	Operating		-25ºC...+55ºC	
	Storage		-55ºC...+80ºC	
Maximum operation altitude without modification in the rated values[1)]			3,000 m	

Notes:
1) For altitudes of 3,000...4,000 m (0.90 xIe and 0.80 xUi) and of 4,000...5,000 m (0.80 xIe and 0.75 xUi).

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Contactors

CWBN Series – NEMA Rated IEC Contactors

Technical Data

Control Circuit – Alternating Current (AC)

Models			CWBN00/0/1	CWBN2	CWBN3
Rated insulation voltage Ui (pollution degree 3)	IEC/EN 60947-4-1	V	690	1,000	1,000
	UL, CSA	V	600	600	600
Standard voltages at 50/60 Hz		V	12...500	24...500	24...500
Coil operating limits	At 50 Hz	xUs	0.8...1.1	0.8...1.1	0.8...1.1
	At 60 Hz	xUs	0.8...1.1	0.8...1.1	0.8...1.1
Average consumption coil 50/60 Hz (60 Hz operation)	Magnetic circuit closed	VA	7.5	17.5	25
	Power factor switched on	cos Θ	0.27	0.28	0.4
	Thermal power dissipation	W	1.5...2.5	4...5.5	9...11
	Closing of the magnetic circuit	VA	75	185	410
	Power factor switching on	cos Θ	0.7	0.55	0.48
Average consumption coil 50/60 Hz (50 Hz operation)	Magnetic circuit closed	VA	9	27	27
	Power factor switched on	cos Θ	0.24	0.25	0.4
	Thermal power dissipation	W	1.5...2.5	5.5...7.8	11...13.4
	Closing of the magnetic circuit	VA	90	202	426
	Power factor switching on	cos Θ	0.8	0.56	0.5
Average operating time	Closing of the NO contacts	ms	15...25	10...15	8...12.5
	Opening of the NO contacts	ms	8...12	8...12	4...8

Control Circuit – Direct Current (DC)

Models			CWBN00/0/1	CWBN2	CWBN3
Rated insulation voltage Ui (pollution degree 3)	IEC/EN 60947-4-1	V	690	1,000	-
	UL, CSA	V	600	600	-
Standard voltages		V	12...500	12...500	-
Coil operating limits		xUs	0.8...1.1	0.8...1.1	-
Average consumption DC coil	Magnetic circuit closed	W	5.8	10.6	-
	Closing of the magnetic circuit	W	5.8	105.5	-
Average operating time	Closing of the NO contacts	ms	35...45	20...30	-
	Opening of the NO contacts	ms	8...12	4...8	-

Control Circuit – Electronic Coils (AC/DC)

Models			CWBN00/0/1	CWBN2	CWBN3
Rated insulation voltage Ui (pollution degree 3)	IEC 60947-4-1, VDE 0660	V	-	-	1,000
	UL, CSA	V	-	-	600
Standard voltages		V	-	-	24...500
Coil operating limits	at VDC	xUs	-	-	0.8...1.1
	at 50 Hz	xUs	-	-	0.8...1.1
	at 60 Hz	xUs	-	-	0.8...1.1
Average consumption			-	-	1.0 x Us and cold coil
AC power supply (60 Hz)	Magnetic circuit closed	VA	-	-	10.8
	Power factor	cos Θ	-	-	0.47
	Thermal power dissipation	W	-	-	5.1
	Closing of the magnetic circuit	VA	-	-	217
	Power factor	cos Θ	-	-	0.88
DC power supply	Magnetic circuit closed	W	-	-	2...5
	Closing of the magnetic circuit	W	-	-	180...220
Average operating time	Closing of the NO contacts	ms	-	-	32...48
	Opening of the NO contacts	ms	-	-	30...55

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Technical Data

Main Contacts

Models			CWBN00	CWBN0	CWBN1	CWBN2	CWBN3
Rated operational current Ie	AC-3 (Ue ≤ 440 V)	A	9	18	25	50	95
	AC-4 (Ue ≤ 440 V)	A	4.4	8.5	10.4	21	52
	AC-1 (Θ ≤ 55ºC, Ue ≤ 690 V)	A	25	32	40	90	140
Rated operational voltage Ue	IEC/EN 60947-4-1	V	690			1,000	
	UL, CSA	V	600				
Conventional thermal current Ith (Θ ≤ 55ºC)		A	25	32	40	90	140
Making capacity – IEC/EN 60947		A	250	300	450	1,000	1,100
Breaking capacity IEC/EN 60947	(Ue ≤ 400 V)	A	250	300	450	1,000	1,100
	(Ue = 500 V)	A	220	250	350	880	970
	(Ue = 690 V)	A	150	180	250	640	700
Acceptable short-time current (no current flowing during recovery time of 15 min and q ≤ 40ºC)	1 second	A	210	240	380	820	1,200
	10 second	A	105	145	240	400	720
	1 minute	A	60	80	120	230	410
	10 minute	A	30	40	50	110	140
Short-circuit protection of the main contacts Fuse (gL/gG)	At 600 V – UL/CSA	kA	5				10
	Coordination type 1	A	25	50	63	100	-
	Coordination type 2	A	20	25	35	80	-
Impedance per pole		mΩ	2.5	2.5	2	1.6	0.7
Average power dissipation per pole	AC-1	W	1.5	2.5	3.2	13	15
	AC-3	W	0.2	0.8	1.2	4	7
Minimum switching capacity[1]		V/mA	50/100				
Utilization Category AC-3							
Rated operational current Ie (Θ ≤ 55ºC)	Ue ≤ 440 V	A	9	18	25	50	95
	Ue ≤ 500 V	A	9	15.8	23	45	84
	Ue ≤ 690 V	A	7	12.8	16.5	35	61
Orientative rated operational power three-phase induction motors (50/60 Hz) IV poles – 1,800 rpm	220/240 V	kW	2.2	4.5	6.5	15	22
		HP	3	6	8.7	20	30
	380/400 V	kW	4	7.5	12.5	22	45
		HP	5.5	10	16.8	29	60
	415/440 V	kW	4.5	9.2	12.5	30	55
		HP	6	12.5	16.8	40	75
	500 V	kW	5.5	10	15	30	55
		HP	7.5	13.4	20	40	75
	660/690 V	kW	5.5	11	15	33	55
		HP	7.5	15	20	44	75
Maximum percentage	600 ops/h	%	100	100	100	100	100
Utilization Category AC-4							
Rated operational current Ie	(Ue ≤ 440 V)	A	4.4	8.5	10.4	21	52
	(Ue ≤ 500 V)	A	3.9	8	12	17.6	46
	(Ue ≤ 690 V)	A	2.8	5.4	12	17	33
Orientative rated operational power three-phase induction motors (50/60 Hz) IV poles – 1,800 rpm (200,000 operations)	220/240 V	kW	1.5	2.2	3	5.5	15
		HP	2	3	4	7.4	20
	380/400 V	kW	2.2	4	5.5	11	22
		HP	3	5.4	7.4	14.7	30
	415/440 V	kW	2.2	3.7	5.5	11	30
		HP	3	5	7.4	14.7	40
	500 V	kW	2.2	5	7.5	15	30
		HP	3	6.7	10	20.1	40
	660/690 V	kW	2.2	5	10	15	30
		HP	3	6.7	13.4	20.1	40

Notes:
1) In order to achieve acceptable reliability for application and/or continuity test on the power contacts, a minimum voltage and current of 50 V and 100 mA, respectively, must be used. For lower values, the auxiliary contacts must be used.

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Contactors

CWBN Series – NEMA Rated IEC Contactors

Technical Data

Main Contacts

Models			CWBN00	CWBN0	CWBN1	CWBN2	CWBN3
Utilization Category AC-1			3P (NO)				
Conventional thermal current Ith	Θ ≤ 55ºC	A	25	32	40	90	140
	Θ ≤ 65ºC	A	20	26	32	72	112
	Θ ≤ 75ºC	A	18	22	28	63	98
Maximum orientative operational current according to the ambient temperature	Θ ≤ 60ºC (Ue ≤ 690 V)	A	25	32	40	90	140
Maximum operational power Θ ≤ 55ºC (three-phase resistors)	240 V	kW	10.4	13.3	16.6	37.4	58.2
	400 V	kW	17.3	22.2	27.7	62.4	97
	440 V	kW	19.1	24.4	30.5	68.6	106.7
	500 V	kW	21.7	27.7	34.6	77.9	121.2
	690 V	kW	29.9	38.2	47.8	107.6	167.3
Current values for connection	2 poles in parallel		Ie x 1.7				
	3 poles in parallel		Ie x 2.4				
	4 poles in parallel		Ie x 3.2		-		
Percentage of maximum operational current	600 ops/h	%	100	100	100	100	100

Auxiliary Contacts

Models			CWBN00...3 (built-in)	BFB (front mounted)	BLB (side mounted)
Compliance with the standards			IEC/EN 60947-5-1		
Rated insulation voltage Ui (pollution degree 3)	IEC/EN 60947-4-1, VDE 0660	V	690		
	UL, CSA	V	600		
Rated operational voltage Ue	IEC/EN 60947-4-1, VDE 0660	V	690		
	UL, CSA	V	600		
Conventional thermal current Ith (Θ ≤ 55ºC)		A	10		
Rated Operational Current Ie					
AC-15 (IEC/EN 60947-5-1)	220/230 V	A	10		
	380/440 V	A	4		
	500 V	A	2.5		
	660/690 V	A	1.5		
DC-13 (IEC/EN 60947-5-1)	24 V	A	4		
	48 V	A	2		
	110 V	A	0.7		
	220 V	A	0.3		
	440 V	A	0.15		
	600 V	A	0.1		
Making capacity	Ue ≤ 690 V 50/60 Hz – AC-15	A	10 x Ie		
Breaking capacity	Ue ≤ 400 V 50/60 Hz – AC-15	A	1 x Ie		
Short-circuit protection with fuse (gL/gG)		A	10		
Control circuit reliability		V/mA	17 / 5		
Electrical lifespan	(million cycles)		1		
Mechanical lifespan	(million cycles)		10		
Non-overlapping time between NO and NC contacts		ms	1.5		
Impedance of the contacts		mΩ	2.5		

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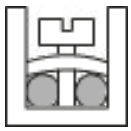
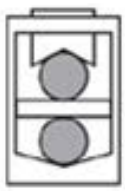
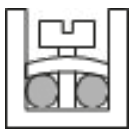
Technical Data

Terminal Capacity and Tightening Torques

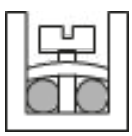
Power Circuit

Models			CWBN00/0	CWBN1	CWBN2	CWBN3
Mounting system screw type			Phillips #2	Phillips #2	ALLEN	ALLEN
					4 mm	4 mm
Flexible conductor without terminal	mm²		1 x 1...6	1 x 2.5...10	-	-
			2 x 1...6	2 x 2.5...10		
Flexible conductor with terminal	mm²		1 x 1...6	1 x 1.5...10	-	-
			2 x 1...4	2 x 1.5...6		
Solid wire	mm²		1 x 1...6	1 x 2.5...10	-	-
			2 x 1...6	2 x 2.5...10		
Tightening torque	Nm		1.7	2.5	-	-
Flexible conductor without terminal	mm²		-	-	1 x 2.5...35	1 x 2.5...70
					2 x 2.5...35	2 x 2.5...70
Flexible conductor with terminal	mm²		-	-	1 x 2.5...35	1 x 2.5...70
					2 x 2.5...35	2 x 2.5...70
Solid wire	mm²		-	-	1 x 2.5...35	1 x 2.5...70
					2 x 2.5...35	2 x 2.5...70
Tightening torque	Nm		-	-	5	6

Control and Auxiliary Circuit

Models			CWBN00...3
Mounting system screw type			Phillips #2
Flexible conductor without terminal	mm²		1 x 1...4
			2 x 1...4
Flexible conductor with terminal	mm²		1 x 1...4
			2 x 1...2.5
Solid wire	mm²		1 x 1...4
			2 x 1...4
Tightening torque	Nm		1

Auxiliary Contact Blocks

Models			BFB (front)	BLB (side)
Mounting system screw type			Phillips #2	
Flexible conductor without terminal	mm²		1 x 1...2.5	
			2 x 1...2.5	
Flexible conductor with terminal	mm²		1 x 1...2.5	
			2 x 1...2.5	
Solid wire	mm²		1 x 1...2.5	
			2 x 1...2.5	
Tightening torque	Nm		1	

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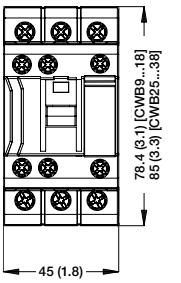
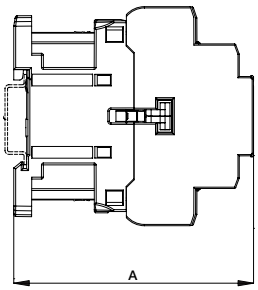
Contactors

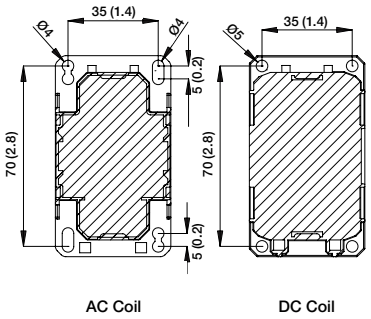
CWB Series – IEC Contactors

Dimensions – mm (inch)

CWB9...38, CWBN00...1

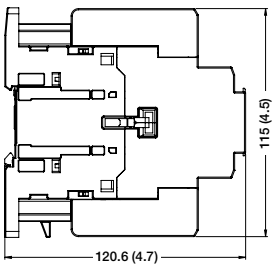


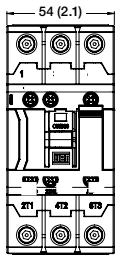


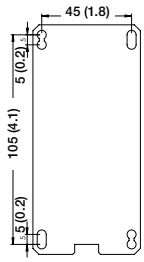


Models	A	
	AC Coil	DC Coil
CWB9...18 CWBN00...0	89.5 (3.5)	98.5 (3.9)
CWB25...38 CWBN1	93 (3.7)	102.2 (4.0)

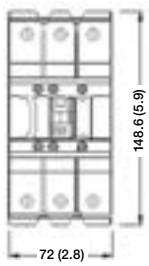
CWB40...80, CWBN2

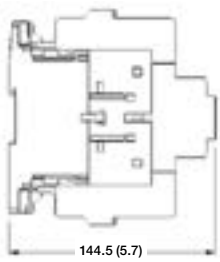


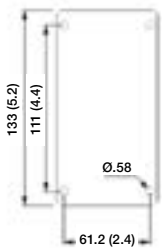




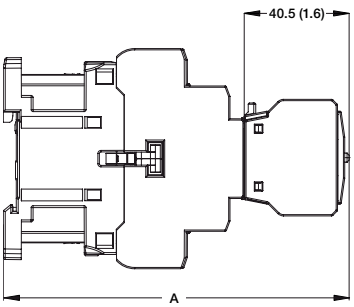
CWB95...125, CWBN3





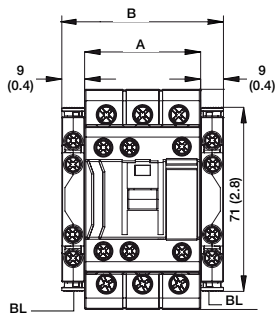


CWB9...125, CWBN00...3 + BFB
(Front Mounted Auxiliary Contact Block)



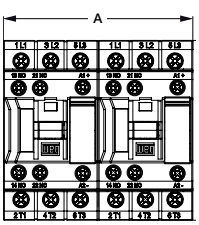
Models	A	
	AC Coil	DC Coil
CWB9...18, CWBN00 / 0	130 (5.1)	139.2 (5.5)
CWB25...38, CWBN1	133.4 (5.3)	142.6 (5.6)
CWB40...80, CWBN2	161.1 (6.3)	161.1 (6.3)
CWB95...125, CWBN3	184.5 (7.3)	184.5 (7.3)

CWB9...125, CWBN00...3 + BLB / BLRB
(Side Mounted Auxiliary Contact Block)



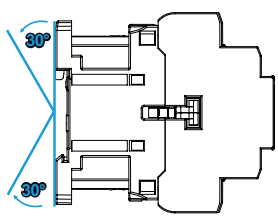
Models	A	B
CWB9...18, CWBN00...1	45 (1.8)	63 (2.5)
CWB40...80, CWBN2	54 (2.1)	72 (2.8)
CWB95...125, CWBN3	72 (2.8)	90 (3.5)

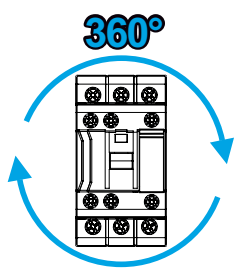
2 x CWB9...125 + IM (Mechanical Interlock)
2 x CWBN00...3 + IM (Mechanical Interlock)



Models	Interlock	A
CWB9...18, CWBN00...1	IM1	90 (3.5)
CWB40...80, CWBN2	IM2	108 (4.3)
CWB95...125, CWBN3		144 (5.7)

Mounting Position
CWB9...125, CWBN00...3





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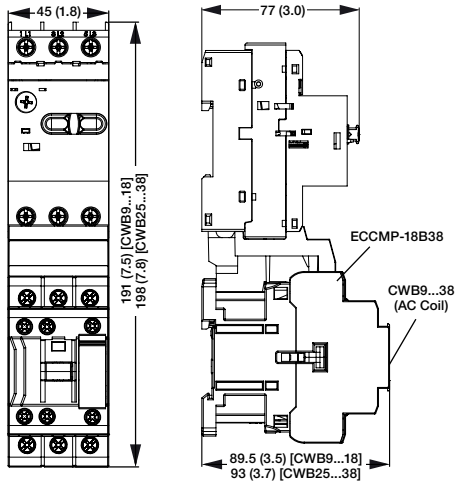
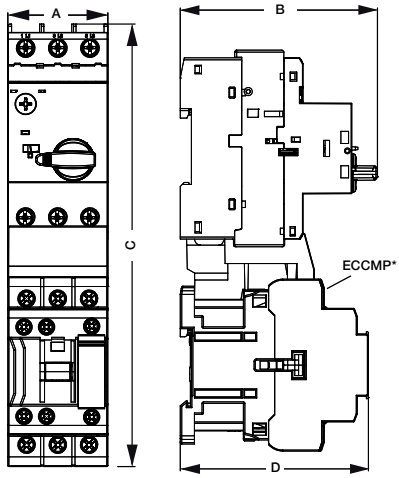
Dimensions – mm (inch)

CWB9...38 + MPW18



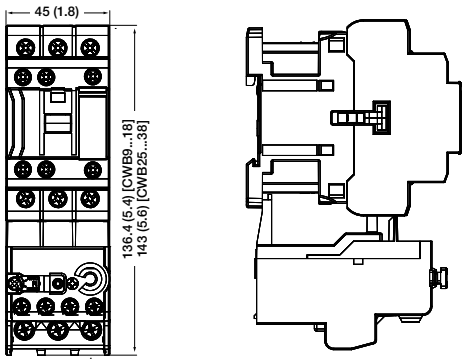
CWB9...38 + MPW40
CWB40...80 + MPW80



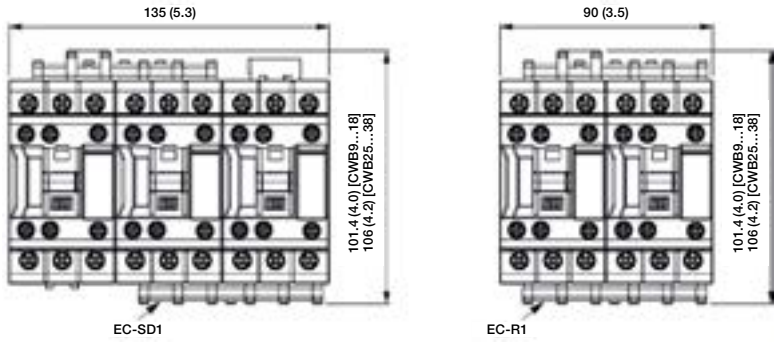
Mounting with MPW40				
A	45 (1.8)			
B	98 (3.9)			
	AC Coil Contactor		DC Coil Contactor	
	CWB9...18	CWB25...38	CWB9...18	CWB25...38
C	191.4 (7.5)	198 (7.8)	191.4 (7.5)	198 (7.8)
D	89.5 (3.5)	93 (3.7)	98.5 (3.9)	102.2 (4.0)
*	ECCMP-40B38		ECCMP-40B38DC	

Mounting with MPW80		
A	54 (2.1)	
B	156.6 (6.2)	
	AC Coil Contactor	DC Coil Contactor
	CWB40...80	CWB40...80
C	263 (10.4)	
D	120.6 (4.7)	
*	ECCMP-80B80	

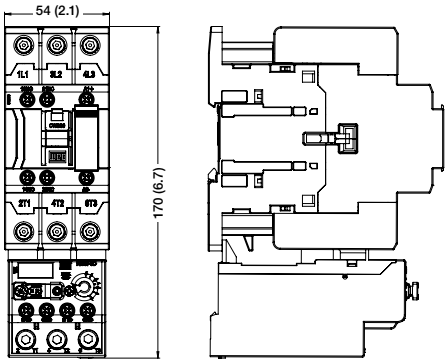
CWB9...38 + RW27-2D



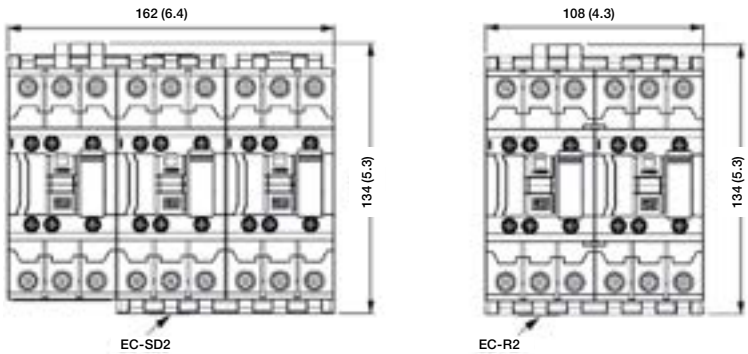
CWB9...38 + Busbar



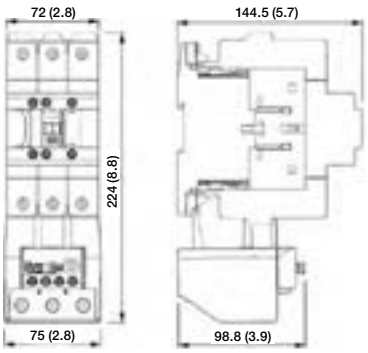
CWB40...80 + RW67-5D



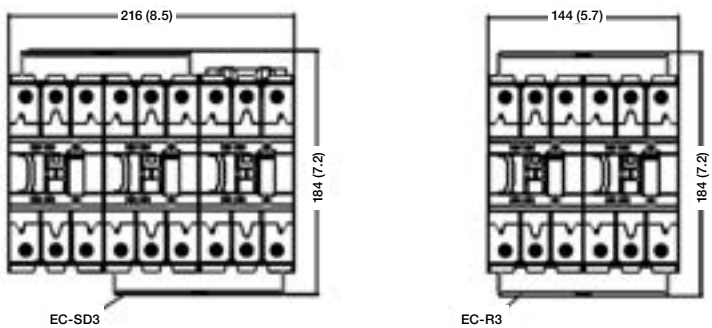
CWB40...80 + Busbar



CWB95...125 + RW117-3D



CWB95...125 + Busbar



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CWBS Series – Safety Contactors

CWBS line of contactors for safety applications was developed in compliance with IEC and UL standards. These contactors feature mechanically linked contacts (IEC/EN 60947-5-1) and mirror contacts (IEC/EN 60947-4-1), which provide proper operation of safety circuits of machines and equipment that must operate in compliance with international safety standards. The wide range of accessories allow fast and compact assembly for various applications.

E202315

Standard Features

- Compact design
- Mechanically linked contacts and mirror contacts
- Available in versions up to 125A (AC-3)
- Three-pole safety contactors available in AC and DC coils
- Panel mountable on 35 mm DIN rails or screws
- Built-in auxiliary contacts 1NO + 1NC
- “Zero-width” and tool-free mechanical interlocks
- Plug-in surge suppressor blocks
- Easy to use accessories through snap-to-connect function

Learn More Online

CWBS Catalog Number Sequence

CWBS	12	-	33	-	30	D15

Contactor Series
CWBS: Safety Contactor

Frame Rating
9: 9 A
12: 12 A
18: 18 A
25: 25 A
32: 32 A
38: 38 A
40: 40 A
50: 50 A
65: 65 A
80: 80 A
95: 95 A
110: 110 A
125: 125 A

Auxiliary Contacts
33: 3NO + 3NC

Power Poles
30: Three Power Poles

Coil Voltage
AC Voltage
D02: 24 V 50/60 Hz
D15: 120 V 50/60 Hz
DC Voltage
C03: 24 VDC
AC/DC Voltage with Electronic Module
E04: 24 - 60 V
E65: 110 - 255 V

Chart intended as reference only and not to create part numbers.

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Power Contactors for Safety Applications

Three-Pole from 9 A to 125 A (AC-3)

Selection Table

Three-Pole CWBS Contactors from 9 A to 125 A (AC-3)

Ie Max (Ue ≤ 440 V)	Maximum UL Horsepower						Built-In Auxiliary Contacts Per Contactor		Catalog Number	List Price AC Coil	List Price DC Coil	Multiplier New (Old)
AC-3 A	Single-Phase		Three-Phase				3 4 NO	1 2 NC				
	115V	230V	200V	230V	480V	575V						
9	3/4	1 1/2	3	3	5	7 1/2	3	3	CWBS9-33-30*	$205	$232	Z1B (Z1)
12	3/4	2	3	3	7 1/2	10	3	3	CWBS12-33-30*	$227	$259	
18	1	3	5	5	10	15	3	3	CWBS18-33-30*	$259	$296	
25	2	5	7 1/2	7 1/2	15	15	3	3	CWBS25-33-30*	$290	$329	
32	3	5	10	10	20	25	3	3	CWBS32-33-30*	$338	$387	
38	3	7 1/2	10	10	25	25	3	3	CWBS38-33-30*	$378	$434	
40	3	7 1/2	10	15	30	30	3	3	CWBS40-33-30*	$425	$506	
50	3	10	15	15	40	40	3	3	CWBS50-33-30*	$478	$550	
65	5	10	20	20	50	50	3	3	CWBS65-33-30*	$577	$641	
80	7 1/2	15	20	25	50	60	3	3	CWBS80-33-30*	$652	$713	
95	7 1/2	20	30	30	75	75	3	3	CWBS95-33-30*	$671	-	
									CWBS95-33-30#	$841	$841	
110	10	25	30	40	75	100	3	3	CWBS110-33-30*	$745	-	
									CWBS110-33-30#	$928	$928	
125	10	25	40	40	100	125	3	3	CWBS125-33-30#	$1,115	$1,115	

Replace "*" by the appropriate coil voltage code.

Replace "#" by the appropriate coil voltage code.

Alternating Current (for contactor CWBS9...100)

Code	D02	D15
V (50/60 Hz)	24	120

Direct Current (for contactor CWB9...80)

Code	C03
VDC	24

Alternating Current/Direct Current with Electronic Module (for contactor CWB95...125)

Code	E04	E65
V (50/60 Hz) / VDC	24 - 60	110 - 255

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Contactors

CWBS Series - Safety Contactors

Technical Data

Use of Contactors in Direct Current Circuits

Utilization Category DC-1 (L/R ≤ 1 ms)

Models		CWBS9	CWBS12	CWBS18	CWBS25	CWBS32	CWBS38	CWBS40	CWBS50	CWBS65	CWBS80	CWBS95	CWBS110	CWBS125
Ue	Poles In Series	Rated Operational Current Ie (A)												
≤ 24 V	1	20	20	25	40	50	50	60	90	110	110	140	150	175
	2	20	20	25	40	50	50	60	90	110	110	140	150	175
	3	20	20	25	40	50	50	60	90	110	110	140	150	175
≤ 48 V	1	20	20	25	40	50	50	60	90	110	110	140	150	175
	2	20	20	25	40	50	50	60	90	110	110	140	150	175
	3	20	20	25	40	50	50	60	90	110	110	140	150	175
≤ 60 V	1	20	20	25	40	50	50	60	90	110	110	140	150	175
	2	20	20	25	40	50	50	60	90	110	110	140	150	175
	3	20	20	25	40	50	50	60	90	110	110	140	150	175
≤ 125 V	1	4	4	4	7	7	7	15	15	15	15	19	22	24
	2	20	20	25	40	50	50	60	90	110	110	140	150	175
	3	20	20	25	40	50	50	60	90	110	110	140	150	175
≤ 220 V	1	1	1	1	1	1	1	2	2	2	2	2.5	2.9	3.2
	2	4	4	4	7	7	7	10	10	10	10	13	15	16
	3	20	20	25	32	32	32	50	50	50	50	64	73	80
≤ 440 V	1	0.4	0.4	0.4	0.4	0.5	0.5	1	1	1	1	1.3	1.5	1.6
	2	1	1	1	1	1	1	2	2	2	2	2.5	2.9	3.2
	3	4	4	4	7	7	7	10	10	10	10	13	15	16
≤ 600 V	1	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	0.4	0.4	0.4	0.4	0.5	0.5	1	1	1	1	1.3	1.5	1.6
	3	4	4	4	5	5	5	2	2	2	2	2.5	2.9	3.2

Use of Contactors in Direct Current Circuits

Utilization Category DC-3 (L/R ≤ 2.5 ms)

Models		CWBS9	CWBS12	CWBS18	CWBS25	CWBS32	CWBS38	CWBS40	CWBS50	CWBS65	CWBS80	CWBS95	CWBS110	CWBS125
Ue	Poles In Series	Rated Operational Current Ie (A)												
≤ 24 V	1	18	18	22	36	45	45	55	80	100	100	127	145	159
	2	18	18	22	36	45	45	55	80	100	100	127	145	159
	3	18	18	22	36	45	45	55	80	100	100	127	145	159
≤ 48 V	1	18	18	22	36	45	45	55	80	100	100	127	145	159
	2	18	18	22	36	45	45	55	80	100	100	127	145	159
	3	18	18	22	36	45	45	55	80	100	100	127	145	159
≤ 60 V	1	18	18	22	36	45	45	55	80	100	100	127	145	159
	2	18	18	22	36	45	45	55	80	100	100	127	145	159
	3	18	18	22	36	45	45	55	80	100	100	127	145	159
≤ 125 V	1	2	2	2	3	3	3	5	5	5	5	6.4	7.3	8.0
	2	14.4	14.4	17.6	28.8	36	36	44	64	80	80	102	116	127
	3	18	18	22	36	45	45	55	80	100	100	127	145	159
≤ 220 V	1	0.5	0.5	0.5	0.5	0.5	0.5	1	1	1	1	1.3	1.5	1.6
	2	2	2	2	3	3	3	5	5	5	5	6.4	7.3	8.0
	3	18	18	22	28	28	28	45	45	45	45	57	65	72
≤ 440 V	1	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	0.3	0.3	0.3	0.5	0.5	0.5	1	1	1	1	1.3	1.5	1.6
	3	1.5	1.5	1.5	1.5	3	3	5	5	5	5	6.4	7.3	8.0
≤ 600 V	1	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	0.5	0.5	0.5	0.5	0.5	0.5	1	1	1	1	1.3	1.5	1.6

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Technical Data

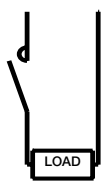
Use of Contactors in Direct Current Circuits

Utilization Category DC-5 (L/R < 15 ms)

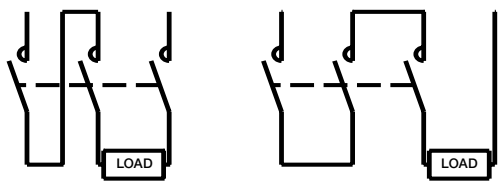
Models		CWBS9	CWBS12	CWBS18	CWBS25	CWBS32	CWBS38	CWBS40	CWBS50	CWBS65	CWBS80	CWBS95	CWBS110	CWBS125
Ue	Poles In Series	Rated Operational Current Ie (A)												
≤ 24 V	1	12	12	12	18	25	32	36	45	55	55	127	145	159
	2	18	18	18	25	40	40	36	45	55	55	127	145	159
	3	18	18	18	25	40	40	36	45	55	55	127	145	159
≤ 48 V	1	9	9	9	12	18	20	36	45	55	55	127	145	159
	2	18	18	18	25	40	40	36	45	55	55	127	145	159
	3	18	18	18	25	40	40	36	45	55	55	127	145	159
≤ 60 V	1	7.5	7.5	7.5	10	15	15	36	45	55	55	127	145	159
	2	18	18	18	25	40	40	36	45	55	55	127	145	159
	3	18	18	18	25	40	40	36	45	55	55	127	145	159
≤ 125 V	1	0.8	0.8	0.8	0.8	1.2	1.2	5	5	5	5	6	7	8
	2	5	5	5	5	5	5	36	45	50	50	102	116	127
	3	15	15	15	20	25	32	36	54	55	55	127	145	159
≤ 220 V	1	-	-	-	-	-	-	1	1	1	1	-	-	-
	2	0.8	0.8	0.8	0.8	0.8	0.8	5	5	5	5	5.1	5.8	6.4
	3	3	3	3	3	3	3	36	45	50	50	52	59	64
≤ 440 V	1	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	1	1	1	1	-	-	-
	3	0.4	0.5	0.5	0.5	0.7	0.7	5	5	5	5	3.8	4.4	4.8
≤ 600 V	1	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-

Wiring Diagrams

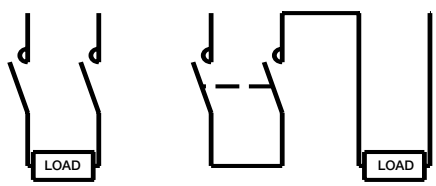
One Pole in Series



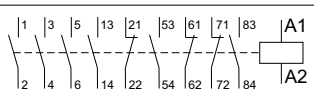
Three Poles In Series



Two Poles In Series



Contact Numbering According to IEC/EN 60947

Diagram	Configuration	Auxiliary Contacts		Catalog Number
		NO	NC	
Three-Pole power contactors with built-in auxiliary contact				CWBS9...125 A
	33	3	3	CWBSxx.33.30

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Contactors

CWBS Series - Safety Contactors

Technical Data

Basic Data

Models			CWBS9	CWBS12	CWBS18	CWBS25	CWBS32	CWBS38
Compliance with the standards			IEC/EN 60947-1, IEC/EN 60947-4-1, IEC/EN 60947-5-1, UL 508					
Rated insulation voltage Ui (pollution degree 3)	IEC/EN 60947-4-1	V	690					
	UL, CSA	V	600					
Rated impulse withstand voltage Uimp	IEC/EN 60947-1	kV	6					
Frequency limits		Hz	25…400					
Mechanical life	AC coil (millions of operations)		10					
	DC coil (millions of operations)		10					
Electrical life	Ie AC-3 (millions of operations)		2.0	2.0	1.8	1.6	1.6	1.2
Degree of protection (IEC 60529)	Main terminals		IP10 (front)					
	Coil and auxiliary contacts		IP20 (front)					
Mounting			Screws or DIN rail 35 mm (EN 50022)					
Coil connection points	Contactors with AC coil		2					
	Contactors with DC coil		2					
Resistance to vibrations (IEC 60068-2-6)	Open contactor	g	4					
	Closed contactor	g	4					
Resistance to mechanical shocks (1/2 sine wave = 11 ms – IEC 60068-2-27)	Open contactor	g	10					
	Closed contactor	g	15					
Ambient temperature	Operation	°C (°F)	-25°C….+55°C (-13°F….+131°F)					
	Storage	°C (°F)	-55°C….+80°C (-67°F….+176°F)					
Maximum operation altitude without modification in the rated values[1)]			3,000 m					

Models			CWBS40	CWBS50	CWBS65	CWBS80	CWBS95	CWBS110	CWBS125
Compliance with the standards			IEC/EN 60947-1, IEC/EN 60947-4-1, IEC/EN 60947-5-1, UL 508						
Rated insulation voltage Ui (pollution degree 3)	IEC/EN 60947-4-1	V	1,000						
	UL, CSA	V	600						
Rated impulse withstand voltage Uimp	IEC/EN 60947-1	kV	6						
Frequency limits		Hz	25…400						
Mechanical life	AC coil (millions of operations)		6						
	DC coil (millions of operations)		6						
Electrical life	Ie AC-3 (millions of operations)		1.6	1.6	1.6	1.2	1.1	1.0	1.0
Degree of protection (IEC 60529)	Main terminals		IP10 (front)						
	Coil and auxiliary contacts		IP20 (front)						
Mounting			Screws or DIN rail 35 mm (EN 50022)						
Coil connection points	Contactors with AC coil		2						
	Contactors with DC coil		2						
Resistance to vibrations (IEC 60068-2-6)	Open contactor	g	4						
	Closed contactor	g	4						
Resistance to mechanical shocks (1/2 sine wave = 11 ms – IEC 60068-2-27)	Open contactor	g	10						
	Closed contactor	g	15						
Ambient temperature	Operation	°C (°F)	-25°C….+55°C (-13°F….+131°F)						
	Storage	°C (°F)	-55°C….+80°C (-67°F….+176°F)						
Maximum operation altitude without modification in the rated values[1)]			3,000 m						

Notes:
1) For altitudes of 3,000...4,000 m (0.09 xI and 0.80 x Ui) and 4,000...5,000 (0.87 xI and 0.75 x Ui).

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Technical Data

Control Circuit – Alternating Current (AC)

Models			CWBS9…38	CWBS40…80	CWBS95…110
Rated insulation voltage Ui (pollution degree 3)	IEC/EN 60947-4-1	V	690	1,000	1,000
	UL, CSA	V	600	600	600
Standard voltages at 50/60 Hz		V	12…500	24…500	24…500
Coil operation limits	At 50 Hz	xUs	0.8…1.1	0.8…1.1	0.8…1.1
	At 60 Hz	xUs	0.8…1.1	0.8…1.1	0.8…1.1
Average coil consumption 50/60 Hz (operation at 60 Hz)	Closed magnetic circuit	VA	7.5	17.5	25
	Power factor switched on	cos ϕ	0.27	0.28	0.40
	Thermal power dissipation	W	1.5…2.5	4…5.5	9…11
	Closing of the magnetic circuit	VA	75	185	410
	Power factor switched on	cos ϕ	0.70	0.55	0.48
Average coil consumption 50/60 Hz (operation at 50 Hz)	Closed magnetic circuit	VA	9	27	27
	Power factor switched on	cos ϕ	0.24	0.25	0.40
	Thermal power dissipation	W	1.5…2.5	5.5…7.8	11…13.4
	Closing of the magnetic circuit	VA	90	202	426
	Power factor switched on	cos ϕ	0.80	0.56	0.50
Average operating time	Closing of the NO contacts	ms	15…25	10…15	8…12.5
	Opening of the NO contacts	ms	8…12	8…12	4…8

Control Circuit – Direct Current (DC)

Models			CWBS9…38	CWBS40…80	CWBS95…125
Rated insulation voltage Ui (pollution degree 3)	IEC/EN 60947-4-1	V	690	1,000	-
	UL, CSA	V	600	600	-
Standard voltages		V	12…500	12…500	-
Coil operation limits		xUs	0.8…1.1	0.8…1.1	-
Average DC coil consumption	Closed magnetic circuit	W	5.8	10.6	-
	Closing of the magnetic circuit	W	5.8	105.5	-
Average operating time	Closing of the NO contacts	ms	35…45	20…30	-
	Opening of the NO contacts	ms	8…12	4…8	-

Control Circuit – Electronic Coil (AC/DC)

Models			CWBS9…38	CWBS40…80	CWBS95…125
Rated insulation voltage Ui (pollution degree 3)	IEC/EN 60947-4-1, VDE 0660	V	-	-	1,000
	UL, CSA	V	-	-	600
Standard voltages		V	-	-	24…500
Coil operation limits	in VDC	xUs	-	-	0.8…1.1
	at 50 Hz	xUs	-	-	0.8…1.1
	at 60 Hz	xUs	-	-	0.8…1.1
Average coil consumption			-	-	1.0 x Us and cold coil
AC power supply (60 Hz)	Closed magnetic circuit	VA	-	-	10.8
	Power factor switched on	cos ϕ	-	-	0.47
	Thermal power dissipation	W	-	-	5.1
	Closing of the magnetic circuit	VA	-	-	217
	Power factor switched on	cos ϕ	-	-	0.88
DC power supply	Closed magnetic circuit	W	-	-	2…5
	Closing of the magnetic circuit	W	-	-	180…220
Average operating time	Closing of the NO contacts	ms	-	-	32…48
	Opening of the NO contacts	ms	-	-	30…55

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Contactors

CWBS Series - Safety Contactors

Technical Data

Main Contacts

Models			CWBS9	CWBS12	CWBS18	CWBS25	CWBS32	CWBS38
Rated operational current Ie	AC-3 (Ue ≤ 440 V)	A	9	12	18	25	32	38
	AC-4 (Ue ≤ 440 V)	A	4.4	5.8	8.5	10.4	14	14
	AC-1 (θ ≤ 55°C, Ue ≤ 690 V)	A	25	25	32	40	50	50
Rated operational voltage Ue	IEC/EN 60947-4-1	V	690					
	UL, CSA	V	600					
Conventional thermal current Ith	(θ ≤ 55°C)	A	25	25	32	40	50	50
Making capacity – IEC/EN 60947		A	250	250	300	450	550	550
Breaking capacity IEC 60947	(Ue ≤ 440 V)	A	250	250	300	450	550	550
	(Ue = 500 V)	A	220	220	250	350	450	450
	(Ue = 690 V)	A	150	150	180	250	350	350
Acceptable short-time current (no current flowing during recovery time of 15 min and ≤ 40°C)	1 second	A	210	210	240	380	400	430
	10 second	A	105	105	145	240	260	310
	1 minute	A	60	60	80	120	130	150
	10 min	A	30	30	40	50	60	60
Short-circuit protection of the main contacts Fuse (gL/gG)	@600 V – UL/CSA	kA	5					
	Coordination type 1	A	25	40	50	63	63	63
	Coordination type 2	A	20	20	25	35	50	50
Average impedance per pole		mΩ	2.5	2.5	2.5	2	2	2
Average power dissipation per pole	AC-1 (θ ≤ 55°C, Ue ≤ 690 V)	W	1.5	1.5	2.5	3.2	5	5
	AC-3 (Ue ≤ 440 V)	W	0.2	0.4	0.8	1.2	2	3
Minimum switching capacity[1)]		V/mA	50/100					
Utilization Category AC-3								
Rated operational current Ie (≤ 55°C)	(Ue ≤ 440 V)	A	9	12	18	25	32	38
	(Ue = 500 V)	A	9	12	15.8	23	28.5	28.5
	(Ue = 690 V)	A	7	9	12.8	16.5	21	21
Orientative rated operational power three-phase induction motors (50/60 Hz) IV poles – 1,800 rpm	220/240 V	kW	2.2	3	4.5	6.5	7.5	9.2
		HP	3	4	6	8.7	10	12.5
	380/400 V	kW	4	5.5	7.5	12.5	15	18.5
		HP	5.5	7.5	10	16.8	20	25
	415/440 V	kW	4.5	6.5	9.2	12.5	15	18.5
		HP	6	8.7	12.5	16.8	20	25
	500 V	kW	5.5	7.5	10	15	18.5	18.5
		HP	7.5	10	13.4	20	25	25
	660/690 V	kW	5.5	7.5	11	15	18.5	18.5
		HP	7.5	10	15	20	25	25
Maximum percentage	600 ops/h	%	100	100	100	100	100	100
Utilization Category AC-4								
Rated operational current Ie	(Ue ≤ 440 V)	A	4.4	5.8	8.5	10.4	14	14
	(Ue = 500 V)	A	3.9	5.1	8	12	13.5	13.5
	(Ue = 690 V)	A	2.8	3.7	5.4	12	12.8	12.8
Orientative rated operational power three-phase induction motors (50/60 Hz) IV poles – 1,800 rpm (200,000 operations)	220/240 V	kW	1.5	1.5	2.2	3	4	4
		HP	2	2	3	4	5.4	5.4
	380/400 V	kW	2.2	3.7	4	5.5	7.5	7.5
		HP	3	5	5.4	7.4	10	10
	415/440 V	kW	2.2	3	3.7	5.5	7.5	7.5
		HP	3	4	5	7.4	10	10
	500 V	kW	2.2	3	5	7.5	9	9
		HP	3	4	6.7	10	12	12
	660/690 V	kW	2.2	3	5	10	11	11
		HP	3	4	6.7	13.4	14.7	14.7

Notes:
1) In order to achieve acceptable reliability for application and/or continuity test on the power contacts, a minimum voltage and current of 50 V and 100 mA, respectively, must be used. For lower values, the auxiliary contacts must be used.

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Main Contacts

Models			CWBS40	CWBS50	CWBS65	CWBS80	CWBS95	CWBS110	CWBS125
Rated operational current Ie	AC-3 (Ue ≤ 440 V)	A	40	50	65	80	95	110	125
	AC-4 (Ue ≤ 440 V)	A	18.5	21	27	40	52	58	65
	AC-1 (θ ≤ 55°C, Ue ≤ 690 V)	A	60	90	110	110	140	150	175
Rated operational voltage Ue	IEC/EN 60947-4-1	V	1,000						
	UL, CSA	V	600						
Conventional thermal current Ith	(θ ≤ 55°C)	A	60	90	110	110	140	150	175
Making capacity – IEC/EN 60947		A	550	1,000	1,000	1,000	1,100	1,200	1,375
Breaking capacity IEC 60947	(Ue ≤ 440 V)	A	550	1,000	1,000	1,000	1,100	1,200	1,375
	(Ue = 500 V)	A	480	880	880	880	970	1,000	1,200
	(Ue = 690 V)	A	350	640	640	640	700	765	870
Acceptable short-time current (no current flowing during recovery time of 15 min and ≤ 40°C)	1 second	A	720	820	900	900	1,200	1,350	1,430
	10 second	A	320	400	520	640	720	780	860
	1 minute	A	165	230	340	360	410	470	515
	10 min	A	85	110	130	130	140	150	175
Short-circuit protection of the main contacts Fuse (gL/gG)	@600 V – UL/CSA	kA	5				-	-	
	Coordination type 1	A	80	100	125	160	-	-	
	Coordination type 2	A	63	80	100	125	-	-	
Average impedance per pole		mΩ	1.6	1.6	1.6	1.6	0.7	0.7	0.7
Average power dissipation per pole	AC-1 (θ ≤ 55°C, Ue ≤ 690 V)	W	6	13	19	19	15	17	21
	AC-3 (Ue ≤ 440 V)	W	3	4	7	10	7	9	11
Minimum switching capacity[1)]		V/mA	50/100						
Utilization Category AC-3									
Rated operational current Ie (≤ 55°C)	(Ue ≤ 440 V)	A	40	50	65	80	95	110	125
	(Ue = 500 V)	A	35	45	55	75	84	97	110
	(Ue = 690 V)	A	32	35	40	50	61	70	80
Orientative rated operational power three-phase induction motors (50/60 Hz) IV poles – 1,800 rpm	220/240 V	kW	11	15	18.5	22	22	30	37
		HP	15	20	25	29	30	40	50
	380/400 V	kW	18.5	22	30	37	45	55	55
		HP	25	29	40	50	60	75	75
	415/440 V	kW	22	30	37	45	55	55	75
		HP	29	40	50	60	75	75	100
	500 V	kW	22	30	37	55	55	55	75
		HP	29	40	50	74	75	75	100
	660/690 V	kW	30	33	37	45	55	55	75
		HP	40	44	50	60	75	75	100
Maximum percentage	600 ops/h	%	100	100	100	100	100	100	100
Utilization Category AC-3									
Rated operational current Ie	(Ue ≤ 440 V)	A	18.5	21	27	40	52	58	65
	(Ue = 500 V)	A	17.5	17.6	23	33	46	51	57
	(Ue = 690 V)	A	14	17	22	26	33	37	41
Orientative rated operational power three-phase induction motors (50/60 Hz) IV poles – 1,800 rpm (200,000 operations)	220/240 V	kW	4.5	5.5	7.5	11	15	16.5	18.5
		HP	6	7.4	10	14.7	20	22	25
	380/400 V	kW	9.2	11	15	1.5	22	28	30
		HP	12.3	14.7	20.1	24.8	30	38	40
	415/440 V	kW	11	11	15	22	30	33	37
		HP	14.7	14.7	20.1	30	40	44	50
	500 V	kW	11	15	18.5	22	30	30	37
		HP	14.7	20.1	25	30	40	40	50
	660/690 V	kW	12.5	15	20	25	30	30	45
		HP	16.8	20.1	26.8	33.5	40	40	60

Notes:
1) In order to achieve acceptable reliability for application and/or continuity test on the power contacts, a minimum voltage and current of 50 V and 100 mA, respectively, must be used. For lower values, the auxiliary contacts must be used.

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CWBS Series - Safety Contactors

Main Contacts

Models			CWBS9	CWBS12	CWBS18	CWBS25	CWBS32	CWBS38
Utilization Category AC-1			3P (NO)					
Conventional thermal current Ith	(θ ≤ 55°C)	A	25	25	32	40	50	50
	(θ ≤ 65°C)	A	20	20	26	32	40	40
	(θ ≤ 75°C)	A	18	18	22	28	35	35
Maximum orientative operational current according to the ambient temperature	θ ≤ 55°C (Ue ≤ 690 V)	A	25	25	32	40	50	50
Maximum orientative operational power θ ≤ 55°C (three-phase resistors)	240 V	kW	10.4	10.4	13.3	16.6	20.8	20.8
	400 V	kW	17.3	17.3	22.2	27.7	34.6	34.6
	440 V	kW	19.1	19.1	24.4	30.5	38.1	38.1
	500 V	kW	27.7	27.7	27.7	34.6	43.3	43.3
	690 V	kW	29.9	29.9	38.2	47.8	59.8	59.8
Actual values for connections	2 poles in parallel		Ie x 1.7					
	3 poles in parallel		Ie x 2.4					

Models			CWBS40	CWBS50	CWBS65	CWBS80	CWBS95	CWBS110	CWBS125
Utilization Category AC-1			3P (NO)						
Conventional thermal current Ith	(θ ≤ 55°C)	A	60	90	110	110	140	150	175
	(θ ≤ 65°C)	A	48	72	88	88	112	121	140
	(θ ≤ 75°C)	A	42	63	77	77	98	106	123
Maximum orientative operational current according to the ambient temperature	θ ≤ 55°C (Ue ≤ 690 V)	A	60	90	110	110	140	150	175
Maximum orientative operational power ≤ 55°C (three-phase resistors)	240 V	kW	24.9	37.4	45.7	45.7	58.2	62.4	72.7
	400 V	kW	41.6	62.4	76.2	76.2	97.0	103.9	121.2
	440 V	kW	45.7	68.6	83.8	83.8	106.7	114.3	133.4
	500 V	kW	52	77.9	95.3	95.3	121.2	129.9	151.6
	690 V	kW	71.7	107.6	131.5	131.5	167.3	179.3	209.1
Actual values for connections	2 poles in parallel		Ie x 1.7						
	3 poles in parallel		Ie x 2.4						

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Technical Data

Auxiliary Contacts

Models			CWBS9…125 (built-in)	BFBS (front mounting blocks)
Compliance with the standards			IEC 60947-5-1	
Rated insulation voltage Ui (pollution degree 3)	IEC/EN 60947-4-1, VDE 0660	V	690	
	UL, CSA	V	600	
Rated operational voltage Ue	IEC/EN 60947-4-1, VDE 0660	V	690	
	UL, CSA	V	600	
Conventional thermal current Ith	(θ ≤ 55°C)	A	10	
Rated Operational Current Ie				
AC-15 (IEC/EN 60947-5-1)	220/230 V	A	10	
	380/440 V	A	4	
	500 V	A	2.5	
	660/690 V	A	1.5	
DC-13 (IEC/EN 60947-5-1)	24 V	A	4	
	48 V	A	2	
	110 V	A	0.7	
	220 V	A	0.3	
	440 V	A	0.15	
	600 V	A	0.1	
Making capacity	Ue ≤ 690 V 50/60 Hz – AC-15	A	10 x Ie	
Breaking capacity	Ue ≤ 4000 V 50/60 Hz – AC-15	A	1 x Ie	
Short-circuit protection with fuse (gL/gG)		A	10	
Control circuit reliability		V/ mA	17/5	
Electrical life	(millions of operations)		1	
Mechanical life	(millions of operations)		10	
Non-overlapping time between NO and NC contacts		ms	1.5	
Impedance of the contacts		mΩ	2.5	

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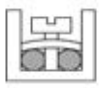
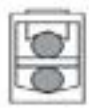
Contactors

CWBS Series - Safety Contactors

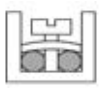
Technical Data

Terminal Capacity and Tightening Torque

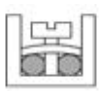
Power Circuit

Models			CWBS9...18	CWBS25...38	CWBS40...80	CWBS95…125
Mounting system screw type			Phillips #2	Phillips #2	ALLEN 4 mm	ALLEN 4 mm
Flexible conductor without terminal	mm²		1 x 1…6	1 x 2.5…10	-	-
			2 x 1…6	2 x 2.5…10		
Flexible conductor with terminal	mm²		1 x 1…6	1 x 1.5…10	-	-
			2 x 1…4	2 x 1.5…6		
Solid wire	mm²		1 x 1…6	1 x 2.5…10	-	-
			2 x 1…6	2 x 2.5…10		
Tightening torque	mm²		1.7	2.5	-	-
Flexible conductor without terminal	mm²		-	-	1 x 2.5…35	1 x 2.5…70
					2 x 2.5…35	2 x 2.5…70
Flexible conductor with terminal	mm²		-	-	1 x 2.5…35	1 x 2.5…70
					2 x 2.5…35	2 x 2.5…70
Solid wire	mm²		-	-	1 x 2.5…35	1 x 2.5…25
					2 x 2.5…35	2 x 2.5…25
Tightening torque	Nm		-	-	5.0	6.0

Control Circuit And Built-In Auxiliary Contacts

Models			CWBS9…125
Mounting system screw type			Phillips #2
Flexible conductor without terminal	mm²		1 x 1…4
			2 x 1…4
Flexible conductor with terminal	mm²		1 x 1…4
			2 x 1…2.5
Solid wire	mm²		1 x 1…4
			2 x 1…4
Tightening torque	Nm		1.0

Auxiliary Contact Blocks

Models			BFBS (frontal)
Mounting system screw type			Phillips #2
			Slot / Philips
Flexible conductor without terminal	mm²		1 x 1…2.5
			2 x 1…2.5
Flexible conductor with terminal	mm²		1 x 1…2.5
			2 x 1…2.5
Solid wire	mm²		1 x 1…2.5
			2 x 1…2.5
Tightening torque	Nm		1.0

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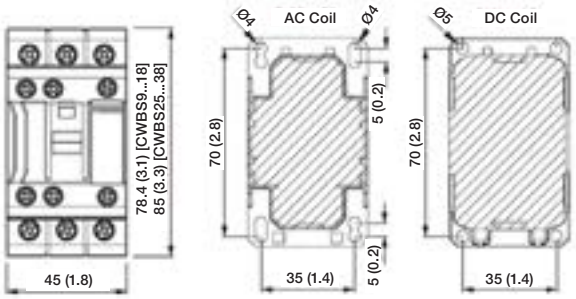
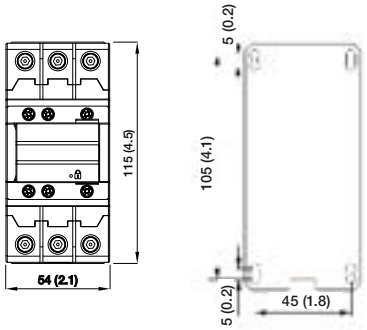
Dimensions – mm (inch)

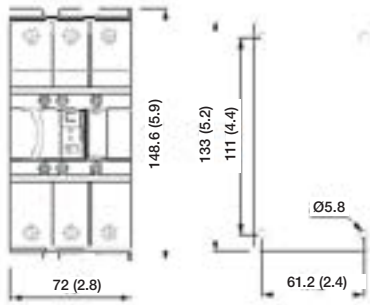
CWBS9...38



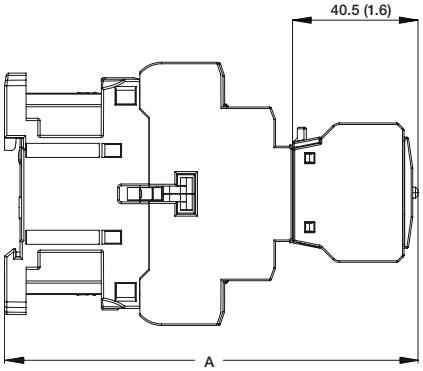
CWBS40...80



CWBS95...125

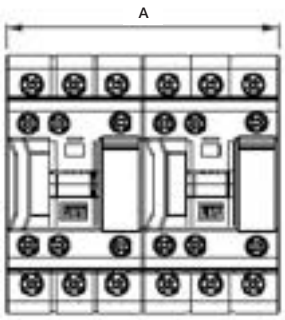


CWBS9...125 + BFBS (front-mounted contact blocks)



Models	A	
	AC Coil	DC Coil
CWBS9...18	130 (5.1)	139.2 (5.5)
CWBS25...38	133.4 (5.3)	142.6 (5.6)
CWBS40...80	161.1 (6.3)	161.1 (6.3)
CWBS95...125	184.5 (7.3)	184.5 (7.3)

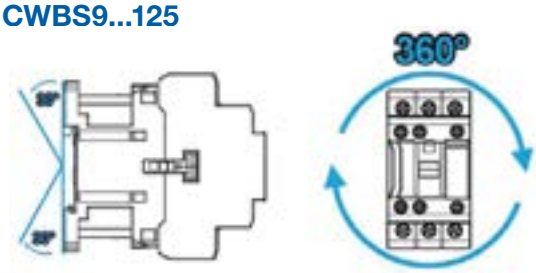
CWBS9...125 + IM (Mechanical Interlock)



Models	Interlock	A
CWBS9...18	IM1	90 (3.5)
CWBS40...80	IM2	108 (4.3)
CWBS95...125		144 (5.7)

Mounting Position

CWBS9...125



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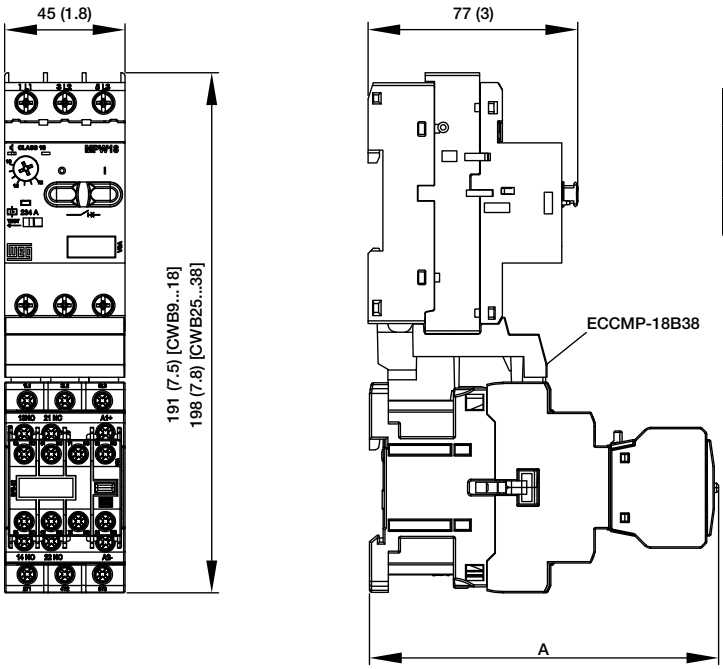
Contactors

CWBS Series - Safety Contactors

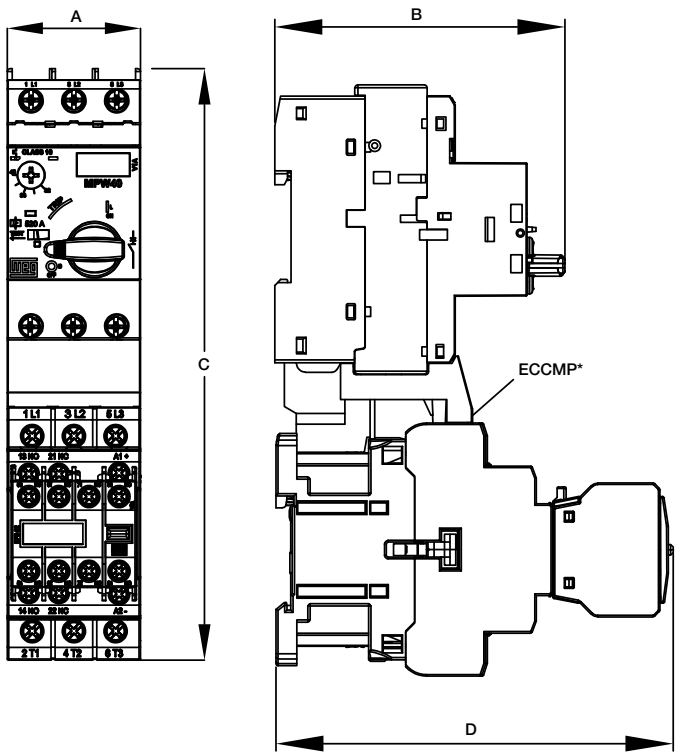
Dimensions – mm (inch)

CWBS9...38 + MPW18



	Assembly with MPW18			
	AC Coil Contactor		DC Coil Contactor	
	CWBS9…18	CWBS25…38	CWBS9…18	CWBS25…38
A	130 (5.1)	133.4 (5.3)	139.2 (5.5)	142.6 (5.6)

CWBS9...38 + MPW40
CWBS40...80 + MPW80



	Assembly with MPW40			
A	45 (1.8)			
B	98 (3.9)			
	AC Coil Contactor		DC Coil Contactor	
	CWBS9…18	CWBS25…38	CWBS9…18	CWBS25…38
C	191.4 (7.5)	198 (7.8)	191.4 (7.5)	198 (7.8)
D	130 (5.1)	133.4 (5.3)	139.2 (5.5)	142.6 (5.6)
*	ECCMP-40B38		ECCMP-40B38DC	

	Assembly with MPW80	
A	54 (2.1)	
B	156.6 (6.2)	
	AC Coil Contactor	DC Coil Contactor
	CWBS40...80	CWBS40...80
C	263 (10.4)	
D	161.1 (6.3)	
*	ECCMP-80B80	

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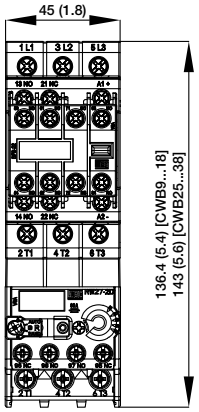
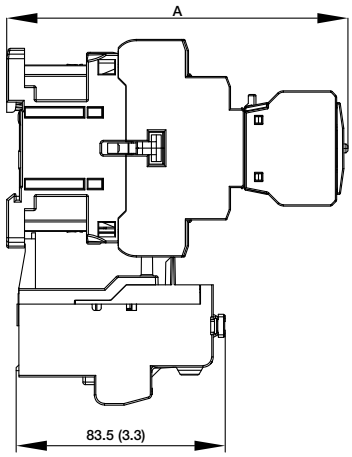
Dimensions – mm (inch)

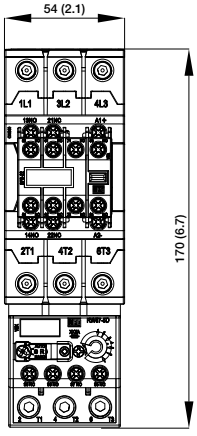
CWBS9...38 + RW27-2D

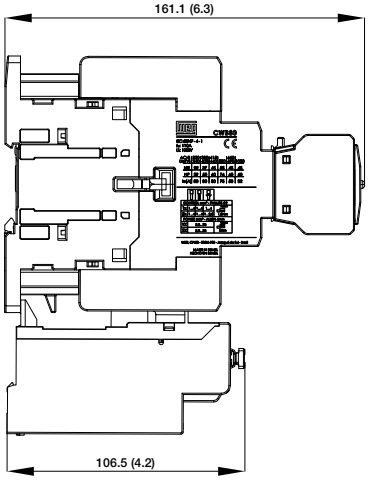




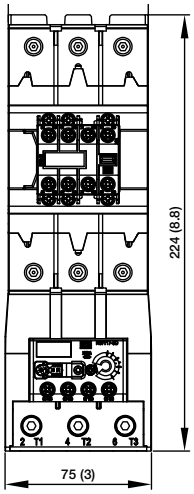
	Assembly with RW27-2D			
	AC Coil Contactor		DC Coil Contactor	
	CWBS9…18	CWBS25…38	CWBS9…18	CWBS25…38
A	130 (5.1)	133.4 (5.3)	139.2 (5.5)	142.6 (5.6)

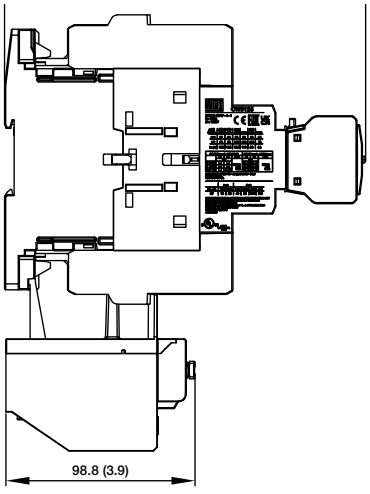
CWBS9...38 + RW27-2D





CWBS95...125 + RW117-3D





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CWM Series – IEC Contactors

The CWM Series IEC Contactor was designed as a general purpose contactor taking into consideration the heavy demands and need for high reliability in modern industry. They are rated for inductive loads up to 800 A at 460V. CWM Contactors are compact in frame size allowing for optimization of valuable internal space within electrical enclosures. Reducing inventory is a “snap” away with the CWM Series common accessories.

UL File No. E202315

Standard Features

- Panel mountable on 35 mm DIN rail (up to CWM105) or screws
- Front and side mounting auxiliary contacts
- Wide range of AC and DC coil options
- Mechanically linked contacts (IEC/EN 60947-5-1) and mirror contacts (IEC/EN 60947-4-1)

Learn More Online

CWM Catalog Number Sequence

CWM | 18 | - | 10 | - | 30 | V18

Contactor Series
CWM: Standard IEC Contactors
CWM_N: Standard NEMA Contactors

Frame Rating
CWM (IEC)

9: 9A	**105**: 105A
12: 12A	**112**: 112A
18: 18A	**150**: 150A
25: 25A	**180**:180A
32: 32A	**250**: 250A
38: 38A	**300**: 300A
40: 40A	**400**: 400A
50: 50A	**500**: 500A
65: 65A	**630**: 630A
80: 80A	**800**: 800A
95: 95A	

CWM_N (NEMA)
9N: 9A (size 00)
18N: 18A (size 0)
32N: 32A (size 1)
50N: 50A (size 2)
95N: 95A (size 3)
150N: 150A (size 4)
300N: 300A (size 5)

Auxiliary Contacts
00: None
10: 1NO01: 1NC
11: 1NO + 1NC
22: 2NO + 2NC

Power Poles
30: Three Poles
20: Two Poles

Coil Voltage
AC Voltage
V04: 24V
V18: 120V
V24: 208-240V
V47: 480V
V56: 500V

DC Voltage
C34: 24-28V
C40: 110-130V

AC/DC Voltage with Electronic Module
E02: 24-28V
E10: 110-130V
E13: 208-250V
E21: 430-500V
E35: 100-127V
E36: 100-240V
E39: 200-240V
D81: 440-575V

Chart intended as reference only and not to create part numbers.

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Contactors

CWM Series - IEC Contactors

Model		CWM9	CWM12	CWM18	CWM25	CWM32	CWM40	CWM50	CWM65	CWM80	CWM95	CWM105
Rated Operational Power												
Single-Phase												
115 VAC	HP	1/2	3/4	1	2	3	3	3	5	7 1/2	7 1/2	10
230 VAC	HP	1 1/2	2	3	5	5	5	7 1/2	10	15	15	20
Three-Phase												
230 VAC	HP	3	3	5	7 1/2	10	15	15	20	25	30	40
460 VAC	HP	5	7 1/2	10	15	20	30	40	50	50	60	75
575 VAC	HP	7 1/2	10	15	15	25	25	40	50	60	75	75
General purpose rating (AC-1)	A	25	25	32	45	60	60	90	110	110	140	140
Inductive motor switching (AC-3)	A	9	12	18	25	32	40	50	65	80	95	105

Overload Relays

RW27-1D
0.28. . .0.4 A
0.4. . .0.63 A
0.56. . .0.8 A
0.8. . .1.2 A
1.2. . .1.8 A
1.8. . .2.8 A
2.8. . .4 A
4. . .6.3 A
5.6. . .8 A
7. . .10 A
8. . .12.5 A
10. . .15 A
11. . .17 A
15…23 A
22…32 A

RW67-1D
25...40A
32...50A

RW67-2D
40...57 A
50...63 A
57...70 A
63...80 A

RW117-1D
0.28. . .0.4 A
0.4. . .0.63 A
0.56. . .0.8 A

Axillary Contact Blocks

Front Mounting
BCXMF10 (1NO)
BCXMF01 (1NC)

Side Mounting
BCXML 11 (1NO + 1NC)
BCXML 20 (2NO)

Second Contact Block
BCXMRL 11 (1NO + 1NC)
BCXMRL 20 (2NO)

Mechanical Interlock

BLIM9-105
BLIM.02 9-105 (2NC)

Electronic Relays

Timing Relays – RTW17 Series
(Please refer to Electronic Relays Section)

Surge Suppressor

RC Block:
BAMRC4 D53 24-48 V 50/60 Hz
BAMRC5 D55 50-127 V 50/60 Hz
BAMRC6 D63 130-250 V 50/60 Hz
Varistor Block:
BAMV1 D68 270-380 V 50/60 Hz
BAMV2 D73 400-510 V 50/60 Hz

RC Block:
BAMRC7 D53 24-48 V 50/60 Hz
BAMRC8 D55 50-127 V 50/60 Hz
BAMRC9 D63 130-250 V 50/60 Hz
Varistor Block:
BAMV1 D68 270-380 V 50/60 Hz
BAMV2 D73 400-510 V 50/60 Hz

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Contactors

CWM Series - IEC Contactors

Model		CWM112	CWM150	CWM180	CWM250	CWM300
Rated Operational Power						
Single-Phase						
115 VAC	HP	-	-	-	-	-
230 VAC	HP	-	-	-	-	-
Three-Phase						
230 VAC	HP	50	60	75	100	125
460 VAC	HP	100	125	150	200	250
575 VAC	HP	100	150	200	250	350
General purpose rating (AC-1)	A	180	225	225	350	410
Inductive/motor switching (AC3)	A	112	150	180	250	300
Overload Relays		**RW117-2D** 75...97A 90...112A		**RW317-1D** 100...150A 140...215A 200...310A 275...420A		
Auxiliary Contact Blocks		**Side Mounting** BCXML11 (1NO+1NC) BCXML20 (2NO)	**Second Contact Block** BCXMRL11 (1NO+1NC) BCXMRL20 (2NO)			
Mechanical Interlock		**BLIM112-300**				
Surge Suppressor		Built-in with electronic module				

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Contactors

CWM Series - IEC Contactors

Model		CWM400	CWM630	CWM800
Rated Optional Power				
Single-Phase				
220/230 VAC	HP	-	-	-
380 VAC	HP	-	-	-
Three-Phase				
230 VAC	HP	150	250	300
460 VAC	HP	300	500	600
575 VAC	HP	300	500	600
General purpose rating (AC-1)	A	450	660	900
Inductive/motor switching (AC-3)	A	400	630	800
Overload Relays		**RW407-1D** 400…600A 560…840A		
Auxiliary Contact Blocks		BCXML11 CWM800 (1NO+1NC) BCXMRL11 CWM800 (1NO+1NC)		
Mechanical Interlock		BLIM CWM400	BLIM CWM800	
Surge Suppressor		(Built-in with electronic module)		

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Contactors

CWM Series - IEC Contactors

Three-Pole Contactors With AC Coil

Maximum UL Horsepower						Auxiliary Contacts		Current Rating (A)	Catalog Number[1)]	List Price	Multiplier New (Old)
Single-Phase		Three-Phase									
15V	230V	200V	230V	460V	575V	NO	NC				
1/2	1 1/2	3	3	5	7 1/2	1	0	9	CWM9-10-30*	$72	Z1M (Z1)
						0	1		CWM9-01-30*		
3/4	2	3	3	7 1/2	10	1	0	12	CWM12-10-30*	$89	
						0	1		CWM12-01-30*		
1	3	5	5	10	15	1	0	18	CWM18-10-30*	$103	
						0	1		CWM18-01-30*		
2	5	7 1/2	7 1/2	15	15	0	0	25	CWM25-00-30*	$118	
3	5	10	10	20	25	0	0	32	CWM32-00-30*	$140	
3	7 1/2	10	15	30	25	0	0	40	CWM40-00-30*	$164	
3	10	15	15	40	40	0	0	50	CWM50-00-30*	$225	
5	10	20	20	50	50	0	0	65	CWM65-00-30*	$255	
7 1/2	15	20	25	50	60	0	0	80	CWM80-00-30*	$270	
7 1/2	15	25	30	60	75	0	0	95	CWM95-00-30*	$365	
10	20	30	40	75	75	0	0	105	CWM105-00-30*	$393	

To complete the selection, replace "*" with desired coil voltage from AC Coil Voltage Code Selection Table.

* AC Coil Voltage Code Selection for Contactors CWM9...CWM105						
Code	V04	V10	V18	V24	V47	V56
60 Hz	24V	48V	120V	208-240V	480V	600V
50 Hz	20V	42V	110V	180-208	400-415V	500V

The Flexible Line from 5 to 75 HP

The 5 to 75 HP at 460V range is differentiated by five frame sizes and only four varying widths, with the choice of either screw or DIN rail mounting. WEG offers one of the most compact 75 HP at 460V contactors in the market.

Coil Technology

WEG Contactor AC coils have three terminals up to 30HP at 460V, which allows an easy connection no matter the complexity of the application and wiring. From 32 A up to 105 A the contactors are equipped with an electronic circuit that provides an unmatched space saving solution, making the 50 A through 105 A contactors depth the same size.

Notes:
1) For other auxiliary contact configurations, please refer to page 208.

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Three-Pole Contactors With DC Coil

Maximum UL Horsepower						Auxiliary Contacts		Current Rating (A)	Catalog Number	List Price	Multiplier New (Old)
Single-Phase		Three-Phase									
115V	230V	200V	230V	460V	575V	NO	NC				
3	5	10	10	20	25	0	0	32	CWM32-00-30+	$220	Z1M (Z1)
3	7 1/2	10	15	30	25	0	0	40	CWM40-00-30+	$282	
3	10	15	15	40	40	0	0	50	CWM50-00-30+	$310	
5	10	20	20	50	50	0	0	65	CWM65-00-30+	$350	
7 1/2	15	20	25	50	60	0	0	80	CWM80-00-30+	$417	
7 1/2	15	25	30	60	75	0	0	95	CWM95-00-30+	$450	
10	20	30	40	75	75	0	0	105	CWM105-00-30+	$540	

For other auxiliary contact configurations please refer to page 208.

To complete the selection, replace “+” with desired coil voltage from DC Coil Voltage Code Selection table.

+ DC COIL VOLTAGE CODE SELECTION FOR CONTACTORS CWM32...CWM105		
Code	C34	C40
Voltage	24-28V	110-130V

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Contactors

CWM Series - IEC Contactors

Three-Pole Contactors With AC/DC Electronic Module Coil

Maximum UL Horsepower						Auxiliary Contacts		Current Rating (A)	Catalog Number	List Price	Multiplier New (Old)
Single-Phase		Three-Phase									
115V	230V	200V	230V	460V	575V	NO	NC				
-	-	40	50	100	100	2	2	112	CWM112-22-30#	$865	Z1M (Z1)
-	-	50	60	125	150	2	2	150	CWM150-22-30#	$960	
-	-	60	75	150	200	2	2	180	CWM180-22-30#	$1,350	
-	-	75	100	200	250	2	2	250	CWM250-22-30#	$1,920	
-	-	100	125	250	300	2	2	300	CWM300-22-30#	$2,150	
-	-	125	150	300	300	2	2	400	CWM400-22-30^	$2,950	
-	-	200	250	500	500	2	2	630	CWM630-22-30^	$4,460	
-	-	200	300	600	600	2	2	800	CWM800-22-30^	$6,530	

For different auxiliary contact configurations please refer to page 208.

To complete the selection, replace “#” or “^” with desired coil voltage from Coil Voltage Code table.

# AC/DC Coil Voltage Code Selection for Contactors CWM112, 150, 180, 250, 300				
Code	E02	E10	E13	E21
Voltage (50/60 Hz)	24-28 VAC/VDC	110-130 VAC/VDC	208-250 VAC/VDC	430-500 VAC/VDC
Mounting on	CWM112-CWM300	CWM112-CWM300	CWM112-CWM300	CWM112-CWM300

^ AC/DC Coil Voltage Code Selection For Contactors CWM400...800				
Code	E36	E35	E39	D82
Voltage	100-240 VAC/100-220VDC	100-127 VAC/100-110VDC	200-240 VAC/200-220VDC	440-575V 50/60 Hz
Mounting on	CWM400	CWM630-CWM800	CWM630-CWM800	CWM400-CWM800

The Tough Line from 100 to 600 HP

With reliability as our goal, WEG contactors are modern and very compact, but they are also one of the most rugged line of contactors in the range from 100 to 600 HP, assuring an extended life under the most challenging conditions of today’s industry.

Electronic Module

From 100 to 600 HP at 460V, WEG offers contactors with electronic module for AC/DC Coil Applications. Such coils provide a smoother switching, therefore enhancing contactor’s performance. Built-in surge suppressor is also standard.

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2-Pole Contactors With AC Coil

Maximum UL Horsepower		Auxiliary Contacts		Current Rating (A)	Catalog Number	List Price	Multiplier New (Old)
Single-Phase							
115V	230V	NO	NC				
1/2	1 1/2	0	0	9	CWM9-00-20*	$65	Z1M (Z1)
3/4	2	0	0	12	CWM12-00-20*	$68	
1	3	0	0	18	CWM18-00-20*	$73	
2	5	0	0	25	CWM25-00-20*	$99	
3	5	0	0	32	CWM32-00-20*	$126	
3	7 1/2	0	0	40	CWM40-00-20*	$160	
3	10	0	0	50	CWM50-00-20*	$174	
5	10	0	0	65	CWM65-00-20*	$200	
7 1/2	15	0	0	80	CWM80-00-20*	$231	
7 1/2	15	0	0	95	CWM95-00-20*	$300	
10	20	0	0	105	CWM105-00-20*	$321	

For other auxiliary contact configurations please refer to page 208.

To complete the selection, replace "*" with desired coil voltage from Coil Voltage Code table.

*AC Coil Voltage Code Selection for Contactors CWM9...CWM105			
Code	V04	V18	V24
60 Hz	24V	120V	208-240V
50 Hz	20V	110V	180-208V

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CWM_N Series – NEMA Rated IEC Contactors

The WEG CWM_N series NEMA rated contactor line has been designed for industrial duty and with reliability in mind. Rated for inductive loads up to 300A or 200 HP at 460V, WEG can offer the suitable contactor for your application.

Customers who are used to specifying contactors (and starters), by a particular NEMA size (size 00, 0, 1, 2, 3, 4, 5), now can use the WEG CWM_N series, NEMA rated contactors. Customers get the ease of choosing the product, the reliability of WEG quality, and still get the sophisticated arc quenching techniques to reduce excess heat on the contacts.

Given their compact footprints, CWM_N contactors allow total panel space optimization, with only a few compact frame sizes. Reducing inventory is a “snap” with CWM’s common accessories. For example, side mounted auxiliary contact blocks are the same from NEMA size 00 to 5.

UL File No. E202315

Standard Features

- Ease of choosing product
- Compact footprint
- Arc quenching technique
- Reduced inventory with common accessories
- Adjustable thermal overload relay accessory for motor protection
- Reliable WEG quality

NEMA Size	NEMA Continuous Amp Rating	WEG Continuous Amp Rating	HP @ 230 V	HP @ 460 V
00	9	9	1.5	2
0	18	18	3	5
1	27	32	7.5	10
2	45	50	15	25
3	90	95	30	50
4	135	150	50	100
5	270	300	100	200

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Contactors

CWM_N Series – NEMA Rated IEC Contactors

Model		CWM9N	CWM18N	CWM32N	CWM50N	CWM95N
NEMA Size		00	0	1	2	3
Rated Operational Power[1]						
Single-Phase						
115 VAC	HP	1/3	1	3	3	7 1/2
230 VAC	HP	1	3	5	7 1/2	15
Three-Phase						
230 VAC	HP	1 1/2	3	7 1/2	15	30
460 VAC	HP	2	5	10	25	50
575 VAC	HP	2	5	10	25	50
General Purpose A Rating		25	32	60	90	140

Overload Relays

RWM40E
0.4 . . . 2.0A
1.6 . . . 8.0A
5 . . . . 25A
8 . . . 40A

RWM112E
14 . . . 56A
28 . . .112A

Axillary Contact Blocks

Front Mounting
BCXMF10 (1NO)
BCXMF01 (1NC)

Side Mounting
BCXML 11 (1NO+1NC)
BCXML 20 (2NO)

Second Contact Block
BCXMRL 11 (1NO+1NC)
BCXMRL 20 (2NO)

Mechanical Interlock

BLIM9-105
BLIM.02 9-105 (2NC)

Electronic Relays

Timing Relays – RTW17 Series
(Please refer to Electronic Relay Section)

Surge Suppressor

RC Block:
BAMRC4 D53 24-48 V 50/60 Hz
BAMRC5 D55 50-127 V 50/60 Hz
BAMRC6 D63 130-250 V 50/60 Hz

Varistor Block:
BAMV1 D68 270-380 V 50/60 Hz
BAMV2 D73 400-510 V 50/60 Hz

RC Block:
BAMRC7 D53 24-48 V 50/60 Hz
BAMRC8 D55 50-127 V 50/60 Hz
BAMRC9 D63 130-250 V 50/60 Hz

Varistor Block:
BAMV1 D68 270-380 V 50/60 Hz
BAMV2 D73 400-510 V 50/60 Hz

Notes:
1) Some motors characteristics may vary according to each manufacturer.

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Contactors

CWM_N Series – NEMA Rated IEC Contactors

Model		**CWM150N**	**CWM300N**
NEMA Sizes		4	5
Rated Operational Power[1)]			
Single-Phase			
115 VAC	HP	-	-
230 VAC	HP	-	-
Three-Phase			
230 VAC	HP	50	100
460 VAC	HP	100	200
575 VAC	HP	100	200
General Purpose Rating	A	225	410
Solid State Overload Relays		**RWM420E** 50. . . 250A 85 . . . 420A	
Auxiliary Contact Blocks		**Side Mounting** BCXML11 (1NO+1NC) BCXML20 (2NO) **Second Contact Block** BCXMRL11 (1NO+1NC) BCXMRL20 (2NO)	
Mechanical Interlock		BLIM112-300	
Surge Suppressor		Built-in with electronic module	

Notes:
1) Some motors characteristics may vary according to each manufacturer.

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Three-Pole NEMA Contactors With AC Coil

NEMA Size	Maximum UL Horsepower						Auxiliary Contacts		Current Rating (A)	Catalog Number	List Price	Multiplier New (Old)
	Single-Phase		Three-Phase									
	115V	230V	200V	230V	460V	575V	NO	NC				
00	1/3	1	1.5	1.5	2	2	1	0	9	CWM9N-10-30*	$103	Z1M (Z1)
							0	1		CWM9N-01-30*		
0	1	2	3	3	5	5	1	0	18	CWM18N-10-30*	$118	
							0	1		CWM18N-01-30*		
1	2	3	7.5	7.5	10	10	0	0	32	CWM32N-00-30*	$164	
2	3	7.5	10	15	25	25	0	0	50	CWM50N-00-30*	$233	
3	7.5	15	25	30	50	50	0	0	95	CWM95N-00-30*	$384	
4	-	-	40	50	100	100	2	2	150	CWM150N-22-30#	$1,350	
5	-	-	75	100	200	200	2	2	300	CWM300N-22-30#	$2,300	

For additional auxiliary contacts, see page 208.

*AC Coil Voltage Code Selection For Contactors CWM9N...CWM95N					
Code	V04	V18	V24	V47	V56
60 Hz	24V	120V	208-240V	480V	600V
50 Hz	20V	110V	180-208V	400-415V	500V

# AC / DC Coil Voltage Code Selection For Contactors CWM150N, CWM300N				
Code	E02	E10	E13	E21
Voltage (50/60 Hz)	24-28 VAC/VDC	110-130 VAC/VDC	208-250 VAC/VDC	430-500 VAC/VDC

Notes:
- *CWM_N Series – 9 to 95 A – AC Coil.*
- *CWM_N Series – 150 to 300 A – AC/DC Coil with Electronic Module.*

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Contactors

CWM Series - IEC Contactors

Accessories

Auxiliary Contacts Block[1)]

Location/Description	Mounting On Contactors	Auxiliary Contacts NO	Auxiliary Contacts NC	Catalog Number	List Price	Multiplier New (Old)
Front mounting	CWM9…105 CWM9N…95N	1	0	BCXMF10	$10	Z1M (Z1)
		0	1	BCXMF01	$10	
Side Mounting	CWM9…300 CWM9N…300N	1	1	BCXML11	$22	
		2	0	BCXML20	$22	
Side Mounting, Second Block		1	1	BCXMRL11	$22	
		2	0	BCXMRL20	$22	
Side Mounting	CWM400…800	1	1	BCXML11 CWM800	$65	
Side Mounting, Second Block		1	1	BCXMRL11 CWM800	$65	

Mechanical Interlock Block[2)3)]

Location/Description	Mounting On Contactors	Auxiliary Contacts NO	Auxiliary Contacts NC	Catalog Number	List Price	Multiplier New (Old)
Side mounted between two contactors	CWM9...105 CWM9N…95N	0	0	BLIM 9-105	$29	Z1M (Z1)
		0	2	BLIM.02 9-105	$40	
	CWM112…300 CWM150N CWM300N	0	0	BLIM 112-300	$77	
	CWM400	0	0	BLIM CWM400	$63	
Bottom mounted	CWM630…800	0	0	BLIM CWM800	$1,850	

Surge Suppressors[4)]

Description	Mounting On Contactors	Voltage Range	Catalog Number	List Price	Multiplier New (Old)
Limits switching transients from contactor pick-up	CWM9...40 CWM9N . . .32N	24...48 VAC	BAMRC4 D53	$30	Z1M (Z1)
		50...127 VAC	BAMRC5 D55	$30	
		130...250 VAC	BAMRC6 D63	$30	
	CWM50...105 CWM50N. . . 95N	24...48 VAC	BAMRC7 D53	$30	
		50...127 VAC	BAMRC8 D55	$30	
		130...250 VAC	BAMRC9 D63	$30	
	CWM9...105 CWM9N . . .95N	270 - 380 VAC	BAMV1 D68	$30	
		400 - 510 VAC	BAMV2 D73	$30	

Notes:
1) Maximum # of added auxiliary contacts per contactor frame size: Note that side mountable version has two auxiliary contacts per block. CWM9…25 = 4 auxiliary contacts; CWM32…40 = 6 auxiliary contacts; CWM50…300E = 8 auxiliary contacts.
2) For CWM9…CWM105 the mechanical interlock can be used to interlock different frame sizes. For CWM112…CWM300, the mechanical interlock has to be used with contactors that have the same mechanical frame size.
3) For BLIM CWM800, a metal mount base is provided with this accessory for an accurate assembling of the contactors.
4) CWM112...300 with Electronic Module and CWM400…800 already have the surge suppressor built-in on the electronic module.

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Accessories

Terminal Cover

Location / Description	Mounting On Contactors	Catalog Number	List Price	Multiplier New (Old)
Two three-phase covers per package	CWM112. . .150	BMP CWM150	$125	Z1M (Z1)
	CWM180	BMP CWM180	$125	
	CWM250. . .300	BMP CWM300	$125	
	CWM400	BMP CWM400	$60	
	CWM630…800	BMP CWM800	$110	

Lugs (3 units per package)

Description / Wire Range	Mounting On Contactors	Catalog Number	List Price	Multiplier New (Old)
300 MCM…6 AWG	CWM112...150	LW1-S300	$52	Z1M (Z1)
300 MCM…6 AWG	CWM180	LW2-S300	$52	
600 MCM…4 AWG	CWM250…300	LW1-S600	$110	
(2) 3-4/0 AWG	CWM400	BMJ CWM400	$98	
(2) 3/0-600 MCM	CWM630…800	BMJ CWM800	$158	

Connector links for Direct Mounting of Overload Relay onto Contactor (3 units per package)

Description	Contactor	Overload Relay	Catalog Number	List Price	Multiplier
Link connectors for easier CWM contactors and RW overload relays assembly	CWM112 / CWM150 / CWM150N	RW117-2D3	GA117D	$41	Z2
	CWM150 / CWM150N	RW317-1D3	GA317-1D	$68	
	CWM180	RW317-1D3	GA317-2D	$70	
	CWM250 / CWM300 / CWM300N	RW317-1D3	GA317-3D	$118	
	CWM400	RW317-1D3	GA317-10D	$118	

Contact Set

Description	Catalog Number	Mounting On	List Price	Multiplier New (Old)
One set consists of all parts required to rebuild one three-pole contactor.	JC CWM112-3P	CWM112	$335.00	Z1M (Z1)
	JC CWM150E-3P	CWM150	$376.00	
	JC CWM180-3P	CWM180	$525.00	
	JC CWM250-3P	CWM250	$1,120.00	
	JC CWM300E-3P	CWM300	$1,190.00	
	JC CWM400-3P	CWM400	$908.00	
	JC CWM630-3P	CWM630	$946.00	
	JC CWM800-3P	CWM800	$983.00	

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Contactors

CWM Series - IEC Contactors

Accessories

Replacement Coil

Description	Mounting On Contactors	Catalog Number	List Price	Multiplier New (Old)
Coil voltage code is required to complete part number	**AC Coil**			
	CWM9... 25 CWM9N... 18N	BCA4-25*	$28	Z1M (Z1)
	CWM32...40 CWM32N	BCA4-40*	$35	
	CWM50...105 CWM50N... 95N	BCA-105*	$44	
	DC Coil[2)]			
	CWM32...40	BECC4-40+	$100	Z1M (Z1)
	CWM50...105	BECC-105+	$60	
	AC/DC Electronic Module & Coil[1)]			
	CWM112...150 CWM150N	BCE-150#	$90	Z1M (Z1)
		ME-300#	$215	
	CWM180	BCE-215#	$118	
		ME-300#	$260	
	CWM250…300 CWM300N	BCE-300#	$146	
		ME-300#	$260	
	CWM400	BCE-400 ^	$700	
	CWM630…800	BCE-800 ^	$850	

*** AC Coil Voltage Code Selection for Contactors CWM9...CWM105, CWM150N, CWM300N, CWM9N...95**

Code	V04	V10	V18	V24	V37	V47	V56
60 Hz	24V	48V	120V	208-240V	277V	480V	600V
50 Hz	20V	42V	110V	180-208V	230-240V	400-415V	500V

+ DC Coil Voltage Code Selection for Contactors CWM32...CWM105[3)]

Code	C34	C40
Voltage	24-28V	110-130V

 # AC/DC Coil Voltage Code Selection for Contactors CWM112, 150, 180, 250, 300, CWM150N, CWM300N – Electronic Contactor Required

Code	E02	E10	E13	E21
Voltage (50/60 Hz)	24-28 VAC/VDC	110-130 VAC/VDC	208-250 VAC/VDC	430-500 VAC/VDC
Mounting on	CWM112-CWM300	CWM112-CWM300	CWM112-CWM300	CWM112-CWM300

^ AC/DC Coil Voltage Code Selection for Contactors CWM400, 630, 800 – Electronic Contactor Required

Code	E36	E35	E39	D82
Voltage	100-240 VAC/100-220 VDC	100-127 VAC/100-110 VDC	200-240 VAC/200-220 VDC	440-575V 50/60 Hz
Mounting on	CWM400	CWM630-CWM800	CWM630-CWM800	CWM400-CWM800

Notes:
1) Module (ME-) and Coil (BCE-) must be used together for a proper contactor operation.
2) DC option does not include NEMA rated contactors.
3) DC coils cannot be used in AC coil contactors due to difference in size of coil housing.

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CWMC Series – Capacitor Switching Contactors

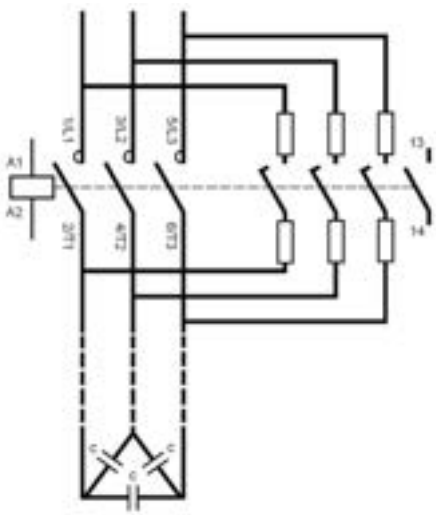
WEG's special CWMC contactors series for switching of capacitors is designed according to UL 508 and IEC 60947-1, and provides the best solution for the switching of power factor correction capacitors.

No More In-Rush

When switching on a capacitor bank, the capacitors are uncharged and the system sees them as a short-circuit for a quick period of time.

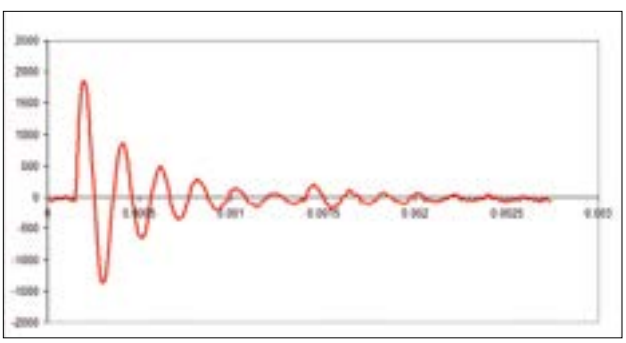
The in-rush current is the result of this little short-circuit and usually lasts for some milliseconds. It may reach 100 times the rated current which one of the main reasons for the short life of a capacitor.

The CWMC contactor is assembled with damping resistors which limit the high in-rush current when the capacitors are switched on. They are assembled with an early-make contact block which is switched on before the main contacts thus, limiting the in-rush current.



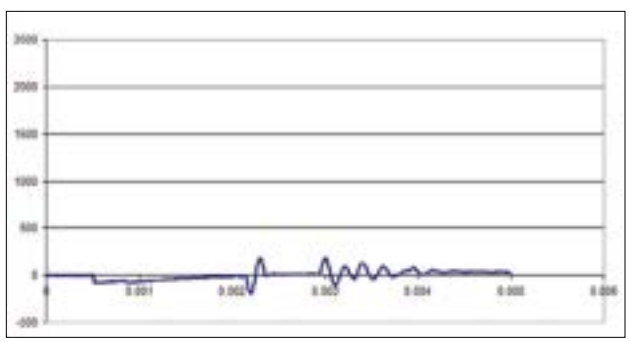
However, the damping resistors don't influence the final load, since they are switched off after five milliseconds leaving only the capacitors in parallel with their inductive load providing the proper power factor correction. This process increases the lifetime of the capacitors and also prevents line distortions.

Current on the contacts, without damping resistors.



Iu (A) with Standard Contactors

Current on the contacts, with damping resistors installed.



Iu (A) with WEG CWMC Contactor

Certifications

SABS - South Africa

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Contactors

CWM Series - IEC Contactors

Modular Design

For 35 mm DIN rail or screw assembly.

Contactor Data & Certifications

Shows all necessary information of CWMC.

Auxiliary Contact

CWMC allows use of standard NO or NC contact blocks, the same used with WEG CWM contactors series.

Damping Resistors

Avoids high in-rush current.

Early Make Contact Block

Connects damping resistors and switches off after 5 ms.

New Models

CWMC contactors are available in five different models in three different frames. All contactors are available with AC coils with a large variety of voltage ranges for 50 or 60 Hz. For DC coils and further information, please contact a WEG representative.

CWMC Contactor for Switching of Capacitors (AC-6b)

Catalog Number	Rated Current AC-6b In (A)	Reactive Power (kVAr)				
		220-230 VAC	480 VAC	660/690 VAC	List Price	Multiplier
CWMC25-10-30**	30	11	25	34	**$225**	Z1
CWMC32-10-30**	40	15	33	45	**$237**	Z1
CWMC50-10-30**	60	25	50	65	**$284**	Z1
CWMC65-10-30**	77	30	65	87	**$312**	Z1
CWMC80-10-30**	93	35	77	106	**$500**	Z1

To complete catalog number, replace "**" with appropriate coil voltage code.

** Complete With The Voltage Code			
X18	X23	X30	X47
120V60 Hz	208V60 Hz	240V60 Hz	480V60 Hz

Technical Data

AC Coil			CWMC25	CWMC32	CWMC50	CWMC65
Reactive power AC-6b @ 55°C	220 - 230 V	kVAr	11	15	25	30
	380 - 415 V		20	25	40	50
	440 V		23	30	45	60
	480 V		25	33	50	65
	660 - 690 V		34	45	65	87
AC-6b current (Ie)	131°F	A	30	40	60	77
Thermal current (Ith)	131°F		45	60	90	110
AC-6b current (Ie)	158°F		22	34	50	62
Maximum fuse (gL/gG)			50	63	100	125
Maximum fuse acc. to UL/CSA (J Type)			45	60	100	125
Cable cross section		mm^2	2 x 10	2 x 16	2 x 35	2 x 35
		AWG	2 x 8	2 x 6	2 x 2	2 x 2
Tightening torque		in-lbs	14…26	22…35	35…53	35…53
Maximum operation per hour		ops/h	120			
Maximum number of auxiliary contacts			1	3	5	
Electrical lifespan	Ops x 103		100	100	100	100
Coil consumption (AC) pick-up/sealing		VA	75/9.3	123/12.5	308/25	308/25

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Technical Data

Control Circuit Ratings – AC Coil

Model		CWM9	CWM12	CWM18	CWM25	CWM32	CWM40	CWM50	CWM65	CWM80	CWM95	CWM105
Rated Insulation Voltage Ui												
Acc. IEC; VDE 0660	V	1000										
Acc. UL; CSA	V	600										
Rated Operating Voltage Ue												
Acc. IEC; VDE 0660	V	690										
Acc. UL; CSA	V	600										
Standard Voltages 60 Hz	V	24...600										
Coil Operating Limits												
Monofrequency coils xUc	V	0.85...1.1										-
Pick-up xUc	V	0.4...0.76				0.5...0.76		0.5...0.76				-
Drop-out xUc	V	0.25...0.65				0.3...0.65		0.25...0.6				-
Operating Time												
Coil energization – NO	ms	8...20				10...19		15...30				-
Coil de-energization – NO	ms	6...13				5...25		9...15				-
Coil Consumption												
Single coils												
Sealed	VA	4...7.2				6.6...12.5		13.1....19.1				-
Inrush	VA	70				98		255				-
Thermal Power Dissipation												
60 Hz	W	2.6				4.3		8.0				-
Power Factor												
Closed	Cos phi	0.28				0.34		0.32				-
Opened	Cos phi	0.85				0.69		0.54				-
Stranded / Solid AWG (UL / CSA)		2x12- 10	2x12-10	2x12-10	2x12-10	2x12-10	2x12-10	2x12-10	2x12-10	2x12-10	2x12-10	2x12-10

Control Circuit Ratings – DC Coil

Model		CWM9	CWM12	CWM18	CWM25	CWM32	CWM40	CWM50	CWM65	CWM80	CWM95	CWM105
Rated Insulation Voltage Ui												
Acc. IEC; VDE 0660	V	1000										
Acc. UL; CSA	V	600										
Standard Voltages	V	12...440				24...240		24...240				
Coil Operating Limits Pick-up xUc Drop-out xUc	V V V	.85 - 1.1 0.4...0.7 0.15...0.4				.85 - 1.1 0.45...0.75 0.15...0.45		.85 - 1.1 0.7...0.8 0.4...0.6				
Operating Time												
Coil energization – NO	ms	35...45				40...55		50...60				
Coil de-energization – NO	ms	7...12				30...65		55...60				
Coil Consumption												
Sealed	W	3.8...9.0				6		6.5				
Inrush	W	3.8...9.0				240		340				
Stranded / Solid (UL / CSA)	AWG	2x12-10	2x12-10	2x12-10	2x12-10	2x12-10	2x12-10	2x12-10	2x12-10	2x12-10	2x12-10	2x12-10

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Contactors

CWM Series - IEC Contactors

Technical Data

IEC Contactors – CWM Series

Model		CWM112	CWM150	CWM180	CWM250	CWM300	CWM400	CWM630	CWM800
Rated Insulation Voltage Ui									
Acc. IEC; VDE 0660	V	1000							
Acc. UL; CSA	V	600							
Rated Operating Voltage Ue									
Acc. IEC; VDE 0660	V	690							
Acc. UL; CSA	V	600							
Standard voltages 50 Hz; 60 Hz; DC	V	24…600							
Coil Operating Limits									
xUc	V	0.8…1.1				0.85...1.1			
Pick-up xUc	V	0.6...0.75				0.77...0.83			
Drop-out xUc	V	0.40...0.60				0.48...0.53			
Operating Time									
Coil energization – NO	ms	60…70	60…70	60…70	60…70	60…70	64…68	66…70	66…70
Coil de-energization – NO	ms	13…17	13…17	13…17	13…17	13…17	43…47	45…49	45…49
Coil Consumption									
Sealed AC	VA	16.3	16.3	21.5	35.2	35.2	14	17	29
Inrush AC	VA	322	322	426	518	518	571	1000	1000
Sealed DC	VA	11.0	11.0	14.3	24.2	24.2	14	17	29
Inrush DC	VA	403	403	529	644	644	571	1000	1000
Thermal Power Dissipation									
AC	W	3.9	3.9	3.8	3.7	3.7	4.7	4.9	5.3
DC	W	2.4	2.4	2.4	2.5	2.5	5.0	6.3	7.8

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Technical Data

Power Contacts

Model			CWM9	CWM12	CWM18	CWM25	CWM32	CWM40	CWM50	CWM65	CWM80	CWM95	CWM105
Standard UL/CSA Ratings													
Rated operating voltage		V	600										
AC-1 (general purpose)		A	25	25	32	32	60	60	90	110	110	140	140
Switching Motor Loads													
Full Voltage – 50/60 Hz													
1-phase	115 V	A	9.8	13.8	16	24	34	34	56	56	80	80	100
	230 V	A	10	12	17	28	28	28	40	50	68	68	88
	115 V	HP	1/2	3/4	1	2	3	3	5	5	7 1/2	7 1/2	10
	230 V	HP	1 1/2	2	3	5	5	7 1/2	10	10	15	15	20
3-phase	200 V	A	11	11	17.5	25	32.2	32.2	48.3	62.1	62.1	78.2	92
	230 V	A	9.6	9.6	15.2	22	28	42	42	54	68	80	104
	460 V	A	7.6	11	14	21	27	40	52	65	65	77	96
	575 V	A	9	11	17	17	27	27	41	52	62	77	77
	200 V	HP	3	3	5	7 1/2	10	10	15	20	20	25	30
	230 V	HP	3	3	5	7 1/2	10	15	15	20	25	30	40
	460 V	HP	5	7 1/2	10	15	20	30	40	50	50	60	75
	575 V	HP	7 1/2	10	15	15	25	25	40	50	60	75	75
Short-circuit Rating	600 V	kA	5	5	5	5	5	5	10	10	10	10	10
Standard IEC Ratings (IEC EN 60947)													
Rated operating voltage		V	690						1000				
Rated thermal current Ith		A	25	25	32	45	60	60	90	110	110	140	140
Switching Motor Loads													
AC-3 – 50/60 Hz													
3-phase	220-240 V	A	9	12	18	25	32	40	50	65	80	95	105
	380-400 V	A	9	12	18	25	32	40	50	65	80	95	105
	415-440 V	A	9	12	18	25	32	40	50	65	80	95	105
	500 V	A	7.5	10.5	14	19	24	32	38	55	63	79	85
	660-690 V	A	7	9	13	15	22	25	34	44	48	60	80
	220-240 V	kW	2.2	3	4	7.5	9	11	15	18.5	22	25	30
	380-400 V	kW	4	5.5	7.5	11	15	18.5	22	30	37	45	55
	415-440 V	kW	4	5.5	7.5	11	15	22	25	37	45	50	55
	500 V	kW	5.5	7.5	10	15	18.5	25	30	40	45	55	65
	660-690 V	kW	5.5	7.5	10	15	18.5	30	35	45	45	55	65
Maximum Switching Rate													
AC-1	ops/hr		1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
AC-3	ops/hr		1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	600	600
No load	ops/hr		9,000	9,000	9,000	9,000	9,000	9,000	5,000	5,000	5,000	5,000	5,000
AC-4													
200,000 operations	≤ 690 V	A	5	7	8	12	16	18.5	23	30	37	44	50
50/60 Hz	220-230 V	kW	1.1	1.5	1.5	3	4	4.5	5.5	7.5	9.2	11	12.5
		HP	1.5	2	2	4	5.4	6	7.5	10	12.5	15	17
	380-400 V	kW	2.2	3	3.7	5.5	7.5	9.2	11	15	18.5	22	22
		HP	3	4	5	7.5	10	12.5	15	20	25	30	30
	415-440 V	kW	2.2	3.7	4.5	5.5	9.2	11	11	15	22	22	30
		HP	3	5	6	7.5	12.5	15	15	20	30	30	40
	500 V	kW	3	4	5.5	7.5	10	11	15	18.5	22	25	30
		HP	4	5.4	7.5	10	13	15	20	25	30	33	40
	660-690 V	kW	3	4.5	5.5	7.5	11	12.5	15	20	25	30	33
		HP	4	6	7.5	10	15	17	20	27	33	40	45

Power Contacts continued on next page.

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Contactors

CWM Series - IEC Contactors

Technical Data

Power Contact Continued

Model			CWM9	CWM12	CWM18	CWM25	CWM32	CWM40	CWM50	CWM65	CWM80	CWM95	CWM105
Breaking Capacity	Ue=400V	A	250	250	250	450	450	920	920	920	920	1050	1050
	Ue=500V	A	250	250	250	320	450	920	920	920	920	1050	1050
	Ue=690V	A	130	130	130	170	205	780	780	780	780	950	950
Impedance per Pole		mW	2.41	2.41	2.35	1.65	1.28	0.95	0.85	0.86	0.86	0.76	0.76
Power Dissipation Per Pole													
	AC-1	W	1.47	1.47	2.46	3.34	4.6	3.42	6.86	10.40	10.40	14.89	14.89
	AC-3	W	0.19	0.34	0.78	1.03	1.31	1.52	2.12	3.63	5.5	6.86	8.37
Short-Time Current Icw													
	1 sec.	A	455	455	570	630	1010	1265	1580	2530	2530	3300	3300
	5 sec.	A	205	205	254	280	450	450	710	1130	1130	1485	1485
	10 sec.	A	144	144	180	200	320	400	500	800	800	1050	1050
	30 sec.	A	85	85	104	115	185	230	290	460	460	600	600
	1 min.	A	60	60	74	80	130	165	205	325	325	430	430
	3 min.	A	35	35	46	50	90	100	120	185	185	250	250
	Rec. time	min.	10	10	10	10	10	10	10	10	10	10	10
Short-Circuit Coordination													
Acc. to IEC													
Coordination Type “1”	gL/gG	A	50	50	63	63	100	125	200	200	200	250	250
Coordination Type “2”	gL/gG	A	25	35	35	50	63	80	100	125	125	160	200
Acc. to UL/CSA	J Type	A	25	35	40	45	60	70	100	125	125	150	200

Built-in Auxiliary Contacts

Model			CWM9	CWM12	CWM18
Rated Insulation Voltage Ui					
Acc. IEC; VDE 0660		V	1000		
Acc. UL; CSA		V	600		
Rated Operating Voltage Ue					
Acc. IEC; VDE 0660		V	690		
Acc. UL; CSA		V	600		
Rated thermal current Ith ≤ 55ºC		A	20		
Rated Operating Current Ie					
Acc. IEC 60947-5-1 / AC-15	110-127V	A	10		
	220-240V	A	10		
	380-400V	A	6		
	415-450V	A	5		
	500V	A	4		
	660-690V	A	2		
Acc. UL; CSA			A600		
Rated Operating Current Ie					
Acc. IEC 60947-5-1 / DC-13	24V	A	6		
	48V	A	4		
	110V	A	2		
	220V	A	0.7		
	440V	A	0.7		
Acc. UL; CSA			P600		
Making Capacity Im					
AC-15 / AC-11	Ue ≤ 690V 50/60 Hz	A	250		
DC-13 / DC-11	Ue ≤ 440 VDC	A	250		
Breaking Capacity Ic					
AC-15 / AC-11	Ue ≤ 400V 50/60 Hz	A	250		
DC-13 / DC-11	Ue ≤220 VDC	A	2		
Short-Circuit Protection with Fuses					
Acc. IEC 60947-5-1 – gL/gG		A	10		
Minimum switching capacity		V/mA	17/5		
Electrical Endurance		Million ops	1		
Mechanical Endurance		Million ops	10		
Guaranteed Non-Overlap Time		ms	1.5		
Insulation Resistance		MOhm	>10		

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Technical Data

Power Contact Continued

Model			CWM112	CWM150	CWM180	CWM250	CWM300	CWM400	CWM630	CWM800
Standard UL/CSA Ratings										
Rated operating voltage		V	600							
AC-1 (general purpose)		A	170	170	200	300	400	450	660	900
Switching Motor Loads										
Full Voltage – 50/60 Hz										
1-phase	115V	A	-	-	-	-	-	-	-	-
	230V	A	-	-	-	-	-	-	-	-
	115V	HP	-	-	-	-	-	-	-	-
	230V	HP	-	-	-	-	-	-	-	-
3-phase	200V	A	120	150	177	221	285	359	414	552
	230V	A	130	154	192	248	312	360	480	772
	460V	A	124	156	180	240	302	361	477	-
	575V	A	99	144	192	242	336	289	382	-
	200V	HP	40	50	60	75	100	125	150	200
	230V	HP	50	60	75	100	125	150	200	300
	460V	HP	100	125	150	200	250	300	400	600
	575V	HP	100	150	200	250	350	300	400	600
Short-circuit rating	600V	kA	10	10	10	18	18	18	30	30
Standard IEC Ratings (IEC/EN 60947)										
Rated operating voltage		V	1000							
Rated thermal current Ith		A	180	225	225	350	350	450	660	900
Switching Motor Loads										
AC-3 – 50/60 Hz										
3-phase	220-240V	A	112	150	180	250	300	400	630	800
	380-400V	A	112	150	180	250	300	400	630	800
	415-440V	A	112	150	180	250	300	400	630	800
	500V	A	95	130	155	220	265	350	500	720
	660-690V	A	82	110	135	185	220	300	420	630
	220-240V	kW	30	45	55	75	90	110	185	220
	380-400V	kW	55	75	90	132	160	220	330	450
	415-440V	kW	55	90	110	150	185	220	370	500
	500V	kW	55	90	110	160	200	220	330	500
	660-690V	kW	75	110	110	160	200	260	400	560
Maximum Switching Rate										
AC-1	ops/hr		600	600	600	600	600	500	500	500
AC-3	ops/hr		600	600	600	600	600	500	500	500
No load	ops/hr		1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000

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Contactors

CWM Series - IEC Contactors

Technical Data

Power Contact Continued

Model			CWM112	CWM150	CWM180	CWM250	CWM300	CWM400	CWM500	CWM630	CWM800
AC-4											
200,000 operations;	≤ 690V	A	50	55	58	100	130	-	-	-	-
50/60 Hz	220-230V	kW	18.5	20	22	37	45	90	-	110	185
		HP	25	27	30	50	60	125	-	150	250
	380-400V	kW	30	33	37	55	75	150	-	220	330
		HP	40	44	50	75	100	200	-	300	450
	415-440V	kW	37	40	45	63	80	185	-	220	370
		HP	50	54	60	84	107	250	-	300	500
	500V	kW	40	45	50	75	90	-	-	-	-
		HP	54	60	67	100	121	-	-	-	-
	660-690V	kW	45	50	55	90	100	-	-	-	-
		HP	600	67	75	121	133	-	-	-	-
Maximum switching rate	ops/hr		150	150	150	150	150	-	-	-	-
Making Capacity		A	1430	1820	2100	2600	3000	-	-	-	-
Breaking Capacity											
Ue ≤ 400V		A	1290	1350	1400	2000	-	4000	-	6300	8000
Ue = 500V		A	1290	1350	1400	2000	-	4000		6300	8000
Impedance per pole		mW	0.5	0.5	0.45	0.3	0.3	-	-	-	-
Power Dissipation Per Pole											
	AC-1	W	16	25	21.6	35	45.7	-	-	-	-
	AC-3	W	6.2	11.1	13.8	17.9	25.7	-	-	-	-
Short-Time Current Icw											
0° ≤ 104°F	1 sec.	A	3165	3763	4649	4427	-	-	-	-	-
	5 sec.	A	1820	2164	2673	2546	-	-	-	-	-
	10 sec.	A	1430	1700	2100	2000	-	-	-	-	-
	30 sec.	A	826	980	1212	1155	-	-	-	-	-
	1 min.	A	584	694	857	816	-	-	-	-	-
	3 min.	A	337	401	495	471	-	-	-	-	-
	Recovery time	min.	10	10	10	10	10	-	-	-	-
Short-Circuit Coordination											
Acc. to IEC											
Coordination type “1”	gL/gG	A	315	355	355	500	630	630	-	800	1000
Coordination type “2”	gL/gG	A	224	250	250	400	500	-	-	-	-
Acc. to UL/CSA	J Type	A	250	350	400	500	700	700	-	900	1100

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Technical Data

General Ratings

Model			CWM9	CWM12	CWM18	CWM25	CWM32	CWM40	CWM50	CWM65	CWM80	CWM95	CWM105
Standards			Devices according to International Standards IEC 60947-1 / 60947-4-1, European Standards EN 60947-1 / 60947-4-1, Underwriters Laboratories – UL 508; CSA C.22.2/14; VDE 0660/102										
Rated Insulation Voltage Ui													
Acc. IEC; VDE 0660		V	1000										
Acc. UL; CSA		V	600										
Rated Impulse Voltage Uimp													
Acc. IEC60947-1		kV	6						8				
Rated operating frequency		Hz	25…400										
Degree of Protection			IP20			Protection against direct contact Acc. VDE 0160 – Part. 100							
Main terminals						IP10							
Coil terminals						IP20							
Auxiliary terminals													
Ambient Temperature													
Storage			-55 to +80°C (-67 to +176°F)										
Operating			-25 to +55°C (-13 to +131°F)										
Altitude													
Up to 1,500 m			Nominal values										
			See graphic on page 221										
Pollution degree			3										
Climatic withstand			According to IEC 60680-2										
Mounting			35 mm rail Acc. DIN EN 50 022										
Vibration Resistance (5 to 200 Hz)													
Contactor open		g	3	3	3	7.5	8	8	4.5	4.5	4.5	5	5
Contactor closed at Uc		g	6	6	6	8	12	12	9	9	9	7	7
Mechanical Endurance													
AC Coil	Million ops		10										
Electrical Endurance AC-3	Million ops		1.8	1.6	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.1
Shock Resistance (1/2 sine wave = 11 ms)													
Contactor open		g	8	8	8	8	7	7	6	6	6	6	6
Contactor closed at Uc		g	12	12	12	12	12	12	10	10	10	10	10
Weight		kg	0.30	0.30	0.30	0.30	0.52	0.54	1.11	1.12	1.13	1.45	1.47
AC Coil		lb	0.65	0.65	0.65	0.65	1.15	1.19	2.44	2.47	2.49	3.20	3.24
Terminal Capacity			Cross/Slotted Combination						Allen Head				
Fine – Stranded with sleeve	Top	mm^2	2x0.5-2.5	2x0.5-2.5	2x0.5-2.5	2x1-2.5	0.75-16	0.75-16	1-35	1-35	1-35	1.5-50	1.5-50
	Bottom	mm^2	or 2x2.5-6	or 2x2.5-6	or 2x2.5-6	or 2x2.5-10	1.0-16	1.0-16	2.5-35	2.5-35	2.5-35	4-35	4-35
Coarse – Stranded / Solid	Top	mm^2	2x1-2.5	2x1-2.5	2x1-2.5	2x1-2.5	1-16	1-16	1.5-35	1.5-35	1.5-35	2.5-50	2.5-50
	Bottom	mm^2	or 2x2.5-6	or 2x2.5-6	or 2x2.5-6	or 2x2.5-10	1.5-16	1.5-16	6-35	6-35	6-35	6-35	6-35
Stranded / Solid (UL / CSA)	Top	AWG	2x20-12	2x20-12	2x20-12	2x18-12	18-6	18-6	16-2	16-2	16-2	16-1	16-1
	Bottom	AWG	or 2x12-10	or 2x12-10	or 2x12-10	or 2x12-8	16-6	16-6	14-2	14-2	14-2	10-2	10-2
Drive size		in (mm)	Screwdriver – Philips #2						5/32 (4)				
Tightening torque		lb-in (Nm)	8.9...15 (1...1.7)	8.9...15 (1...1.7)	8.9...15 (1...1.7)	14.2...26.6 (1.6...3)	22.1...35..4 (2.5...4)	22.1...35..4 (2.5...4)	35.4...53.1 (4...6)	35.4...53.1 (4...6)	35.4...53.1 (4...6)	44.3...57.5 (5...6.5)	44.3...57.5 (5...6.5)

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Contactors

CWM Series - IEC Contactors

Technical Data

General Ratings

Model		CWM112	CWM150	CWM180	CWM250	CWM300	CWM400	CWM630	CWM800
Standards		Devices according to International Standards IEC 60947-1 / 60947-4-1, European Standards EN 60947-1 / 60947-4-1, Underwriters Laboratories – UL 508; CSA C.22.2/14; VDE 0660/102							
Rated Insulation Voltage Ui									
Acc. IEC; VDE 0660	V	1000							
Acc. UL; CSA	V	600							
Rated Impulse Voltage Uimp									
Acc. IEC60947-1	kV	8							
Rated operating frequency	Hz	25…400							
Degree of protection		Protection against direct contact acc. VDE 0160 – Part. 100							
Main terminals		IP00							
Coil terminals		IP20							
Auxiliary terminals		IP20							
Ambient Temperature									
Storage		-55 to +80ºC (-67 to +176ºF)							
Operating		-25 to +55ºC (-13 to +131ºF)							
Altitude									
Up to 1,500 m		Nominal values							
Other altitudes		See graphic on page 221					up to 2000 m		
Pollution degree		3							
Climatic withstand		According to IEC 68-2							
Mounting		Screw to panel							
Vibration Resistance (5 to 200 Hz)									
Contactor open	g	4							
Contactor closed at Uc	g	4							
Mechanical Endurance									
AC Coil	Million ops	10					5		
Electrical Endurance AC-3	Million ops	1.1	1.1	1.0	1.0	1.0	0.5		
Shock Resistance (1/2 sine wave = 11 ms)									
Contactor open	g	3							
Contactor closed at Uc	g	3							
Weight									
AC/DC Coil	kg	2.54	2.54	4.04	6.14	6.14	9.2	22.4	22.4
	lb	5.60	5.60	8.91	13.54	13.54	20	49	49
Terminal Capacity									
Fine – Stranded with sleeve	mm^2	2 x (25-70)		2 x (50-120)	2 x (50-150)		1 x 150	1 x 240	1 x 240
AWG wires with end sleeve		1 x 300 or 2 x 107			1 x 500 or 2 x 300		Nº2 30×5	Nº2 50×5	Nº2 60×5
Busbars	mm	2 x (15 x 3)		2 x (20 x 3)	2 x (30 x 5)		-	-	-
Tightening torque	lb-in (Nm)	47.8-53.1(5.4-6)		123.9-141.6 (14-16)	203.6-230.1 (23-26)		203.6 (23)	504.5 (57)	504.5 (57)

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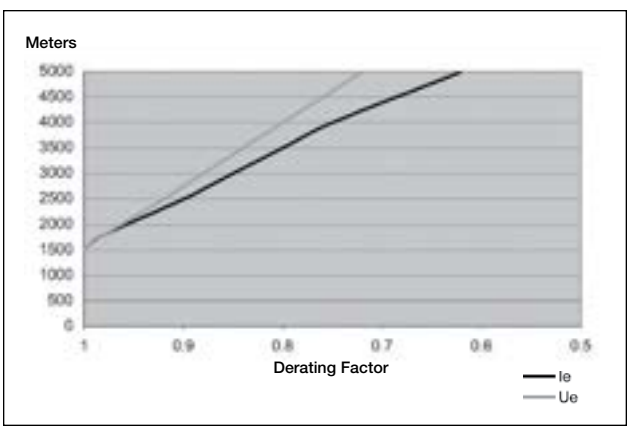
Technical Data

Auxiliary Contact Block Ratings

Model			BCXMF	BCXML	BCXMRL	BLIM.02
Rated Insulation Voltage Ui						
Acc. IEC; VDE 0660		V	1000			
Acc. UL; CSA		V	600			
Rated Operating Voltage Ue						
Acc. IEC; VDE 0660		V	690			
Acc. UL; CSA		V	600			
Rated thermal current Ith ≤ 55ºC		A	10			
Rated Operating Current Ie						
Acc. IEC 60947-5-1 / AC-15	110-127V	A	6			
	220-240V	A	6			
	380-400V	A	4			
	415-450V	A	3.5			
	500V	A	2.5			
	660-690V	A	1.5			
Acc. UL; CSA			A600			
Rated Operating Current Ie						
Acc. IEC 60947-5-1 / DC-13	24V	A	4			
	48V	A	2			
	110V	A	0.7			
	220V	A	0.3			
	440V	A	0.15			
Acc. UL; CSA			Q600			
Making Capacity Im						
AC-15 / AC-11	Ue ≤ 400V 50/60 Hz	A	90			
DC-13 / DC-11	Ue ≤ 220 VDC	A	90			
Breaking Capacity Ic						
AC-15 / AC-11	Ue ≤ 400V 50/60 Hz	A	60			
DC-13 / DC-11	Ue ≤ 220 VDC	A	0.95			
Short-Circuit Protection with Fuses						
Acc. IEC 60947-5-1 – gL/gG		A	10			
Minimum switching capacity		V/mA	17/5			
Electrical endurance		Million ops	1			
Mechanical endurance		Million ops	10			
Guaranteed non-overlap time		ms	1.5			
Insulation resistance		MOhm	>10			

Graphic Altitude



Notes: Altitude compensation in CWM Series contactors, considers a factor according to which the rated power must be reduced.

The derating of the permissible operating power for installation altitudes above 1,500 m (5,000 ft) is calculated according to:

Total derating = Derating $_{current}$ x Derating $_{voltage}$

Example: Altitude: 3,000 m (10,000 ft):

Derating current K1 = 0.85
Derating voltage K2 = 0.88

Total derating = 0.85 x 0.88 = 0.75 x HP

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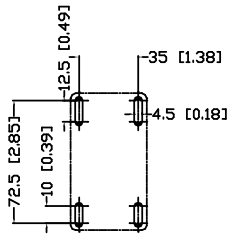
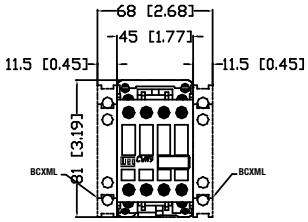
Contactors

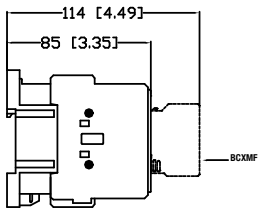
CWM Series - IEC Contactors

Dimensions – mm (inch)

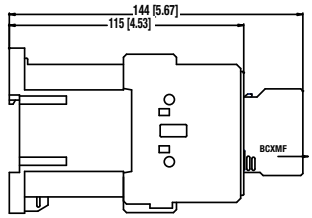
CWM9, CWM9N, CWM12, CWM18, and CWM18N





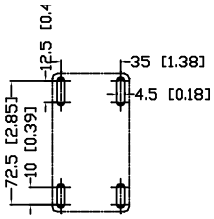


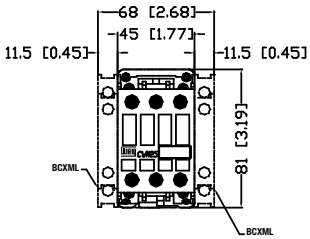
VAC Contactors

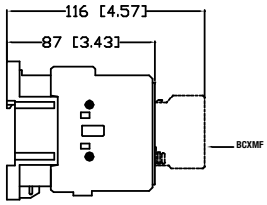


VDC Contactors

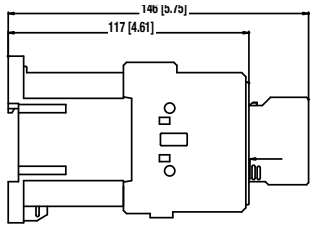
CWM25





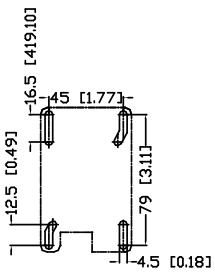


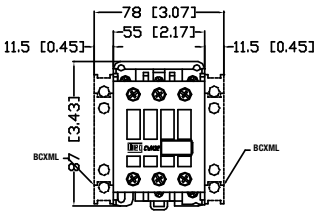
VAC Contactors

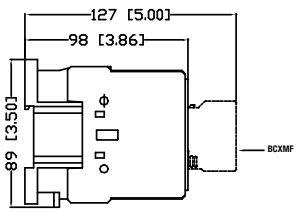


VDC Contactors

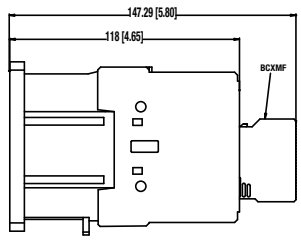
CWM32, CWM32N and CWM40







VAC Contactors



VDC Contactors

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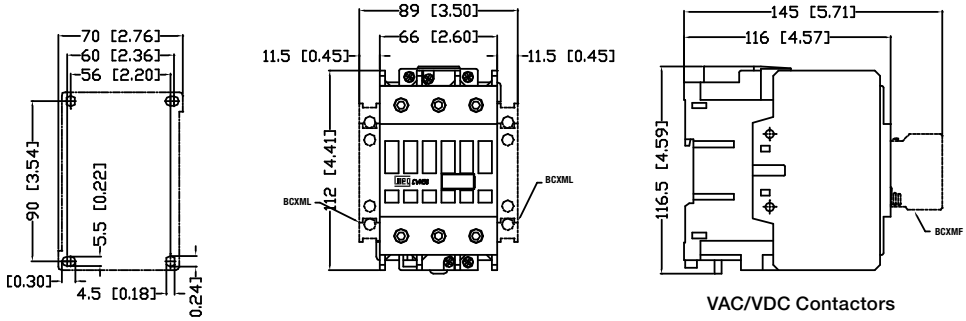
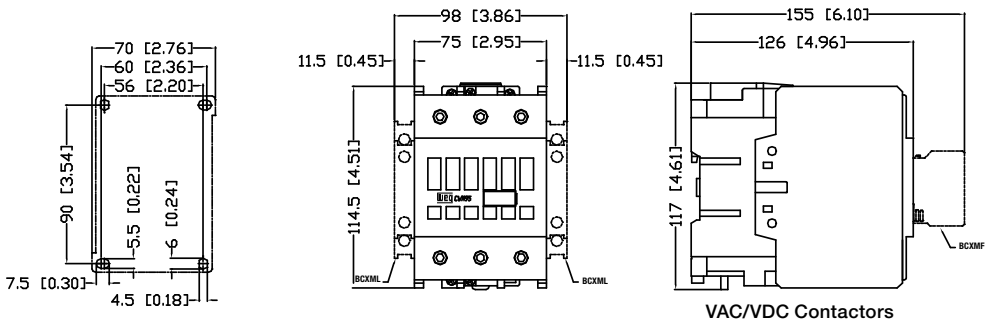
Dimensions – mm (inch)

CWM50, CWM50N, CWM65 and CWM80



VAC/VDC Contactors

CWM95, CWM95N, and CWM105



VAC/VDC Contactors

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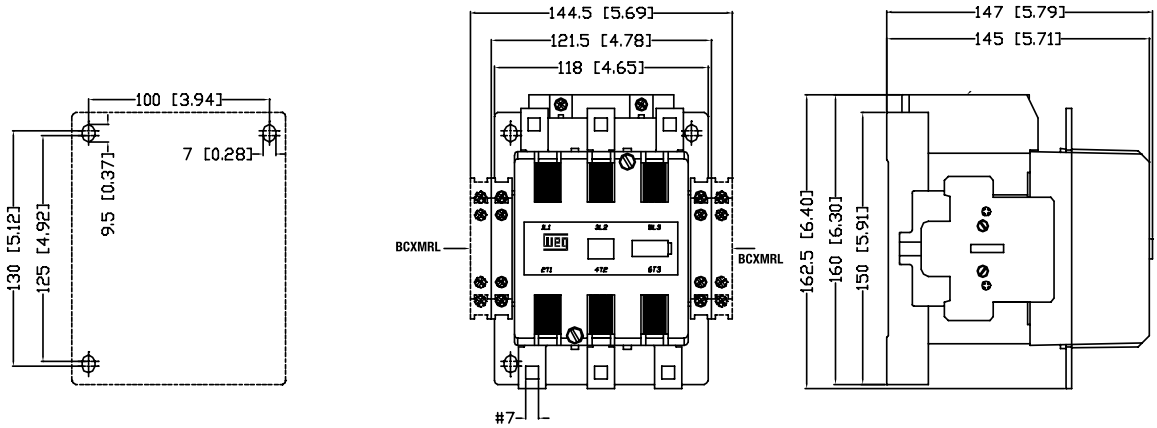
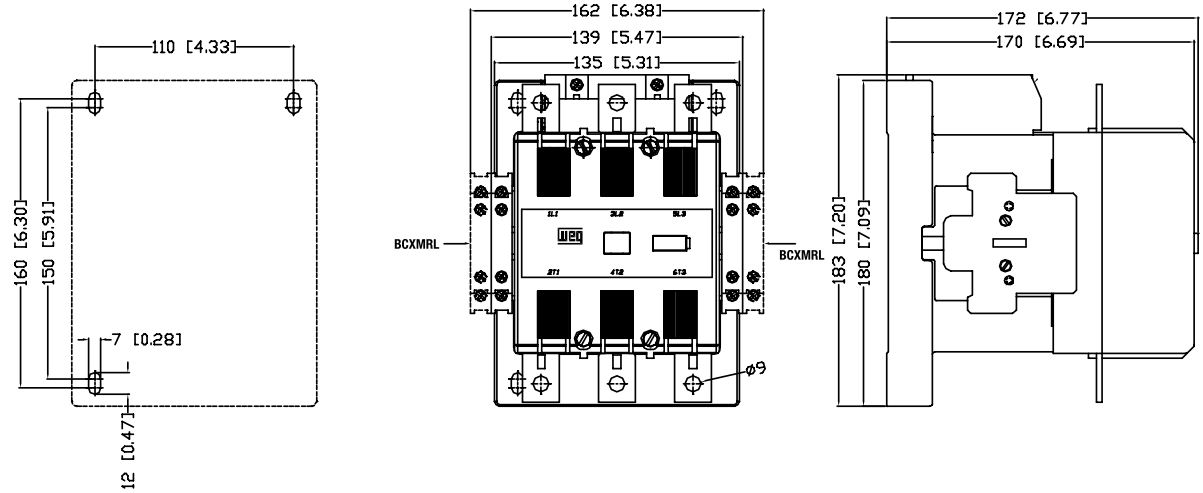
CWM Series - IEC Contactors

Dimensions – mm (inch)

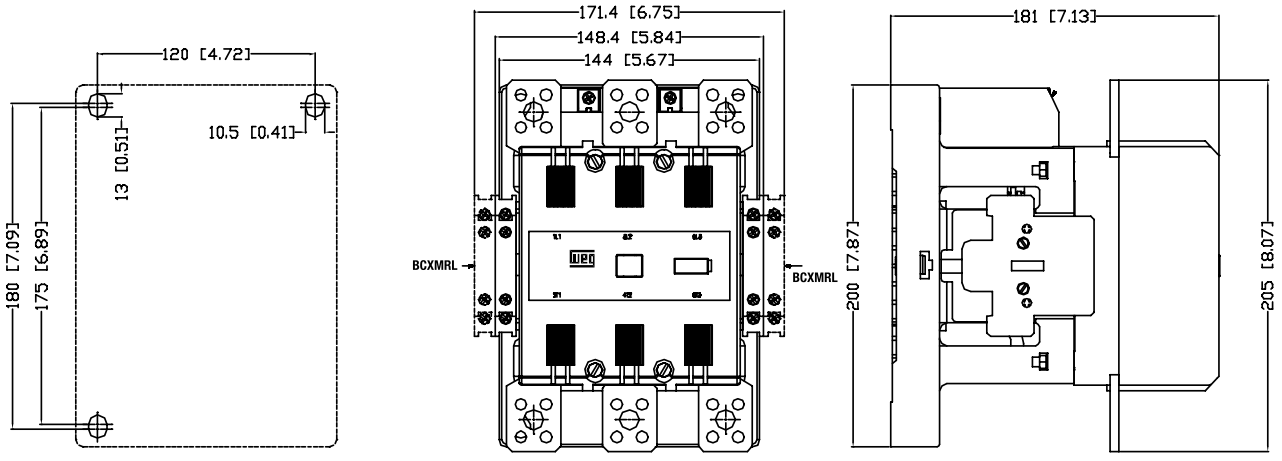
CWM50, CWM50N, CWM65 and CWM80



CWM180



CWM250, CWM300 and CWM300N



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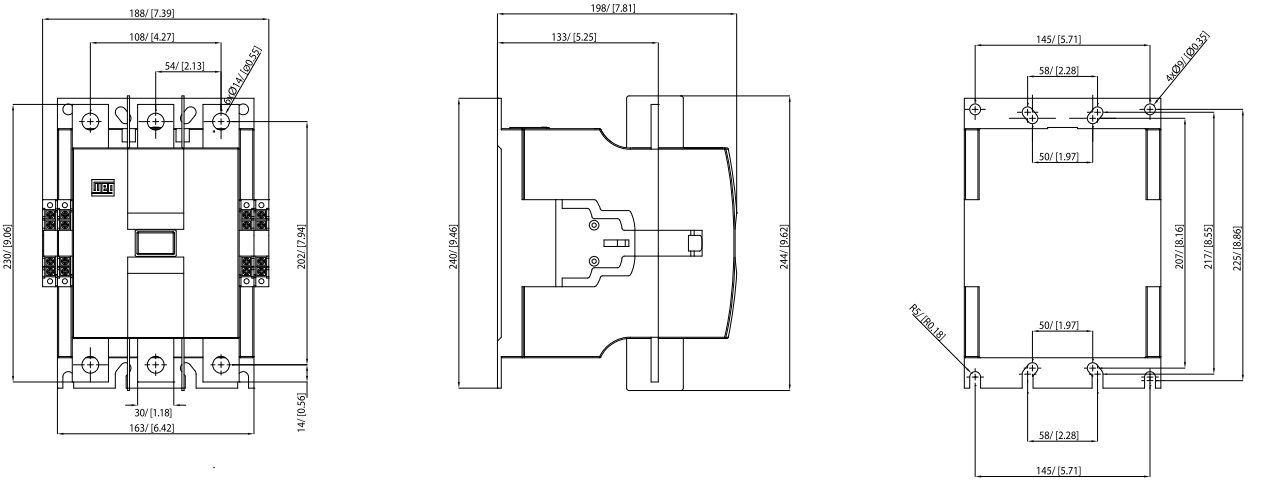
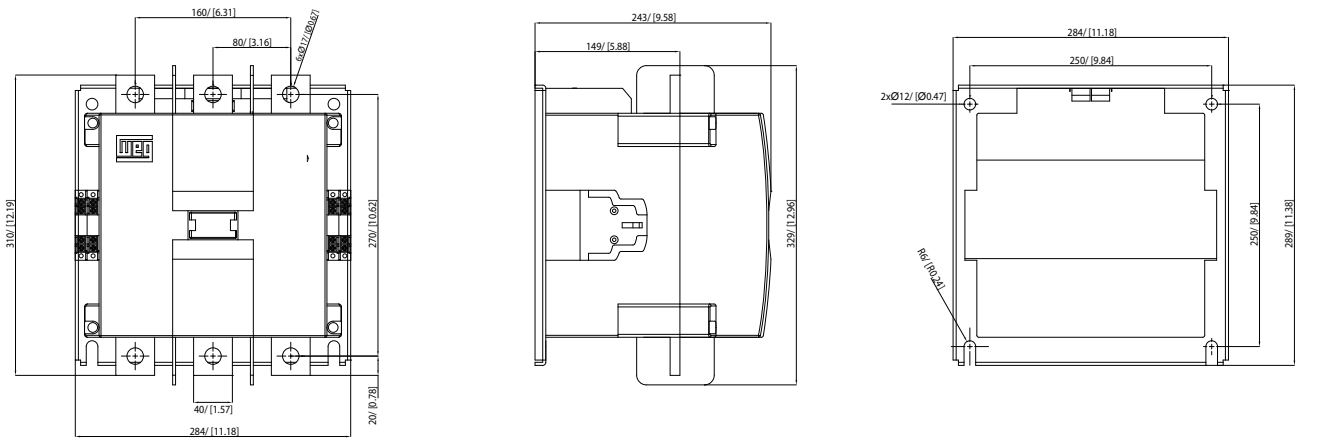
Dimensions – mm (inch)

CWM400



CWM630 and CWM800



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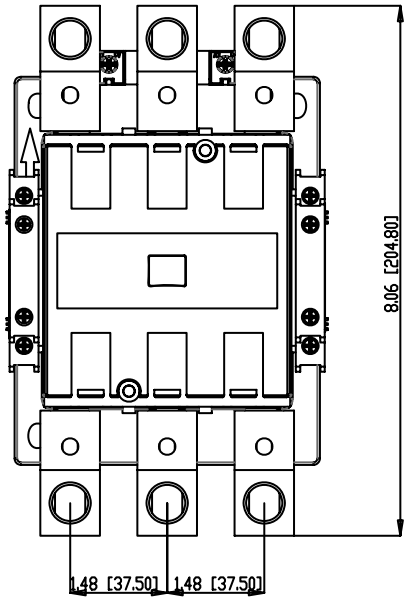
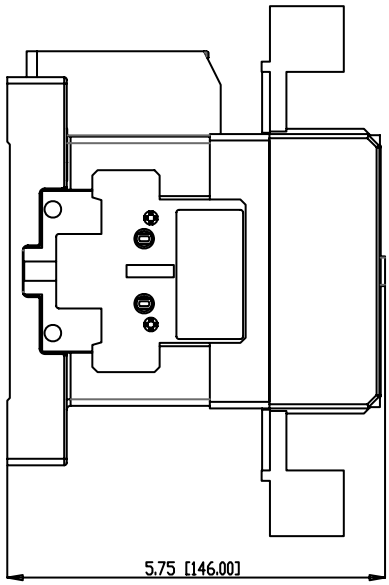
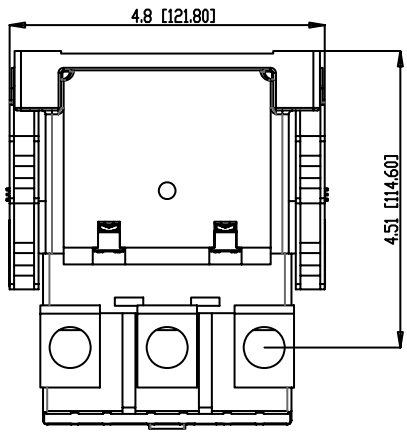
CWM Series - IEC Contactors

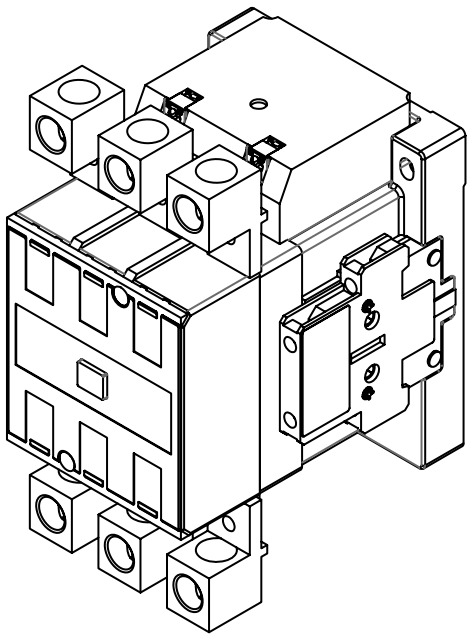
Dimensions – mm (inch)

CWM112 – CWM150 + LW1-S300 (contactor with lugs)









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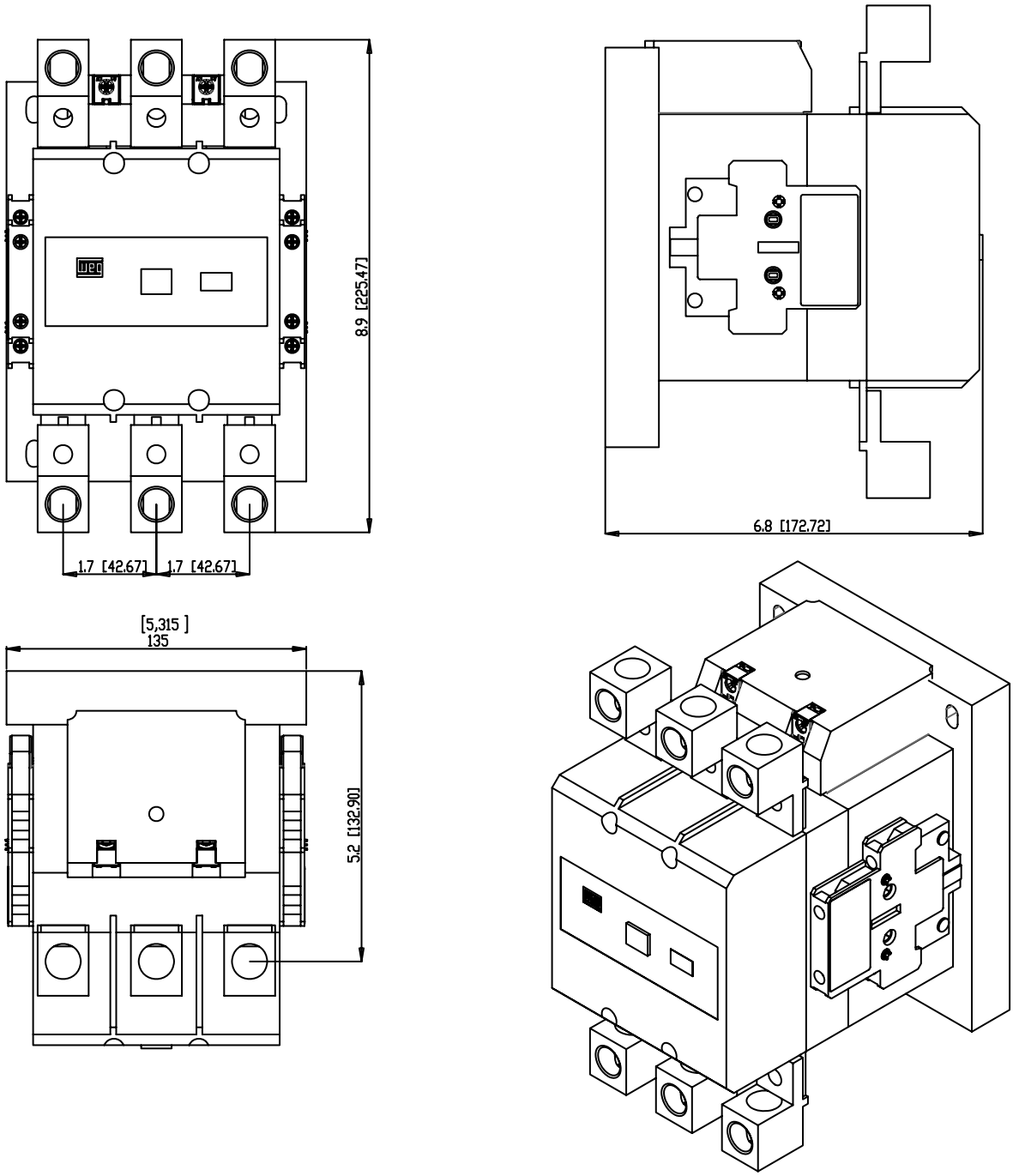
Dimensions – mm (inch)

CWM180 + LW2-S300 (contactor with lugs)



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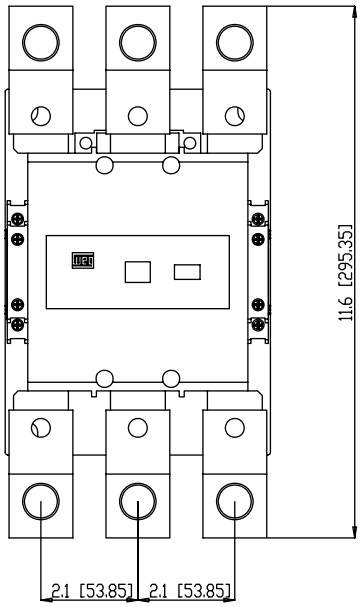
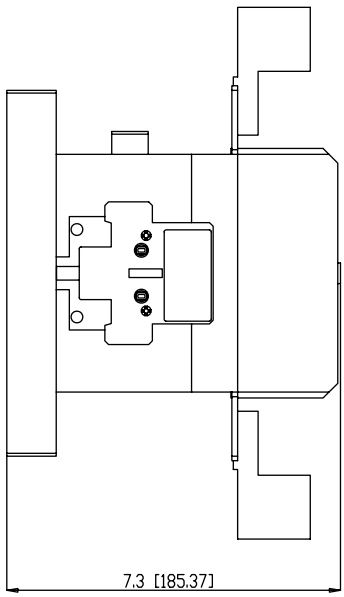
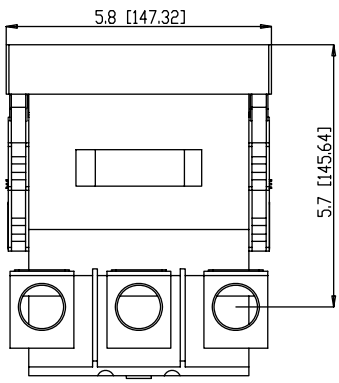
CWM Series - IEC Contactors

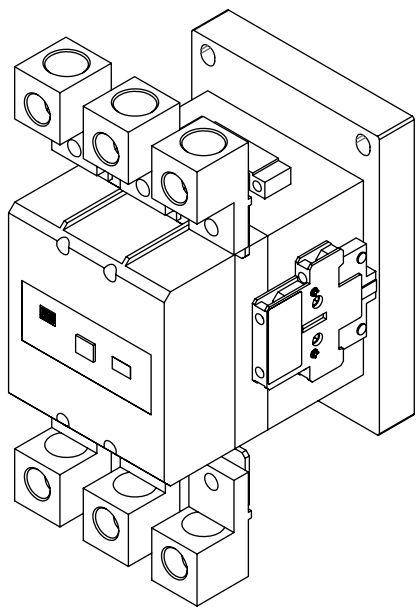
Dimensions – mm (inch)

CWM250 + LW1-S600 (contactor with lugs)









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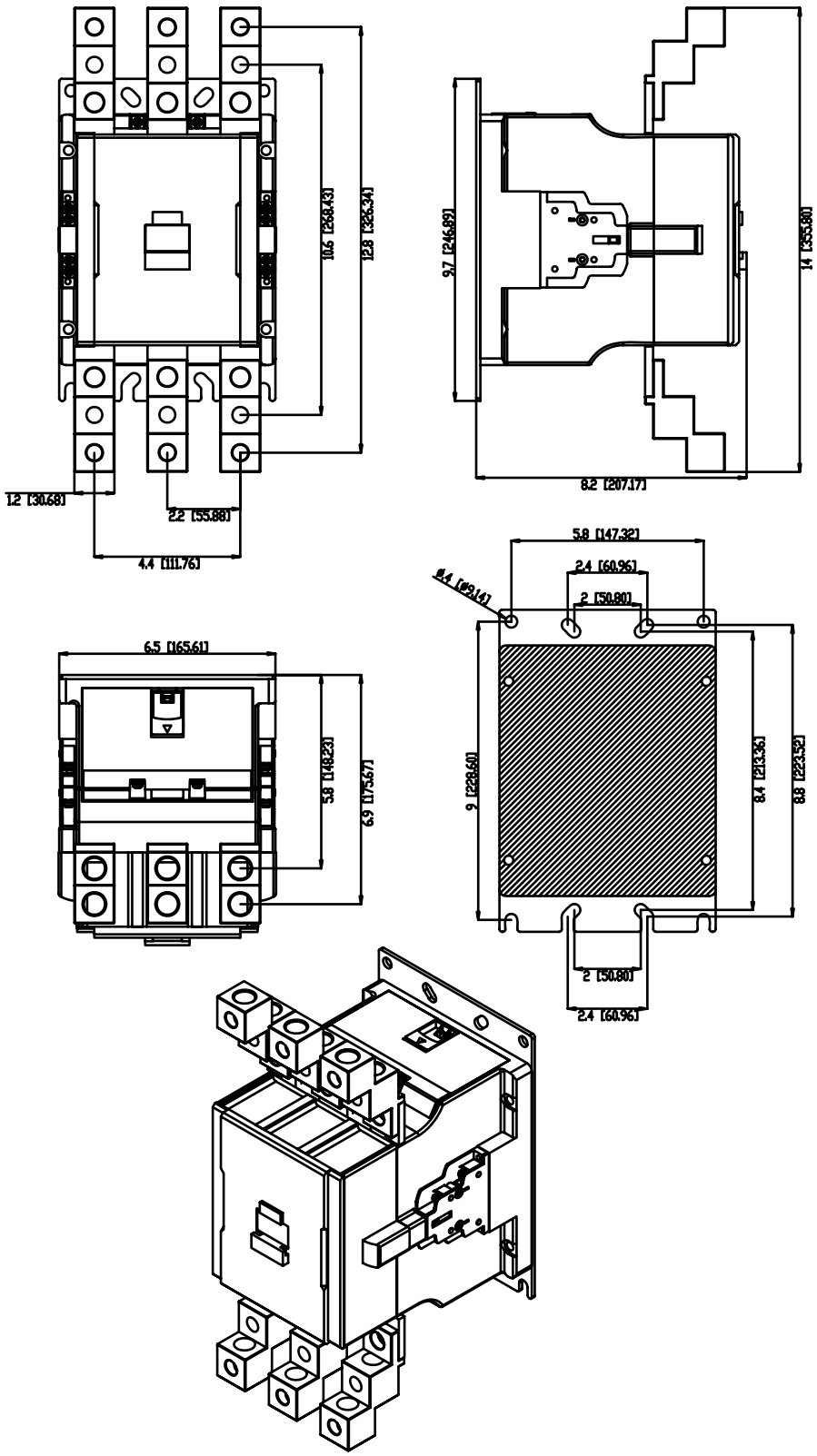
Dimensions – mm (inch)

CWM400 + BMJ (contactor with lugs)



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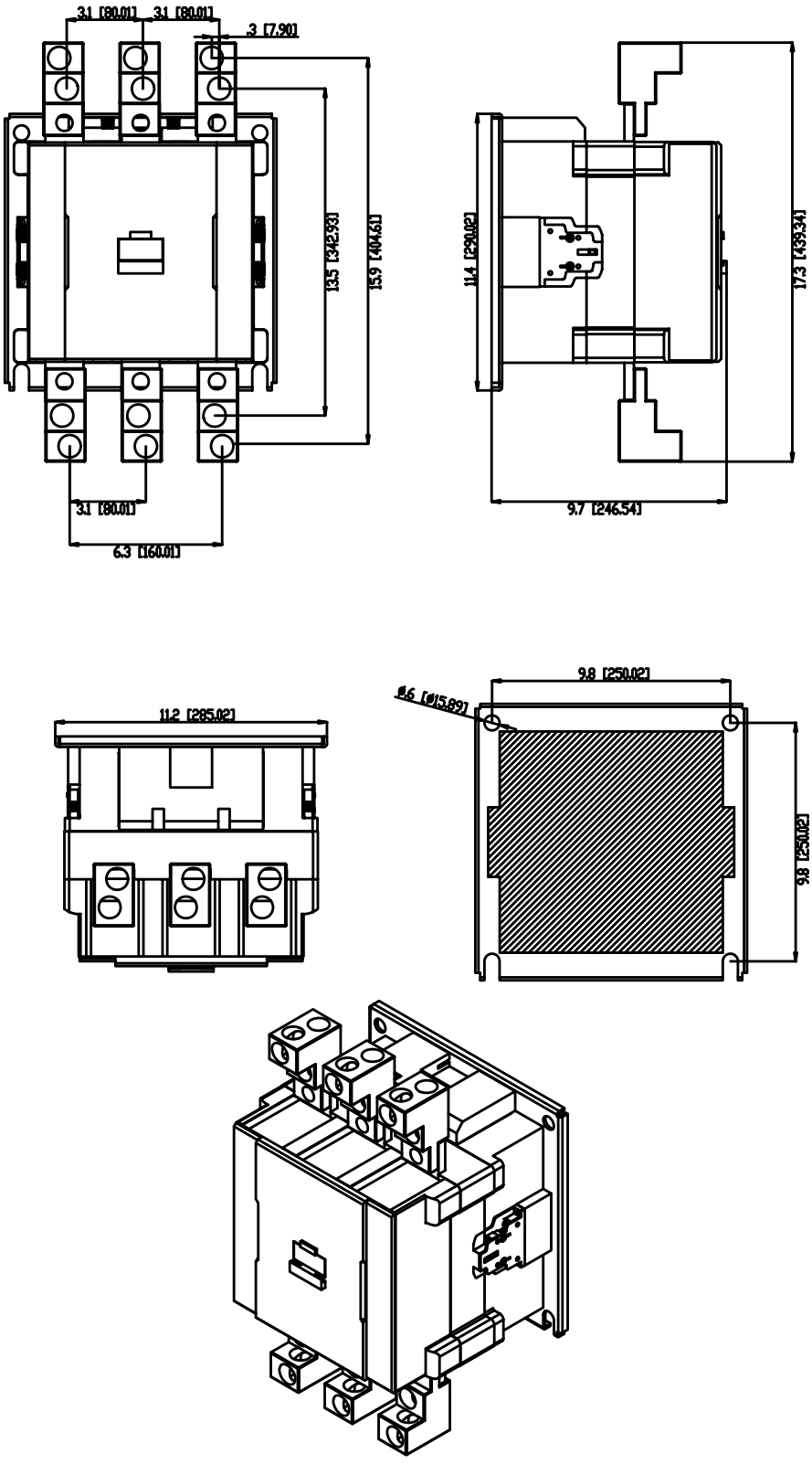
CWM Series - IEC Contactors

Dimensions – mm (inch)

CWM630-CWM800 + BMJ (contactor with lugs)



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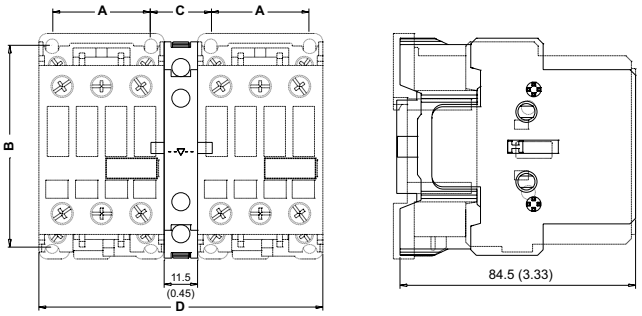
Dimensions – mm (inch)

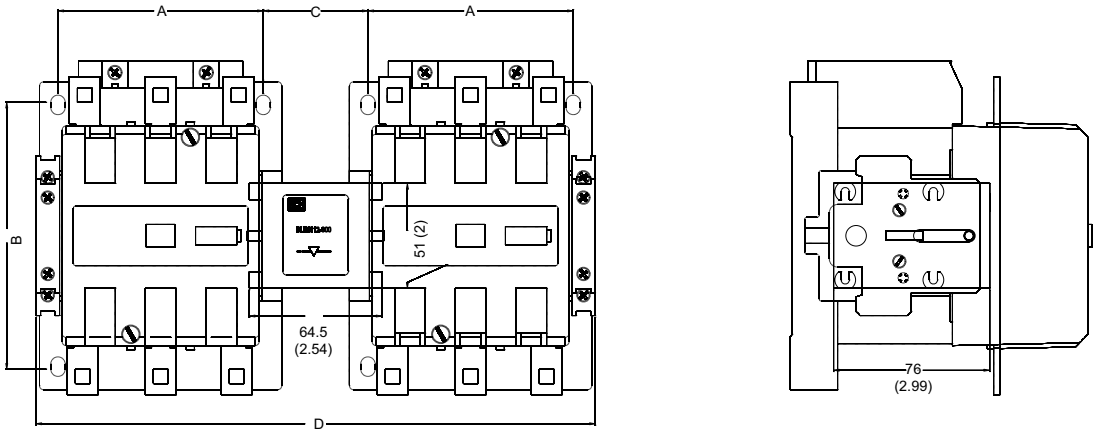
BLIM9-105



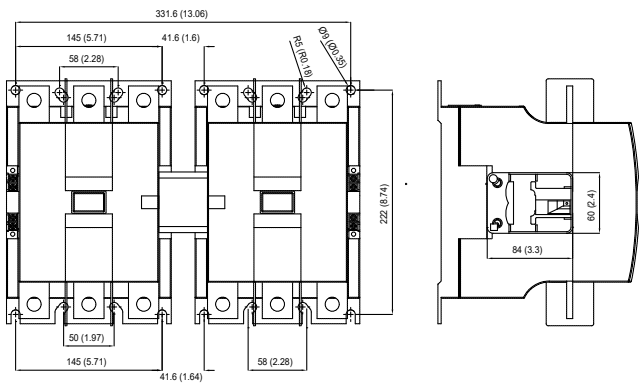
Model	A	B	C	D
CWM9…25	35 (1.4)	72.5 (2.9)	22 (0.9)	102 (4)
CWM32…40	45 (1.8)	79 (3.1)	22 (0.9)	122 (4.8)
CWM50…80	57 (2.2)	90 (3.5)	21 (0.8)	144 (5.7)
CWM95…105	57 (2.2)	90 (3.5)	29.8 (1.2)	153 (6)

Model	A	B	C	D
CWM112…150	100 (3.9)	130 (5.1)	51 (2)	272.5 (10.7)
CWM180	110 (4.3)	160 (6.3)	58.5 (2.3)	303.5 (11.9)
CWM250…300	120 (4.7)	180 (7.1)	57 (2.2)	325.4 (12.8)

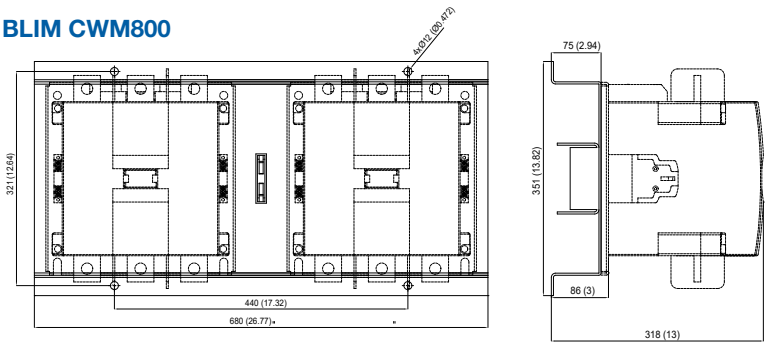
BLIM112-300



BLIM CWM400



BLIM CWM800



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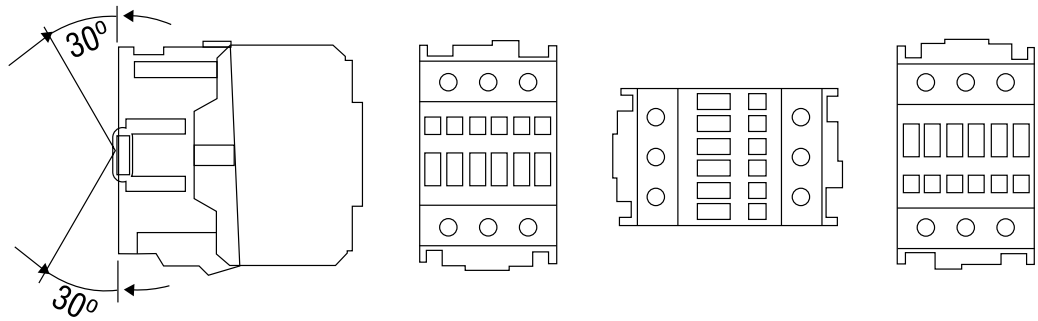
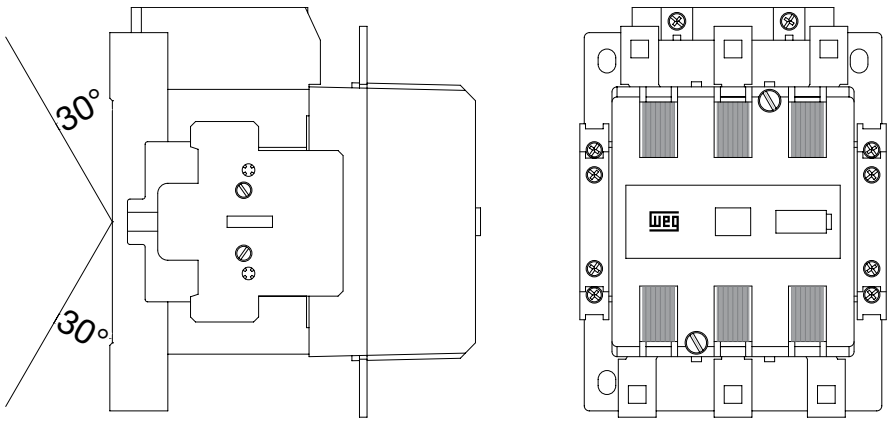
CWM Series - IEC Contactors

Mounting Position[1)]

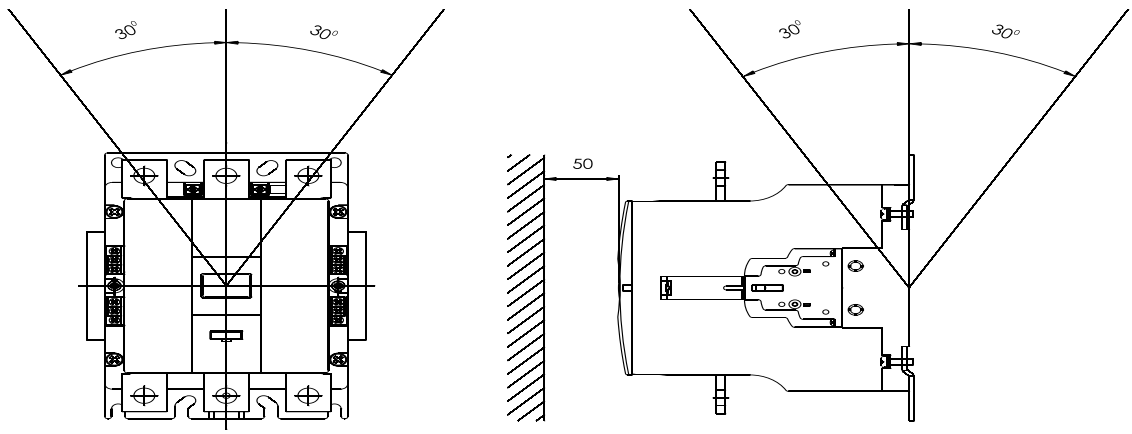
CWM9...105



CWM112...300



CWM400...800



Notes:
1) Consult WEG if application requires a different mounting position.

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RW Series – Thermal Overload Relays

An extended operational service life is one of the main features you can find in RW overload relays. WEG's RW Thermal Overload Relays are designed for use with, and as perfect complement to, WEG contactors. RW overload relays can be mounted directly under WEG contactors, assuring electrical and mechanical operation as an open across-the-line starter. Accessories are also available for separate mounting.

UL File No. E189202

Standard Features

- Two-pole and three-pole versions available
- Direct mounting to WEG contactors with no accessory
- Accessories also available for separate mounting
- Phase loss and current unbalance sensitivity protection
- Class 10 trip characteristics
- Selectable RESET button (automatic or manual)
- Isolated 1NO and 1NC auxiliary contacts

Learn More Online

RW Catalog Number Sequence

RW	27-1D	-	3	-	U004

Overload Relay Series
RW: Thermal Overload Relay

Frame, Size and Terminal Type
17-1D: to use with CWC07…016 & CWCA0
17-2D: to use with CWC025
27-1D: to use with CWM9…40 & CWM9N…CWM32N
27-2D: to use with CWB9…38 & CWBN00…CWBN1
67-1D: to use with CWM32…40 & CWM32N
67-2D: to use with CWM50…80 & CWM50N
67-5D: to use with CWB40…80 & CWBN2
117-1D: to use with CWM95…105 & CWM95N
117-2D: to use with CWM112…150 & CWM150N
117-3D: to use with CWB95…125 & CWBN3
317-1D: to use with CWM112…300 & CWM300N
407-1D: to use with CWM400…800

Power Poles
3: Three Power Poles
2: Two Power Poles

Overload Current Setting
RW17
D004: 0.28…0.40A
U032: 22…32A
RW27
D004: 0.28…0.40A
U040: 32…40A
RW67
U040: 25…40A
U080: 63…80A
RW117
U080: 63…80A
U140: 110…140A
RW317
U150: 100…150A
U420: 275…420A
RW407
U600: 400…600A
U840: 560…840A

Chart intended as reference only and not to create part numbers.

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RW Series – Thermal Overload Relays

Multifunction Reset / Test Button

The thermal overload relay has a multifunction RESET / TEST button that can be set in four different positions:

A – Automatic **RESET** only;

AUTO – Automatic **RESET / TEST**;

HAND – Manual **RESET / TEST**;

H – Manual **RESET** only.

In HAND and AUTO positions, when RESET button is pressed, both NO (97-98) and NC (95-96) contacts change states.

Operation Description

In H (manual RESET only) or A (automatic RESET only) position, the test function is blocked. However in the positions HAND (manual RESET / TEST) or AUTO (automatic RESET / TEST) it is possible to simulate the test and the trip functions by pressing the RESET button.

When set in the H or HAND position the RESET button must be pressed manually to reset the overload relay after a tripping event. On the other hand, when set in A or AUTO position, the overload relay will reset automatically after a tripping event.

The H, HAND, AUTO and A function setting is carried out by rotating without pressing the red button and placing it on the desired position of the RESET button.

When changing from HAND to AUTO, the RESET button must be slightly pressed while the red button is rotated.

Functions	H	Hand	Auto	A
Relay reset	Manual[1)]	Manual[1)]	Automatic	Automatic
Auxiliary contact trip test 95-96 (NC) opening test	Function is disabled	Test/Stop is allowed	Test/Stop is allowed	Function is disabled
Auxiliary contact trip test 97-98 (NO) opening test	Function is disabled	Test/Stop is allowed	Test/Stop is allowed	Function is disabled

Recovery Time

The RW thermal overload relays have thermal memory.

After tripping due to an overload, the relay requires a certain period of time for the bimetal strips to cool down. This period of time is called recovery time. The relay can only be reset once it has cooled down. The recovery time depends on the characteristic tripping curves and the level of the tripping current. After tripping due to overload, the recovery time allows the load to cool down.

Operation in the Output Side of Frequency Inverters

The RW27-2D, RW67-5D, and RW117-3D thermal overload relays are designed for operation on 50/60 Hz up to 400 Hz and the tripping values are related to the heating by currents within this frequency range. Depending on the design of the frequency inverter, the switching frequency can reach several k Hz and generate harmonic currents at the output that result in additional temperature rise in the bimetal strips. In such applications, the temperature rise not only depends on the rms value of the current, but on the induction effects of the higher frequency currents in the metal parts of the device (skin effect caused by eddy currents).

Due to these effects, the current settings on the overload relay should be higher than the motor rated current.

Dial FLA Setting

The trip-current is set via an infinitely adjustable dial designed with the motor's full load current (FLA) in mind.

Temperature Compensation

Because RW overload relays include a forth bimetallic strip in addition to the three that are directly heated by the motor current, ambient temperature variations in the range of -4°F to +140°F are no obstacle for accurate protection of your motors even in the toughest conditions.

Phase Failure Sensitivity

WEG overload relays include phase failure sensitivity protection as a standard. This feature ensures fast tripping in case of phase loss, protecting your motor and avoiding expensive repairs and corrective maintenance.

Notes:
1) A recovery time of a few minutes is necessary before resetting the thermal overload relay.

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For Use With CWC, CWM and CWM_N Contactors

Three-Pole Thermal Overload Relay Class 10

- Adjustable trip current
- Phase-loss sensitivity
- Trip class 10
- 1NO + 1NC auxiliary contacts
- Temperature compensation from -4°F to +140°F
- Selectable Hand/Auto reset button

Matching Contactor	Setting Range (A)		Maximum Fuse UL[1] (A)	Catalog Number	List Price	Multiplier New (Old)
	Min	Max				
CWC07…CWC016 CWCA0 (Mini-contactor)	0.28	0.40	15	RW17-1D3-D004	$46	Z2A (Z2)
	0.40	0.63	15	RW17-1D3-C063	$46	
	0.56	0.80	15	RW17-1D3-D008	$46	
	0.80	1.20	15	RW17-1D3-D012	$46	
	1.20	1.80	15	RW17-1D3-D018	$46	
	1.80	2.80	15	RW17-1D3-D028	$46	
	2.80	4.00	15	RW17-1D3-U004	$46	
	4.00	6.30	25	RW17-1D3-D063	$46	
	5.60	8.00	30	RW17-1D3-U008	$46	
	7.00	10.0	40	RW17-1D3-U010	$46	
	8.00	12.5	50	RW17-1D3-D125	$46	
	10.0	15.0	60	RW17-1D3-U015	$46	
	11.0	17.0	60	RW17-1D3-U017	$46	
CWC025 (Mini-contactor)	15.0	23.0	90	RW17-2D3-U023	$46	
	22.0	32.0	90	RW17-2D3-U032	$46	
CWM9...CWM40 CWM9N...CWM32N	0.28	0.40	15	RW27-1D3-D004	$50	Z2
	0.40	0.63	15	RW27-1D3-C063	$50	
	0.56	0.80	15	RW27-1D3-D008	$50	
	0.80	1.20	15	RW27-1D3-D012	$50	
	1.20	1.80	15	RW27-1D3-D018	$50	
	1.80	2.80	15	RW27-1D3-D028	$50	
	2.80	4.00	15	RW27-1D3-U004	$50	
	4.00	6.30	25	RW27-1D3-D063	$50	
	5.60	8.00	30	RW27-1D3-U008	$50	
	7.00	10.0	40	RW27-1D3-U010	$50	
	8.00	12.5	50	RW27-1D3-D125	$50	
	10.0	15.0	60	RW27-1D3-U015	$50	
	11.0	17.0	60	RW27-1D3-U017	$50	
	15.0	23.0	90	RW27-1D3-U023	$50	
	22.0	32.0	90	RW27-1D3-U032	$50	
CWM32...CWM40 CWM32N	25.0	40.0	90	RW67-1D3-U040	$87	
	32.0	50.0	125	RW67-1D3-U050	$94	
CWM50...CWM80 CWM50N	25.0	40.0	90	RW67-2D3-U040	$95	
	32.0	50.0	125	RW67-2D3-U050	$95	
	40.0	57.0	150	RW67-2D3-U057	$95	
	50.0	63.0	150	RW67-2D3-U063	$95	
	57.0	70.0	175	RW67-2D3-U070	$112	
	63.0	80.0	200	RW67-2D3-U080	$112	
CWM95...CWM105 CWM95N	63.0	80.0	200	RW117-1D3-U080	$150	
	75.0	97.0	225	RW117-1D3-U097	$192	
	90.0	112	250	RW117-1D3-U112	$192	
CWM112...CWM150 CWM150N	75.0	97.0	225	RW117-2D3-U097	$232	
	90.0	112	250	RW117-2D3-U112	$232	
CWM112…CWM300 CWM300N	100	150	300	RW317-1D3-U150	$285	
	140	215	350	RW317-1D3-U215	$285	
	200	310	500	RW317-1D3-U310	$320	
CWM400...CWM800	275	420	700	RW317-1D3-U420	$320	
	400	600	1000	RW407-1D3-U600	$690	
	560	840	1250	RW407-1D3-U840	$690	

Notes:
1) IEC Maximum Ruse Amp ratings may differ. RW117-2D, RW317-1D and RW407-1D are for separate mounting.
Connector links for contactors CWM112…CWM300 are available as an accessory on page 239.

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Overloads

RW Series – Thermal Overload Relays

For Use With CWB, CWBN, and CWBS Contactors

Three-Pole Thermal Overload Relay Class 10

- Adjustable tripping current
- Phase-loss sensitivity
- Trip class 10
- 1NO + 1NC auxiliary contacts
- Temperature compensation from -4°F to +140°F
- Selectable Hand/Auto reset button

Matching Contactor	Setting Range (A)		Maximum Fuse UL [1] (A)	Catalog Number	List Price	Multiplier
	Min	Max				
CWB9 - CWB38 CWBN00 - CWBN1	0.28	0.40	15	RW27-2D3-D004	$50	Z2
	0.40	0.63	15	RW27-2D3-C063	$50	
	0.56	0.80	15	RW27-2D3-D008	$50	
	0.80	1.20	15	RW27-2D3-D012	$50	
	1.20	1.80	15	RW27-2D3-D018	$50	
	1.80	2.80	15	RW27-2D3-D028	$50	
	2.80	4.00	15	RW27-2D3-U004	$50	
	4.00	6.30	25	RW27-2D3-D063	$50	
	5.60	8.00	30	RW27-2D3-U008	$50	
	7.00	10.0	40	RW27-2D3-U010	$50	
	8.00	12.5	50	RW27-2D3-D125	$50	
	10.0	15.0	60	RW27-2D3-U015	$50	
	11.0	17.0	60	RW27-2D3-U017	$50	
	15.0	23.0	90	RW27-2D3-U023	$50	
	22.0	32.0	90	RW27-2D3-U032	$50	
	32.0	40.0	90	RW27-2D3-U040	$60	
CWB40 - CWB80 CWBN2	25.0	40.0	90	RW67-5D3-U040	$95	Z2
	32.0	50.0	125	RW67-5D3-U050	$95	
	40.0	57.0	150	RW67-5D3-U057	$95	
	50.0	63.0	150	RW67-5D3-U063	$95	
	57.0	70.0	175	RW67-5D3-U070	$112	
	63.0	80.0	200	RW67-5D3-U080	$112	
CWB95 – CWB125 CWBN3	63.0	80.0	200	RW117-3D3-U080	$195	Z2
	75.0	97.0	225	RW117-3D3-U097	$221	
	90.0	112.0	250	RW117-3D3-U112	$231	
	110.0	140.0	315	RW117-3D3-U140	$264	

Notes:
1) IEC Maximum Ruse Amp ratings may differ.

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For Use With CWM Contactors

Two-pole Thermal Overload Relays Class 10 (used for single-phase applications)

- Adjustable trip current
- Phase-loss sensitivity
- Trip class 10
- 1NO + 1NC auxiliary contacts
- Temperature compensation from -4°F to +140°F
- Selectable Hand/Auto reset button

Matching Contactor	Setting Range (A)		Max Fuse (A) UL[1)]	Catalog Number	List Price	Multiplier
	Min.	Max				
CWM9...CWM40 CWM9N...CWM32N	0.28	0.40	15	RW27-1D2-D004	$40	Z2
	0.40	0.63	15	RW27-1D2-C063	$40	
	0.56	0.80	15	RW27-1D2-D008	$40	
	0.80	1.20	15	RW27-1D2-D012	$40	
	1.20	1.80	15	RW27-1D2-D018	$40	
	1.80	2.80	15	RW27-1D2-D028	$40	
	2.80	4.00	15	RW27-1D2-U004	$40	
	4.00	6.30	25	RW27-1D2-D063	$40	
	5.60	8.00	30	RW27-1D2-U008	$50	
	7.00	10.0	40	RW27-1D2-U010	$50	
	8.00	12.5	50	RW27-1D2-D125	$50	
	10.0	15.0	60	RW27-1D2-U015	$50	
	11.0	17.0	60	RW27-1D2-U017	$50	
	15.0	23.0	90	RW27-1D2-U023	$50	
	22.0	32.0	90	RW27-1D2-U032	$50	
CWM32...CWM40 CWM32N	25.0	40.0	90	RW67-1D2-U040	$81	
	32.0	50.0	125	RW67-1D2-U050	$88	
CWM50...CWM80 CWM50N	25.0	40.0	90	RW67-2D2-U040	$95	
	32.0	50.0	125	RW67-2D2-U050	$95	
	40.0	57.0	150	RW67-2D2-U057	$95	
	50.0	63.0	150	RW67-2D2-U063	$95	
	57.0	70.0	175	RW67-2D2-U070	$105	
	63.0	80.0	200	RW67-2D2-U080	$105	

Notes:
1) IEC Maximum Ruse Amp ratings may differ.

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Overloads

RW Series – Thermal Overload Relays

For Use With CWB Contactors

Two-pole Thermal Overload Relays Class 10 (used for single-phase applications)

- Adjustable tripping current
- Phase-loss sensitivity
- Tripping class 10
- Auxiliary contacts 1NO + 1NC
- Temperature compensation from -4°F to +140°F
- Hand/Auto/Reset button

2-pole Thermal Overload Relays – Class 10

Matching Contactor	Setting Range (A)		Max Fuse (A) UL[1)]	Catalog Number	List Price	Multiplier
	Min.	Max				
CWB9 - CWB38 CWBN00 - CWBN1	0.28	0.40	15	RW27-2D2-D004	$50	Z2
	0.40	0.63	15	RW27-2D2-C063	$50	
	0.56	0.80	15	RW27-2D2-D008	$50	
	0.80	1.20	15	RW27-2D2-D012	$50	
	1.20	1.80	15	RW27-2D2-D018	$50	
	1.80	2.80	15	RW27-2D2-D028	$50	
	2.80	4.00	15	RW27-2D2-U004	$50	
	4.00	6.30	25	RW27-2D2-D063	$50	
	5.60	8.00	30	RW27-2D2-U008	$50	
	7.00	10.0	40	RW27-2D2-U010	$50	
	8.00	12.5	50	RW27-2D2-D125	$50	
	10.0	15.0	60	RW27-2D2-U015	$50	
	11.0	17.0	60	RW27-2D2-U017	$50	
	15.0	23.0	90	RW27-2D2-U023	$50	
	22.0	32.0	90	RW27-2D2-U032	$50	
	32.0	40.0	90	RW27-2D2-U040	$50	
CWB40 - CWB80 CWBN2	25.0	40.0	90	RW67-5D2-U040	$95	Z2
	32.0	50.0	125	RW67-5D2-U050	$95	
	40.0	57.0	150	RW67-5D2-U057	$95	
	50.0	63.0	150	RW67-5D2-U063	$95	
	57.0	70.0	175	RW67-5D2-U070	$105	
	63.0	80.0	200	RW67-5D2-U080	$105	

Notes:
1) IEC Maximum Ruse Amp ratings may differ.

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Accessories

Separate Mounting Bracket

Description	Mounting On Overload Relays (2 or 3 pole)	Catalog Number	List Price	Multiplier
Enables overload relay to be directly mounted to a back panel via screws or DIN rail	RW27-1D	BF27D	$14	Z2
	RW27-2D	BF27-2D	$14	
	RW67-1D	BF67.1D	$23	
	RW67-2D	BF67-2D	$23	
	RW117-1D	BF117D	$30	
	RW67-5D	BF67-5D	$23	
	RW117-3D	BF117-3D	$30	

Reset Pushbutton with Shaft

Description	Catalog Number	List Price	Multiplier
Flush blue pushbutton with engraved reset and adjustable shaft Min: 22.5 mm Max: 250 mm	CSW-BHF437	$12	Z5

Connector links (3 units per package)

Description	Contactor	Overload Relay	Catalog Number	List Price	Multiplier
Link connectors for easier CWM contactors and RW overload relays assembly	CWM112 / CWM150 CWM150N	RW117-2D3	GA117D	$41	Z2
	CWM150 / CWM150N	RW317-1D3	GA317-1D	$68	
	CWM180	RW317-1D3	GA317-2D	$70	
	CWM250 / CWM300 CWM300N	RW317-1D3	GA317-3D	$118	
	CWM400	RW317-1D3	GA317-10D	$118	

Lugs for RW Series (Overload Relay) (3 units per package)

Description / Wire Range	Mounting On Overloads	Catalog Number	List Price	Multiplier
6 AWG...300 MCM	RW317-1D (100A-215A)	LW3-S300	$35	Z2
4 AWG...600 MCM	RW317-1D (200A-420A)	LW2-S600	$75	
2 AWG...(2)600 MCM	RW407-2D (400A-840A)	LW1-2S600-B	$230	

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Overloads

RW Series – Thermal Overload Relays

Technical Data

Basic Data

Models		RW17	RW27	RW67	RW117	RW317	RW407
Compliance with the standards		IEC 60947-1 and UL 508					
Frequency limits		25...400 Hz				50/60 Hz	
Use in direct current		Yes				No	
Maximum frequency of operation cycles		15					
Protection rating (IEC 60529)	Main terminals	IP10				IP00	
	Auxiliary contacts	IP10					
	Other regions	IP20				IP20	
Mounting		Directly to mini-contactors	Directly to contactors or with screws and DIN rail 35 mm (EN 50022) using an accessory			Directly to contactors by accessories or with screws	
Resistance to mechanical shocks (IEC 60068-2-27 – 1/2 sine wave)		10 g / 11 ms					
Ambient temperature	Transport and storage	-50°C...+80°C					
	Operation	-20°C...+70°C					
	Temperature compensation	-20°C...+60°C					
Maximum operation altitude without modification in the rated values		2,000 m					

Main Contacts

Models			RW17	RW27	RW67	RW117	RW317	RW407
Rated insulation voltage Ui (pollution degree 3)	IEC 60947-4-1	V	690				1,000	
	UL, CSA	V	600					
Rated impulse withstand voltage Uimp (IEC 60947-1)		kV	6				8	
Current settings / max fuse (gL / gG)		A	0.28...0.4 / 2	0.28...0.4 / 2	25...40 / 80	63...80 / 200	100...150 / 315	320...480 / 800
			0.43...0.63 / 2	0.43...0.63 /2	32...50 / 100	75...97 / 225	140...215 / 355	400...600 / 1.000
			0.56...0.8 / 2	0.56...0.8 / 2	40...57 / 100	90...112 / 250	200...310 / 500	560...840 / 1.250
			0.8...1.2 / 4	0.8...1.2 / 4	50...63 / 100	110...140 / 315	275...420 / 710	
			1.2...1.8 / 6	1.2...1.8 / 6	57...70 / 125			
			1.8...2.8 / 6	1.8...2.8 / 6	63...80 / 125			
			2.8...4 / 10	2.8...4 / 10				
			4...6.3 / 16	4...6.3 / 16				
			5.6...8 / 20	5.6...8 / 20				
			7...10 / 25	7...10 / 25				
			8...12.5 / 25	8...12.5 / 25				
			10...15 / 35	10...15 / 35				
			11...17 / 40	11...17 / 40				
			15...23 / 50	15...23 / 50				
			22...32 / 63	22...32 / 63				
				32...40 / 90				
Average power dissipation per pole		W	≤ 3	≤ 3	≤ 5.5	≤ 5.5	≤ 15	≤ 20

Data is subject to change without notice.

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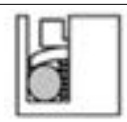
Technical Data

Auxiliary Circuit

Models			RW17	RW27	RW67	RW117	RW317	RW407
Compliance with the standards			IEC 60 947-4-1 and UL 508					
Rated insulation voltage Ui (pollution degree 3)	IEC	V	690					
	UL, CSA	V	600					
Rated operational voltage Ue	IEC	V	690					
	UL, CSA	V	600					
Conventional thermal current Ith (Θ ≤ 55ºC)		A	6					
Rated Operational Current Ie								
AC-14/AC-15 (IEC 60947-5-1)	24 V	A	4					
	60 V	A	3.5					
	125 V	A	3					
	230 V	A	2					
	400 V	A	1.5					
	500 V	A	0.5					
	690 V	A	0.3					
UL, CSA			C600					
DC-13/DC-14 (IEC 60947-5-1)	24 V	A	1					
	60 V	A	0.5					
	110 V	A	0.25					
	220 V	A	0.1					
UL, CSA			R300					
Short-circuit protection with fuse (gL/gG)		A	6					
Minimum voltage / permissible current (IEC 60947-5-4)			17V / 5 mA					

Terminal Capacity and Tightening Torque – Power Circuit

Models			RW17 and RW27	BF27D	RW67-1D and BF67-1D	RW67-2D, RW67-5D, BF67-2D and BF67-5D	RW117 and BF117D
Mounting system screw type			M4 x 10	M4 x 10	M6 x 16.8	M6 x 16.8	M10
			Slot / Phillips	Slot / Phillips	Slot / Phillips	Allen	Allen
Conductor Cross-Section							
Flexible conductor	(mm²)		-	1.5...10	-	-	-
Conductor with terminal/solid wire	(mm²)		-	1.5...6.0	-	-	-
Wire / cable AWG			-	14...6	-	-	-
Torque	Nm		-	2.3	-	-	-
Flexible conductor	(mm²)		1.5...10	-	-	-	-
Conductor with terminal/solid wire	(mm²)		1.5...6.0	-	-	-	-
Wire / cable AWG			14...6	-	-	-	-
Torque	Nm		2.3	-	-	-	-
Conductor connection at the bottom							
Flexible conductor	(mm²)		-	-	6.0...35	6.0...35	25...35
Conductor with terminal/solid wire	(mm²)		-	-	6.0...35	6.0...35	25...35
Flexible conductor	(mm²)		-	-	6.0...35	6.0...35	25...35
Wire / cable AWG			-	-	18...2	18...2	8...1/0
Torque	Nm		-	-	4	4	6

Models			RW317 (100 A... 215 A)	RW317 (200 A...420 A)	RW407
Mounting system screw type			M8	M10	M12
			Hexagonal	Hexagonal	Hexagonal
Cable with terminal	(mm²)		35...120	95...150	-
Busbars (mm) – max size			2 x (25x5)	2 x (25x5)	2 x (60x10)
Torque	Nm		16	26	26

Terminal Capacity and Tightening Torque – Auxiliary Contacts

Models			RW17...407
Mounting system screw type			M3.5 x 10
			Slotted / Philips
Conductor cross-section			
Wire / conductor with or without terminal	(mm²)		2 x 1...2.5
Torque	Nm		1.5

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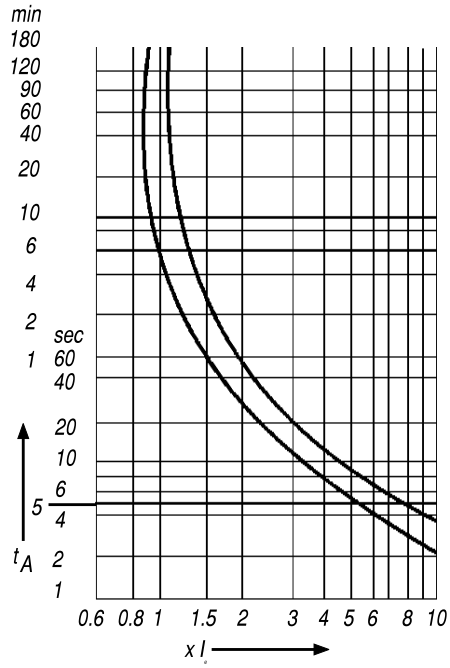
Overloads

RW Series – Thermal Overload Relays

RW Tripping Characteristics

These tripping characteristics show the tripping of RW in relation to the current. They show the mean values of the tolerance ranges at ambient temperature of 68°F (20°C), starting from cold stats. The tripping time of the overload releases at operational temperature is reduced to approximately 25% of the values shown. Under normal operational conditions, all three phases of the RWs should be loaded.



Altitude & Temperature Derating

The derating of a RW overload relay has two possible factors:

1) Ambient temperature

- Temperature compensation requires applying a correction factor to the rated current must be reduced when ambient temperature is higher than 60°C (140°F).

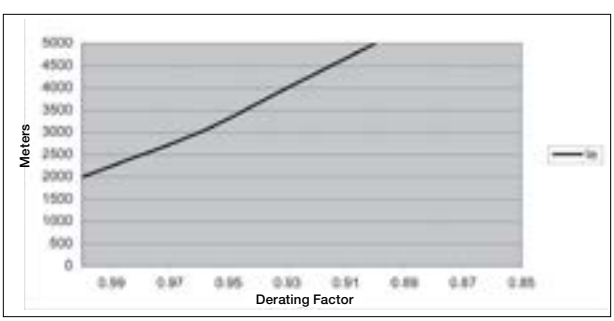
2) Altitude

- Altitude compensation involves both the rated current and voltage.
- Current compensation requires applying a correction factor to the rated current when altitude exceeds 2,000 m.
- For voltage, altitude limits the maximum operating voltage of the overload relay when altitude exceeds 2,000 m.

The derating of the permissible operating current for installation altitudes above 2,000 m (6,667 ft) and ambient temperatures over 60°C (140°F) is calculated according to:

Temperature Compensation		Current Correction Factor
149°F	(65°C)	0.94 x In
158°F	(70°C)	0.87 x In
167°F	(75°C)	0.81 x In
176°F	(80°C)	0.73 x In

Altitude	Current Correction Factor Iu (A)	Current Correction Factor
Up to 2,000 m (6,667 ft)	690	1.00 x In
Up to 3,000 m (10,000 ft)	550	0.96 x In
Up to 4,000 m (13,333 ft)	480	0.93 x In
Up to 5,000 m (16,667 ft)	420	0.90 x In



Total derating = Derating altitude x Derating ambient temperature

Example;

Altitude: 3,000 m (10,000 ft)

K1 = 0.96

Ambient temperature: 70°C (158°F)

K2 = 0.87

Total current derating = 0.96 x 0.87 = 0.84 x Ie

In this case, the maximum rated voltage we can connect to our RW overload relay is 550V.

In order to select the proper overload relay, you have to choose a device with a current range that accommodates:

Overload Setting Point = FLA motor / (K1 x K2)

As in the example above, K1 x K2 = 0.84

For a motor with FLA = 20A

Overload Setting Point = 20 / 0.84 = 23.8A

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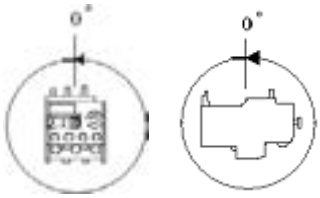
Operating Positions[1)]

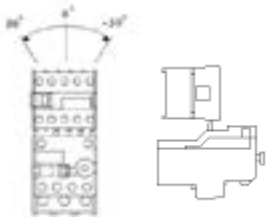
RW17D, RW27D, RW67D, RW117D, RW317D, RW407D

When mounting without contactor, the overload relays can be mounted at any position.



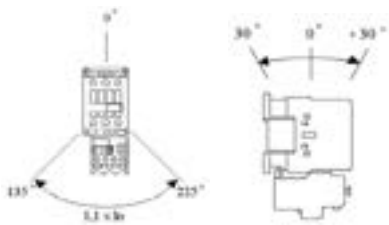
RW17D with CWC Series

As shown in the left figure below, the inclination can not exceed ± 30° degrees for intended function of the contactor. Laterally, as shown in the right figure below, the mounting position is equivalent to 0° degrees – not requiring a correction factor on the dial of the relay. The assembly can work with mounting variations of 0° to 180°



RW27D, RW67D, RW117D, RW317D, RW407

The mounting position shown in the left figure below is equivalent to 0° degrees – not requiring a correction factor on the dial of the relay. The assembly can work with mounting variations of 0° to 135° for each side, however, when mounting the relay above the contactor, position between 135° and 225°, is required a correction factor of +10% on the dial of the relay. Laterally, as shown in the right figure below, the inclination can not exceed ± 30° for the intended function of the contactor.



Notes:
1) Please consult WEG for different mounting positions.

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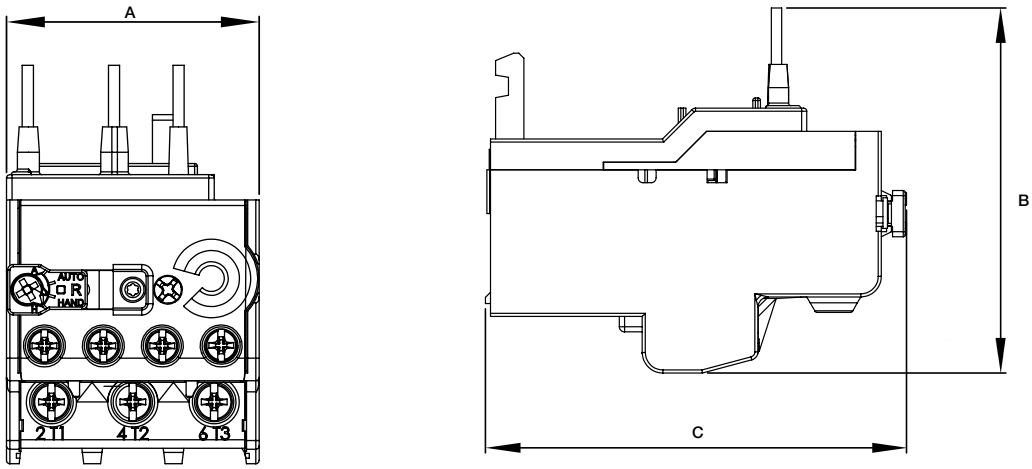
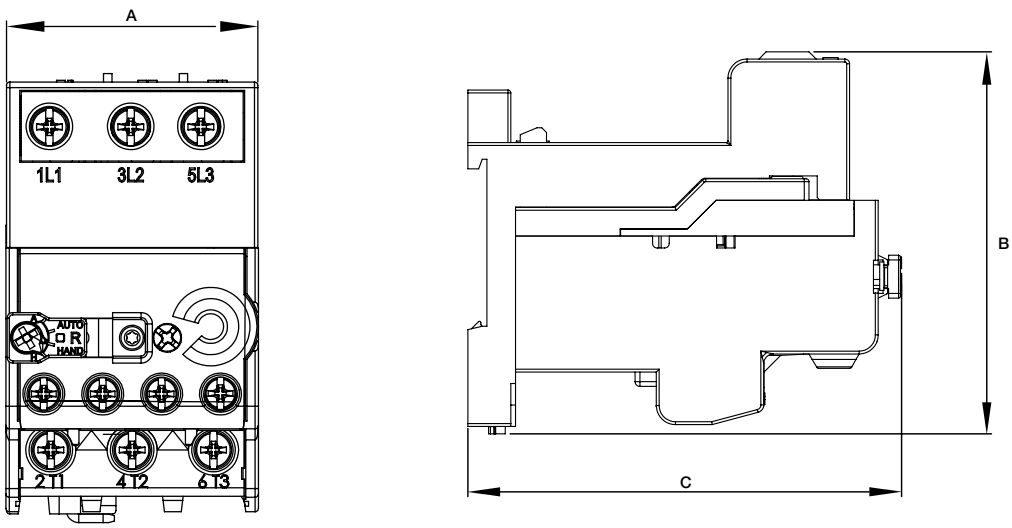
RW Series – Thermal Overload Relays

Dimensions – mm



	RW17-1D RW17-2D RW27-1D RW27-2D	RW67-1D	RW67-2D	RW67-5D	RW117-1D RW117-3D
A (mm)	45.0	50.0	50.0	50.0	75.0
B (mm)	71.5	76.5	81.5	71.5	99.5
C (mm)	83.5	106.5	106.5	106.5	98.8



	BF27D + RW27-1D BF27-2D + RW27-2D	BF67-1D + RW67-1D BF67-2D + RW67-2D BF67-5D + RW67-5D	BF117D + RW117-1D RW117-2D
A (mm)	45.0	50.0	75.0
B (mm)	80.0	71.0	116.4
C (mm)	92.5	106.0	107.0

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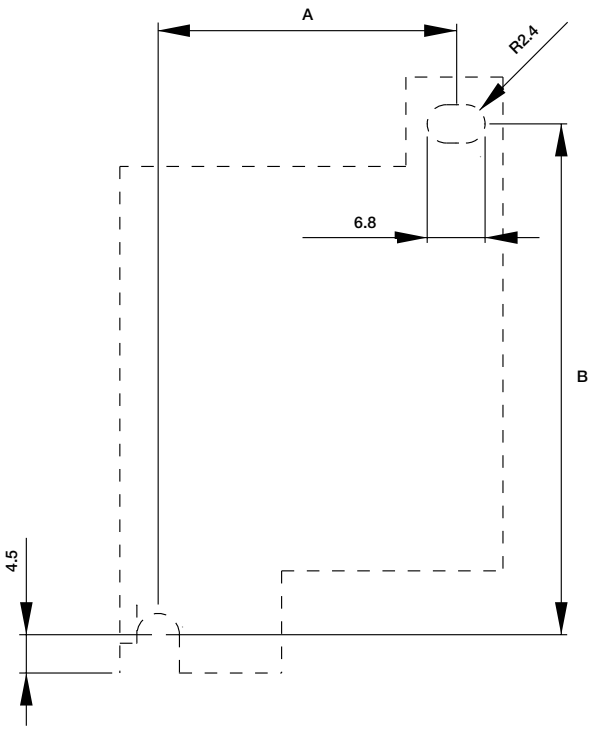
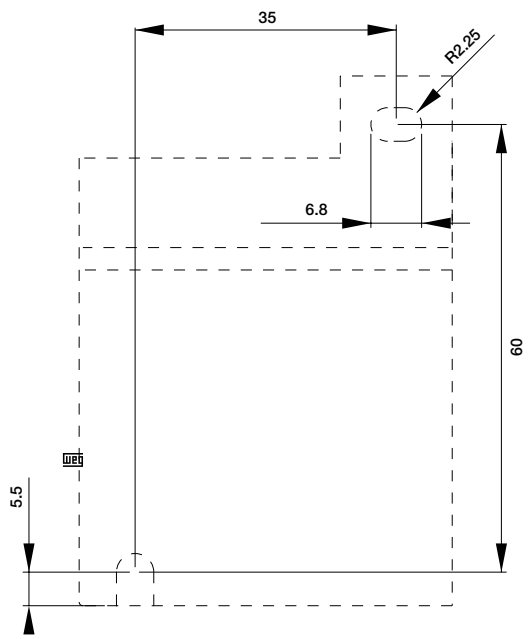
Dimensions – mm

RW27 + BF27

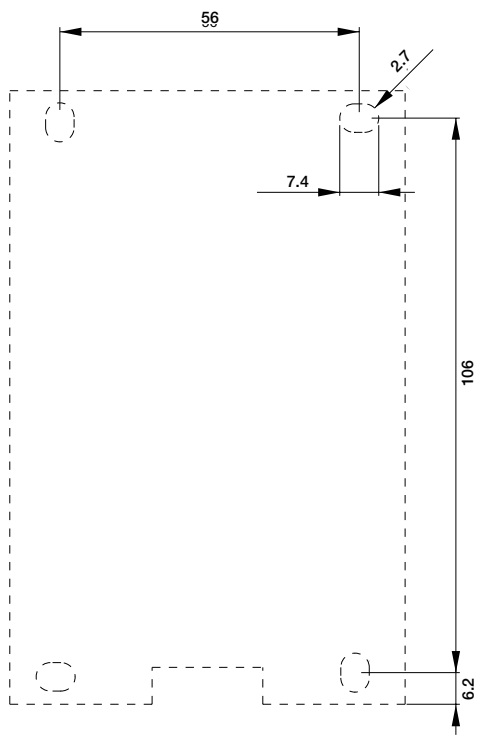


	BF27D	BF27-2D
A (mm)	34	34
B (mm)	60	65

RW67 + BF67



RW117-1D + BF117D
RW117-2D



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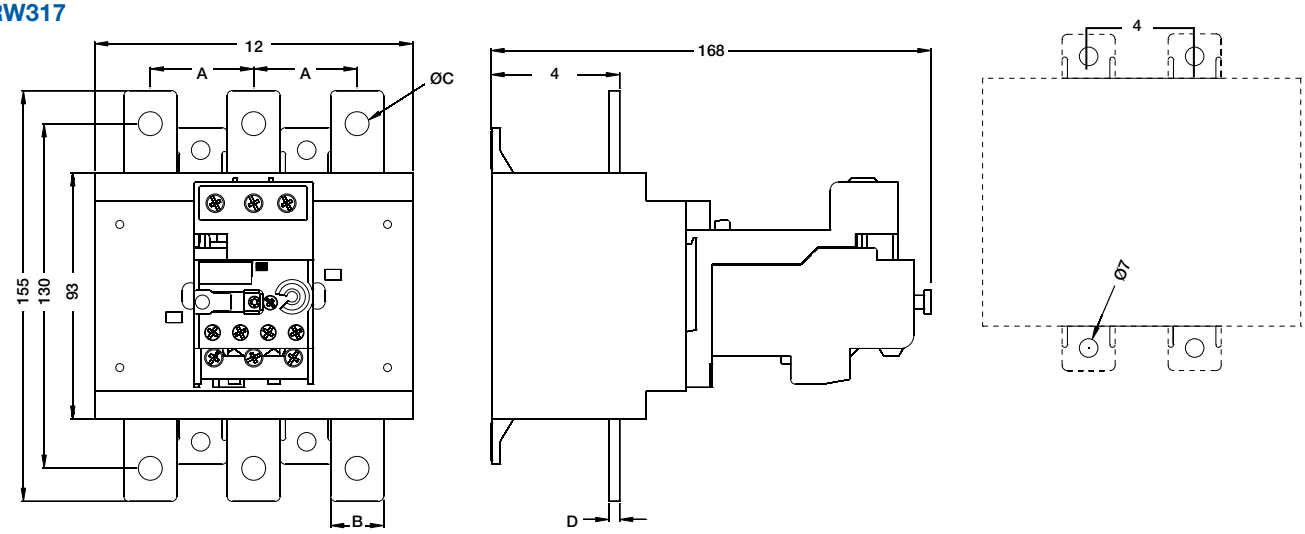
Overloads

RW Series – Thermal Overload Relays

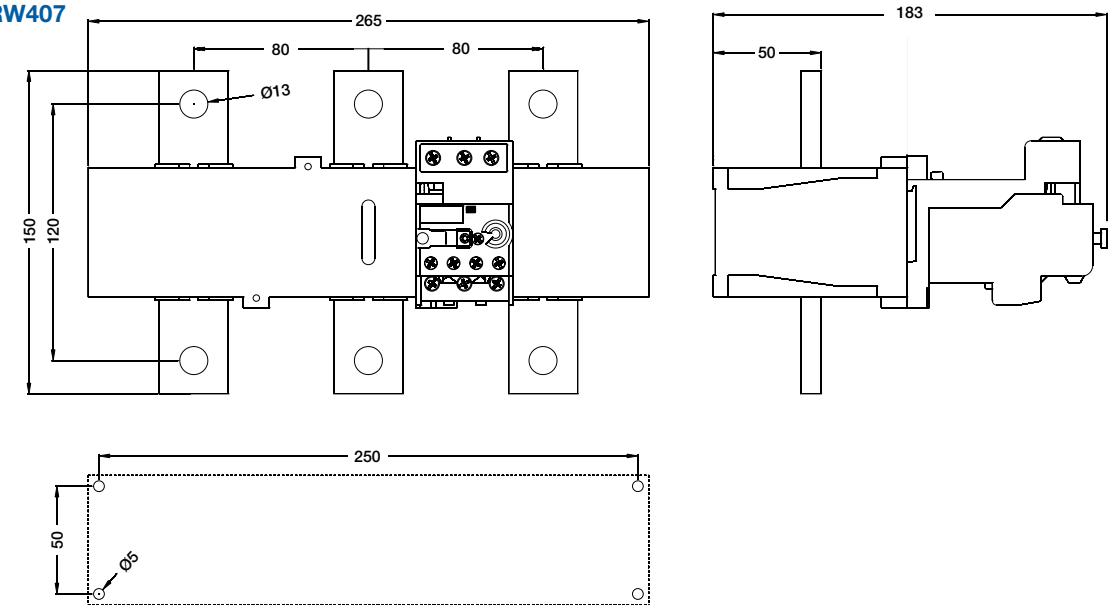
Dimensions – mm

RW317

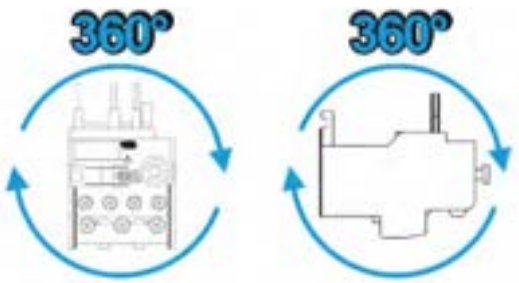


Current ranges	A (mm)	B (mm)	C (mm)	D (mm)
100...150 A	39	20	9	4
140...215 A				
200...310 A	45	25	11	5
275...420 A				

RW407



Mounting Position
RW17 . . . 407



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RW_E Series – Solid-State Overload Relays

The new RW_E Solid State Overload Relays are developed with cutting edge technology according to the most demanding standards worldwide. With its wide current range, the RW_E OL Relay can be used for protection of electric motors of different power ratings. This provides versatility and flexibility for manufacturers due to the possibility of standardization of control panels. This Solid State Overload Relay can be directly mounted on WEG Contactors for reliable and flexible motor starter units. The RW_E includes two independent built-in auxiliary contacts that assure the motor is switched off when a failure occurs.

c UL us

UL File No. E189202

Standard Features

- Three-pole solid state overload relays with adjustable trip class: 10, 20 and 30
- Self-powered
- Wide adjustment range (5:1)
- Thermal memory
- Phase loss protection
- Phase unbalance protection
- Temperature compensated -4°C up to +60°C
- Manual (Hand), Automatic, and Remote reset modes
- Direct mounting to WEG contactors with no accessory
- Accessories available for separate mounting
- 1NO and 1NC built-in auxiliary contacts

Learn More Online

RW_E Catalog Number Sequence

RWB	40	E	-	3	-	A	4U040

Contactor Series
RWM: Solid State OL for CWM
RWB: Solid State OL for CWB

Contactor Frame
40: 40A Contactor
112: 112A Contactor
420: 420A Contactor
840: 840A Contactor

OL Relay Type
E: Electronic OL

Power Poles
3: Three Power Poles

Reset Mode
A: Local
E: Remote/Local

Overload Current Setting
4U002: 0.4 - 2.0 A
4U008: 1.6 - 8.0 A
4U025: 5 - 25 A
4U040: 8 - 40 A
4U056: 14 - 56 A
4U112: 28 - 112 A
4U250: 50 - 250 A
4U420: 85 - 420 A
4U840: 170 - 840 A

Chart intended as reference only and not to create part numbers.

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Overloads

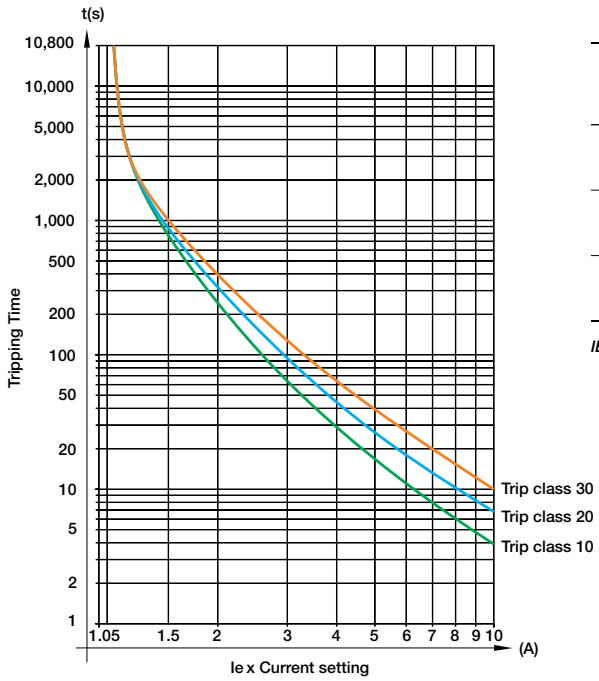
RW_E Series - Solid-State Overload Relays

Suitable for Great Variety of Applications

The solid-state overload relays RW_E are suitable to protect motors in a wide range of industrial applications including those where long starting time is required. Motors on low, medium or heavy duty applications can be properly protected just by selecting the proper trip class (10, 20 or 30 according to IEC 60947-4-1) with the DIP-switches.

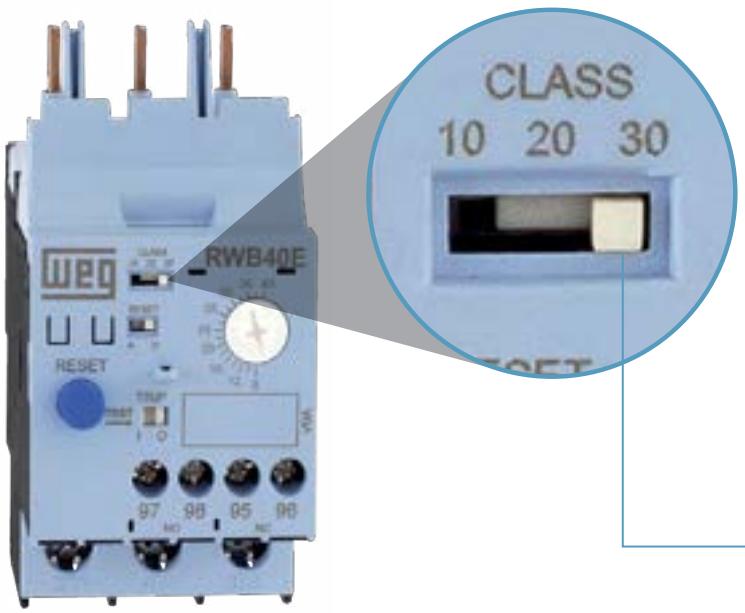
Additionally, the microprocessed electronic circuits of RW_E are temperature compensated according to IEC 60947-4-1, which assures that , the tripping point is not affected and it performs consistently without undesirable tripping throughout the temperature range of -4°F up to +140°F.

The RW_E also features thermal memory which assures that the heating and cooling effects of motors are modeled and proper protection is guaranteed even after downtime periods.



Trip Class	Multiples of Current Setting			
	1.05 x Ir	1.2 x Ir	1.5 x Ir	7.2 x Ir
10	-	Tp < 2 hr	Tp < 4 min.	4 < Tp ≤ 10 sec.
20	-	Tp < 2 hr	Tp < 8 min.	6 < Tp ≤ 20 sec.
30	-	Tp < 2 hr	Tp < 12 min.	9 < Tp ≤ 30 sec.

IEC 60947-4-1



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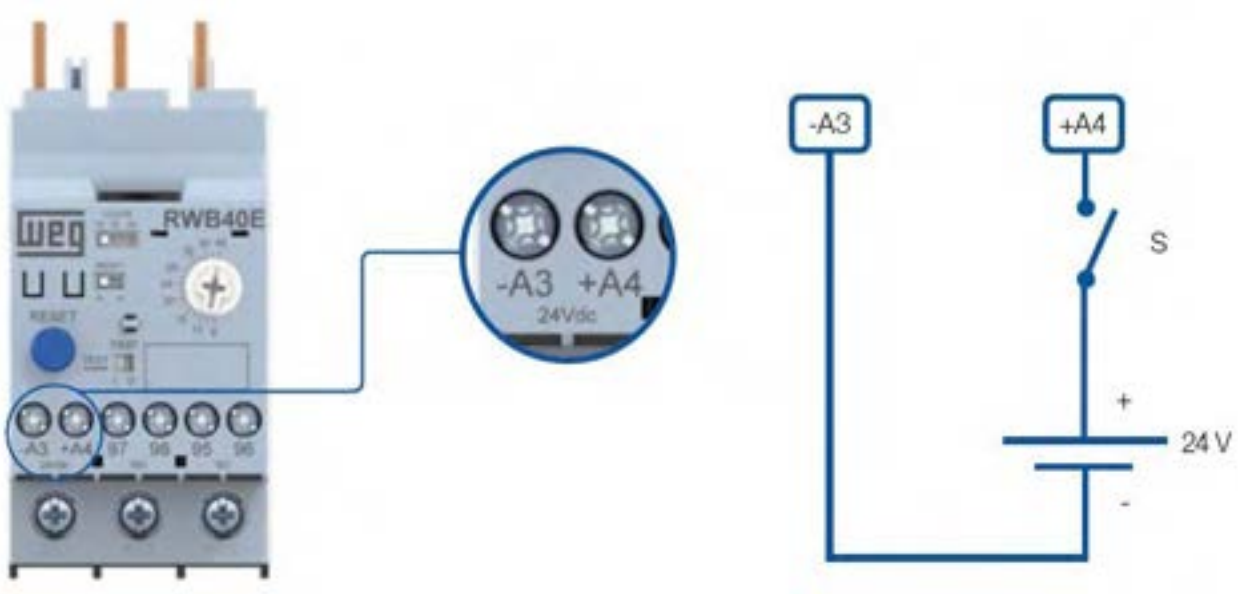
Local and Remote Reset Modes

Solid state overload models with remote reset mode can be reset locally (at the panel) or remotely.

The Local Reset is performed by pressing the blue "RESET" button located on the front of the overload or by pressing an external Reset pushbutton (separate accessory) with shaft that can be wired and mounted on a panel enclosure.

The Remote Reset is performed by applying 24 VDC across terminals -A3 and +A4, by pressing an external pushbutton (separate accessory) or via a PLC's digital output.



Notes:
The duration of the reset pulse must be greater than 0.25 seconds and must not exceed 5 seconds (typical = 1s).

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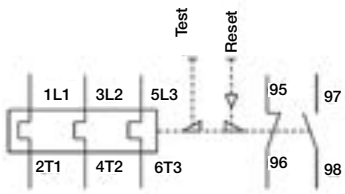
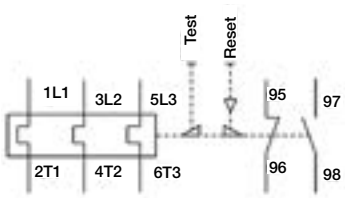
Overloads

RW_E Series - Solid-State Overload Relays

RW_E Solid-State Overload Relays from 0.4 up to 840 A

For Direct Mounting On Contactors	Current Range (A)	Diagram	Max Fuse (gL/gG) A	Local Reset Only		Local/Remote Reset		Multiplier
				Catalog Number	List Price	Catalog Number	List Price	
CWB9...38 CWBN00...1	0.4...2		16	RWB40E-3-A4U002		RWB40E-3-R4U002		Z2
	1.6...8		32	RWB40E-3-A4U008	$92	RWB40E-3-R4U008	$98	
	5...25		63	RWB40E-3-A4U025		RWB40E-3-R4U025		
	8...40		125	RWB40E-3-A4U040	$145	RWB40E-3-R4U040	$155	
CWM9...40 CWM9N...32N	0.4...2		16	RWM40E-3-A4U002		RWM40E-3-R4U002		
	1.6...8		32	RWM40E-3-A4U008	$92	RWM40E-3-R4U008	$98	
	5..25		63	RWM40E-3-A4U025		RWM40E-3-R4U025		
	8...40		125	RWM40E-3-A4U040	$145	RWM40E-3-R4U040	$155	
CWM50...105	14...56		160	RWM112E-3-A4U056	$225	RWM112E-3-R4U056	$240	
CWM50N...95N	28...112		250	RWM112E-3-A4U112	$240	RWM112E-3-R4U112	$255	

Not to be used in single-phase and direct current applications.

For Separate Mounting Or By Connector Links[1)]	Current Range (A)	Diagram	Max Fuse (gL/gG) A	Local Reset Only		Local/Remote Reset		Multiplier
				Catalog Number	List Price	Catalog Number	List Price	
CWM112...500 CWM300N	50...250		500	RWM420E-3-A4U250	$490	RWM420E-3-R4U250	$520	Z2
	85...420		710	RWM420E-3-A4U420	$580	RWM420E-3-R4U420	$620	
CWM150...800	170....840		1,250	RWM840E-3-A4U840[1]	$1,300	RWM840E-3-R4U840[1]	$1,380	

Not to be used in single-phase and direct current applications.

Notes:
1) RWM840E model allows two different types of connection to contactor:
a) By connecting the contactor cables to relay busbars;
b) By removing the relay busbars and using the Ø32 mm window for the passage of the contactor cables.

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Accessories

Mounting Kit

Image	For Use With Relays	Description	Catalog Number	Weight (kg)	List Price	Multiplier
	RWM40E	Enables the overload relay to be mounted directly to a panel via screws or 35 mm DIN rail	BF27D	0.050	$14	Z2
	RWB40E		BF27-2D			
	RWM112E		BF112	0.230	$35	

Connector links for Direct Mounting of Overload Relay onto Contactor (3 units per package)

Image	For Use With Relays	For Use With Contactors	Catalog Number	Weight (kg)	List Price	Multiplier
	RWM112E	CWM112/150 CWM150N	GA117D	0.135	$41	Z2
	RWM420E	CWM112/CWM150 CWM150N	GA317-1D	0.250	$68	
		CWM180	GA317-2D	0.270	$70	
		CWM250/300 CWM300N	GA317-3D	0.630	$118	
		CWM400	GA317-10D	0.500	$118	

Phase Barriers

Image	For Use With Relays	Description	Catalog Number	Weight (kg)	List Price	Multiplier
	RWM420E	Contains one (1) plastic insulator and fixing screws to be used where the overload relay power terminals external dimension exceed the busbar external dimension.	IBRW317	0.044	$4	Z2

Reset Pushbutton with Shaft

Image	For Use With Relays	Description	Catalog Number	Weight (kg)	List Price	Multiplier
	RW-E	Blue Flush pushbutton – Engraved Reset – with shaft. Length: max 250 mm and min. 22.5 mm	CSW-BHF437	0.032	$12	Z5

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Overloads

RW_E Series - Solid-State Overload Relays

Technical Data

General Data

Model			RWM40E / RWB40E[1]	RWM112E[1][2]	RWM420E[2]	RWM840E
Standards			IEC 60947-4-1, IEC 60947-5-1, IEC 60947-1, UL 60947-1, UL 60947-4-1A and UL 508			
Rated insulation voltage Ui (pollution degree 3)	IEC 60947-4-1	V	690		100	
	UL, CSA	V	600			
Rated impulse withstand voltage Uimp (IEC 60947-1)		kV	6		8	
Rated operational frequency (sinusoidal networks)		Hz	50/60			
Suitable for use	Three-phase loads		Yes			
	Single-phase and two-phase loads		No			
	DC current loads		No			
Trip class (IEC 60947-4-1)			10, 20 or 30 – selectable			
Additional featured protections	Phase loss		Yes / less than <5s			
	Phase unbalance		Yes / > 40%			
Reset	Manual / minimum downtime for reset		Yes / instantaneous[3]			
	Automatic / minimum downtime for reset		Yes / ≥ 90s			
Maximum operation per hour		(ops/h)	30			
Protection degree (IEC 60529)	Main contacts		IP10		IP00	
	Auxiliary contacts		IP20			
Mounting			1)		2)	
Mechanical shock resistance – 1/2 sine wave			15g / 11 ms			
Vibration resistance (IEC 60068-2-6)			6g / 30...300 Hz			
Ambient temperature	Transport and storage		-50ºC...+80ºC			
	Operating		-20ºC...+60ºC			
	Temperature compensation		-20ºC...+60ºC			
Altitude			2,000 m			

Main Contacts

Model			RWM40E / RWB40E[4]	RWM112E[4][5]	RWM420E[5]	RWM840E
Rated operational voltage Ue	IEC 60947-4-1	V	690		100	
	UL, CSA	V	600			
Current setting / max fuse (gL/gG)		A	0.4...2 / 16 1.6...8 / 32 5...25 / 63 8...40 / 125	14...56 / 160 28....112 / 250	50...250 / 500 85...420 / 710	170...840 / 1,250
Setting current / average power dissipation per pole		W	0.4...2 / 0.07 1.6...8 / 0.06 5...25 / 0.38 8...40 / 1.5	14...56 / 2 28....112 / 2.6	50...250 / 12 85...420 / 12	170...840 / 14.5

Notes:
1) Direct mounting on contactor or directly on the panel via screws or 35 mm DIN rail when using the mounting kit accessory (BF27D and BF112).
2) Direct mounting on contactor when using the Connector Link GA117 / GA317 accessory or directly on the panel via screws.
3) Before performing a manual reset, it is recommended to wait at least 180 seconds for the load to cool down and for the system to recover after an overload occurs. Resetting the overload before the recommended time will not guarantee a proper re-activation of the system and may cause damages to the equipment.
4) Direct mounting on contactor or directly on the panel via screws or 35 mm DIN rail when using the mounting kit accessory (BF27D and BF112).
5) Direct mounting on contactor when using the Connector Link GA117 / GA317 accessory or directly on the panel via screws.

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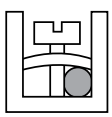
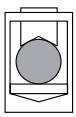
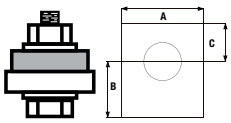
Technical Data

Auxiliary Contacts

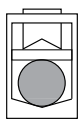
Model			RWM40...840E / RWB40E
Rated insulation voltage Ui (pollution degree 3)	IEC 60947-4-1	V	250
	UL, CSA	V	600
Rated impulse withstand voltage Uimp (IEC 60947-1)		kV	4
Rated operational voltage Ue	IEC 60947-4-1	V	250
	UL, CSA	V	600
Rated thermal current Ith ≤ 60ºC)		A	5
Rated Operational Current Ie			
AC-14/AC-15 (IEC 60947-5-1)	24 V	A	3
	120 V	A	3
	250 V	A	1.5
DC-13 (IEC 60947-5-1)	24 V	A	2
	60 V	A	0.4
	110 V	A	0.22
	125 V	A	0.22
	250 V	A	0.1
NEMA control circuit ratings	UL, CSA		C300 / R300
Short-circuit protection with fuse		A	6
Minimum voltage / admissible current (IEC 60947-5-4)			12 V / 10 mA

Terminal Capacity and Tightening Torque – Main Contacts

Model			BF27D	RWM40E / RWB40E	RW112E	BF112
Type of screw			M4	M3.5	M10	M10
			Flat / Phillips #2	Flat / Phillips #2	Allen #4	Allen #4
Cable size						
Flexible cable	mm²		1.5...10	-	-	-
Cable with terminal / rigid cable	mm²		1.5...6	-	-	-
AWG wire			16...10	-	-	-
Tightening torque	Nm		2.3	-	-	-
Flexible cable	mm²		-	1...10	2.5...35	2.5...35
Cable with terminal / rigid cable	mm²		-	1...10	2.5...35	2.5...35
AWG wire			-	16...8	14...2	14...2
Tightening torque	Nm		-	1.7	6	6

Model			RWM420E	RWM840E
Type of screw			M10 Hexagon Head	M12 Hexagon Head
Cable with terminal	mm²		2 x (25...150)	2 x (60 x 10)
Busbar (A x B x C)	mm		25 x 18.5 x 12.5	31.7 x 28.3 x 15
Tightening torque	Nm		26	26

Terminal Capacity and Tightening Torque – Auxiliary Contacts

Model			RWM40...840E / RWB40E
Type of screw			Flat / Phillips #1
Cable size			
Cable with or without terminal	mm²		1 x 1...2.5
AWG wire			16...12
Tightening torque	Nm		0.8

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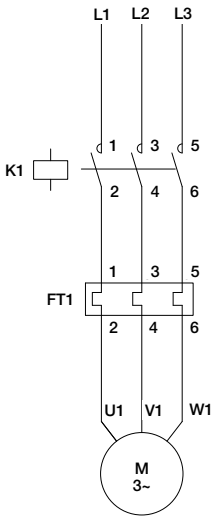
Overloads

RW_E Series - Solid-State Overload Relays

Technical Data

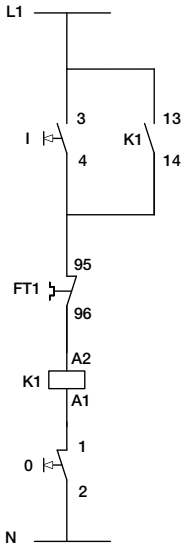
Motor Protection – Alternating Current

3-pole

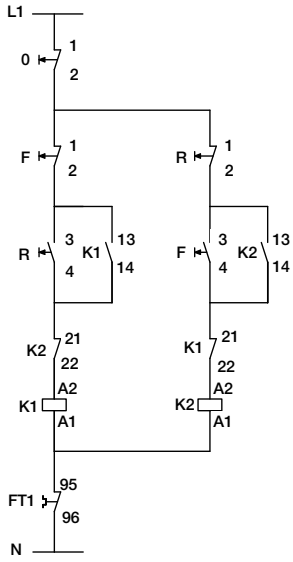


Typical Connection – Contactor + Overload Relay

Direct On Line Starter (1 Direction of Rotation)



Direct On Line Starter (2 Directions of Rotation)



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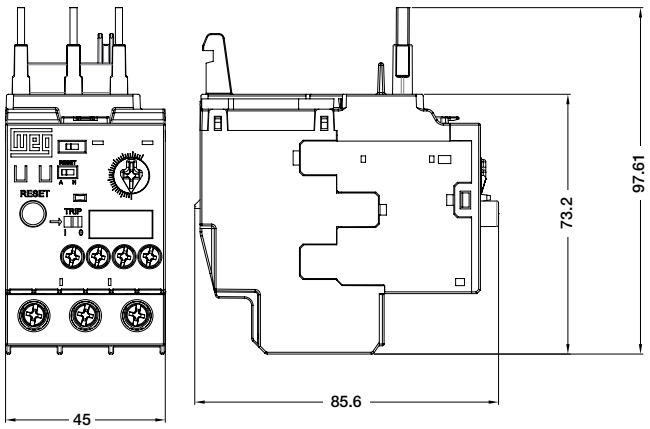
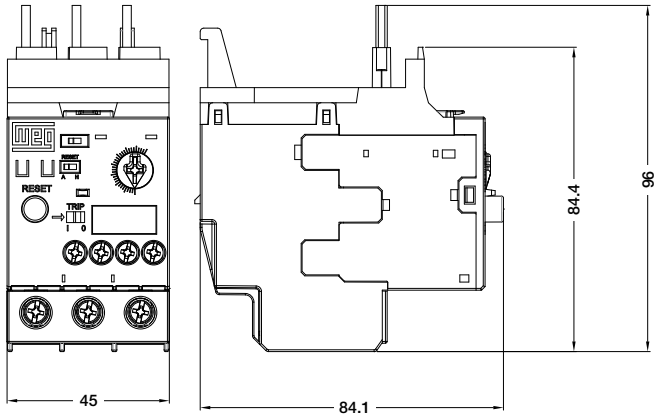
Dimensions – mm

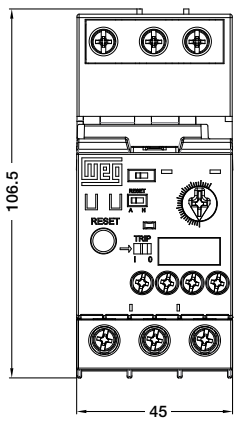
RWM40E

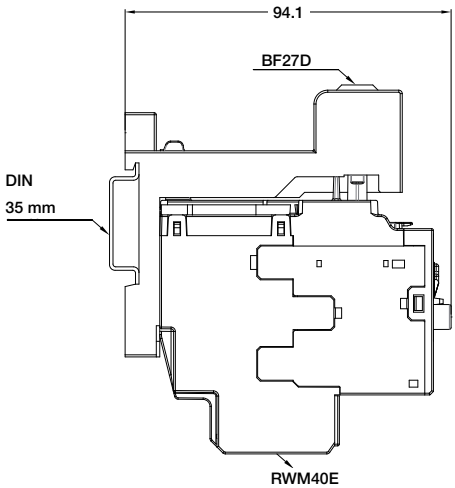


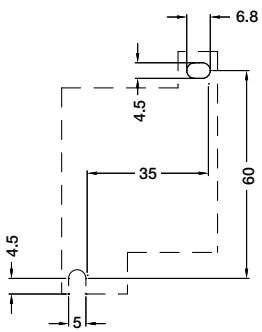
RWB40E



RWM40E + BF27D
RWB40E + BF27-2D







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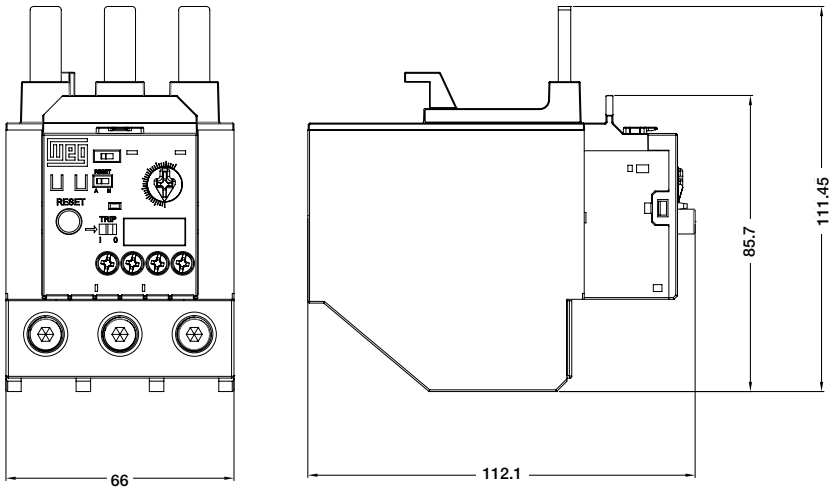
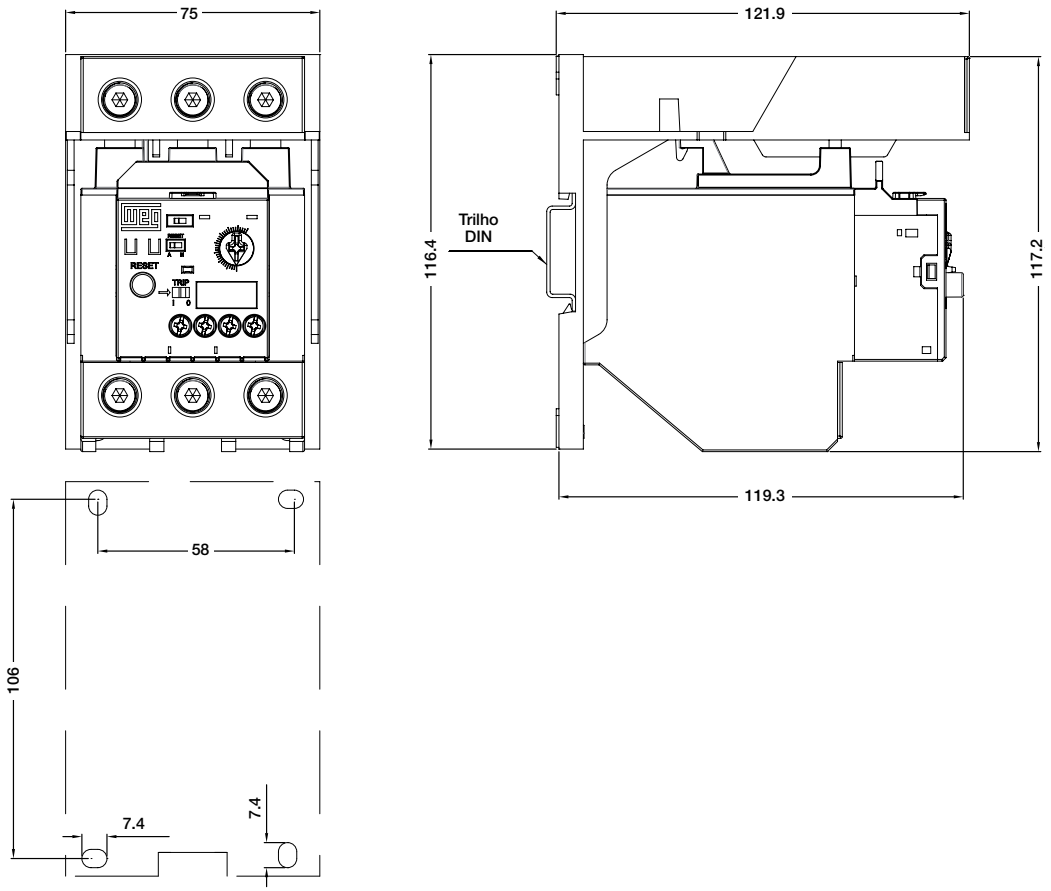
RW_E Series - Solid-State Overload Relays

Dimensions – mm

RWM112E



RWM112E + BF112



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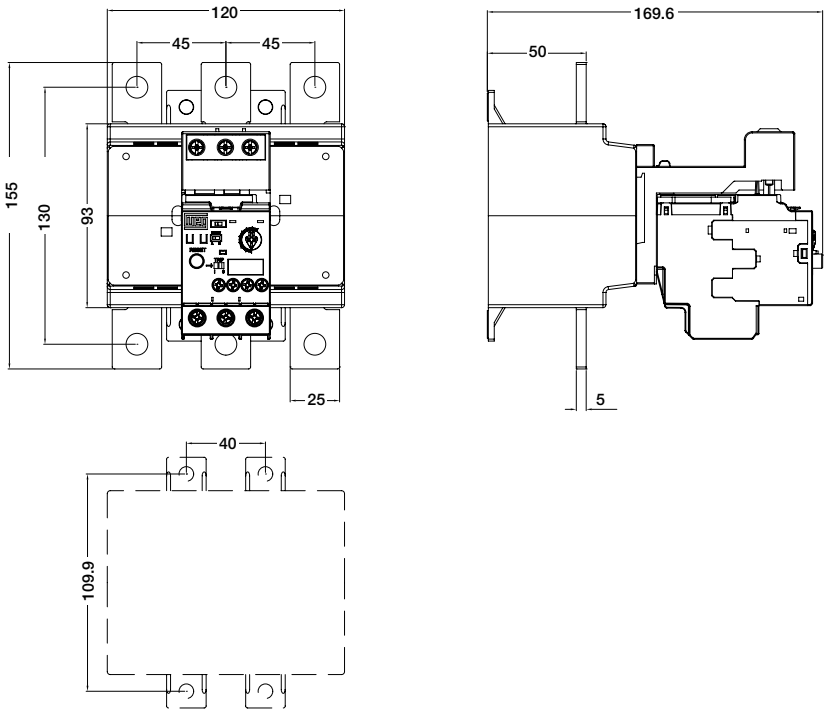
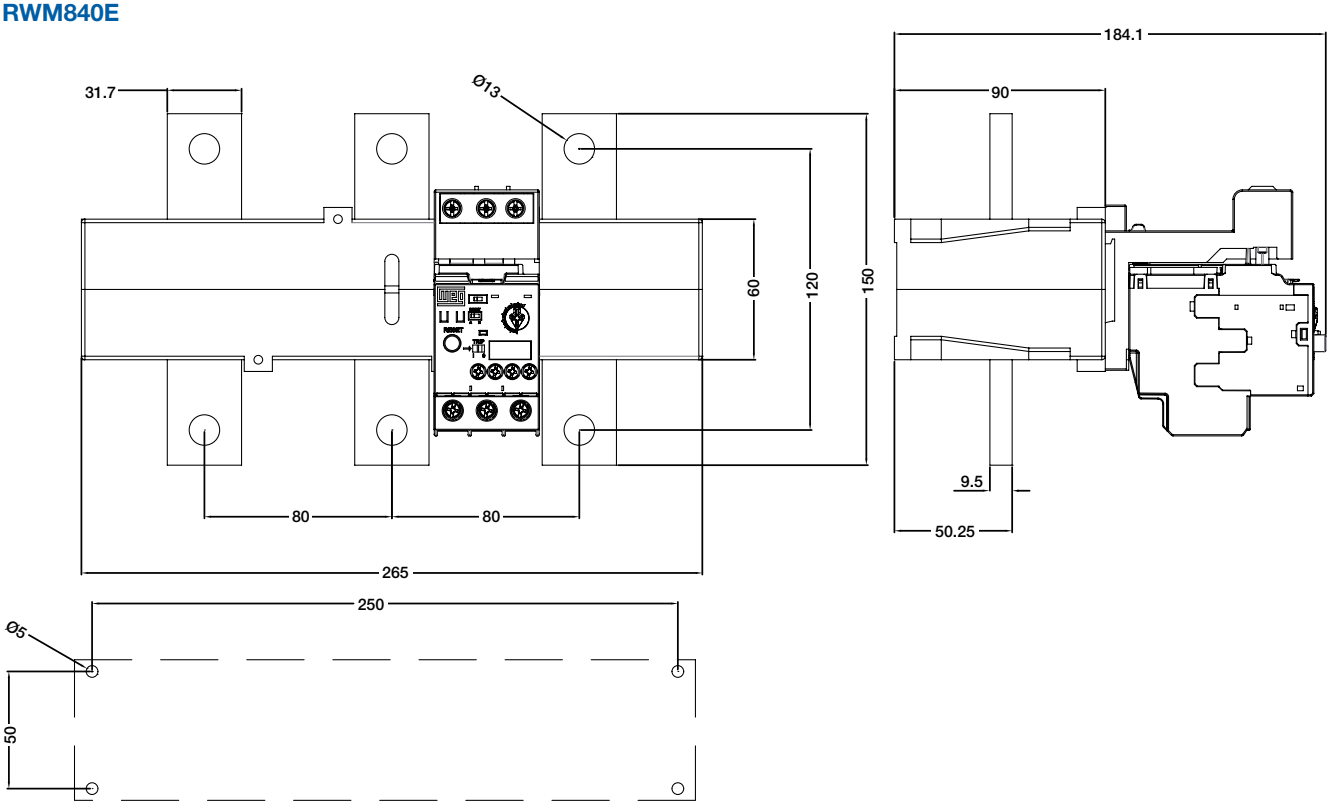
Dimensions – mm

RWM420E



RWM840E



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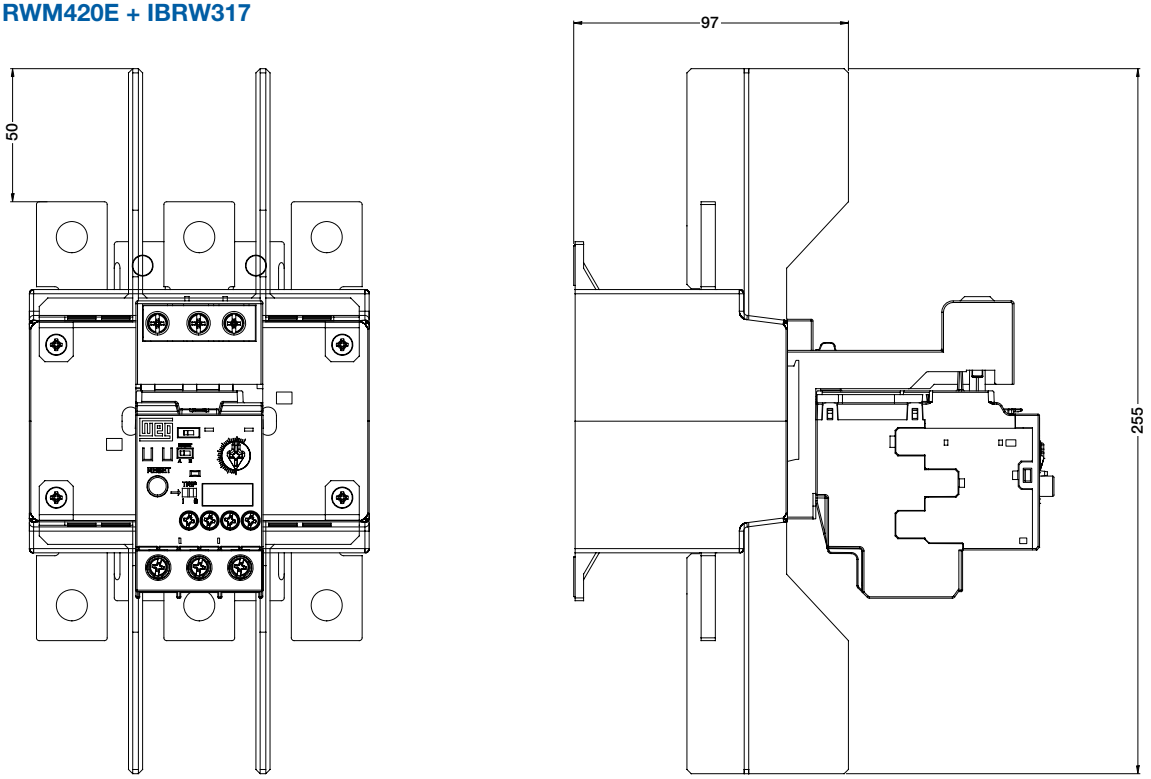
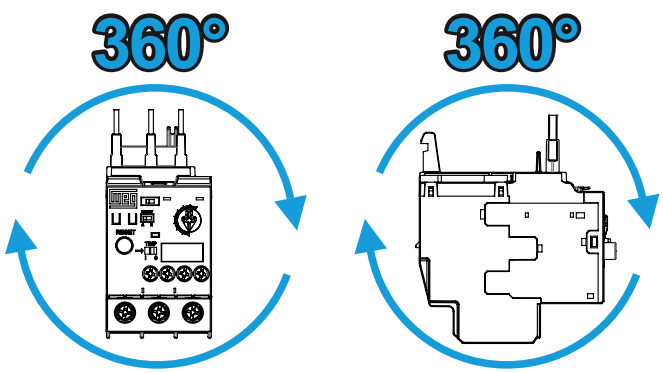
RW_E Series - Solid-State Overload Relays

Dimensions – mm

RWM420E + IBRW317



RWM40...840E / RWB40E



Mounting Position

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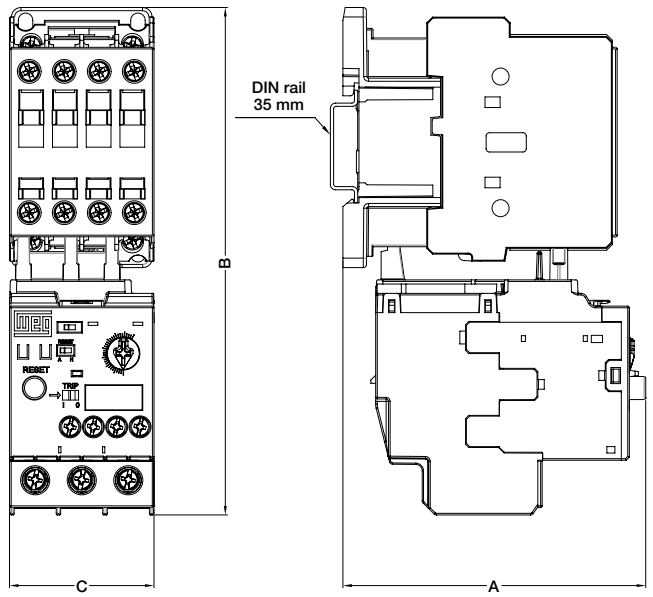
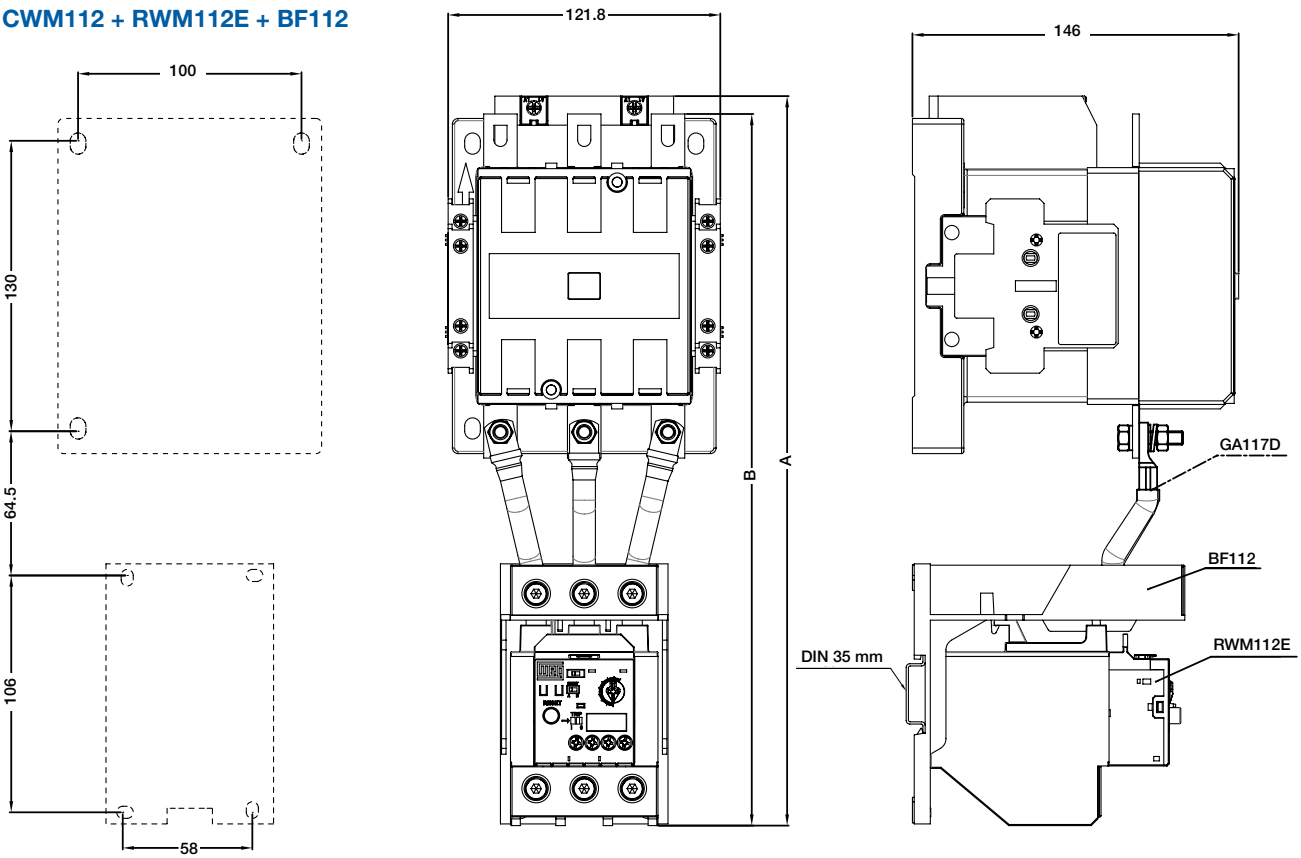
Dimensions – mm

CWM9...105 + RWM40...112E and CWB9...38 + RWB40E



Contactor	Type of Contactor Coil	A	B	C
CWM9...18	AC	94.3	158	45
	DC	125.1		
CWM25	AC	94.9	159.3	45
	DC	124.8		
CWM32/40	AC	98.6	166.5	55
	DC	118.6		
CWM50...80	AC	122.6	202.7	66
	DC			
CWM95/105	AC	126	202.7	75.4
	DC			
CWB9...18	AC	89.5	163.1	45
	DC	98.7		
CWB25...38	AC	93	166.5	
	DC	102.2		

CWM112 + RWM112E + BF112



CWM112	A	B
AC conventional coil	-	318.5
Electronic coil	326.5	318.5

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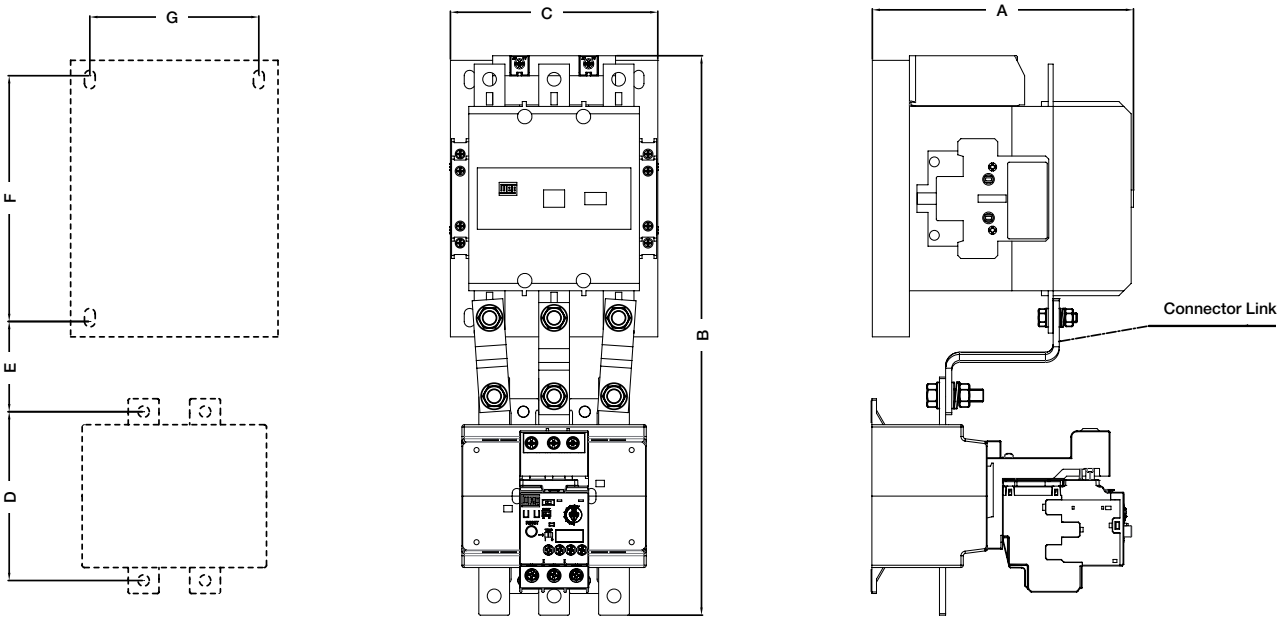
Overloads

RW-E Series - Solid State

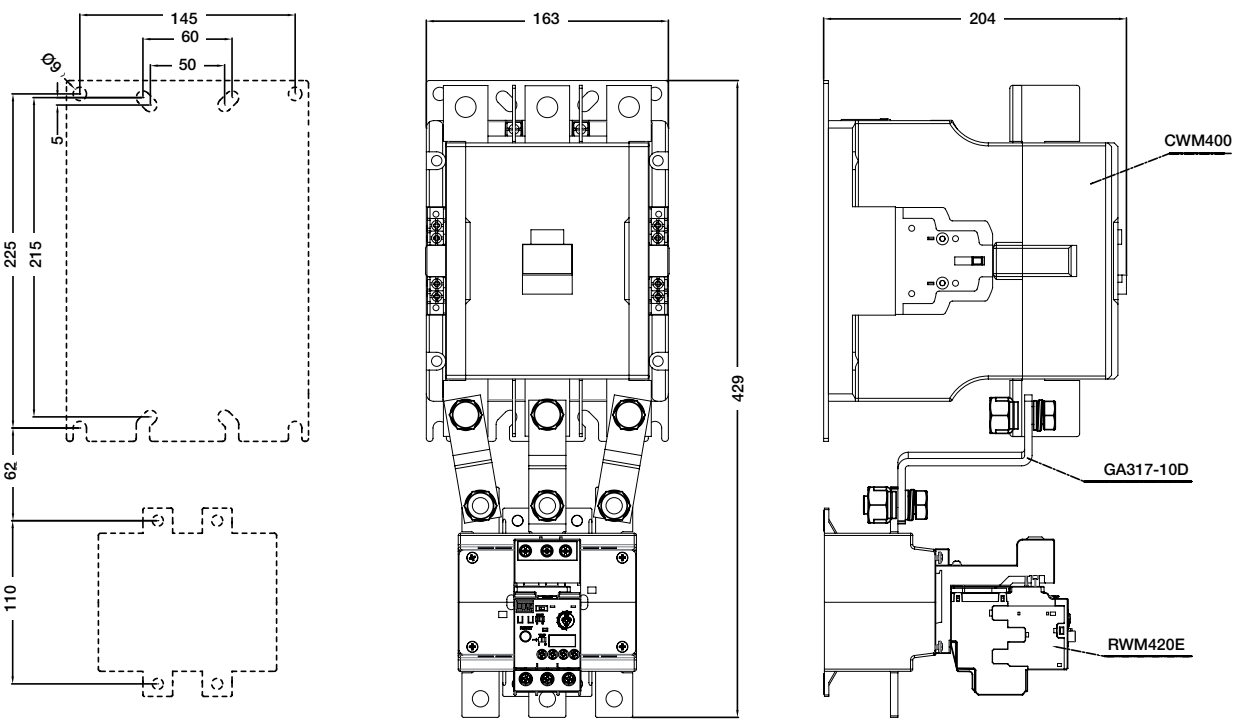
Dimensions – mm

CWM112...300 + RWM112/420E



Contactor	Connector links	Overload relay	A	B	C	D	E	F	G
CWM112/150	GA117D	RWM112E	147	325	121.5	106	64	130	100
CWM112/150	GA317-1D	RW420E	166	343		110	60.5		
CWM180	GA317-2D	RW420E	172	358	139		52.5	160	110
CWM250/300	GA317-3D	RW420E	181	380	148.4		55	180	120

CWM400 + RWM420E



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SRW01 – Smart Relays

UL File No. E189202

The main function of the SRW01 is to protect and control electric motors in their most diverse industrial applications. Due to its reduced size and modular design, the relay is frequently used when space for its assembly is a determining point. The on-line monitoring options, failure diagnosis, and failure statistics allow preventive maintenance to be more effective, thus reducing the number of downtimes. It covers wide applications for continuous process plants in a wide variety of market segments.

Standard Features

- Three ways to parameterize, program, and monitor:
  - Via network protocols
  - Via HMI (Human Machine Interface)
  - Via USB port with free WLP (WEG Ladder Programmer) software
- Standard six (6) digital inputs and four (4) digital outputs
- Status LED indicators for digital inputs, outputs, network, operating condition, failure, and alarm
- Digital Expansion Unit (EDU) for extra digital inputs and outputs
- Current Measuring Unit (UMC) for three-phase electric motors
- Current and Voltage Measuring Unit with Transformer (UMCT) for monitoring phase sequence, power factor, motor power, and power consumption

Learn More Online

SRW01 Catalog Number Sequence

SRW01-UC	P	T	1	E47

Communication Protocols
B: Without Communication
D: DeviceNet
M: Modbus-RTU
P: Profibus-DP
E1: Ethernet Modbus-TCP
E2: Ethernet PROFINET IO
E3: EtherNet/IP

Protection
T: PTC
E: Earth Leakage
TE: PTC and Earth Leakage

Digital Input Operating Voltage
1: 24 VDC
2: 110 VAC

Supply Voltage
E26: 24 VAC (50-60 Hz)/VDC
E47: 110-240 VAC (50-60 Hz)/VDC

Chart intended as reference only and not to create part numbers.

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SRW01 – Smart Relay

Construction Characteristics

Using the modular concept, SRW01 offers flexibility and easy configuration.

Digital Expansion Unit (EDU)[1)]

The Digital Expansion Unit (EDU) increases the number of digital inputs and outputs present in the Control Unit (UC) of the SRW01. The EDU adds six (6) digital inputs and four (4) digital outputs, and can be used to monitor signals and to control external devices.

Current Measuring Unit (UMC) or Voltage and Current Measuring Unit (UMCT)

The Current Measuring Unit (UMC) measures the current of the three phases of the motor.

Including a potential transformer, the Current and Voltage Measuring Unit (UMCT) also monitors voltages up to 690 V, allowing the smart relay to monitor phase sequence, power factor, motor power (active, reactive and apparent) and power consumption (kWh).

The data are digitally transmitted to the Control Unit (UC).

UMC **UMCT**

Notes:
1_Limit of one Digital Expansion Unit (EDU) for each Control Unit (UC).

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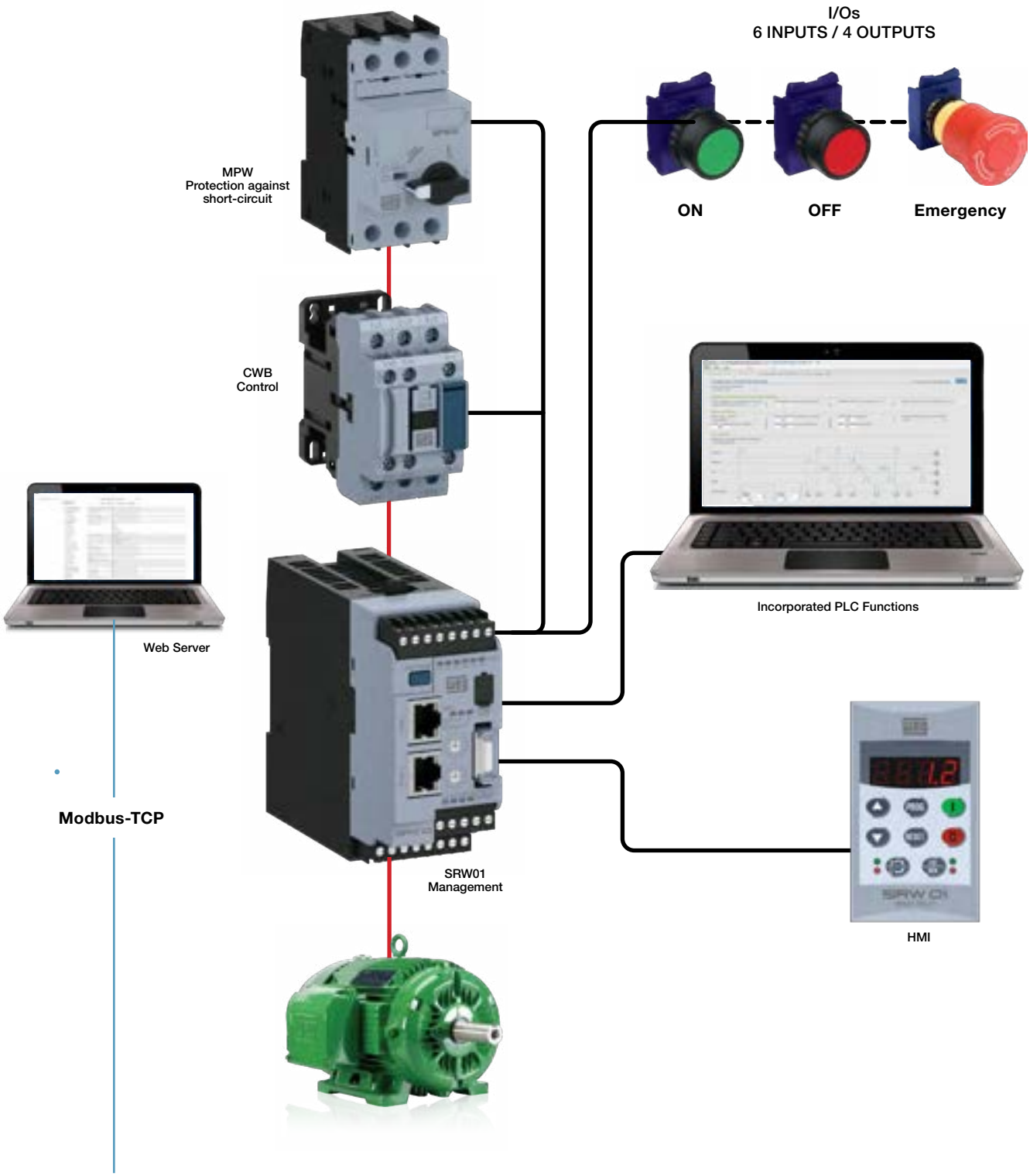
Connectivity



Its capacity of immediate diagnosis helps the preventive maintenance, avoiding undesirable machine breakdown, and also meeting the **IoT** requirements, which is one of the cornerstones of the **4.0 Industry.**

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Overloads

SRW01 – Smart Relay

Selection Table

Control Unit – UC

Image for illustrative purposes
Ethernet version.

SRW01-UC | P | T | 1 | E47

Communication Protocols
B: Without communication
D: DeviceNet
M: Modbus-RTU
P: Profibus-DP
E1: Ethernet Modbus-TCP
E2: Ethernet PROFINET IO
E3: EtherNet/IP

Protection
T: PTC
E: Earth leakage
TE: PTC and Earth leakage

Digital Input Operating Voltage
1: 24VDC
2: 110VAC

Supply Voltage
E26: 24VAC (50-60 Hz)/VDC
E47: 110-240VAC (50-60 Hz)/VDC

Catalog Number	Protection	Supply Voltage	Communication Protocol	Digital Input Voltage	List Price	Multiplier
SRW01-UCBE1E47	Earth leakage	110-240 VAC (50-60 Hz)/ VDC	Without communication	24 VDC	$890	Z8
SRW01-UCBE1E26		24 VAC (50-60 Hz)/ VDC		24 VDC	$1,000	
SRW01-UCBE2E47		110-240 VAC (50-60 Hz)/ VDC		110 VAC	$890	
SRW01-UCBE2E26		24 VAC (50-60 Hz)/ VDC		110 VAC	$1,000	
SRW01-UCBT1E47	PTC	110-240 VAC (50-60 Hz)/ VDC		24 VDC	$810	
SRW01-UCBT1E26		24 VAC (50-60 Hz)/ VDC		24 VDC	$810	
SRW01-UCBT2E47		110-240 VAC (50-60 Hz)/ VDC		110 VAC	$810	
SRW01-UCBT2E26		24 VAC (50-60 Hz)/ VDC		110 VAC	$910	
SRW01-UCDE1E47	Earth leakage	110-240 VAC (50-60 Hz)/ VDC	DeviceNet	24 VDC	$995	
SRW01-UCDE1E26		24 VAC (50-60 Hz)/ VDC		24 VDC	$1,110	
SRW01-UCDE2E47		110-240 VAC (50-60 Hz)/ VDC		110 VAC	$995	
SRW01-UCDE2E26		24 VAC (50-60 Hz)/ VDC		110 VAC	$1,110	
SRW01-UCDT1E47	PTC	110-240 VAC (50-60 Hz)/ VDC		24 VDC	$910	
SRW01-UCDT1E26		24 VAC (50-60 Hz)/ VDC		24 VDC	$1,020	
SRW01-UCDT2E47		110-240 VAC (50-60 Hz)/ VDC		110 VAC	$910	
SRW01-UCDT2E26		24 VAC (50-60 Hz)/ VDC		110 VAC	$1,020	
SRW01-UCPE1E47	Earth leakage	110-240 VAC (50-60 Hz)/ VDC	Profibus-DP	24 VDC	$1,290	
SRW01-UCPE1E26		24 VAC (50-60 Hz)/ VDC		24 VDC	$1,450	
SRW01-UCPE2E47		110-240 VAC (50-60 Hz)/ VDC		110 VAC	$1,290	
SRW01-UCPE2E26		24 VAC (50-60 Hz)/ VDC		110 VAC	$1,450	
SRW01-UCPT1E47	PTC	110-240 VAC (50-60 Hz)/ VDC		24 VDC	$1,450	
SRW01-UCPT1E26		24 VAC (50-60 Hz)/ VDC		24 VDC	$1,360	
SRW01-UCPT2E47		110-240 VAC (50-60 Hz)/ VDC		110 VAC	$1,210	
SRW01-UCPT2E26		24 VAC (50-60 Hz)/ VDC		110 VAC	$1,360	
SRW01-UCME1E47	Earth leakage	110-240 VAC (50-60 Hz)/ VDC	Modbus-RTU	24 VDC	$1,110	
SRW01-UCME1E26		24 VAC (50-60 Hz)/ VDC		24 VDC	$1,250	
SRW01-UCME2E47		110-240 VAC (50-60 Hz) / VDC		110 VAC	$1,110	
SRW01-UCME2E26		24 VAC (50-60 Hz)/ VDC		110 VAC	$1,250	
SRW01-UCMT1E47	PTC	110-240 VAC (50-60 Hz)/ VDC		24 VDC	$1,030	
SRW01-UCMT1E26		24 VAC (50-60 Hz)/ VDC		24 VDC	$1,150	
SRW01-UCMT2E47		110-240 VAC (50-60 Hz)/ VDC		110 VAC	$1,030	
SRW01-UCMT2E26		24 VAC (50-60 Hz)/ VDC		110 VAC	$1,150	
SRW01-UCE1TE1E47	PTC and Earth leakage	110-240 VAC (50-60 Hz)/ VDC	Modbus-TCP	24 VDC	$1,660	
SRW01-UCE1TE1E26		24 VAC (50-60 Hz)/ VDC		24 VDC	$1,860	
SRW01-UCE2TE1E47		110-240 VAC (50-60 Hz)/ VDC	PROFINET IO	24 VDC	$1,650	
SRW01-UCE2TE1E26		24 VAC (50-60 Hz)/ VDC		24 VDC	$1,850	
SRW01-UCE3TE1E47		110-240 VAC (50-60 Hz)/ VDC	EtherNet/IP	24 VDC	$1,650	
SRW01-UCE3TE1E26		24 VAC (50-60 Hz)/ VDC		24 VDC	$1,850	

Tolerances for the SRW01 are 5% and above, Measurement Modules are only for reference.

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Accessories

Current Measuring Unit (UMC) or Current and Voltage Measuring Unit (UMCT)

They must be selected according to the motor rated current.

Current Range (A)	Catalog Number	List Price	Catalog Number[1)]	List Price	Multiplier
0.5-5.0	SRW01-UMC1	$335	SRW01-UMCT1	$670	Z8
1.25-12.5	SRW01-UMC2	$345	SRW01-UMCT2	$685	
2.5-25.0	SRW01-UMC3	$360	SRW01-UMCT3	$700	
12.5-125.0	SRW01-UMC4	$525	SRW01-UMCT4	$860	
42.0-420.0	SRW01-UMC5	$715	SRW01-UMCT5	$1,050	
84.0-840.0	SRW01-UMC6	$955	SRW01-UMCT6	$1,290	

The Control Unit (UC) can be assembled with the Current Measuring Unit (UMC) to create one single unit, or it can be assembled as detached (up to 2 meters). The Current and Voltage Measuring Unit (UMCT) can be exclusively assembled as detached from the Control Unit (UC).
Tolerances for the SRW01 are 5% and above. Measurement models are only for reference.

SRW01-UMC1 & SRW01-UMCT1

Width (mm)	Current (A)	Power Connection
45	0.25 - 2.5[2)]	Cable through
	0.5 - 5	
	1.25 - 12.5	
	2.5 - 25	

SRW01-UMC4 & SRW01-UMCT4

Width (mm)	Current (A)	Power Connection
66	12.5 - 125	Cable through

SRW01-UMC5 & SRW01-UMCT5

Width (mm)	Current (A)	Power Connection
120	42 - 420	Busbar

SRW01-UMC6 & SRW01-UMCT6

Width (mm)	Current (A)	Power Connection
265	84 - 840	Cable through or busbar

For applications at higher currents or out of the model range of the Current Measuring Unit (UMC) or Current and Voltage Measuring Unit (UMTC), it is possible to use external current transformers (CTs) supplied by the user.

SRW01-UMC1, 2 & 3

SRW01-UMCT1, 2 & 3

SRW01-UMC4

SRW01-UMCT4

SRW01-UMC5

SRW01-UMCT5

SRW01-UMC6

SRW01-UMCT6

Images for illustrative purposes

UC-UMC or UMCT / UC-EDU Connection Cable

The SRW01-CB cable makes the electrical connection of the Control Unit (UC) to the Current Measuring Unit (UMC) or Current and Voltage Measuring Unit (UMCT) or Digital Expansion Unit (EDU), allowing the detached assembly up to two meters away and simplifying the installation.

Catalog Number	Length (mm)	List Price	Multiplier
SRW01-CB0	60	$13.50	Z8
SRW01-CB1	120	$13.50	
SRW01-CB2	500	$15.50	
SRW01-CB3	2,000	$17.50	
SRW01-CB4	1,000	$17.50	

Notes:
1) Alternating supply voltage from 35 to 690 V.
2) For a current range from 0.25 to 2.5 A, use the SRW01-UMC1 or SRW01-UMCT1 with two turns in the primary winding. For further details, refer to the user's manual.

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Overloads

SRW01 – Smart Relay

Accessories

Digital Expansion Unit – EDU

Catalog Number	Digital inputs	Digital input (external) supply voltage	Digital outputs	List Price	Multiplier
SRW01-EDU1	6	24 VDC	4	$440	Z8
SRW01-EDU2	6	110 VAC	4	$440	

Human Machine Interface – HMI

The HMI is connected to the front part of the relay by means of a communication cable, making its operation and configuration easier and more convenient. It offers two mounting options: vertical and horizontal.

Catalog Number	Description	List Price	Multiplier
SRW01-HMI	Standard human machine interface – HMI – vertical	$250	Z8

Catalog Number	Description	List Price	Multiplier
SRW01-HMI2	Human machine interface – HMI – horizontal	$470	Z8

Earth Leakage Sensor (EL)

The Earth leakage sensor must be installed detached from the Control Unit (UC).

It can be installed in any position and connected to the Control Unit (UC) by means of a twisted pair and/or shielded cable connected to the sensor terminals and S1 and S2 terminals, for the model with Profibus-DP, DeviceNet and Modbus-RTU, or to the other E1 and E2 terminals for the EtherNet/IP, PROFINET IO and Modbus-TCP models, with maximum recommended distance of 10 m.

Catalog Number	Diameter (mm)	UMC/UMCT Compatible	List Price	Multiplier
SRW01-EL1	35	SRW01-UMC/UMCT 1, 2, 3	$265	Z8
SRW01-EL2	70	SRW01-UMC/UMCT 4	$460	
SRW01-EL3	120	SRW01-UMC/UMCT 5	$825	
SRW01-EL4	210	SRW01-UMC/UMCT 6	$1,670	

Specify the Earth leakage sensor according to the diameter of the cables that go through the window; choose the sensor with the smallest opening.

It is recommended to use the equivalence relation between the Current Measuring Unit (UMC) or Current and Voltage Measuring Unit (UMCT) and the ELS sensors for the installation, as shown on the table above.

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Accessories

Connection Cable UC-HMI

Catalog Number	Length (mm)	List Price	Multiplier
SRW01-CH1	500	$35	Z8
SRW01-CH2	1,000	$35	
SRW01-CH3	1,500	$35	
SRW01-CH4	2,000	$45	

USB Communication Cable

Catalog Number	Length (mm)	List Price	Multiplier
SRW01-USB	2,000	$45	Z8

Communication Module

Catalog Number	Communication Protocol	List Price	Multiplier
SRW01-MCD[1) 2)]	DeviceNet	$100	Z8
SRW01-MCM[1) 2)]	Modbus-RTU	$220	
SRW01-MCP[1) 2)]	Profibus-DP	$400	

Fixing Adapter

Catalog Number	Description	List Price	Multiplier
PLMP	Adapter for screw fixing (2 pieces per package / 0.006 kg)	$.50	Z4

Busbar for UMC and UMCT

Catalog Number	Description	List Price	Multiplier
JBL RW407D	Busbar for the Current Measuring Unit (UMC6) / Current and Voltage Measuring Unit (UMCT6)	$345	Z8

Protection Covers – Replacement

DB9

Catalog Number	Description	List Price	Multiplier
SRW01-CDB[3)]	Plastic cover for DB9 connector protection	$7	Z8

USB Adapter for Panel Door

Catalog Number	Description	List Price	Multiplier
SRW01-AUSB1	USB adapter cable with protection cover IP68 and length of 25 cm	$160	Z8
SRW01-AUSB2	USB adapter cable with protection cover IP68 and length of 50 cm	$230	

Notes:
1) For replacement or for Control Unit (UC) without network module.
2) Not available in the Ethernet version.
3) 10-unit pack.

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Overloads

SRW01 – Smart Relay

Technical Data

General Data	Mounting position	Any	
	Pollution degree (UL 508)	2	
	Degree of protection (IEC 60529)	Control Unit (UC): IP20 Current Measurement Unit (UMC): - Without busbar: IP20 - With busbar: IP00 Current and Voltage Measuring Unit (UMCT): - Without busbar: IP20 - With busbar: IP00 Digital Expansion Unit (EDU) IP20 Human Machine Interface (HMI): IP54 Earth Leakage Sensor (ELS): IP20	
	Ambient temperature	Operation: - According to IEC: 0...+55ºC - According to UL: 0...+40ºC Storage and transport: -25...+80ºC	
	Short-circuit ratings (UL)[1)]	Control Unit (UC): refer to the user's manual Current Measuring Unit (UMC/UMCT): refer to the user's manual	
	Tripping class (UL)	Control Unit (UC): classes 10/20/30 Current Measuring Unit (UMC/UMCT): classes 10/20/30	
Control Unit (UC)	Rated insulation voltage Ui	300 V	
	Rated supply voltage U^s	110 - 240 VAC/VDC @ 50/60 Hz	24 VAC/VDC @ 50/60 Hz
	Operation range	0.85 U_s - 1.10 U_s	0.85 U_s - 1.10 U_s
	Consumption (typical)[2)]	6 W	5 W
	Number of digital inputs	4 optically isolated inputs (24 VDC or 110 VAC) 6 optically isolated inputs (24 VDC) for the Ethernet model	
	Digital input power supply	24 VDC	110 VAC
	Digital input power source	Internal 24 VDC isolated power source or external	External 110 VAC power source
	Digital input current	11 mA @ 24 VDC 6 mA @ 24 VDC (Ethernet)	5 mA @ 110 VAC
	Digital input isolation	3 kV	
	Number of digital outputs	4 relay outputs	
	Contact grouping	2 SPST outputs 2 common shared SPST outputs	
	Maximum operation voltage	250 VDC, 240 VAC	
	Smallest operation power	1 W or 1 VA	
	Switching capacity per relay contact	UL 508: C300 Pilot Duty AC-15 (IEC 60947-5-1): 1.5 A AC / 120 VAC 0.75 A AC / 240 VAC DC-13 (IEC 60947-5-1): 0.22 A DC / 125 VDC 0.1 A DC / 250 VDC	
	Contacts capacity (resistive load)	2.5 A, 30 VDC / 250 VAC	
	External protection against short-circuit	6 A gL/gG fuse	
	Motor protection via PTC	TRIP value: > 3.4 kΩ; Reset value <1.6 kΩ	
	Terminals (connectors)	Torque: 0.5 Nm – 4.5 in-lb Conductor section: - Solid and bare: 1 x (0.2 - 2.5 mm^2); 1 x (26 -12 AWG) - Flexible with/without terminals: 1 x (0.2 - 2.5 mm^2); 1 x (26 - 12 AWG) Screws: M3	
	Reset button	Error or fault reset – system TRIP or alarm reset – protections TRIP test	

Notes:
1) See the user's manual.
2) Considering the consumption of the Control Unit (UC) and of the Current Measuring Unit (UMC).

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Technical Data

Current Measurement Unit (UMC)	Current range	0.25 to 840 VAC	
	Insulation degree Ui	690 VAC	
	Rated operating voltage Ue	IEC 60947-4-1: 690 VAC UL 508: 600 VAC	
	Impulse voltage Uimp	6 kV	
	Frequency range	50/60 Hz	
	Application	Single-phase and three-phase	
	Cable hole diameter	UMC 1, 2 and 3: 8 mm UMC 4: 15 mm UMC 5: busbar UMC 6: 32 mm or busbar	
Current and Voltage Measuring Unit (UMCT)	Current range	0.25 - 840 VAC	
	Voltage range	35 - 690 VAC	
	Insulation degree Ui	690 VAC	
	Rated operating voltage Ue	IEC 60947-4-1: 690 VAC UL 508: 600 VAC	
	Impulse voltage Uimp	6 kV	
	Frequency range	50/60 Hz	
	Application	Single-phase and three-phase	
	Cable hole diameter	UMCT 1, 2 and 3: 8 mm UMCT 4: 15 mm UMCT 5: busbar UMCT 6: 32 mm or busbar	
	Terminals (connectors)	Torque: 0.5 Nm – 4.5 in-lb Conductor section: - Solid and bare: 1 x (0.2 - 2.5 mm^2); 1 x (26 - 12 AWG) - Flexible with/without terminals: 1 x (0.2 - 2.5 mm^2); 1 x (26 - 12 AWG) Screws: M3	
Digital Expansion Unit (EDU)	Rated insulation voltage Ui	300 V	
	Number of digital inputs	6 optically isolated inputs (24 VDC or 110 VAC)	
	Digital input power source	24 VDC	110 VAC
	Digital input power source	External 24 VDC power source	External 110 VAC power source
	Digital input current	11 mA @ 24 VDC	5 mA @ 110 VAC
	Digital input isolation	3 kV	
	Number of digital outputs	4 relay outputs	
	Contact grouping	4 SPST outputs	
	Maximum operation voltage	250 VDC, 240 VAC	
	Smallest operation power	1 W or 1 VA	
	Switching capacity per relay contact	UL 508: Piloty Duty C300 AC-15 (IEC 60947-5-1): 1.5 A AC / 120 VAC 0.75 A AC / 240 VAC DC-13 (IEC 60947-5-1): 0.22 A DC / 125 VDC 0.1 A DC / 250 VDC	
	Contacts capacity (resistive load)	2.5 A, 30 VDC / 250 VAC	
	External protection against short-circuit	6 A gL/gG fuse	
	Terminals (connectors)	Torque: 0.5 Nm – 4.5 in-lb Conductor section: - Solid and bare: 1 x (0.2 - 2.5 mm^2); 1 x (26 - 12 AWG) - Flexible with/without terminals: 1 x (0.2 - 2.5 mm^2); 1 x (26 - 12 AWG) Screws: M3	
Earth Leakage Sensor (ELS)	Current range	0.3 - 5 VAC	
	Insulation degree Ui	690 VAC	
	Rated operating voltage Ue	IEC 60947-4-1: 690 VAC UL 508: 600 VAC	
	Impulse voltage Uimp	6 kV	
	Frequency range	50/60 Hz	
	Application	Single-phase and three-phase	
	Window internal diameter	EL1: 35 mm EL2: 70 mm EL3: 120 mm EL4: 210 mm	
	Terminals (connectors)	Torque: 0.29 Nm – 2.6 in-lb Maximum conductor section: - Solid and bare: 1 x (0.2 - 2.5 mm^2); 1 x (22 - 14 AWG) - Flexible with/without terminals: 1 x (0.2 - 1.5 mm^2); 1 x (22 - 14 AWG) Screws: M3	

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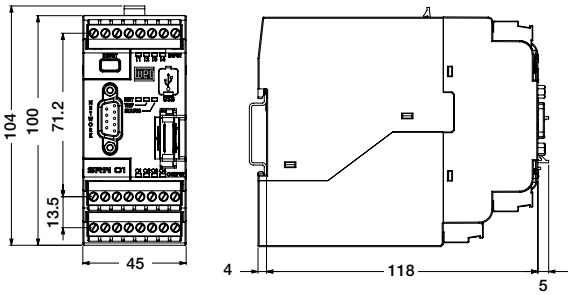
Overloads

SRW01 – Smart Relay

Dimensions – mm

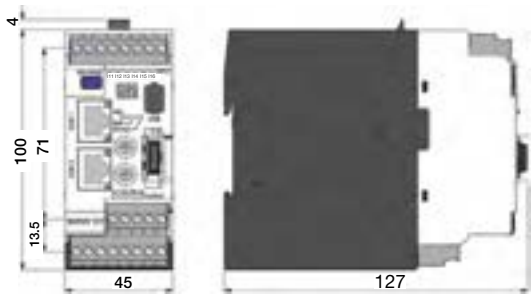
Control Unit – UC

SRW01-UC



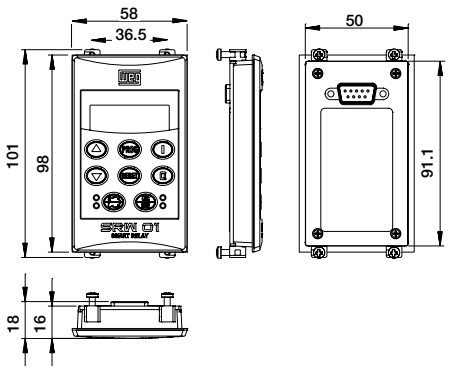
Control Unit – UC (Ethernet)

Control Unit – UC (mm)

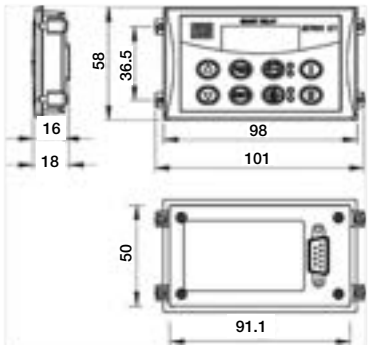


Human Machine Interface – HMI

SRW01-HMI

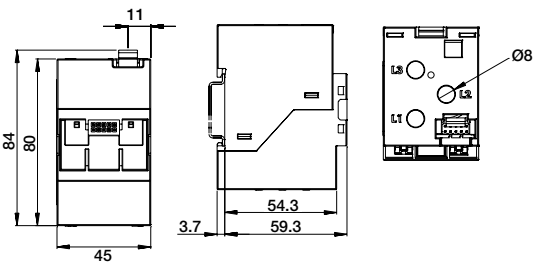


SRW01-HMI2

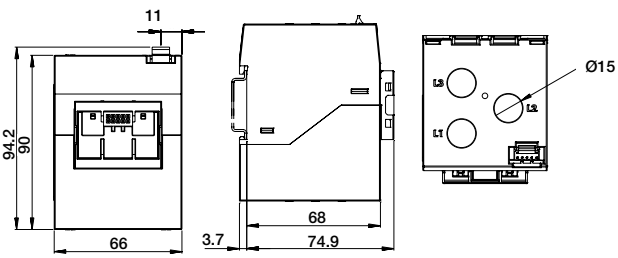


Current Measurement Unit – UMC

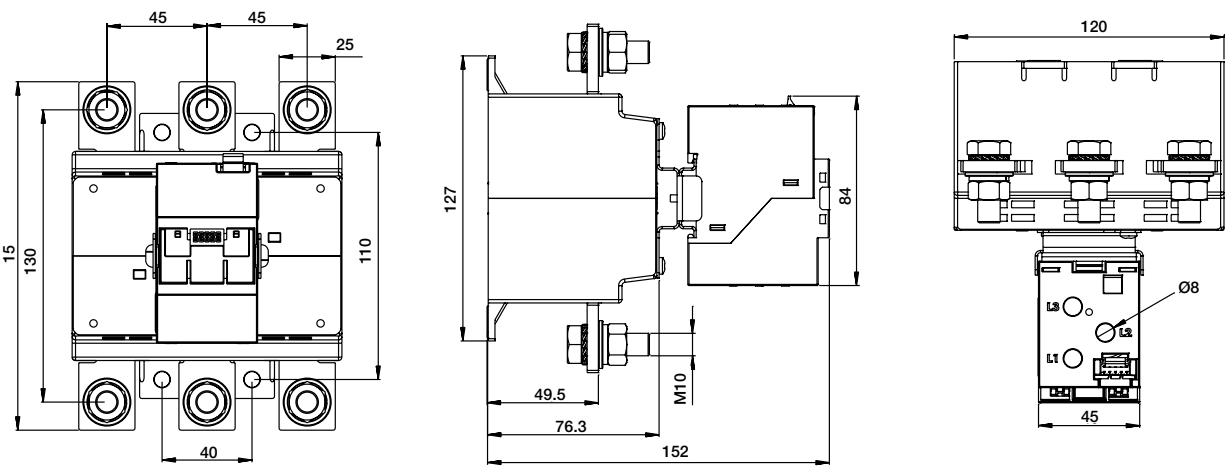
SRW01-UMC1/UMC2/UMC3



SRW01-UMC4



SRW01-UMC5



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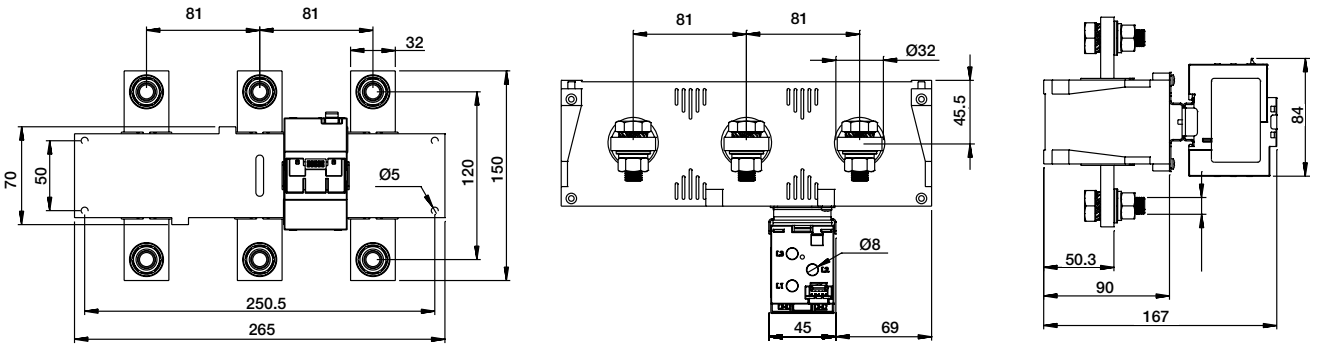
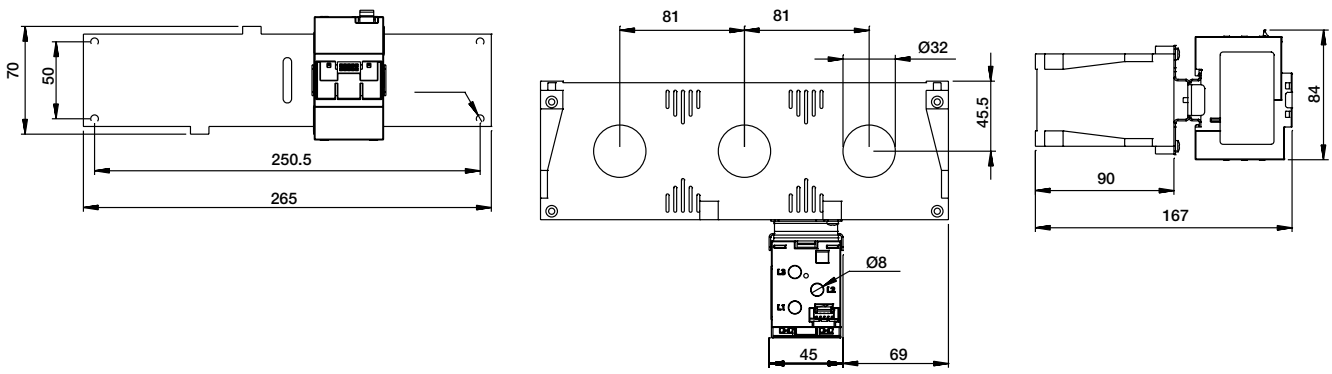
Dimensions – mm

Current Measurement Unit – UMC

SRW01-UMC6 (with busbar)

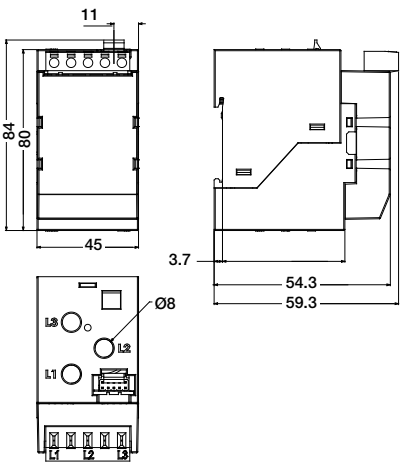


SRW01-UMC6 (without busbar)



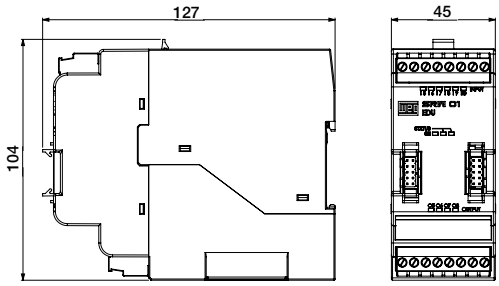
Current and Voltage Measuring Unit – UMCT

SRW01-UMCT1/UMCT2/UMCT3



Digital Expansion Unit – EDU

SRW01-EDU



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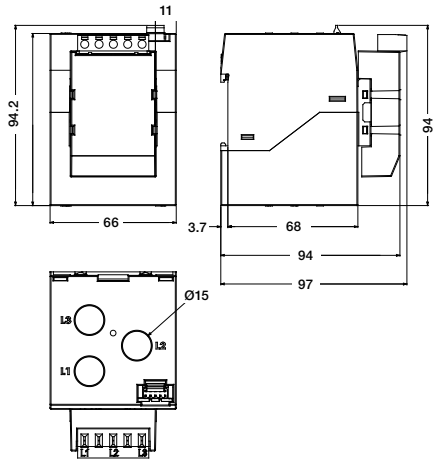
Overloads

SRW01 – Smart Relay

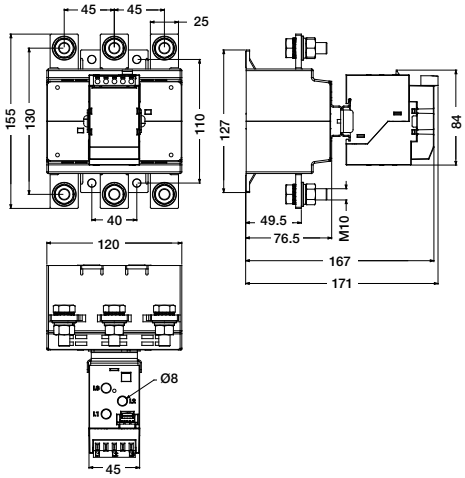
Dimensions – mm

Current and Voltage Measuring Unit – UMCT

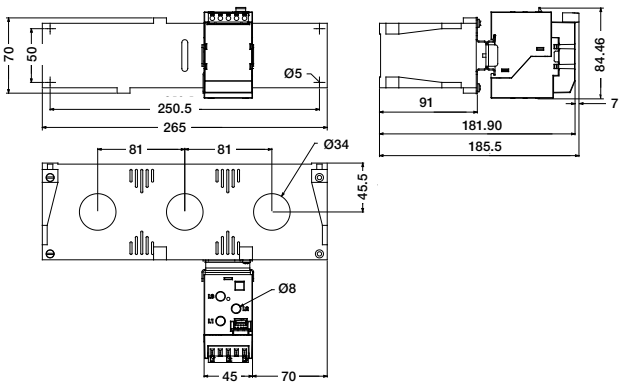
SRW01-UMCT4



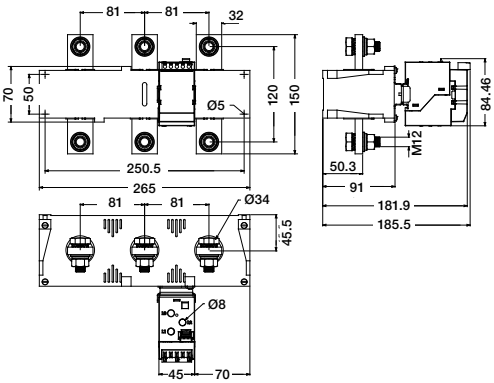
SRW01-UMCT5



SRW01-UMCT6 (without busbar)

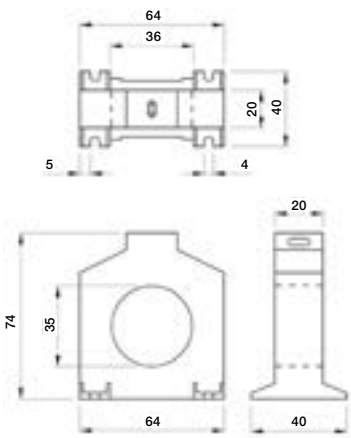


SRW01-UMCT6 (with busbar)

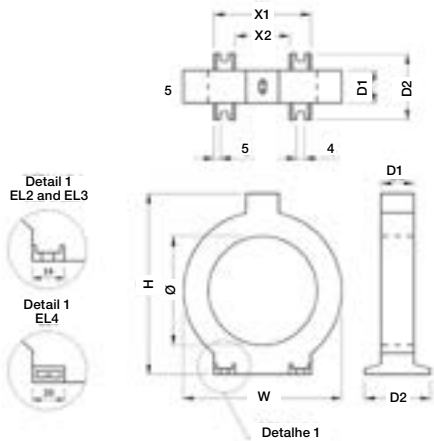


Earth Leakage Sensor (ELS)

SRW01-EL1



SRW01-EL2 / EL3 / EL4



Model	Ø	H	W	X1	X2	D1	D2
EL2	70	116	104	64	36	20	40
EL3	120	169	154	94	66	20	40
EL4	210	304	290	150	110	33	90[1)]

Notes:
1) With base metallic support.

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CPTW Series – Control Power Transformers

The WEG CPTW Series Control Power Transformers are designed to accommodate the momentary current inrush associated with electromagnetic components in industrial applications. The CPTW product line ranges from 50 to 5000 VA. The high-grade silicon steel laminations and completely encapsulated core are designed to optimize performance and meet or exceed UL, cUL, CSA, and CE standards. The CPTW line offers the quality, reliability, and uncompromising performance that you have come to expect from WEG.

UL File No. E535994

Standard Features

- Completely encapsulated coils for maximum protection against moisture, dirt, dust, and contaminants in industrial environments.
- Built-in, finger-safe terminals provide up to 30% greater terminal contact area and permit low-loss connections.
- Extra deep barriers reduce the chance of shorts from frayed leads or careless wiring.
- Phil-Slot-Hex head terminal screws designed to accept bare wire, ferrules, spade or ring lugs.
- Molded terminals result in a more robust and compact design.
- Fully threaded quarter-inch long terminal screws prevent stripping and pullouts.
- High-grade silicon steel laminations reduce energy losses through eddy currents.
- High-grade silicon steel cores are machine wound with copper magnet wire for increased electrical resistivity and durability.
- Mounting plate is heavy gauge steel to add strength and provide stability.
- All transformers up to 750 VA come standard with secondary fuse clips for quick and easy fusing.
- CPTW transformers are developed in compliance with UL, cUL, CSA, and CE standards.

Learn More Online

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Control Power Transformers

CPTW Series

How to select the proper transformer.

Transformer selection requires the following information:

- **Inrush VA** is the product of Load Voltage (V) multiplied by the current (A) that is required during circuit start-up. It is calculated by adding the Inrush VA requirements of all devices (contactors, timers, relays, pilot lights, solenoids, etc.), which will be energized together. Inrush VA requirements are best obtained from the component manufacturer.
- **Sealed VA** is also called Steady State VA and is the product of Load Voltage (V) multiplied by the current (A) after initial start-up or under normal operating conditions. It is calculated by adding the Sealed VA requirements of all electrical components that will be energized at any given time. Sealed VA requirements are best obtained from the component manufacturer.
- **Primary voltage** is the voltage available from the electrical distribution system and its operational frequency. This is the power which is connected to the transformer supply voltage terminals.
- **Secondary voltage** is the voltage required for load operation. This is the power which is available from the transformer load voltage terminals.

Once that information is known, the steps are as follows:

1. Calculate the total Inrush VA of the application by using the following formula:

$$\textbf{Application Inrush VA} = \sqrt{((\textbf{Inrush VA})^{2)} + (\textbf{Sealed VA})}$$

2. Refer to the Inrush Regulation Data Chart below. If the primary voltage is stable and does not vary by more than 5% from nominal, the 90% secondary voltage column should be used. If the primary voltage varies between 5% and 10% of the nominal voltage, the 95% secondary voltage column should be used.
3. After determining the proper secondary voltage column, read down until a value equal to or greater than the application inrush VA is found. In no case should a figure less than the application inrush VA be used.
4. Read left to the Transformer VA Rating column to determine the proper transformer rating for this application. As a final check, make sure that the Transformer VA Rating is equal to or greater than the total sealed requirements. If not, select a transformer with a VA rating equal to or greater than the total sealed VA.

Inrush Regulation Data Chart

Continuous VA Transformer Rating	Secondary Voltage		
	85%	90%	95%
50	200	167	131
75	311	257	200
100	471	377	276
150	923	716	491
200	1125	883	622
250	1944	1476	970
300	2040	1547	1020
350	3300	2400	1400
500	3191	2500	1745
750	6025	4520	2915
1000	8100	5600	3000
1500	16000	12000	6600
2000	19500	13500	7300
3000	25500	18250	10500
5000	75000	56000	33000

Notes:
- *Inrush VA assessed at 0.4 Power Factor.*
- *To comply with NEMA standards, which require all magnetic devices to operate successfully at 85% of rated voltage, the 90% secondary voltage column is most often used in selecting a transformer.*

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CPTW Catalog Number Sequence

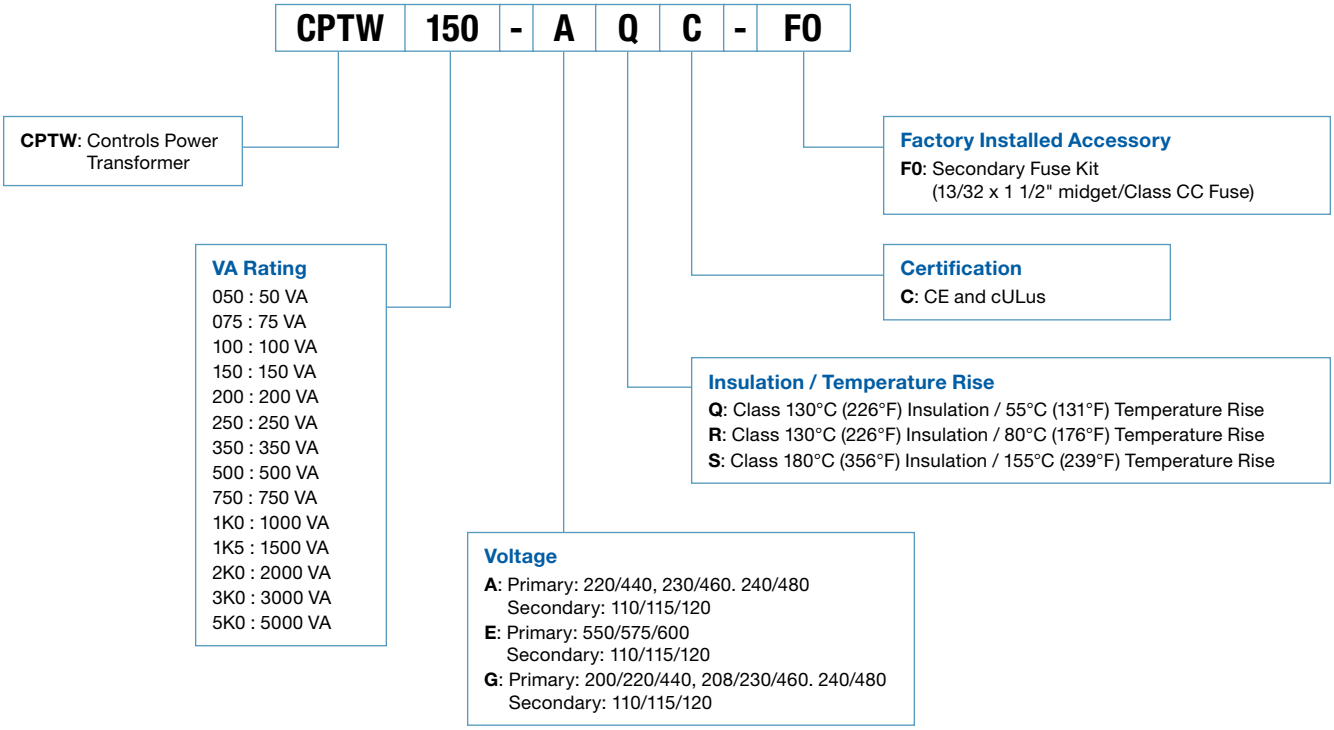

Chart intended as reference only and not to create part numbers.

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Control Power Transformers

CPTW Series

Selection Guide

Group	Primary Voltage (VAC)	Secondary Voltage (VAC)	VA	Secondary Fuse Clips Included	Catalog Number	List Price	Multiplier
A	220 / 440 230 / 460 240 / 480	110/115/120	50	Yes	CPTW050-AQC-F0	$107	Z14
			75	Yes	CPTW075-AQC-F0	$122	
			100	Yes	CPTW100-AQC-F0	$140	
			150	Yes	CPTW150-ARC-F0	$178	
			250	Yes	CPTW250-ARC-F0	$225	
			350	Yes	CPTW350-ARC-F0	$260	
			500	Yes	CPTW500-ARC-F0	$329	
			750	Yes	CPTW750-ARC-F0	$445	
			1000	No	CPTW1K0-ASC	$500	
			1500	No	CPTW1K5-ASC	$640	
			2000	No	CPTW2K0-ASC	$864	
			3000	No	CPTW3K0-ASC	$1,440	
			5000	No	CPTW5K0-ASC	$1,737	
E	550/575/600	110/115/120	50	Yes	CPTW050-EQC-F0	$120	
			75	Yes	CPTW075-EQC-F0	$145	
			100	Yes	CPTW100-EQC-F0	$148	
			150	Yes	CPTW150-ERC-F0	$204	
			250	Yes	CPTW250-ERC-F0	$259	
			350	Yes	CPTW350-ERC-F0	$280	
			500	Yes	CPTW500-ERC-F0	$397	
			750	Yes	CPTW750-ERC-F0	$563	
			1000	No	CPTW1K0-ESC	$584	
			3000	No	CPTW3K0-ESC	$1,474	
			5000	No	CPTW5K0-ESC	$1,780	
G	200/220/440 208/230/460 240/480	110/115/120	50	Yes	CPTW050-GQC-F0	$140	
			75	Yes	CPTW075-GQC-F0	$162	
			100	Yes	CPTW100-GQC-F0	$164	
			150	Yes	CPTW150-GRC-F0	$203	
			200	Yes	CPTW200-GRC-F0	$230	
			250	Yes	CPTW250-GRC-F0	$284	
			350	Yes	CPTW350-GRC-F0	$320	
			500	Yes	CPTW500-GRC-F0	$396	
			750	Yes	CPTW750-GRC-F0	$563	
			1000	No	CPTW1K0-GSC	$614	
			1500	No	CPTW1K5-GSC	$831	
			2000	No	CPTW2K0-GSC	$1,033	
			3000	No	CPTW3K0-GSC	$1,520	
			5000	No	CPTW5K0-GSC	$2,470	

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Accessories

Fuse Covers

	For Use With	Catalog Number	Description	List Price	Multiplier
	Fits any fuse block	CPTW-ACC-1401	Fuse block cover with puller	$11	Z14
	Fits any fuse clip	CPTW-ACC-2401	Fuse clip cover	$10	

Secondary Fuse Clips

	For Use With	Catalog Number	Description	List Price	Multiplier
	CPTW050...750	CPTW-ACC-2111	Secondary fuse clip (13/32" x 1 1/2" midget / Class CC fuse)	$12	Z14
	CPTW1K0...5K0	CPTW-ACC-2121	Secondary fuse clip (13/32" x 1 1/2" midget / Class CC fuse)	$12	

Secondary Fuse Block

	For Use With	Catalog Number	Description	List Price	Multiplier
	Fits all models	CPTW-ACC-2201	Single pole Secondary fuse block (Class CC)	$16	Z14

Primary Fuse Block

	For Use With	Catalog Number	Description	List Price	Multiplier
	Fits all models	CPTW-ACC-1201	Dual pole Primary fuse block (Class CC)	$23	Z14

Primary Fuse Block and Secondary Fuse Clips

	For Use With	Catalog Number	Description	List Price	Multiplier
	Fits all models	CPTW-ACC-3201	Dual pole Primary fuse block (Class CC) and Secondary fuse clip (13/32" x 1 1/2" midget)	$31	Z14

Primary Fuse Block and Secondary Fuse Block

	For Use With	Catalog Number	Description	List Price	Multiplier
	CPTW150...3K0	CPTW-ACC-3231	Dual pole Primary fuse block (Class CC) and single pole Secondary fuse block (Class CC)	$37	Z14

Terminal Covers

	For Use With	Catalog Number	Description	List Price	Multiplier
	CPTW050...350	CPTW-ACC-4312	4 Position (25 Pack)	$40	Z14
	CPTW050...350	CPTW-ACC-4412	4 Position w/ Secondary Fuse Clip (25 Pack)	$40	
	CPTW500...750	CPTW-ACC-6342	6 Position (25 Pack)	$71	
	CPTW500...750	CPTW-ACC-6442	6 Position w/ Secondary Fuse Clip (25 Pack)	$85	
	CPTW1K0...5K0	CPTW-ACC-6452	6 Position w/ Secondary Fuse Clip (25 Pack)	$85	

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Control Power Transformers

CPTW Series

Technical Data

Primary Standard Fuse Rating

	Voltage AC 50/60 Hz																
VA Rating	115	120	200	208	220	230	240	277	380	400	415	440	460	480	550	575	600
50	1.00	1.00	0.60	0.60	0.50	0.50	0.50	0.40	0.30	0.30	0.30	0.25	0.25	0.25	0.25	0.25	0.25
75	1.60	1.50	0.80	0.80	0.80	0.80	0.75	0.60	0.50	0.40	0.40	0.40	0.40	0.40	0.30	0.30	0.30
100	2.00	2.00	1.25	1.13	1.00	1.00	1.00	0.80	0.60	0.60	0.60	0.50	0.50	0.50	0.40	0.40	0.40
150	3.20	3.00	1.80	1.80	1.60	1.60	1.50	1.30	0.80	0.80	0.80	0.80	0.80	0.75	0.60	0.60	0.60
250	5.00	5.00	3.00	3.00	2.80	2.50	2.50	2.00	1.60	1.50	1.50	1.40	1.30	1.30	1.00	1.00	1.00
350	7.50	7.00	4.00	4.00	3.50	3.50	3.50	3.00	2.25	2.00	2.00	1.80	1.80	1.80	1.60	1.50	1.40
500	10.0	10.0	6.25	6.00	5.60	5.00	5.00	4.50	3.20	3.00	3.00	2.80	2.50	2.50	2.00	2.00	2.00
750	15.0	15.0	9.00	9.00	8.00	8.00	7.50	6.25	4.50	4.50	4.50	4.00	4.00	3.50	3.20	3.20	3.00
1000	20.0	20.0	12.0	12.0	10.0	10.0	10.0	9.00	6.25	6.25	6.00	5.60	5.00	5.00	4.50	4.00	4.00
1500	30.0	30.0	17.5	17.5	15.0	15.0	15.0	12.0	9.00	9.00	9.00	8.00	8.00	7.50	6.25	6.25	6.25
2000	-	-	25.0	20.0	20.0	20.0	20.0	17.5	12.0	12.0	12.0	10.0	10.0	10.0	9.00	8.00	8.00
3000	-	-	-	-	30.0	30.0	30.0	25.0	17.5	17.5	17.5	15.0	15.0	15.0	12.0	12.0	12.0
5000	-	-	-	-	-	-	-	-	30.0	30.0	30.0	25.0	25.0	25.0	20.0	20.0	20.0

Secondary Standard Fuse Rating

	Voltage AC 50/60 Hz												
VA Rating	12	23	24	25	90	95	100	110	115	120	220	230	240
50	6.25	3.50	3.20	3.20	0.80	0.80	0.80	0.75	0.70	0.60	0.30	0.30	0.30
75	10.0	5.00	5.00	5.00	1.30	1.30	1.25	1.00	1.00	1.00	0.50	0.50	0.50
100	12.0	7.00	6.25	6.25	1.80	1.60	1.60	1.50	1.40	1.30	0.75	0.70	0.60
150	15.0	10.0	10.0	10.0	2.50	2.50	2.50	2.00	2.00	2.00	1.00	1.00	1.00
250	25.0	15.0	15.0	15.0	4.50	4.00	4.00	3.50	3.50	3.20	1.80	1.80	1.60
350	-	20.0	20.0	15.0	6.25	6.00	5.60	5.00	5.00	4.50	2.50	2.50	2.25
500	-	30.0	30.0	25.0	9.00	8.00	8.00	7.50	7.00	6.25	3.50	3.50	3.20
750	-	-	-	-	12.0	12.0	12.0	10.0	10.0	10.0	5.60	5.00	5.00
1000	-	-	-	-	15.0	15.0	15.0	12.0	12.0	12.0	7.50	7.00	6.25
1500	-	-	-	-	25.0	20.0	20.0	15.0	15.0	15.0	10.0	10.0	10.0
2000	-	-	-	-	30.0	30.0	25.0	25.0	25.0	25.0	12.0	12.0	12.0
3000	-	-	-	-	-	-	-	-	-	-	15.0	15.0	15.0
5000	-	-	-	-	-	-	-	-	-	-	30.0	30.0	30.0

Primary and Secondary Protection

Fuse Sizing Is Based On NEC 4503		
Rated Secondary Current in Amps	Maximum Primary Fuse Size	Maximum Secondary Fuse
Less than 9 Amps	250% or next size smaller	167% or next size smaller
Greater than or equal to 9 Amps	250%or next size smaller	125% or next size smaller

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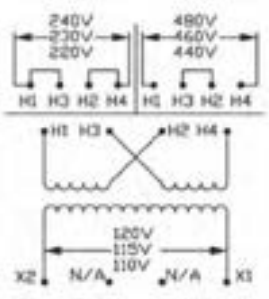
Control Power Transformers

CPTW Series

Group A

PRIMARY VOLTAGE VAC 50/60 Hz	SECONDARY VOLTAGE VAC 50/60 Hz
220/440 230/460 240/480	110/115/120

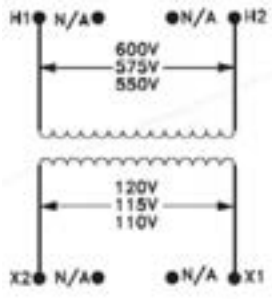


PRIMARY VOLTS	JUMPERS	PRIMARY LINE LEADS
220/230/240 440/460/480	H1-H3, H2-H4 H2-H3	H1, H4 H1, H4

SECONDARY VOLTS	CONNECTIONS	SECONDARY LINE LEADS
110/115/120	N/A	X1, X2

Group E

PRIMARY VOLTAGE VAC 50/60 Hz	SECONDARY VOLTAGE VAC 50/60 Hz
550/575/600	110/115/120

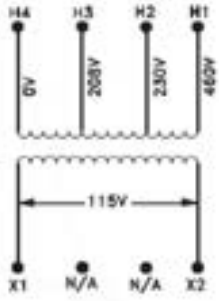


PRIMARY VOLTS	JUMPERS	PRIMARY LINE LEADS
550/575/600	N/A	H1, H2

SECONDARY VOLTS	CONNECTIONS	SECONDARY LINE LEADS
110/115/120	N/A	X1, X2

Group G

PRIMARY VOLTAGE VAC 50/60 Hz	SECONDARY VOLTAGE VAC 50/60 Hz
200/220/440 208/230/460 240/480	110/115/120

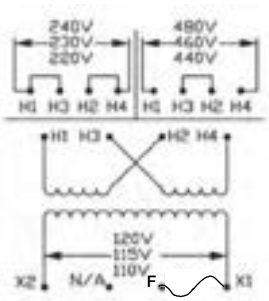


PRIMARY VOLTS	JUMPERS	PRIMARY LINE LEADS
200/208 220/230/240 440/460/480	N/A	H3, H4 H2, H4 H1, H4

SECONDARY VOLTS	CONNECTIONS	SECONDARY LINE LEADS
110/115/120	N/A	X1, X2

Group A With Secondary Fusing

PRIMARY VOLTAGE VAC 50/60 Hz	SECONDARY VOLTAGE VAC 50/60 Hz
220/440 230/460 240/480	110/115/120

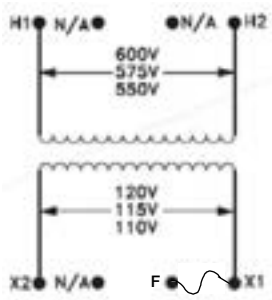


PRIMARY VOLTS	JUMPERS	PRIMARY LINE LEADS
220/230/240 440/460/480	H1-H3, H2-H4 H2-H3	H1, H4 H1, H4

SECONDARY VOLTS	CONNECTIONS	SECONDARY LINE LEADS
110/115/120	N/A	F, X2

Group E With Secondary Fusing

PRIMARY VOLTAGE VAC 50/60 Hz	SECONDARY VOLTAGE VAC 50/60 Hz
550/575/600	110/115/120

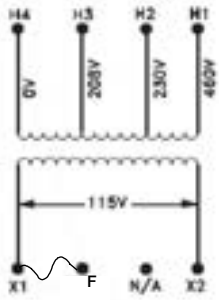


PRIMARY VOLTS	JUMPERS	PRIMARY LINE LEADS
550/575/600	N/A	H1, H2

SECONDARY VOLTS	CONNECTIONS	SECONDARY LINE LEADS
110/115/120	N/A	F, X2

Group G With Secondary Fusing

PRIMARY VOLTAGE VAC 50/60 Hz	SECONDARY VOLTAGE VAC 50/60 Hz
200/220/440 208/230/460 240/480	110/115/120



PRIMARY VOLTS	JUMPERS	PRIMARY LINE LEADS
200/208 220/230/240 440/460/480	N/A	H3, H4 H2, H4 H1, H4

SECONDARY VOLTS	CONNECTIONS	SECONDARY LINE LEADS
110/115/120	N/A	F, X2

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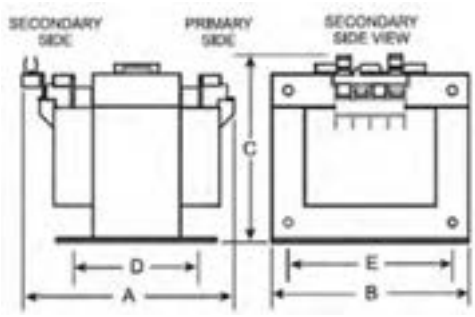
Control Power Transformers

CPTW Series

Dimensions – Inch

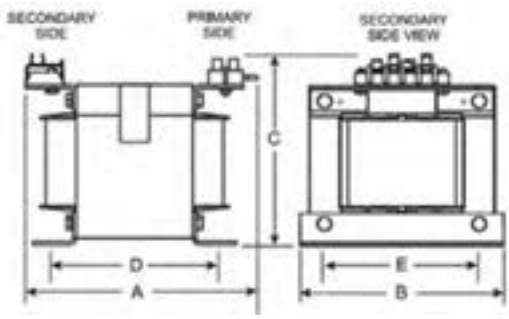
Group A Frame Sizes

50VA - 350VA



Images are a general representation of a CPTW Control Transformer without fusing accessories or jumper links.[1)]

500VA-5000VA



Transformers 50VA – 350VA have four terminals per side. Transformers 500VA – 5000 VA have six terminals per side.

Group A

Primary	**220/440, 230/460, 240/480**
Secondary	**110/115/120**

Approximate Dimensions (In) and Weight (lbs)

VA Rating	Catalog Number	Maximum Depth (A)	Maximum Width (B)	Maximum Height (C)	Mounting Depth (D)	Mounting Width (E)	Mounting Hole Depth	Mounting Hole Width	Temp Rise	Insulation	Est. Shipping Weight
50	CPTW050-AQC-F0	3.32	3.00	2.79	2.00	2.50	0.20	0.41	55°C (131°F)	130°C (266°F)	2.60
75	CPTW075-AQC-F0	3.82	3.00	2.79	2.50	2.50	0.20	0.41	55°C (131°F)	130°C (266°F)	3.50
100	CPTW100-AQC-F0	3.78	3.38	3.10	2.38	2.81	0.20	0.41	55°C (131°F)	130°C (266°F)	4.20
150	CPTW150-ARC-F0	4.27	3.75	3.41	2.88	3.13	0.20	0.41	80°C (176°F)	130°C (266°F)	6.70
250	CPTW250-ARC-F0	4.55	4.50	4.04	2.88	3.75	0.20	0.41	80°C (176°F)	130°C (266°F)	10.0
350	CPTW350-ARC-F0	5.28	4.50	4.04	3.75	3.75	0.20	0.41	80°C (176°F)	130°C (266°F)	13.6
500	CPTW500-ARC-F0	5.75	5.25	4.66	4.25	4.38	0.31	1.06	80°C (176°F)	130°C (266°F)	15.8
750	CPTW750-ARC-F0	7.00	5.25	4.66	5.38	4.38	0.31	1.06	80°C (176°F)	130°C (266°F)	28.1
1000	CPTW1K0-ASC	6.61	7.00	5.65	4.00	6.13	0.31	1.06	115°C (239°F)	180°C (356°F)	29.8
1500	CPTW1K5-ASC	7.62	7.00	5.65	4.50	6.13	0.31	1.06	115°C (239°F)	180°C (356°F)	30.0
2000	CPTW2K0-ASC	8.37	7.00	5.65	5.13	6.13	0.31	1.06	115°C (239°F)	180°C (356°F)	38.0
3000	CPTW3K0-ASC	7.82	9.00	7.62	4.25	6.50	0.44	1.00	115°C (239°F)	180°C (356°F)	53.0
5000	CPTW5K0-ASC	9.06	9.00	7.62	7.25	7.50	0.44	1.00	115°C (239°F)	180°C (356°F)	89.0

Notes:
1) Jumper Link and Fuse Clip height not included.
2) Add 5/16" to the Depth (A) when fuse clips are included (50 thru 350VA).
3) Add 1 3/8" to the Height (D) when fuse block is included (1, 2, and 3 poles) (50 thru 350VA).
4) Add 1/2" to the Height (D) when fuse block is included (1, 2, and 3 poles) (500 thru 5000VA).

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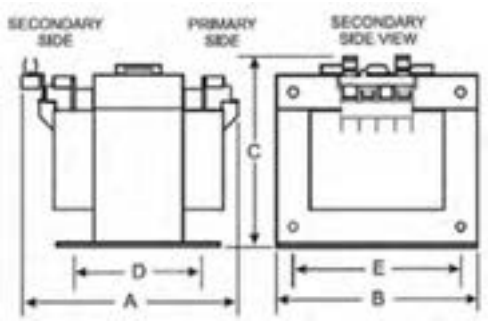
Dimensions – Inch

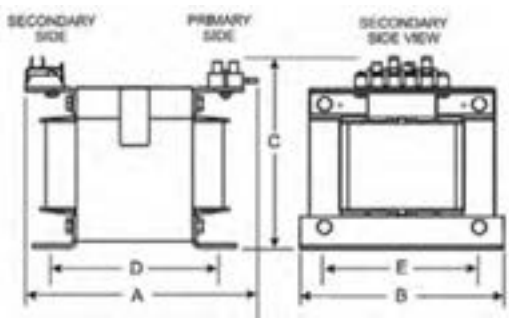
Group E Frame Sizes

50VA - 350VA



Images are a general representation of a CPTW Control Transformer without fusing accessories or jumper links.

500VA-5000VA



Transformers 50VA - 350VA have four terminals per side.
Transformers 500VA - 5000VA have six terminals per side.

Group E

Primary	**550/575/600**
Secondary	**110/115/120**

Approximate Dimensions (In) and Weight (lbs)

VA Rating	Catalog Number	Maximum Depth (A)	Maximum Width (B)	Maximum Height (C)	Mounting Depth (D)	Mounting Width (E)	Mounting Hole Depth	Mounting Hole Width	Temp Rise	Insulation	Est. Shipping Weight
50	CPTW050-EQC-F0	3.23	3.00	2.79	2.00	2.50	0.20	0.41	55°C (131°F)	130°C (266°F)	2.60
75	CPTW075-EQC-F0	3.73	3.00	2.79	2.50	2.50	0.20	0.41	55°C (131°F)	130°C (266°F)	3.50
100	CPTW100-EQC-F0	3.69	3.38	3.11	2.38	2.81	0.20	0.41	55°C (131°F)	130°C (266°F)	4.20
150	CPTW150-ERC-F0	4.17	3.75	3.42	2.88	3.13	0.20	0.41	80°C (176°F)	130°C (266°F)	6.70
250	CPTW250-ERC-F0	4.47	4.50	4.04	2.88	3.75	0.20	0.41	80°C (176°F)	130°C (266°F)	10.0
350	CPTW350-ERC-F0	5.19	4.50	4.04	3.75	3.75	0.20	0.41	80°C (176°F)	130°C (266°F)	13.6
500	CPTW500-ERC-F0	5.17	5.25	4.66	4.25	4.38	0.31	1.06	80°C (176°F)	130°C (266°F)	15.9
750	CPTW750-ERC-F0	6.42	5.25	4.66	5.38	4.38	0.31	1.06	80°C (176°F)	130°C (266°F)	28.1
1000	CPTW1K0-ESC	6.21	7.00	5.65	4.00	6.13	0.31	1.06	115°C (239°F)	180°C (356°F)	29.8
3000	CPTW3K0-ESC	7.82	9.00	7.62	4.25	6.50	0.44	1.00	115°C (239°F)	180°C (356°F)	53.0
5000	CPTW5K0-ESC	9.06	9.00	7.62	7.25	7.50	0.44	1.00	115°C (239°F)	180°C (356°F)	89.0

Notes:
** Jumper Link and Fuse Clip height not included.*
*** Add 5/16" to the Depth (A) when fuse clips are included (50 thru 350VA).*
**** Add 1 3/8" to the Height (D) when fuse block is included (1, 2, and 3 poles) (50 thru 350VA).*
***** Add 1/2" to the Height (D) when fuse block is included (1, 2, and 3 poles) (500 thru 5000VA).*

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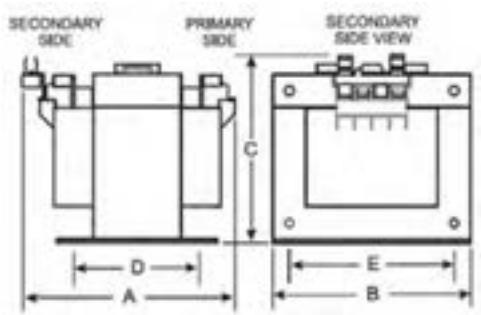
Control Power Transformers

CPTW Series

Dimensions – Inch

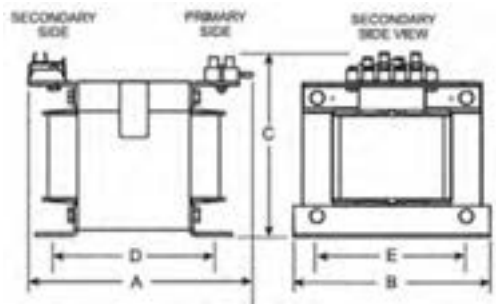
Group G Frame Sizes

50VA - 350VA



Images are general representation of a CPTW Control Transformer without fusing accessories or jumper links.

500VA - 5000VA



Transformers 50VA - 350VA have 4 terminals per side.
Transformers 500VA - 5000VA have 6 terminals per side

Group G

Primary	**200/220/440, 208/230/460, 240/480**
Secondary	**110/115/120**

Approximate Dimensions (In) and Weight (lbs)

VA Rating	Part #	Max Depth (A)	Max Width (B)	Max Height (C)	Mounting Depth (D)	Mounting Width (E)	Mounting Hole Depth	Mounting Hole Width	Temp Rise	Insulation	Est. Shipping Weight
50	CPTW050-GQC-F0	3.23	3.00	2.79	2.00	2.50	0.20	0.41	55°C (131°F)	130°C (266°F)	2.60
75	CPTW075-GQC-F0	3.73	3.00	2.79	2.50	2.50	0.20	0.41	55°C (131°F)	130°C (266°F)	3.50
100	CPTW100-GQC-F0	3.69	3.38	3.11	2.38	2.81	0.20	0.41	55°C (131°F)	130°C (266°F)	4.20
150	CPTW150-GRC-F0	4.17	3.75	3.42	2.88	3.13	0.20	0.41	80°C (176°F)	130°C (266°F)	6.70
200	CPTW200-GRC-F0	3.96	4.50	4.04	2.88	3.75	0.20	0.41	80°C (176°F)	130°C (266°F)	8.50
250	CPTW250-GRC-F0	4.47	4.50	4.04	3.25	3.75	0.20	0.41	80°C (176°F)	130°C (266°F)	10.0
350	CPTW350-GRC-F0	5.19	4.50	4.04	3.75	3.75	0.20	0.41	80°C (176°F)	130°C (266°F)	13.6
500	CPTW500-GRC-F0	5.17	5.25	4.66	4.75	4.38	0.31	1.06	80°C (176°F)	130°C (266°F)	16.0
750	CPTW750-GRC-F0	6.42	5.25	4.66	5.38	4.38	0.31	1.06	80°C (176°F)	130°C (266°F)	28.1
1000	CPTW1K0-GSC	6.21	7.00	5.65	4.00	6.13	0.31	1.06	115°C (239°F)	180°C (356°F)	29.8
1500	CPTW1K5-GSC	7.23	7.00	5.65	4.50	6.13	0.31	1.06	115°C (239°F)	180°C (356°F)	30.0
2000	CPTW2K0-GSC	7.98	7.00	5.43	5.13	6.13	0.31	1.06	115°C (239°F)	180°C (356°F)	38.0
3000	CPTW3K0-GSC	7.50	9.00	7.62	4.25	6.50	0.44	1.00	115°C (239°F)	180°C (356°F)	53.0
5000	CPTW5K0-GSC	9.00	9.00	7.62	7.25	7.50	0.44	1.00	115°C (239°F)	180°C (356°F)	89.0

Notes:
** Jumper Link and Fuse Clip height not included.*
*** Add 5/16" to the Depth (A) when fuse clips are included (50 thru 350VA).*
**** Add 1 3/8" to the Height (D) when fuse block is included (1, 2, and 3 poles) (50 thru 350VA).*
***** Add 1/2" to the Height (D) when fuse block is included (1, 2, and 3 poles) (500 thru 5000VA).*

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Enclosed Starters Series

Operation and Protection of Motors up to 600 HP at 460 VAC (800A)

WEG Enclosed Starters Series were designed to meet the requirements and flexibility frequently demanded in industrial applications. Featuring components that meet IEC design standards and UL horsepower ratings, WEG enclosed starters are UL508A approved and cULus certified. This means your panels will fulfill the rigorous requirements of UL508A and will have the quality and performance as for all WEG products.

Standard or Custom

By having most of the processes in WEG facilities, we can manufacture not only the enclosed starters listed on this catalog, but also any other custom panel your application may require. Our engineers will work together with you to provide the perfect solution for your application.

Perfect Solution

WEG offers options for both: Full Voltage Non-Reversing Non-Combination Starters and Full Voltage Non-Reversing Combination Starters up to 250 HP at 460 VAC.

WEG's UL508A panel shops can manufacture any configuration of Non-Combination or Combination Starters for any low voltage horsepower ratings. Some examples are listed below:

- Enclosed contactors
- Full voltage reversing starters
- Reduced voltage magnetic starters (part-winding, wye-delta)
- Reduced voltage solid-state starters
- Multi-speed starters
- Explosion proof starters

Whenever you need a reliable product to control and protect your application, WEG field specialists can help you find the best solution.

New Concepts

Smaller size components allow selection of smaller enclosures which translates to cost savings. A wide range of ratings and frames allow the components to be more closely matched to your application. Our overload relays provide phase loss sensitivity, ambient temperature compensated for -4°F to +140°F (eliminating the need for additional heaters), and automatic reset for remote applications.

A wide range of industrial applications are covered: Pumps, Industrial Washing Machines, Compressors, Blowers, Cutting Machines, Conveyors, Lumber Processing and many others.

Learn More Online

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Enclosed Starters

Non-Combination Starters

Product Line Overview

Non-Combination Starters

Model		ESW	PESW	ESWX-M16	ESWX-M	ESWX
Maximum horsepower rating at 460 VAC 60 Hz	HP	75	75	10	75	75
Maximum rated current Imax (Iu)	A	105	105	16	100	105
Rated operational voltage	V	600	600	600	600	600
Enclosure type		Metallic Type 1	Non-Metallic Type 4X	Cast Aluminum NEMA 7/9 NEMA 4X	Cast Aluminum Type 7/9	Cast Aluminum Type 7/9
Protections Provided						
Motor disconnect				✓	✓	
Motor branch short-circuit				✓	✓	
Motor controller		✓	✓	✓	✓	✓
Motor overload		✓	✓	✓	✓	✓

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Product Line Overview

Combination Starters

Model		ESWC	ESWE
Maximum horsepower rating at 460 VAC 60 Hz	HP	250	20
Maximum rated current Imax (Iu)	A	300	32
Rated operational voltage	V	600	600
Enclosure type		Metallic Type 1 Type 3R Type 4 / 12	Non-Metallic Type 4X
Protections Provided			
Motor disconnect		✓	✓
Motor branch short-circuit		✓	✓
Motor controller		✓	✓
Motor overload		✓	✓

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ESW/PESW Series – Non-Combination Starters

WEG offers non-reversing and non-combination magnetic starters up to 75 HP at 460 VAC (105 A). Featuring WEG contactors and overload relays, the magnetic starters are ideal to protect and operate motors, ensuring smooth operation year-after year. The ESW series starters are housed in a metallic Type 1 enclosure and the PESW series are enclosed in a non-metallic Type 4X housing.

WEG ESW and PESW starters are pre-wired from the factory and recommended for all single- and three-phase applications where magnetic starters can be applied.

Standard Features

- High horsepower ratings in four compact sizes
- Fast acceleration and high initial torque
- Bimetallic overload relays – class 10
- Adjustable trip current
- Ambient temperature compensated
- Phase-loss sensitivity protection
- Selectable manual or automatic RESET
- Electrically isolated NO and NC auxiliary contacts
- Easy to install and setup

c UL US

UL File No. E202315

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ESW Catalog Number Sequence

ESW	(*)	-	B	18	D15	A	-	R32

ESW Enclosed Starter Non-Combination NEMA1
Blank: Three-Phase
S: Single-Phase

Contactor Series
Blank: CWM
B: CWB

Contactor Frame Size
9: 9A
12: 12A
18: 18A
25: 25A
32: 32A
38: 38A
40: 40A
50: 50A
65: 65A
80: 80A
95: 95A
105: 105A

Coil Voltage
CWB Contactor:
D15: 120 VAC
V24: 208-240 VAC
D39: 480 VAC
CWM Contactor:
V18: 120 VAC
V24: 208-240 VAC
V47: 480 VAC

Control Devices
A: START STOP + RESET
C: ON OFF Selector Switch + RESET
E: RESET Only
H: HOA + RESET

Overload Current Setting

Three-Phase	Range	Single-Phase
R23	0.8 - 1.2A	RM23
R24	1.2 - 1.8A	RM24
R25	1.8 - 2.8A	RM25
R26	2.8 - 4A	RM26
R27	4 - 6.3A	RM27
R28	5.6 - 8A	RM28
R29	7 - 10A	RM29
R30	8 - 12.5A	RM30
R32	11 - 17A	RM32
R33	15 - 23A	RM33
R34	22 - 32A	RM34
R35	32 - 40A	RM35
R70	25 - 40A	RM70
R71	32 - 50A	RM71
R72	40 - 57A	
R73	50 - 63A	
R74	57 - 70A	
R75	63 - 80A	
R43	63 - 80A	
R44	75 - 97A	
R45	90 - 112A	

Chart intended as reference only and not to create part numbers.

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Enclosed Starters

ESW Series - Non-Combination Starters

NEMA 1 Enclosure – Three Phase

ESW Series – Non-combination Across The Line Starter
Three -Phase – Enclosure Type-1

Max UL Horsepower				Box	Setting Range (A)	Coil Voltage (V)	RESET Only		START STOP + RESET		Multiplier New (Old)
200V	230V	460V	575V				Catalog Number	List Price	Catalog Number	List Price	
-	-	1/2	1/2	M04	0.8 - 1.2	120	ESW-B9D15E-R23	$157	ESW-B9D15A-R23	$210	Z3E (Z3)
						208-240	ESW-B9V24E-R23		ESW-B9V24A-R23		
						480	ESW-B9D39E-R23		ESW-B9D39A-R23		
-	-	3/4	1	M04	1.2 - 1.8	120	ESW-B9D15E-R24	$157	ESW-B9D15A-R24	$210	
						208-240	ESW-B9V24E-R24		ESW-B9V24A-R24		
						480	ESW-B9D39E-R24		ESW-B9D39A-R24		
1/2	1/2	1	2	M04	1.8 - 2.8	120	ESW-B9D15E-R25	$157	ESW-B9D15A-R25	$210	
						208-240	ESW-B9V24E-R25		ESW-B9V24A-R25		
						480	ESW-B9D39E-R25		ESW-B9D39A-R25		
3/4	3/4	2	3	M04	2.8 - 4.0	120	ESW-B9D15E-R26	$157	ESW-B9D15A-R26	$210	
						208-240	ESW-B9V24E-R26		ESW-B9V24A-R26		
						480	ESW-B9D39E-R26		ESW-B9D39A-R26		
1	1 1/2	3	5	M04	4.0 - 6.3	120	ESW-B9D15E-R27	$157	ESW-B9D15A-R27	$210	
						208-240	ESW-B9V24E-R27		ESW-B9V24A-R27		
						480	ESW-B9D39E-R27		ESW-B9D39A-R27		
2	2	5	5	M04	5.6 - 8.0	120	ESW-B9D15E-R28	$157	ESW-B9D15A-R28	$210	
						208-240	ESW-B9V24E-R28		ESW-B9V24A-R28		
						480	ESW-B9D39E-R28		ESW-B9D39A-R28		
2	3	5	7 1/2	M04	7.0 - 10	120	ESW-B9D15E-R29	$157	ESW-B9D15A-R29	$210	
						208-240	ESW-B9V24E-R29		ESW-B9V24A-R29		
						480	ESW-B9D39E-R29		ESW-B9D39A-R29		
3	3	7 1/2	10	M04	8.0 - 12.5	120	ESW-B12D15E-R30	$174	ESW-B12D15A-R30	$227	
						208-240	ESW-B12V24E-R30		ESW-B12V24A-R30		
						480	ESW-B12D39E-R30		ESW-B12D39A-R30		
3	5	10	15	M04	11 - 17	120	ESW-B18D15E-R32	$188	ESW-B18D15A-R32	$241	
						208-240	ESW-B18V24E-R32		ESW-B18V24A-R32		
						480	ESW-B18D39E-R32		ESW-B18D39A-R32		
5	7 1/2	15	15	M04	15 - 23	120	ESW-B25D15E-R33	$223	ESW-B25D15A-R33	$276	
						208-240	ESW-B25V24E-R33		ESW-B25V24A-R33		
						480	ESW-B25D39E-R33		ESW-B25D39A-R33		
10	10	20	25	M04	22 - 32	120	ESW-B32D15E-R34	$245	ESW-B32D15A-R34	$298	
						208-240	ESW-B32V24E-R34		ESW-B32V24A-R34		
						480	ESW-B32D39E-R34		ESW-B32D39A-R34		
10	-	25	-	M04	32 - 40	120	ESW-B38D15E-R35	$292	ESW-B38D15A-R35	$345	
						208-240	ESW-B38V24E-R35		ESW-B38V24A-R35		
						480	ESW-B38D39E-R35		ESW-B38D39A-R35		
10	10	20	25	M06	25 - 40	120	ESW-B40D15E-R70	$336	ESW-B40D15A-R70	$385	
						208-240	ESW-B40V24E-R70		ESW-B40V24A-R70		
						480	ESW-B40D39E-R70		ESW-B40D39A-R70		
10	15	30	40	M06	32 - 50	120	ESW-B50D15E-R71	$350	ESW-B50D15A-R71	$403	
						208-240	ESW-B50V24E-R71		ESW-B50V24A-R71		
						480	ESW-B50D39E-R71		ESW-B50D39A-R71		
15	20	40	50	M06	40 - 57	120	ESW-B65D15E-R72	$375	ESW-B65D15A-R72	$428	
						208-240	ESW-B65V24E-R72		ESW-B65V24A-R72		
						480	ESW-B65D39E-R72		ESW-B65D39A-R72		
15	20	40	50	M06	50 - 63	120	ESW-B65D15E-R73	$400	ESW-B65D15A-R73	$450	
						208-240	ESW-B65V24E-R73		ESW-B65V24A-R73		
						480	ESW-B65D39E-R73		ESW-B65D39A-R73		
20	25	50	-	M06	57 - 70	120	ESW-B80D15E-R74	$421	ESW-B80D15A-R74	$474	
						208-240	ESW-B80V24E-R74		ESW-B80V24A-R74		
						480	ESW-B80D39E-R74		ESW-B80D39A-R74		
-	25	50	-	M06	63 - 80	120	ESW-B80D15E-R75	$448	ESW-B80D15A-R75	$498	
						208-240	ESW-B80V24E-R75		ESW-B80V24A-R75		
						480	ESW-B80D39E-R75		ESW-B80D39A-R75		
25	30	60	75	M08	63 - 80	120	ESW-95V18E-R43	$876	ESW-95V18A-R43	$929	
						208-240	ESW-95V24E-R43		ESW-95V24A-R43		
						480	ESW-95V47E-R43		ESW-95V47A-R43		
30	30	75	75	M08	75 - 97	120	ESW-105V18E-R44	$975	ESW-105V18A-R44	$1,028	
						208-240	ESW-105V24E-R44		ESW-105V24A-R44		
						480	ESW-105V47E-R44		ESW-105V47A-R44		
30	40	75	-	M08	90 - 112	120	ESW-105V18E-R45	$975	ESW-105V18A-R45	$1,028	
						208-240	ESW-105V24E-R45		ESW-105V24A-R45		
						480	ESW-105V47E-R45		ESW-105V47A-R45		

Notes:
• 3-Phase starters can be wired for single-phase applications (see page 291 for single-phase conversion diagram).

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NEMA 1 Enclosure – Single Phase

ESWS Series – Non-combination Across The Line Starter – Non Reversing Single-Phase – Enclosure Type-1

Max UL Horsepower		Box	Setting Range (A)	Coil Voltage (V)	RESET only		START STOP + RESET		Multiplier New (Old)
115V	230V				Catalog Number	List Price	Catalog Number	List Price	
_	_	M04	0.8 - 1.2	120	ESWS-B9D15E-RM23	$135	ESWS-B9D15A-RM23	$188	Z3E (Z3)
				208-240	ESWS-B9V24E-RM23		ESWS-B9V24A-RM23		
_	1/10	M04	1.2 - 1.8	120	ESWS-B9D15E-RM24	$135	ESWS-B9D15A-RM24	$188	
				208-240	ESWS-B9V24E-RM24		ESWS-B9V24A-RM24		
_	1/6	M04	1.8 - 2.8	120	ESWS-B9D15E-RM25	$135	ESWS-B9D15A-RM25	$188	
				208-240	ESWS-B9V24E-RM25		ESWS-B9V24A-RM25		
1/8	1/3	M04	2.8 - 4.0	120	ESWS-B9D15E-RM26	$135	ESWS-B9D15A-RM26	$188	
				208-240	ESWS-B9V24E-RM26		ESWS-B9V24A-RM26		
1/4	1/2	M04	4.0 - 6.3	120	ESWS-B9D15E-RM27	$135	ESWS-B9D15A-RM27	$188	
				208-240	ESWS-B9V24E-RM27		ESWS-B9V24A-RM27		
1/3	1	M04	5.6 - 8.0	120	ESWS-B9D15E-RM28	$135	ESWS-B9D15A-RM28	$188	
				208-240	ESWS-B9V24E-RM28		ESWS-B9V24A-RM28		
1/2	1 1/2	M04	7.0 - 10	120	ESWS-B9D15E-RM29	$135	ESWS-B9D15A-RM29	$188	
				208-240	ESWS-B9V24E-RM29		ESWS-B9V24A-RM29		
1/2	2	M04	8.0 - 12.5	120	ESWS-B12D15E-RM30	$161	ESWS-B12D15A-RM30	$214	
				208-240	ESWS-B12V24E-RM30		ESWS-B12V24A-RM30		
3/4	2	M04	10 - 15	120	ESWS-B18D15E-RM31	$170	ESWS-B18D15A-RM31	$223	
				208-240	ESWS-B18V24E-RM31		ESWS-B18V24A-RM31		
1	3	M04	11 - 17	120	ESWS-B18D15E-RM32	$170	ESWS-B18D15A-RM32	$223	
				208-240	ESWS-B18V24E-RM32		ESWS-B18V24A-RM32		
1 1/2	3	M04	15 - 23	120	ESWS-B25D15E-RM33	$180	ESWS-B25D15A-RM33	$233	
				208-240	ESWS-B25V24E-RM33		ESWS-B25V24A-RM33		
2	5	M04	22 - 32	120	ESWS-B32D15E-RM34	$230	ESWS-B32D15A-RM34	$276	
				208-240	ESWS-B32V24E-RM34		ESWS-B32V24A-RM34		
3	7 1/2	M04	32 - 40	120	ESWS-B38D15E-RM35	$274	ESWS-B38D15A-RM35	$327	
				208-240	ESWS-B38V24E-RM35		ESWS-B38V24A-RM35		
3	7 1/2	M06	25 - 40	120	ESWS-B40D15E-RM70	$312	ESWS-B40D15A-RM70	$394	
				208-240	ESWS-B40V24E-RM70		ESWS-B40V24A-RM70		
3	10	M06	32 - 50	120	ESWS-B50D15E-RM71	$330	ESWS-B50D15A-RM71	$423	
				208-240	ESWS-B50V24E-RM71		ESWS-B50V24A-RM71		

Notes:
- *OLR must be set at 115% of motor FLA.*
- *ESWS – Single-phase version – assembled with 2-pole contactor and 2-pole overload relays.*

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Enclosed Starters

ESW Series - Non-Combination Starters

Field Mod Kits for ESW/ESWS Series

Accessories	Field Kit Medications				
Description	Structure		Catalog Number	List Price	Multiplier New (Old)
	Top	Bottom			
No pilot device metal brackets – 2 x 22 mm holes w/plugs	PLUG	PLUG	KESWPP	$25	Z3E (Z3)
START STOP pushbutton	PLUG	START - STOP	KESWPS	$80	
HAND-OFF-AUTO selector switch	HAND - OFF - AUTO	PLUG	KESWHP	$80	
OFF-ON selector switch	OFF - ON	PLUG	KESWFP	$80	
E-STOP	PLUG	E-STOP	KESWPE	$80	

KESWPP

KESWPS

KESWHP

KESWFP

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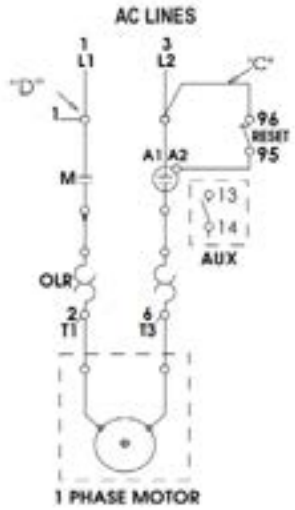
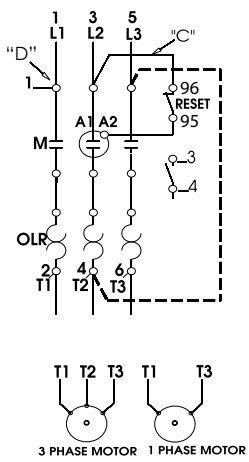
Wiring Diagram

Single-Phase Starter



Three-Phase Starter



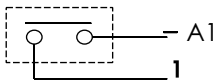
Conversion to single-phase, add jumper wire from L3 to T2 (follow dotted line connection above)

Separate Control

For separate control, remove wires “C” and “D” if supplied and connect separate control lines to terminal Nº 96 on the overload relay and to terminal Nº _3 on the auxiliary Contact block (for 3-wire control) or to the contactor coil Nº A1 (for 2-wire control).

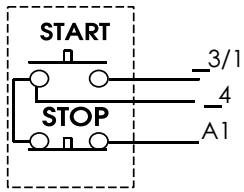
Pilot Devices

2-Wire Control

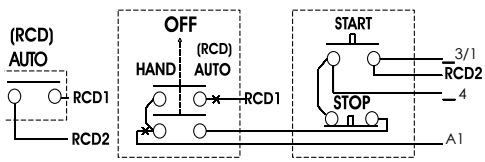


NOT FOR USE WITH AUTO RESET OL RELAYS.

3-Wire Control



Hand-Off-Auto Wire Control (for ESW series only)



Dimensions

Provision for Cable Gland Fitting	Standard			
	Top	Bottom	Side	Back
Box M04	2x (1/2" or 3/4")	2x (1/2" or 3/4")	4x (1/2" or 3/4")	2x (1/2" or 3/4")
	1x (3/4" or 1")	1x (3/4" or 1")	-	-
Box M06	1x (1/2" or 3/4")	1x (1/2" or 3/4")	3x (1/2" or 3/4")	-
	2x (1" or 1 1/4")	2x (1" or 1 1/4")	4x (1" or 1 1/4")	-
Box M08	1x (1")	1x (1")	1x (1")	1x (1")
	1x (1 1/2")	1x (1 1/2")	4x (3/4")	-

Dimensions (approx. inches)				
Enclosed Starters	Enclosure Size			
	BOX	H	W	D
ESW(S)-B9, B12, B18, B25, B32, B38	M04	9.5	5.5	5.0
ESW(S)-B40, B50, B65, B80	M06	13.0	7.5	5.6
ESW 95, 105	M08	17.8	9.5	6.7

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Enclosed Starters

PESW Series - Non-Combination Starters

PESW Catalog Number Sequence

PESW	(*)	-	B	18	D15	AX	-	R32

PESW Enclosed Starter Non-Combination NEMA4X
Blank: Three-Phase
S: Single-Phase

Contactor Series
Blank: CWM
B: CWB

Contactor Frame Size
9: 9A
12: 12A
18: 18A
25: 25A
32: 32A
38: 38A
40: 40A
50: 50A
65: 65A
80: 80A
95: 95A
105: 105A

Coil Voltage
CWB Contactor:
D15: 120 VAC
V24: 208-240 VAC
D39: 480 VAC
CWM Contactor:
V18: 120 VAC
V24: 208-240 VAC
V47: 480 VAC

Control Devices
AX: START STOP + RESET
ACX: START STOP + HOA + RESET
AB1X: START STOP + Indicator
ECX: HOA + RESET
EX: RESET Only
EFX: ON/OFF Selector + RESET
ICX: HOA, No Reset
IFX: ON/OFF Switch, No Reset

Overload Current Setting

Three-Phase	Range	Single-Phase
R57	0.8 - 1.2 A	RM57
R58	1.2 - 1.8A	RM58
R59	1.8 - 2.8A	RM59
R60	2.8 - 4A	RM60
R61	4 - 6.3A	RM61
R62	5.6 - 8A	RM62
R63	7 - 10A	RM63
R64	8 - 12.5A	RM64
R66	11 - 17A	RM66
R67	15 - 23A	RM67
R68	22 - 32A	RM68
R69	32 - 40A	RM69
R70	25 - 40A	RM70
R71	32 - 50A	RM71
R72	40 - 57A	RM72
R73	50 - 63A	RM73
R74	57 - 70A	RM74
R75	63 - 80A	RM75
R43	63 - 80A	RM43
R44	75 - 97A	RM44
R45	90 - 112A	RM45

Chart intended as reference only and not to create part numbers.

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PESW Series – Non-Combination Across the Line Starter

Three-Phase Enclosure Type 4X

Max UL Horsepower				Box	Setting Range (A)	Coil Voltage (V)	RESET only		START STOP + RESET		Multiplier New (Old)
200V	230V	460V	575V				Catalog Number	List Price	Catalog Number	List Price	
-	-	1/2	1/2	05	0.8 - 1.2	120	PESW-B9D15EX-R57	$157	PESW-B9D15AX-R57	$210	Z3P (Z3)
						208-240	PESW-B9V24EX-R57		PESW-B9V24AX-R57		
						480	PESW-B9D39EX-R57		PESW-B9D39AX-R57		
-	-	3/4	1	05	1.2 - 1.8	120	PESW-B9D15EX-R58	$157	PESW-B9D15AX-R58	$210	
						208-240	PESW-B9V24EX-R58		PESW-B9V24AX-R58		
						480	PESW-B9D39EX-R58		PESW-B9D39AX-R58		
1/2	1/2	1	2	05	1.8 - 2.8	120	PESW-B9D15EX-R59	$157	PESW-B9D15AX-R59	$210	
						208-240	PESW-B9V24EX-R59		PESW-B9V24AX-R59		
						480	PESW-B9D39EX-R59		PESW-B9D39AX-R59		
3/4	3/4	2	3	05	2.8 - 4.0	120	PESW-B9D15EX-R60	$157	PESW-B9D15AX-R60	$210	
						208-240	PESW-B9V24EX-R60		PESW-B9V24AX-R60		
						480	PESW-B9D39EX-R60		PESW-B9D39AX-R60		
1	1 1/2	3	5	05	4.0 - 6.3	120	PESW-B9D15EX-R61	$157	PESW-B9D15AX-R61	$210	
						208-240	PESW-B9V24EX-R61		PESW-B9V24AX-R61		
						480	PESW-B9D39EX-R61		PESW-B9D39AX-R61		
2	2	5	5	05	5.6 - 8.0	120	PESW-B9D15EX-R62	$157	PESW-B9D15AX-R62	$210	
						208-240	PESW-B9V24EX-R62		PESW-B9V24AX-R62		
						480	PESW-B9D39EX-R62		PESW-B9D39AX-R62		
2	3	5	7 1/2	05	7.0 - 10	120	PESW-B9D15EX-R63	$157	PESW-B9D15AX-R63	$210	
						208-240	PESW-B9V24EX-R63		PESW-B9V24AX-R63		
						480	PESW-B9D39EX-R63		PESW-B9D39AX-R63		
3	3	7 1/2	10	05	8.0 - 12.5	120	PESW-B12D15EX-R64	$174	PESW-B12D15AX-R64	$227	
						208-240	PESW-B12V24EX-R64		PESW-B12V24AX-R64		
						480	PESW-B12D39EX-R64		PESW-B12D39AX-R64		
3	5	10	15	05	11 - 17	120	PESW-B18D15EX-R66	$188	PESW-B18D15AX-R66	$241	
						208-240	PESW-B18V24EX-R66		PESW-B18V24AX-R66		
						480	PESW-B18D39EX-R66		PESW-B18D39AX-R66		
5	7 1/2	15	15	05	15 - 23	120	PESW-B25D15EX-R67	$223	PESW-B25D15AX-R67	$276	
						208-240	PESW-B25V24EX-R67		PESW-B25V24AX-R67		
						480	PESW-B25D39EX-R67		PESW-B25D39AX-R67		
10	10	20	25	05	22 - 32	120	PESW-B32D15EX-R68	$262	PESW-B32D15AX-R68	$298	
						208-240	PESW-B32V24EX-R68		PESW-B32V24AX-R68		
						480	PESW-B32D39EX-R68		PESW-B32D39AX-R68		
10	--	25	--	05	32 - 40	120	PESW-B38D15EX-R69	$321	PESW-B38D15AX-R69	$345	
						208-240	PESW-B38V24EX-R69		PESW-B38V24AX-R69		
						480	PESW-B38D39EX-R69		PESW-B38D39AX-R69		

Non-Combination Across the Line Starter continued on next page.

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PESW Series - Non-Combination Starters

PESW Series – Non-Combination Across the Line Starter Continued

Three-Phase Enclosure Type 4X

Max UL Horsepower				Box	Setting Range (A)	Coil Voltage (V)	RESET only		START STOP + RESET		Multiplier New (Old)
200V	230V	460V	575V				Catalog Number	List Price	Catalog Number	List Price	
10	10	20	25	08	25 - 40	120	PESW-B40D15EX-R70	$536	PESW-B40D15AX-R70	$550	Z3P (Z3)
						208-240	PESW-B40V24EX-R70		PESW-B40V24AX-R70		
						480	PESW-B40D39EX-R70		PESW-B40D39AX-R70		
10	15	30	40	08	32 - 50	120	PESW-B50D15EX-R71	$564	PESW-B50D15AX-R71	$579	
						208-240	PESW-B50V24EX-R71		PESW-B50V24AX-R71		
						480	PESW-B50D39EX-R71		PESW-B50D39AX-R71		
15	20	40	50	08	40 - 57	120	PESW-B65D15EX-R72	$589	PESW-B65D15AX-R72	$604	
						208-240	PESW-B65V24EX-R72		PESW-B65V24AX-R72		
						480	PESW-B65D39EX-R72		PESW-B65D39AX-R72		
20	25	50	-	08	57 - 70	120	PESW-B80D15EX-R74	$635	PESW-B80D15AX-R74	$650	
						208-240	PESW-B80V24EX-R74		PESW-B80V24AX-R74		
						480	PESW-B80D39EX-R74		PESW-B80D39AX-R74		
-	25	50	-	08	63 - 80	120	PESW-B80D15EX-R75	$665	PESW-B80D15AX-R75	$680	
						208-240	PESW-B80V24EX-R75		PESW-B80V24AX-R75		
						480	PESW-B80D39EX-R75		PESW-B80D39AX-R75		
25	30	60	75	10	63 - 80	120	PESW-95V18EX-R43	$1,085	PESW-95V18AX-R43	$1,100	
						208-240	PESW-95V24EX-R43		PESW-95V24AX-R43		
						480	PESW-95V47EX-R43		PESW-95V47AX-R43		
30	30	75	75	10	75 - 97	120	PESW-105V18EX-R44	$1,184	PESW-105V18AX-R44	$1,199	
						208-240	PESW-105V24EX-R44		PESW-105V24AX-R44		
						480	PESW-105V47EX-R44		PESW-105V47AX-R44		
30	40	75	-	10	90 -112	120	PESW-105V18EX-R45	$1,184	PESW-105V18AX-R45	$1,199	
						208-240	PESW-105V24EX-R45		PESW-105V24AX-R45		
						480	PESW-105V47EX-R45		PESW-105V47AX-R45		

Notes:
- *OLR must be set at 115% of FLA.*
- *3-phase starters with 120V coil are wired for separate control.*
- *3-phase starters can be wired for single-phase applications (see diagram) on page 291.*

Data is subject to change without notice.

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PESW Series – Non-Combination Across the Line Starter

Single-Phase Enclosure Type 4X

Max UL Horsepower		Box	Setting Range (A)	Coil Voltage (V)	RESET only		START STOP + RESET		Multiplier New (Old)
115V	230V				Catalog Number	List Price	Catalog Number	List Price	
1/8	1/3	05	2.8 - 4.0	120	PESWS-B9D15EX-RM60	$140	PESWS-B9D15AX-RM60	$155	Z3P (Z3)
				208-240	PESWS-B9V24EX-RM60		PESWS-B9V24AX-RM60		
1/4	1/2	05	4.0 - 6.3	120	PESWS-B9D15EX-RM61	$140	PESWS-B9D15AX-RM61	$155	
				208-240	PESWS-B9V24EX-RM61		PESWS-B9V24AX-RM61		
1/3	1	05	5.6 - 8.0	120	PESWS-B9D15EX-RM62	$140	PESWS-B9D15AX-RM62	$155	
				208-240	PESWS-B9V24EX-RM62		PESWS-B9V24AX-RM62		
1/2	1 1/2	05	7.0 - 10	120	PESWS-B9D15EX-RM63	$140	PESWS-B9D15AX-RM63	$155	
				208-240	PESWS-B9V24EX-RM63		PESWS-B9V24AX-RM63		
1/2	2	05	8.0 - 12.5	120	PESWS-B12D15EX-RM64	$140	PESWS-B12D15AX-RM64	$155	
				208-240	PESWS-B12V24EX-RM64		PESWS-B12V24AX-RM64		
3/4	2	05	10 - 15	120	PESWS-B18D15EX-RM65	$161	PESWS-B18D15AX-RM65	$182	
				208-240	PESWS-B18V24EX-RM65		PESWS-B18V24AX-RM65		
1	3	05	11 - 17	120	PESWS-B18D15EX-RM66	$170	PESWS-B18D15AX-RM66	$182	
				208-240	PESWS-B18V24EX-RM66		PESWS-B18V24AX-RM66		
1 1/2	3	05	15 - 23	120	PESWS-B25D15EX-RM67	$180	PESWS-B25D15AX-RM67	$195	
				208-240	PESWS-B25V24EX-RM67		PESWS-B25V24AX-RM67		
2	5	05	22 - 32	120	PESWS-B32D15EX-RM68	$180	PESWS-B32D15AX-RM68	$195	
				208-240	PESWS-B32V24EX-RM68		PESWS-B32V24AX-RM68		
3	7 1/2	05	32 - 40	120	PESWS-B38D15EX-RM69	$274	PESWS-B38D15AX-RM69	$300	
				208-240	PESWS-B38V24EX-RM69		PESWS-B38V24AX-RM69		
3	7 1/2	08	25 - 40	120	PESWS-B40D15EX-RM70	$410	PESWS-B40D15AX-RM70	$418	
				208-240	PESWS-B40V24EX-RM70		PESWS-B40V24AX-RM70		
3	10	08	32 - 50	120	PESWS-B50D15EX-RM71	$430	PESWS-B50D15AX-RM71	$440	
				208-240	PESWS-B50V24EX-RM71		PESWS-B50V24AX-RM71		

Accessories – Mounting in Control Stations

Contact Block

Replacement Base Mount Contact Blocks for PESW(S)-B9...38

0.015 kg

Description	Contacts	Diagram	Standard Packing	Catalog Number	Price	Multiplier
Single contact blocks to mounting in control stations or DIN rail 35 mm	1NO		1 piece	BC10B-CSW	$5.00	Z5

Notes:
- *Overload must be set at 115% of motor FLA.*
- *PESWS – Single-phase version – assembled with 2-pole contactor and 2-pole overload relay.*

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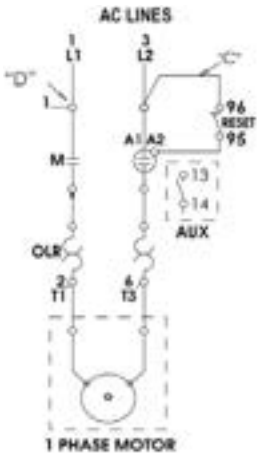
Enclosed Starters

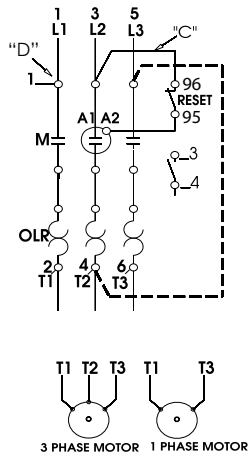
PESW Series - Non-Combination Starters

Wiring Diagram

Single-Phase Starter



Three-Phase Starter



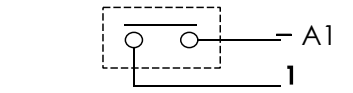
Conversion to single-phase, add jumper wire from L3 to T2 (follow dotted line connection above).

Separate Control

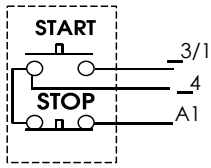
For separate control, remove wires “C” and “D” if supplied and connect separate control lines to terminal Nº 96 on the overload relay and to terminal Nº _3 on the auxiliary contact block (for 3-wire control) or to the contactor coil Nº A1 (for 2-wire control).

Pilot Devices

2-Wire Control



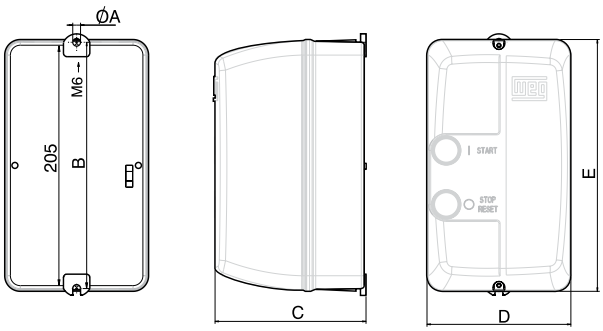
3-Wire Control



Dimensions

Size 05 – mm (in)	Size 08 – mm (in)	Size 10 – mm (in)
øA = 5.5 (0.2165)	øA = 6.0 (0.2)	øA = 7.0 (0.3)
B = 219.0 (8.622)	B = 275 (10.8)	B = 355 (14.0)
C = 112 (4.4331)	C = 143 (5.6)	C = 167 (6.6)
D = 114.0 (4.4882)	D = 180 (7.1)	D = 250 (9.9)
E = 217 (8.5433)	E = 280 (11.0)	E = 360 (14.2)

Provision for Cable Gland Fitting	Standard		
	Top	Bottom	Back
Size 05	2 x 1/2" - 3/4" PG13.5	2 x 1/2" - 3/4" PG13.5	4 X 1/2" PG13.5
Size 08	2 x 3/4" and 1"	2 x 3/4" and 1"	-
Size 10	2 x 3/4" and 1"	2 x 3/4" and 1"	-
	1 x 1" and 1 1/4"	1 x 1" and 1 1/4"	-



For wall mounting on starters size 08 and 10, four screws with the following characteristics should be used:

- Pan, dome or rounded shaped head;
- Starter size 08:
- Screws size 1/4 in (or M6 – ISO Standard);
- Dimensions: diameter thread shall be maximum 1/4 in and diameter head shall be maximum 15/64 in.
- Starter size 10:
- Screws size 12 (or M5 – ISO Standard);
- Dimensions: diameter thread shall be maximum 0.236 in and diameter head shall be maximum 0.394 in.

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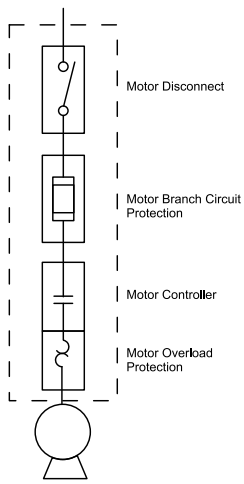
ESWC Series – Combination Starters

High performance and optimized solutions for motor starting and control. WEG offers full voltage non-reversing combination starters, ESWC series, up to 250 HP at 460 VAC (300A) with control power transformers for three-phase applications.

Standard Features

- Multi-rated enclosure type: 1/3R/4/12
- Multi-voltage transformer: primary 208V/230V/460V – secondary 120V
- Branch disconnect: rotary through-the-door handle
- Short-circuit protection: molded case circuit breaker
- Motor control: magnetic IEC contactor
- Overload protection: solid-state overload relay
  - Selectable trip class 10, 20, 30
  - (5:1) ratio adjustable current setting
- Standard Control Devices: RESET, START, STOP, HOA, and RUN LIGHT



Learn More Online

ESWC Catalog Number Sequence

ESWC	9	-	TM1	K	9	-	RE1

Product Code
ESWC: Combination Starters

Contactor Size
9: 9A
12: 12A
18: 18A
25: 25A
38: 38A
65: 65A
105: 105A
112: 112A
150: 150A

Control Power Transformer (Pri/Sec)[1)]
TM1: 208/230/460 V - 120V1
T5: 600 V - 120V

Control Options
A: RESET, START, STOP
B: RESET, START, STOP, HOA
C: RESET, START/STOP SELECTOR
D: RESET, STOP
E: RESET
I: NONE
J: RESET, START, STOP, RUN LIGHT
K: RESET, START, STOP, HOA, RUN LIGHT
S: RESET, START, HOA

Enclosure Type
9: 1/3R/4/12
0: 4X SS

Electronic Overload Range
RE1: 0.4 - 2.0A
RE2: 1.6 - 8.0A
RE3: 5.0 - 25A
RE4: 8.0 - 40A
RE5: 14 - 56A
RE6: 28 - 112A
RE7: 50 - 250A
RE8: 85 - 420A
RE9: 170 - 840A

Chart intended as reference only and not to create part numbers.

Notes:
1) Wired for 480V primary from the factory. Instructions and fuses provided for 208V - 230V field conversion.

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Enclosed Starters

ESWC Series – Combination Starters

ESWC Series – Full Voltage Non-Reversing Combination Starter (Three Phase)

Supply Voltage	Motor HP Range	Overload Range (A)	Metallic Enclosure Type 1/3R/4/12			Multiplier New (Old)
			Catalog Number	List Price	Box Size	
208 VAC	-	0.4-2.0	ESWC-9TM1K9-RE1	$2,120	B-1	Z3C (Z3)
240 VAC	-					
480 VAC	0.5 – 0.75					
600 VAC	0.5 - 1		ESWC-9T5K9-RE1			
208 VAC	0.5 - 1.5	1.6-8.0	ESWC-9TM1K9-RE2	$2,120	B-1	
240 VAC	0.5 - 2					
480 VAC	0.75 - 5					
600 VAC	1 - 5		ESWC-9T5K9-RE2			
208 VAC	1.5 - 3	5.0-25.0	ESWC-12TM1K9-RE3	$2,120	B-1	
240 VAC	1.5 - 3					
480 VAC	5 - 7.5					
600 VAC	5 - 10		ESWC-12T5K9-RE3			
208 VAC	3 - 5	5.0-25.0	ESWC-18TM1K9-RE3	$2,170	B-1	
240 VAC	3 - 5					
480 VAC	7.5 - 10					
600 VAC	10 - 15		ESWC-18T5K9-RE3			
208 VAC	5 - 7.5	8.0-40.0	ESWC-25TM1K9-RE4	$2,170	B-1	
240 VAC	5 - 7.5					
480 VAC	7.5 - 15					
600 VAC	15 - 20		ESWC-25T5K9-RE4			
208 VAC	7.5 - 10	8.0-40.0	ESWC-38TM1K9-RE4	$2,355	B-1	
240 VAC	7.5 - 10					
480 VAC	15 - 25					
600 VAC	20 - 30		ESWC-38T5K9-RE4			
208 VAC	10 - 20	28-112	ESWC-65TM1K9-RE6	$2,652	B-1	
240 VAC	10 - 20					
480 VAC	25 - 40					
600 VAC	30 - 60		ESWC-65T5K9-RE6			
208 VAC	20 - 30	28-112	ESWC-105TM1K9-RE6	$3,455	B-2	
240 VAC	20 - 30					
480 VAC	40 - 75					
600 VAC	50 - 100		ESWC-105T5K9-RE6			
208 VAC	30 - 50	50-250	ESWC-150TM1K9-RE7	$5,500	B-3	
240 VAC	30 - 50					
480 VAC	75 - 125					
600 VAC	75 - 150		ESWC-150T5K9-RE7			
208 VAC	50 - 60	50-250	ESWC-180TM1K9-RE7	$6,540	B-3	
240 VAC	50 - 60					
480 VAC	100 - 150					
600 VAC	125 - 175		ESWC-180T5K9-RE7			
208 VAC	60 - 100	85 - 420	ESWC-300TM1K9-RE8	$7,600	B-3	
240 VAC	60 - 125					
480 VAC	150 - 250					
600 VAC	175 - 300		ESWC-300T5K9-RE8			

Notes:
- *Wired for 480V primary from the factory. Instructions and fuses provided for 208V - 230V field conversion.*

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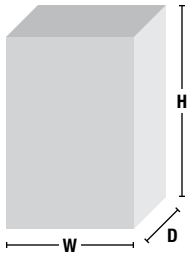
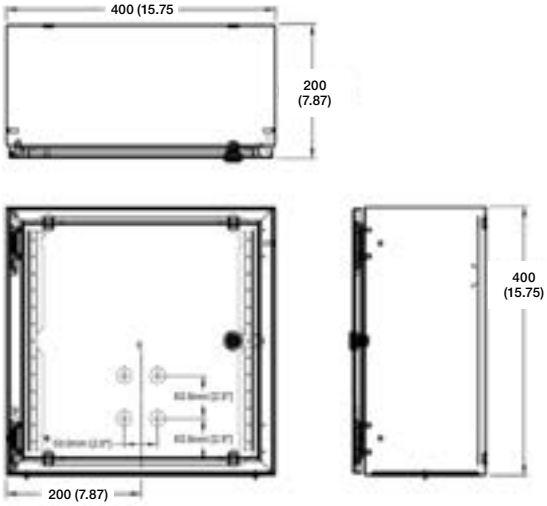
Dimensions – mm (inch)

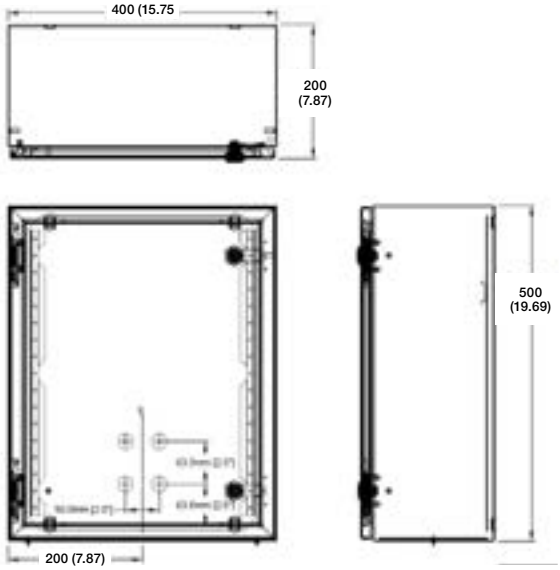
Enclosure Size	Dimensions – mm (inch)		
	H	W	D
B1	400 (15.75)	400 (15.75)	200 (7.87)
B2	500 (19.69)	400 (15.75)	200 (7.87)
B3	800 (31.5)	600 (23.6)	300 (11.8)



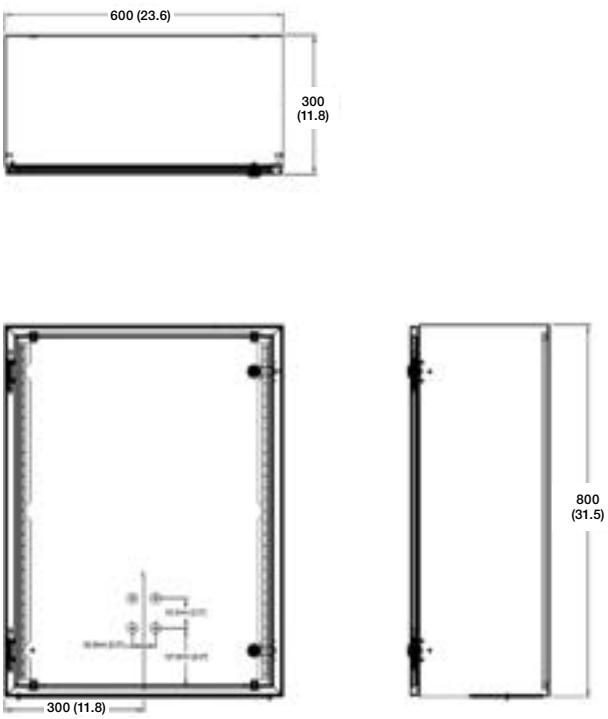
B1 Enclosure



B2 Enclosure



B3 Enclosure



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ESWE Series – Combination Starters

High performance and optimized solutions for motor starting and control. WEG offers full voltage non-reversing combination starters, ESWE series, up to 20 HP at 460 VAC (38A) with or without control power transformers for three-phase applications.

Standard Features

- Standard enclosure type: non-metallic 4X
- Control power transformer: with or without
  - CPT primary 575V – secondary 120V
  - CPT primary 480V/240V – secondary 120V
- Branch disconnect: rotary through-the-door handle
- Short-circuit protection: manual motor protector
- Motor control: magnetic IEC contactor
- Overload protection: manual motor protector
- Standard control devices: HAND-OFF-AUTO switch, START-STOP pushbuttons, pilot lights

Learn More Online

ESWE Catalog Number Sequence

ESWE	-	B	9	V24	K	X	-	D10

Contactor Series
B: CWB

Contactor Frame Size
9: 9A
12: 12A
18: 18A
25: 25A
38: 38A

Coil Voltage
Without CPT
D02: 24 VAC
D15: 120 VAC
V24:208-240 VAC
D39: 480 VAC
D45: 600 VAC
With CPT
T01: 208V / 120V
T02: 240V / 120V
T03: 277V / 120V
T04: 480V / 120V
T05: 600V / 120V
T06: 208V / 24V
T08: 240V / 24V
T09: 277V / 24V
T0A: 240V / 24V
TOB: 600V / 24V

Control Devices
K: HOA, START, STOP, RESET Pilot Lights

Enclosure Type
X: NEMA 4X

Overload Current Setting
D01: 0.1 - 0.16A
D02: 0.16 - 0.25A
D03: 0.25 - 0.4A
D04: 0.4 - 0.63A
D05: 0.63 - 1A
D06: 1 - 1.6A
D07: 1.6 - 2.5A
D08: 2.5 - 4A
D09: 4 - 6.3A
D10: 6.3 - 10A
D11: 10 - 16A
D12: 16 - 20A
D13: 20 - 25A
D14: 25 - 32A

Chart intended as reference only and not to create part numbers.

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Combination Type E Across The Line Starter

- Branch disconnect: rotary through-the-door handle
- Short-circuit protection: manual motor protection
- Motor control: magnetic contactor
- Overload protection: manual motor protection
- Control devices: HAND-OFF-AUTO switch, START-STOP pushbutton, pilot lights

Three-Phase Without CPT – Enclosure Type 4X

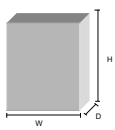
Combination Type E Across the Line Starter

Max 3-ph HP Motors				Overload Setting Range (A)	Coil Voltage (VAC)[1]	Non-Metallic Enclosure Type 4X			Multiplier New (Old)
200V	230V	460V	575V			Catalog Number	List Price	Box Size	
-	-	1/2	1/2	0.63 - 1.0	120	ESWE-B9D15KX-D05	$855	E-1	Z3C (Z3)
					480	ESWE-B9D39KX-D05			
1/4	1/3	3/4	1	1.0 - 1.6	120	ESWE-B9D15KX-D06	$855	E-1	
					208-240	ESWE-B9V24KX-D06			
					480	ESWE-B9D39KX-D06			
1/2	1/2	1 1/2	1 1/2	1.6 - 2.5	120	ESWE-B9D15KX-D07	$855	E-1	
					208-240	ESWE-B9V24KX-D07			
					480	ESWE-B9D39KX-D07			
3/4	1	2	3	2.5 - 4.0	120	ESWE-B9D15KX-D08	$855	E-1	
					208-240	ESWE-B9V24KX-D08			
					480	ESWE-B9D39KX-D08			
1 1/2	1 1/2	3	5	4.0 - 6.3	120	ESWE-B9D15KX-D09	$855	E-1	
					208-240	ESWE-B9V24KX-D09			
					480	ESWE-B9D39KX-D09			
3	3	5	7 1/2	6.3 - 10	120	ESWE-B9D15KX-D10	$865	E-1	
					208-240	ESWE-B9V24KX-D10			
					480	ESWE-B9D39KX-D10			
5	5	10	15	10 - 16	120	ESWE-B18D15KX-D11	$875	E-1	
					208-240	ESWE-B18V24KX-D11			
					480	ESWE-B18D39KX-D11			
7 1/2	7 1/2	15	15	16 - 20	120	ESWE-B25D15KX-D12	$900	E-1	
					208-240	ESWE-B25V24KX-D12			
					480	ESWE-B25D39KX-D12			
10	10	20	25	25 - 32	120	ESWE-B38D15KX-D14	$990	E-1	
					208-240	ESWE-B38V24KX-D14			
					480	ESWE-B38D39KX-D14			

Three-Phase with CPT – Enclosure Type 4X

Max 3-ph HP Motors				Overload Setting Range (A)	Coil Voltage (VAC) (prim. / sec.)	Non-Metallic Enclosure Type 4X			Multiplier New (Old)
200V	230V	460V	575V			Catalog Number	List Price	Box Size	
-	-	1/2	1/2	0.63 - 1.0	480 / 120	ESWE-B9T04KX-D05	$1,140	E-1	Z3C (Z3)
					575 / 120	ESWE-B9T05KX-D05			
1/4	1/3	3/4	1	1.0 - 1.6	240 / 120	ESWE-B9T02KX-D06	$1,140	E-1	
					480 / 120	ESWE-B9T04KX-D06			
					575 / 120	ESWE-B9T05KX-D06			
1/2	1/2	1 1/2	1 1/2	1.6 - 2.5	240 / 120	ESWE-B9T02KX-D07	$1,140	E-1	
					480 / 120	ESWE-B9T04KX-D07			
					575 / 120	ESWE-B9T05KX-D07			
3/4	1	2	3	2.5 - 4.0	240 / 120	ESWE-B9T02KX-D08	$1,140	E-1	
					480 / 120	ESWE-B9T04KX-D08			
					575 / 120	ESWE-B9T05KX-D08			
1 1/2	1 1/2	3	5	4.0 - 6.3	240 / 120	ESWE-B9T02KX-D09	$1,140	E-1	
					480 / 120	ESWE-B9T04KX-D09			
					575 / 120	ESWE-B9T05KX-D09			
3	3	5	7 1/2	6.3 - 10	240 / 120	ESWE-B9T02KX-D10	$1,140	E-1	
					480 / 120	ESWE-B9T04KX-D10			
					575 / 120	ESWE-B9T05KX-D10			
5	5	10	15	10 - 16	240 / 120	ESWE-B18T02KX-D11	$1,155	E-1	
					480 / 120	ESWE-B18T04KX-D11			
					575 / 120	ESWE-B18T05KX-D11			
7 1/2	7 1/2	15	15	16 - 20	240 / 120	ESWE-B25T02KX-D12	$1,175	E-1	
					480 / 120	ESWE-B25T04KX-D12			
					575 / 120	ESWE-B25T05KX-D12			
10	10	20	25	25 - 32	240 / 120	ESWE-B38T02KX-D14	$1,260	E-1	
					480 / 120	ESWE-B38T04KX-D14			
					575 / 120	ESWE-B38T05KX-D14			

Notes:
1) Please contact your local WEG representative for starters with 575V coil voltage.
• 3-phase starters with 120V coil are pre-wired for separate control
• 3-phase starters can be wired for single-phase applications



Box Size	Dimensions (in)		
	Enclosure Size		
	H	W	D
E-1	14.2	9.9	6.6

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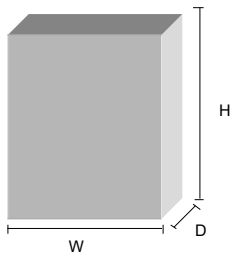
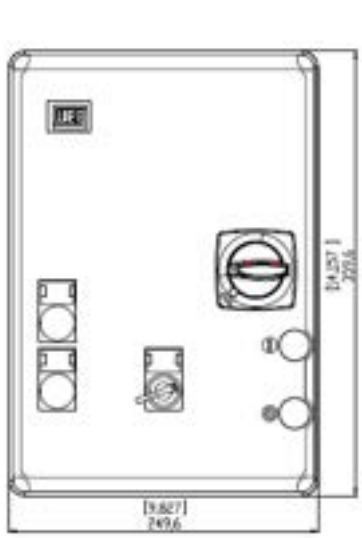
Enclosed Starters

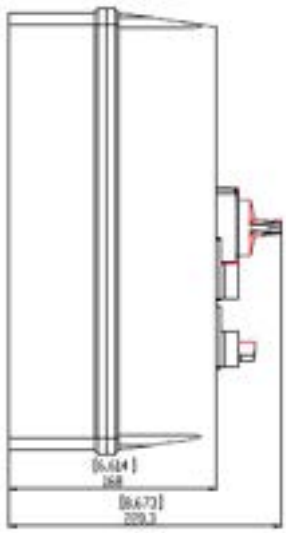
ESWE Series – Combination Starters

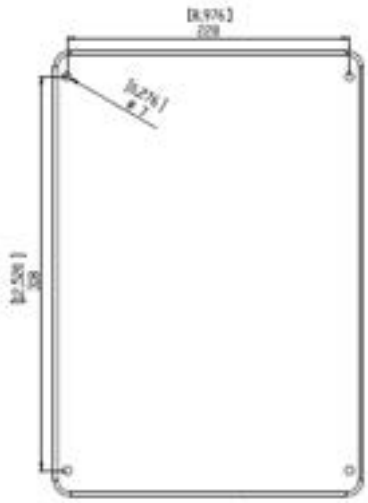
Dimensions (in) – ESWE Series

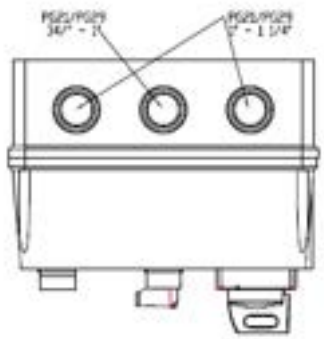
Enclosure Size	Dimensions (in)		
	H	W	D
E-1	14.2	9.9	6.6

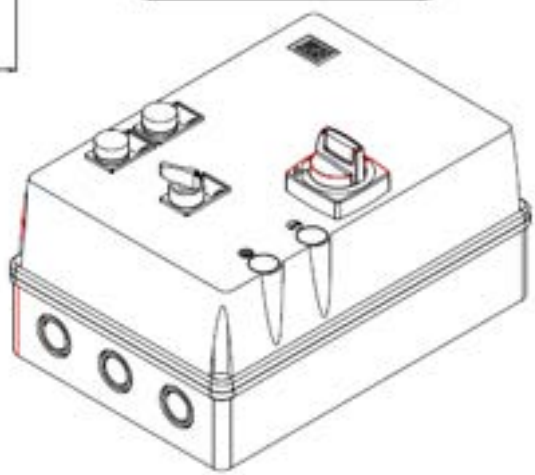












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ESWX Series – Hazardous Location Starters

Motor Control for Hazardous Areas: Class I, Groups C & D – Class II, Groups E, F, G

WEG Explosion Proof Motors Starters are the perfect compliment for motor control in hazardous and industrial environments. Applications include oil and gas, mining, and chemical processing industries.

ESWX-M Series – Enclosed Manual Motor Starters

- High short-circuit interrupting rating – up to 50 kA at 480V
- Thermal overload protection Class 10
- Phase loss sensitivity protection
- Ambient temperature compensation -4°F+140°F (-20°C +60°C)
- Lockable rotary handle mechanism for disconnect
- Snap-in accessories
- Finger safe protected terminals
- Test trip feature
- Manual motor starters
- Suitable for motor disconnect applications

ESWX Series – Enclosed Starters

- Copper free aluminum alloy body
- Bolted flange design
- Durable cast on lugs
- Watertight ‘O’ rings for NEMA applications
- Hinged door for easier access
- NEMA 7 / 9 housing
- Class I, Groups C and D - Class II, Groups E, F, G
- Starter includes contactor plus overload relay
- START, STOP, and RESET buttons (standard)
- HOA or pilot light (optional)
- Available up to 75 HP at 460 VAC – 100 A
- NEMA rated starters available from size 00 to size 3 on request

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Enclosed Starters

ESWX Series – Hazardous Location Starters

ESWX-M25 Series

- NEMA 4X / 7 / 9 housing
- Hinged cover for easy access
- ON / OFF – rotary handle
- Lockable in OFF position
- Available up to 20 HP at 460 VAC – 32A

ESWX-M25 – Product Selection

Max 3 Phase UL HP			Thermal Setting (A)	Short-Circuit Interrupting Capacity		Catalog Number	List Price	Multiplier
Three-Phase								
230V	460V	575V		480 VAC	600 VAC			
-	1/2	1/2	0.63 - 1.0	50 kA	25 kA	ESWX-M25R79-U001	$2,200	Z33
-	3/4	3/4	1.0 - 1.6	50 kA	25 kA	ESWX-M25R79-D016	$2,200	
1/2	1	1 1/2	1.6 - 2.5	50 kA	25 kA	ESWX-M25R79-D025	$2,200	
3/4	2	3	2.5 - 4.0	50 kA	25 kA	ESWX-M25R79-U004	$2,200	
1 1/2	3	5	4.0 - 6.3	50 kA	25 kA	ESWX-M25R79-D063	$2,200	
3	5	7 1/2	6.3 - 10	50 kA	25 kA	ESWX-M25R79-U010	$2,200	
5	10	15	10 - 16	50 kA	25 kA	ESWX-M25R79-U016	$2,200	
7 1/2	15	15	16 - 20	50 kA	25 kA	ESWX-M25R79-U020	$2,200	
7 1/2	15	20	20 - 25	50 kA	25 kA	ESWX-M25R79-U025	$2,200	
10	20	25	25 - 32	42 kA	25 kA	ESWX-M25R79-U032	$2,200	

ESWX-M65 Series

- NEMA 4X / 7 / 9 housing
- Hinged cover for easy access
- ON / OFF – rotary handle
- Lockable in OFF position
- Available up to 50 HP at 460 VAC – 65A

ESWX-M65 – Product Selection

Max 3 Phase UL HP			Thermal Setting (A)	Short-Circuit Interrupting Capacity		Catalog Number	List Price	Multiplier
Three-Phase								
230V	460V	575V		480 VAC	600 VAC			
15	25	30	32 - 40	35 kA	10 kA	ESWX-M65R79-U040	$2,600	Z33
15	30	40	40 - 50	35 kA	10 kA	ESWX-M65R79-U050	$2,600	
20	50	60	50 - 65	35 kA	10 kA	ESWX-M65R79-U065	$2,600	

ESWX-M100 Series

- NEMA 4X / 7 / 9 housing
- Hinged cover for easy access
- ON / OFF – rotary handle
- Lockable in OFF position
- Available up to 75 HP at 460 VAC – 100A

ESWX-M100 – Product Selection

Max 3 Phase UL HP			Thermal Setting (A)	Short-Circuit Interrupting Capacity		Catalog Number	List Price	Multiplier
Three-Phase								
230V	460V	575V		480 VAC	600 VAC			
25	50	60	55 - 75	50 kA	10 kA	ESWX-M100R79-U075	$3,350	Z33
30	60	75	70 - 90	50 kA	10 kA	ESWX-M100R79-U090	$3,350	
30	75	100	80 - 100	50 kA	10 kA	ESWX-M100R79-U100	$3,350	

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Accessories for MPW18 / 40 / 80 – Summary

Description	Catalog Number	List Price	Multiplier
Auxiliary Contact Blocks			
1NO & 1NC auxiliary contact block front mounting – 250V max	ACBF-11	$20	Z4
1NO & 1NC auxiliary contact block left side mounting – 600V max	ACBS-11	$22	
2NO Auxiliary contact block left side mounting – 600V max	ACBS-20	$22	
2NC Auxiliary contact block left side mounting – 600V max	ACBS-02	$22	
Undervoltage and Shunt Release Blocks			
Shunt release block right side mounting – 20-24V 50/60 Hz	SRMP D51	$56	Z4
Shunt release block right side mounting – 100-127V 50/60 Hz	SRMP D59	$56	
Shunt release block right side mounting – 200-240V 50/60 Hz	SRMP D65	$56	
Undervoltage release block right side mounting – 24V 60 Hz	URMP D02	$56	
Undervoltage release block right side mounting – 120V 60 Hz	URMP V18	$56	
Undervoltage release block right side mounting – 208V 60 Hz	URMP V23	$56	
Undervoltage release block right side mounting – 240V 60 Hz	URMP V30	$56	
Undervoltage release block right side mounting – 480V 60 Hz	URMP V47	$56	

Accessories For MPW100 – Summary

Description	Catalog Number	List Price	Multiplier
Auxiliary Contact Blocks			
1NO & 1NC auxiliary contact block front mounting – 250V max	ACBF-11 MPW100	$35	Z4
1NO & 1NC auxiliary contact block left side mounting – 600V max	ACBS-11 MPW100	$27	
2NO Auxiliary contact block left side mounting – 600V max	ACBS-20 MPW100	$27	
2NC Auxiliary contact block left side mounting – 600V max	ACBS-02 MPW100	$27	
Undervoltage and Shunt Release Blocks			
Shunt release block right side mounting – 120V 50/60 Hz	SRMP V18 MPW100	$56	Z4
Shunt release block right side mounting – 240-260V 60 Hz	SRMP V33 MPW100	$56	
Undervoltage release block right side mounting – 120V 60 Hz	URMP V18 MPW100	$56	
Undervoltage release block right side mounting – 240V 60 Hz	URMP V33 MPW100	$56	
Undervoltage release block right side mounting – 460V 60 Hz	URMP V43 MPW100	$56	

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Enclosed Starters

ESWX Series – Hazardous Location Starters

NEMA 7/9 Enclosure – Three Phase

- Motor control: magnetic contactor
- Overload protection: thermal overload relay
- Control devices: START, STOP and RESET pusbuttons
  - One additional pilot device available as modification; ex. I-HOA or I-indicator light
- Cast aluminum NEMA 7/9 housing with NEMA 4 gasket
  - Breather and drain available on request

ESWX Series – Non-combination Across The Line Starter for use in Hazardous Areas
Enclosure Type NEMA 7/9

Max UL 3 Phase Horsepower				Box	Setting Range (A)	Coil Voltage (V)	RESET only		START + STOP + RESET		Multiplier
200V	230V	460V	575V				Catalog Number	List Price	Catalog Number	List Price	
-	1/3	1/2	-	X04	0.8 - 1.2	120	ESWX-25V18E79-R23	$3,250	ESWX-25V18A79-R23	$3,850	Z33
						208-240	ESWX-25V24E79-R23		ESWX-25V24A79-R23		
						480	ESWX-25V47E79-R23		ESWX-25V47A79-R23		
-	-	1	1	X04	1.2 - 1.8	120	ESWX-25V18E79-R24	$3,250	ESWX-25V18A79-R24	$3,850	
						480	ESWX-25V47E79-R24		ESWX-25V47A79-R24		
1/2	3/4	1 1/2	2	X04	1.8 - 2.8	120	ESWX-25V18E79-R25	$3,250	ESWX-25V18A79-R25	$3,850	
						208-240	ESWX-25V24E79-R25		ESWX-25V24A79-R25		
						480	ESWX-25V47E79-R25		ESWX-25V47A79-R25		
1	1	2	3	X04	2.8 - 4.0	120	ESWX-25V18E79-R26	$3,250	ESWX-25V18A79-R26	$3,850	
						208-240	ESWX-25V24E79-R26		ESWX-25V24A79-R26		
						480	ESWX-25V47E79-R26		ESWX-25V47A79-R26		
1 1/2	1 1/2	3	5	X04	4.0 - 6.3	120	ESWX-25V18E79-R27	$3,250	ESWX-25V18A79-R27	$3,850	
						208-240	ESWX-25V24E79-R27		ESWX-25V24A79-R27		
						480	ESWX-25V47E79-R27		ESWX-25V47A79-R27		
2	2	5	-	X04	5.6 - 8.0	120	ESWX-25V18E79-R28	$3,250	ESWX-25V18A79-R28	$3,850	
						208-240	ESWX-25V24E79-R28		ESWX-25V24A79-R28		
						480	ESWX-25V47E79-R28		ESWX-25V47A79-R28		
3	3	-	7 1/2	X04	7.0 - 10	120	ESWX-25V18E79-R29	$3,250	ESWX-25V18A79-R29	$3,850	
						208-240	ESWX-25V24E79-R29		ESWX-25V24A79-R29		
-	-	7 1/2	10	X04	8.0 - 12.5	120	ESWX-25V18E79-R30	$3,250	ESWX-25V18A79-R30	$3,850	
						480	ESWX-25V47E79-R30		ESWX-25V47A79-R30		
5	5	10	15	X04	11 - 17	120	ESWX-25V18E79-R32	$3,250	ESWX-25V18A79-R32	$3,850	
						208-240	ESWX-25V24E79-R32		ESWX-25V24A79-R32		
						480	ESWX-25V47E79-R32		ESWX-25V47A79-R32		
7 1/2	7 1/2	15	-	X04	15 - 23	120	ESWX-25V18E79-R33	$3,250	ESWX-25V18A79-R33	$3,850	
						208-240	ESWX-25V24E79-R33		ESWX-25V24A79-R33		
						480	ESWX-25V47E79-R33		ESWX-25V47A79-R33		
10	10	20	25	X04	22 - 32	120	ESWX-40V18E79-R34	$3,300	ESWX-40V18A79-R34	$3,950	
						208-240	ESWX-40V24E79-R34		ESWX-40V24A79-R34		
						480	ESWX-40V47E79-R34		ESWX-40V47A79-R34		
10	15	30	-	X04	25 - 40	120	ESWX-40V18E79-R35	$3,300	ESWX-40V18A79-R35	$3,950	
						208-240	ESWX-40V24E79-R35		ESWX-40V24A79-R35		
						480	ESWX-40V47E79-R35		ESWX-40V47A79-R35		
15	15	30	40	X04	32 - 50	120	ESWX-80V18E79-R38	$3,400	ESWX-80V18A79-R38	$4,050	
						208-240	ESWX-80V24E79-R38		ESWX-80V24A79-R38		
						480	ESWX-80V47E79-R38		ESWX-80V47A79-R38		
20	20	40	50	X04	40 - 57	120	ESWX-80V18E79-R39	$3,400	ESWX-80V18A79-R39	$4,050	
						208-240	ESWX-80V24E79-R39		ESWX-80V24A79-R39		
						480	ESWX-80V47E79-R39		ESWX-80V47A79-R39		
-	25	50	60	X04	57 - 70	120	ESWX-80V18E79-R41	$3,420	ESWX-80V18A79-R41	$4,050	
						208-240	ESWX-80V24E79-R41		ESWX-80V24A79-R41		
						480	ESWX-80V47E79-R41		ESWX-80V47A79-R41		
25	30	60	75	Consult Factory	63 - 80	120	ESWX-105V18E79-R43	$4,870	ESWX-105V18A79-R43	$5,600	
						208-240	ESWX-105V24E79-R43		ESWX-105V24A79-R43		
						480	ESWX-105V47E79-R43		ESWX-105V47A79-R43		
30	-	75	-	Consult Factory	75 - 97	120	ESWX-105V18E79-R44	$4,870	ESWX-105V18A79-R44	$5,600	
						480	ESWX-105V47E79-R44		ESWX-105V47A79-R44		
-	40	-	-	Consult Factory	90 - 112	120	ESWX-105V18E79-R45	$4,870	ESWX-105V18A79-R45	$5,600	
						208-240	ESWX-105V24E79-R45		ESWX-105V24A79-R45		

Notes:
- *Overload Relay dial must be set with FLA of the motor.*
- *3-phase starters with 120V coil are pre-wired for separate control.*
- *3-phase starters can be wired for single-phase applications.*

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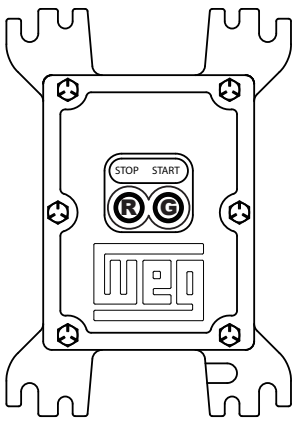
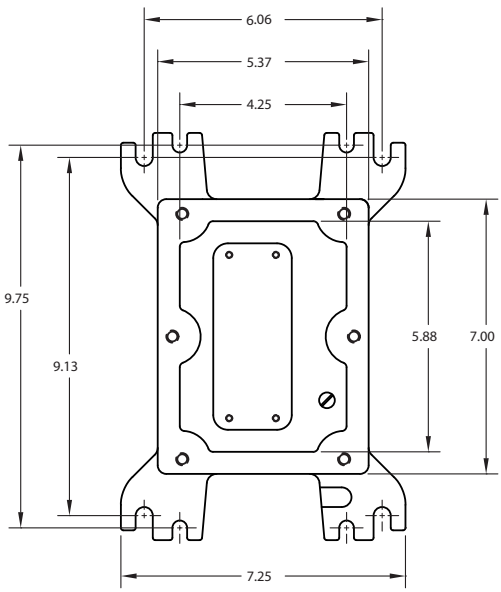
Dimensions – Inch

Explosion Proof Manual Starters

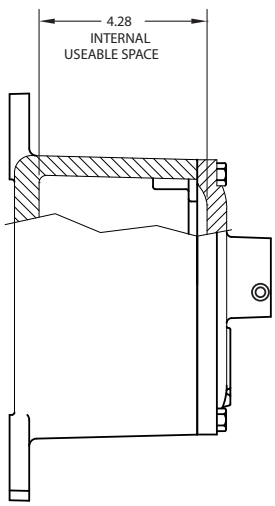
ESWX-M16

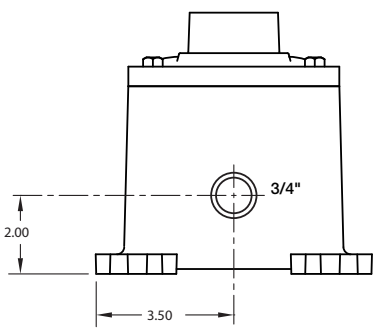


FRONT



FRONT
(w/DOOR REMOVED)





BOTTOM

Certifications
Class I, Groups C & D
Class II, Groups E, F, & G
UL Standard 1203 (Classified)
NEMA 7 (C&D), 9 (E, F, & G)

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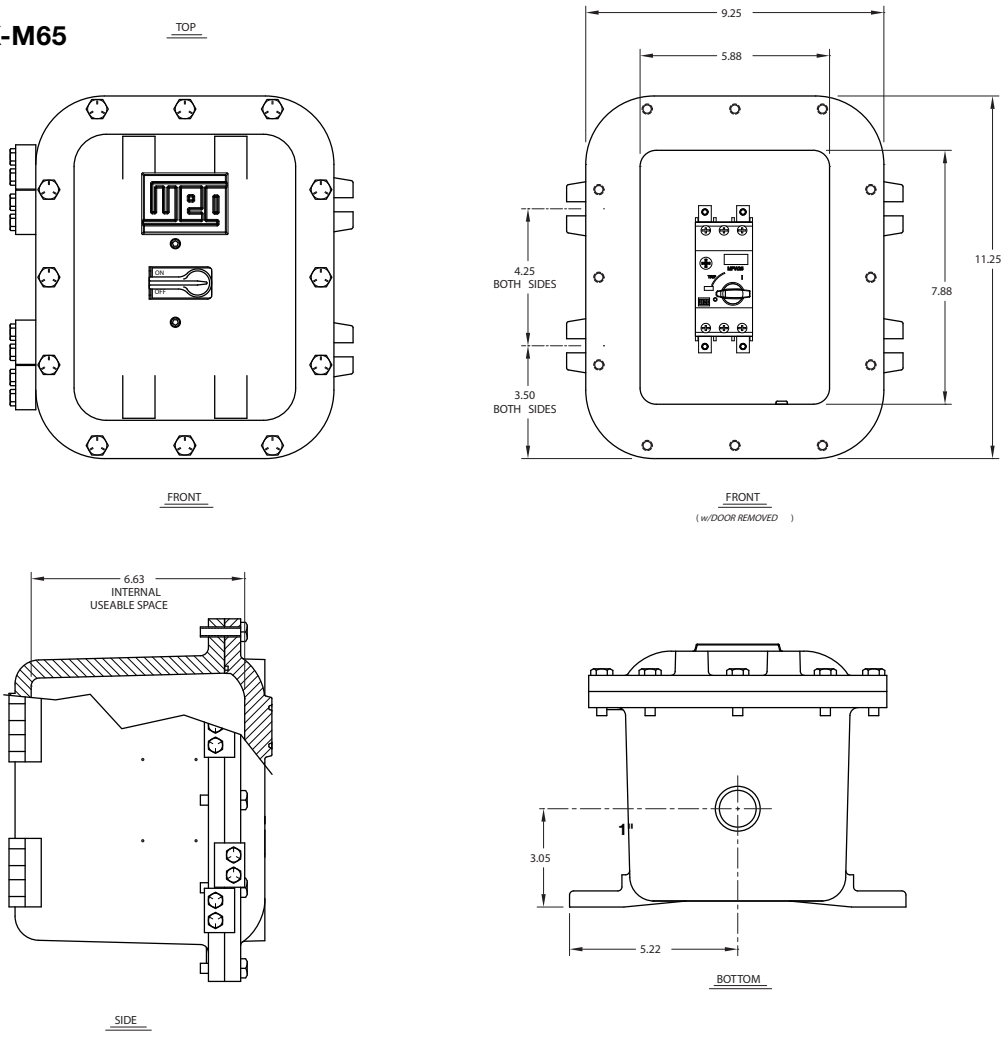
Enclosed Starters

ESWX Series – Hazardous Location Starters

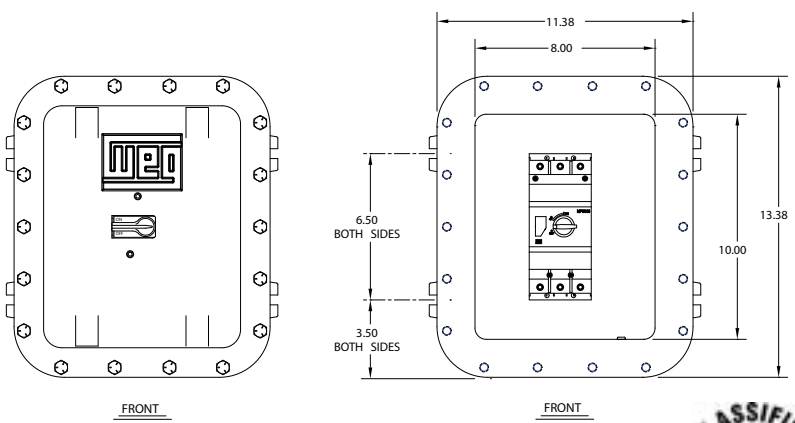
Dimensions – Inch

Explosion Proof Manual Starters

ESWX-M25 and ESWX-M65



ESWX-M100



Certifications
Class I, Groups C & D
Class II, Groups E, F, & G
UL Standard 1203 (Classified)
NEMA 7 (C&D), 9 (E, F, & G)

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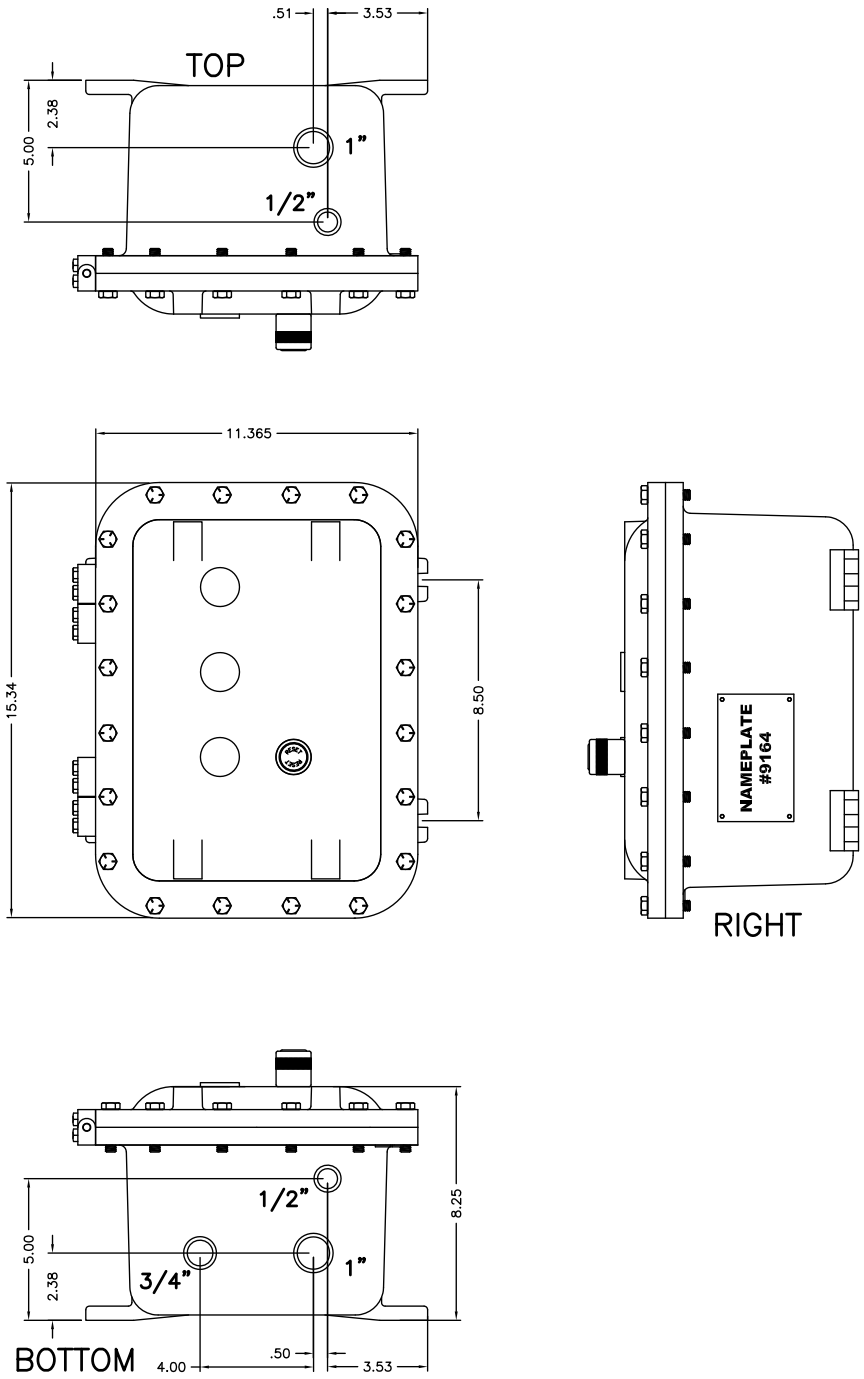
Dimensions – Inch

Explosion Proof Non-Combination Starters

ESWX Series: Type-NEMA 7/9 – Cast Aluminum Enclosure



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Notes:

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Electronic Relays

Timing Relays RTW17 & ERWT Series

Protection Relays RMW17, RPW & ERWM Series

Level Relays RNW Series

c UL us

UL File No. E189202

WEG comprises three different series under the category Electronic Relays:

- Timing Relays (RTW17 and ERWT)
- Protection Relays (RMW17, RPW and ERWM)
- Level Relays (RNW)

These Electronic Relays of the Modular Line are manufactured in a compact 17.5 mm wide frame with two “form C” output relay. All units utilize high precision electronic circuits with line noise immunity, low energy consumption and are equipped with reliable LEDs for status indication. The units can be directly mounted on DIN rail 35 mm or with screws. They are effective and a safe solution for industrial, commercial and residential applications.

The line offers many timing options for applications of motor control and starting, industrial and commercial automation, as well as specific functions for lighting system control and voltage monitoring.

Standard Features

- High precision electronic circuit with noise immunity
- Low energy consumption
- LED status indication
- Compact 17.5 mm wide size frame
- Direct mounting on DIN rail 35 mm or fixed with screws
- Applications in industrial or residential environments
- Suitable for installation in distribution boards, industrial panels and motor starters
- Designed according to the following standards:
  - IEC / EN 60947-1
  - IEC / EN 60947-5-1
  - IEC / EN 61812
  - UL 508 CAN / CSA C22.2

Learn More Online

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Timing Relay RTW17 & ERWT

WEG timing relays allow switching of an output signal according to the timing function and selected time. Setting time ranges from 0.1s to 10 days. The relays come in a compact 17.5 mm wide frame and can be mounted directly on DIN rail 35 mm or fixed by screws. Available with two “form C” output relay.

Ideal for applications such as industrial processes, automation and motor starters. The relays can also be used in residential and commercial applications.

Timing Functions

- RTW17-A – ON-delay
- RTW17-E – Impulse ON
- RTW17-G – Star-Delta
- RTW17-Ba – OFF-delay with external command
- RTW17-Da – Symmetrical flasher, starts with pulse ON
- RTW17-Db – Symmetrical flasher, starts with pulse OFF
- RTW17-Dc – Asymmetrical flasher, starts with pulse ON
- RTW17-Dd – Asymmetrical flasher, starts with pulse OFF

Multifunction Timer Features

- Multifunction timers – two different types
- Up to eight functions in one timer
- Multi-voltage, 24-240 VAC/VDC

Learn More Online

Timing Relay Catalog Number Sequence

RTW17	-	A	02	-	U001S	-	E05

Timing Relays
RTW17: Single or multiple timing relay
ERWT: Multifunction timing relay[2)3):]

Selection of the Function

A: ON-delay[1)3)]
E: Impulse ON[1)3)]
G: Star-Delta[1)3)]
B: OFF-delay with external command[3)]
Da: Symmetrical flasher, starts with pulse ON[3)]
Db: Asymmetrical flasher, starts with pulse OFF[3)]
Dc: Asymmetrical flasher, starts with pulse ON
Dd: Asymmetrical flasher, starts with pulse OFF

MF1: 8 Configurable Functions[2)4)]
- ON-delay
- ON-delay with control signal
- ON-delay and OFF-delay with control signal
- Symmetric flasher, start ON
- Asymmetric flasher, start OFF
- Impulse ON with control signal
- Star-delta

MF2: 8 Configurable Functions[2)4)]
- Asymmetric flasher, start ON
- Asymmetric flasher, start OFF
- Percentage flasher, start ON
- Percentage flasher, start OFF
- Flasher for motor reversing
- ON-delay and OFF-delay with control signal and independent settings
- Delayed adjustable-length pulse
- Bistable

Power Supply
E05: 24-240 VAC/VDC
D90: 208-480 VAC[1)]

Timing
U001S: 0.1 to 1 second
U003S: 0.3 to 3 seconds
U010S: 1 to 10 seconds
U030S: 3 to 30 seconds
U060S: 6 to 60 seconds
U100S: 10 to 1,000 seconds
U300S: 30 to 300 seconds
U010M: 1 to 10 minutes
U030M: 3 to 30 minutes
U060M: 6 to 60 minutes
MAT[3)]: 0.1s to 10 days[1),2)]

Number of Contacts
02: DPDT (2NO/NC)

Notes:
1) D90 - 208-480 VAC only for functions RTW17-A, E and G.
2) MF1 and MF2 available only for ERWT multifunction relays.
3) MAT multiple timing models available only for RTW17-A, E, G, Ba, Da, Db models.
4) Multiple timing models available only at voltage E05 - 24-240 VAC/VDC.

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Timing Relays – Multi-Voltage & Multi-Timing

Function / Description	Output Contacts	Voltage	Timing	Catalog Number	List Price	Multiplier
On-Delay	DPDT (2NO/NC)	24-240 VAC 50 Hz/60 Hz 24-240VDC	0.1 sec - 10 days	RTW17-A02MATE05	$103	Z7
Off-Delay with external command	DPDT (2NO/NC)	24-240 VAC 50 Hz/60 Hz 24-240VDC	0.1 sec - 10 days	RTW17-BA02MATE05	$103	
Impulse ON	DPDT (2NO/NC)	24-240 VAC 50 Hz/60 Hz 24-240VDC	0.1 sec - 10 days	RTW17-E02MATE05	$103	
Star-Delta	DPDT (2NO/NC)	24-240 VAC 50 Hz/60 Hz 24-240VDC	0.1 sec - 10 days	RTW17-G02MATE05	$90	
Symmetrical flasher – pulse (start ON)	DPDT (2NO/NC)	24-240 VAC 50 Hz/60 Hz 24-240VDC	0.1 sec - 10 days	RTW17-DA02MATE05	$90	
Symmetrical flasher – pulse (start OFF)	DPDT (2NO/NC)	24-240 VAC 50 Hz/60 Hz 24-240VDC	0.1 sec - 10 days	RTW17-DB02MATE05	$90	
Multifunction – MF1	DPDT (2NO/NC)	24-240 VAC 50 Hz/60 Hz 24-240 VDC	0.1 sec - 10 days	ERWT-MF1-02MT1E05	$175	Z7
ON-delay						
ON-delay with control signal						
ON-delay and OFF-delay with control signal						
Symmetric flasher, start ON						
Asymmetric flasher, start OFF						
Impulse ON with control signal						
Star-delta						
Multifunction – MF2	DPDT (2NO/NC)	24-240 VAC 50 Hz/60 Hz 24-240VDC	0.1 sec - 10 days	ERWT-MF2-02MT1E05	$175	
Asymmetric flasher, start ON						
Asymmetric flasher, start OFF						
Percentage flasher, start ON						
Percentage flasher, start OFF						
Flasher for motor reversing						
ON-delay and OFF-delay with control signal and independent settings						
Delayed adjustable-length pulse						
Bistable						

RTW17 - A02

RTW17 - BA02

RTW17 - BE02

RTW17 - G02

RTW17 - DA02

RTW17 - DB02

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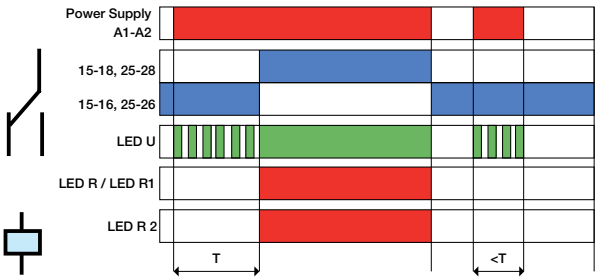
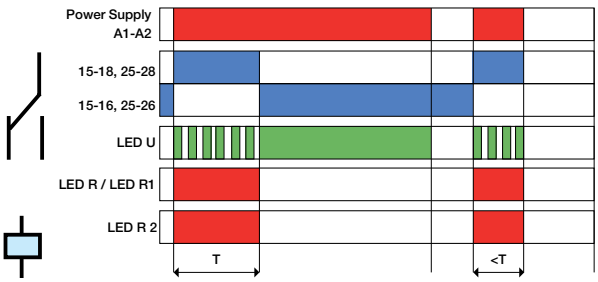
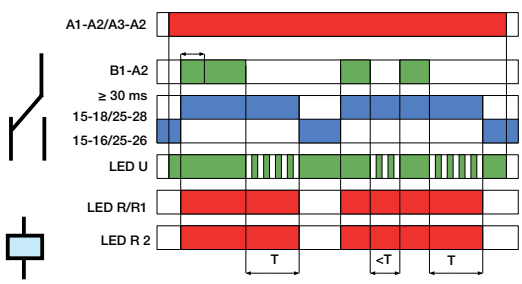
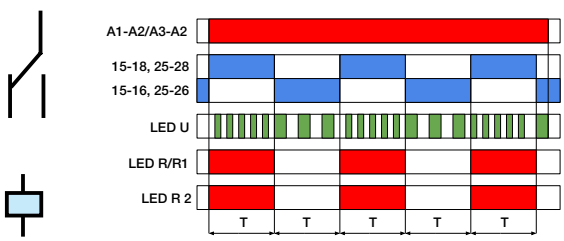
Timing Relays

Operation Modes

Single Timing Models (RTW17) or Multiple Timing (RTW17-MAT)

Operating Mode	Timing Diagram
RTW17-A (ON – Delay) – Connecting a supply voltage on terminals A1-A2 / A3-A2, the selected time delay begins with the output relay remaining de-energized and LED (power supply "U") pulses green during the time delay. After the end of the delay time, the output relay energizes (red LED R1 and R2 turns on) and remains energized until the supply voltage is removed. This can be repeated as often as required. Reset: Removing supply voltage resets the time delay and the output	
RTW17-E (Impulse ON) – Connecting a supply voltage on terminals A1-A2 / A3-A2, the green LED (power supply "U") pulses and the output relay energizes without delay (red LED R1 and R2 turns on). The output remains energized until the selected pulse time elapse, the red LED R1 and R2 turns off and the green LED (power supply "U") goes solid. This can be repeated as often as required. Reset: Removing supply voltage resets the time delay and the output.	
RTW17-Ba (OFF-delay with external command) – This function requires continuous supply voltage on terminals A1-A2 / A3-A2, the green LED (power supply "U") turns on and timing is controlled by a command contact at terminals A2-B1. If the command contact is removed the selected time delay begins. When the selected time elapse the output relay is de-energized (red LED R1 and R2 turns off). This can be repeated as often as required. Reset: Removing supply voltage resets the time delay and the output.	
RTW17-Da (symmetrical flasher, starts with pulse ON) – Connecting a supply voltage on terminals A1-A2 / A3-A2 the green LED (power supply "U") pulses and the output relay (R1 and R2) are activated. After the time set in the selector switch has elapsed, the output relay is deactivated. This continues with in symmetric ON/OFF cycles. The single dial presets a fixed ON and OFF time. Reset: Removing supply voltage resets the time delay and the output.	

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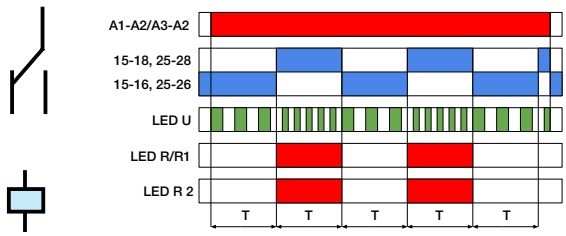
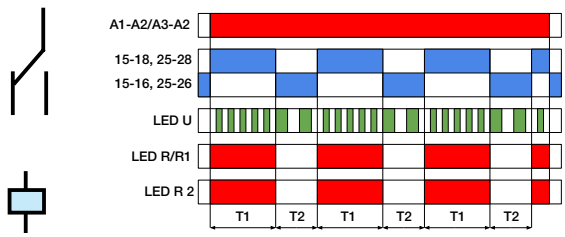
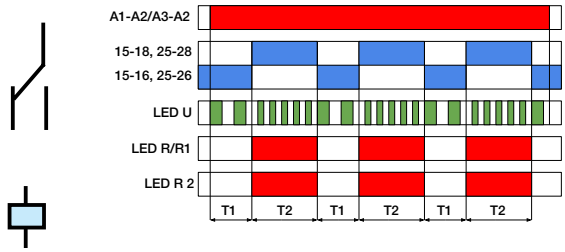
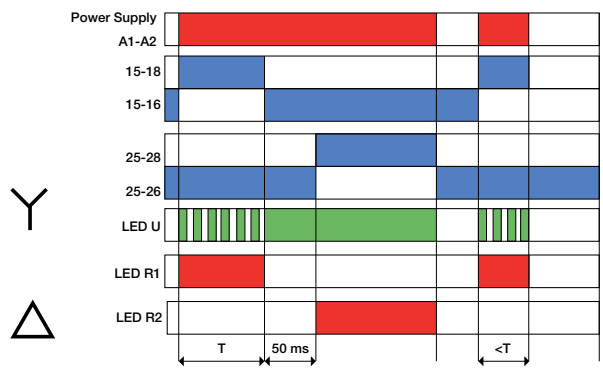
Operation Modes

Single Timing Models (RTW17) or Multiple Timing (RTW17-MAT)

Operating Mode	Timing Diagram
RTW17-Db (symmetrical flasher, starts with pulse OFF) – Connecting a supply voltage on terminals A1-A2 / A3-A2 the green LED (power supply "U") pulses and the output relay (R1 and R2) remain deactivated. After the time set in the selector switch has elapsed, the output relay is activated. This continues with symmetric OFF/ON cycles. The single dial presets a fixed ON and OFF time. Reset: Removing supply voltage resets the time delay and the output.	
RTW17-Dc (asymmetrical flasher, starts with pulse ON) – Connecting a supply voltage on terminals A1-A2 / A3-A2 the green LED (power supply "U") pulses and the output relay (R1 and R2) is energized. The timer starts to pulse with adjustable ON/OFF cycles. The upper dial presets the ON time (red LED R1 and R2 turns on and output relay are energized) and the lower dial selects the OFF time when the output relay is de-energized. Reset: Removing supply voltage resets the time delay and the output.	
RTW17-Dd (asymmetrical flasher, starts with pulse OFF) – Connecting a supply voltage on terminals A1-A2 / A3-A2 the green LED (power supply "U") pulses and the output relay (R1 and R2) remain de-energized. The timer starts to pulse with adjustable ON/OFF cycles. The upper dial presets the ON time (red LED R1 and R2 turns on and output relay are energized) and the lower dial selects the OFF time when the output relay is de-energized. Reset: Removing supply voltage resets the time delay and the output.	
RTW17-G (star-delta) – Connecting a supply voltage on terminals A1-A2 / A3-A2 the output contact for the star-connection energizes and the adjusted time starts (red LED R1 turns on and output contact is energized). When the start-up time elapses, a fixed star-delta changeover time of 100 ms starts and this star-delta changeover time elapses the output contact for the star-connection (R1) de-energizes and the delta-connection (R2) energizes and stayed energized until supply is disconnected. Reset: Removing supply voltage resets the time delay and the output.	

Notes: MAT multiple timing functions available only for RTW17-A, E, Ba, Da, Db, G models.

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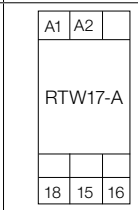
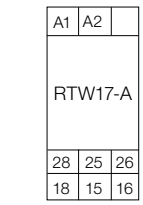
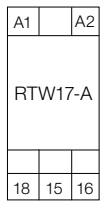
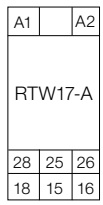
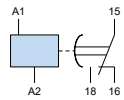
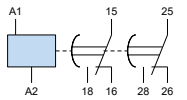
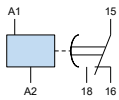
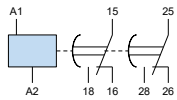
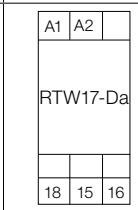
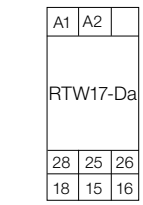
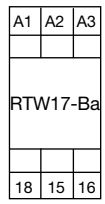
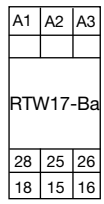
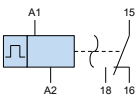
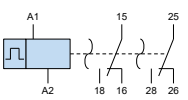
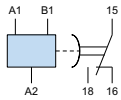
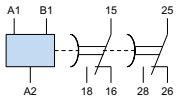
Electronic Relays

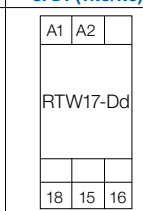
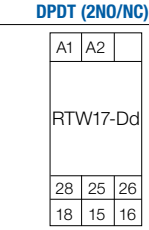
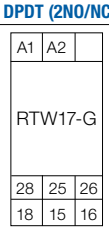
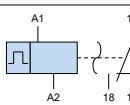
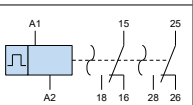
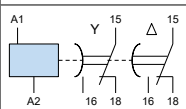
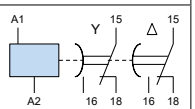
Timing Relays

Wiring Diagram

Timing Relays RTW17 – Single Timing and Multiple Timing

Reference		RTW17-A			
Contacts		SPDT (1NO/NC)	DPDT (2NO/NC)	SPDT (1NO/NC)	DPDT (2NO/NC)
Terminal Position					
Wiring Diagram					
Circuit		24-240 VAC /		208-480 VAC	
		-		-	
		-		-	
Terminals	15-16-18	Output 1	Output 1	Output 1	Output 1
	25-26-28	-	Output 2	-	Output 2

Reference		RTW17-Da		Catalog Number	RTW17-Ba	
Contacts		SPDT (1NO/NC)	DPDT (2NO/NC)	Contacts	SPDT (1NO/NC)	DPDT (2NO/NC)
Terminal Position				Terminal Position		
Wiring Diagram				Wiring Diagram		
Circuit		24-240 VAC / VDC		Circuit	24-240 VAC/ VDC	
		-			-	
		-			-	
Terminals	15-16-18	Output 1	Output 1	Terminals 15-16-18	Output 1	Output 1
	25-26-28	-	Output 2	25-26-28	-	Output 2

Reference		RTW17-Dd		RTW17-G	
Contacts		SPDT (1NO/NC)	DPDT (2NO/NC)	DPDT (2NO/NC)	DPDT (2NO/NC)
Terminal Position					
Wiring Diagram					
Circuit		24-240 VAC / VDC		208-480 VAC	24-240 VAC / VDC
		-		-	-
		-		-	-
Terminals	15-16-18	Output 1	Output 1	Output 1	Output 1
	25-26-28	-	Output 2	Output 2	Output 2

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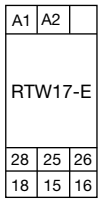
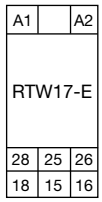
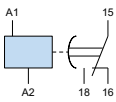
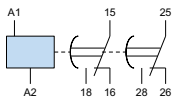
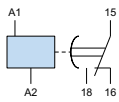
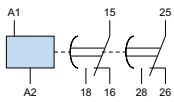
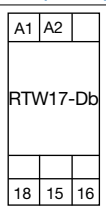
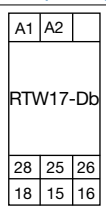
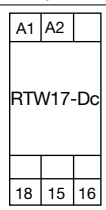
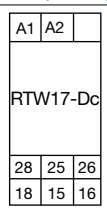
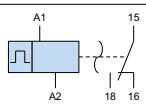
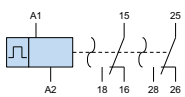
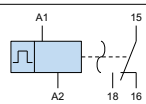
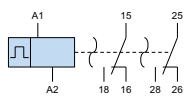
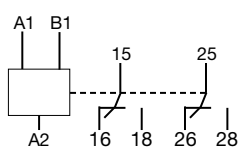
Wiring Diagram

Timing Relays RTW17 – Single Timing and Multiple Timing

Catalog Number		RTW17-E			
Contacts		SPDT (1NO/NC)	DPDT (2NO/NC)	SPDT (1NO/NC)	DPDT (2NO/NC)
Terminal Position					
Wiring Diagram					
Circuit		24-240 VAC/VDC		208-480 VAC	
		-		-	
		-		-	
Terminals	15-16-18	Output 1	Output 1	Output 1	Output 1
	25-26-28	-	Output 2	-	Output 2
Catalog Number		RTW17-Db		RTW17-Dc	
Contacts		SPDT (1NO/NC)	DPDT (2NO/NC)	SPDT (1NO/NC)	DPDT (2NO/NC)
Terminal Position					
Wiring Diagram					
Circuit		24-240 VAC/VDC		24-240 VAC/VDC	
		-		-	
		-		-	
Terminals	15-16-18	Output 1	Output 1	Output 1	Output 1
	25-26-28	-	Output 2	-	Output 2

Multifunction Models ERWT (MF1-MF2)

Functions	Erwt-Mf1 / Mf2	Supply Voltage	Wiring Diagram	Control Voltage
		A1-A2 24-240 VAC / cc		B1-A2 24-240 VAC / cc
	15 - 16 / 18 – output contact 1			
	25 - 26 / 28 – output contact 2			

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Electronic Relays

Timing Relays

Technical Data

Catalog Number			RTW17-xxx-UxxxxE05	RTW17-xxxx-MATE05	RTW17-xxx-UxxxxD90	ERWT-MFx-02MT1E05
Input	Power Supply (Ue)	A1-A2	24-240 VAC/VDC	24-240 VAC/VDC	24-240 VAC /VDC	24-240 VAC /VDC
	Operation Range		0.85 to 1.10 x Us			
	Frequency		50/60 Hz			
	Maximum consumption (Us)		70 mA at 240 VAC			80 mA at 240 VAC
	Rated insulation voltage (Ui)		300 V	300 V	600 V	300 V
Time Adjustment	Minimum time for reset		100 ms			
	Minimum period of the command pulse		50 ms			
	Scale precision (full scale)		± 5%			± 5%[1]
	Repeatability precision (full scale)		± 2%			
	Switching time Y - D (star-delta function)		50 ms ± 20%			100 ms ± 20%
Output	Capacity of the output contacts (Ie)		AC-13 (resistive) at 250 VAC: 5A			AC-12 (resistive) at 250 VAC: 5 A
			AC-15 at 230 VAC: 1A			AC-15 at 230 VAC: 1A
			DC-13 at 24VDC: 1A			DC-13 at 24VDC: 1A
			DC-13 at 48VDC: 0.45A			DC-13 at 48VDC: 0.45A
			DC-13 at 60VDC: 0.35A			DC-13 at 60VDC: 0.35A
			DC-13 at 125VDC: 0.2A			DC-13 at 125VDC: 0.2A
			DC-13 at 250VDC: 0.1A			DC-13 at 250VDC: 0.1A
			-			B300
			-			R300
	Rated thermal current (Ith)		5A for AC			10A for AC / 1A for DC
	Fuse (class gL/gG)		4A			
	Mechanical life		30 x 10^6 switching cycles			
Characteristics	Ambient temperature	Operation	-5°C to +60°C			
		Storage	-40°C to +85°C			
	Protection rating		Enclosure: IP20			
			Terminals: IP20			
	Connection section (min. to max)	Cable without end sleeves	2 x 0.5 mm^2			1 x (0.5 to 2.5) mm^2
			2 x 1 mm^2			2 x (0.5 to 1.5) mm^2
		Cable with terminal	1 x (0.5 to 1.5) mm^2			1 x (0.5 to 1.5) mm^2
			2 x (0.5 to 0.75) mm^2			2 x (0.5 to 1.5) mm^2
		Wire AWG	2 x (28 to 18) AWG			2 x (20 to 14) AWG
	Tightening torque		0.4 Nm			0.8 to 1.2 Nm
	Terminal screw		3.5 in-lb			7 to 10.6 in-lb
	Mounting position		Any position			
	Shock resistance		15g / 11 ms			
	Vibration resistance		10 to 55 Hz / 0.35 mm			
	Weight		0.08 kg – models with SPDT (1NO/NC)			
			0.095 kg – models with DPDT (2NO/NC)			
	Pollution degree		2			
	Overvoltage category		III			II
	Certification		CE / UL			

Notes:
1) For the ERWT models, under extreme voltage and temperature conditions, the scale accuracy may vary up to +/- 10% (full scale).
2) For solid conductors, use gauges of the same diameter.

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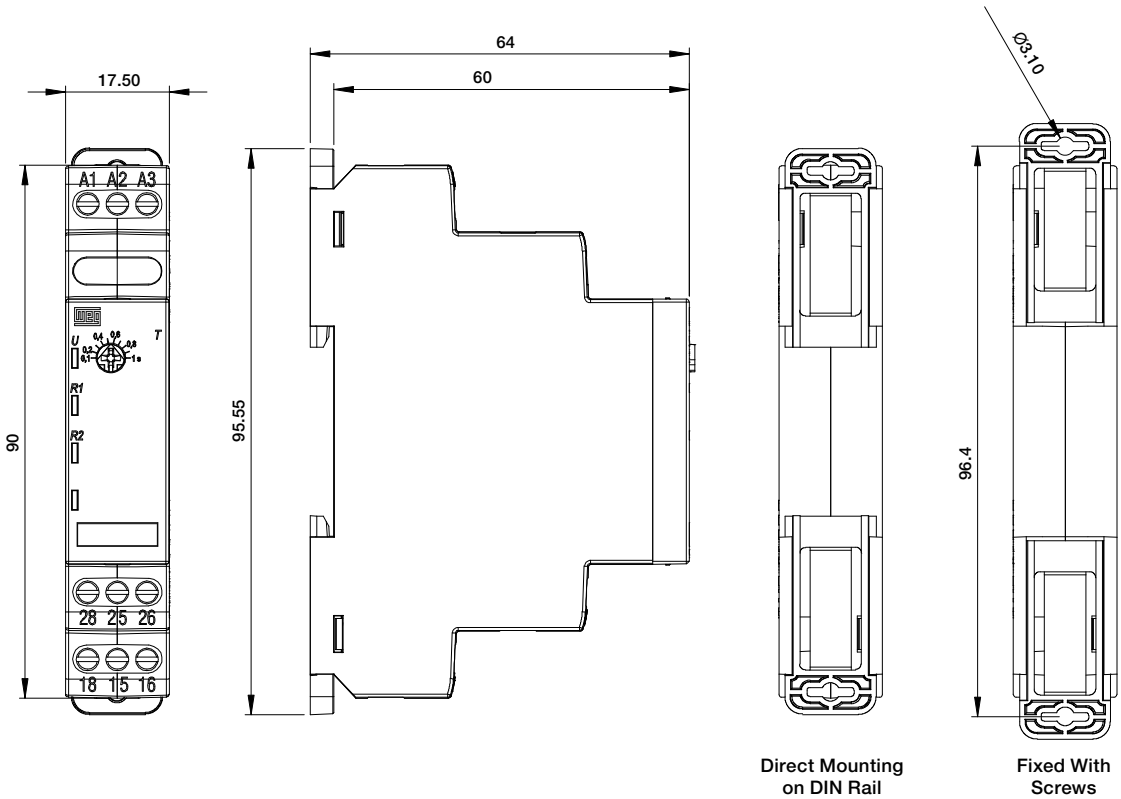
Dimensions – mm

RTW17 /RMW17



Altitudes – Ratio-Corrector Factor

Altitude Above Sea Level – H	Voltage Ratio-Corrector Factor (Ue) / V	Current Ratio-Corrector Factor (Lu) / A
h ≤ 2,000 m	1	1 x In
2,000 <h ≤ 3,000 m	0.87	0.95 x In
3,000 <h ≤ 4,000 m	0.77	0.90 x In
4,000 <h ≤ 5,000 m	0.67	0.85 x In

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Protection Relays RMW17, RPW & ERWM

WEG protection relays are designed to supervise and monitor three-phase and single-phase power supplies, interrupting the process of operation whenever an anomaly occurs. They can switch off circuits and activate safety devices and alarms in order to protect machines and equipment against faults on the power supply according to the settings.

Some anomalies in electric installations that could occur are overvoltage, undervoltage, phase loss, and phase sequence. Overvoltage or phase loss can overheat machinery and motors, thus reducing the lifetime. Phase sequence inversion can cause machinery to run in the wrong way, possibly destroying the entire system. Undervoltage may occur causing machinery to run in an undefined range, which could cause some parts of the system to run properly while others cease operating.

Protection Functions

- RMW17-FF – Phase Loss Relay
- RMW17-SF – Phase Sequence Relay
- RMW17-FSF – Phase Loss and Sequence Relay
- RMW17-SS – Three-Phase Undervoltage and Overvoltage Relay
- RMW17-SSM – Single-Phase Undervoltage and Overvoltage Relay
- RPW-PTC – Thermistor Relay

Learn More Online

RMW17-FF – The **Phase Loss Relay** is used to monitor three-phase networks against phase failure.

RMW17-SF – The **Phase Sequence Relay** is used to monitor three-phase networks against incorrect phase sequence.

RMW17-FSF – The **Phase Loss and Phase Sequence Relay** is used to monitor three-phase networks against phase loss and incorrect phase sequence.

RMW17-SS – The **Three-Phase Undervoltage and Overvoltage Relay** is used to monitor the maximum and minimum variations that three-phase power supplies are able to work. The RMW17-SS also protects the circuit against phase unbalance (asymmetry) of 20% or higher between phases.

RMW17-SSM – The **Single-Phase Undervoltage and Overvoltage Relay** is used to monitor the maximum and minimum variations that single-phase power supplies are able to work. The RMW17-SSM also protects the circuit against phase unbalance (asymmetry) of 20% or higher between phases.

RPW-PTC – The **Thermistor Relay** is used to measure the motor temperature by using PTC sensor inside of the motor. When the motor temperature rises above the PTC sensor class, the output relay is de-energized avoiding damages to the motor.

RMW17-FF

RMW17-FSF

RMW17-SS

RPW-PTC

ERWM-VM1/VM2

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Protection Relay Catalog Number Sequence

RTW17 - FF - 01 - D65

Protection Relays
RMW17: Single or multiple protection relay
RPW: Thermistor relay
ERWM: Multifunction protection relay

Selection of the Function
FF: Phase loss
SF: Phase Sequence
FSF: Phase loss and Phase Sequence
SS: Three-phase undervoltage and overvoltage
SSM: Single-phase undervoltage and overvoltage
PTC: Thermistor Relay

VM1: 5 Configurable Functions[1)]
- Phase loss
- Phase sequence
- Overvoltage/undervoltage
- Asy-unbalance
- Neutral detection

VM2: 4 Configurable Functions[1)]
- Phase loss
- Overvoltage/undervoltage
- Asy-unbalance
- Neutral detection

Number of Contacts
01: SPDT (1NO/NC)

Power Supply
D23: 220VAC
D39: 480VAC
D65: 200-240VAC
D77: 208VAC
D90: 208-480VAC
D97: 380-480VAC
E05[2:] 24-240VAC /VDC

Chart intended as reference only and not to create part numbers.

Function / Description	Output Contacts	Voltage	Catalog Number	List Price	Multiplier
Phase loss	SPDT (1NO/NC)	200-240 VAC 50 Hz/60 Hz	RMW17-FF01D65	$93	
		380-480 VAC 50 Hz/60 Hz	RMW17-FF01D97	$93	
Phase sequence	SPDT (1NO/NC)	200-240 VAC 50 Hz/60 Hz	RMW17-SF01D65	$84	
		208-480 VAC 50 Hz/60 Hz	RMW17-SF01D90	$84	
Phase loss and phase sequence	SPDT (1NO/NC)	200-240 VAC 50 Hz/60 Hz	RMW17-FSF01D65	$94.50	
		380-480 VAC 50 Hz/60 Hz	RMW17-FSF01D97	$94.50	
Three-phase undervoltage and overvoltage	SPDT (1NO/NC)	208 VAC 50 Hz/60 Hz	RMW17-SS01D77	$99.75	
		220 VAC 50 Hz/60 Hz	RMW17-SS01D23	$99.75	
		480 VAC 50 Hz/60 Hz	RMW17-SS01D39	$99.75	
Single-phase undervoltage and overvoltage	SPDT (1NO/NC)	220 VAC 50 Hz/60 Hz	RMW17-SSM01D23	$99.75	
Thermistor relay		24-240 VAC 50 Hz/60 Hz 24-240 VDC	RPW-PTCE05	$105	
Multifunction – VM1	SPDT (1NO/NC)	208-480 VAC 50 Hz/60 Hz	ERWM-VM1-01D90	$230	Z7
Phase loss					
Phase sequence					
Overvoltage/undervoltage					
Asy-unbalance					
Neutral detection					
Multifunction – VM2	SPDT (1NO/NC)	208-480 VAC 50 Hz/60 Hz	ERWM-VM2-01D90	$230	
Phase loss					
Overvoltage/undervoltage					
Asy-unbalance					
Neutral detection					

Notes:
1) VM1 and VM2 available only for ERWM multifunction relays
2) E05 power supply available only for ERWM multifunction relays

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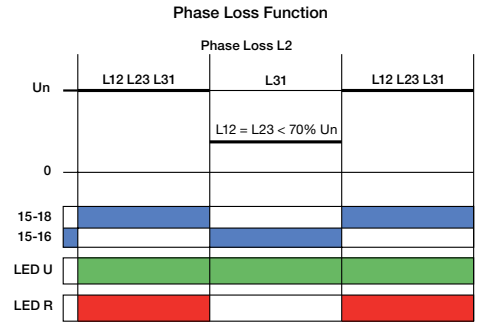
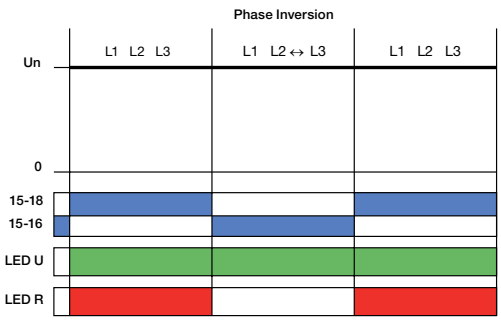
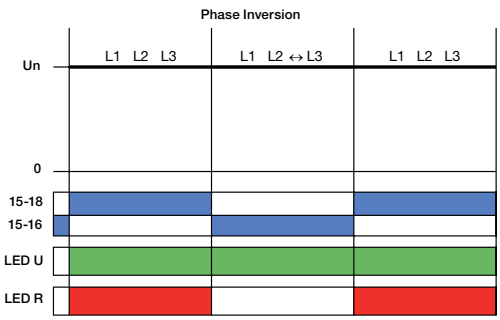
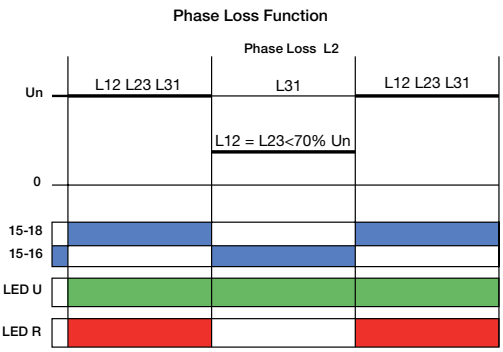
Electronic Relays

Protection Relays

Operation Modes

Single Protection Models (RMW17)

Operating Mode	Timing Diagram
RMW17-FF: Connected directly to the supply voltage to be monitored. The output relay switched the contacts to the operation position (closing terminals 15-18), and the red LED (relay "R") and green LED (power supply "U") will turn on. Adjust the sensitivity of the line voltage. If one of the phases drop down below the percentage limit set on the selector switch, the coil output contacts will be powered down. This will open contacts 15-18 and the red LED will turn OFF	
RMW17-SF: Connected directly to the supply voltage to be monitored. If the phase sequence at the terminal L1-L2-L3 is correct, the output relay will energize (closing the 15-18 terminals) and the red LED (relay "R") will turn ON. In case of an incorrect phase sequence, the output relay will de-energize (closing 15-16 terminals) and the red LED (relay "R") will turn OFF.	
RMW17-FSF: Connected directly to the supply voltage to be monitored. If the phase sequence at the terminals L1-L2-L3 is correct and balanced with values higher than the selected on the dial, the output relay energizes (closing the 15-18 terminals) and the red LED (relay "R") turns ON. In case of an incorrect phase sequence or a phase falls below the threshold value, the output relay remains de-energized (closing 15-16 terminals) and the red LED (relay "R") turn OFF.	
	

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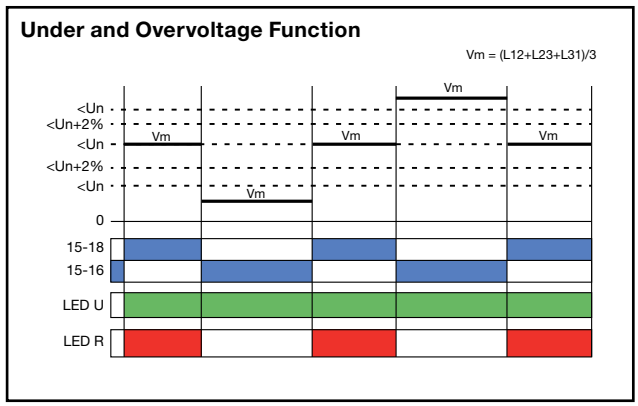
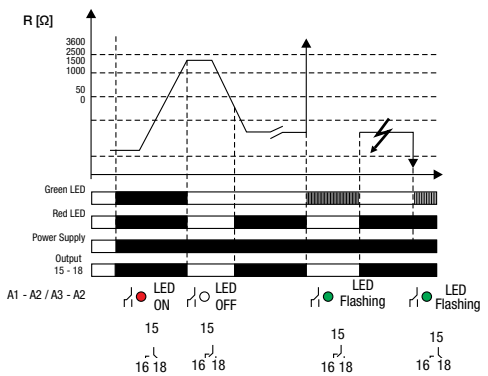
Operation Modes

Single Protection Models (RMW17/RPW)

Operating Mode	Timing Diagram
RMW17-SS/SSM: Connected directly to the supply voltage to be monitored. Connected to terminals A1 and A2 (for the single-phase version) or terminals L1-L2-L3 (for the three-phase version) with phase amplitudes within the selected values and asymmetry between them below the therhold (20%), the output relay energizes (closing the 15-18 terminals) and the red LED (relay "R") turns ON. In case of a phase loss, asymmetry between phases higher than 20% or under and over-voltage, the output relay remains de-energized (closing the 15-16 terminals) and the red LED (relay "R") is turns OFF.	
RPW-PTC: Connected directly to the supply voltage and in series to the PTC (Positive Temperature Coefficient) sensor (maximum of 3 sensors). The output relay is automatically energized (closing the 15-18 terminals) and turns on the red LED (relay "R") indicating that the temperature is within acceptable values. If an over temperature occurs, the probe resistance is rapidly increase and the output relay is de-energized (closing the 15-16 terminals) and the red LED (relay "R") turns OFF, remaining on this situation until the temperature decreases at a normal value. The RPW PTC is able to evaluate if the PTC sensor has a fault (not caused by an over temperature) or if it is not connected (open circuit). In such situations, the green LED will start flashing.	

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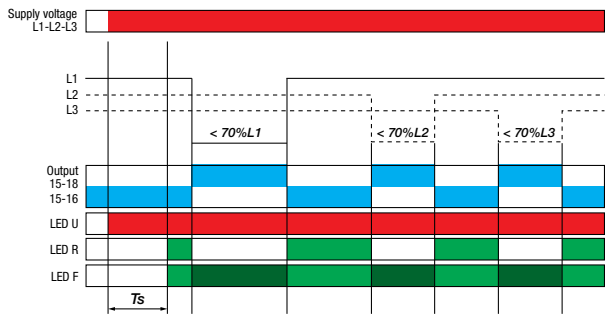
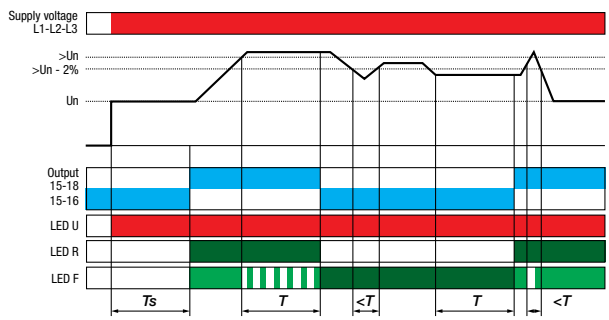
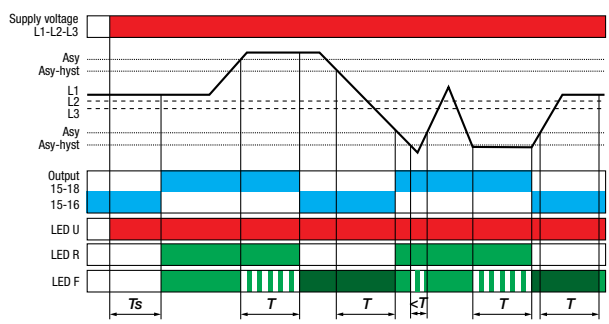
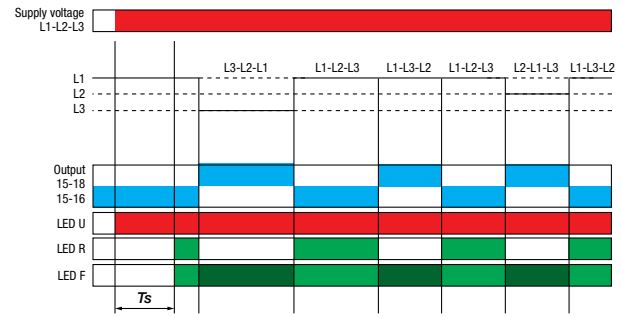
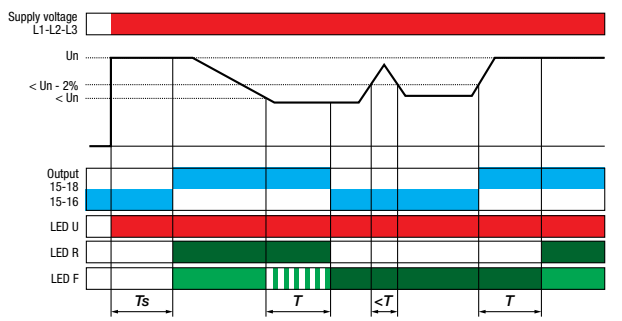
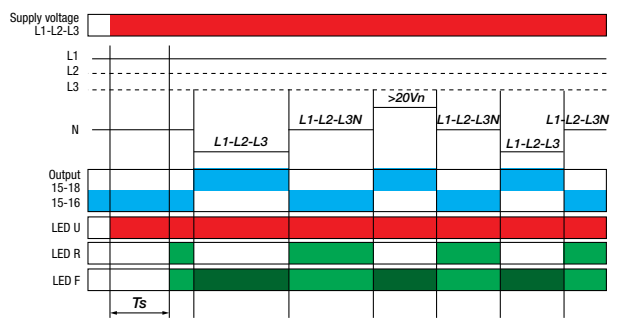
Protection Relays

Operation Modes

Multiple Protection Models (ERWM-VM1 / VM2)

Operating mode
PF (phase loss) – It occurs when the voltage of one of the phases drops below 70% of the supply voltage. The maximum time delay is 350 ms for both the fault detection and the return of the ERWM to normal operation. Timing diagram 
> Un (overvoltage) – It occurs after the rated tripping voltage (Un) (208 to 480 V) and the tripping overvoltage percentage (> Un) (3 to 15%) are selected. The time delay is defined by the time scale (1 to 30 s) or disabled (OFF) acting in a maximum of 350 ms. The selected time delay is for both the fault detection and the return of the ERWM to normal operation. Timing Diagram 
Asy (unbalance) – It occurs when the voltage of one, two or three of the phases vary, calculating the average value of the three phases and also the greatest voltage variation value by the average value. The worst voltage variation case is taken into account in the unbalance calculation. The time delay is defined by the time scale (1 to 30 s) or disabled (OFF) acting in a maximum of 350 ms. The selected time delay is for both the fault detection and the return of the ERWM to normal operation. Timing Diagram 

Operating mode
PS (phase sequence) – It occurs when the phases are not connected in the correct sequence (L1-L2-L3) or even when a phase inversion occurs during operation. The maximum time delay is 350 ms for both the fault detection and the return of the EWM to normal operation. Only the ERWM-VM1 measures phase sequence. Timing diagram 
<Un (undervoltage) – It occurs after the rated tripping voltage (Un) (208 to 480 V) and the tripping undervoltage percentage (<Un) (-3 to -15%) are selected. The time delay is defined by the time scale (1 to 30 s) or disabled (OFF) acting in a maximum of 350 ms. The selected time delay is for both the fault detection and the return of the ERWM to normal operation. Timing Diagram 
ND (neutral detection) – It occurs when the Neutral is not connected or it is disconnected during operation, or also when the voltage rises above 20 V (due to unbalance in the power grid). The maximum time delay is 350 ms for both the fault detection and the return of the ERWM to normal operation. For neutral detection, it is necessary to provide a bridge between terminals A and B; otherwise, the neutral will not be monitored. Timing Diagram 

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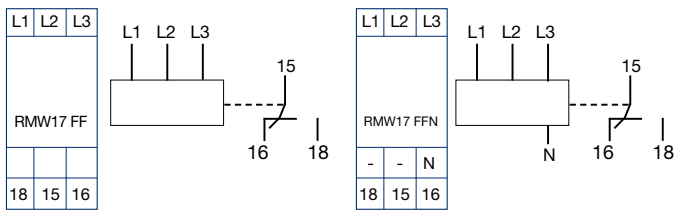
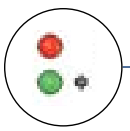
Wiring Diagram

RMW17-FF – Phase Loss

Wiring Diagram



The RMW17 protector relay has state indication LEDs, as shown below:

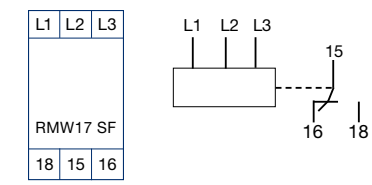


Output energized

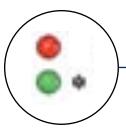
Relay energized

RMW17-SF – Phase Sequence Function

Wiring Diagram



The RMW17 protector relay has state indication LEDs, as shown below:



Energized output

Energized relay

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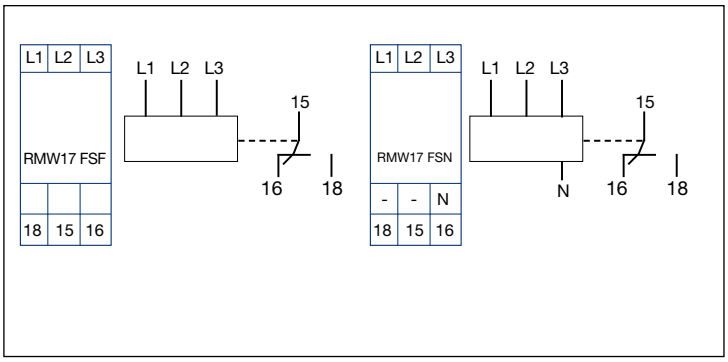
Protection Relays

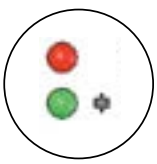
Wiring Diagram

RMW17-FSF – Phase Loss and Sequence

Wiring Diagram



The RMW17 protector relay has state indication LEDs, as shown below:

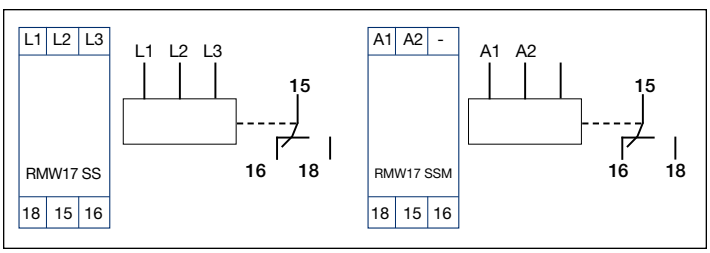


Output energized

Relay energized

RMW17-SS/SSM – Three-Phase and Single-Phase Undervoltage and Overvoltage Function

Wiring Diagram



	ON	Normal operation
	OFF	Under, overvoltage and phase loss
	ON	Fed
	OFF	Not fed

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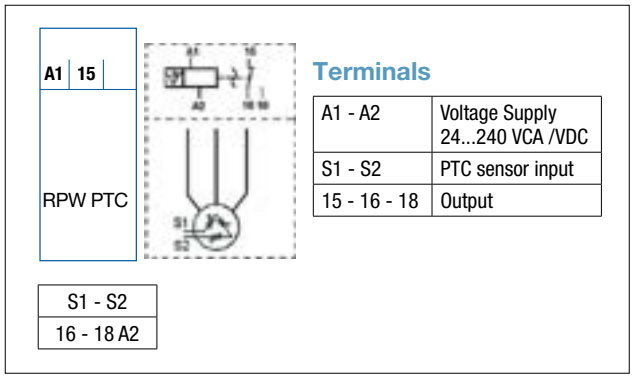
Wiring Diagram

RPW-PTC – Thermistor Relay

Wiring Diagram



Terminals

A1 - A2	Voltage Supply 24...240 VCA /VDC
S1 - S2	PTC sensor input
15 - 16 - 18	Output

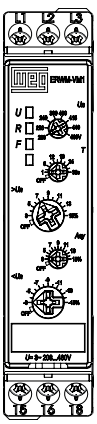
Protection Relay RPW is provided with LED's for status indication.

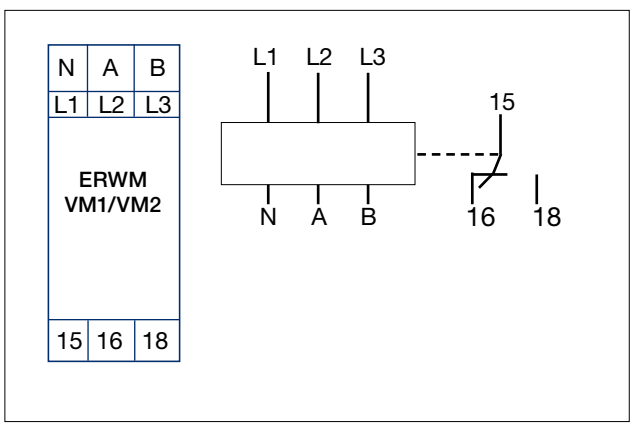
Output energized

Protector energized

Multifunction Models (VM1 – VM2)

Wiring Diagram





Electrical Connection (VM1 / VM2)	
L1 - L2 - L3	Supply voltage
N - A - B	Voltage and neutral detection
15 - 16 / 18	Output contact

Supply Voltage
208 - 480 VAC 50/0 Hz (L1-L2-L3)

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Electronic Relays

Protection Relays

Technical Data

Technical Data			Catalog Number		
			RWM17	RPW-PTC	ERWM
Input	Power supply (Us) L1 - L2 - L3 /A1-A2		208 V / 220-240 V/ 220 V / 230 V / 240 V / 208-480 V / 380 V / 380-480 V / 400 V / 415 V / 440 V / 460 V / 480 V	24-240 VAC 24-240VDC	208-480 VAC
	Frequency		50/60 Hz		
	Sensitivity setting		± 3 TO 15 %	-	± 3 TO 15 %
	Operation range		0.85 TO 1.1 X Us for VAC		
	Maximum consumption (Us)		80 mA / 1 W		
	Maximum voltage allowed on the neutral		20 VAC	-	20 VAC
	Scale precision (full scale)		± 10 %	± 5 %	
Outputs	Repeatability precision		± 1 %		
	Maximum output contact capacity (Ie)		5 A (resistive load)		
			3 A (AC-15)		
	Fuse (class gL/gG)		4A		
	Mechanical lifespan		30 x 106 operating cycles		
Characteristics	Electrical lifespan		10 x 105 operating cycles		
	Ambient temperature allowed	In operation	-5 to +60°C / 23 to 140°F		
		Stored	-40 to +85°C / -40 to 185°F		
	Degree of protection		Enclosure IP20 / Terminals IP20		
	Connection section (min. to max)	Cable without end sleeves	1 x (0.5 to 2.5) mm^2	1 x (0.5 to 2.5) mm^2	
			2 x (0.5 to 1) mm^2	2 x (0.5 to 1.5) mm^2	
		Cable with terminal	1 x (0.5 to 1.5) mm^2	1 x (0.5 to 1.5) mm^2	
			2 x (0.5 to 0.75) mm^2	2 x (0.5 to 1.5) mm^2	
		Wire AWG[1)]	2 x (28 to 18) mm^2	2 x (20 to 16) mm^2	
	Tightening torque		0.4 Nm	0.8 to 1.4 Nm	0.8 to 1.2 Nm
			3.5 in-lb	7.1 to 12.3 in-lb	7 to 10.6 in-lb
	Terminal screw		M3		
	Mounting position		Any position		
	Shock resistance		15g / 11 ms		
	Vibration resistance		10 to 55 Hz / 0.35 mm		
	Weight		0.1 kg		
	Pollution degree		2		
	Overvoltage category		III		
	Certification		CE / UL		

Altitudes – Ratio-Corrector Factor

Altitude Above Sea Level – h	Voltage Ratio-Corrector Factor (Ue) / V	Current Ratio-Corrector Factor (Iu) / A
h ≤ 2,000 m	1	1 x In
2,000 <h ≤ 3,000 m	0.87	0.95 x In
3,000 <h ≤ 4,000 m	0.77	0.90 x In
4,000 <h ≤ 5,000 m	0.67	0.85 x In

Notes:
1) For wires, use gauges of the same diameter.

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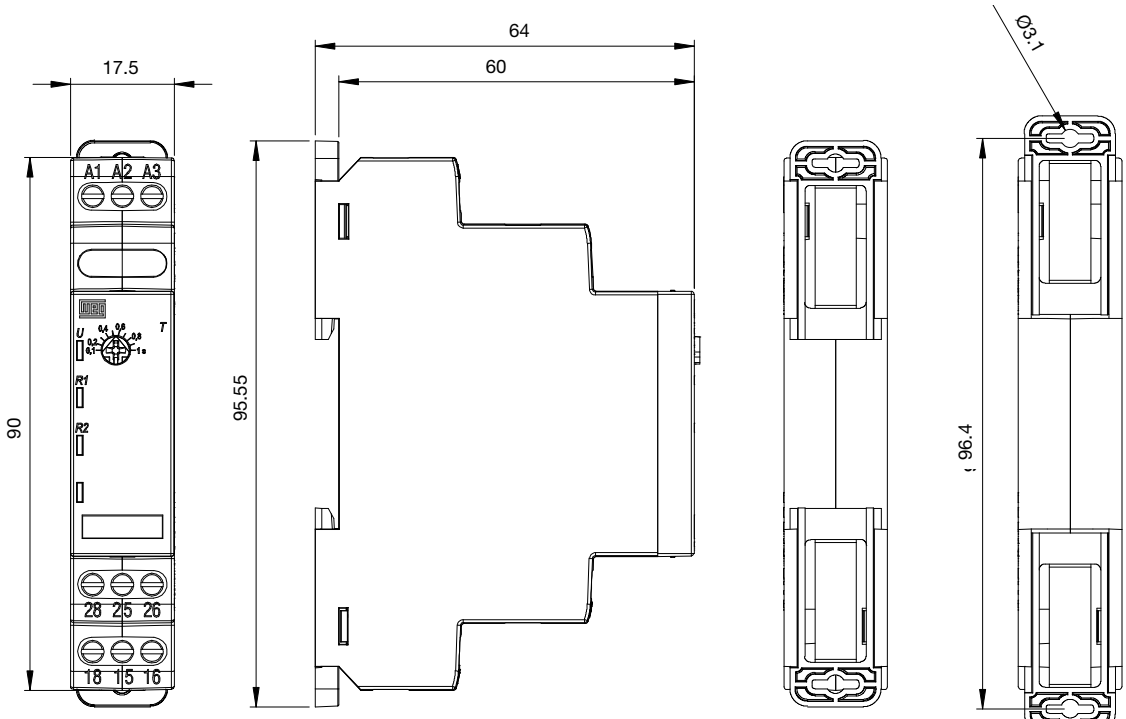
Dimensions – mm

RTW17/RMW17



Notes: Dimensions in millimeters (mm).

Direct mounting on DIN rail

Fixed with screws

Altitudes – Ratio-Corrector Factor

Altitude Above Sea Level – H	Voltage Ratio-Corrector Factor (Ue) / V	Current Ratio-Corrector Factor (Lu) / A
h ≤ 2,000 m	1	1 x In
2,000 <h ≤ 3,000 m	0.87	0.95 x In
3,000 <h ≤ 4,000 m	0.77	0.90 x In
4,000 <h ≤ 5,000 m	0.67	0.85 x In

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Level Relays RNW Series

WEG Level Relays are electronic control devices that enable the monitoring and automatic adjustment of levels in electric current liquid conductors. Widely used in general reservoir automation, the RNW relays can also be utilized in several applications such as prevention of dry pump operation, monitoring against filling tank overflow, activation of solenoids or alarms / lighting.

The operating principle is based on measuring the electrical resistance of the reservoir liquid through electrodes that work as liquid presence / absence sensors. To optimize their performance, the relay has a sensitivity DIAL enabling the electronic circuit to be adjusted to the liquid resistance.

Available in two functions, RNW-EN filling and RNW-ES draining, the level relay offers digital electronics that provide high precision, repeatability and noise resistance. The supply system is isolated from the electronic circuit therefore ensuring greater user safety. Designed in accordance with international standards, the RNW offers a safe and compact solution, in 22.5 mm wide housing for assembly on 35 mm DIN rail, with one output reversable contact (C form) and voltage supply range of 100-240 VAC/VDC.

Available in the following functions:

- RNW EN → Filling
- RNW ES → Draining

Learn More Online

Level Relay RNW Catalog Number Sequence

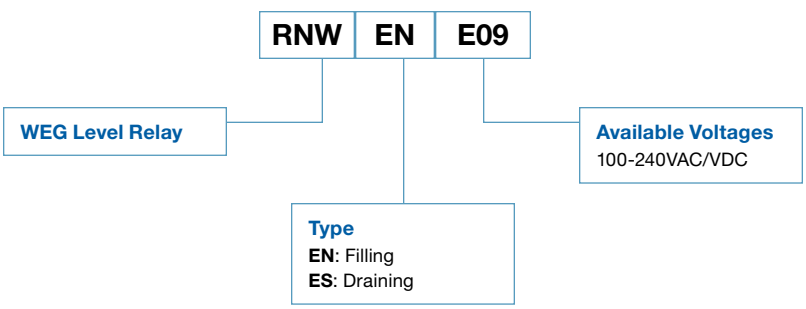

Chart intended as reference only and not to create part numbers.

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Product Selection

Function / Description	Output Contacts	Voltage	Catalog Number	List Price	Multiplier
Draining Relay	SPDT (1NO/NC)	100-240 VAC 50 Hz/60 Hz 100-240VDC	RNW-ESE09	$125	Z7
Filling Relay	SPDT (1NO/NC)	100-240 VAC 50 Hz/60 Hz 100-240VDC	RNW-ENE09	$125	
Pendulum Type Electrode	-	-	EPW	$25	
Shaft Type Electrode	-	-	EHW	$92	
Panel Mounting Kit	-	-	PLMP	$0.50	Z4

SPDT – Single Pole Double Throw = 1NO/NC changeover contact set

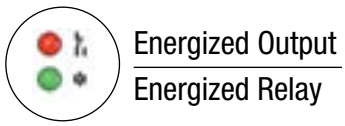
Sensitivity Adjustment

Liquid resistance can vary according to the liquid in question and the position of the electrodes. To adapt the electronic circuit to the liquid used, sensitivity must be adjusted through the DIAL located in the front part of the RNW, which has a graded scale without values.

To perform the sensitivity adjustment, all electrodes must be submersed into the reservoir liquid and the DIAL positioned at its limit anti-clockwise (less resistance). With the relay energized, the DIAL must be turned clockwise (greater resistance) until the relay output switches its contacts (the red LED must change status). To confirm the adjustment, the reference electrode C must be disconnected and then quickly reconnected, the relay must return to its previous status. If this not happen, a new adjustment must be performed. By doing this, the RNW will be adjusted to the ideal sensitivity point.

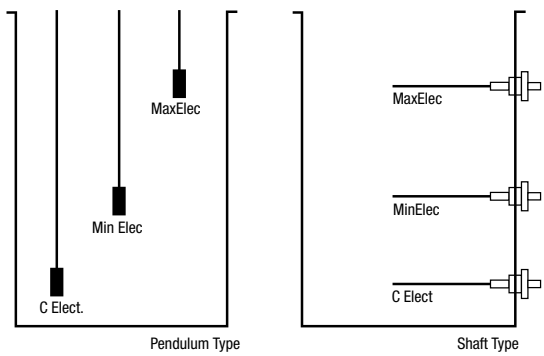
Relay Light Indications

The RNW Level Relay is equipped with indicator LEDs as shown on the right:



Functional Diagram

The electrodes are fixed in the reservoir according to desired control levels, minimum or maximum. The reference electrode (C) must be positioned in the lower part, below the maximum and minimum level electrodes. When the system is energized, an alternating current is applied to the reference electrode and,once the liquid comes into contact with the level electrodes, a path is established for the circulation of electrical current between the electrodes. An electronic current compares the current and switches the relay output contacts according to the chosen model (RNW ES or RNW EN). The electrodes are available in 2 versions, shaft (EHW) or pendulum (EPW), the difference between them is the assembly type. The RNW is available in two distinct functions, draining and filling.



Notes: The EHW shaft sensors can be fixed both horizontally and vertically.

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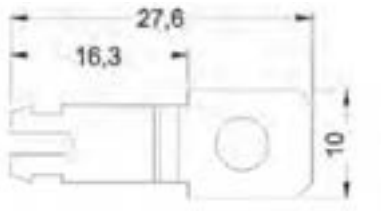
Level Relays

RNW Series Accessories

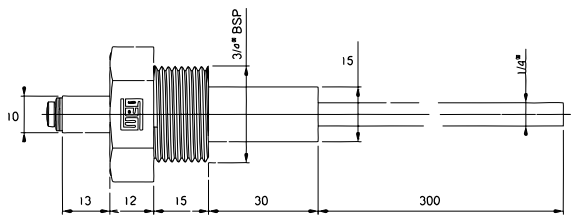
Panel Mounting Kit- PLMP

Dimensions (mm)



Shaft Electrode – EHW

Dimensions (mm)

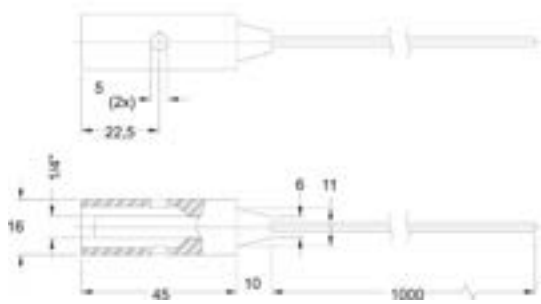


- Teflon coated stainless steel shaft
- 11/4“ chrome hex screw
- Length: 300 mm

Notes: Other lengths upon request. Maximum sensor cable 100 m (110 yd).

Pendulum Electrode – EPW

Dimensions (mm)



- Body in natural black polypropylene
- Stainless steel sensor shaft
- 1 x 10 mm² gauge flexible connection cable
- Cable length: 1000 mm

Notes: Maximum sensor cable 100 m (110 yd).

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RNW Series Technical Data

	Product			RNW ES / RNW EN
Inputs	Supply (Un)	A1	VAC	100-240 50/60 Hz
		A2	VDC	100-240
	Isolated Rated Voltage (Ui)		V	300
	Operating Limits			0.85 to 1.1 x Ue
	Maximum Consumption		VA / W	2 / 1
Outputs	Contacts	15 - 16 / 18		1 SPDT (1NO/NC)
	Output Contact Capacity (Ie)		A	5 (resistive load)
	AC-15 in 230 VCA			3
	DC-13 in 24VDC			1
	DC-13 in 48VDC			0.45
	DC-13 in 60VDC			0.35
	DC-13 in 125VDC			0.2
	DC-13 in 250VDC			0.1
	A300 : AC-15			
	R300 : DC-13			
	Rated thermal current (Ith)		A	10 (for AC)
				2.5 (for DC)
	Fuse (class gL / gG)		A	4
	Mechanical Lifespan		operations	30 x 10^6
Characteristics	Temperature	Operation	ºC (F)	-5 to +60ºC (23...140 ºF)
		Storage		-40 to +85ºC (-40...185 ºF)
	Degree of Protection			IP20
	Terminal Capacity	Rigid or fexible cable	mm^2	1 x (0.5 to 2.5)
				2 x (0.5 to 1.5)
	Cable with Terminal	Rigid or fexible cable/terminal	mm^2	1 x (0.5 to 2.5)
				2 x (0.5 to 1.5)
		AWG solid conductor	AWG	2 x (30 to 14)
	Tightening torque		Nm	0.8 to 1.2
			in-lb	7 to 10.6
	Terminal Screws			M3
	Assembly Position			Any
	Resistance to Impacts		g / ms	15 / 11
	Resistance to vibration		Hz / mm	10 to 500 / 10
	Weight		kg	0.08
	Pollution			2
	Over voltage category			II
	Sensitivity Adjustment		kΩ	0 to 100
	Electrode Voltage		VCA	7
Electrodes	Electrode Current		mA	0.05
	Maximum length of sensor cable		m	100 (maximum cable capacitance 2.2nF)
	Detector operating temperature - Shaft		ºC (F)	0 to + 260°C (32...500ºF)
	- Pendulum			0 to + 60ºC (32...140ºF)
	Allowable detector pressure - Shaft		kgf / cm^2	3
	- Pendulum			-
	Detector Weight - Shaft		kg	0.230
	- Pendulum			0.012

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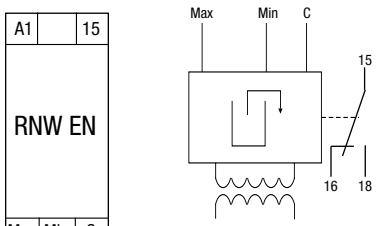
Level Relays

Level Relays – RNW Series

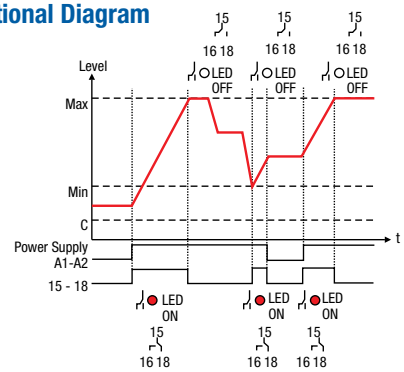
RNW EN (Filling)

Controls 2 levels using three (3) electrodes: the reference electrode (C), the maximum level electrode (Max) and the minimum level electrode (Min). Once powered, the RNW EN start monitoring the liquid level in the reservoir. With the electrode being uncovered at minimum level Min, the output relay will energize (terminals 15-18 closed) causing the liquid level to rise. When the reservoir liquid covers the Max level electrode, the output realy de-energize (terminals 15-18 open) and remains de-energized until the Min level electrode is discovered again. If there is a supply failure, the RNW EN will restart its initial logic.

Wiring Diagrams



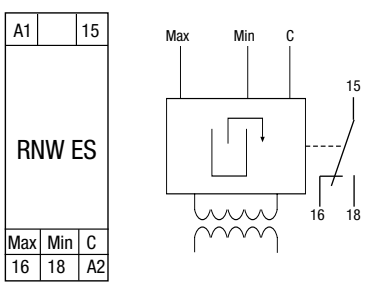
Functional Diagram



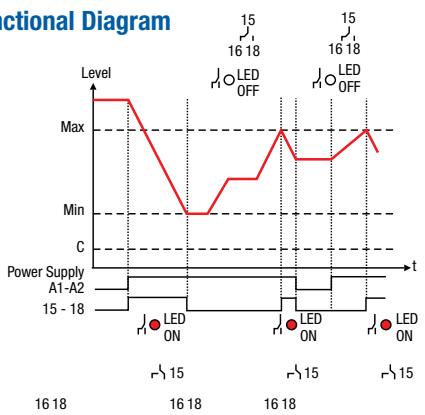
RNW ES (Draining)

Controls 2 levels using three (3) electrodes: the reference electrode (C), the maximum level electrode (Max) and the minimum level electrode (Min). Once powered, the RNW ES start monitoring the liquid level in the reservoir. With the liquid being in contact with the Max level electrode, the relay will energize (terminals 15-18 closed), causing the reservoir liquid level begin to drop. Once the Min level electrode is uncovered by the liquid the relay will energize (terminals 15-18 open) and will remain energized until the liquid enters into contact again with the Max level electrode, restarting the process. If there is a supply failure, the RNW ES will restart its initial logic.

Wiring Diagram



Functional Diagram



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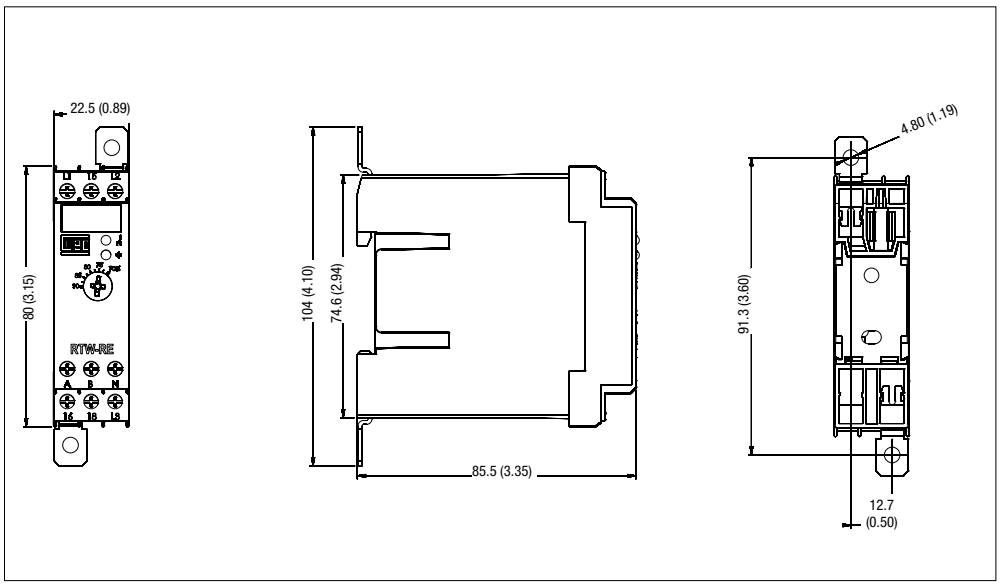
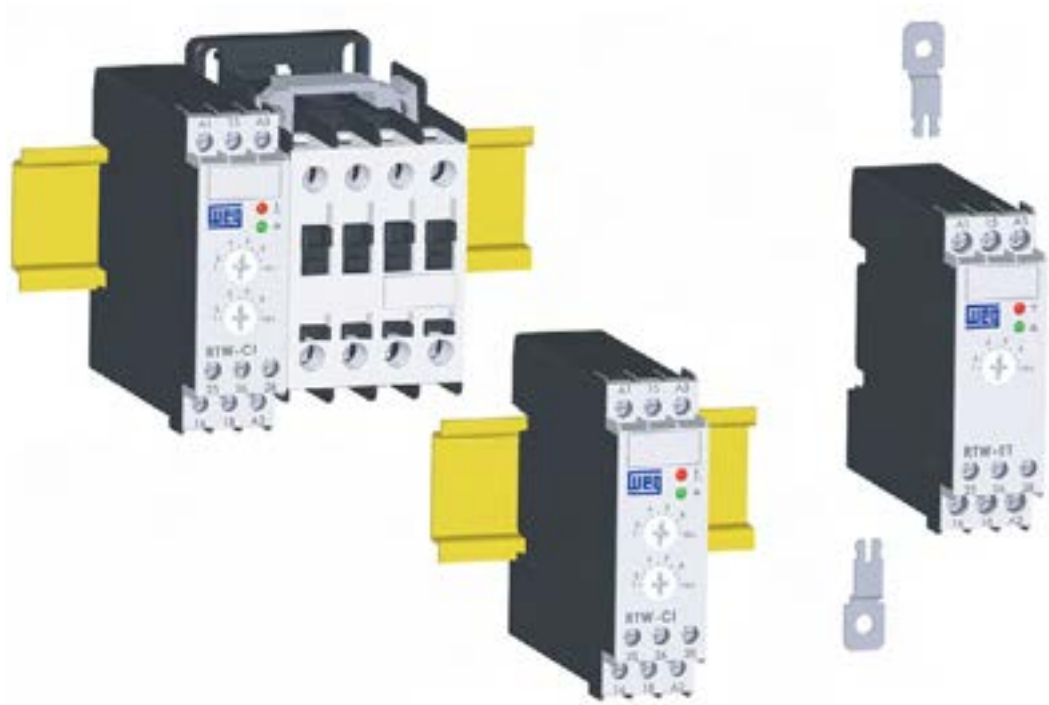
RNW Series

Electronic Relay Technical Data

Dimensions – mm (inch)



Relay Assembly



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Safety Relays

The WEG Safety Relays are devices that supervise circuits, providing instant and reliable monitoring of signals from safety devices. Ensuring the equipment/system and operator's safety. They are designed to meet the latest safety standards, always aiming at reaching the maximum efficiency and reliability in a single product. It is developed in compliance with TÜV Rheinland, CE, and UL standards.

Standard Features

- TÜV Rheinland certification
- Dual channel outputs
- LED status indication
- Direct mounting on DIN rail 35 mm
- Contact supervision
- Protected against faults and tampering
- Flexibility – suitable for different application types
- Lead-free products

E189202

CP Line – Emergency Stop Control

CS Line – Simultaneity Monitoring

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Safety Relays CP Line – Emergency Stop Control

Standard Features

- 24 VDC / VAC power supply
- Supervises contacts of different safety equipment types
- Three NO safety outs
- One NC auxiliary outputs
- Dual channel
- Short-circuit detection
- Feedback circuit
- Broken wire detection
- Cat 4 / PLe (ISO 13849-1), SIL CL 3 IEC 62061 / IEC 61508

CP-D

CPA-D

Supply Voltage	Safety Contacts	Auxiliary Contact	Width (mm)	Reset	Catalog Number	List Price	Multiplier
24VDC / VAC	3NO	1NC	22.5	Manual	CP-D	$304.97	Z7
				Automatic	CPA-D	$315.35	

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CS Line – Simultaneity Monitoring

Standard Features

- 24 VDC / VAC power supply
- Supervises contacts of different safety equipment types
- Two (2) NO safety outs
- One (1) NC auxiliary outputs
- Dual channel
- Short-circuit detection
- Feedback circuit
- Broken wire detection
- Cat 4 / PLe (ISO 13849-1), SIL CL 3 IEC 62061 / IEC 61508

CS-D201

Supply Voltage	Safety Contacts	Width (mm)	Catalog Number	List Price	Multiplier
24VDC	2NO + 1NC	22.5	CS-D201	$364.99	Z7

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Technical Data

Catalog Number		CP-D	CPA-D	CS-D201
Start / reset method	-	Manual	Automatic	-
Power supply	V	24VDC / VAC ± 10%		24VDC ± 10%
Maximum consumption	-	2.5W		<10 VA
Frequency	Hz	50 Hz / 60 Hz		-
Output Terminals				
Safety contacts	-	3NO Contacts		2NO Contacts
Auxiliary contact	-	1NC Contact		
Response time	ms	10 ms (max)		
Service life of the contacts	-	10^7 operations		
Capacity of the contacts	-	4.5A - 30VDC / 200W - 250 VAC		
Protection current	(mA)	-		15 mA
Short-circuit detector	-	Yes		
Feedback circuit	-	Yes		
Broken wire detector	-	Yes		
Operating temperature	°C /°F	-10°C to +55°C (14°F to 131°F)		
Storage and transport	°C /°F	-40°C to +70°C (-40°F to 158°F)		
Connection types	-	Screw type terminals		
Maximum conductor resistance	(Ω)	40 Ohms		
Maximum cable cross-section	(mm)	2.5 mm^2		
Connection cable	-	Rigid or flexible		
Removable terminals	-	No		
Maximum torque	(N-m)	0.6 N-m		
Screwdriver Nº	-	Slot #3		
Protection degree	-	IP20		
$b10_d$	Cycles until 10% of dangerous failure	-		
PFH_d	Probability of dangerous failure per hour	2.82 E-10 1/h		4.37 E-10 1/h
$MTTF_d$	Mean Time to dangerous failure	2,315 years	2,195 years	84 years
DC	Diagnostic Coverage	99%		
Service life	-	20 years		
Standards	-	ISO 13849-1, IEC 61508, IEC 62061, IEC 60204-1, ISO 13850		EN 574 (tipo IIIC), ISO 13849-1, IEC 62061, IEC 61508, IEC 60947-5-1, IEC 60204-1, IEC 60664-1
Safety certification	-	Cat 4 / PLe (ISO 13849-1), SIL CL 3 IEC 62061/IEC 61508) TÜV Rheinland		
Product certification	-	TÜV, CE and UL[1)]		

Notes:
1) UL certification as a control relay.

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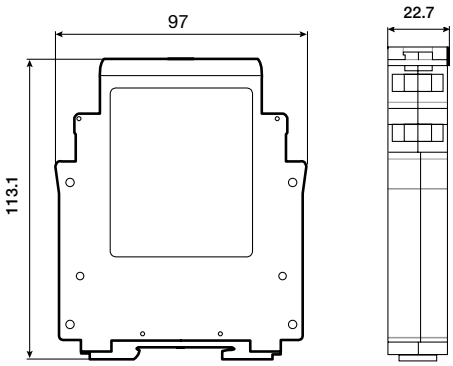
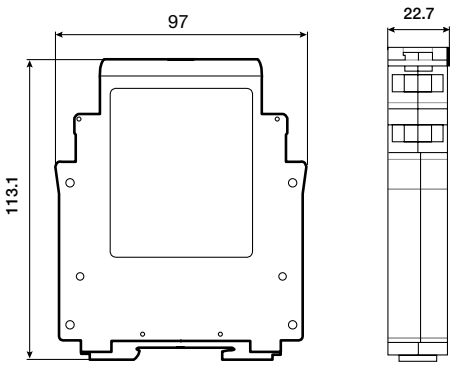
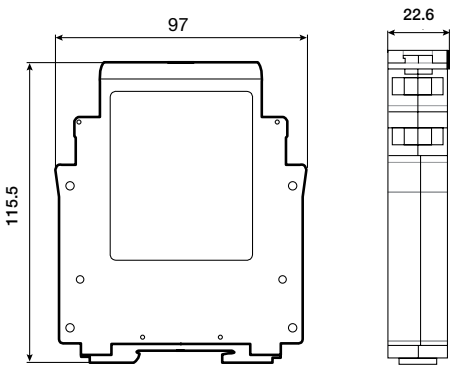
Dimensions – mm



CP-D



CPA-D



CS-D201

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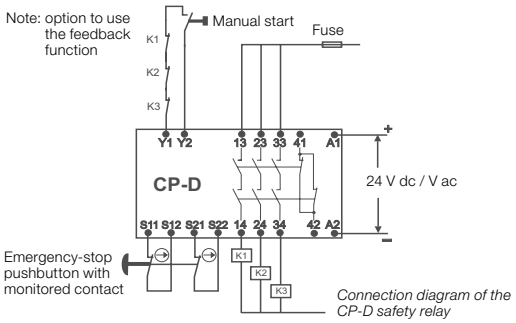
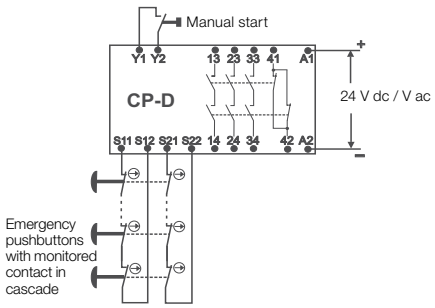
Safety Relays

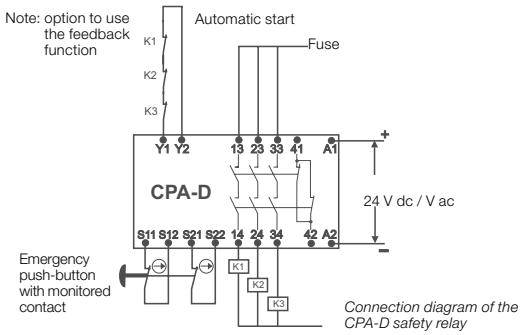
Typical Wiring Diagrams

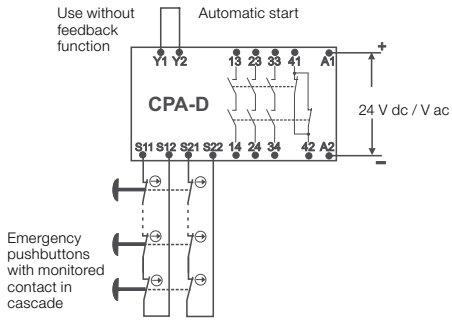
Manual Start





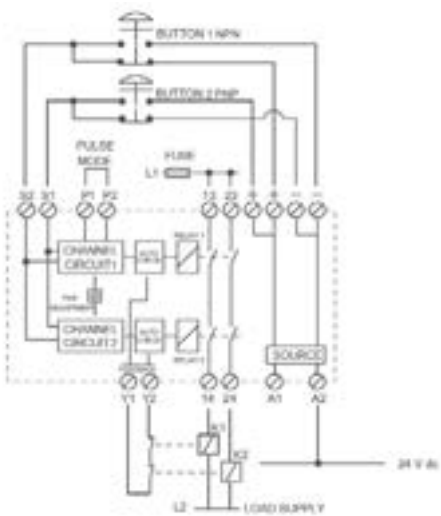
Automatic Start





Typical Wiring Diagram - CS Line

CS-D201



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CSW Series (22 mm) – Pushbuttons & Pilot Devices

The WEG 22 mm Pushbuttons and Pilot Device line uses leading edge technology and development. These user friendly pilot devices are used in many different industrial applications and environments.

Standard Features

- Fast and easy assembly of pushbuttons and contact blocks
- High efficiency self-cleaning contact blocks
- Long life expectancy
- High luminosity and color with the LED Lights
- Full line of accessories

High Performance Illuminated Blocks

The CSW line features the BIDL (integrated LED illuminated blocks) which offer high efficiency — lumens/Watt — with low thermal dissipation and energy consumption. The integrated construction guarantees high resistance against vibrations and maintenance-free operation.

UL File No. E330817

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Pushbuttons and Pilot Lights

CSW Series (22mm)

Flush[1)]

Image	Color		Catalog Number	List Price	Multiplier
0.021 kg	○	White	CSW-BF0 WH	$5	Z5
	●	Red	CSW-BF1 WH	$5	
	●	Green	CSW-BF2 WH	$5	
	●	Yellow	CSW-BF3 WH	$5	
	●	Blue	CSW-BF4 WH	$5	
	●	Orange	CSW-BF5 WH	$5	

Guarded[1)]

Image	Color		Catalog Number	List Price	Multiplier
0.022 kg	○	White	CSW-BGA0 WH	$5.50	Z5
	●	Red	CSW-BGA1 WH	$5.50	
	●	Green	CSW-BGA2 WH	$5.50	
	●	Yellow	CSW-BGA3 WH	$5.50	
	●	Blue	CSW-BGA4 WH	$5.50	
	●	Orange	CSW-BGA5 WH	$5.50	

Extended[1)]

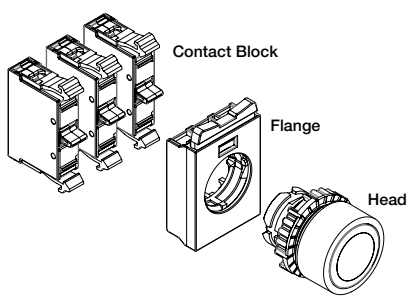
Image	Color		Catalog Number	List Price	Multiplier
0.021 kg	○	White	CSW-BS0 WH	$6.50	Z5
	●	Red	CSW-BS1 WH	$6.50	
	●	Green	CSW-BS2 WH	$6.50	
	●	Yellow	CSW-BS3 WH	$6.50	
	●	Blue	CSW-BS4 WH	$6.50	
	●	Orange	CSW-BS5 WH	$6.50	

Mushroom – External Diameter: 40 mm[1)]

Image	Color		Catalog Number	List Price	Multiplier
0.024 kg	●	Red	CSW-BC1 WH	$8.50	Z5
	●	Green	CSW-BC2 WH	$8.50	

How To Order[2)]

Head
+ Flange
+ Contact block



Notes:
1) Does not allow the use of contact blocks in the central position of the mounting flanges.
2) Check the maximum of recommended contact blocks for each head on page 365.

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Pushbuttons and Pilot Lights

Pushbuttons with Latch - Ø22 mm - IP66

Emergency Pushbuttons with Latch (EN 418 and IEC 60947-5-5)

Emergency Pushbuttons with Latch – External Diameter: 42 mm [2)]

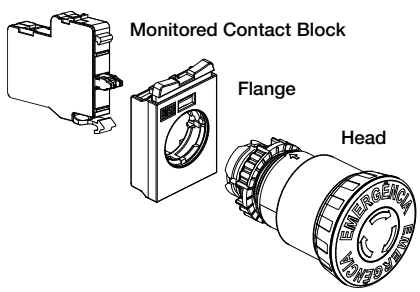
Image	Actuations	Signaling	Color		Catalog Number	List Price	Multiplier
0.049 kg	Pull to release	-	●	Red	CSW-BESP WH	$15	Z5
0.049 kg	Twist to release	-	●	Red	CSW-BESG WH	$15	
0.114 kg	Key to release[1)]	-	●	Red	CSW-BESY WH	$45	
	GBES-02; Use with CSW-BESP WH, CSW-BESPM WH, CSW-BESPSFI WH, CSW-BESPFIM WH, CSW-BESG WH, CSW-BESGM WH, CSW-BESGSFI WH, CSW-BESGSFIM WH, and CSW-BESY WH				GBES-02	$10	

Emergency Pushbuttons with Latch – External Diameter: 40 mm [2)]

Image	Actuations	Color		Catalog Number	List Price	Multiplier
0.027 kg	Twist to release	●	Red	CSW-BCT1 WH	$13	Z5
0.091 kg	With key[1)]	●	Red	CSW-BCY1 WH	$40	
	APEG-02; Use with: CSW-BCT1 WH, CSW-BCY1 WH			APEG-02	$10	

How to order[3)]

Head
+ Flange
+ Contact block



Notes:
1) Keys with different codes are available upon request.
2) Does not allow the use of contact blocks in the central position of the mounting flanges.
3) Check the maximum of recommended contact blocks for each head on page 365.

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Pushbuttons and Pilot Lights

Illuminated Pushbuttons - Ø22 mm - IP66

Flush[1)]

Image	Color		Catalog Number	List Price	Multiplier
0.021 kg	○	White	CSW-BFI0 WH	$8.50	Z5
	●	Red	CSW-BFI1 WH	$8.50	
	●	Green	CSW-BFI2 WH	$8.50	
	●	Yellow	CSW-BFI3 WH	$8.50	
	●	Blue	CSW-BFI4 WH	$8.50	
	●	Orange	CSW-BFI6 WH[3)]	$8.50	

Extended[1)]

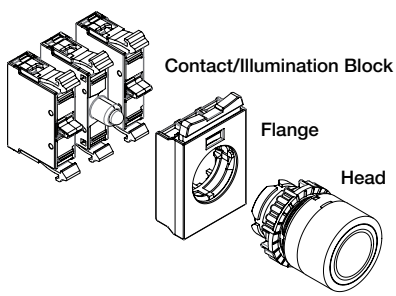
Image	Color		Catalog Number	List Price	Multiplier
0.021 kg	○	White	CSW-BSI0 WH	$8.50	Z5
	●	Red	CSW-BSI1 WH	$8.50	
	●	Green	CSW-BSI2 WH	$8.50	
	●	Yellow	CSW-BSI3 WH	$8.50	
	●	Blue	CSW-BSI4 WH	$8.50	
	●	Orange	CSW-BSI6 WH[3)]	$8.50	

Mushroom – External Diameter: Ø40 mm[1)]

Image	Color		Catalog Number	List Price	Multiplier
0.026 kg	○	White	CSW-BCI0 WH	$10	Z5
	●	Red	CSW-BCI1 WH	$10	
	●	Green	CSW-BCI2 WH	$10	
	●	Yellow	CSW-BCI3 WH	$10	
	●	Blue	CSW-BCI4 WH	$10	
	●	Orange	CSW-BCI6 WH[3)]	$10	

How To Order[2)]

Head
+ Flange
+ Contact block
+ Illumination block

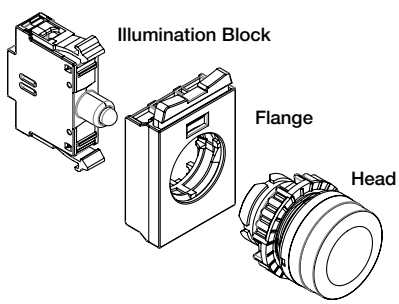


Pilot Lights[1)]

Image	Color		Catalog Number	List Price	Multiplier
0.016 kg	○	White	CSW-SD0 WH	$7.30	Z5
	●	Red	CSW-SD1 WH	$7.30	
	●	Green	CSW-SD2 WH	$7.30	
	●	Yellow	CSW-SD3 WH	$7.30	
	●	Blue	CSW-SD4 WH	$7.30	
	●	Orange	CSW-SD6 WH[3)]	$7.30	

How To Order[2)]

Head
+ Flange
+ Illumination block



Notes:
1) Allows illumination through LED or lamp block.
2) Check the maximum of recommended contact blocks for each head.
3) For better lighting performance use yellow LED block with this device.

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Pushbuttons and Pilot Lights

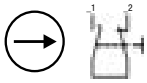
Pushbuttons with Latch and Light Indication - 022mm - IP66

Emergency Pushbuttons with Latch (EN 418 and IEC 60947-5-5)

Emergency Pushbuttons with Latch – External Diameter: 42 mm[1)2)]

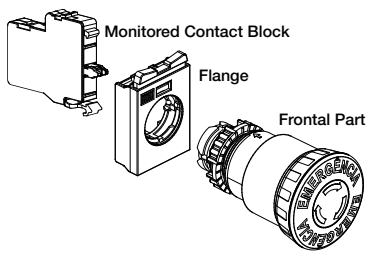
Illustrative Image	Description	Signaling		Color		Catalog Number	Price	Multiplier
		Front	Side					
	Pull-to-release	Light	Green Ring	●	Red	CSW-BESPSFI-WH	$19	Z5
	Twist-to-release			●	Red	CSW-BESGSFI-WH	$19	
	GBES-02; Use with CSW-BESP WH, CSW-BESG WH, CSW-BESY WH, CSW-BESPSFI WH, CSW-BESGSFI WH, CSW-BESPSFIM WH, CSW-BESGSFIM WH					GBES-02	$10	

Self-Monitoring Contact Block for Emergency Pushbuttons[3)4)]

	Contacts	Diagram	Standard Packing	Compatible flange	Catalog Number	List Price	Multiplier
0.002 kg	1NC		1 piece	AF3F	BCM01F-CSW	$27.37	Z5

How to Order[2)]

Frontal part
+ Flange
+ Contact block



Notes:
1) For use with BIDL illumination blocks (supplied separately).
2) Check the maximum number of contact blocks recommended for each head on page 365.
3) Not compatible with the PBW Control Stations line. For control station accessories, please refer to page 358.
4) The NO contact closes when assembled correctly in the flange.

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Pushbuttons and Pilot Lights

2 Positions Selectors - Ø22 mm - IP66

Knob

Illustrative Image	Position		Diagram	Selector Angle	Color	Catalog Number	List Price	Multiplier
0.025 kg	0 I	Fixed	1	45º	Black	CSW-CK2F45 WH	$13	Z5
	0 I	With return	1	45º	Black	CSW-CK2R45 WH	$15	
	0 I	Fixed	1	90º	Black	CSW-CK2F90 WH	$13	
	0 I	With return	1	90º	Black	CSW-CK2R90 WH	$15	

Lever

Illustrative Image	Position		Diagram	Selector Angle	Color	Catalog Number	List Price	Multiplier
0.025 kg	0 I	Fixed	1	45º	Black	CSW-CA2F45 WH	$14	Z5
	0 I	With return	1	45º	Black	CSW-CA2R45 WH	$16	
	0 I	Fixed	1	90º	Black	CSW-CA2F90 WH	$14	
	0 I	With return	1	90º	Black	CSW-CA2R90 WH	$16	

With Key[1) 2)]

Illustrative Image	Position		Diagram	Selector Angle	Color	Catalog Number	List Price	Multiplier
0.087 kg	0 I	Fixed	1	45º	Black	CSW-CY2F45 WH	$41	Z5
	0 I	With return	1	45º	Black	CSW-CY2R45 WH	$43	
	0 I	Fixed	1	90º	Black	CSW-CY2F90 WH	$41	
	0 I	With return	1	90º	Black	CSW-CY2R90 WH	$43	

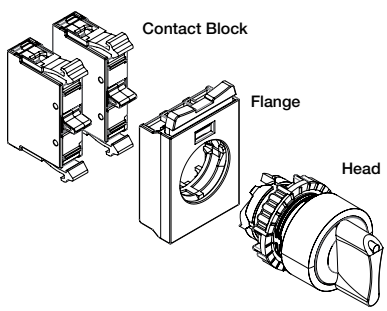
Spare Keys[1)]

Illustrative Image	Description	Catalog Number	List Price	Multiplier
	2 spare keys	CSW-CY	$7	Z5

Diagram 1

Handle position	Mounting position in the flange				
	-	2	3	1	-
	4	2	5	1	3
0	☐	☐	-	☐	☐
I	■	■		■	■

LEGEND:
☐ Contacts in the rest position
■ Contacts operated



How To Order[3)]

Head
+ Flange
+ Contact block

Notes:
1) Keys with different codes are available upon request;
2) Key is released in any position. For key release in specific positions, please replace CY by: CYD (only at right), CYE (only at left) and CYC (only at center)
3) Check the maximum of recommended contact blocks for each head on page 365.

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Pushbuttons and Pilot Lights

A3 Positions Selectors - Ø22 mm - IP66 CW

Knob

Illustrative Image	Position		Diagram	Selector Angle	Color[1]		Catalog Number	List Price	Multiplier
0.025 kg	I 0 II	Fixed	1	45º	●	Black	CSW-CK3F45 WH	$13	Z5
	I 0 II	With return	1	45º	●	Black	CSW-CK3R45 WH	$15	
	I 0 II	With return from the right	1	45º	●	Black	CSW-CK3RD45 WH	$15	
	I 0 II	With return from the left	1	45º	●	Black	CSW-CK3RE45 WH	$15	

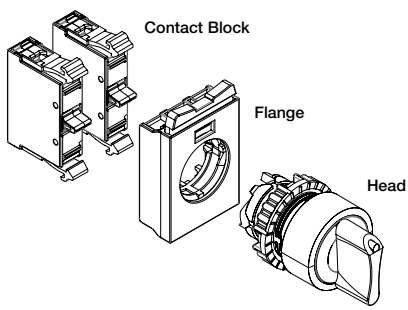
Lever

Illustrative Image	Position		Diagram	Selector Angle	Color[1]		Catalog Number	List Price	Multiplier
0.025 kg	I 0 II	Fixed	1	45º	●	Black	CSW-CA3F45 WH	$14	Z5
	I 0 II	With return	1	45º	●	Black	CSW-CA3R45 WH	$16	
	I 0 II	With return from the right	1	45º	●	Black	CSW-CA3RD45 WH	$16	
	I 0 II	With return from the left	1	45º	●	Black	CSW-CA3RE45 WH	$16	

Diagram 1

Handle position	Mounting position in the flange				
	-	2	3	1	-
	4	2	5	1	3
I	■	■		□	□
0	□	□	-	□	□
II	□	□		■	■

LEGEND:
□ Contacts in the rest position
■ Contacts operated



How to order[2]

Head
+ Flange
+ Contact block

Notes:
1) Selector switches in other colors are available under request.
2) Check the maximum of recommended contact blocks for each head on page 365.

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Pushbuttons and Pilot Lights

A3 Positions Selectors - Ø22 mm - IP66 CW

With Key[1)2)]

Illustrative Image	Position		Diagram	Selector angle	Color		Catalog Number	List Price	Multiplier
0.087 kg	0 I II	Fiixed	1	45º	●	Black	CSW-CY3F45 WH	$41	Z5
	0 I II	With return	1	45º	●	Black	CSW-CY3R45 WH	$43	
	0 I II	With return from the right	1	45º	●	Black	CSW-CY3RD45 WH	$43	
	0 I II	With return from the left	1	45º	●	Black	CSW-CY3RE45 WH	$43	

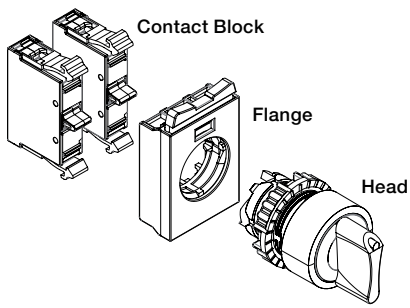
Spare Key[1)]

Illustrative Image	Description	Catalog Number	List Price	Multiplier
	2 spare keys	CSW-CY	$7	Z5

Diagram 1

Handle position	Mounting position in the flange				
	-	2	3	1	-
	4	2	5	1	3
I	■	■	-	□	□
0	□	□		□	□
II	□	□		■	■

LEGEND:
□ Contacts in the rest position
■ Contacts operated



How to order[3)]

Head
+ Flange
+ Contact block

Reset Pushbutton with Shaft

Illustrative Image	Description	Catalog Number	Weight (kg)	List Price	Multipler
	Flush pushbutton – blue – engraved reset – with shaft. Length: max 250 mm and min 22.5 mm	CSW-BHF437	0.045	$12	Z5

Notes:
1) Keys with different codes are available under request.
2) Key is released in any position. For key release in specific positions, please replace CY by: CYD (only at right), CYE (only at left) and CYC (only at center).
3) Check the maximum of recommended contact blocks for each head on page 365.

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Pushbuttons and Pilot Lights

Illuminated Selectors - Ø22 mm - IP66

2 Positions Illuminated Selectors

Illustrative Image	Position		Diagram	Selector Angle	Color		Catalog Number	List Price	Multiplier
0.020 kg	0 I	Fixed	1	90°	○	White	CSW-CKI2F900 WH	$8	Z5
					●	Red	CSW-CKI2F901 WH	$8	
					●	Green	CSW-CKI2F902 WH	$8	
					●	Yellow	CSW-CKI2F903 WH	$8	
					●	Blue	CSW-CKI2F904 WH	$8	
					●	Orange	CSW-CKI2F906 WH[1)]	$8	

3 Positions Illuminated Selectors

Illustrative Image	Position		Diagram	Selector Angle	Color		Catalog Number	List Price	Multiplier
0.020 kg	I 0 II	Fixed	2	45°	○	White	CSW-CKI3F450 WH	$8	Z5
					●	Red	CSW-CKI3F451 WH	$8	
					●	Green	CSW-CKI3F452 WH	$8	
					●	Yellow	CSW-CKI3F453 WH	$8	
					●	Blue	CSW-CKI3F454 WH	$8	
					●	Orange	CSW-CKI3F456 WH[1)]	$8	
	I 0 II	With return	2	45°	○	White	CSW-CKI3R450 WH	$8.50	
					●	Red	CSW-CKI3R451 WH	$8.50	
					●	Green	CSW-CKI3R452 WH	$8.50	
					●	Yellow	CSW-CKI3R453 WH	$8.50	
					●	Blue	CSW-CKI3R454 WH	$8.50	
					●	Orange	CSW-CKI3R456 WH[1)]	$8.50	
	I 0 II	With return from the right	2	45°	○	White	CSW-CKI3RD450 WH	$8.50	
					●	Red	CSW-CKI3RD451 WH	$8.50	
					●	Green	CSW-CKI3RD452 WH	$8.50	
					●	Yellow	CSW-CKI3RD453 WH	$8.50	
					●	Blue	CSW-CKI3RD454 WH	$8.50	
					●	Orange	CSW-CKI3RD456 WH[1)]	$8.50	
	I 0 II	With return from the left	2	45°	○	White	CSW-CKI3RE450 WH	$8.50	
					●	Red	CSW-CKI3RE451 WH	$8.50	
					●	Green	CSW-CKI3RE452 WH	$8.50	
					●	Yellow	CSW-CKI3RE453 WH	$8.50	
					●	Blue	CSW-CKI3RE454 WH	$8.50	
					●	Orange	CSW-CKI3RE456 WH[1)]	$8.50	

Diagram 1

Handle position	Mounting position in the flange				
	-	2	3	1	-
	4	2	5	1	3
0	□	□	☼	□	□
I	■	■		■	■

Diagram 2

Handle position	Mounting position in the flange					Flange
	-	2	3	1	-	3P
	4	2	5	1	3	5P
I	■	■	☼	□	□	
0	□	□		□	□	
II	□	□		■	■	

LEGEND:
- □ Contacts in the rest position
- ■ Contacts operated
- ☼ Mounting position for LED blocks in illuminated switches.

POTENTIOMETER

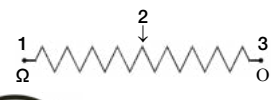
CSW-POT_W

LIST PRICE
$145

CSW-POT ___ W

Resistance
- 0.5: 0.5 kΩ
- **1**: 1 kΩ
- **2**: 2 kΩ
- **5**: 5 kΩ
- **10**: 10 kΩ
- **1M**: 1M kΩ

WIRING DIAGRAM



Clockwise knob rotation as seen from the front of the panel.

Measuring Between Terminals:
- 1 & 2 Decreasing resistance (↓Ω)
- 2 & 3 Increasing resistance (↑Ω)
- 2 Is the common

Notes:
1) For better lighting performance use yellow LED Block.

Data is subject to change without notice.

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Pushbuttons and Pilot Lights

Flush Double Pushbutton – Degree of Protection IP40[1)2)] – (refer to 1. How to order)

0.034 kg

Color		Engraving	Catalog Number	List Price	Multiplier
Green		I	CSW-BD WH	$11.50	Z5
Red		O			
Green		START	CSW-BD21SS WH	$11.50	
Red		STOP			

Double Pushbutton – (refer to 1. How to order)

0.034 kg

Frontal	Color		Engraving	Catalog Number	List Price	Multiplier
Flush		Green	I	CSW2-BDF21IO WH	$14	Z5
Flush		Red	O			
Flush		Green	START	CSW2-BDF21SS WH	$14	
Flush		Red	STOP			

Extended Double Pushbutton – (refer to 1. How to order)

0.034 kg

Frontal	Color		Engraving	Catalog Number	List Price	Multiplier
Flush		Green	I	CSW2-BDS21IO WH	$14	Z5
Extended		Red	O			
Flush		Green	START	CSW2-BDS21SS WH	$14	
Extended		Red	STOP			

Triple Pushbutton – (refer to 1. How to order)

0.034 kg

Frontal	Color		Engraving	Catalog Number	List Price	Multiplier
Flush		Green	I	CSW2-BTF241IOR WH	$16	Z5
Extended		Blue	RESET			
Flush		Red	O			

Extended Triple Pushbutton – (refer to 1. How to order)

0.034 kg

Frontal	Color		Engraving	Catalog Number	List Price	Multiplier
Flush		Green	I	CSW2-BTS241IOR WH	$16	Z5
Extended		Blue	RESET			
Extended		Red	O			

Flush Double Pushbutton w/ illumination – (refer to 2. How to order)[1)]

0.025g

Frontal	Color		Engraving	Catalog Number	List Price	Multiplier
Flush		Green	I	CSW2-BDFI21IO WH	$14	Z5
Flush		Red	O			
Flush		Green	START	CSW2-BDFI21SS WH	$14	
Flush		Red	STOP			

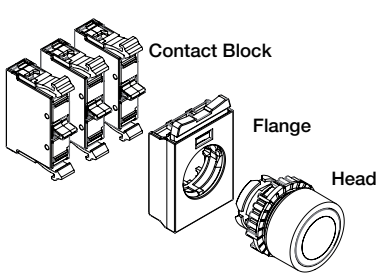
Extended Double Pushbutton w/ illumination – (refer to 2. How to order)[1)]

0.025g

Frontal	Color		Engraving	Catalog Number	List Price	Multiplier
Flush		Green	I	CSW2-BDSI21IO WH	$14	Z5
Extended		Red	O			
Flush		Green	START	CSW2-BDSI21SS WH	$14	
Extended		Red	STOP			

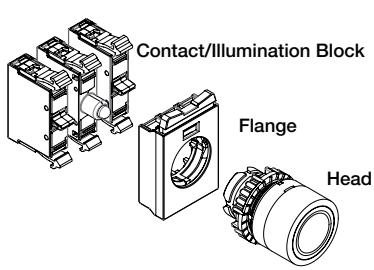
1. How to order[3)]

Head
+ Flange
+ Contact block



2. How to order[3)]

Head
+ Flange
+ Contact block
+ Illumination block



Notes:
1) Does not allow the use of contact blocks in the central position of the mounting flanges.
2) To increase the Degree of Protection, use the APBD silicon protective cover.
3) Check the maximum of recommended contact blocks for each head on page 365.

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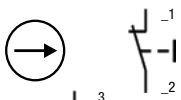
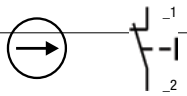
Pushbuttons and Pilot Lights

Accessories for CSW (22mm)

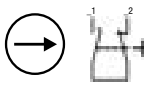
Flanges[1)]

Illustrative Image	Description	Standard Packing	Catalog Number	List Price	Multiplier
0.010 kg	3-position mounting flange for blue contact blocks Allows the mounting of extras contact blocks due to front-back system	1 piece	AF3F	$2.17	Z5
	5-position mounting flange for blue contact blocks Allows the mounting of extras contact blocks due to front-back system	1 piece	AF5F	$6.06	

Contact Blocks[1)]

Illustrative Image	Contacts	Diagram	Standard packing	Compatible flange	Catalog Number	List Price	Multiplier
0.015 kg	1NO		1 piece	AF3F, AF5F	BC10F-CSW	$5.00	Z5
	1NC		1 piece		BC01F-CSW	$5.00	
	1NO EARLY MAKE		1 piece	AF3F, AF5F	BCA10F-CSW	$5.55	
	1NC LATE BREAK		1 piece		BCR01F-CSW		

Self-Monitoring Contact Block for Emergency Pushbuttons[1)2)]

Illustrative Image	Contacts	Diagram	Standard Packing	Compatible flange	Catalog Number	List Price	Multiplier
0.002 kg	1NC		1 piece	AF3F	BCM01F-CSW	$27.37	Z5

Notes:
1) Not compatible with the PBW Control Stations line. For control stations accessories, please refer to the page 358 of this catalog
2) The NO contact close when assembled correctly in the flange

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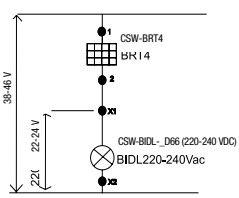
Pushbuttons and Pilot Lights

Accessories for CSW (22mm)

Illumination Blocks with Integrated LED[1)]

Illustrative Image	Voltage	Color		Diagram	Standard packing	Compatible flange	Catalog Number	List Price	Multiplier
	12 VAC/VDC 50/60 Hz		White		1 piece	AF3F AF5F	CSW-BIDLF0E25	$16	Z5
			Red				CSW-BIDLF1E25	$16	
			Green				CSW-BIDLF2E25	$16	
			Yellow				CSW-BIDLF3E25	$16	
			Blue				CSW-BIDLF4E25	$16	
	24 VAC/VDC 50/60 Hz		White				CSW-BIDLF0E26	$16	
			Red				CSW-BIDLF1E26	$16	
			Green				CSW-BIDLF2E26	$16	
			Yellow				CSW-BIDLF3E26	$16	
			Blue				CSW-BIDLF4E26	$16	
	48 VAC/VDC 50/60 Hz		White				CSW-BIDLF0E27	$16	
			Red				CSW-BIDLF1E27	$16	
			Green				CSW-BIDLF2E27	$16	
			Yellow				CSW-BIDLF3E27	$16	
			Blue				CSW-BIDLF4E27	$16	
	110-130 VAC/VDC 50/60 Hz		White				CSW-BIDLF0E10	$16	
			Red				CSW-BIDLF1E10	$16	
			Green				CSW-BIDLF2E10	$16	
			Yellow				CSW-BIDLF3E10	$16	
			Blue				CSW-BIDLF4E10	$16	
0.016 kg	220-240 VAC 50/60 Hz		White				CSW-BIDLF0D66	$16	
			Red				CSW-BIDLF1D66	$16	
			Green				CSW-BIDLF2D66	$16	
			Yellow				CSW-BIDLF3D66	$16	
			Blue				CSW-BIDLF4D66	$16	

Voltage Reduction Blocks[1)]

	Description	Ue	Diagram	Standard packing	Compatible flange	Catalog Number	List Price	Multiplier
0.016 kg	For Use With Integrated LED blocks models: CSW-BIDL(F)_D66 (220-240 VAC)	380-460 VAC		1 piece	AF3F AF5F	CSW-BRT4F	$8.88	Z5

Notes:
1) Not compatible with the PBW Control Stations line. For control stations accessories, please refer to the page 358 of this catalog.

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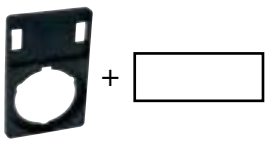
Pushbuttons and Pilot Lights

Accessories for CSW (22mm)

Plate Holder and Plastic Legend Plate Set[1)]

Illustrative Image	Description	Standard Packing	Catalog Number	List Price	Multiplier
0.004 kg	Plate holder and plastic legend plate set (27 x 18 mm, no engraved, red and black colored) for pilot lights, single pushbuttons and selector switches.	5 pieces	APP30	$11.50	Z5
	Plate holder and plastic legend plate set (27 x 18 mm, no engraved, red and black colored) for double pushbuttons CSW-BD. Not compatible with CSW2-BD.	1 piece	APP60	$2.30	
 0.004 kg	Plate holder and plastic legend plate set (27 x 18 mm, no engraved, translucent) for pilot lights, single pushbuttons and selector switches.	5 pieces	APP30T	$11.50	
	Plate holder and plastic legend plate set (27 x 18 mm, no engraved, translucent) for double pushbuttons CSW-BD. Not compatible with CSW2-BD.	1 piece	APP60T	$3	

Reduction Ring[1)]

Illustrative Image	Description	Standard Packing	Catalog Number	List Price	Multiplier
0.030 kg	Reduction ring from Ø30 mm to Ø22 mm	5 pieces	AR30	$21.25	Z5

Emergency-Stop Plate[1)]

Illustrative Image	Description	Standard Packing	Catalog Number	List Price	Multiplier
	Legend plate for emergency pushbutton. Text: English	1 piece	APE-02	$8.30	Z5
0.009 kg	DIN rail adaptor	1 piece	DRCSWA	$16	

Push-On/Push-Off Block[1)2)]

Illustrative Image	Descripction	Standard Packing	Compatible Flange	Catalog Number	List Price	Multiplier
0.019 kg	Push-on/Push-off block for: CSW-BF, CSW-BFI, CSW-BS, CSW-BSI, CSW-BGA, CSW-BC, CSW-BCI. Notes: use only with the following contact blocks: • BC01-F (1NC) • BCA10-F (1NO early-make)	1 piece	AF3F	BR-3PF-CSW	$7.97	Z5

Notes:
1) Not compatible with the PBW Control Stations line. For control stations accessories, please refer to the page 358.
2) Not compatible with double pushbuttons CSW2-BD.

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APP30 Plate Holder and 27 x 18 mm Engraved Plastic Legend Plate Set[1) 3)]

For Use With single pushbuttons, pilot lights and selector switches

0.015 kg[4)]

+ **MANUAL**

Pushbuttons and Pilot Lights

Catalog Number	Engraving	List Price	Multiplier
APP30-01	CLOSE	$4.20	
APP30-02	DOWN	$4.20	
APP30-03[2)]	EMERGENCY STOP	$4.20	
APP30-04	FORWARD	$4.20	
APP30-05	JOG	$4.20	
APP30-06	JOG FORWARD	$4.20	
APP30-07	JOG REVERSE	$4.20	
APP30-08	LOWER	$4.20	
APP30-09	OFF	$4.20	
APP30-10	ON	$4.20	
APP30-11	OPEN	$4.20	
APP30-12	POWER ON	$4.20	
APP30-13	RAISE	$4.20	
APP30-14	RESET	$4.20	
APP30-15	REVERSE	$4.20	
APP30-16	RUN	$4.20	
APP30-17	START	$4.20	
APP30-18[2)]	STOP	$4.20	
APP30-19	UP	$4.20	
APP30-20	FORWARD REVERSE	$4.20	
APP30-21	HAND AUTO	$4.20	
APP30-22	JOG RUN	$4.20	
APP30-23	MANUAL AUTO	$4.20	Z5
APP30-24	OFF ON	$4.20	
APP30-25	OPEN CLOSE	$4.20	
APP30-26	RUN JOG	$4.20	
APP30-27	START STOP	$4.20	
APP30-28	UP DOWN	$4.20	
APP30-30	FOR OFF REV	$4.20	
APP30-31	Auxiliary	$4.20	
APP30-32	MAN OFF AUTO	$4.20	
APP30-33	OPEN OFF AUTO	$4.20	
APP30-34	OPEN OFF CLOSE	$4.20	
APP30-35	UP OFF DOWN	$4.20	
APP30-36	ON/OFF	$4.20	
APP30-37	OPEN/CLOSE	$4.20	
APP30-38	UP/DOWN	$4.20	
APP30-147	FAULT	$4.20	
APP30-149	AUTO OFF REV	$4.20	
APP30-198	LOW MED HIGH	$4.20	
APP30-199	LOW OFF HIGH	$4.20	
APP30-P00	0-100	$6.00	
APP30-P01	0-10	$6.00	
APP30-P02	SPEED 0-10	$6.00	
APP30-P03	SPEED 0-100	$6.00	

Notes:
1) Other engraving option available upon request.
2) Red plates are engraved in white.
3) Not compatible with the PBW Control Stations Line. For control station accessories, please refer to the page 358.
4) Unitary weight.

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Accessories for CSW (22mm)

Decentralized Control Stations – PBW

Type 4x Protection

WEG control stations and emergency stop stations, also known as the PBW line, are available for a wide range of applications meeting the most demanding requirements of quality, robustness and modular design. The PBW line has been developed meeting the requirements of international standards such as IEC 60947-5-1, IEC 50102, IEC 60529 and UL 508 and can be used with WEG current pushbuttons and signaling units (CSW series).

Standard Features

- IP66/Type 4x degree of protection: accurate design combined with a special sealing gasket assures the degree of protection throughout product life cycle
- Several cable entries: knock-out type entries on the top, base and side, meeting different cable glands with different threads
- Exclusive ID plate holding system: integrated to the construction, allows for standard CSW legend plates
- Captive screws: ensures safe and easy operations without loosing hardware
- Premium polycarbonate construction: non-flammable and UV ray protected, its oversized thickness offers high mechanical resistance
- The PWB line is very cost effective, and inventory is always readily available.

IP66 Degree of Protection

Exclusive ID Plate Holding System

UL File No. E330817

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Type 4X Decentralized Control Stations[1)]

Image	Number of Holes	Color		Standard Packing	Catalog Number	List Price	Multiplier
		Cover	Base				
0.114 kg	1	Yellow	Black	1 piece	PBW-1Y	$25	Z5
0.114 kg	1	Gray	Black	1 piece	PBW-1	$25	Z5
0.152 kg	2	Gray	Black	1 piece	PBW-2	$30	Z5
0.185 kg	3	Gray	Black	1 piece	PBW-3	$34	Z5
0.215 kg	4	Gray	Black	1 piece	PBW-4	$41	Z5
0.276 kg	6	Gray	Black	1 piece	PBW-6	$59	Z5

Emergency Pushbuttons with Decentralized Control Station

Image	Description	Pushbuttons	Contact Blocks	Plate	Catalog Number	Weight (kg)	List Price	Multiplier
	Yellow:1 hole	Emergency stop CSW-BESG	1NO + 1NC	Red engraved “EMERGENCY STOP”	PBW1Y-G11 V03	0.212	$48	Z5

Start/Stop Pushbuttons with Decentralized Control Station

Image	Description	Pushbuttons	Contact Blocks	Plate	Catalog Number	Weight (kg)	List Price	Multiplier
	Gray: 2 hole	Green, Flush, Non-Illumination - CSW-BF2 WH Red, Flush, Non-Illumination -CSW-BF1 WH	1NO + 1NC	White engraved “START" White engraved "STOP"	CSW PBW2-F2F111P17P1800	0.212	$48	Z5

Notes:
1) Compatible with all single of the CSW line pushbuttons, selector switches and pilot lights. To avoid interferences and ensure the performance when use a mushroom pushbutton beside another pushbutton, WEG recommend maintaining an empty hole between the pushbuttons. To close the hole use the ATR accessory.

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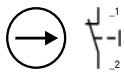
Pushbuttons and Pilot Lights

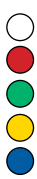
Accessories for CSW (22mm)

Mounting in Control Stations

Contact Block[1)]

Image	Description	Contacts	Diagram	Standard Packing	Catalog Number	List Price	Multiplier
0.015 kg[2)]	Single contact blocks to mounting in control stations or DIN rail 35 mm	1NO		1 piece	BC10B-CSW	$5	Z5
		1NC		1 piece	BC01B-CSW	$5	

Illumination Blocks with Integrated LED[1)]

Image	Voltage	Color		Diagram	Standard Packing	Catalog Number	List Price	Multiplier
0.016 kg[2)]	12 VAC/VDC 50/60 Hz		White		1 piece	CSW-BIDLB-0E25	$16.60	Z5
			Red			CSW-BIDLB-1E25	$16.60	
			Green			CSW-BIDLB-2E25	$16.60	
			Yellow			CSW-BIDLB-3E25	$16.60	
			Blue			CSW-BIDLB-4E25	$16.60	
	24 VAC/VDC 50/60 Hz		White			CSW-BIDLB-0E26	$16.60	
			Red			CSW-BIDLB-1E26	$16.60	
			Green			CSW-BIDLB-2E26	$16.60	
			Yellow			CSW-BIDLB-3E26	$16.60	
			Blue			CSW-BIDLB-4E26	$16.60	
	48 VAC/VDC 50/60 Hz		White			CSW-BIDLB-0E27	$16.60	
			Red			CSW-BIDLB-1E27	$16.60	
			Green			CSW-BIDLB-2E27	$16.60	
			Yellow			CSW-BIDLB-3E27	$16.60	
			Blue			CSW-BIDLB-4E27	$16.60	
	110-130 VAC/VDC 50/60 Hz		White			CSW-BIDLB-0E10	$16.60	
			Red			CSW-BIDLB-1E10	$16.60	
			Green			CSW-BIDLB-2E10	$16.60	
			Yellow			CSW-BIDLB-3E10	$16.60	
			Blue			CSW-BIDLB-4E10	$16.60	
	220-240 VAC 50/60 Hz		White			CSW-BIDLB-0D66	$16.60	
			Red			CSW-BIDLB-1D66	$16.60	
			Green			CSW-BIDLB-2D66	$16.60	
			Yellow			CSW-BIDLB-3D66	$16.60	
			Blue			CSW-BIDLB-4D66	$16.60	

Notes:
1) Blocks specific for mounting in base or PBW plastic control stations or DIN rail 35 mm.
2) Unitary weight.

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Emergency Pushbuttons with Latch (EN 418 and IEC 60947-5-5)

Pushbuttons with Latch, Light Indication and Monitoring – 022 mm – IP66

Emergency Pushbuttons with Latch and Monitoring – External Diameter 42 mm [2)]

Image	Description	Signaling		Color		Catalog Number	Price	Multiplier
		Front	Side					
	Pull-to-release	N/A	N/A	●	Red	CSW-BESPM WH	$15	Z5
	Twist-to-release			●	Red	CSW-BESGM WH	$15	
	GBES-02; Use with CSW-BESP WH, CSW-BESPM WH, CSW-BESPSFI WH, CSW-BESPFIM WH, CSW-BESG WH, CSW-BESGM WH, CSW-BESGSFI WH, CSW-BESGSFIM WH, and CSW-BESY WH					GBES-02	$10	

Emergency Pushbuttons with Latch, Light Indication and Monitoring – External Diameter 42 mm [1) 2)]

Image	Description	Signaling		Color		Catalog Number	Price	Multiplier
		Front	Side					
	Pull-to-release	Light	Green Ring	●	Red	CSW-BESPSFIM WH	$19	Z5
	Twist-to-release			●	Red	CSW-BESGSFIM WH	$19	
	GBES-02; Use with CSW-BESP WH, CSW-BESPM WH, CSW-BESPSFI WH, CSW-BESPFIM WH, CSW-BESG WH, CSW-BESGM WH, CSW-BESGSFI WH, CSW-BESGSFIM WH, and CSW-BESY WH					GBES-02	$10	

Contact Block Tie

Image	Description	Standard Packaging	Catalog Number	Price	Multiplier
	Contact block tie for the monitoring mechanical assembly together with CSW-BESPM WH,CSW-BESPFIM WH, CSW-BESGM WH, or CSW-BESGSFIM WH pushbutton. Maximum number of contact blocks: 3 BC_F blocks. Notes: It does not allow overlapping the contacts.	1 piece	CBCSW	$3	Z5

Notes:
1) For use with BIDL illumination blocks (supplied separately).
2) Check the maximum number of contact blocks recommended for each head on page 365.

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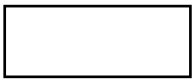
Pushbuttons and Pilot Lights

Accessories for CSW (22mm)

Mounting in Flanges or Control Stations

Plastic Legend Plates

Image	Description	Standard Packing	Catalog Number	List Price	Multiplier
0.006 kg	Black and red legend plates 27 x 18 mm without engraving	5 pieces	AP30	$8.00	Z5
 0.006 kg	Translucent legend plates 27x18 mm without engraving	5 pieces	AP30T	$8.00	Z5

Emergency-Stop Plate

Image	Description	Standard Packing	Catalog Number	List Price	Multiplier
0.009 kg	Legend plate for emergency pushbutton.	1 piece	APEC-02	$7.50	Z5

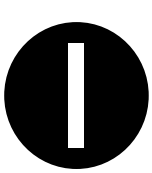
Fixing Ring Tool

Image	Description	Standard Packing	Catalog Number	List Price	Multiplier
0.017 kg	Tool for the insertion/removal of the CSW pushbuttons, pilot lights and selector switches fixing ring	1 piece	CAF22	$5.60	Z5

Spare Lens for Pilot Lights

Image	Description	Color	Standard Packing	Catalog Number	List Price	Multiplier
0.004 kg	Lens to replace the pilot lights color	○	5 pieces	ALSD0	$10.50	Z5
		●		ALSD1	$10.50	
		●		ALSD2	$10.50	
		●		ALSD3	$10.50	
		●		ALSD4	$10.50	

Engraved Pushbutton Caps[1)]

Image	Description	Function and Color	Standard Packing	Catalog Number	List Price	Multiplier
	Engraved caps for flush pushbuttons[1)]	Stop	5 pieces	ACB1-30	$1.50	Z5
		Start		ACB5-31		
		Rectilinear movement		ACB5-32		
		Clockwise rotation		ACB5-33		
		Counterclockwise rotation		ACB5-34		
		Feed		ACB5-35		
		Reset		ACB4-37		

Notes:
1) Other engraving options under request.

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Common Accessories – Mounting in Flanges or Control Stations

Pushbutton Caps

Image	Description	Color	Standard Packing	Catalog Number	List Price	Multiplier
0.005 kg [2]	Caps to replace the flush pushbuttons colors	○	5 pieces	ACB0	$.90	Z5
		🔴		ACB1	$.90	
		🟢		ACB2	$.90	
		🟡		ACB3	$.90	
		🔵		ACB4	$.90	
		⚫		ACB5	$.90	
		All six colors	6 pieces	ACB	$.90	

Engraved Illuminated Pushbutton Caps[1]

Image	Description	Function and Color		Standard Packing	Catalog Number	List Price	Multiplier
	Engraved internal caps for flush illuminated and extended illuminated pushbutton[1]	◯	Stop	5 pieces	ALBI-30	$2.00	Z5
		|	Start		ALBI-31		
		→	Rectilinear movement		ALBI-32		
		↻	Clockwise rotation		ALBI-33		
		↺	Counterclockwise rotation		ALBI-34		
		⏦	Feed		ALBI-35		

Hole Plug

Image	Description	Standard Packing	Catalog Number	List Price	Multiplier
0.010 kg [2]	Round plug for unused Ø22 mm holes	5 pieces	ATR	$24.50	Z5

Single Pushbutton Protection

Image	Description	Standard Packing	Catalog Number	List Price	Multiplier
0.010 kg [2]	Silicon additional protective cover for flush pushbuttons (BF) and pilot lights (SD)	5 pieces	APBF CSW	$38.50	Z5
	Silicon additional protective cover for illuminated flush pushbuttons (BFI), illuminated extended pushbuttons (BSI) and extended pushbuttons (BS)		APBI CSW	$49.50	Z5

Double Pushbutton Protection[3]

Image	Description	Standard Packing	Catalog Number	List Price	Multiplier
0.010 kg [2]	Silicon protective cover for double pushbuttons CSW-BD (IP40) to ensure IP66 Degree of Protection	5 pieces	APBD CSW	$78.00	Z5
	Silicon protective cover for double pushbuttons CSW2-BD to ensure IP66 Degree of Protection	5 pieces	AP2BD CSW	$78.00	Z5
	Silicon protective cover for triple pushbuttons CSW2-BT to ensure IP66 Degree of Protection	5 pieces	AP2BT CSW	$78.00	Z5

Notes:
1) Other engraving options under request.
2) Unitary weight.
3) Not compatible with PBW Control Station.

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Pushbuttons and Pilot Lights

CSW Series (22mm)

Plastic Engraved 27 x 18 mm Legend Plates[1] for Control Stations

0.020 kg[3]

Single pushbuttons and pilot lights

Catalog Number	Engraving	List Price	Multiplier
AP30-204	HAND	$1.75	Z5
AP30-205	AUTO	$1.75	
AP30-18[2]	STOP	$1.75	
AP30-11	OPEN	$1.75	
AP30-01	CLOSE	$1.75	
AP30-19	UP	$1.75	
AP30-02	DOWN	$1.75	
AP30-04	FORWARD	$1.75	
AP30-15	REVERSE	$1.75	
AP30-10	ON	$1.75	
AP30-132	OFF	$1.75	
AP30-12	POWER ON	$1.75	
AP30-14	RESET	$1.75	
AP30-17	START	$1.75	
AP30-16	RUN	$1.75	
AP30-206	FAST	$1.75	
AP30-207	SLOW	$1.75	
AP30-208	RIGHT	$1.75	
AP30-209	LEFT	$1.75	
AP30-210	INCH	$1.75	
AP30-03[2]	EMERGENCY STOP	$1.75	
AP30-05	JOG	$1.75	
AP30-06	JOG FORWARD	$1.75	
AP30-07	JOG REVERSE	$1.75	
AP30-08	LOWER	$1.75	
AP30-13	RAISE	$1.75	
AP30-147	FAULT	$1.75	
AP30-129	MANUAL	$1.75	

2-Position Selector Switches

Catalog Number	Engraving		List Price	Multiplier
AP30-21	HAND	AUTO	$1.75	Z5
AP30-27	START	STOP	$1.75	
AP30-20	FOR	REV	$1.75	
AP30-22	JOG	RUN	$1.75	

Catalog Number	Engraving		List Price	Multiplier
AP30-24	OFF	ON	$1.75	Z5
AP30-25	OPEN	CLOSE	$1.75	
AP30-26	RUN	JOG	$1.75	

3-Position Selector Switches

Catalog Number	Engraving			List Price	Multiplier
AP30-30	FOR	OFF	REV	$1.75	Z5
AP30-32	MAN	OFF	AUTO	$1.75	
AP30-33	OPEN	OFF	AUTO	$1.75	
AP30-34	OPEN	OFF	CLOSE	$1.75	

Notes:
1) Other engraving options under request.
2) Red plate engraved in white.
3) Unitary weight.

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Technical Data

Pushbuttons, Selector Switches and Pilot Lights

Applicable standards	IEC 60947-5-1, VDE 0660, UL 508, CENELEC EN 50007, ISO 13850 (EN 418), IEC 60947-5-5
Certifications	CE, cULus, BV, IRAM, PCT, RCC, ICONTEC
Degree of protection	IP66 and IP40 (CSW-BD) according to IEC 60529
	Type 1, 2, 3, 3R, 3S, 4, 4X, 5, 12, 12K and 13 according to UL 508
Mechanical Lifespan	
Pushbuttons	3 x 10^6 operations
Pushbuttons CSW-BEG/EY/CT/CY	3 x 10^5 operations
Pushbuttons CSW2-BD and CSW-BT	2 x 10^6 operations
Emergency pushbuttons CSW-BESG/P/Y/W	1 x 10^5 operations
Lighting Emergency pushbuttons CSW-BESG-I	5 x 10^4 operations
Selector switches	1 x 10^6 operations

Contact Block

Applicable standards	IEC 60947-5-1. VDE 0660. UL 508. CENELEC EN 50007. ISO 13850 (EN 418). IEC 60947-5-5			
Certifications	CE. cULus. BV. IRAM. PCT. RCC. ICONTEC			
Rated insulation voltage Ui	690 V			
Rated impulse voltage Uimp	4 kV			
Degree of protection (IEC 60529)	IP20			
Conventional thermal current Ith	10 A			
Electrical performance according to IEC 60947-5-1				
Utilization category AC-15	BC....-CSW		BCM01-CSW	
	Ue (VAC)	Ie (A)	Ue (VAC)	Ie (A)
	24	10	24	6
	48	10	48	6
	60	10	60	6
	110	6	110	6
	220	3	220	3
	380	2	380	2
	500	1.5	500	1.5
	600	1.2	600	1.2
Utilization category DC-13	Ue (VDC)	Ie (A)	Ue (VDC)	Ie (A)
	24	2.5	24	2.5
	48	1.4	48	1.4
	60	1	60	1
	110	0.55	110	0.55
	220	0.27	220	0.27
	300	0.2	300	0.2
	600	0.1	600	0.1
Performance according to UL and CSA	AC / Heavy Duty (A600) e DC / Standard Duty (R300)		-	
Contact resistance (IEC 60255)	≤ 25 m Ω			
Protection against short-circuit (IEC 60269-1/IEC 60269-3)	6 A fuse / 690 V gL/gG (1 kA) 16 A Miniature Circuit Breaker (MDW-B16)		6 A fuse / 500 V gL/gG (0.5 kA) 6 A Miniature Circuit Breaker (MDW-B6)	
Electric shock protection (IEC 60536)	Class II			
Terminal capacity (wire/cable with or without terminal)	Minimum (1 x 0.5 mm^2) and maximum (2 x 2.5 mm^2)			
Tightening torque	0.8 Nm			
Ambient temperature allowed	-25ºC...+70ºC			
Mechanical shock resistance	No damage or disassembling up to 100g (1/2 sin wave = 11 rms. according to MIL 202 B method 202 A)			
Vibration resistance (IEC 60068-2-6)	16g for a frequency range of 40 to 500 Hz. Maximum displacement 0.75 mm (peak to peak)			

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Pushbuttons and Pilot Lights

CSW Series (22mm)

Technical Data

Illumination Blocks with Integrated LED

Applicable standards	IEC 60947-5-1, UL 508
Operation voltage range	0.85...1,10 x Ue
Degree of protection (IEC 60529)	IP20
Energy consumption (VAC/VDC)	10 mA
Rated impulse voltage Ui (IEC 60947-1)	2.5 kV
Operating temperature range	-25ºC...+70ºC / -13°F...+158°F
Average lifespan	100,000 hours
Brightness	Red 70 mcd
	Yellow 115 mcd
	White 275 mcd
	Blue 64 mcd
	Green 150 mcd
Terminal capacity (wire/cable with or without terminal)	Minimum (1 x 0.5 mm^2) and maximum (2 x 2.5 mm^2)
Tightening torque	0.8 Nm

Special Blocks (Illumination, Sockets, Voltage Reduction)

Applicable standards	IEC 60947-5-1, UL 508
Degree of protection (IEC 60529)	IP20
Rated impulse voltage Ui (IEC 60947-1)	4 kV
Operating temperature range	-25ºC...+70ºC / -13°F...+158°F
Terminal capacity (wire/cable with or without terminal)	Minimum (1 x 0.5 mm^2) and maximum (2 x 2.5 mm^2)
Tightening torque	0.8 Nm

Decentralized Control Stations

Applicable standards	IEC 60947-5-1, IEC 50102, IEC 60529, UL 508, UL 50
Certifications	CE
Degree of protection (IEC 60529)	IP66 (NEMA 4X)
Operating temperature range	-25ºC...+70ºC / -13°F...+158°F
Material	Polycarbonate (cover and base)
Cover color	Gray (RAL 7035) or Yellow (RAL 1003)
Base color	Black (RAL 9005)
Cable entry holes	ØM20 / PG13.5 / 1/2" and ØM16 / 3/8"
Use in ambient	External (UV rays) or internal

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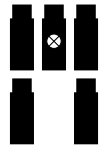
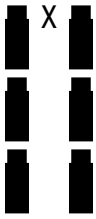
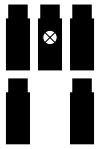
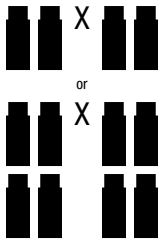
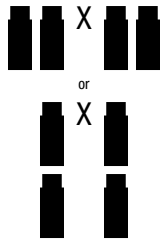
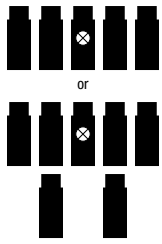
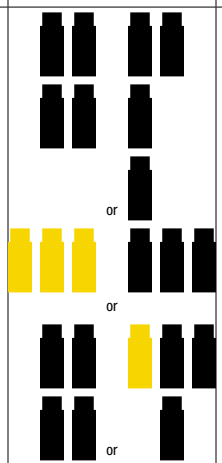
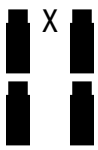
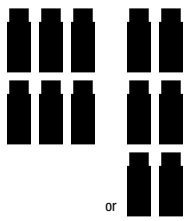
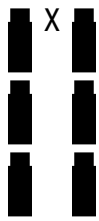
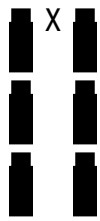
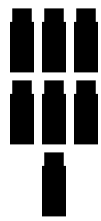
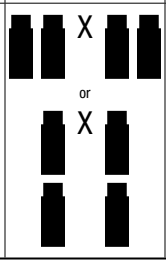
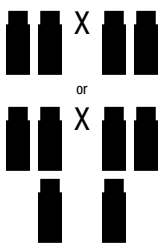
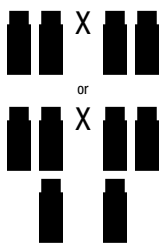
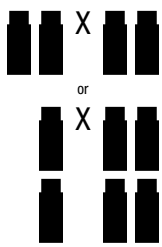
Assembly Configurations

Maximum Recommended Configuration of Contact Blocks for Each type of Head and Flange

Type of Frontal Part	Illuminated Selector Switch	Non-Illuminated Selector Switch	Illuminated Pushbuttons	
Basic Reference	CSW-CKI	CSW-CK, CSW-CA, CSW-CY	CSW2-BDFI, CSW2-BDSI	CSW-BCI, CSW-BD, CSW-BFI, CSW-BSI
Max No. of Contacts	Max 4	Max 6	Max 4	Max 6
AF3F Flange (3 positions)				
Max No. of Contacts	Max 4	Max 8	Max 4	Max 6
AF5F Flange (5 positions)[1]				

Type of Frontal Part	Non-Illuminated Pushbuttons						
Basic Reference	CSW-BESGM, CSW-BESPM, CSW-BESYM	CSW-BESG, CSW-BESP, CSW-BESY	CSW2-BDF, CSW2-BDS	CSW-BF, CSW-BGA	CSW-BC, CSW-BS	CSW-BEG, CSW-BCT, CSW-BCY	CSW2-BT
Max No. of Contacts	Max 3	Max 4	Max 4	Max 6	Max 6	Max 6	Max 7
AF3F flange (3 positions)							
Max No. of Contacts	-	Max 4	Max 4	Max 4	Max 4	Max 4	-
AF5F flange (5 positions)[2]	-	-					-

BC10F-CSW contact blocks
BC01F-CSW contact blocks

BIDLF illumination blocks

BCM01-CSW monitoring contact blocks

X Location not permitted

CBCSW contact block tie

Notes:
1) In the central position of the AF5F flange, use illumination blocks only.
2) Do not use monitoring blocks with the AF5F flange. Do not use emergency-stop pushbuttons with the AF5F flange.

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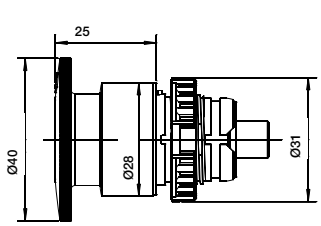
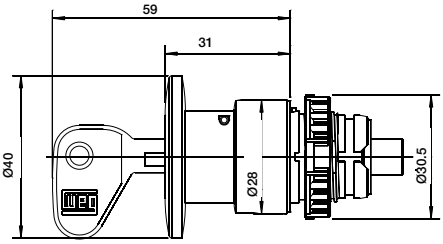
Pushbuttons and Pilot Lights

CSW Series (22mm)

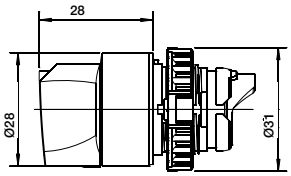
Dimensions – mm

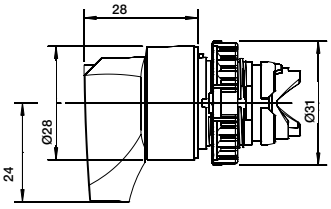


BEG
BCT



BEY
BCY





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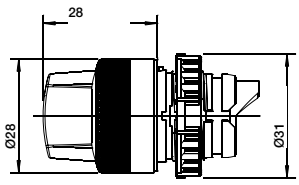
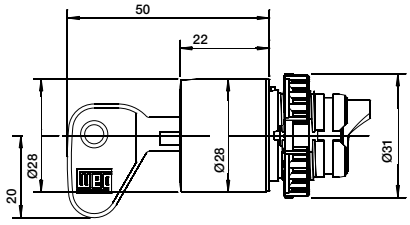


CKI



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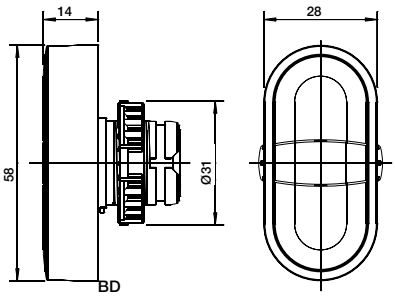
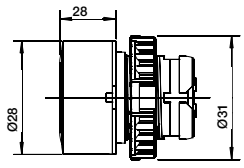
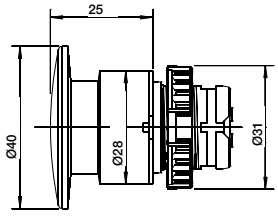


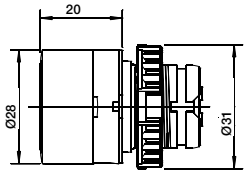
BD



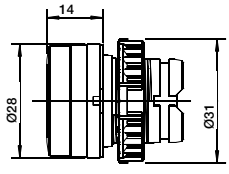
BF



BC
BCI



BFI
BGA



SD

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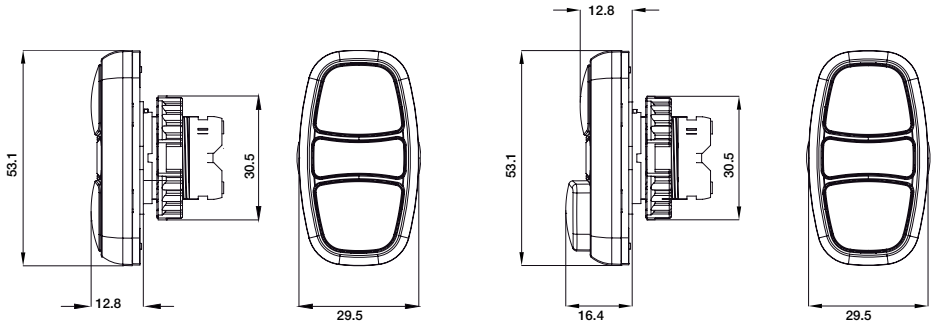
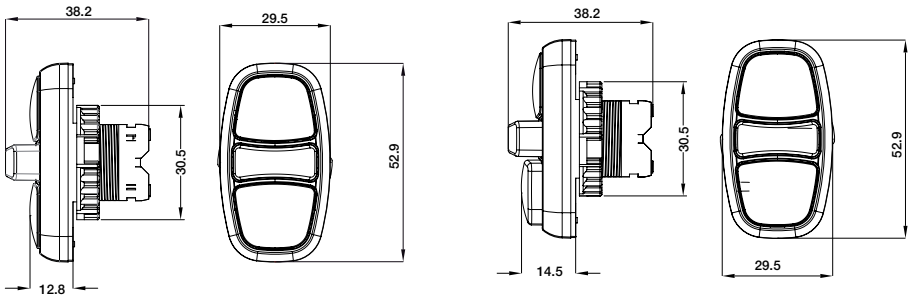
Dimensions – mm



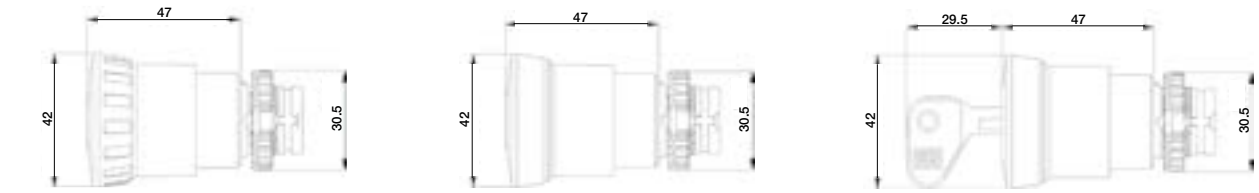
CSW2-BDF

CSW2-BDS



CSW2-BTF

CSW2-BTS



BESG / BESGM / BESGSFI / BESGSFIM

BESP / BESPM / BESPSFI / BESGSFIM

BESY

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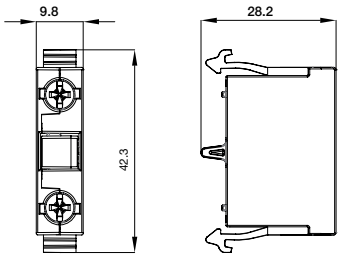
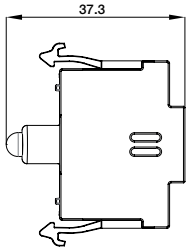
Pushbuttons and Pilot Lights

CSW Series (22mm)

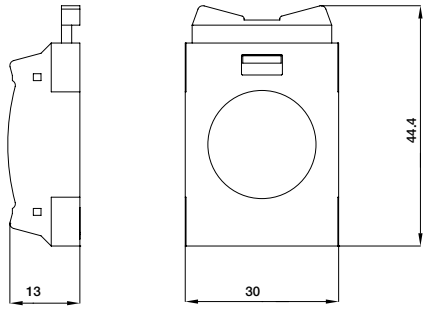
Dimensions – mm



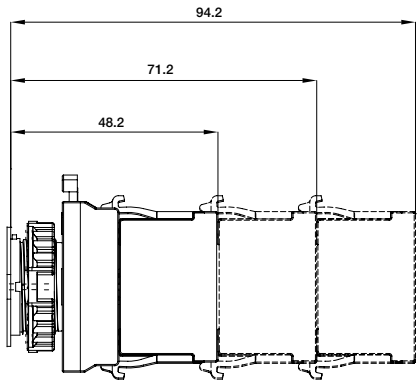
BC10F/BC01F



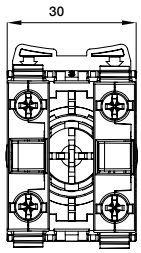
BIDLF-**CSW



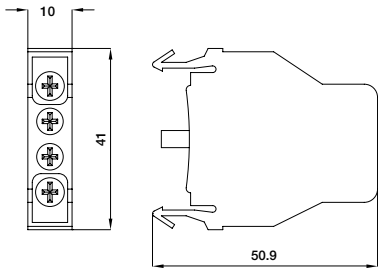
AF3F



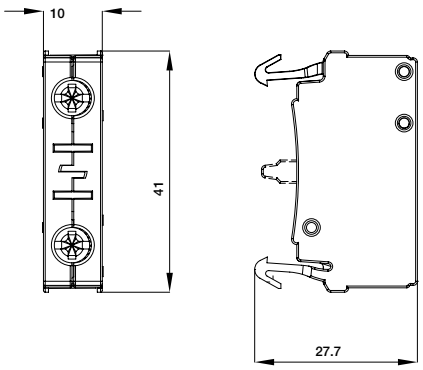
AF3F + 1..3x Contact Block BC_F



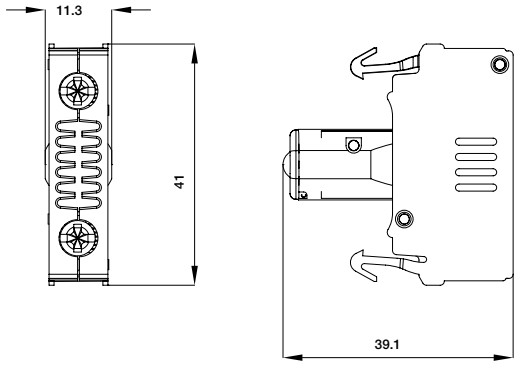
AF3F + Contact Block



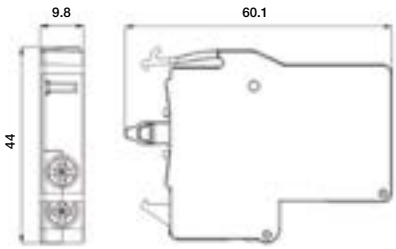
BC11/BC20/BC02



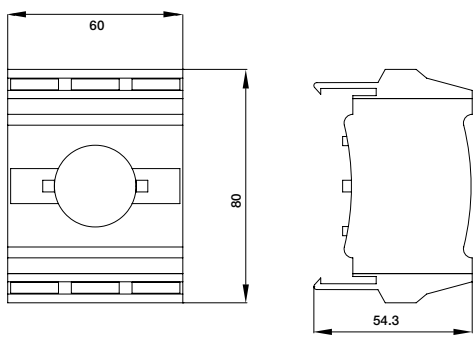
BC10/BC01/BCA10/BCR01



BIDL



BCM01



BR-3P

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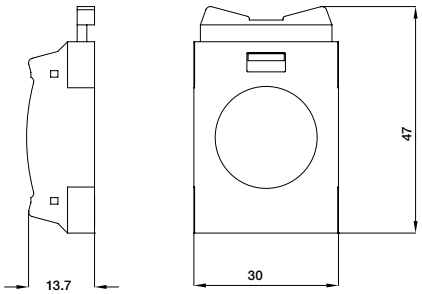
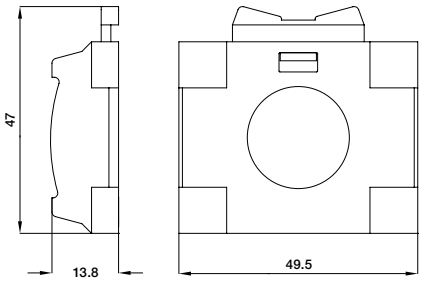
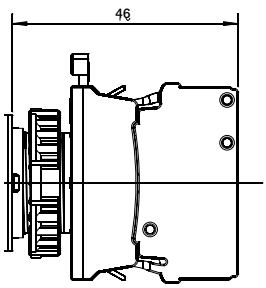
Dimensions – mm



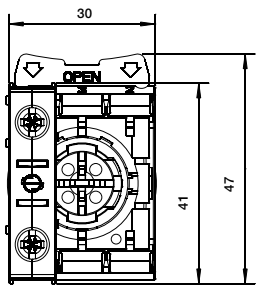
AF3



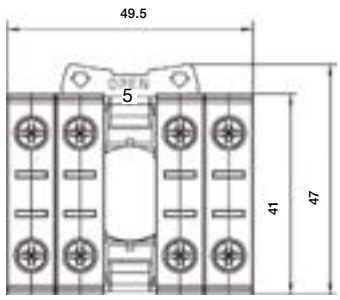
AF5



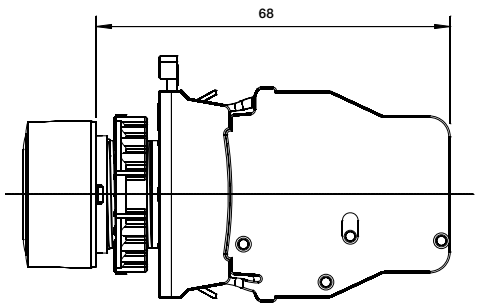
AF5 + BC01/10
BCA10
BCR01



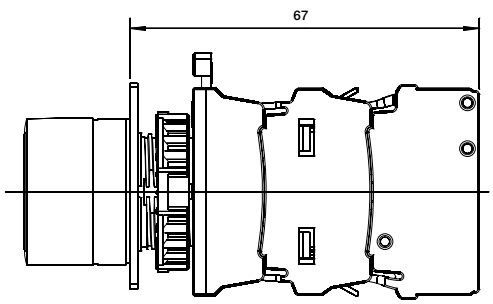
AF3 + BC01/10
BCA10
BCR01



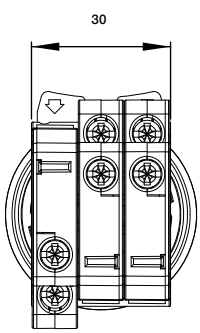
BF + AF5 + BC01/10
BCA10
BCR01

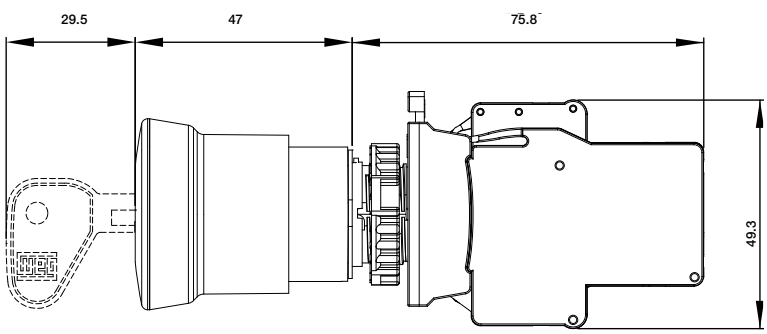


AF3/5 + BC11/20/02



AF3 + BR-3P + BIDL





BES + BCM01-CSW

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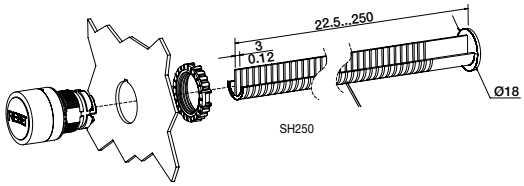
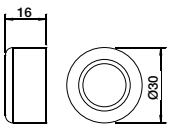
Pushbuttons and Pilot Lights

CSW Series (22mm)

Dimensions – mm



CSW-BHF437



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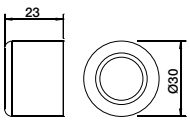
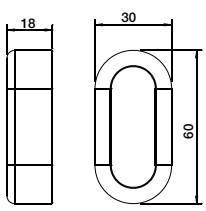
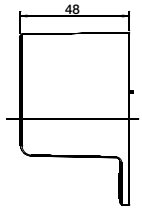
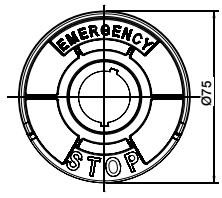


APBI

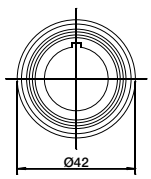


APBD



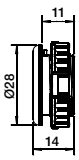


APEG

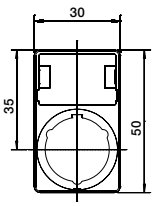


AR30

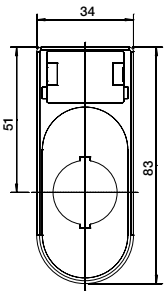
APE



ATR



APP30



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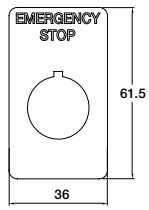
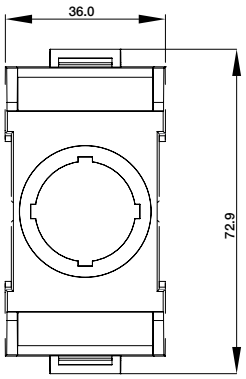
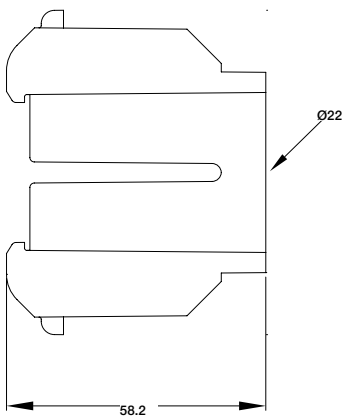
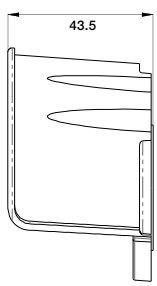


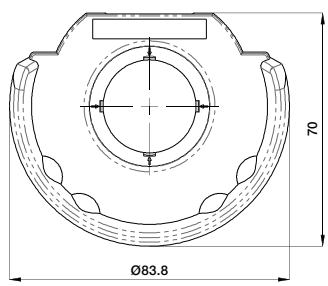
APEC





DRCSWA





GBES

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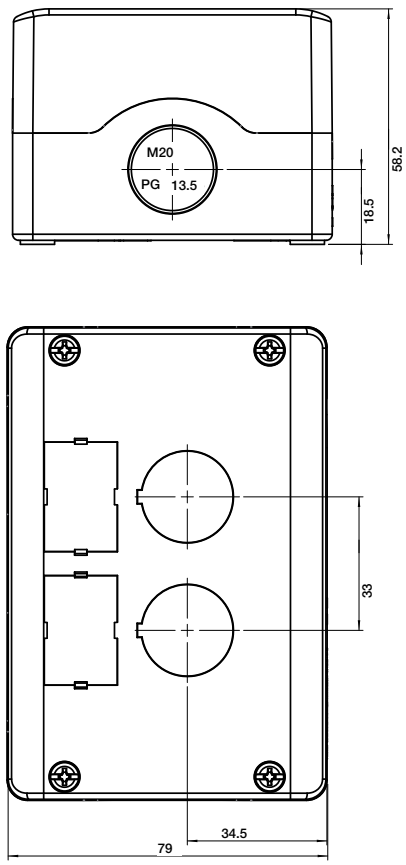
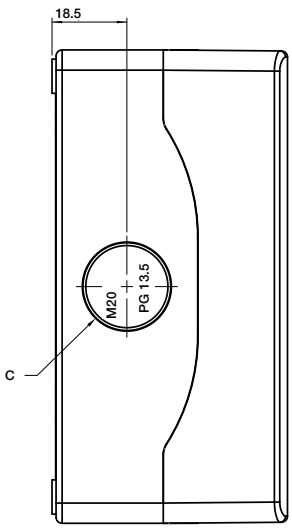
Dimensions – mm

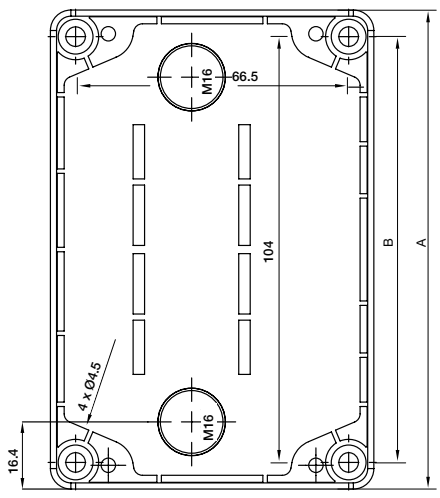
Bottom/Top



Side



Base



PBW decentralized control station

Number of Holes	A	B	Cable Entry Holes											
			Bottom			Top			Side			Base		
			Size		Cable Gland Thread Length	Size		Cable Gland Thread Length	Size		Cable Gland Thread Length	Size		Cable Gland Thread Length
1	74	66.7	1 x	ØM20 ØPG13.5 Ø½ NPT	9 to 16 mm	1 x	ØM20 ØPG13.5 Ø½NPT	9 to 16 mm	1 x	ØM20 ØPG13.5 Ø½NPT	9 to 16 mm	2 x	ØM16 ØPG9	7 to 10 mm
2	104	117												
3	137	150							2 x					
4	170	183												
6	236	249												

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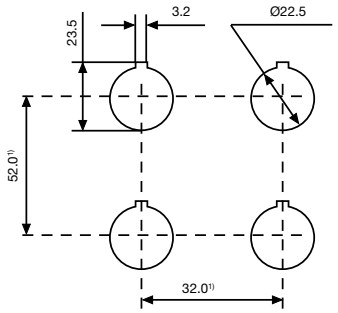
Pushbuttons and Pilot Lights

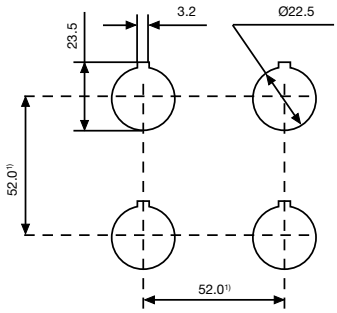
CSW Series (22mm)

Installation Distances (mm)

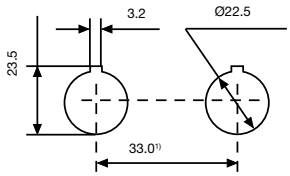
AF3F Flange



AF5F Flange



PBW Control Stations



Notes:
1) Minimum distance to use Pushbuttons (Flush/Extended/Guarded) or Selectors (Knob). To use others Pushbuttons or Selectors is necessary to evaluate the head dimensions.

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CSW30 Series (30mm) – Pushbutton & Pilot Light

The WEG 30 mm pushbuttons, selector switches, and indicators have been designed to offer the ruggedness required for severe industrial applications and environments. These modular devices offer superior quality at an affordable price.

Our hazardous duty series CSW30H also offers a wide selection of operators and pilot devices for hazardous duty applications (Class 1, Division 2 and Zone 2).This series offers a wide selection of hermetically sealed reed and factory sealed contact blocks for superior corrosion resistance.

UL File No. E330817

Standard Features

- NEMA 4, IP65 Rated
- Fits 1-13/64 (30.5 mm) hole without notch required
- Contact blocks snap-in (fast and easy assembly)
- Up to eight contact blocks for non-illuminated operators and up to four contact blocks for illuminated operators
- LED lamps with built-in leakage protection
- Same simple part numbering system as 22 mm series

Learn More Online

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Pushbuttons and Pilot Lights

CSW30 Series (30mm)

Pushbuttons

MULTIPLIER FOR CSW-30 SERIES - Z55

Types
BF: Flush
BS: Extended
BC: Mushroom
BGA: Recessed
BGAI: Illuminated Recessed
BSI: Illuminated Extended
BCI: Illuminated Mushroom

CSW30 - ___ ___ ___

- ___: Voltage (see Voltage Code)
- ___: Color (see Color Code)

For Illuminated Only

NON-ILLUMINATED FLUSH

CSW30 - __ — LIST PRICE $26

- BF0
- BF1
- BF2
- BF3
- BF4
- BF5

NON-ILLUMINATED (EXTENDED)

CSW30 - __ — LIST PRICE $26

- BS0
- BS1
- BS2
- BS3
- BS4
- BS5

MUSHROOM (40MM HEAD)

CSW30 - __ — LIST PRICE $37

- BC1
- BC2
- BC3
- BC4
- BC5

NON-ILLUMINATED RECESSED

CSW30 - __ — LIST PRICE $32

- BGA0
- BGA1
- BGA2
- BGA3
- BGA4
- BGA5

Notes:
- *Illuminated operators are supplied with LED block. To complete selection, replace "*" with desired Voltage code: E26 (24 VAC/VDC), D61 (120 VAC/VDC), D66 (240 VAC/VDC), or D67 (480 VAC/VDC). See LED Block Voltage table below.*
- *Contact block ordered separately. See page 358.*

ILLUMINATED EXTENDED

CSW30 - __ — LIST PRICE $93

- BSI0
- BSI1
- BSI2
- BSI3
- BSI4

ILLUMINATED MUSHROOM (40MM HEAD)

CSW30 - __ — LIST PRICE $100

- BCI0
- BCI1
- BCI2
- BCI3
- BCI4

ILLUMINATED RECESSED

CSW30 - __ — LIST PRICE $100

- BGAI0
- BGAI1
- BGAI2
- BGAI3
- BGAI4

Emergency-Stop Pushbuttons

Types
G : Twist release
P: Push Pull

CSW30 - ___ ___

- ___: Color (see Color Code)

E-STOP - TWIST RELEASE

- BEG
- BEG2
- BEG3

LIST PRICE $81

E-STOP - PUSH PULL

- BEP
- BEP2
- BEP3

LIST PRICE $75

Notes: Contact block ordered separately. See page 376.

Pilot Lights

CSW30 - ___ ___

- ___: Color (see Color Code)
- ___: Voltage (see Voltage Code)

PILOT LIGHTS

CSW30 - __ — LIST PRICE $89

- SD0
- SD1
- SD2
- SD3
- SD4

Notes:
- *Illuminated operators are supplied with LED block. To complete selection, replace "*" with desired Voltage code: E26 (24 VAC/VDC), D61 (120 VAC/VDC), D66 (240 VAC/VDC), or D67 (480 VAC/VDC).*
- *Contact block ordered separately. See page 376.*

Color Code Chart

Color	Clear/White	Red	Green	Yellow	Blue	Black
Code	0	1	2	3	4	5
Symbol	○	●	●	●	●	●

LED Block Voltage	
E26	24 VAC/VDC
D61	120 VAC/VDC
D66	240 VAC/VDC
D67	480VAC/VDC

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Selector Switches

CSW30 - ____ ____ ____ ____

Types
CK: Knob
CA: Lever
CY: Key

No. of Positions
2: Two positions
3: Three positions
4: Four positions

Handle
F: Maintained
R: Spring return
RE: Spring return from left
RD: Spring return from right

Angle
45: 45°
90: 90°

Knob	Lever	With Key[1]	Position	Diagram
2)	2)	2)		
LIST PRICE Maintained $39 Spring Return $57	LIST PRICE Maintained $39 Spring Return $57	LIST PRICE Maintained $110 Spring Return $128		
CSW30-CK2F90	CSW30-CA2F90	CSW30-CY2F90		1
CSW30-CK2R90	CSW30-CA2R90	CSW30-CY2R90		1
CSW30-CK3F45	CSW30-CA3F45	CSW30-CY3F45		2
CSW30-CK3R45	CSW30-CA3R45	CSW30-CY3R45		2
CSW30-CK3RE45	CSW30-CA3RE45	CSW30-CY3RE45		2
CSW30-CK3RD45	CSW30-CA3RD45	CSW30-CY3RD45		2
CSW30-CK4F18	CSW30-CA4F18	CSW30-CY4F18		3

DIAGRAM 1

Handle Position		Auxiliary Contact	Mounting Position
I	II		
0	X	NO	Either
X	0	NC	Either
0	X	Early make	Either
X	0	Late break	Either

LEGEND:
X = CLOSED
0 = OPEN

DIAGRAM 2

Handle Position			Auxiliary Contact	Mounting Position
I	0	II		
X	0	0	NO	Left
0	0	X	NO	Right
0	X	0	NC	Either
X	0	X	Early make	Either
0	X	X	Late break	Left
X	X	0	Late break	Right

DIAGRAM 3

Handle Position				Auxiliary Contact	Mounting Position
I	II	III	IV		
X	0	0	0	NO	Left
0	0	0	X	NO	Right
0	0	X	0	NC	Left
0	X	0	0	NC	Right
X	X	0	X	Early make	Left
X	0	X	X	Early make	Right
0	X	X	X	Late break	Left
X	X	X	0	Late break	Right

Notes:
1) Key is released on any position. Consult WEG for other configuration.
2) Contact blocks ordered separately.

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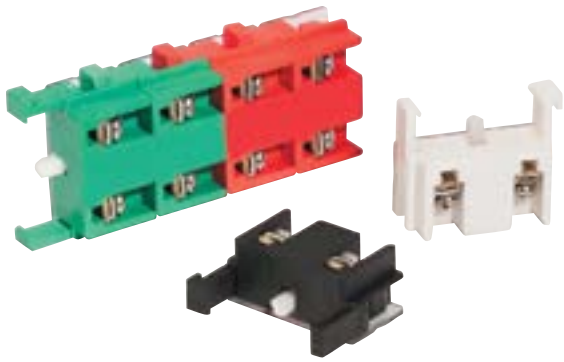
Pushbuttons and Pilot Lights

CSW30 Series (30mm)

Auxiliary Contacts

Our standard contact blocks are color coded for easy circuit identification to minimize wiring errors. WEG's contact blocks are stackable up to four deep (for a total of up to eight (8) circuits per operator) without the need of any additional accessory. Combining different contact blocks types enable several functions to be achieved.



CONTACT BLOCKS

Normally Open
BC10-CSW30

LIST PRICE $13

Normally Closed
BC01-CSW30

LIST PRICE $13

Early Make
BCA10-CSW30

LIST PRICE $17

Late Break
BCR01-CSW30

LIST PRICE $17

Accessories

CLAMP RING WRENCH

CPAW30

LIST PRICE $30

Simplifies the tightening or loosening of polyester and aluminum 1-3/8" clamp rings.

30MM HOLE PLUG

ATR30

LIST PRICE $25

NEMA 4X rated plug to seal up unwanted panel holes.

THRUST AND TRIM WASHER

CSW30-TTW

LIST PRICE $4

Anti-rotation ring

GUARD & LOCK-OFF ATTACHMENT

Figure	Catalog Number	Description	List Price	Multiplier
1	CSW30-GAPB	30 mm guard attachment for maintained push buttons	$40	Z55
2	CSW30-LO1	30 mm lock off attachment for standard extended cap	$32	
2	CSW30-LO2	30 mm lock off attachment for standard momentary mushroom cap	$32	
2	CSW30-LO3	30 mm lock off attachment for push-pull mtd mushroom cap or push mtd extended cap	$32	
3	CSW30-LO4	30 mm lock off attachment for most push buttons and selector switches	$50	

EMERGENCY PLATE

APE30-03

LIST PRICE $8.30

PANEL GASKETS

CSW30-PG2 (1/16")
CSW30-PG6 (3/16")

LIST PRICE $10

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Special Operators

POTENTIOMETER

CSW30-POT_W

LIST PRICE $145

CSW30 ___ W

Resistance
1: 1 kΩ
2: 2 kΩ
5: 5 kΩ
10: 10 kΩ
50: 50 kΩ

RESET

CSW30-RSBW

LIST PRICE $30

Notes: Plunger included as standard.

PUSH ON / PUSH OFF BLOCK

CSW30-CPBT

LIST PRICE $37

WOBBLE STICK

CSW30-WS

LIST PRICE $65

BOOTED CABLE PULL

CSW30-CPBT

LIST PRICE $130

LED Bulbs

Catalog Number	Description	List Price	Multiplier
CSW30-BIDL3E26	Yellow 24VAC/24VDC	$28	Z55
CSW30-BIDL4E26	Blue 24VAC / 24VDC	$28	
CSW30-BIDL2E26	Green 24VAC / 24VDC	$28	
CSW30-BIDL1E26	Red 24VAC / 24VDC	$28	
CSW30-BIDL0E26	White 24VAC / 24VDC	$28	
CSW30-BIDL3D61	Yellow 120VAC / 120VDC	$28	Z55
CSW30-BIDL4D61	Blue 120VAC / 120VDC	$28	
CSW30-BIDL2D61	Green 120VAC / 120VDC	$28	
CSW30-BIDL1D61	Red 120VAC / 120VDC	$28	
CSW30-BIDL0D61	White 120VAC / 120VDC	$28	

Notes:
Replacement LED bulbs for 240 VAC/VDC illuminated operators are the "E26" (24 VAC/VDC) bulbs. Please refer to the correct color when ordering.

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Pushbuttons and Pilot Lights

CSW30 Series (30mm)

Engraved Legend Plates

Catalog Number	Engraving	Description	List Price	Multiplier
For Pushbuttons & Indicating Lights				
APP30S-01	Close	30 mm Legend Plate and Holder - Close	$6	Z55
APP30S-02	Down	30 mm Legend Plate and Holder - Down	$6	
APP30S-03	Emergency Stop	30 mm Legend Plate and Holder - Emergency Stop	$6	
APP30S-04	Forward	30 mm Legend Plate and Holder - Forward	$6	
APP30S-05	Jog	30 mm Legend Plate and Holder - Jog	$6	
APP30S-06	Jog Forward	30 mm Legend Plate and Holder - Jog Forward	$6	
APP30S-07	Jog Reverse	30 mm Legend Plate and Holder - Jog Reverse	$6	
APP30S-08	Lower	30 mm Legend Plate and Holder - Lower	$6	
APP30S-09	Off	30 mm Legend Plate and Holder - Off	$6	
APP30S-10	On	30 mm Legend Plate and Holder - On	$6	
APP30S-11	Open	30 mm Legend Plate and Holder - Open	$6	
APP30S-12	Power On	30 mm Legend Plate and Holder - Power On	$6	
APP30S-13	Raise	30 mm Legend Plate and Holder - Raise	$6	
APP30S-14	Reset	30 mm Legend Plate and Holder - Reset	$6	
APP30S-15	Reverse	30 mm Legend Plate and Holder - Reverse	$6	
APP30S-16	Run	30 mm Legend Plate and Holder - Run	$6	
APP30S-17	Start	30 mm Legend Plate and Holder - Start	$6	
APP30S-18	Stop	30 mm Legend Plate and Holder - Stop	$6	
APP30S-19	Up	30 mm Legend Plate and Holder - Up	$6	
APP30S-147	Fault	30 mm Legend Plate and Holder - Fault	$6	
APP30S-100	Auto	30 mm Legend Plate and Holder - Auto	$6	
APP30S-101	Fast	30 mm Legend Plate and Holder - Fast	$6	
APP30S-102	Hand	30 mm Legend Plate and Holder - Hand	$6	
APP30S-103	Low	30 mm Legend Plate and Holder - Low	$6	
APP30S-104	Manual	30 mm Legend Plate and Holder - Manual	$6	
APP30S-105	Out	30 mm Legend Plate and Holder - Out	$6	
APP30S-106	Overload	30 mm Legend Plate and Holder - Overload	$6	
APP30S-107	Push-to-Reset	30 mm Legend Plate and Holder - Push-to-Reset	$6	
APP30S-108	Slow	30 mm Legend Plate and Holder - Slow	$6	
APP30S-109	Trip	30 mm Legend Plate and Holder - Trip	$6	
APP30S-148	Motor Run	30 mm Legend Plate and Holder - Motor Run	$6	
APP30S-149	Power Off	30 mm Legend Plate and Holder - Power Off	$6	
APP30S-150	Push-to-Test	30 mm Legend Plate and Holder - Push-to-Test	$6	
APP30S-151	Test	30 mm Legend Plate and Holder - Test	$6	
For two-position Selector Switch				
APP30S-20	Forward -Reverse	30 mm Legend Plate and Holder - Forward Reverse	$6	Z55
APP30S-21	Hand - Auto	30 mm Legend Plate and Holder - Hand Auto	$6	
APP30S-22	Jog - Run	30 mm Legend Plate and Holder - Jog Run	$6	
APP30S-23	Manual - Auto	30 mm Legend Plate and Holder - Manual Auto	$6	
APP30S-24	Off - On	30 mm Legend Plate and Holder - Off On	$6	
APP30S-25	Open - Close	30 mm Legend Plate and Holder - Open Close	$6	
APP30S-26	Run - Jog	30 mm Legend Plate and Holder - Run Jog	$6	
APP30S-27	Start - Stop	30 mm Legend Plate and Holder - Start Stop	$6	
APP30S-28	Up - Down	30 mm Legend Plate and Holder - Up Down	$6	
APP30S-153	Down - Up	30 mm Legend Plate and Holder - Down Up	$6	
APP30S-154	Local - Remote	30 mm Legend Plate and Holder - Local Remote	$6	
APP30S-156	Reverse - Forward	30 mm Legend Plate and Holder - Reverse Forward	$6	
APP30S-157	Stop - Start	30 mm Legend Plate and Holder - Stop Start	$6	
APP30S-110	Auto - Hand	30 mm Legend Plate and Holder - Auto Hand	$6	

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Engraved Legend Plates

Catalog Number	Engraving	Description	List Price	Multiplier
		For two-position Selector Switch		
APP30S-111	Auto -Manual	30 mm Legend Plate and Holder - Auto Manual	$6	
APP30S-112	Fast - Slow	30 mm Legend Plate and Holder - Fast Slow	$6	
APP30S-113	High - Low	30 mm Legend Plate and Holder - High Low	$6	
APP30S-114	Inch - Run	30 mm Legend Plate and Holder - Inch Run	$6	
APP30S-115	Left - Right	30 mm Legend Plate and Holder - Left Right	$6	Z55
APP30S-116	On - Off	30 mm Legend Plate and Holder - On Off	$6	
APP30S-119	Raise - Lower	30 mm Legend Plate and Holder - Raise Lower	$6	
APP30S-120	Slow - Fast	30 mm Legend Plate and Holder - Slow Fast	$6	
APP30S-121	Summer - Winter	30 mm Legend Plate and Holder - Summer Winter	$6	
		For three-position Selector Switch		
APP30S-29	Auto - Off - Hand	30 mm Legend Plate and Holder - Auto Off Hand	$6	
APP30S-30	Forward - Off - Reverse	30 mm Legend Plate and Holder - For Off Rev	$6	
APP30S-31	Hand - Off - Auto	30 mm Legend Plate and Holder - Hand Off Auto	$6	
APP30S-32	Manual - Off - Auto	30 mm Legend Plate and Holder - Man Off Auto	$6	
APP30S-33	Open - Off - Auto	30 mm Legend Plate and Holder - Open Off Auto	$6	
APP30S-34	Open - Off - Close	30 mm Legend Plate and Holder - Open Off Close	$6	
APP30S-35	Up - Off - Down	30 mm Legend Plate and Holder - Up Off Down	$6	
APP30S-198	Low - Med - High	30 mm Legend Plate and Holder - Low Med High	$6	
APP30S-199	Low - Off - High	30 mm Legend Plate and Holder - Low Off High	$6	
APP30S-158	Down - Off - Up	30 mm Legend Plate and Holder - Down Off Up	$6	
APP30S-159	Jog - Off - Auto	30 mm Legend Plate and Holder - Jog Off Auto	$6	
APP30S-160	Raise - Off - Lower	30 mm Legend Plate and Holder - Raise Off Lower	$6	Z55
APP30S-161	Local - Off - Remote	30 mm Legend Plate and Holder - Local Off Remote	$6	
APP30S-162	Forward - Auto - Rev	30 mm Legend Plate and Holder - Fwd Auto Rev	$6	
APP30S-122	Auto - Manual - Off	30 mm Legend Plate and Holder - Auto Manual Off	$6	
APP30S-123	High - Off - Low	30 mm Legend Plate and Holder - High Off Low	$6	
APP30S-124	Off - Run - Start	30 mm Legend Plate and Holder - Off Run Start	$6	
APP30S-125	Off - Start - Run	30 mm Legend Plate and Holder - Off Start Run	$6	
APP30S-126	Off - 1 - 2	30 mm Legend Plate and Holder - Off 1 2	$6	
APP30S-127	Slow - Off - Fast	30 mm Legend Plate and Holder - Slow Off Fast	$6	
APP30S-128	Summer - Off -Winter	30 mm Legend Plate and Holder - Summer Off Winter	$6	
APP30S-129	1 - Off - 2	30 mm Legend Plate and Holder - 1 Off 2	$6	
APP30S-130	1 - 2 - 3	30 mm Legend Plate and Holder - 1 2 3	$6	
		For Push/Pull units		
APP30S-36	On - Off	30 mm Legend Plate and Holder - On / Off	$6	
APP30S-37	Open - Close	30 mm Legend Plate and Holder - Open / Close	$6	
APP30S-38	Up - Down	30 mm Legend Plate and Holder - Up / Down	$6	
APP30S-152	Pull Start - Push Stop	30 mm Legend Plate and Holder - Pull Start / Push Stop	$6	Z55
APP30S-155	Push to Stop - Pull to Start	30 mm Legend Plate and Holder - Push to Stop / Pull to Start	$6	
APP30S-117	Push Off - Pull On	30 mm Legend Plate and Holder - Push Off / Pull On	$6	
APP30S-118	Push On - Push Off	30 mm Legend Plate and Holder - Push On / Push Off	$6	
		For Potentiometers		
APP30S-P00	0 - 100	30 mm Legend Plate and Holder - (0 - 100)	$6	
APP30S-P01	0 - 10	30 mm Legend Plate and Holder - (0 - 10)	$6	Z55
APP30S-P02	Speed 0 - 10	30 mm Legend Plate and Holder - (Speed 0 - 10)	$6	
APP30S-P03	Speed 0 - 100	30 mm Legend Plate and Holder - (Speed 0 - 100)	$6	

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Pushbuttons and Pilot Lights

CSW30 Series (30mm)

Technical Data

Electrical Ratings – 30 mm Industrial Pilot Devices

Lamp	Industry Number	Rated Volts	Lumens (MSCD)	Design Life (Hrs.)	Current Draw (mA)	Lamp Type	Shock & Vibration	Leakage Protection
BIDL6	**	6V	Varies w/Color	100,000	50	LED	Excellent	14 mA
BIDL12	**	12V	Varies w/Color	100,000	<20	LED	Excellent	4 mA
BIDL24	**	24V	2000 MSCD	100,000	<20	LED	Excellent	4 mA
BIDL130	**	120/130V	Typical	100,000	<10	LED	Excellent	2 mA

**Specify lamp color when ordering.*

Dielectric Strength (Terminal to Ground) 2200V for 1 Minute

Standard Contacts	Current Type	IEC	UL	Make Rating	Break Rating	Ith-Thermal Current
BC10-CSW30 **BC01-CSW30**	AC	AC-15	A600	7200VA	720VA	10A
BCA10-CSW30 **BCR01-CSW30**	DC	DC-13	P300	138VA	138VA	5A

Notes:
- *For AC voltage below 72 VAC the maximum allowed switching current is 10A = Ith.*
- *For DC voltages below 28 VDC the maximum allowed switching current is 5A = Ith.*
- *For switching applications below 24V/40 mA - Hermetic REED contacts are recommended. Hermetic Reeds are also excellent in environments containing chemical vapors, oxidizing agents, and explosive gases.*
- *Please refer to the HAZARDOUS section of the 30 mm devices for more information.*

Environmental Ratings
Operating Temperature -40 to +131° F (-40 to +55° C)
Storage Temperature -40 to +185° F (-40 to +85° C)
Operating environments below freezing temperatures are assumed to be absent of freezing liquids or pollutants.

Terminal & Wiring Consideration
Wire - AWG 22-12 CU (Copper Only - Solid and Stranded (.5~4 mm^2) One or Two wires permitted per termination
Recommended tightening torque 7 lb-in (+3.0/-0.0 lb-in – (.8 Nm)

Mechanical Design Life Cycles	
Push Buttons	
Momentary	5,000,000
Maintained	250,000
Selector Switches	500,000
All Other Devices	250,000
Standard Contact Blocks	10,000,000
Indicating Lights – Refer to the appropriate Lamp Data	

Materials
Thermoplastic Polyester and Polyester Blends (UV Stabilized for outdoor use)
Operator Housings
Operator Caps and Handles - Non-illuminated (Glass Reinforced Grades)
Mounting Rings and Nuts
Thrust Washer
Trim Washer
High Impact Polycarbonate (UV Stabilized for outdoor use)
Pilot Light Lens
Transparent Pushbutton and Mushroom Caps
Custom Polymers
Certain CAM and Bearing parts are Teflon, Silicone, and Moly-Disulfide Impregnated for improved wearability
Fluorosilicone and Thermoplastic Neoprene Boot Accessories
Seals
Neoprene Gaskets
Thermoplastic - Molded Neoprene and alloy derivatives
BUNA N - Rubber - Teflon Coated
Thermoplastic - Elastomer Molded Seals
Fluorosilicone - Boots
Metal: Brass & Stainless Steel
Push Pull Bushings
Internal tubes for Maintained Devices
Detents for Maintained Devices
Springs (Stainless Steel throughout)
Aluminum
Optional Mounting Nut

Materials	
Pushbuttons (Operator Only)	
Momentary	1.3 lbs. (5.8N)
Illuminated Momentary	2.8 lbs. (12.4N)
Maintained	4 to 6 lbs (17.9~26.7 N)
Illuminated Maintained	4.6 lbs. (20.5 N)
Reset Push Button	1.5 lbs. (6.7 N)
Selector Switches	
Maintained	1.7 in-lbs (.19 Nm)
Momentary	1.7 in-lbs (.19 Nm)
Key Operated	1.7 in-lbs (.19 Nm)
Cable Pull	
Standard	4 to 6 lbs (17.9~26.7 N)
Heavy Duty	13 lbs. (57.8 N)
Push-Twist Release	4.7 lbs (20.9 N)
Potentiometer	
2 Watt "J" Series	3-12 in-oz (.11 Nm Max) (300° Rotation)
Standard Contact Blocks	1 lb. (4.45 N)
Indicating Lights	Refer to the appropriate Lamp Data
Multi-Voltage Light	20-140 VAC/VDC (Burden .65W max)
Transformer	2 VA

Data is subject to change without notice.

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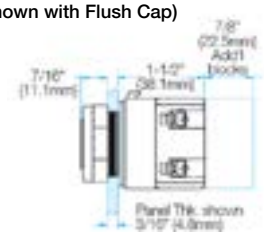
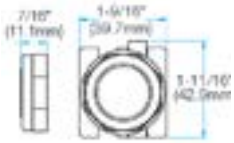
Momentary & Maintained Non-Illuminated Push Buttons

Fully-assembled operators come standard with one 3/16 in (4.8 mm) and three 1/16 in (1.6 mm) gaskets.

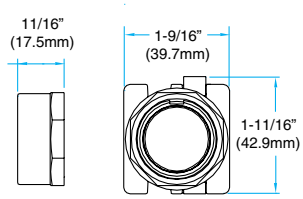
Non-Illuminated Operator
(shown with Flush Cap)



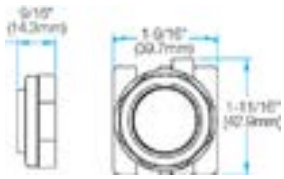
Momentary Flush Cap



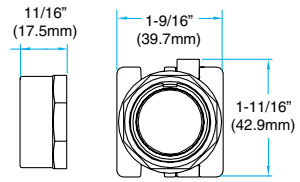
Momentary Guarded Flush Cap



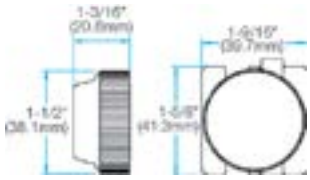
Momentary Extended Cap



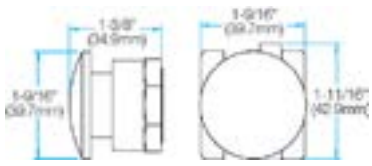
Momentary Guarded Extended Cap



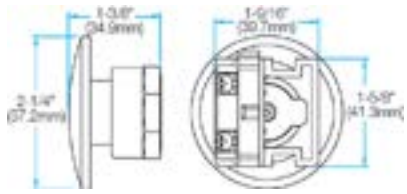
Momentary Standard
Rubber Boot



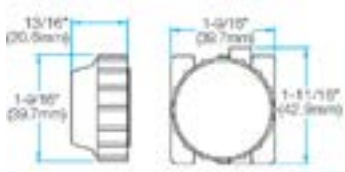
Momentary 1 1/2" (38 mm)
Mushroom Cap



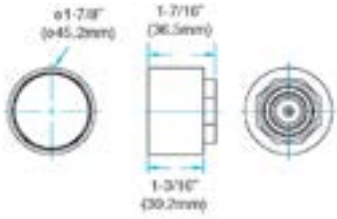
Momentary 2 1/4" (57.2 mm)
Jumbo Mushroom Cap



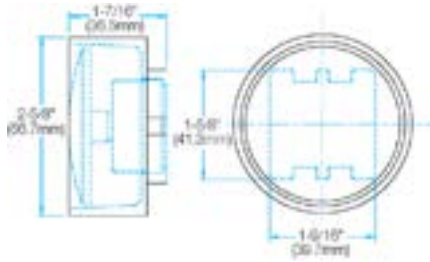
Momentary Fluorosilicone
Rubber Boot



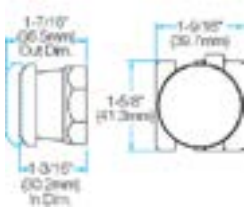
Momentary 1 1/2" (38 mm)
Shrouded Mushroom Cap



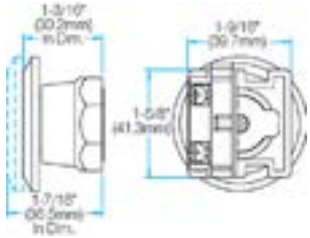
Momentary 2 1/4" (57.2 mm)
Shrouded Jumbo Mushroom Cap



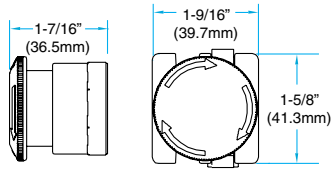
2-Position Push-Pull Maintained 1 1/2"
(38 mm) Mushroom Cap



2-Position Push-Pull Maintained
2 1/4" (57.2 mm) Jumbo Mushroom Cap



2-Position Push-Twist Maintained
1 1/2" (38 mm) Mushroom Cap



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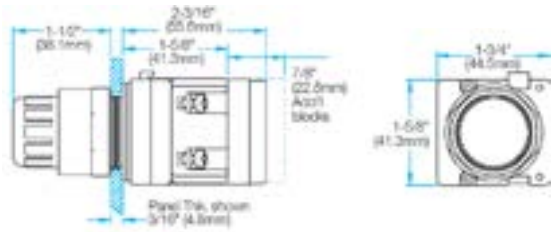
Pushbuttons and Pilot Lights

CSW30 Series (30mm)

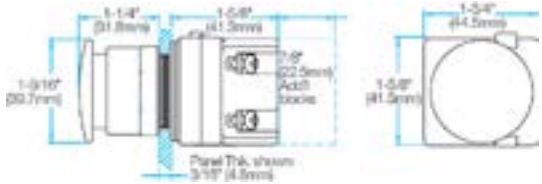
Momentary Illuminated Push Buttons

Fully-assembled operators come standard with one 3/16 in (4.8 mm) and three 1/16 in (1.6 mm) gaskets.

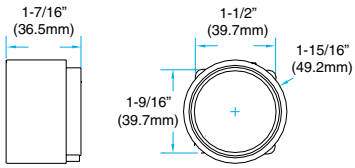
Illuminated Full Voltage, Resistor and Dual-Input Operators



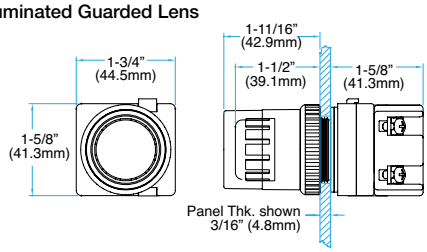
Illuminated Full Voltage Operators



Illuminated Shrouded Mushroom Lens



Illuminated Guarded Lens



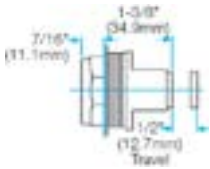
2 & 3 Position Push-Pull Maintained Illuminated Push Buttons

Fully-assembled operators come standard with one 3/16 in (4.8 mm) and three 1/16 in (1.6 mm) gaskets.

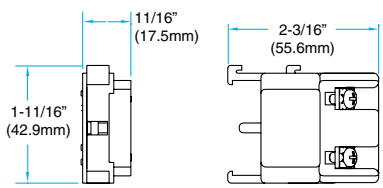
Illuminated Full Voltage Operator

Reset Push Button

Fully-assembled operators come standard with one 3/16 in (4.8 mm) and three 1/16 in (1.6 mm) gaskets.



Alternate Action Block



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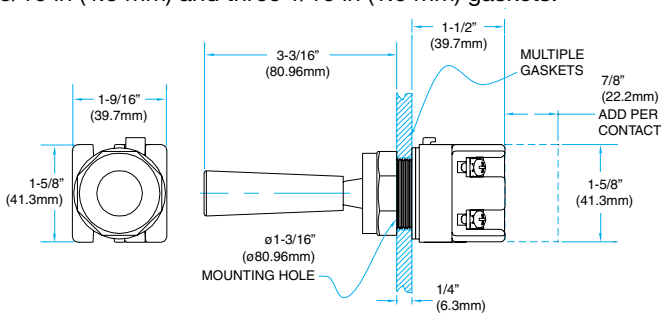
Wobble stick

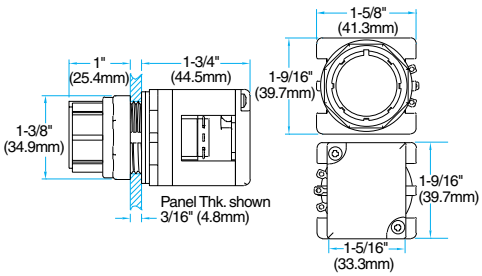
Fully-assembled operators come standard with one 3/16 in (4.8 mm) and three 1/16 in (1.6 mm) gaskets.



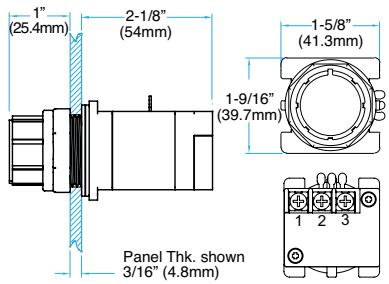
Potentiometer with and without Terminal Block

Fully-assembled operators come standard with one 3/16 in (4.8 mm) and three 1/16 in (1.6 mm) gaskets.

Potentiometer Operator
(shown without Terminal Block)

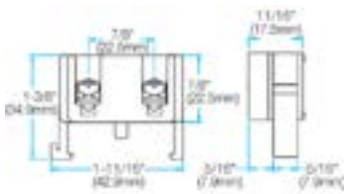


Potentiometer Operator
(shown with Terminal Block)

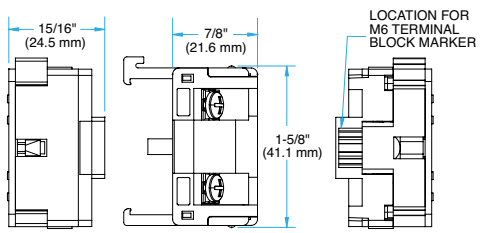


Contact Blocks

Contact Block



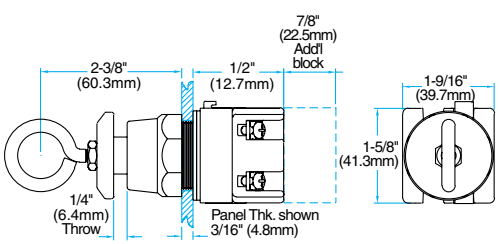
Contact Block
(shown with IP20 Terminal Guard)



Cable Pull Operators

Fully-assembled operators come standard with one 3/16 in (4.8 mm) and three 1/16 in (1.6 mm) gaskets.

Push-Pull Maintained Cable Pull Operator



Momentary and Heavy Duty Cable Pull Operators

Momentary Booted Cable Pull Operator

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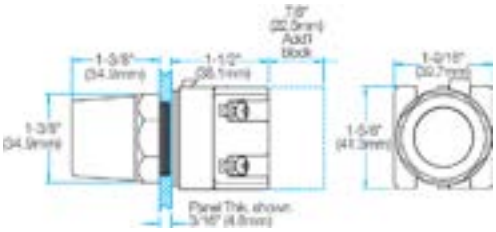
Pushbuttons and Pilot Lights

CSW30 Series (30mm)

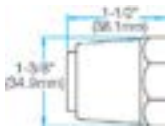
Maintained Flush & Extended Push Button Caps

Fully-assembled operators come standard with one 3/16 in (4.8 mm) and three 1/16 in (1.6 mm) gaskets.

Maintained Flush Push Button Cap
(shown with an operator and contact block)



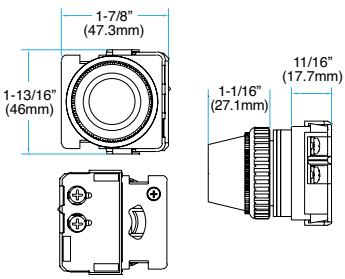
Maintained Extended Push Button Cap



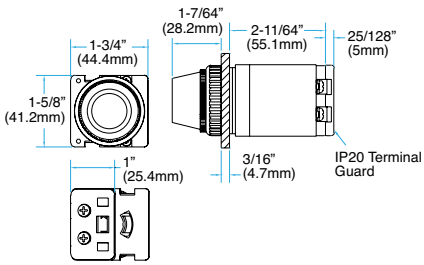
Pilot Lights

Fully-assembled operators come standard with one 3/16 in (4.8 mm) and two 1/16 in (1.6 mm) gaskets.

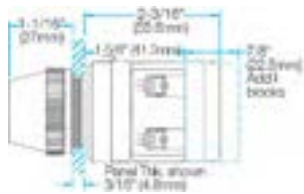
Full Voltage Pilot Light Operator



Resistor Pilot Light Operators



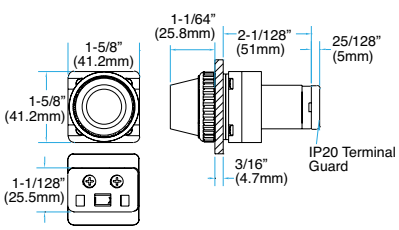
Dual Input Pilot Light Operator



Multi-Voltage Pilot Light

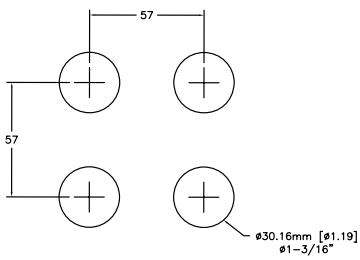
Fully-assembled operators come standard with four 1/16 in (1.6 mm) gaskets.

Multi-Voltage Pilot Light



Drilling

CSW30 Panel Cutout



30mm
DRILLING PLAN
MINIMUM DISTANCES

Data is subject to change without notice.

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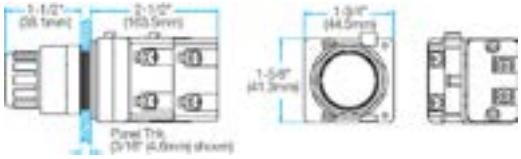
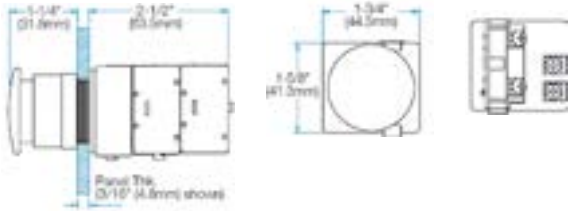
Push-To-Test Pilot Lights

Fully-assembled operators come standard with one 3/16 in (4.8 mm) and three 1/16 in (1.6 mm) gaskets.

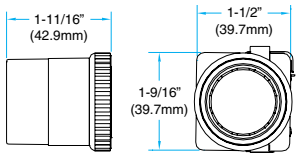
Full Voltage, Resistor Push-To-Test Operators



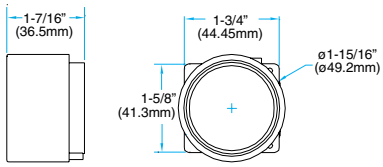
Full Voltage, Resistor Push-To-Test Operators



Guarded Lens



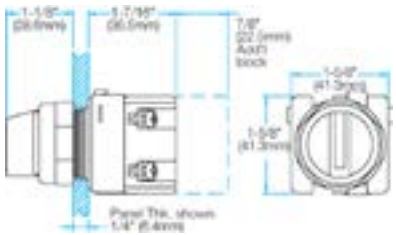
Shrouded Mushrooms Lens



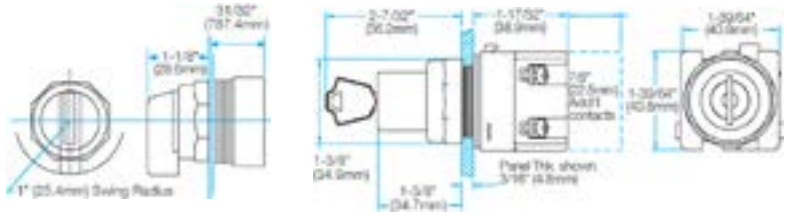
Selector Switches

Fully-assembled operators come standard with one 3/16 in (4.8 mm) and three 1/16 in (1.6 mm) gaskets.

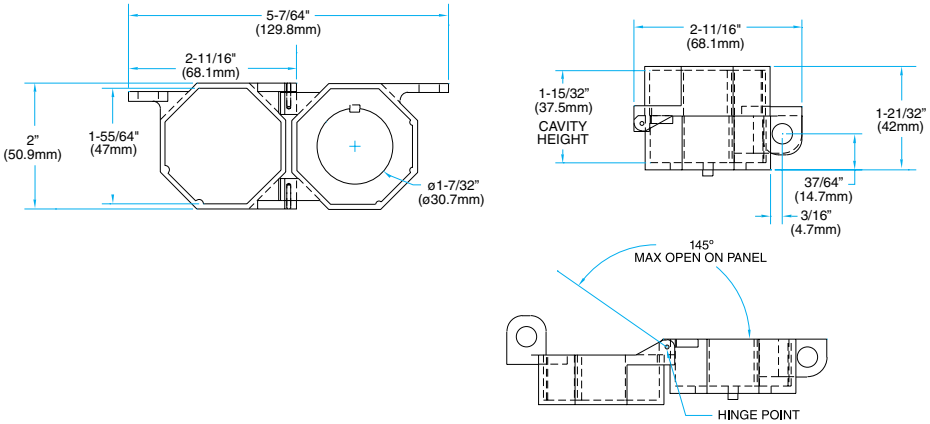
Selector Switch Operator (shown with standard handle)



Selector Switch Lever Handle



Lock-Off Attachment



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CSW30H Series (30mm) Hazardous Duty

General Standards

WEG hazardous duty series CSW30H also offers a wide selection of operators and pilot devices for hazardous duty applications (Class 1, Division 2 and Zone 2). This series offers a wide selection of hermetically sealed reed and factory sealed contact blocks for superior corrosion resistance.

- NEMA 4, IP65 Rated
- Fits 1-13/64 (30.5 mm) hole without notch required
- Contact blocks snap-in (fast and easy assembly)
- Up to eight contact blocks for non-illuminated operators and up to four contact blocks for illuminated operators
- LED lamps with built-in leakage protection
- Same simple part numbering system as 22 mm series

WEG Hazardous duty Pilot Devices are specially engineered for Class 1, Division 2 and Zone 2.

Wide selection of hermetically sealed reed and factory sealed contact block.

An all-polyester construction with nickel-plated or stainless steel metal parts for superior corrosion resistance.

Logic Reeds are hermetically sealed, Providing needed dependability for harsh environments.

Logic Reeds provide great operation for low power level (resistive loads only), especially PLC inputs.

Added Security – Standard Features

All Hazardous duty Push Buttons comes standard with a screw tightening mounting bracket to ensure the contact blocks remain tight to the operator.

Added Security – Optional Features

Rubber Boots add an additional layer of protection from corrosive chemicals left behind from hands on operations or washdown environments.

UL File No. E330817

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Pushbuttons

Types
BF: Flush
BS: Extended
BC: Mushroom
BGA: Recessed
BGAI: Illuminated Recessed
BSI: Illuminated Extended
BCI: Illuminated Mushroom

CSW30H- ___ ___ ___

___ Voltage (see Voltage Code)

___ Color (see Color Code)

MULTIPLIER SYMBOL FOR CSW30H SERIES - Z55

NON-ILLUMINATED FLUSH

CSW30H - ___ — LIST PRICE $31

- ○ BF0
- BF1
- BF2
- BF3
- BF4
- BF5

NON-ILLUMINATED (EXTENDED)

CSW30H - ___ — LIST PRICE $31

- ○ BS0
- BS1
- BS2
- BS3
- BS4
- BS5

NON-ILLUMINATED MUSHROOM (40 MM HEAD)

CSW30H - ___ — LIST PRICE $42

- ○ BC1
- BC2
- BC3
- BC4
- BC5

NON-ILLUMINATED RECESSED

CSW30H - ___ — LIST PRICE $37

- ○ BGA0
- BGA1
- BGA2
- BGA3
- BGA4
- BGA5

- *Notes:*
- *Illuminated operators are supplied with LED block. To complete selection, replace "*" with desired voltage code: E26 (24 VAC/VDC), D61 (120 VAC/VDC), or D66 (240 VAC/VDC). See LED Block Voltage table below.*
- *Contact block ordered separately. See page 389.*

ILLUMINATED EXTENDED

CSW30H - ___ — LIST PRICE $110

- ○ BSI0
- BSI1
- BSI2
- BSI3
- BSI4

ILLUMINATED MUSHROOM (40 MM HEAD)

CSW30H - ___ — LIST PRICE $120

- ○ BCI0
- BCI1
- BCI2
- BCI3
- BCI4

ILLUMINATED RECESSED

CSW30H - ___ — LIST PRICE $115

- ○ BGAI0
- BGAI1
- BGAI2
- BGAI3
- BGAI4

Emergency-Stop Pushbuttons

Types
G : Twist release
P: Push Pull

CSW30H- ___ ___

___ Color (see Color Code)

CSW30H- ___ ___

___ Color (see Color Code)

___ Voltage (see Voltage Code)

E-STOP - TWIST RELEASE

- BEG
- BEG2
- BEG3

LIST PRICE $86

E-STOP - PUSH PULL

- BEP
- BEP2
- BEP3

LIST PRICE $80

PILOT LIGHTS

CSW30H - ___ — LIST PRICE $107

- ○ SD0
- SD1
- SD2
- SD3
- SD4

Notes: Contact block ordered separately. See page 376.

Color Code Chart

Color	Clear/White	Red	Green	Yellow	Blue	Black
Code	0	1	2	3	4	5
Symbol	○	●	●	●	●	●

LED Block Voltage	
E26	24 VAC/VDC
D61	120 VAC/VDC
D66	240 VAC/VDC

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Pushbuttons and Pilot Lights

CSW30H Series (30mm) Hazardous Duty

Selector Switches

CSW30H - ____ ____ ____ ____

Types
CK: Knob
CA: Lever

No. of Positions
2: Two positions
3: Three positions

Handle
F: Maintained
R: Spring return
RE: Spring return from left
RD: Spring return from right

Angle
45: 45°
90: 90°

Knob	Lever	Position	Diagram
LIST PRICE Maintained $44 Spring Return $62	LIST PRICE Maintained $44 Spring Return $62		
CSW30H-CK2F90	CSW30H-CA2F90		1
CSW30H-CK2R90	CSW30H-CA2R90		1
CSW30H-CK3F45	CSW30H-CA3F45		2 & 3
CSW30H-CK3R45	CSW30H-CA3R45		2 & 3
CSW30H-CK3RE45	CSW30H-CA3RE45		2 & 3
CSW30H-CK3RD45	CSW30H-CA3RD45		2 & 3

Notes: Contact blocks ordered separately. See page 389.

Clamp Rings

Catalog Number	Pushbutton & Pilot Light Type	List Price	Multiplier
CSW30-FCR	Flush (PB)	$15	Z55
CSW30-ECR	Extended (PB)	$15	
CSW30-PLCR	Pilot Light	$15	

DIAGRAM 1 – Hermetically & Factory Sealed Block			
HANDLE POSITION		Auxiliary Contact	Mounting Position
I	II		
0	X	NO	Either
X	0	NC	Either
0	X	NO & NC	Either
X	0		

DIAGRAM 2 – Factory Sealed Block				
HANDLE POSITION			Auxiliary Contact	Mounting Position
I	0	II		
X	0	0	NO & NC	Left
0	X	0		
0	0	X	NO & NC	Right
0	X	0		

DIAGRAM 3 – Hermetically Sealed Block				
HANDLE POSITION			Auxiliary Contact	Mounting Position
I	0	II		
X	0	0	NO	Left
0	0	X	NO	Right
0	X	X	NC	Left
X	X	0	NC	Right
X	0	X	2NO	wired in parallel
0	X	0	2NC	wired in series
X	0	X	early make	Either
0	X	X	late break	Left
X	X	0	late break	Right

LEGEND:
X = CLOSED
0 = OPEN

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Factory Sealed / Hermetically Sealed Contact Blocks

Auxiliary Contact Blocks – Factory Sealed (720VA) Product Description	Catalog Number	List Price	Multiplier
Linear devices - 1NO & 1NC	BC11FS-CSW30H	$120	Z55
For rotary devices only - 1NO & 1NC	BC11FSR-CSW30H		
Auxiliary Contact Blocks – Hermetically Sealed (360VA inductive) Product Description			
Power reed - 1NO	BC10PR-CSW30H	$95	Z55
Power reed - 1NC	BC01PR-CSW30H		
Power reed - 2NO	BC20PR-CSW30H	$150	
Power reed - 2NC	BC02PR-CSW30H		
Auxiliary Contact Blocks – Hermetically Sealed (180VA inductive) Product Description			
Mid-power reed - 1NO	BC10MP-CSW30H	$75	Z55
Mid-power reed - 1NC	BC01MP-CSW30H		
Mid-power reed - 2NO	BC20MP-CSW30H	$130	
Mid-power reed - 2NC	BC02MP-CSW30H		
Mid-power reed - 1NO & 1NC	BC11MP-CSW30H		
Auxiliary Contact Blocks – Hermetically Sealed (40VA inductive / 100W resistive) Product Description			
Mid-logic reed - 1NO	BC10ML-CSW30H	$45	Z55
Mid-logic reed - 1NC	BC01ML-CSW30H		
Mid-logic reed - 2NO	BC20ML-CSW30H	$70	
Mid-logic reed - 2NC	BC02ML-CSW30H		
Mid-logic reed - 1NO & 1NC	BC11ML-CSW30H		
Auxiliary Contact Blocks – Hermetically Sealed (40W resistive) Product Description			
Logic reed - 1NO	BC10LR-CSW30H	$28	Z55
Logic reed - 1NC	BC01LR-CSW30H		

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Pushbuttons and Pilot Lights

CSW30H Series (30mm) Hazardous Duty

Technical Data

FACTORY SEALED: Contact Blocks are Certified as "Explosion Proof". Devices employing this method of protection are designed so that all electrical parts are enclosed in a switch housing that is capable of withstanding, without damage, an explosion of a specified gas or vapor/air mixture which may occur during the operation of the switch. Further, the explosion internal to the switch body is controlled so that the hot gases are extinguished and cooled before they are allowed to escape to the surrounding atmosphere.

HERMETICALLY SEALED: Contact Blocks are Certified as "Non-Incendive". Devices employing this method of protection are designed so that all electrical parts are a bonded part of the switch housing that forms an arcing chamber that is evacuated of all oxygen, filled with an inert gas, and then sealed to prohibit the exchange of gases with the surrounding environment. These devices are incapable of igniting the surrounding gases or vapor/air mixtures under normal operation. Devices of this type are suitable for use in Div. 2/Zone 2 applications. Hermetically Sealed contact blocks are also extremely useful for switching low energy circuits or circuits applied in atmospheres containing oxidizing agents and pollutants that might effect the performance of silver switching and metal contact elements. Hermetically Sealed Switch performance is consistent and repeatable in almost any environment.

Dielectric Strength (Mechanical Contacts)

2200V for 1 Minute

Factory Sealed Contact Block

Class I Div. 2 Gr. B,C, & D / Zone 2 Gr. IIB +H2

	Utilization Category		Make Rating	Break Rating	Ith-Thermal Current
	IEC	UL			
AC	AC-15	A600	7200VA	720VA	10A
DC	DC-13	Q300	69VA	69VA	2.5A

Notes: For AC voltage below 72 VAC the maximum allowed switching current is 10A = Ith.
For DC voltages below 28VDC the maximum allowed switching current is 2.5A = Ith.
For switching applications below 24V/40 mA, Hermetic REED contacts are recommended.

Hermetically Sealed Power Reed Contact Block

Class I Div. 2 Gr. A, B, C, & D/Zone 2 Gr. IIC

	Utilization Category		Make Rating	Break Rating	Ith-Thermal Current
	IEC	UL			
AC	AC-15	B300	3600VA	360VA	5A
	AC-15	C600	18 00VA	180V	2.5A
DC	DC-13	Q300	69VA	69VA	2.5A

Notes: For AC voltage below 72 VAC the maximum allowed switching current is 5A = Ith.
For DC voltages below 28VDC the maximum allowed switching current is 2.5A = Ith.
Suitable for switching DRY Circuits and Low Energy Circuits (Less than 24V-40 mA).

Hermetically Sealed mid-logic reed Contact Block

Class I Div. 2 Gr. A, B, C, & D/Zone 2 Gr. IIC

	Utilization Category		Inductive	Resistive	Ith-Thermal Current
	IEC	UL			
AC	AC-12	250V Max	40VA	100 Watt	3A

Suitable for switching DRY Circuits and Low Energy Circuits (Less than 24V-40 mA).

Hermetically Sealed Mid-Power Reed Contact Block

Class I Div. 2 Gr. A, B, C, & D/Zone 2 Gr. IIC

	Utilization Category		Make Rating	Break Rating	Ith-Thermal Current
	IEC	UL			
AC	AC-15	C300	1800VA	180VA	2.5A
DC	DC-13	Q150	69VA	69VA	2.5A

Notes: For AC voltage below 72 VAC the maximum allowed switching current is 2.5A = Ith.
For DC voltages below 28VDC the maximum allowed switching current is 2.5A = Ith.
Suitable for switching DRY Circuits and Low Energy Circuits (Less than 24V-40 mA).

Hermetically Sealed logic reed Contact Block

Class I Div. 2 Gr. A, B, C, & D/Zone 2 Gr. IIC

	Utilization Category		Inductive	Resistive	Ith-Thermal Current
	IEC	UL			
AC	-	220V Max	N/A	40 Watt	2A

Suitable for switching DRY Circuits and Low Energy Circuits (Less than 24V-40 mA).

Indicating Lights

Light Unit	**T-Code**
• FV Incandescent Lights	• T4A
• FV LED Lights	• T6 (No marking required)
• Resistor Lights	• T3C
Light Unit	**T-Code**
• Resistor LED Lights	• T6
• Transformer Lights Incd. and LED	• T4A
• Multi-Voltage 20V-240V LED Light	• T4A

Materials

Thermoplastic Polyester and Polyester Blends (UV Stabilized for outdoor use)
- Operator housings
- Operator caps and handles
- Non-illuminated (glass reinforced grades)
- Mounting rings and nuts
- Thrust washer
- Trim washer

High Impact Polycarbonate (UV stabilized for outdoor use)
- Pilot light lens
- Transparent PB and mushroom caps

Custom Polymers
- Certain CAM and bearing parts are Teflon, silicone, and moly-disulfide impregnated for improved wearability
- Fluorosilicone and thermoplastic
- Neoprene boot accessories

Seals
- Neoprene gaskets
- Thermoplastic – molded neoprene and alloy derivatives
- BUNA N – rubber – Teflon coated
- Thermoplastic – elastomer molded seals
- Fluorosilicone – boots

Metal: Stainless Steel
- Push pull bushings
- Internal tubes for maintained devices
- Detents for maintained devices
- Stainless steel springs and screws throughout

Aluminum
- Optional mounting nut

Environmental Ratings

Type 1, 2, 3, 3R, 4/4X, 12, 13, and IP65

Operating Temperature
-40 to +131° F (-40 to +55° C)

Storage Temperature
-40 to +185° F (-40 to +85° C)

Operating environments below freezing temperatures are assumed to be absent of freezing liquids or pollutants.

Terminal & Wiring Consideration

Wire- AWG 22-12 CU
Copper Only – Solid and Stranded
(.5 ~ 4 mm^2)

One or two wires permitted per termination.
Recommended tightening torque.

7 lb-in (+3.0/-0.0 lb-in) – [.8 Nm]

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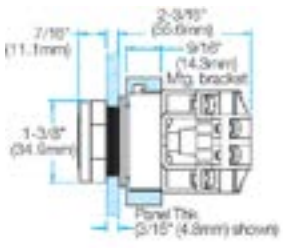
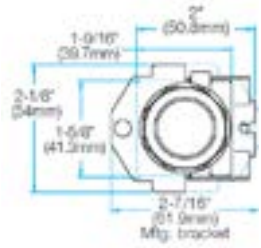
Momentary Non-Illuminated H-Line Push Buttons

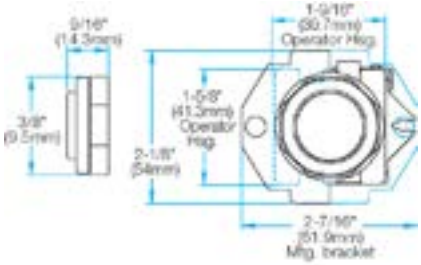
Fully-assembled operators come standard with one 3/16 in (4.8 mm) and three 1/16 in (1.6 mm) gaskets.

Non-Illuminated Operator (shown with Flush Cap and Factory Sealed Contact Block)

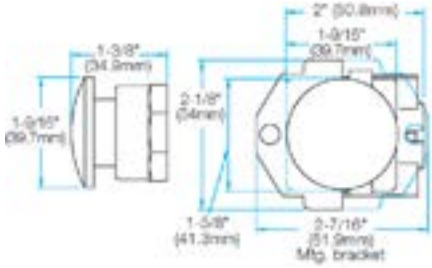




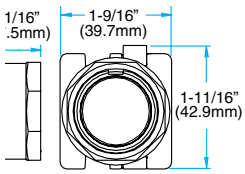
Momentary Extended Cap



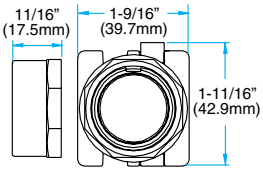
Momentary 1 1/2" (38 mm) Mushroom Cap



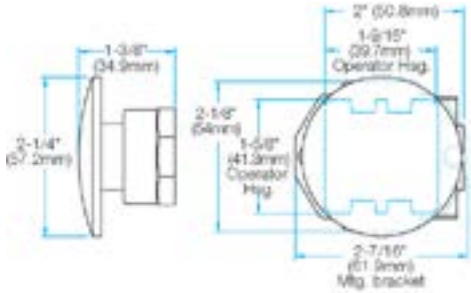
Momentary Guarded Flush Cap



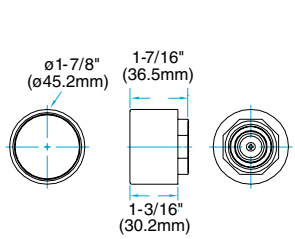
Momentary Guarded Extended Cap

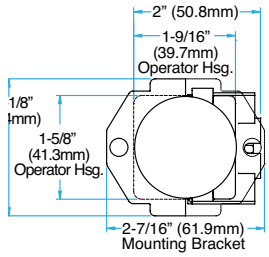


Momentary 2 1/4" (57.2 mm) Jumbo Mushroom Cap

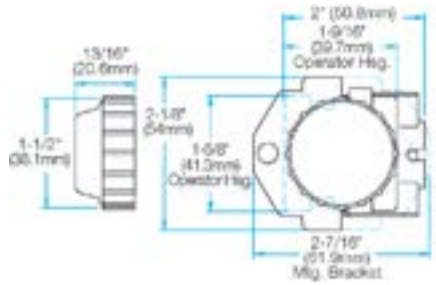


Momentary 1 1/2" (38 mm) Shrouded Mushroom Cap

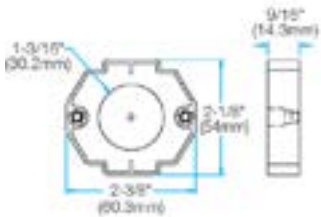




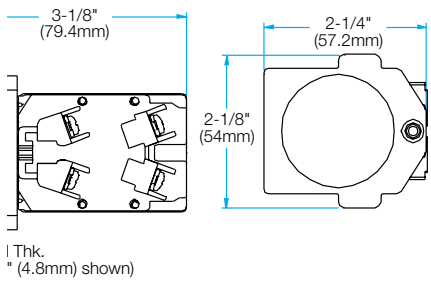
Momentary Fluorosilicone Rubber Boot



Non-Illuminated Push Button Mounting Bracket



Momentary 2 1/4" (57.2 mm) Shrouded Jumbo Mushroom Cap



Thk.
" (4.8mm) shown)

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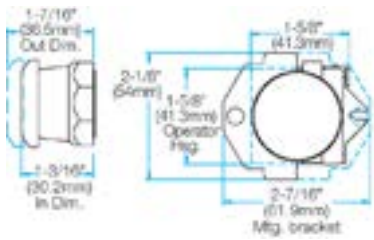
Pushbuttons and Pilot Lights

CSW30H Series (30mm) Hazardous Duty

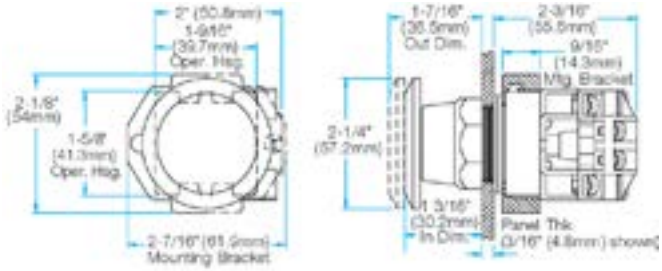
Maintained non-Illuminated H-Line Push Buttons

Fully-assembled operators come standard with one 3/16 in (4.8 mm) and three 1/16 in (1.6 mm) gaskets.

2-Position Push-Pull Maintained
1 1/2" (38 mm) Mushroom Cap



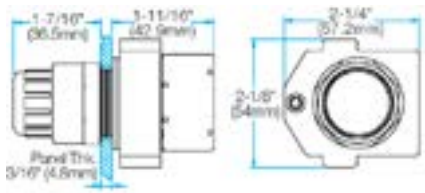
2-Position Push-Pull Maintained Operator
(shown with 2 1/4" (57.2 mm) Jumbo Mushroom Cap)



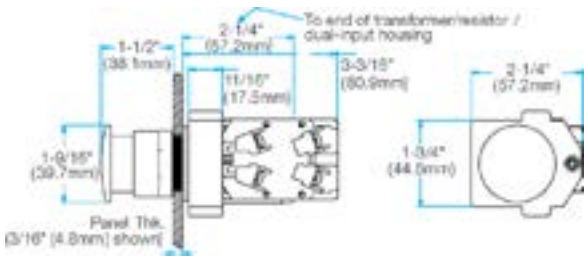
Momentary Illuminated H-Line Push Buttons

Fully-assembled operators come standard with one 3/16 in (4.8 mm) and three 1/16 in (1.6 mm) gaskets.

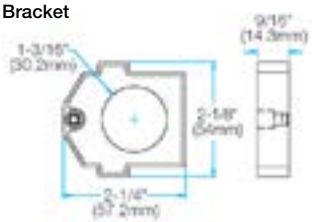
Illuminated Full Voltage Operator



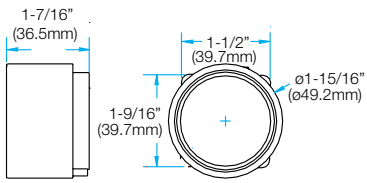
Illuminated Transformer, Resistor and Dual Input Operators



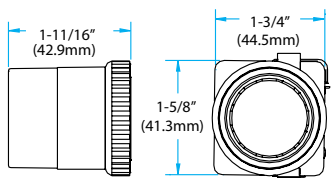
Illuminated Push Button Mounting Bracket



Illuminated Shrouded Mushroom Lens



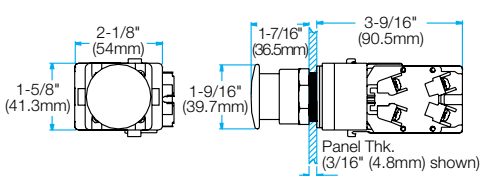
Illuminated Guarded Lens



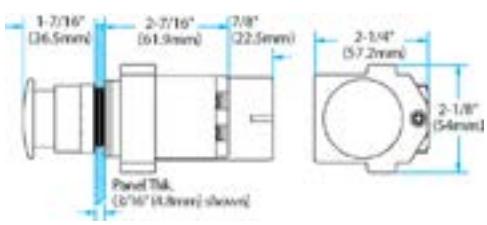
2-Position Push-Pull Maintained Illuminated H-Line Push Buttons

Fully-assembled operators come standard with one 3/16 in (4.8 mm) and three 1/16 in (1.6 mm) gaskets.

Illuminated Full Voltage Operator



Illuminated Transformer and Resistor Operators



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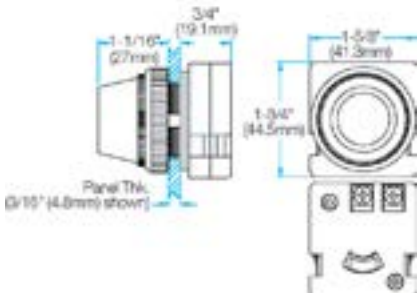
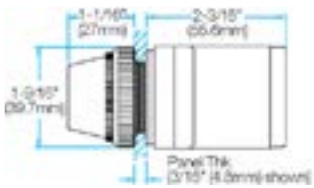
H-Line Pilot Lights

Fully-assembled operators come standard with one 3/16 in (4.8 mm) and two 1/16 in (1.6 mm) gaskets.

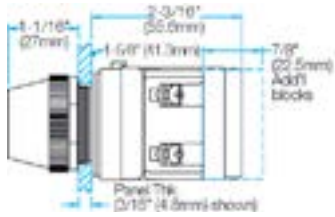
Full Voltage Pilot Light Operator



Transformer & Resistor Pilot Light Operators



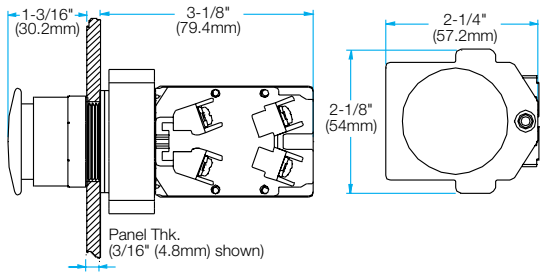
Dual Input Pilot Light Operator



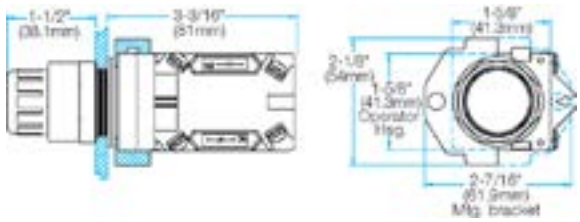
Push-To-Test H-Line Pilot Lights

Fully-assembled operators come standard with one 3/16 in (4.8 mm) and three 1/16 in (1.6 mm) gaskets.

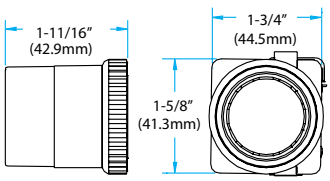
Full Voltage Push-To-Test Operator



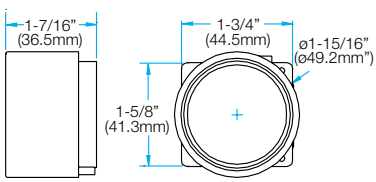
Transformer & Resistor Push-To-Test Operators



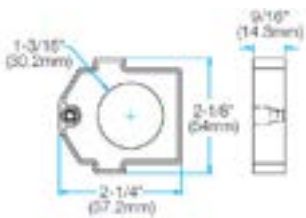
Guarded Lens



Shrouded Mushroom Lens



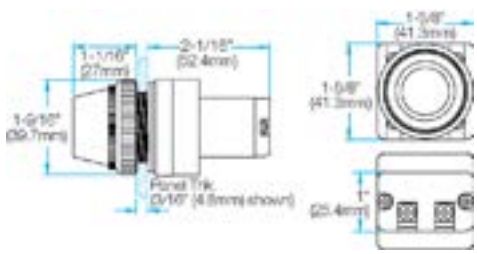
Illuminated Push-To-Test Mounting Bracket



Multi-Voltage H-Line Pilot Light

Fully-assembled operators come standard with four 1/16 in (1.6 mm) gaskets.

Multi-Voltage Pilot Light



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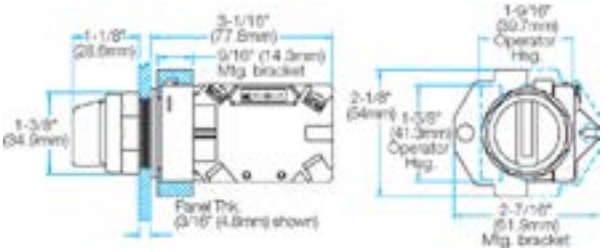
Pushbuttons and Pilot Lights

CSW30H Series (30mm) Hazardous Duty

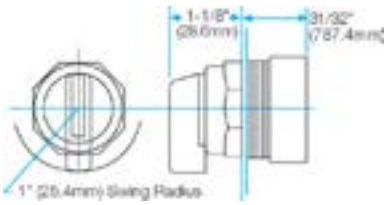
H-line Selector Switches

Fully-assembled operators come standard with one 3/16 in (4.8 mm) and three 1/16 in (1.6 mm) gaskets.

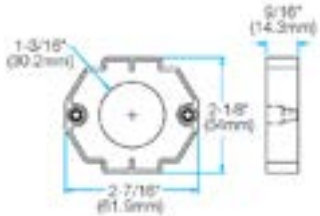
Selector Switch Operator (shown with standard handle)



Selector Switch Lever Handle

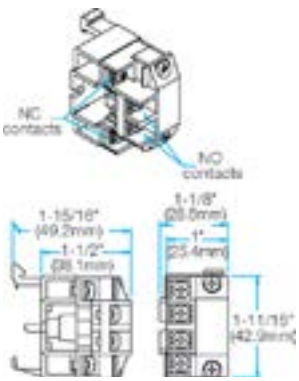


Selector Switch Mounting Bracket

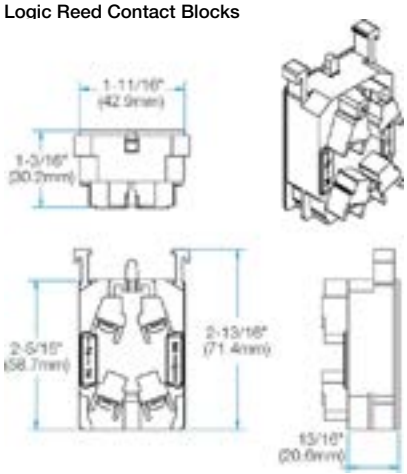


H-Line Contact Blocks

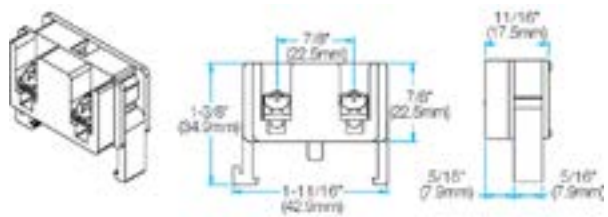
Factory Sealed Contact Block



Power Reed, Mid-Power Reed & Medium Logic Reed Contact Blocks



Logic Reed Contact Block



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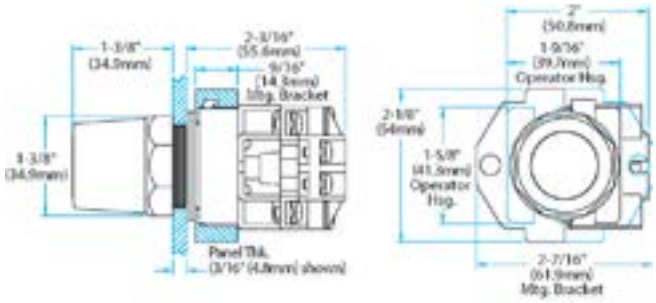
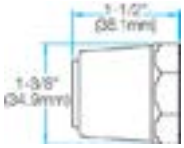
Maintained Flush & Extended h-line Push Button Caps

Fully-assembled operators come standard with one 3/16 in (4.8 mm) and three 1/16 in (1.6 mm) gaskets.

Maintained Flush Push Button Cap
(shown with an operator and contact block)



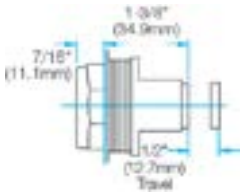
Maintained Extended
Push Button Cap



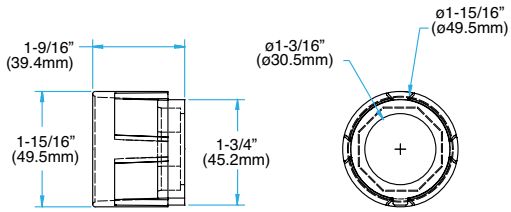
H-Line Reset Push Button

Fully-assembled operators come standard with one 3/16 in (4.8 mm) and three 1/16 in (1.6 mm) gaskets.

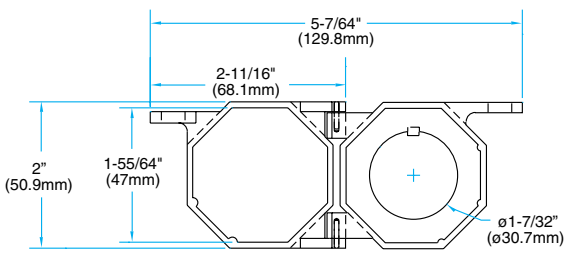
Reset Push Button

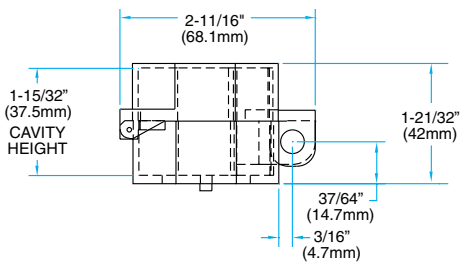


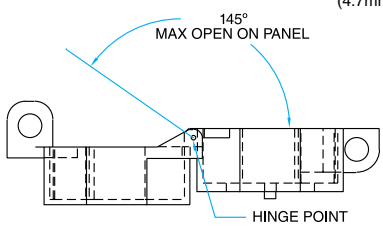
Guard Attachment



Lock-Off Attachment







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BTW Series – Terminal Blocks

Terminal blocks are devices designed to provide safe and secure electrical and mechanical conductor connections. Among all available connectors, terminal blocks are the most commonly used to their specific characteristics. All parts were developed to assure side-by-side assembly, thus saving space inside panels. Easy assembly of these terminal blocks on DIN Rails reduces panel assembly time.

UL File No. E320231

Standard Features

- Available in different colors
- Captive terminal screws or spring-clamps and PA66 polyamide body with high mechanical resistance
- Internal conductor element with high current conduction capacity
- Inlet tapered cable for easy insertion of conductors
- Stainless steel spring on spring-clamp type terminals
- Easy installation

Wide Range of Accessories

- End plates
- Separating boards
- Connecting bridges/jumpers
- End brackets
- DIN rail / support
- Group identifiers
- Identifiers with or without markings

Learn More Online

Terminal Blocks with Screw-Type Connection

BTWP 2.5

BTWP 4

BTWP 6

BTWP 10

Terminal Blocks with Spring Clamp Type Connection (Push-In)

BTWI 2.5

BTWI 4

BTWI 6

BTWI 10

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BTW Series – BTWP/BTWD/BTWT/BTWS

Screw Type Connection

Terminal Blocks

BTWP 2.5

BTWP 4

BTWP 6

BTWP 10

BTWP 16

BTWP 35

BTWP 70

Ground Terminal Blocks

BTWP 2.5/4T

BTWP 6/10T

BTWP 16T

BTWP 35T

Double Terminal Blocks

BTWD 2.5N

BTWD 4N

BTWD 4NK

Triple Terminal Blocks

BTWT 3

Double Terminal Block + Ground

BTWT 2T

Triple Terminal Block + Ground

BTWT 3T

Terminal Block for Detectors

BTWT 3S

Terminal Blocks for Fuses

BTWS 2S

BTWS 4S

Disconnect Terminal

BTWS 3A

1in-2out Terminal Block

BTWP 4C

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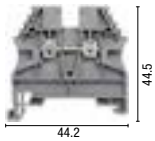
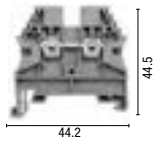
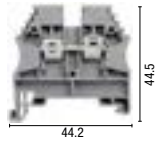
Terminal Blocks

BTWP Series

MULTIPLIER for BTW Series - Z9

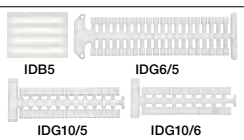
BTWP Series – Terminal Blocks With Screw Connection Terminals

List price is per pack.

	BTWP 2.5 5 mm width	BTWP 4 6 mm width	BTWP 6 6 mm width
			
Technical Data	**Voltage / Current / Cross Section**	**Voltage / Current / Cross Section**	**Voltage / Current / Cross Section**
IEC 60947-7-1	750 V~ / 24 A / 2.5 mm²	750 V~ / 32 A / 4 mm²	630 V~ / 41 A / 6 mm²
UL / CSA	600 V~ / 20 A / AWG 26…12	600 V~ / 30 A / AWG 26...10	600 V~ / 50 A / AWG 26…8
Rated surge voltage	8 kV	8 kV	8 kV
Pollution degree	3	3	3
Cable stripping	10 mm	10 mm	12 mm
Tightening torque	0.4 Nm / 3.54 lb-in	0.5 Nm / 4.42 lb-in	0.8 Nm / 7.08 lb-in
Connection Capacity			
Rigid wire	0.5…4 mm²	0.5…6 mm²	0.5…10 mm²
Flexible cable	1.5…2.5 mm²	1.5…4 mm²	1.5…6 mm²
AWG conductor	26…12	26…10	26…8

Terminal Block	Color	Catalog Number	Qty/Pack.	List Price	Catalog Number	Qty/Pack.	List Price	Catalog Number	Qty/Pack.	List Price
	Gray	BTWP 2.5	100	$130	BTWP 4	80	$130	BTWP 6	60	$130
	Blue	BTWP 2.5-AZ	100	$130	BTWP 4-AZ	80	$130	BTWP 6-AZ	60	$130
	Red	BTWP 2.5-VM	100	$130	BTWP 4-VM	80	$130	BTWP 6-VM	60	$130

Accessories

End Plate	Color	Catalog Number	Qty/Pack.	List Price	Catalog Number	Qty/Pack.	List Price	Catalog Number	Qty/Pack.	List Price
1.5 mm width	Gray	TF-BTWP 2.5-10	100	$65	TF-BTWP 2.5-10	100	$65	TF-BTWP 2.5-10	100	$65
	Blue	TF-BTWP 2.5-10-AZ	10	$7	TF-BTWP 2.5-10-AZ	10	$7	TF-BTWP 2.5-10-AZ	10	$7
	Red	TF-BTWP 2.5-10-VM	10	$7	TF-BTWP 2.5-10-VM	10	$7	TF-BTWP 2.5-10-VM	10	$7
Separating Board	**Color**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**
	Gray	PD-BTWP 2.5-10	25	$23	PD-BTWP 2.5-10	25	$23	PD-BTWP 2.5-10	25	$23
Connecting Bridge	**# of poles**	**Catalog Number**	**Qty/Pack**	**List Price**	**Catalog Number**	**Qty/Pack**	**List Price**	**Catalog Number**	**Qty/Pack**	**List Price**
	2	PC-BTWP 2.5/2	25	$47.50	PC-BTWP 4/2	25	$55	PC-BTWP 6/2	25	$57
	3	PC-BTWP 2.5/3	20	$56	PC-BTWP 4/3	20	$65	PC-BTWP 6/3	20	$67
	4	PC-BTWP 2.5/4	15	$57	PC-BTWP 4/4	15	$65	PC-BTWP 6/4	15	$67
	10	PC-BTWP 2.5/10	5	$44	PC-BTWP 4/10	5	$55	PC-BTWP 6/10	5	$57
End Bracket	**Color**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**
	Gray	PF3-BTW	100	$90	PF3-BTW	100	$90	PF3-BTW	100	$90
	Gray	PF4-BTW	100	$130	PF4-BTW	100	$130	PF4-BTW	100	$130
Din Rail / Support	**Type**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**
Din EN 50022	Flat	MR 35 x 7.5	2 m busbars	$15	MR 35 x 7.5	2 m busbars	$15	MR 35 x 7.5	2 m busbars	$15
	Support	ST-BTW	25	$80	ST-BTW	25	$80	ST-BTW	25	$80
Group Identifier	**Assembly**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**
	Din rail	IG-BTW	50	$75	IG-BTW	50	$75	IG-BTW	50	$75
	End Bracket	IG22-BTW [1]	25	$47	IG22-BTW [1]	25	$47	IG22-BTW [1]	25	$47
Identifier [2]		**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**
		-	-	-	IDG10/6-BTW	360	$60	IDG10/6-BTW	360	$60
		IDG10/5-BTW	440	$60	IDG10/5-BTW	440	$60	IDG10/5-BTW	440	$60
		IDG6/5-BTW	400	$50	IDG6/5-BTW	400	$50	IDG6/5-BTW	400	$50
		IDB5-BTW	500	$30	IDB5-BTW	500	$30	IDB5-BTW	500	$30

Notes:
1) For assembly on PF4-BTW end bracket only.
2) Further details about identifiers on page 411.

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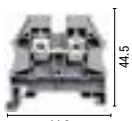
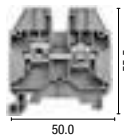
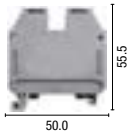
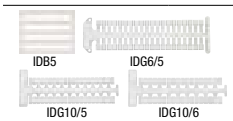
BTWP Series – Terminal Blocks With Screw Connection Terminals

List price is per pack.

	BTWP 10 10 mm width	BTWP 16 12 mm width	BTWP 35 16 mm width	BTWP 70 22 mm width
				
Technical Data	**Voltage / Current / Cross Section**	**Voltage / Current / Cross Section**	**Voltage / Current / Cross Section**	**Voltage / Current / Cross Section**
IEC 60947-7-1	630 V~ / 57 A / 10 mm²	750 V~ / 76 A / 16 mm²	750 V~ / 125 A / 35 mm²	750 V~ / 192 A / 70 mm²
UL / CSA	600 V~ / 65 A / AWG 16 ... 6	600 V~ / 85 A / AWG 12 ... 4	600 V~ / 115 A / AWG 10 ... 2	600 V~ / 175 A / AWG 6...2/0
Rated surge voltage	8 kV	8 kV	8 kV	8 kV
Pollution degree	3	3	3	3
Cable stripping	12 mm	16 mm	18 mm	20 mm
Tightening torque	1.2 Nm / 10.62 lb-in	1.2 Nm / 10.62 lb-in	2.5 Nm / 22.12 lb-in	6 Nm / 53.10 lb-in
Connection Capacity				
Rigid wire	1.5 ... 16 mm²	1.5 ... 16 mm²	6 ... 16 mm²	10 ... 16 mm²
Flexible cable	1.5 ... 10 mm²	1.5 ... 16 mm²	10 ... 35 mm²	10 ... 70 mm²
AWG conductor	16 ... 6	12 ... 4	10 ... 2	6 ... 2/0

Terminal Block	Color	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price
	Gray	BTWP 10	50	$140	BTWP 16	50	$210	BTWP 35	40	$320	BTWP 70	10	$300
	Blue	BTWP 10-AZ	50	$140	BTWP 16-AZ	50	$210	BTWP 35-AZ	40	$320	BTWP 70-AZ	10	$300
	Red	BTWP 10-VM	50	$140	BTWP 16-VM	50	$210	BTWP 35-VM	40	$320	BTWP 70-VM	10	$300
Accessories													
End Plate	**Color**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
1.5 mm width	Gray	TF-BTWP 2.5-10	100	$65	TF-BTWP 16	10	$10	-			-		
	Blue	TF-BTWP 2.5-10-AZ	10	$7	TF-BTWP 16-AZ	10	$10	-			-		
	Red	TF-BTWP 2.5-10-VM	10	$7	TF-BTWP 16-VM	10	$10	-			-		
Separating board	**Color**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
	Gray	PD-BTWP 2.5-10	25	$23	PD-BTWP 16	25	$23	-			-		
Connecting Bridge	**# Poles**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
	2	PC-BTWP 10/2	25	$75	PC-BTWP 16/2	25	$90	PC-BTWP 35/2	25	$180	-		
	3	PC-BTWP 10/3	20	$100	PC-BTWP 16/3	20	$110	PC-BTWP 35/3	20	$220	-		
	4	PC-BTWP 10/4	15	$90	PC-BTWP 16/4	15	$110	PC-BTWP 35/4	15	$210	-		
	10	PC-BTWP 10/10	5	$70	PC-BTWP 16/10	5	$90	PC-BTWP 35/10	5	$150	-		
End Bracket	**Color**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
	Gray	PF3-BTW	100	$90	PF3-BTW	100	$90	PF3-BTW	100	$90	PF3-BTW	100	$90
	Gray	PF4-BTW	100	$130	PF4-BTW	100	$130	PF4-BTW	100	$130	PF4-BTW	100	$130
Din Rail / Support	**Type**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
Din EN 50022	Flat	MR 35 x 7.5	2 m busbars	$15	MR 35 x 7.5	2 m busbars	$15	MR 35 x 7.5	2 m busbars	$15	MR 35 x 7.5	2 m busbars	$15
	Support	ST-BTW	25	$80	ST-BTW	25	$80	ST-BTW	25	$80	ST-BTW	25	$80
Group Identifier	**Assembly**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
	Din Rail	IG-BTW	0	$75	IG-BTW	50	$75	IG-BTW	50	$75	IG-BTW	50	$75
	End Bracket	IG22-BTW [1]	25	$47	IG22-BTW [1]	25	$47	IG22-BTW [1]	25	$47	IG22-BTW [1]	25	$47
Identifier [2]		**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
		IDG10/6-BTW	360	$60	IDG10/6-BTW	360	$60	IDG10/6-BTW	360	$60	IDG10/6-BTW	360	$60
		IDG10/5-BTW	440	$60	IDG10/5-BTW	440	$60	IDG10/5-BTW	440	$60	IDG10/5-BTW	440	$60
		IDG6/5-BTW	400	$50	IDG6/5-BTW	400	$50	IDG6/5-BTW	400	$50	IDG6/5-BTW	400	$50
		IDB5-BTW	500	$30	IDB5-BTW	500	$30	IDB5-BTW	500	$30	IDB5-BTW	500	$30

Notes:
1) For assembly on PF4-BTW end bracket only.
2) Further details about identifiers on page 411.

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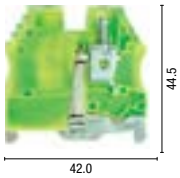
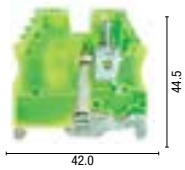
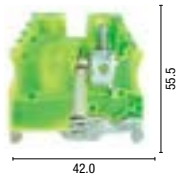
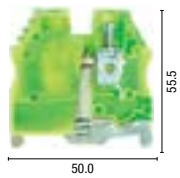
Terminal Blocks

BTWP Series

MULTIPLIER for BTW Series - Z9

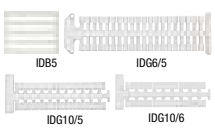
BTWP Series – Ground Terminal Blocks

List price is per pack.

	BTWP 2.5/4T 6 mm width	BTWP 6/10T 10 mm width	BTWP 16T 16 mm width	BTWP 35T 35 mm width
				
Technical Data	**Cross Section**	**Cross Section**	**Cross Section**	**Cross Section**
IEC 60947-7-1	4 mm²	10 mm²	**16 mm²**	35 mm²
UL / CSA	AWG 26 ... 10	AWG 16 ... 8	**AWG 12...4**	AWG 12…2
Rated surge voltage	8 kV	8 kV	**8 kV**	8 kV
Pollution degree	3	3	**3**	3
Cable stripping	10 mm	12 mm	**18 mm**	18 mm
Tightening torque	0.5 Nm / 4.42 lb-in	1.2 Nm / 10.62 lb-in	**2.5 Nm / 22.12 lb-in**	**2.5 Nm / 22.12 lb-in**
Connection Capacity				
Rigid wire	0.5 ... 6 mm²	1.5 ... 16 mm²	**6 ... 16 mm²**	**6 ... 16 mm²**
Flexible cable	1.5 ... 4 mm²	1.5 ... 10 mm²	**10 ... 35 mm²**	10 ... 35 mm²
AWG conductor	26 ... 10	16 ... 8	**10 ... 2**	**10 ... 2**

Terminal Block	Color	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price
	Gr Ye	BTWP 2.5/4T-VD/AM	50	$310	BTWP 6/10T-VD/AM	25	$187.50	BTWP 16T-VD/AM	50	$380	BTWP 35T-VD/AM	25	$317

Accessories

Din Rail / Support	Type	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price
	Flat	MR 35 x 7.5	2 m busbars	$15	MR 35 x 7.5	2 m busbars	$15	MR 35 x 7.5	2 m busbars	$15	MR 35 x 7.5	2 m busbars	$15
	Support	ST-BTW	25	$80	ST-BTW	25	$80	ST-BTW	25	$80	ST-BTW	25	$80
Group Identifier	**Assembly**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
	Din Rail	IG-BTW	50	$75	IG-BTW	50	$75	IG-BTW	50	$75	IG-BTW	50	$75
Identifier [2]		**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
		-	-	-	IDG10/6-BTW	360	$60	IDG10/6-BTW	360	$60	IDG10/6-BTW	360	$60
		IDG10/5-BTW	440	$60	IDG10/5-BTW	440	$60	IDG10/5-BTW	440	$60	IDG10/5-BTW	440	$60
		IDG6/5-BTW	400	$50	IDG6/5-BTW	400	$50	IDG6/5-BTW	400	$50	IDG6/5-BTW	400	$50
		IDB5-BTW	500	$30	IDB5-BTW	500	$30	IDB5-BTW	500	$30	IDB5-BTW	500	$30

Notes:
1) Further details about identifiers on page 411.

Data is subject to change without notice.

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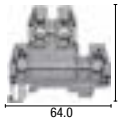
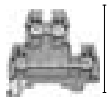
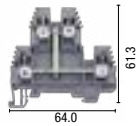
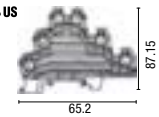
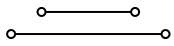
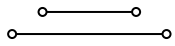
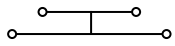
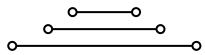
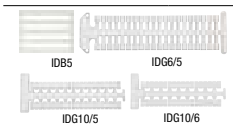
BTWD Series – Double Terminal Blocks with Screw Connection Terminals
BTWT Series – Triple Terminal Blocks with Screw Connection Terminals

List price is per pack.

	BTWD 2.5N 5 mm width	BTWD 4N 6 mm width	BTWD 4NK 6 mm width	BTWT 3 5 mm width
				
Technical Data				
	Voltage / Current / Cross Section	**Voltage / Current / Cross Section**	**Voltage / Current / Cross Section**	**Voltage / Current / Cross Section**
IEC 60947-7-1	500 V~ / 24 A / 2.5 mm²	500 V~ / 32 A / 4 mm²	500V~ / 32 A / 4 mm²	400 V~ / 24 A / 2.5 mm²
UL / CSA	300 V~ / 20 A / AWG 26 ... 12	300 V~ / 30 A / AWG 26 ... 10	300 V~ / 30 A / AWG 26...10	300 V~ / 24 A / AWG 24…12
Rated surge voltage	8 kV	8 kV	8 kV	8 kV
Pollution degree	3	3	3	3
Cable stripping	9 mm	9 mm	9 mm	9 mm
Tightening torque	0.4 Nm / 3.54 lb-in	0.5 Nm / 4.42 lb-in	0.5 Nm / 4.42 lb-in	0.4 Nm / 3.54 lb-in
Connection Capacity				
Rigid wire	0.5 ... 4 mm²	0.5 ... 6 mm²	0.5…6 mm²	0.5…4 mm²
Flexible cable	1.5 ... 2.5 mm²	1.5 ... 4 mm²	1.5…4 mm²	1.5…2.5 mm²
AWG conductor	26 ... 12	26 ... 10	26…10	24…12

Terminal Block	Color	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price
	Gray	BTWD 2.5N	100	$480	BTWD 4N	100	$500	BTWD 4N	20	$191	BTWT 3	20	$185
Accessories													
End Plate	**Color**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
	Gray	TF-BTWD 2.5-4N	25	$32.50	TF-BTWD 2.5-4N	25	$32.50	TF-BTWD 2.5-4N	25	$32.50	TF-BTWT 3	10	$13
Separating Board	**Color**	**Catalog Number**	**Qty/ Pack**	**List Price**	**Catalog Number**	**Qty/ Pack**	**List Price**	**Catalog Number**	**Qty/ Pack**	**List Price**	**Catalog Number**	**Qty/ Pack**	**List Price**
	Gray	-	-	-	-	-	-	-	-	-	PS1-BTWP	100	$41
Connecting Bridge	**# Poles**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
	2	PC-BTWP 2.5/2	25	$47.50	PC-BTWP 4/2	25	$55	PC-BTWT 2.5/2	25	$47.50	PC-BTWT 2.5/2	25	$47.50
	3	PC-BTWP 2.5/3	20	$56	PC-BTWP 4/3	20	$65	PC-BTWT 2.5/3	20	$56	PC-BTWT 2.5/3	20	$56
	4	PC-BTWP 2.5/4	15	$57	PC-BTWP 4/4	15	$65	PC-BTWT 2.5/4	15	$57	PC-BTWT 2.5/4	15	$57
	10	PC-BTWP 2.5/10	5	$44	PC-BTWP 4/10	5	$55	PC-BTWT 2.5/10	5	$44	PC-BTWT 2.5/10	5	$44
End Bracket	**Color**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
	Gray	PF3-BTW	100	$90	PF3-BTW	100	$90	PF3-BTW	100	$90	PF3-BTW	100	$90
	Gray	PF4-BTW	100	$130	PF4-BTW	100	$130	PF4-BTW	100	$130	PF4-BTW	100	$130
Din Rail / Support	**Type**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
Din EN 50022 	Flat	MR 35 x 7.5	2 m busbars	$15	MR 35 x 7.5	2 m busbars	$15	MR 35 x 7.5	2 m busbars	$15	MR 35 x 7.5	2 m busbars	$15
	Support	ST-BTW	25	$80	ST-BTW	25	$80	ST-BTW	25	$80	ST-BTW	25	$80
Identifier Group	**Assembly**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
	Din Rail	IG-BTW	50	$75	IG-BTW	50	$75	IG-BTW	50	$75	IG-BTW	50	$75
	End Bracket	IG22-BTW [1]	25	$47	IG22-BTW [1]	25	$47	IG22-BTW [1]	25	$47	IG22-BTW [1]	25	$47
Identifier [2]		**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
		-	-	-	IDG10/6-BTW	360	$60	IDG10/6-BTW	360	$60	-	-	-
		IDG10/5-BTW	440	$60	IDG10/5-BTW	440	$60	IDG10/5-BTW	440	$60	-	-	-
		IDG6/5-BTW	400	$50	IDG6/5-BTW	400	$50	IDG6/5-BTW	400	$50	-	-	-
		IDB5-BTW	500	$30	IDB5-BTW	500	$30	IDB5-BTW	500	$30	IDB5-BTW	500	$30

Notes:
1) For assembly on PF4-BTW end bracket.
2) Further details about identifiers on page 411

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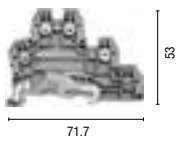
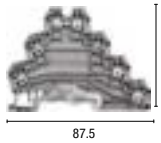
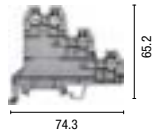
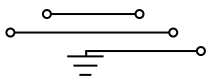
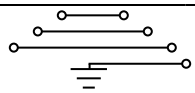
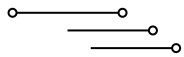
Terminal Blocks

BTW Series

MULTIPLIER for BTW Series - Z9

BTWT Series – Double Terminal Blocks + Ground With Screw Connection Terminals
BTWT Series – Triple Terminal Blocks + Ground With Screw Connection Terminals
BTWT Series – Terminal Blocks for Sensors With Screw Connection Terminals

List price is per pack.

	BTWT 2T 6 mm width	BTWT 3T 6 mm width	BTWT 3S 6 mm width
			
Technical Data			
	Voltage / Current / Cross Section	**Voltage / Current / Cross Section**	**Voltage / Current / Cross Section**
IEC 60947-7-1	440 V~ / 24 A / 2.5 mm²	440 V~ / 24 A / 2.5 mm²	500 V~ / 24 A / 2.5 mm²
UL / CSA	300 V~ / 24 A / AWG 24 ... 12	300 V~ / 24 A / AWG 24 ... 12	300 V~ / 24 A / AWG 24 ... 12
Rated surge voltage	8 kV	8 kV	8 kV
Pollution degree	3	3	3
Cable stripping	9 mm	9 mm	9 mm
Tightening torque	0.4 Nm / 13.54 lb-in	0.4 Nm / 13.54 lb-in	0.4 Nm / 13.54 lb-in
Connection Capacity			
Rigid wire	0.5 ... 4 mm²	0.5 ... 4 mm²	0.5 ... 4 mm²
Flexible cable	1.5 ... 2.5 mm²	1.5 ... 2.5 mm²	1.5 ... 2.5 mm²
AWG conductor	24 ... 12	24 ... 12	24 ... 12

Terminal Block	Color	Catalog Number	Qty/Pack.	List Price	Catalog Number	Qty/Pack.	List Price	Catalog Number	Qty/Pack.	List Price
	Gray	BTWT 2T	20	$200	BTWT 3T	20	$290	BTWT 3S	20	$100

Accessories

End Plate	Color	Catalog Number	Qty/Pack.	List Price	Catalog Number	Qty/Pack.	List Price	Catalog Number	Qty/Pack.	List Price
	Gray	TF-BTWT 2T	10	$13	TF-BTWT 2T	10	$13	TF-BTWT 2T	10	$13
Connecting Bridge	**# Poles**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**
	2	PC-BTWT 2.5/2	25	$47.50	PC-BTWT 2.5/2	25	$47.50	PC-BTWT 2.5/2	25	$47.50
	3	PC-BTWT 2.5/3	20	$56	PC-BTWT 2.5/3	20	$56	PC-BTWT 2.5/3	20	$56
	4	PC-BTWT 2.5/4	15	$57	PC-BTWT 2.5/4	15	$57	PC-BTWT 2.5/4	15	$57
	10	PC-BTWT 2.5/10	5	$44	PC-BTWT 2.5/10	5	$44	PC-BTWT 2.5/10	5	$44
End Bracket	**Color**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**
	Gray	PF3-BTW	100	$90	PF3-BTW	100	$90	PF3-BTW	100	$90
	Gray	PF4-BTW	100	$130	PF4-BTW	100	$130	PF4-BTW	100	$130
Rail / Support	**Type**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**
Din EN 50022 	Flat	MR 35 x 7.5	2 m busbars	$15	MR 35 x 7.5	2 m busbars	$15	MR 35 x 7.5	2 m busbars	$15
	Support	ST-BTW	25	$80	ST-BTW	25	$80	ST-BTW	25	$80
Identifier Group	**Assembly**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**
	Din Rail	IG-BTW	50	$75	IG-BTW	50	$75	IG-BTW	50	$75
	End Bracket	IG22-BTW [1]	25	$47	IG22-BTW [1]	25	$47	IG22-BTW [1]	25	$47
Identifier [2]		**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**
		IDB5-BTW	500	$30	IDB5-BTW	500	$30	IDB5-BTW	500	$30

Notes:
1) For assembly on PF4-BTW end bracket.
2) Further information about identifiers on page 411.

Data is subject to change without notice.

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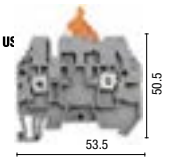
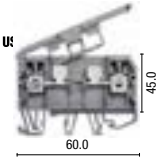
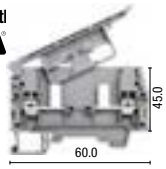
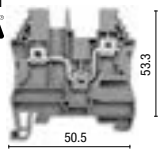
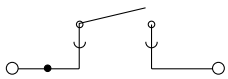
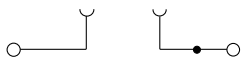
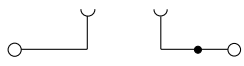
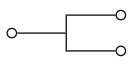
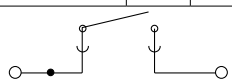
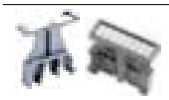
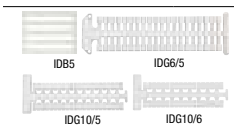
BTWS Series – Terminal Blocks for Fuses
BTWP Series – 1In-2Out Terminal Block

List price is per pack.

	Terminal Block for Fuses			1 IN / 2 OUT Terminal Block
	BTWS 3A **6 mm width** 	**BTWS 2S** **8 mm width** 	**BTWS 4S** **10 mm width** 	**BTWP 4C** **6 mm width** 
Technical Data				
	Voltage / Current / Cross Section	**Voltage / Current / Cross Section**	**Voltage / Current / Cross Section**	**Voltage / Current / Cross Section**
IEC 60947-7-1	500 V~ / 16 A / 4 mm²	500 V~ / 6.3 A / 6 mm²	750 V~ / 6.3 A / 6 mm²	750 V~ / 32 A / 4 mm²
UL / CSA	600 V~ / 16 A / AWG 26…10	300 V~ / 6.3 A / AWG 26 ... 8	600 V~ / 6.3 A / AWG 22 ... 8	600V~ / 29 A / AWG 22...10
Rated surge voltage	8 kV	8 kV	8 kV	8 kV
Pollution degree	3	3	3	3
Fuse dimensions	-	5x20 or 5x25 mm	6.35x31.75 mm (1/4"x1 1/4")	-
Cable stripping	10 mm	12 mm	12 mm	10 mm
Tightening torque	0.5 Nm / 4.42 lb-in	0.8 Nm / 7.08 lb-in	0.8 Nm / 7.08 lb-in	0.5 Nm / 4.42 lb-in
Connection Capacity				
Rigid wire	0.5…6 mm²	0.5 ... 10 mm²	0.5 ... 10 mm²	0.5 ... 6 mm²
Flexible cable	1.5…4 mm²	1.5 ... 6 mm²	1.5 ... 6 mm²	1.5 ... 4 mm²
AWG conductor	26…10	26…8	22…8	26…10

Terminal Block	**Color**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
					BTWS 2S	50	$525	BTWS 4S	20	$210			
	Gray	BTWS 3A	50	$250				Note: Space to house a spare fuse.			BTWP 4C	50	$250

Accessories

End Plate	**Color**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
	Gray	TF-BTWS 3	10	$10	TF-BTWS 2	25	$30	Supplied with end plate as standard.			TF-BTWP 4C	10	$10
Separating Board	**Color**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
	Gray	PS1-BTWP	100	$41	-	-	-	-	-	-	-	-	-
End Bracket	**Color**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
	Gray	PF3-BTW	100	$90	PF3-BTW	100	$90	PF3-BTW	100	$90	PF3-BTW	100	$90
	Gray	PF4-BTW	100	$130	PF4-BTW	100	$130	PF4-BTW	100	$130	PF4-BTW	100	$130
Rail / Support	**Type**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
Din EN 50022 	Flat	MR 35 x 7.5	2 m busbars	$15	MR 35 x 7.5	2 m busbars	$15	MR 35 x 7.5	2 m busbars	$15	MR 35 x 7.5	2 m busbars	$15
	Support	ST-BTW	25	$80	ST-BTW	25	$80	ST-BTW	25	$80	ST-BTW	25	$80
Group Identifier	**Assembly**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
	Din Rail	IG-BTW	50	$75	IG-BTW	50	$75	IG-BTW	50	$75	IG-BTW	50	$75
	End Bracket	IG22-BTW [1]	25	$47	IG22-BTW [1]	25	$47	IG22-BT W [1]	25	$47	IG22-BTW [1]	25	$47
Identifier [2]		**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
		IDG10/6-BTW	360	$30	-	-	-	IDG10/6-BTW	360	$60	IDG10/6-BTW	360	$60
		IDG10/5-BTW	440	$60	-	-	-	IDG10/5-BTW	440	$60	IDG10/5-BTW	440	$60
		IDG6/5-BTW	400	$50	-	-	-	IDG6/5-BTW	400	$50	IDG6/5-BTW	400	$50
		IDB5-BTW	500	$30	IDB5-BTW	500	$30	IDB5-BTW	500	$30	IDB5-BTW	500	$30

Notes:
1) For assembly on PF4-BTW end bracket.
2) Further information about identifiers on page 411.

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Terminal Blocks

BTWI Series

BTWI Terminal Blocks

Spring Clamp Type Connection (Push-In) Terminal Blocks

BTWI 2.5

BTWI 4

BTWI 6

BTWI 10

Ground Terminal Blocks

BTWI 2.5T

BTWI 4T

BTWI 6T

BTWI 10T

Double Terminal Blocks

BTWI 2.5-2F

BTWI 4-2F

BTWI 4-2FK

Triple Terminal Blocks

BTWI 2.5-3F

Double Terminal Block + Ground

BTWI 2.5-2FT

Triple Terminal Block + Ground

BTWI 2.5-3FT

Terminal Block for Sensors

BTWI 3S

Disconnect Terminal Block

BTWI 2.5A

Terminal Blocks for Fuses

BTWI S

BTWI SLD

BTWI I

1In-2Out Terminal Block

BTWI 2.5E

2In-2Out Terminal Block

BTWI 2.5C

Double Ground Terminal Block

BTWI 2.5CT

Data is subject to change without notice.

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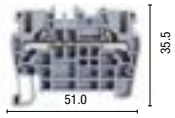
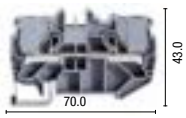
BTWI Series – Terminal Blocks With Spring Clamp Connection Terminals (Push-In)

List price is per pack.

	BTWI 2.5 5 mm width	BTWI 4 6 mm width	BTWI 6 8 mm width	BTWI 10 10 mm width
				
Technical Data	**Voltage / Current / Cross Section**	**Voltage / Current / Cross Section**	**Voltage / Current / Cross Section**	**Voltage / Current / Cross Section**
IEC 60947-7-1	750 V~ / 24 A / 2.5 mm²	750 V~ / 32 A / 4 mm²	750 V~ / 41 A / 6 mm²	750 V~ / 57 A / 10 mm²
UL / CSA	600 V~ / 20 A / AWG 22…12	600 V~ / 26 A / AWG 22...10	600 V~ / 35 A / AWG 22…8	600 V~ / 55 A / AWG 20…6
Rated surge voltage	8 kV	8 kV	8 kV	8 kV
Pollution degree	3	3	3	3
Cable stripping	10 mm	12 mm	12 mm	13 mm
Connection Capacity				
Rigid wire	0.5…4 mm²	0.5…6 mm²	0.5…10 mm²	0.5…16 mm²
Flexible cable	0.5…2.5 mm²	0.5…4 mm²	0.5…6 mm²	0.5…10 mm²
AWG conductor	22…12	22…10	22…8	20…6

Terminal Block	Color	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price
	Gray	BTWI 2.5	100	$150	BTWI 4	100	$200	BTWI 6	60	$184	BTWI 10	50	$213
	Blue	BTWI 2.5-AZ	100	$150	BTWI 4-AZ	100	$200	BTWI 6-AZ	60	$184	BTWI 10-AZ	50	$213
	Red	BTWI 2.5-VM	100	$150	BTWI 4-VM	100	$200	BTWI 6-VM	60	$184	BTWI 10-VM	50	$213

Accessories

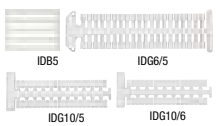
End Plate	Color	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price
	Gray	TF-BTWI 2.5	100	$67	TF-BTWI 4	100	$91	TF-BTWI 6	100	$101	TF-BTWI 10	100	$113
	Blue	TF-BTWI 2.5-AZ	100	$67	TF-BTWI 4-AZ	100	$91	TF-BTWI 6-AZ	100	$101	TF-BTWI 10-AZ	100	$113
	Red	TF-BTWI 2.5-VM	100	$67	TF-BTWI 4-VM	100	$91	TF-BTWI 6-VM	100	$101	TF-BTWI 10-VM	100	$113

Connecting Bridge	# Poles	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price
	2	PC-BTWM 2.5/2	25	$33	PC-BTWM 4/2	25	$37	PC-BTWM 6/2	25	$48	PC-BTWM 10/2	25	$83
	3	PC-BTWM 2.5/3	20	$43	PC-BTWM 4/3	20	$45	PC-BTWM 6/3	20	$53	PC-BTWM 10/3	20	$104
	4	PC-BTWM 2.5/4	15	$36	PC-BTWM 4/4	15	$40	PC-BTWM 6/4	15	$52	PC-BTWM 10/4	15	$100
	10	PC-BTWM 2.5/10	5	$27	PC-BTWM 4/10	5	$29	PC-BTWM 6/10	5	$40	PC-BTWM 10/10	5	$72

End Bracket	Color	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price
	Gray	PF3-BTW	100	$90	PF3-BTW	100	$90	PF3-BTW	100	$90	PF3-BTW	100	$90
	Gray	PF4-BTW	100	$130	PF4-BTW	100	$130	PF4-BTW	100	$130	PF4-BTW	100	$130

Rail / Support	Type	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price
Din EN 50022 	Flat	MR 35 x 7.5	2 m busbars	$15	MR 35 x 7.5	2 m busbars	$15	MR 35 x 7.5	2 m busbars	$15	MR 35 x 7.5	2 m busbars	$15
	Support	ST-BTW	25	$80	ST-BTW	25	$80	ST-BTW	25	$80	ST-BTW	25	$80

Group Identifier	Assembly	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price
	Din Rail	IG-BTW	50	$75	IG-BTW	50	$75	IG-BTW	50	$75	IG-BTW	50	$75
	End Bracket	IG22-BTW [1]	25	$47	IG22-BTW [1]	25	$47	IG22-BTW [1]	25	$47	IG22-BTW [1]	25	$47

Identifier [2]	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price
	-	-	-	IDG10/6-BTW	360	$60	IDG10/6-BTW	360	$60	IDG10/6-BTW	360	$60
	IDG10/5-BTW	440	$60	IDG10/5-BTW	440	$60	IDG10/5-BTW	440	$60	IDG10/5-BTW	440	$60
	IDG6/5-BTW	400	$50	IDG6/5-BTW	400	$50	IDG6/5-BTW	400	$50	IDG6/5-BTW	400	$50
	IDB5-BTW	500	$30	IDB5-BTW	500	$30	IDB5-BTW	500	$30	IDB5-BTW	500	$30

Notes:
1) For assembly on PF4-BTW end bracket.
2) Further details about identifiers on page 411.

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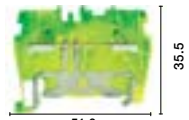
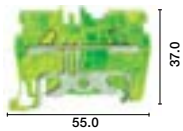
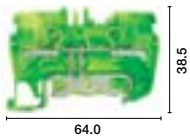
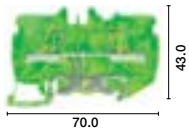
Terminal Blocks

BTWI Series

MULTIPLIER for BTW Series - Z9

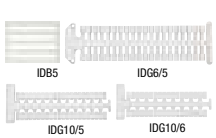
BTWI Series – Ground Terminal Blocks With Spring Clamp Connection Terminals (Push-In)

List price is per pack.

	BTWI 2.5T 5 mm width	BTWI 4T 6 mm width	BTWI 6T 8 mm width	BTWI 10T 10 mm width
				
Technical Data	**Cross Section**	**Cross Section**	**Cross Section**	**Cross Section**
IEC 60947-7-1	2.5 mm²	4 mm²	6 mm²	10 mm²
UL / CSA	AWG 22…12	AWG 22...10	AWG 22…8	AWG 20…6
Rated surge voltage	8 kV	8 kV	8 kV	8 kV
Pollution degree	3	3	3	3
Cable stripping	10 mm	12 mm	12 mm	13 mm
Connection Capacity				
Rigid wire	0.5…4 mm²	0.5…6 mm²	0.5…10 mm²	0.5…16 mm²
Flexible cable	0.5…2.5 mm²	0.5…4 mm²	0.5…6 mm²	0.5…10 mm²
AWG conductor	22…12	22…10	22…8	20…6

Terminal Block	Color	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price
	Green	BTWI 2.5T-VD/AM	50	$252	BTWI 4T-VD/AM	50	$257	BTWI 6T-VD/AM	60	$372	BTWI 10T-VD/AM	25	$219

Accessories

End Plate	Color	Catalog Number	Qty/ Pack	List Price	Catalog Number	Qty/ Pack	List Price	Catalog Number	Qty/ Pack	List Price	Catalog Number	Qty/ Pack	List Price
	Green	TF-BTWI 2.5 T	10	$7	TF-BTWI 4 T	10	$9	TF-BTWI 6 T	10	$10	TF-BTWI 10 T	10	$11
End Bracket	**Color**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
	Gray	PF3-BTW	100	$90	PF3-BTW	100	$90	PF3-BTW	100	$90	PF3-BTW	100	$90
	Gray	PF4-BTW	100	$130	PF4-BTW	100	$130	PF4-BTW	100	$130	PF4-BTW	100	$130
Din Rail / Support	**Type**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
Din EN 50022 	Flat	MR 35 x 7.5	2 m busbars	$15	MR 35 x 7.5	2 m busbars	$15	MR 35 x 7.5	2 m busbars	$15	MR 35 x 7.5	2 m busbars	$15
	Support	ST-BTW	25	$80	ST-BTW	25	$80	ST-BTW	25	$80	ST-BTW	25	$80
Group Identifier	**Assembly**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
	Din Rail	IG-BTW	50	$75	IG-BTW	50	$75	IG-BTW	50	$75	IG-BTW	50	$75
	End Bracket	IG22-BTW [1]	25	$47	IG22-BTW [1]	25	$47	IG22-BTW [1]	25	$47	IG22-BTW [1]	25	$47
Identifier [2]		**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
		-	-	-	IDG10/6-BTW	360	$60	IDG10/6-BTW	360	$60	IDG10/6-BTW	360	$60
		IDG10/5-BTW	440	$60	IDG10/5-BTW	440	$60	IDG10/5-BTW	440	$60	IDG10/5-BTW	440	$60
		IDG6/5-BTW	400	$50	IDG6/5-BTW	400	$50	IDG6/5-BTW	400	$50	IDG6/5-BTW	400	$50
		IDB5-BTW	500	$30	IDB5-BTW	500	$30	IDB5-BTW	500	$30	IDB5-BTW	500	$30

Notes:
1) For assembly on PF4-BTW end bracket.
2) Further details about identifiers on page 411.

Data is subject to change without notice.

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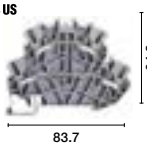
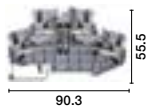
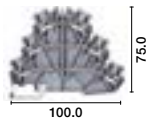
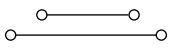
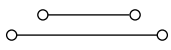
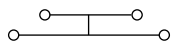
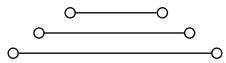
BTWI Series – Double Terminal Blocks With Spring Clamp Connection Terminals (Push-In)
BTWI Series – Triple Terminal Blocks With Spring Clamp Connection Terminals (Push-In)

List price is per pack.

	BTWI 2.5-2F 5 mm width	BTWI 4-2F 6 mm width	BTWI 4-2FK 6 mm width	BTWI 2.5-3F 5 mm width
				
Technical Data				
	Voltage / Current / Cross Section	**Voltage / Current / Cross Section**	**Voltage / Current / Cross Section**	**Voltage / Current / Cross Section**
IEC 60947-7-1	500 V~ / 24 A / 2.5 mm²	750 V~ / 30 A / 4 mm²	750 V~ / 30 A / 4 mm²	500 V~ / 24 A / 2.5 mm²
UL / CSA	600 V~ / 20 A / AWG 22…12	600 V~ / 26 A / AWG 22...10	600 V~ / 26 A / AWG 22...12	600 V~ / 20 A / AWG 22…12
Rated surge voltage	8 kV	8 kV	8 kV	8 kV
Pollution degree	3	3	3	3
Cable stripping	10 mm	12 mm	10 mm	10 mm
Connection Capacity				
Rigid wire	0.5…4 mm²	0.5…6 mm²	0.5…6 mm²	0.5…4 mm²
Flexible cable	0.5…2.5 mm²	0.5…4 mm²	0.5…4 mm²	0.5…2.5 mm²
AWG conductor	22…12	22…10	22…10	22…12

Terminal Block	Color	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price
	Gray	BTWI 2.5-2F	40	$178	BTWI 4-2F	25	$104	BTWI 4-2FK	25	$208	BTWI 2.5-3F	30	$179
Accessories													
End Plate	**Color**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
1.5 mm width	Gray	TF-BTWI 2.5-2F	50	$48	TF-BTWI 4-2F	25	$32	TF-BTWI 4-2F	25	$32	TF-BTWI 2.5-3F	10	$13
Connecting Bridge	**# Poles**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
	2	PC-BTWM 2.5/2	25	$33	PC-BTWM 4/2	25	$37	PC-BTWM 4/2	25	$37	PC-BTWM 2.5/2	25	$33
	3	PC-BTWM 2.5/3	20	$43	PC-BTWM 4/3	20	$45	PC-BTWM 4/3	20	$45	PC-BTWM 2.5/3	20	$43
	4	PC-BTWM 2.5/4	15	$36	PC-BTWM 4/4	15	$40	PC-BTWM 4/4	15	$40	PC-BTWM 2.5/4	15	$36
	10	PC-BTWM 2.5/10	5	$27	PC-BTWM 4/10	5	$29	PC-BTWM 4/10	5	$29	PC-BTWM 2.5/10	5	$27
End Bracket	**Color**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
	Gray	PF3-BTW	100	$90	PF3-BTW	100	$90	PF3-BTW	100	$90	PF3-BTW	100	$90
	Gray	PF4-BTW	100	$130	PF4-BTW	100	$130	PF4-BTW	100	$130	PF4-BTW	100	$130
Din Rail / Support	**Type**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
Din EN 50022	Flat	MR 35 x 7.5	2 m busbars	$15	MR 35 x 7.5	2 m busbars	$15	MR 35 x 7.5	2 m busbars	$15	MR 35 x 7.5	2 m busbars	$15
	Support	ST-BTW	25	$80	ST-BTW	25	$80	ST-BTW	25	$80	ST-BTW	25	$80
Group Identifier	**Assembly**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
	Din Rail	IG-BTW	50	$75	IG-BTW	50	$75	IG-BTW	50	$75	IG-BTW	50	$75
	End Bracket	IG22-BTW [1]	25	$47	IG22-BTW [1]	25	$47	IG22-BTW [1]	25	$47	IG22-BTW [1]	25	$47
Identifier [2]		**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
IDB5 IDG6/5 IDG10/5 IDG10/6		-	-	-	IDG10/6-BTW	360	$60	IDG10/6-BTW	360	$60	-	-	-
		IDG10/5-BTW	440	$60	IDG10/5-BTW	440	$60	IDG10/5-BTW	440	$60	IDG10/5-BTW	440	$60
		-	-	-	IDG6/5-BTW	400	$50	IDG6/5-BTW	400	$50	-	-	-
		IDB5-BTW	500	$30	IDB5-BTW	500	$30	IDB5-BTW	500	$30	IDB5-BTW	500	$30

Notes:
1) For assembly on PF4-BTW end bracket only.
2) Further details about identifiers on page 411

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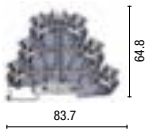
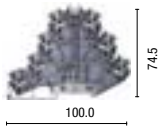
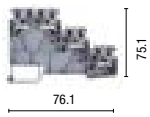
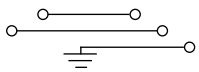
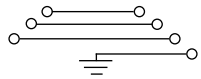
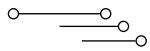
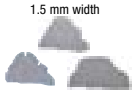
Terminal Blocks

BTWI Series

MULTIPLIER for BTW Series - Z9

BTWI Series – Double Terminal Blocks + Ground With Spring Clamp Connection Terminals (Push-In)
BTWI Series – Triple Terminal Blocks + Ground With Spring Clamp Connection Terminals (Push-In)
BTWI Series – Terminal Blocks For Sensors With Spring Clamp Connection Terminals (Push-In)

List price is per pack.

	BTWI 2.5-2FT 5 mm width			BTWI 2.5-3FT 5 mm width			BTWI 3S 5 mm width		
									
Technical Data									
	Voltage / Current / Cross Section			**Voltage / Current / Cross Section**			**Voltage / Current / Cross Section**		
IEC 60947-7-1	500 V~ / 24 A / 2.5 mm²			500 V~ / 24 A / 2.5 mm²			500 V~ / 24 A / 2.5 mm²		
UL / CSA	600 V~ / 20 A / AWG 22…12			600 V~ / 20 A / AWG 22…12			-		
Rated surge voltage	8 kV			8 kV			8 kV		
Pollution degree	3			3			3		
Cable stripping	10 mm			10 mm			10 mm		
Connection Capacity									
Rigid wire	0.5…4 mm²			0.5…4 mm²			0.5…4 mm²		
Flexible cable	0.5…2.5 mm²			0.5…2.5 mm²			0.5…2.5 mm²		
AWG conductor	22…12			22…12			22…12		
Terminal Block	**Color**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**
	Gray	BTWI 2.5-2FT	30	$304	BTWI 2.5-3FT	30	$345	BTWI 3S	20	$80
Accessories										
End Plate	**Color**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**
1.5 mm width 	Gray	TF-BTWI 2.5-2F	50	$48	TF-BTWI 2.5-3FT	10	$21	TF-BTWI 3S	10	$24
Connecting Bridge	**# Poles**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**
	2	PC-BTWM 2.5/2	25	$33				PC-BTWM 2.5/2	25	$33
	3	PC-BTWM 2.5/3	20	$43				PC-BTWM 2.5/3	20	$43
	4	PC-BTWM 2.5/4	15	$36	-			PC-BTWM 2.5/4	15	$36
	10	PC-BTWM 2.5/10	5	$27				PC-BTWM 2.5/10	5	$27
End Bracket	**Color**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**
	Gray	PF3-BTW	100	$90	PF3-BTW	100	$90	PF3-BTW	100	$90
	Gray	PF4-BTW	100	$130	PF4-BTW	100	$130	PF4-BTW	100	$130
Din Rail / Support	**Type**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**
	Flat	MR 35 x 7.5	2 m busbars	$15	MR 35 x 7.5	2 m busbars	$15	MR 35 x 7.5	2 m busbars	$15
	Support	ST-BTW	25	$80	ST-BTW	25	$80	ST-BTW	25	$80
Group Identifier	**Assembly**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**
	Din Rail	IG-BTW	50	$75	IG-BTW	50	$75	IG-BTW	50	$75
	End Bracket	IG22-BTW [1]	25	$47	IG22-BTW [1]	25	$47	IG22-BTW [1]	25	$47
Identifier [2]		**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**
		IDG10/5-BTW	440	$60	IDG10/5-BTW	440	$60	IDG10/5-BTW	440	$60
		IDB5-BTW	500	$30	IDB5-BTW	500	$30	IDB5-BTW	500	$30

Notes:
1) For assembly on PF4-BTW end bracket only.
2) Further details about identifiers on page 411.

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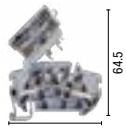
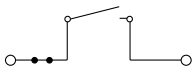
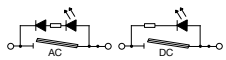
BTWI Series – Disconnect Terminal Blocks With Spring Clamp Connection Terminals (Push-In)

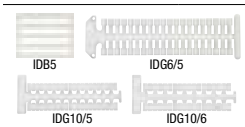
BTWI Series – Terminal Blocks For Fuses With Spring Clamp Connection Terminals (Push-In)

List price is per pack.

	BTWI 2.5 A 5 mm width	BTWI S 8 mm width	BTWI SLD 8 mm width	BTWI I 8 mm width
				
Technical Data				
	Voltage / Current / Cross Section	**Voltage / Current / Cross Section**	**Voltage / Current / Cross Section**	**Voltage / Current / Cross Section**
IEC 60947-7-1	750 V~ / 16 A / 2.5 mm²	500 V~ / 10 A / 4 mm²	750 V~ / 30 A / 4 mm²	500 V~ / 10 A / 4 mm²
UL / CSA	600 V~ / 10 A / AWG 22…12	600 V~ / 10 A / AWG 22...10	600 V~ / 26 A / AWG 22...12	600 V~ / 10 A / AWG 22…10
Rated surge voltage	8 kV	8 kV	8 kV	8 kV
Pollution degree	3	3	3	3
Fuse dimensions	-	5x20 mm or 5x25 mm	5x20 mm or 5x25 mm	6.35x31.75 mm (1/4" x 1 1/4")
Cable stripping	10 mm	12 mm	10 mm	12 mm
Connection Capacity				
Rigid wire	0.5…4 mm²	0.5…6 mm²	0.5…6 mm²	0.5…4 mm²
Flexible cable	0.5…2.5 mm²	0.5…4 mm²	0.5…4 mm²	0.5…4 mm²
AWG conductor	22…12	22…10	22…10	22…10

Terminal Block	Color	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price
	Gray	BTWI 2.5 A	50	$317	BTWI S	15	$95	BTWI SLD C03 - 24VDC	15	$171	BTWI I	15	$111
					Note: spare fuse included.			BTWI SLD D13 - 110 VAC	15	$171	Note: spare fuse included.		
								BTWI SLD D23 - 220 VAC	15	$171			

Accessories

End Plate	Color	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price	Catalog Number	Qty/ Pack.	List Price
	Gray	TF-BTWI 2.5 A	10	$53	Built-in			Built-in			Built-in		
Connecting Bridge	**# Poles**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
	2	PC-BTWM 2.5/2	25	$33	PC-BTWM 6/2	25	$48	PC-BTWM 4/2	25	$37	PC-BTWM 6/2	25	$48
	3	PC-BTWM 2.5/3	20	$43	PC-BTWM 6/3	20	$53	PC-BTWM 4/3	20	$45	PC-BTWM 6/3	20	$53
	4	PC-BTWM 2.5/4	15	$36	PC-BTWM 6/4	15	$52	PC-BTWM 4/4	15	$40	PC-BTWM 6/4	15	$52
	10	PC-BTWM 2.5/10	5	$27	PC-BTWM 6/10	5	$40	PC-BTWM 4/10	5	$29	PC-BTWM 6/10	5	$40
End Bracket	**Color**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
	Gray	PF3-BTW	100	$90	PF3-BTW	100	$90	PF3-BTW	100	$90	PF3-BTW	100	$90
	Gray	PF4-BTW	100	$130	PF4-BTW	100	$130	PF4-BTW	100	$130	PF4-BTW	100	$130
Din Rail / Support	**Type**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
Din EN 50022 	Flat	MR 35 x 7.5	2 m busbars	$15	MR 35 x 7.5	2 m busbars	$15	MR 35 x 7.5	2 m busbars	$15	MR 35 x 7.5	2 m busbars	$15
	Support	ST-BTW	25	$80	ST-BTW	25	$80	ST-BTW	25	$80	ST-BTW	25	$80
Group Identifier	**Assembly**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
	Din Rail	IG-BTW	50	$75	IG-BTW	50	$75	IG-BTW	50	$75	IG-BTW	50	$75
	End Bracket	IG22-BTW [1]	25	$47	IG22-BTW [1]	25	$47	IG22-BTW [1]	25	$47	IG22-BTW [1]	25	$47
Identifier [2]		**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**	**Catalog Number**	**Qty/ Pack.**	**List Price**
		-	-	-	IDG10/6-BTW	360	$60	IDG10/6-BTW	360	$60	IDG10/6-BTW	360	$60
		IDG10/5-BTW	440	$60	IDG10/5-BTW	440	$60	IDG10/5-BTW	440	$60	IDG10/5-BTW	440	$60
		IDG6/5-BTW	400	$50	-	-	-	IDG6/5-BTW	400	$50	-	-	-
		IDB5-BTW	500	$30	IDB5-BTW	500	$30	IDB5-BTW	500	$30	IDB5-BTW	500	$30

Notes:
1) For assembly on PF4-BTW end bracket only.
2) Further details about identifiers on page 411.

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Terminal Blocks

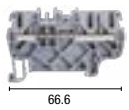
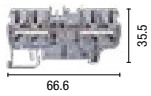
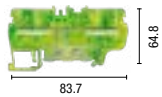
BTWI Series

MULTIPLIER for BTW Series - Z9

Terminal Block for Fuses

BTWI Series – 1In – 2Out Terminal Block With Spring Clamp Connection Terminals (Push-In)
BTWI Series – 2In – 2Out Terminal Block With Spring Clamp Connection Terminals (Push-In)
BTWI Series – Double Ground Terminal Block With Spring Clamp Connection Terminals (Push-In)

List price is per pack.

	BTWI 2.5 E 5 mm width	**BTWI 2.5 C** 5 mm width	**BTWI 2.5 CT** 5 mm width
			
Technical Data	**Voltage / Current / Cross Section**	**Voltage / Current / Cross Section**	**Cross Section**
IEC 60947-7-1	750 V~ / 24 A / 2.5 mm²	750 V~ / 24 A / 2.5 mm²	2.5 mm²
UL / CSA	600 V~ / 20 A / AWG 22…12	600 V~ / 20 A / AWG 22…12	AWG 22…12
Rated surge voltage	8 kV	8 kV	8 kV
Pollution degree	3	3	3
Cable stripping	13 mm	13 mm	13 mm
Connection Capacity			
Rigid wire	0.5…4 mm²	0.5…4 mm²	0.5…4 mm²
Flexible cable	0.5…2.5 mm²	0.5…2.5 mm²	0.5…2.5 mm²
AWG conductor	22…12	22…12	22…12

Terminal Block	**Color**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**
	Gray	BTWI 2.5 E	50	$120	BTWI 2.5 C	50	$163	-	-	-
	Green	-	-	-	-	-	-	BTWI 2.5 CT-VD/AM	50	$331

Accessories

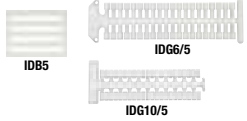
End Plate	**Color**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**
	Gray	TF-BTWI 2.5 E	10	$15	TF-BTWI 2.5 C	10	$23	-	-	-
	Green	-	-	-	-	-	-	TF-BTWI 2.5 CT	10	$12

Connecting Bridge	**# Poles**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**
	2	PC-BTWM 2.5/2	25	$33	PC-BTWM 2.5/2	25	$33	-		
	3	PC-BTWM 2.5/3	20	$43	PC-BTWM 2.5/3	20	$43			
	4	PC-BTWM 2.5/4	15	$36	PC-BTWM 2.5/4	15	$36			
	10	PC-BTWM 2.5/10	5	$27	PC-BTWM 2.5/10	5	$27			

End Bracket	**Color**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**
	Gray	PF3-BTW	100	$90	PF3-BTW	100	$90	PF3-BTW	100	$90
	Gray	PF4-BTW	100	$130	PF4-BTW	100	$130	PF4-BTW	100	$130

Rail / Support	**Type**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**
Din EN 50022 	Flat	MR 35 x 7.5	2 m busbars	$15	MR 35 x 7.5	2 m busbars	$15	MR 35 x 7.5	2 m busbars	$15
	Support	ST-BTW	25	$80	ST-BTW	25	$80	ST-BTW	25	$80

Group Identifier	**Assembly**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**
	Din Rail	IG-BTW	50	$75	IG-BTW	50	$75	IG-BTW	50	$75
	End Bracket	IG22-BTW [1]	25	$47	IG22-BTW [1]	25	$47	IG22-BTW [1]	25	$47

Identifier [2]	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**	**Catalog Number**	**Qty/Pack.**	**List Price**
	-	-	-	-	-	-	-	-	-
	IDG10/5-BTW	440	$60	IDG10/5-BTW	440	$60	IDG10/5-BTW	440	$60
	IDG6/5-BTW	400	$50	IDG6/5-BTW	400	$50	IDG6/5-BTW	400	$50
	IDB5-BTW	500	$30	IDB5-BTW	500	$30	IDB5-BTW	500	$30

Notes:
1) For assembly on PF4-BTW end bracket.
2) Further information about identifiers on page 411.

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Selection Guide

Identifiers are supplied in specific packaging and quantity for each type. Markings shown below are standards and stockable. For any custom markings, please consult WEG.

Identifiers	IDG5	IDG6/5	IDG10/5	IDG10/6
Technical data	Technical data	Technical data	Technical data	Technical data
Identifier dimensions	5 x 5 mm	6 x 5 mm	10 x 5 mm	10 x 6 mm
Identifier color	White	White	White	White
Marking color	Black	Black	Black	Black
Number of identifiers (tags) per sheet	50	40	44	36

Marking	Catalog Number	Sheets Per Pack	List Price Per Pack	Catalog Number	Sheets Per Pack	List Price Per Pack	Catalog Number	Sheets Per Pack	List Price Per Pack	Catalog Number	Sheets Per Pack	List Price Per Pack
Without marking	IDB5-BTW	10	$30	IDG6/5-BTW	10	$65	IDG10/5T-BTW	10	$75	IDG10/6T-BTW	10	$75
0	IDB5-BTWH-0	10	$40	IDG6/5-BTWH-0	10	$65	IDG10/5-BTWH-0	10	$75	IDG10/6-BTWH-0	10	$75
1	IDB5-BTWH-1	10	$40	IDG6/5-BTWH-1	10	$65	IDG10/5-BTWH-1	10	$75	IDG10/6-BTWH-1	10	$75
2	IDB5-BTWH-2	10	$40	IDG6/5-BTWH-2	10	$65	IDG10/5-BTWH-2	10	$75	IDG10/6-BTWH-2	10	$75
3	IDB5-BTWH-3	10	$40	IDG6/5-BTWH-3	10	$65	IDG10/5-BTWH-3	10	$75	IDG10/6-BTWH-3	10	$75
4	IDB5-BTWH-4	10	$40	IDG6/5-BTWH-4	10	$65	IDG10/5-BTWH-4	10	$75	IDG10/6-BTWH-4	10	$75
5	IDB5-BTWH-5	10	$40	IDG6/5-BTWH-5	10	$65	IDG10/5-BTWH-5	10	$75	IDG10/6-BTWH-5	10	$75
6	IDB5-BTWH-6	10	$40	IDG6/5-BTWH-6	10	$65	IDG10/5-BTWH-6	10	$75	IDG10/6-BTWH-6	10	$75
7	IDB5-BTWH-7	10	$40	IDG6/5-BTWH-7	10	$65	IDG10/5-BTWH-7	10	$75	IDG10/6-BTWH-7	10	$75
8	IDB5-BTWH-8	10	$40	IDG6/5-BTWH-8	10	$65	IDG10/5-BTWH-8	10	$75	IDG10/6-BTWH-8	10	$75
9	IDB5-BTWH-9	10	$40	IDG6/5-BTWH-9	10	$65	IDG10/5-BTWH-9	10	$75	IDG10/6-BTWH-9	10	$75
10	IDB5-BTWH-10	10	$40	IDG6/5-BTWH-10	10	$65	IDG10/5-BTWH-10	10	$75	IDG10/6-BTWH-10	10	$75
1, 2, 3 ... 8, 9, 10	IDB5-BTWH-1-10	10	$40	IDG6/5-BTWH-1-10	10	$65	-	-	-	-		
11, 12, 13 ... 18, 19, 20	IDB5-BTWH-11-20	10	$40	IDG6/5-BTWH-11-20	10	$65	-	-	-	-		
21, 22, 23 ... 28, 29, 30	IDB5-BTWH-21-30	10	$40	IDG6/5-BTWH-21-30	10	$65	-	-	-	-		
31, 32, 33 ... 38, 39, 40	IDB5-BTWH-31-40	10	$40	IDG6/5-BTWH-31-40	10	$65	-	-	-	-		
41, 42, 43 ... 48, 49, 50	IDB5-BTWH-41-50	10	$40	IDG6/5-BTWH-41-50	10	$65	-	-	-	-		
1, 2, 3 ... 20, 21, 22	-	-	-	-	-	-	IDG10/5-BTWH-1-22	10	$75	-		
23, 24, 25 ... 42, 43, 44	-	-	-	-	-	-	IDG10/5-BTWH-23-44	10	$75	-		
1, 2, 3 ... 16, 17, 18	-	-	-	-	-	-	-	-	-	IDG10/6-BTWH-1-18	10	$75
19, 20, 21 ... 34, 35, 36	-	-	-	-	-	-	-	-	-	IDG10/6-BTWH-19-36	10	$75
1, 2, 3 ... 48, 49, 50	IDB5-BTWH-1-50	10	$40	-	-	-	-	-	-	-		
51, 52, 53 ... 98, 99, 100	IDB5-BTWH-51-100	10	$40	-	-	-	-	-	-	-		
101,102,103...148, 149, 150	IDB5-BTWH-101-150	10	$40	-	-	-	-	-	-	-		
151,152,153...198, 199, 200	IDB5-BTWH-151-200	10	$40	-	-	-	-	-	-	-		
1, 2, 3 ... 38, 39, 40	-	-	-	IDG6/5-BTWH-1-40	10	$65	-	-	-	-		
41, 42, 43 ... 78, 79, 80	-	-	-	IDG6/5-BTWH-41-80	10	$65	-	-	-	-		
81, 82, 83 ... 118, 119, 120	-	-	-	IDG6/5-BTWH-81-120	10	$65	-	-	-	-		
1, 2, 3 ... 42, 43, 44	-	-	-				IDG10/5-BTWH-1-44	10	$75	-		
45, 46, 47 ... 86, 87, 88	-	-	-				IDG10/5-BTWH-45-88	10	$75	-		
89, 90, 91 ... 130, 131, 132	-	-	-				IDG10/5-BTWH-89-132	10	$75	-		
1, 2, 3 ... 34, 35, 36	-	-	-	-	-	-	-	-	-	IDG10/6-BTWH-1-36	10	$75
37, 38, 39 ... 70, 71, 72	-	-	-	-	-	-	-	-	-	IDG10/6-BTWH-37-72	10	$75
73, 74, 75 ... 106, 107, 108	-	-	-	-	-	-	-	-	-	IDG10/6-BTWH-73-108	10	$75

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Power Factor Correction Product Groups

UCWT Series – Three-Phase Capacitor Unit (Heavy Duty)

BCWT Series – Bank of Three-Phase Capacitors With or Without Fuse Protection, in NEMA 4 Enclosure

WEG power factor correction capacitors were designed using self-healing metallized polypropylene film, have security protection against internal over pressure and the dielectric losses are less than 0.2 W/kVAr. The growing demand for electricity has required large investments in power generation to meet the rate of global development, both in developing countries where the population has gained greater access to consumer goods, and in developed countries, where energy efficiency has been object concern in order to reduce high investments in power generation. These investments, however, besides being planned in the medium and long term, involve the use of increasingly scarce natural resources which are subject to environmental pressures. In short term, the best way to increase the supply of electricity has been reducing waste and increasing energy efficiency. It is estimated that currently 40% of global consumption of electricity is related to the use of electric motors. Moreover, the application of new technologies has become increasingly common in many industry sectors, bringing deep changes in the form of application and control of electric motors. Within this context of technological changes and pressures for higher energy efficiency, WEG presents its line of capacitors for power factor correction.

Standard Features

- Self-healing metalized polypropylene film
- Internal over pressure security device
- Maximum allowed fault current of 10 kA
- Dielectric losses smaller than 0.2 W/kVAr
- Internal discharge resistors in three-phase units, modules and banks
- Custom built PFCC Banks available upon request

Learn More Online

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Sizing Power Factor Capacitors

There are two methods we will use examples to show how to size power factor correction capacitors.

The simplest method uses the selected chart below. The selection chart shows the maximum KVAR based on the motor HP and RPM. The KVAR recommended is designed to improve the power factor to approximately 0.95.

HP	3600 RPM		1800 RPM		1200 RPM		900 RPM		720 RPM		600 RPM	
	Required KVAR	Est. Amp Red. %	Required KVAR	Est. Amp Red. %	Required KVAR	Est. Amp Red. %	Required KVAR	Est. Amp Red. %	Required KVAR	Est. Amp Red. %	Required KVAR	Est. Amp Red. %
1	0.5	15	0.75	24	1	29	1.5	39	1.5	42	2	42
1.5	0.75	15	0.75	24	1	29	1.5	39	2	42	2	42
2	1.0	15	1	24	1.5	29	2	39	2	42	2.5	42
3	1.5	14	1.5	23	2.5	28	3	38	3	40	3	40
5	2	14	2.5	22	3	26	3	31	3	40	5	40
7.5	2.5	14	3	20	3	21	5	28	5	38	5	45
10	3	14	3	18	5	21	5	27	7.5	36	7.5	38
15	5	12	5	18	5	20	7.5	24	7.5	32	10	34
20	5	12	5	17	7.5	19	7.5	23	12.5	25	17.5	30
25	7.5	12	7.5	17	7.5	19	10	23	12.5	25	17.5	30
30	7.5	11	7.5	16	10	19	12.5	22	15	24	22.5	30
40	10	12	12.5	15	15	19	17.5	21	22.5	24	25	30
50	12.5	12	17.5	15	20	19	22.5	21	22.5	24	30	30
60	15	12	20	14	22.5	17	25	20	30	22	35	28
75	20	12	22.5	14	25	15	27.5	17	30	14	40	19
100	22.5	11	30	14	30	12	35	16	40	15	45	17
125	25	10	35	12	35	12	40	14	45	15	50	17
150	30	10	40	12	40	12	50	14	50	14	60	17
200	35	10	50	11	50	10	60	13	60	13	90	17
250	40	11	60	10	60	10	75	13	85	13	100	17
300	45	11	60	10	75	12	100	14	100	13	120	17
350	50	12	75	8	90	12	120	13	120	13	135	15
400	75	10	75	8	100	12	130	13	140	13	150	15
450	75	8	90	8	120	10	140	12	160	14	160	15
500	100	8	100	9	150	12	160	12	180	13	180	15

Example:

For a 75 HP motor running at 3600 rpm, the maximum value would be 20 KVAR.

Important! Do not oversize the capacitors, when sizing at the motor load to avoid over voltage on the circuit.

Notes:

- *The KVAR needed to correct the Power Factor is the same regardless of the motor voltage. The actual capacitor selection is dependent on voltage.*

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Sizing Power Factor Capacitors

The next method uses a power factor multiplier chart and formula for calculating the recommended KVAR. This method is often used when sizing power factor capacitors for a system wide approach.

Existing Power Factor	Desired Power Factor (F)														
	0.85	0.86	0.87	0.88	0.89	0.90	0.91	0.92	0.93	0.94	0.95	0.96	0.97	0.98	0.99
0.50	1.112	1.139	1.165	1.192	1.220	1.248	1.276	1.306	1.337	1.369	1.403	1.440	1.481	1.529	1.589
0.52	1.023	1.050	1.076	1.103	1.131	1.159	1.187	1.217	1.248	1.280	1.314	1.351	1.392	1.440	1.500
0.54	0.939	0.966	0.992	1.019	1.047	1.075	1.103	1.133	1.164	1.196	1.230	1.267	1.308	1.356	1.416
0.56	0.860	0.887	0.913	0.940	0.968	0.996	1.024	1.054	1.085	1.117	1.151	1.188	1.229	1.277	1.337
0.58	0.785	0.812	0.838	0.865	0.893	0.921	0.949	0.979	1.010	1.042	1.076	1.113	1.154	1.202	1.262
0.60	0.713	0.740	0.766	0.793	0.821	0.849	0.877	0.907	0.938	0.970	1.004	1.041	1.082	1.130	1.190
0.62	0.646	0.673	0.699	0.726	0.754	0.782	0.810	0.840	0.871	0.903	0.937	0.974	1.015	1.063	1.123
0.64	0.581	0.608	0.634	0.661	0.689	0.717	0.745	0.775	0.806	0.838	0.872	0.909	0.950	0.998	1.068
0.66	0.518	0.545	0.571	0.598	0.626	0.654	0.682	0.712	0.743	0.775	0.809	0.846	0.887	0.935	0.995
0.68	0.458	0.485	0.511	0.538	0.566	0.594	0.622	0.652	0.683	0.715	0.749	0.786	0.827	0.875	0.935
0.70	0.400	0.427	0.453	0.480	0.508	0.536	0.564	0.594	0.625	0.657	0.691	0.728	0.769	0.817	0.877
0.72	0.344	0.371	0.397	0.424	0.452	0.480	0.508	0.538	0.569	0.601	0.635	0.672	0.713	0.761	0.821
0.74	0.289	0.316	0.342	0.369	0.397	0.425	0.453	0.483	0.514	0.546	0.580	0.617	0.658	0.706	0.766
0.76	0.235	0.262	0.288	0.315	0.343	0.371	0.399	0.429	0.460	0.492	0.526	0.563	0.604	0.652	0.712
0.78	0.182	0.209	0.235	0.262	0.290	0.318	0.346	0.376	0.407	0.439	0.473	0.510	0.551	0.599	0.659
0.80	0.130	0.157	0.183	0.210	0.238	0.266	0.294	0.324	0.355	0.387	0.421	0.458	0.499	0.547	0.609
0.82	0.078	0.105	0.131	0.158	0.186	0.214	0.242	0.272	0.303	0.335	0.369	0.406	0.447	0.495	0.555
0.84	0.026	0.053	0.079	0.106	0.134	0.162	0.190	0.220	0.251	0.283	0.317	0.354	0.395	0.443	0.503
0.86	-	-	0.026	0.053	0.081	0.109	0.137	0.167	0.198	0.230	0.264	0.301	0.342	0.390	0.450
0.88	-	-	-	-	0.028	0.056	0.084	0.114	0.145	0.177	0.211	0.248	0.289	0.337	0.397
0.90	-	-	-	-	-	-	0.028	0.058	0.089	0.121	0.155	0.192	0.233	0.281	0.341
0.92	-	-	-	-	-	-	-	-	0.031	0.063	0.097	0.134	0.175	0.223	0.283
0.94	-	-	-	-	-	-	-	-	-	-	0.034	0.071	0.112	0.160	0.229
0.96	-	-	-	-	-	-	-	-	-	-	-	-	0.041	0.089	0.149
0.98	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.060

First, determine the Total kW used in the system.

Second, look to the left hand column of the power factor correction multiplier chart (Table above), and select the original or existing power factor.

Third, select the desired power factor and choose the number (multiplier) that intersects the two columns.

Take the number (multiplier) and multiply it by the Total kW of the system.

Example:

Total kW _____= 500 kW
Existing Power Factor _____ = 0.78
Required Power Factor _____ = 0.92
Multiplier from Table above_____ = 0.376

Formula:
0.376 x 500 kW = 188 kVAr

For automatic switching or fixed units at the main, choose the closest value. If the exact kVAr is not listed, choose the next higher rating.

For the example listed above, it would be 200 kVAr.

If the existing power factor is not known, you can calculate it.

The power factor formula is: Active Power (kW) divided by the Apparent Power (kVA)

PF = kW / kVA

Notes:
- *The examples shown on this catalog are strictly for guidance. Whenever possible, the load types and load curves of the installation should be evaluated. If more than 20% of the loads to be corrected are non-linear (VFDs, Soft-Starters, rectifiers, electronic reactors, etc.), Anti-Harmonics Inductors must be installed in series with the capacitors.*
- *THD limit for capacitors: THDvoltage < 5% Vrms and THDcurrent < 15%.*
- *The use of capacitors in electric systems with high harmonic distortions can internally damage the capacitive cells.*

Data is subject to change without notice.

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UCWT Series – Three-Phase Capacitor Unit (Heavy Duty)

Reactive Power 0.45...26.82 kVAR
Rated Voltage 208V

Reactive Power 0.5...20 kVAR
Rated Voltage 240V

Reactive Power 0.5...50 kVAR
Rated Voltage 480V

Three-Phase Capacitors – UCWT (Heavy Duty) [1) 2)]

Rated Voltage (V)	60 Hz		Capacitance (uF)	Capacitance (uF) (Δ Connection)	Series[3)]	Dimensions ØxH (in)	Weight (lb)	Catalog Number	List Price	Multiplier
	Relative Power (kVAr)	Rated Current In (A)								
208	0.45	1.2	9.1	9.1 x 3	D	2.4 x 6.1	1.19	UCWT0.5V25 L10	$45	Z11
	0.67	1.9	13.7	13.7 x 3	D	2.4 x 6.1	1.19	UCWT0.75V25 L10	$47	
	0.89	2.5	18.3	18.3 x 3	D	2.4 x 6.1	1.19	UCWT1V25 L10	$50	
	1.34	3.7	27.4	27.4 x 3	D	2.4 x 6.1	1.19	UCWT1.5V25 L10	$55	
	1.79	5.0	36.6	36.6 x 3	D	2.4 x 6.1	1.19	UCWT2V25 L10	$61	
	2.23	6.2	45.7	45.7 x 3	D	2.4 x 8.3	1.19	UCWT2.5V25 L16	$70	
	2.68	7.4	54.8	54.8 x 3	D	2.4 x 8.3	1.52	UCWT3V25 L16	$76	
	4.47	12.4	91.4	91.4 x 3	E	2.9 x 8.7	3.01	UCWT5V25 N20	$124	
	6.70	18.6	137.1	137.1x3	E	2.9 x11.1	3.85	UCWT7.5V25 N22	$148	
	8.94	24.8	182.8	182.7x3	E	2.9 x11.1	3.85	UCWT10V25 N22	$175	
	8.94	24.8	182.8	182.7x3	F	3.9x9.0	2.17	UCWT10V25 Q26	$184	
	11.17	31.0	228.5	228.3x3	F	3.3 x 14	4.40	UCWT12.5V25 Q26	$192	
	13.41	37.2	274.2	274 x3	F	3.3 x 14	4.40	UCWT15V25 S26	$246	
	15.64	43.4	319.7	319.7x3	F	4.5 x 11.4	3.50	UCWT17.5V25 S28	$258	
	17.88	49.6	385.4	385.4x3	F	4.5 x 11.4	3.50	UCWT20V25 S28	$267	
	22.35	62.0	456.7	456.7x3	F	5.3 x 11.4	4.43	UCWT25V25 U28	$278	
	26.82	74.4	548.1	548.1x3	F	5.3 x 11.4	4.43	UCWT30V25 U28	$285	
240	0.50	1.2	7.7	7.7x3	D	2.4 x 6.1	1.19	UCWT0.5V29 L10	$45	
	0.75	1.8	11.5	11.5x3	D	2.4 x 6.1	1.19	UCWT0.75V29 L10	$47	
	1.00	2.4	15.4	15.4x3	D	2.4 x 6.1	1.19	UCWT1V29 L10	$50	
	1.50	3.6	23.0	23.0x3	D	2.4 x 6.1	1.19	UCWT1.5V29 L10	$55	
	2.00	4.8	30.7	30.7x3	D	2.4 x 6.1	1.19	UCWT2V29 L10	$61	
	2.50	6.0	38.4	38.4x3	D	2.4 x 8.3	1.19	UCWT2.5V29 L16	$70	
	3.00	7.2	46.1	46.1x3	D	2.4 x 8.3	1.19	UCWT3V29 L16	$76	
	5.00	12.0	76.8	76.8x3	E	2.9 x 8.7	3.01	UCWT5V29 N20	$124	
	7.50	18.0	115.2	115.2x3	E	2.9 x 11.1	3.98	UCWT7.5V29 N22	$148	
	10.00	24.1	153.6	153.6x3	E	3.3 x 14	4.40	UCWT10V29 N22	$175	
	10.00	24.1	153.5	153.6x3	F	2.5 x 9	4.40	UCWT10V29 Q26	$184	
	12.50	30.1	192.0	192.0x3	F	3.3 x 14	4.40	UCWT12.5V29 Q26	$246	
	15.00	36.1	230.3	230.3x3	F	4.5 x 9	5.10	UCWT15V29 S26	$257	
	17.50	42.1	268.3	268.3x3	F	4.5 x9	7.10	UCWT17.5V29 S28	$269	
	20.00	48.1	307.0	307x3	F	4.5 x9	7.05	UCWT20V29 S28	$269	

Notes:
1) For other voltages, please contact WEG.
2) Discharge resistors sized so the voltage on the terminals of the capacitor is 1/10 of the rated voltage in 30 s.
3) The D series capacitors are provided with internal resistors in the capacitive cell. The E series capacitors are provided with external resistors in the capacitive cell.

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Power Factor Correction

UCWT Series

UCWT Series – Three-Phase Capacitors (Heavy Duty)[1)2)]

Rated Voltage (V)	60 Hz		Capacitance (uF)	Capacitance (uF) (Δ Connection)	Series[3)]	Dimensions Ø x H (in)	Weight (lb)	Catalog Number	List Price	Multiplier
	Relative Power (kVAr)	Rated Current In (A)								
480	0.50	0.6	1.9	1.9 x 3	D	2.4 x 6.1	1.17	UCWT0.5V53 L10	$43	Z11
	0.60	0.7	2.3	2.3 x3	D	2.4 x 6.1	1.17	UCWT0.5V52 L10	$43	
	0.75	0.9	2.9	2.9 x 3	D	2.4 x 6.1	1.17	UCWT0.75V53 L10	$45	
	0.90	1.1	3.5	3.5x3.5	D	2.4 x 6.1	1.17	UCWT0.75V52 L10	$46	
	1.00	1.2	3.8	3.8 x 3	D	2.4 x 6.1	1.17	UCWT1V53 L10	$47	
	1.50	1.8	5.8	5.8 x 3	D	2.4 x 6.1	1.17	UCWT1.5V53 L10	$51	
	1.90	2.2	6.9	6.9x3	D	2.4 x 6.1	1.17	UCWT1.5V52 L10	$51	
	2.00	2.4	7.7	7.7 x 3	D	2.4 x 6.1	1.17	UCWT2V53 L10	$56	
	2.50	3.0	9.6	9.6 x 3	D	2.4 x 6.1	1.17	UCWT2.5V53 L10	$60	
	3.60	4.3	13.8	13.8 x 3	D	2.4 x 6.1	1.63	UCWT3V52 L10	$80	
	5.00	6.0	19.2	19.2 x 3	D	2.4 x 6.1	1.52	UCWT5V53 L16	$80	
	7.50	9.0	28.8	28.8 x 3	E	2.9 x 8.7	2.93	UCWT7.5V53 N20	$103	
	9.00	10.8	34.5	34.5x3	E	2.9 x 3	2.93	UCWT7.5V52 N20	$114	
	10.00	12.0	38.4	38.4 x 3	E	2.9 x 8.7	3.04	UCWT10V53 N20	$118	
	12.50	15.0	48.0	48.0 x 3	E	2.9 x 11.1	3.81	UCWT12.5V53 N22	$131	
	15.00	18.0	57.6	57.6 x 3	E	2.9 x 11.1	3.90	UCWT12.5V52 N22	$145	
	15.00	18.0	57.6	57.6 x 3	E	2.9 x 11.1	3.64	UCWT15V53 N22	$155	
	15.00	18.0	57.6	57.6 x 3	E	2.9 x 11.1	5.73	UCWT15V53 Q26	$155	
	17.50	21.0	67.2	67.15 x 3	E	3.3 x 14	4.40	UCWT17.5V53 Q26	$219	
	18.00	21.7	69.1	69.1 x 3	F	3.3 x 14	4.40	UCWT15V52 Q26	$224	
	20.00	24.1	76.8	76.7 x 3	F	3.3 x 14	4.40	UCWT20V53 S26	$232	
	22.50	27.1	86.4	86.3 x 3	F	4.5 x 9	4.40	UCWT22.5V53 S26	$246	
	25.00	30.1	96.0	96.3 x3	F	4.5 x 9	4.40	UCWT25V53 S26	$259	
	30.00	36.1	115.1	115.1x3	F	4.5 x 9	4.40	UCWT30V53 S28	$267	
	35.00	42.1	134.3	134.3x3	F	4.5 x 9	4.40	UCWT35V53 S28	$274	
	40.00	48.1	153.5	153.5x3	F	5.3 x 9	12.23	UCWT40V53 U28	$289	
	50.00	60.1	191.9	191.9x3	F	5.3 x 9	12.23	UCWT50V53 U28	$325	

Notes:
1) For other voltages, please contact WEG.
2) Discharge resistors sized so the voltage on the terminals of the capacitor is 1/10 of the rated voltage in 30s.
3) The D series capacitors are provided with internal resistors in the capacitive cell. The E series capacitors are provided with external resistors in the capacitive cell.

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Technical Data

Technical Characteristics	D Series	E Series	F Series
Phases	Three Phase		
Power	0.45...5 (kVAr)	4.47...17.5 (kVAr)	8.94...50 (kvar)
Rated Voltage	208...480 (V)		
Rated Frequency	50 or 60 (Hz)		
Capacitance Tolerance	±5 (%)		
Useful Life	100.000 (h)		
Temperature class	Minimum temperature: -13 ºF / -25°C Maximum temperature: 131 ºF / 55°C Average maximum temperature in 24h = 13 ºF / -10.5°C Average maximum temperature in 1 year = 95 ºF / 35°C		
Safety	Self-healing polypropylene film. Disconnection for overpressure.		
Maximum short-circuit capacity	10 (kA) @ 560V		
Protection degree	IP50	IP20	
Maximum altitude [1)]	6561 (ft) / 2000 (m)		
Shield / terminal	Plastic / Screw + Washer	Aluminum / Box	
Input cable connection	M3 Flat/Philips	Box Terminal	
Input cable section	20…10 AWG	10…8 AWG	
Input cable torque	7…13 (lb-in)	13…22 (lb-in)	
Discharge resistance	Inside the product	Fast-on Terminal	
Discharge resistor	Included		
Capacitor mounting bolt	M12 bolt		
Maximum torque for capacitor	124 (lb-in) / 168 (Nm)		
Impregnation	Polyurethane Resin		
Maximum voltage	1.1 x Vn 8h duration for each 24h – not continuous (system fluctuation)		
Maximum dV/dt	≤ 30 (V/µs)		
Maximum current	1.3 x In (short periods of time)		
Maximum inrush current	≤ 100 x In		
Voltage test between terminals	2.15 x Vn for 2s		
Voltage test between terminals and enclosure	3 kV for 2s		
Reference standards	IEC 60831 1/2 UL 810		
Certifications	CE IRAM cULus		

Accessories for Capacitors

Discharge Resistors

UCWT (E and F Series)				
Catalog Number	Resistance / Power	Package Quantity	List Price	Multiplier
RDC 39K 3W-UCW-T	3x39 kΩ / 3 W	1pk with 3 pieces	$3	Z11
RDC 56K 3W-UCW-T	3x56 kΩ / 3 W	1pk with 3 pieces	$3	
RDC 82K 3W-UCW-T	3x82 kΩ / 3 W	1pk with 3 pieces	$3	
RDC 120K 3W-UCW-T	3x120 kΩ / 3 W	1pk with 3 pieces	$3	
RDC 150K 3W-UCW-T	3x150 kΩ / 3 W	1pk with 3 pieces	$3	
RDC 180K 3W-UCW-T	3x180 kΩ / 3 W	1pk with 3 pieces	$3	
RDC 270K 3W-UCW-T	3x270 kΩ / 3 W	1pk with 3 pieces	$3	
RDC 390K 3W-UCW-T	3x390 kΩ / 3 W	1pk with 3 pieces	$3	

Notes:
1) Maximum Altitude: 6561 ft. For application in higher altitudes, please contact WEG.

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Power Factor Correction

UCWT Series

D Series

Three-Phase Capacitive Units – UCWT (Heavy Duty)

Reactive Power 0.45...2.68 kVAR
Rated Voltage 208V

Reactive Power 0.5...3 kVAR
Rated Voltage 240V

Reactive Power 0.5...5 kVAR
Rated Voltage 480V

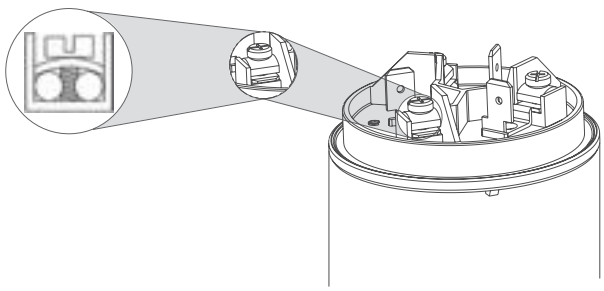
Electrical Connections

Provided with NEMA 12 rating protection cover.

M3 Flat/Philips screw terminals for connection of power cables.

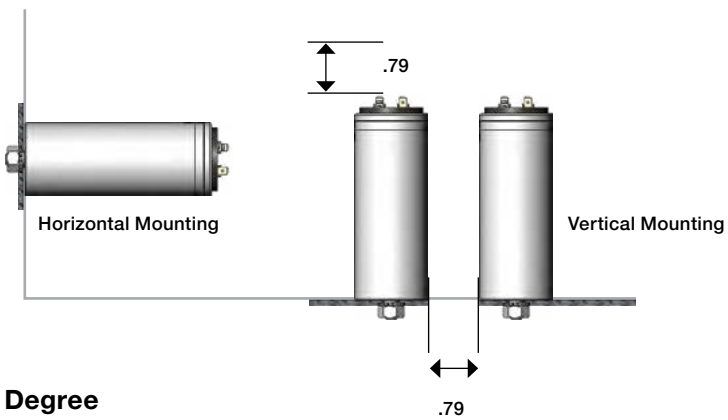
The D series capacitors are provided with internal resistors in the capacitive cell.

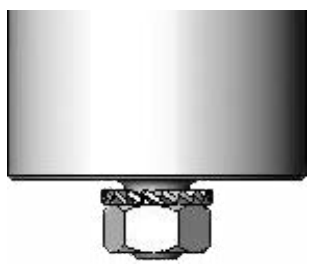
Grounding is assured by connection of capacitive unit mounting bolt with assembly plate.



Dimension – Inch

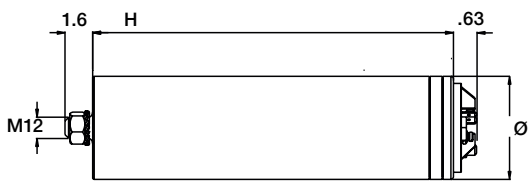
Mounting





M12 Bolt Mounting
(Nut and washer included)

Protection Degree



Diameter (Ø)	Height (H)	Protection Degree
2.4	6.1	IP50
2.4	8.3	IP50

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E Series

Three-Phase Capacitive Units – UCWT (Heavy Duty)

Reactive Power 4.47...8.94 kVAR
Rated Voltage 208V

Reactive Power 5...10 kVAR
Rated Voltage 240V

Reactive Power 0.5...5 kVAR
Rated Voltage 480V

Electrical Connections

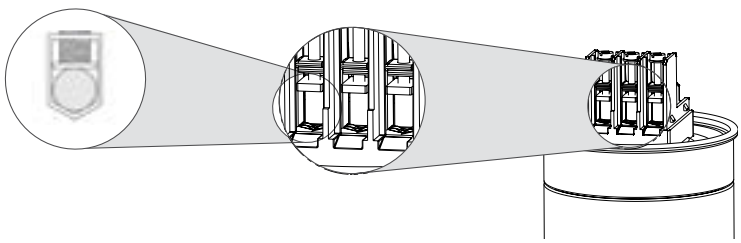
"Box" type terminals for connection of power cables.

Fast-on connection terminals for discharge resistor connection

The E series capacitors are provided with external resistors in the capacitive cell.

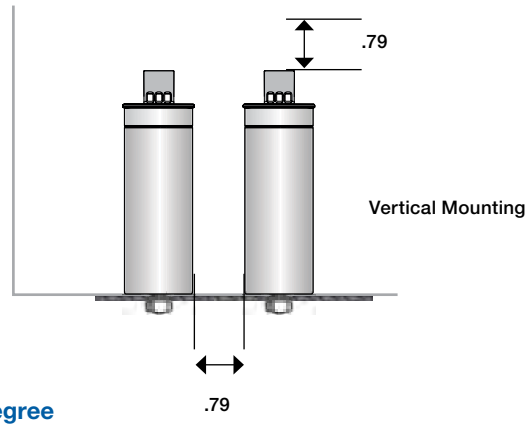
Allows connection of power cables separately from discharge resistors.

Grounding is assured by connection of capacitive unit mounting bolt with assembly plate.

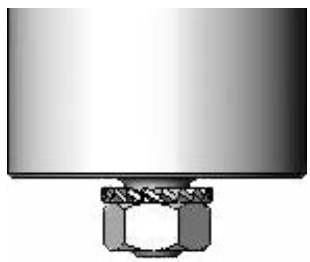


Dimension – Inch

Mounting



Vertical Mounting



M12 Bolt Mounting
(Nut and washer included)

Protection Degree

Diameter (Ø)	Height (H)	Protection Degree
2.9	8.7	IP20
2.9	11.1	IP20
3.3	14	IP20

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Power Factor Correction

UCWT Series

F Series

Three-Phase Capacitive Units – UCWT (Heavy Duty)

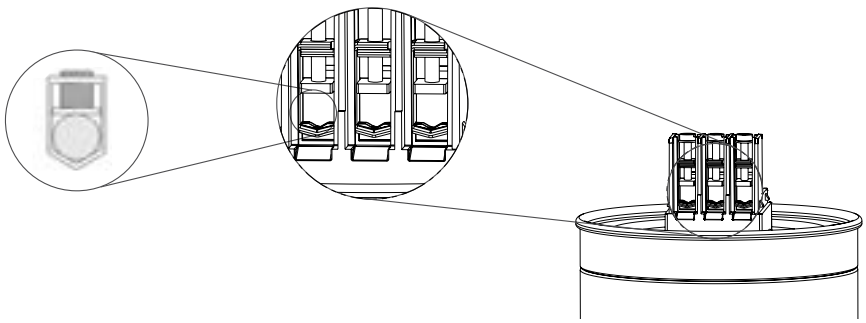
Reactive Power 8.94…26.82 kVAR
Rated Voltage 208V

Reactive Power 10…20 kVAR
Rated Voltage 240V

Reactive Power 18…50 kVAR
Rated Voltage 480V

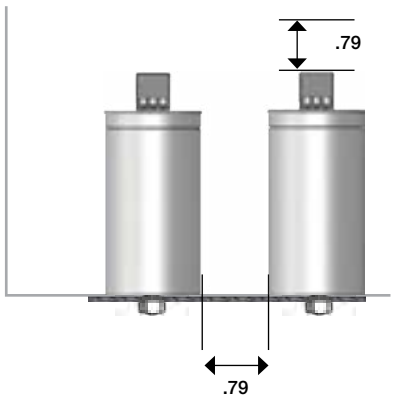
Electrical Connections

- "Box" type terminals for connection of power cables.
- Fast-on connection terminals for discharge resistor connection.
- The F series capacitors are provided with external resistors in the capacitive cell.
- Allows connection of power cables separately from discharge resistors.
- Grounding is assured by connection of capacitive unit mounting bolt with assembly plate.



Dimension – Inch

Mounting

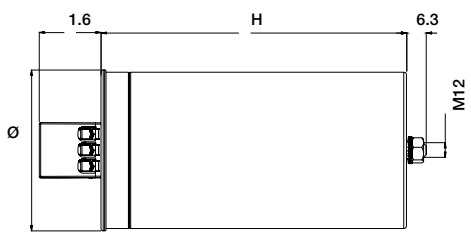


Vertical Mounting

M12 Bolt Mounting
(Nut and washer included)

Reduced height accommodates installation in MCC buckets.

Protection Degree



Diameter (Ø)	Height (H)	Protection Degree
3.9	9.1	IP20
4.6	9.1	IP20

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Three-Phase Enclosed Capacitors

BCWT Series

Straight-Forward Design

WEG Enclosed Power Factor Capacitor Banks include three-phase WEG UCWT capacitors in a NEMA 4 enclosure that is easy to install and wire.

Reliability

WEG UCWT Capacitors are assembled with high performance and low loss, self healing polypropylene dielectric film.

Flexibility

Three-phase enclosed capacitor banks available with or without fuses. NEMA 4 enclosure is standard, so no need to worry whether the installation is indoors or outdoors.

Learn More Online

c UL US

UL File No. E346734

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Power Factor Correction

BCWT Series

BCWT Series – Three-Phase Enclosed Capacitors

Non-Fused – 240V

Catalog Number[1)]	Reactive Power (kVAr)	Rated Current In (A)	Enclosure Size (in) H x W x D	Enclosure Drawing Ref	List Price	Multiplier
BCWTC050V29A4-N	0.5	1.20	11.8 x 7.9 x 4.8	A	$603	Z11
BCWTC075V29A4-N	0.75	1.80			$606	
BCWTC100V29A4-N	1	2.41			$609	
BCWTC150V29A4-N	1.5	3.61			$617	
BCWTC200V29A4-N	2	4.81			$624	
BCWTC250V29B4-N	2.5	6.01	15.8 x 7.9 x 4.8	B	$643	
BCWTC300V29B4-N	3	7.22			$650	
BCWTC500V29B4-N	5	12.03			$709	
BCWTC750V29C4-N	7.5	18.04	19.8 x 7.9 x 4.8	C	$810	
BCWTD100V29E4-N	10	24.06	23.6 x 11.8 x 4.8	E	$967	
BCWTD125V29E4-N	12.5	30.07			$1,055	
BCWTD150V29E4-N	15	36.08			$1,121	
BCWTD175V29E4-N	17.5	42.10			$1,342	
BCWTD200V29E4-N	20	48.11			$1,374	
BCWTD250V29E4-N	25	60.14			$1,475	
BCWTD275V29E4-N	27.5	66.15			$1561	
BCWTD300V29E4-N	30	72.17			$1,576	
BCWTD350V29F4-N	35	84.20	23.6 x 15.8 x 4.8	F	$1,791	
BCWTD400V29F4-N	40	96.23			$1,892	
BCWTD450V29F4-N	45	108.25			$2,015	

Fused – 240V

Catalog Number[1)]	Reactive Power (kVAr)	Rated Current In (A)	Enclosure Size (in) H x W x D	Enclosure Drawing Ref	List Price	Multiplier
BCWTC050V29A4-F	0.5	1.20	11.8 x 7.9 x 4.8	A	$833	Z11
BCWTC075V29A4-F	0.75	1.80			$836	
BCWTC100V29A4-F	1	2.41			$839	
BCWTC150V29A4-F	1.5	3.61			$847	
BCWTC200V29A4-F	2	4.81			$854	
BCWTC250V29B4-F	2.5	6.01	15.8 x 7.9 x 4.8	B	$871	
BCWTC300V29B4-F	3	7.22			$881	
BCWTC500V29B4-F	5	12.03			$934	
BCWTC750V29C4-F	7.5	18.04	19.8 x 7.9 x 4.8	C	$1,236	
BCWTD100V29E4-F	10	24.06	23.6 x 11.8 x 4.8	E	$1,378	
BCWTD125V29E4-F	12.5	30.07			$1,696	
BCWTD150V29E4-F	15	36.08			$1,488	
BCWTD175V29E4-F	17.5	42.10			$1,663	
BCWTD200V29E4-F	20	48.11			$1,735	
BCWTD250V29E4-F	25	60.14			$1,848	
BCWTD275V29E4-F	27.5	66.15			$1,924	
BCWTD300V29F4-F	30	72.17	23.6 x 15.8 x 4.8	F	$2,384	
BCWTD350V29F4-F	35	84.20			$2,651	
BCWTD400V29F4-F	40	96.23			$2,760	
BCWTD450V29F4-F	45	108.25			$2,908	

1) For other voltages, please contact WEG.

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BCWT Series – Three-Phase Enclosed Capacitors

Non-Fused – 480V

Catalog Number[1)]	Reactive Power (kVAr)	Rated Current In (A)	Enclosure Size (in) H x W x D	Enclosure Drawing Ref	List Price	Multiplier
BCWTC050V53A4-N	0.5	0.60	11.8 x 7.9 x 4.8	A	$601	Z11
BCWTC075V53A4-N	0.75	0.90			$603	
BCWTC100V53A4-N	1	1.20			$606	
BCWTC150V53A4-N	1.5	1.80			$612	
BCWTC200V53A4-N	2	2.41			$617	
BCWTC250V53A4-N	2.5	3.01			$622	
BCWTC300V53A4-N	3	3.61			$627	
BCWTC500V53B4-N	5	6.01	15.8 x 7.9 x 4.8	B	$658	
BCWTC750V53B4-N	7.5	9.02			$688	
BCWTD100V53B4-N	10	12.03			$706	
BCWTD125V53C4-N	12.5	15.04	19.7 x 7.8 x 4.8	C	$795	
BCWTD150V53C4-N	15	18.04			$812	
BCWTD175V53E4-N	17.5	21.05	23.7 x 11.8 x 4.8	E	$1,030	
BCWTD200V53E4-N	20	24.06			$1,048	
BCWTD225V53E4-N	22.5	27.06			$1,065	
BCWTD250V53E4-N	25	30.07			$1,082	
BCWTD275V53D4-N	27.5	33.08	19.7 x 11.8 x 4.8	D	$1,280	
BCWTD300V53D4-N	30	36.08			$1,297	
BCWTD350V53E4-N	35	42.10	23.6 x 11.8 x 4.8	E	$1,498	
BCWTD400V53E4-N	40	48.11			$1,531	
BCWTD450V53E4-N	45	54.13			$1,565	
BCWTD500V53E4-N	50	60.14			$1,598	
BCWTD600V53F4-N	60	72.17	23.6 x 15.8 x 4.8	F	$1,926	
BCWTD750V53F4-N	75	90.21			$2,026	

1) For other voltages, please contact WEG.

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Power Factor Correction

BCWT Series

BCWT Series – Three-Phase Enclosed Capacitors

Fused – 480V

Catalog Number[1)]	Reactive Power (kVAr)	Rated Current In (A)	Enclosure Size (in) H x W x D	Enclosure Drawing Ref	List Price	Multiplier
BCWTC050V53A4-F	0.5	0.60	11.8 x 7.9 x 4.8	A	$832	Z11
BCWTC075V53A4-F	0.75	0.90			$834	
BCWTC100V53A4-F	1	1.20			$836	
BCWTC150V53A4-F	1.5	1.80			$841	
BCWTC200V53A4-F	2	2.41			$846	
BCWTC250V53A4-F	2.5	3.01			$851	
BCWTC300V53A4-F	3	3.61			$856	
BCWTC500V53B4-F	5	6.01	15.8 x 7.9 x 4.8	B	$889	
BCWTC750V53B4-F	7.5	9.02			$915	
BCWTD100V53B4-F	10	12.03			$932	
BCWTD125V53C4-F	12.5	15.04	19.7 x 7.8 x 4.8	C	$1,208	
BCWTD150V53C4-F	15	18.04			$1,238	
BCWTD175V53E4-F	17.5	21.05	23.7 x 11.8 x 4.8	E	$1,435	
BCWTD200V53E4-F	20	24.06			$1,455	
BCWTD225V53E4-F	22.5	27.06			$1,497	
BCWTD250V53E4-F	25	30.07			$1,513	
BCWTD275V53D4-F	27.5	33.08	19.7 x 11.8 x 4.8	D	$1,587	
BCWTD300V53D4-F	30	36.08			$1,656	
BCWTD350V53E4-F	35	42.10	23.6 x 11.8 x 4.8	E	$1,836	
BCWTD400V53E4-F	40	48.11			$1,877	
BCWTD450V53E4-F	45	54.13			$1,918	
BCWTD500V53E4-F	50	60.14			$1,959	
BCWTD600V53F4-F	60	72.17	23.6 x 15.8 x 4.8	F	$3,110	
BCWTD750V53F4-F	75	90.21			$3,237	

Notes:
1) For other voltages, please contact WEG.

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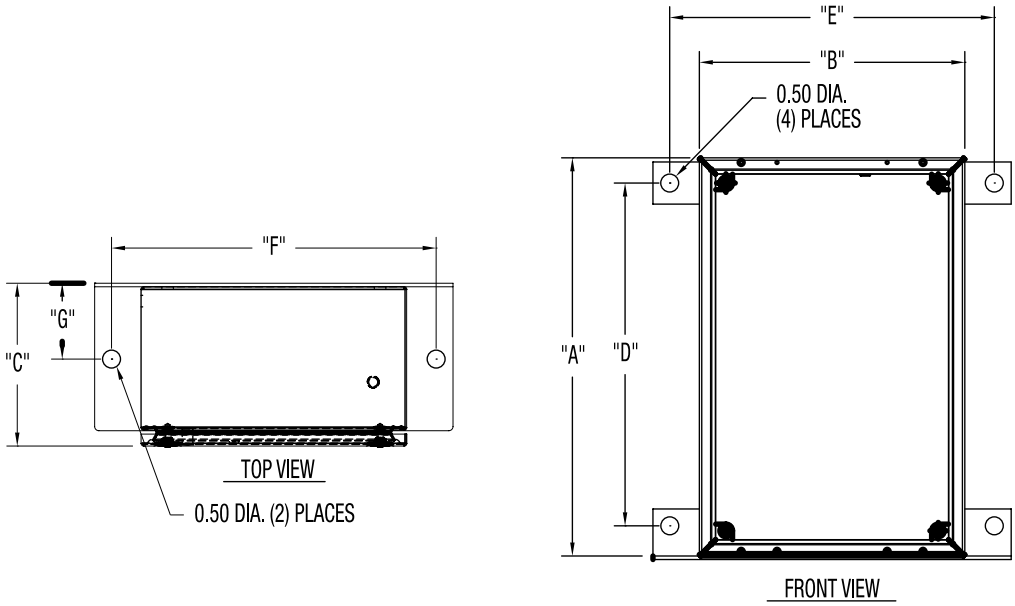
Dimension – Inch

BCWT Series – Three-Phase Enclosed Capacitors

Enclosure



CAPACITOR ENCLOSURE DIMENSIONS							
DRAWING REF	"A"	"B"	"C"	"D"	"E"	"F"	"G"
A	11.81	7.87	4.83	10.25	9.50	9.50	2.25
B	15.75	7.87	4.83	14.18	9.50	9.50	2.25
C	19.69	7.87	4.83	18.12	9.50	9.50	2.25
D	19.69	11.81	4.83	18.12	13.50	13.50	2.25
E	23.62	11.81	4.83	22.06	13.50	13.50	2.25
F	23.62	15.75	4.83	22.06	17.50	17.50	2.25

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Appendix A

Technical Information

NEMA, UL and CSA Enclosure Ratings

Enclosure Rating	NEMA National Electrical Manufacturers Association (NEMA Standard 250) and Electrical and Electronic Mfg. Association of Canada (EEMAC)	Underwriters Laboratories Inc. (UL50 and UL508)	Canadian Standards Association (Standard C22.2 No. 94)
Type 1	Enclosures are intended for indoor use primarily to provide a degree of protection against contact with the enclosed equipment or locations where unusual service conditions do not exist.	Indoor use primarily to provide protection against contact with the enclosed equipment and against a limited amount of falling dust.	General purpose enclosure. Protects against accidental contact with live parts.
Type 3	Enclosures are intended for outdoor use primarily to provide a degree of protection against windblown dust, rain, and sleet; undamaged by the formation of ice on the enclosure.	Outdoor use to provide a degree of protection against windblown dust and windblown rain; undamaged by the formation of ice on the enclosure.	Indoor or outdoor use; provides a degree of protection against rain, snow, and windblown dust; undamaged by the external formation of ice on the enclosure.
Type 3R*	Enclosures are intended for outdoor use primarily to provide a degree of protection against falling rain and sleet; undamaged by the formation of ice on the enclosure.	Outdoor use to provide a degree of protection against falling rain; undamaged by the formation of ice on the enclosure.	Indoor or outdoor use; provides a degree of protection against rain and snow; undamaged by the external formation of ice on the enclosure.
Type 4	Enclosures are intended for indoor or outdoor use primarily to provide a degree of protection against windblown dust and rain, splashing water, and hose directed water; undamaged by the formation of ice on the enclosure.	Either indoor or outdoor use to provide a degree of protection against falling rain, splashing water, and hose-directed water; undamaged by the formation of ice on the enclosure.	Indoor or outdoor use; provides a degree of protection against rain, snow, windblown dust, splashing and hose-directed water; undamaged by the external formation of ice on the enclosure.
Type 4X	Enclosures are intended for indoor or outdoor use primarily to provide a degree of protection against corrosion, windblown dust and rain, splashing water, and hose-directed water; undamaged by the formation of ice on the enclosure.	Either indoor or outdoor use to provide a degree of protection against falling rain, splashing water, and hose-directed water; undamaged by the formation of ice on the enclosure; resists corrosion.	Indoor or outdoor use; provides a degree of protection against rain, snow, windblow dust, splashing and hose-directed water; undamaged by the external formation of ice on the enclosure; resists corrosion.
Type 6	Enclosures are intended for use indoors or outdoors where occasional submersion is encountered, limited depth, undamaged by the formation of ice on the enclosure.	Indoor or outdoor use to provide a degree of protection against entry of water during temporary submersion at a limited depth; undamaged by the external formation of ice on the enclosure.	Indoor or outdoor use; provides a degree of protection against the entry of water during temporary submersion at a limited depth. Undamaged by the external formation of ice on the enclosure; resists corrosion.
Type 12	Enclosures are intended for indoor use primarily to provide a degree of protection against dust, falling dirt, and dripping noncorrosive liquids.	Indoor use to provide a degree of protection against dust, dirt, fiber flyings, dripping water, and external condensation of noncorrosive liquids.	Indoor use; provides a degree of protection against circulating dust, lint, fibers, and flyings; dripping and light splashing of non-corrosive liquids; not provided with knockouts.
Type 12K	Enclosures with knockouts are intended for indoor use primarily to provide a degree of protection against dust, falling dirt, and dropping noncorrosive liquids.	Indoor use to provide a degree of protection against dust, dirt, fiber flyings, dripping water, and external condensation of noncorrosive liquids. Knockouts located in the top or bottom walls, or both.	Indoor use; provides a degree of protection against circulating dust, lint, fibers and flyings; dripping and light splashing of non-corrosive liquids; provided with knockouts.
Type 13	Enclosures are intended for indoor use primarily to provide a degree of protection against dust, spraying of water, oil, and noncorrosive coolant.	Indoor use to provide a degree of protection against lint, dust seepage, external condensation and spraying of water, oil, and noncorrosive liquids.	Indoor use; provides a degree of protection against circulating dust, lint, fibers, and flyings; seepage and spraying of non-corrosive liquids, including oils and coolants.

*NFPA 70 (National Electric Code) defines new Type 3RX as providing the same degree of protection as Type 3R, with the addition of protection against corrosive agents.

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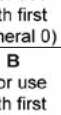
Technical Information

IEC Enclosure Ratings – First Numeral

Protection Against Ingress of Solid Objects		Protection of Persons Against Access to Hazardous Parts with:	Examples
IP	Requirements		
0	No protection.	Non-Protected	
1	Full penetration of 50mm diameter sphere not allowed. Contact with hazardous parts	Back of Hand	
2	Full penetration of 12.5mm diameter sphere not allowed. The jointed test finger shall have adequate clearance from hazardous parts.	Finger	
3	The access probe of 2.5mm diameter shall not penetrate.	Tool	
4	The access probe of 1.0mm diameter shall not penetrate.	Wire	
5	Limited ingress of dust permitted (no harmful deposit).	Wire	
6	Totally protected against ingress of dust.	Wire	

Second Numeral

Protection Against Harmful Ingress of Water		Protection from Water:	Examples
IP	Requirements		
0	No protection.	Non-Protected	
1	Protected against vertically falling drops of water. Limited ingress permitted.	Vertically Dripping	
2	Protected against vertically falling drops of water with enclosure tilted 15° from the vertical. Limited ingress permitted.	Dripping up to 15° from the Vertical	
3	Protected against sprays to 60° from the vertical. Limited ingress permitted.	Limited Spraying	
4	Protected against water splashed from all directions. Limited ingress permited.	Splashing from all Directions	
5	Protected against jets of water. Limited ingress permitted.	Hosing Jets from all Directions	
6	Protected against strong jets of water. Limited ingress permitted.	Strong Hosing Jets from all Directions	
7	Protected against the effects of immersion between 15cm and 1m.	Temporary Immersion	
8	Protected against long periods of immersion under pressure.	Continuous Immersion	

Additional Letter (Optional)

Protection Against Ingress of Solid Objects		Protection of Persons Against Access to Hazardous Parts with:	Examples
IP	Requirements		
A (For use with first numeral 0)	Penetration of 50mm diameter sphere up to	Back of Hand	
B (For use with first numerals 0 and 1)	Test finger penetration to a maximum of 80mm must not contact	Finger	
C (For use with first numerals 1 and 2)	Wire of 2.5mm diameter x 10mm long must not contact hazardous	Tool	
D (For use with first numerals 2 and 3)	Wire of 1.0mm diameter x 100mm long must not contact hazardous	Wire	

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Technical Information

Motor Current Ratings

Horsepower	60 Hz AC Induction Motor					
	Single-Phase		Three-Phase			
	115V	230V	200V	230V	460V	575V
1/6	4.4	2.2	-	-	-	-
1/4	5.8	2.9	-	-	-	-
1/3	7.2	3.6	-	-	-	-
1/2	9.8	4.9	2.5	2.2	1.1	0.9
3/4	13.8	6.9	3.7	3.2	1.6	1.3
1	16.0	8.0	4.8	4.2	2.1	1.7
1 1/2	20.0	10.0	6.9	6.0	3.0	2.4
2	24.0	12.0	7.8	6.8	3.4	2.7
3	34.0	17.0	11.0	9.6	4.8	3.9
5	56.0	28.0	17.5	15.2	7.6	6.1
7 1/2	80.0	40.0	25.0	22.0	11.0	9.0
10	100	50.0	32.0	28.0	14.0	11.0
15	135	68.0	48.0	42.0	21.0	17.0
20	-	88.0	62.0	54.0	27.0	22.0
25	-	110	78.0	68.0	34.0	27.0
30	-	136	92.0	80.0	40.0	32.0
40	-	176	120	104	52.0	41.0
50	-	216	150	130	65.0	52.0
60	-	-	177	154	77.0	62.0
75	-	-	221	192	96.0	77.0
100	-	-	285	248	124	99.0
125	-	-	359	312	156	125
150	-	-	414	360	180	144
200	-	-	552	480	240	192
250	-	-	692	602	302	242
300	-	-	-	-	361	289
350	-	-	-	-	414	336
400	-	-	-	-	477	382
500	-	-	-	-	590	472

The information in this table was extracted from Table 430.248 and 430.250 of the NEC.

The following values of full load currents are for motors running at usual speeds and motors with normal torque characteristics. The voltages listed are rated motor voltages. The currents listed shall be permitted for system voltage ranges of 110-120, 220-240, 440-480 and 550-600 Volts.

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Technical Information

NEMA Ratings – CWM Series Contactors to NEMA Comparison

NEMA Ratings	WEC Contactor Series	Maximum Horsepower (UL/					
		Single-Phase		Three-Phase			
		115V	230V	200V	230V	460V	575V
00	CWM9N	1/3	1	1 1/2	1 1/2	2	2
	CWM9	1/2	1 1/2	3	3	5	7 1/2
	CWM12	3/4	2	3	3	7 1/2	10
0	CWM18N	1	2	3	3	5	5
	CWM18	1	3	5	5	10	15
	CWM25	1 1/2	3	5	7 1/2	15	15
1	CWM32N	2	3	7 1/2	7 1/2	10	10
	CWM32	2	5	10	10	20	25
	CWM40	3	5	10	10	25	25
2	CWM50N	3	7 1/2	10	15	25	25
	CWM50	3	7 1/2	15	15	30	40
	CWM65	5	10	20	20	40	50
	CWM80	5	15	20	25	50	60
3	CWM95N	7 1/2	15	25	30	50	50
	CWM95	7 1/2	15	25	30	60	75
	CWM105	10	20	30	40	75	75
4	CWM150N	-	-	40	50	100	100
	CWM112	-	-	40	50	100	100
	CWM150	-	-	50	60	125	150
	CWM180	-	-	60	75	150	200
5	CWM300N	-	-	75	100	200	200
	CWM250	-	-	75	100	200	250

This table is for comparison and reference only. CWM Series contactors are not NEMA labeled.

How To Dimension Control Components In A Starter

	Across-the-Line Starter	Reversing Starter	Wye-Delta Starter	Autotransformer Starter tap 65%	Autotransformer Starter tap 80%
Contactor – K1	FLA	FLA	0.58 x FLA	FLA	FLA
Contactor – K2	-	-	0.58 x FLA	0.42 x FLA	0.64 x FLA
Contactor – K3	-	-	0.33 x FLA	0.23 x FLA	0.16 x FLA
Overload Relay – FT	FLA	FLA	0.58 x FLA	FLA	FLA
Manual Motor Protector MPW40	FLA				

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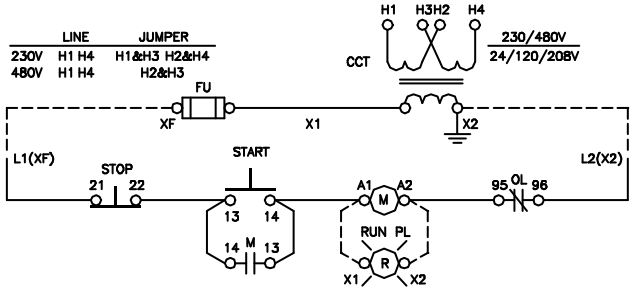
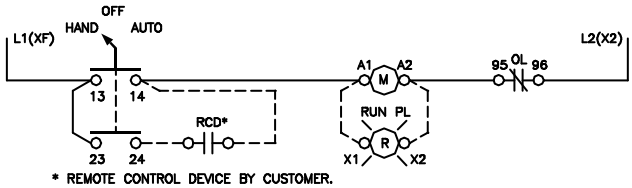
Technical Information

Electrical Wiring Diagrams

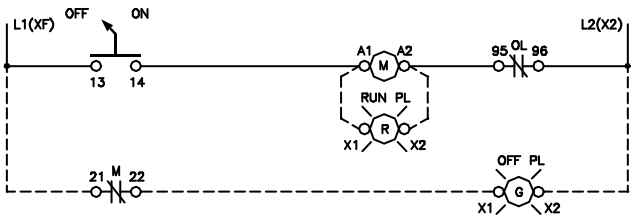
Motor Starters Non-Reversing



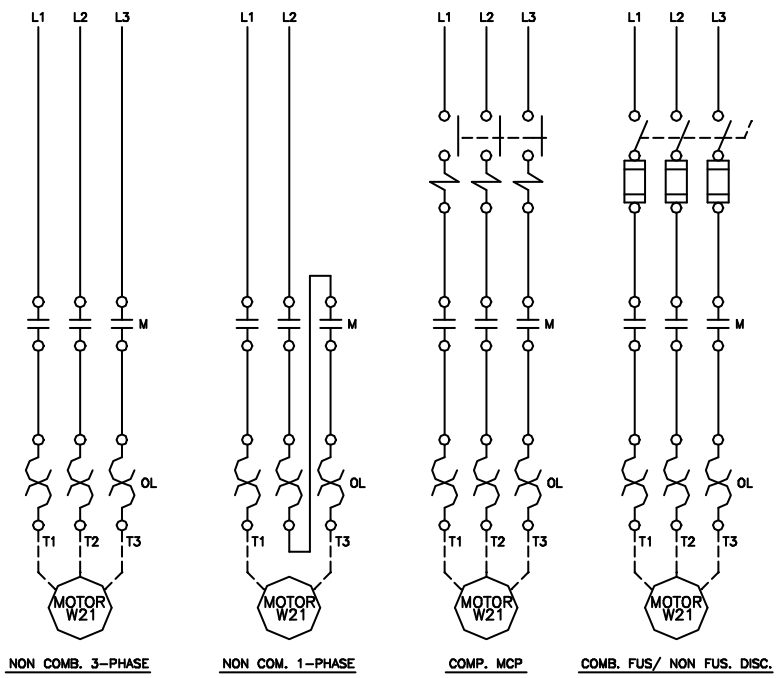
START–STOP PUSHBUTTONS



HAND–OFF–AUTO SELECTOR SWITCH



OFF–ON SELECTOR SWITCH



NON COMB. 3–PHASE | NON COM. 1–PHASE | COMP. MCP | COMB. FUS/ NON FUS. DISC.

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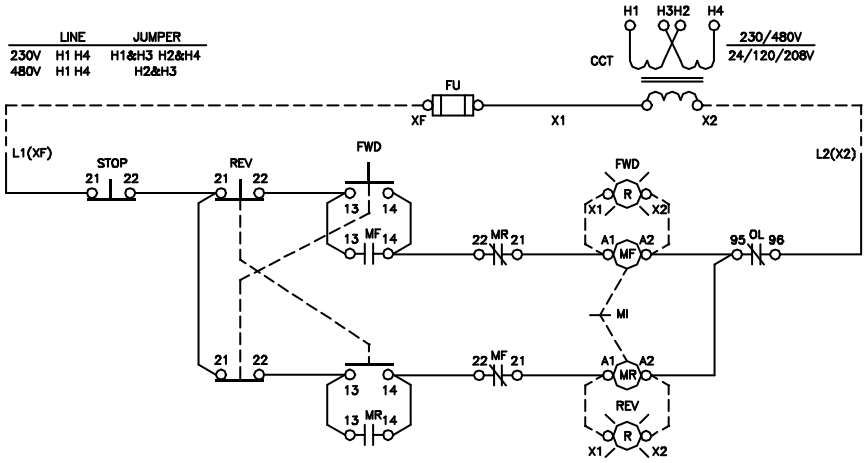
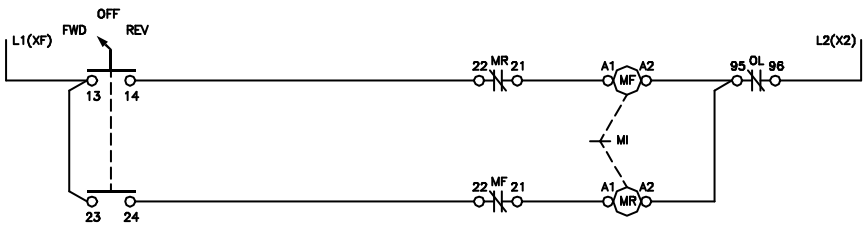
Technical Information

Electrical Wiring Diagrams

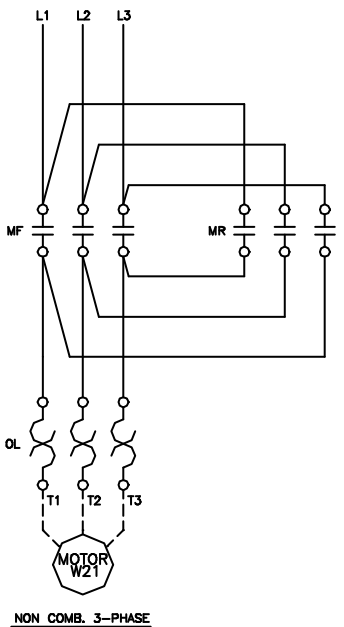
Motor Starters Reversing (1-3PH.)



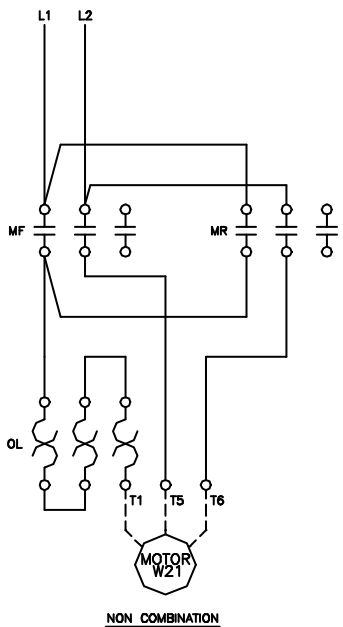
FORWARD–OFF–REVERSE PUSHBUTTONS



FORWARD–OFF–REVERSE SELECTOR SWITCH



NON COMB. 3–PHASE



NON COMBINATION
1–PHASE–RECONNECTABLE WINDING
THREE LEAD MOTOR

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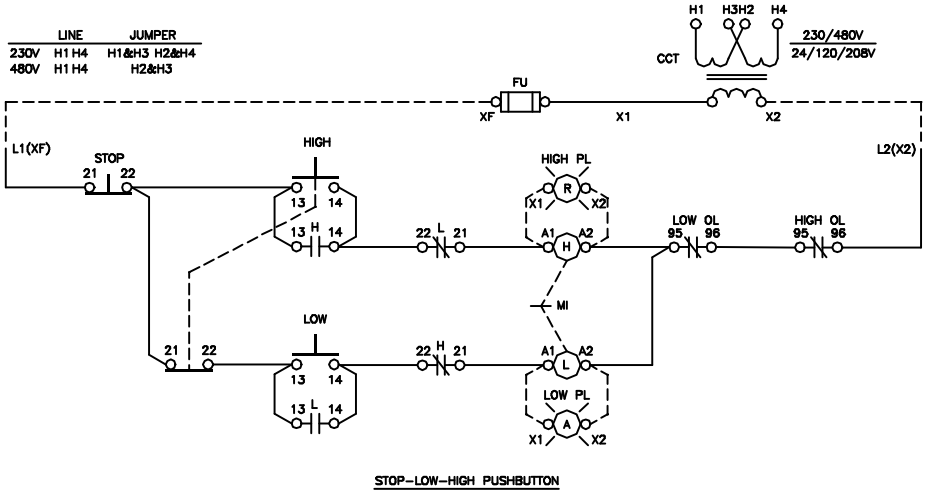
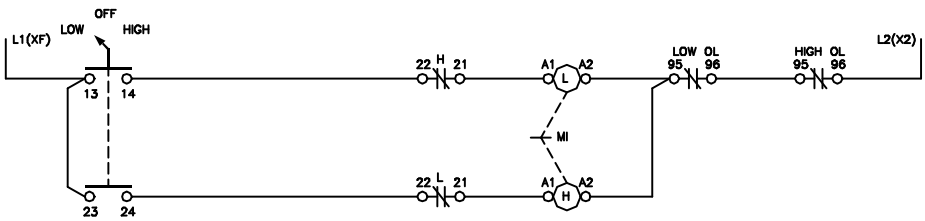
Technical Information

Electrical Wiring Diagrams

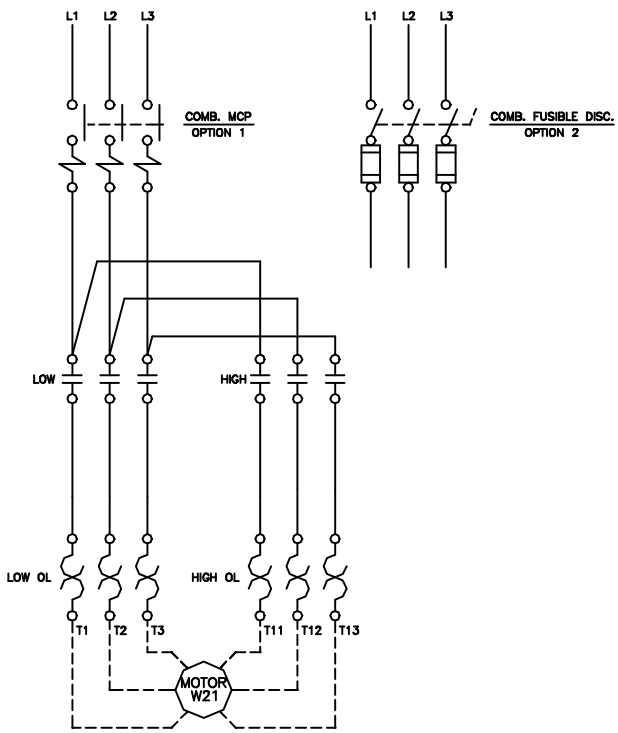
Multi-Speed Two Separate Windings



STOP–LOW–HIGH PUSHBUTTON



LOW–OFF–HIGH SELECTOR SWITCH



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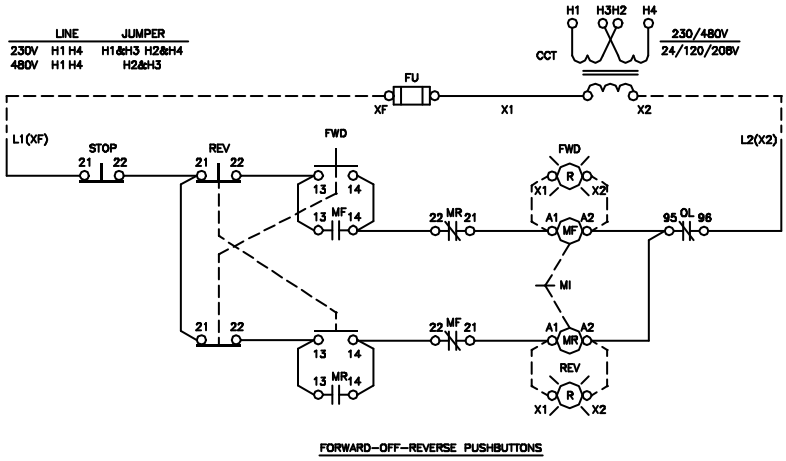
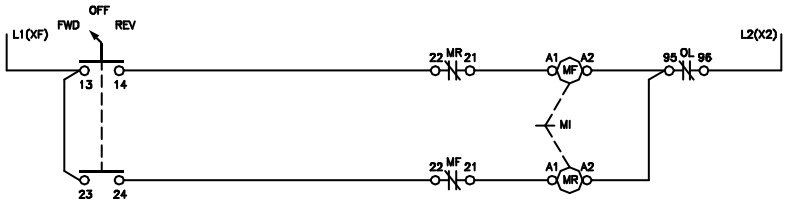
Technical Information

Electrical Wiring Diagrams

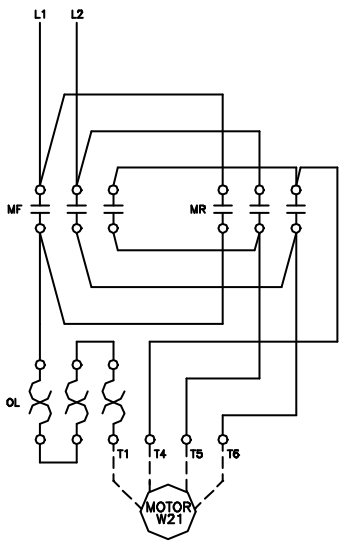
Motor Starters Reversing (1PH)



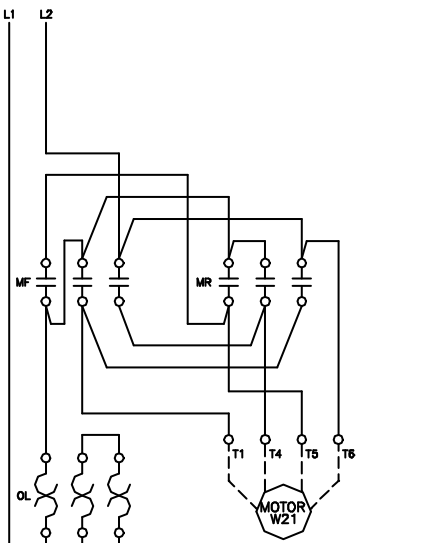
FORWARD–OFF–REVERSE PUSHBUTTONS



FORWARD–OFF–REVERSE SELECTOR SWITCH



NON COMBINATION
SINGLE PHASE–SERIES WINDING
FOUR LEAD REPULSION INDUCTION MOTOR



NON COMBINATION
SINGLE PHASE–PARALLEL WINDING
FOUR LEAD CAPACITOR OR SPLIT PHASE MOTOR

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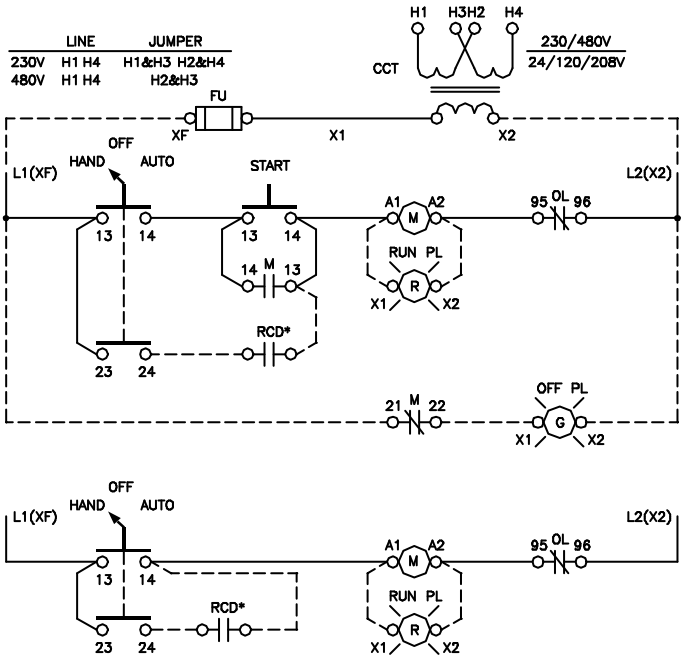
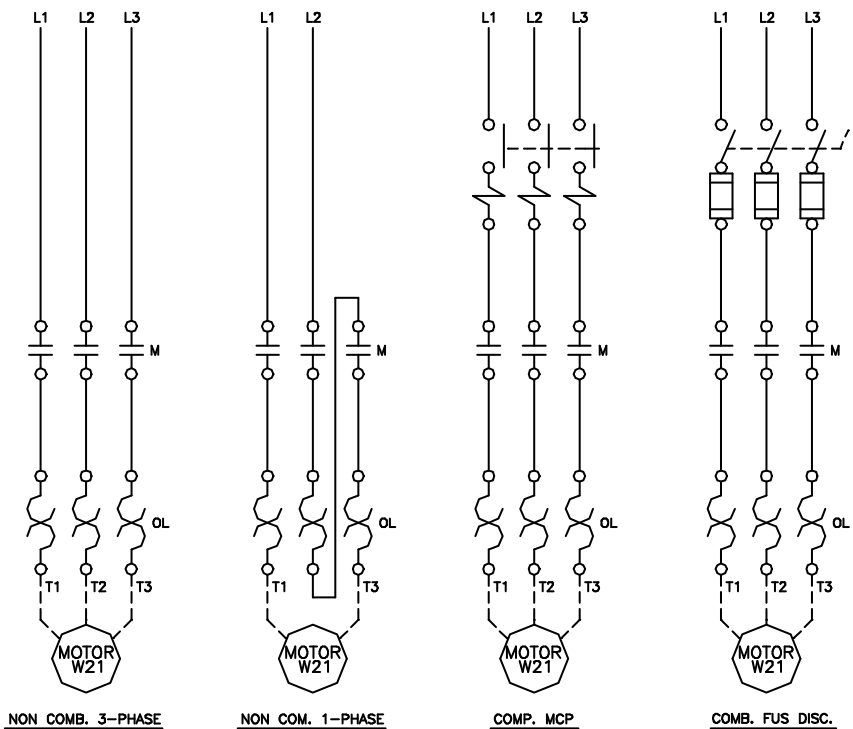
Technical Information

Electrical Wiring Diagrams

Pump Control Panels



* REMOTE CONTROL DEVICE BY CUSTOMER.



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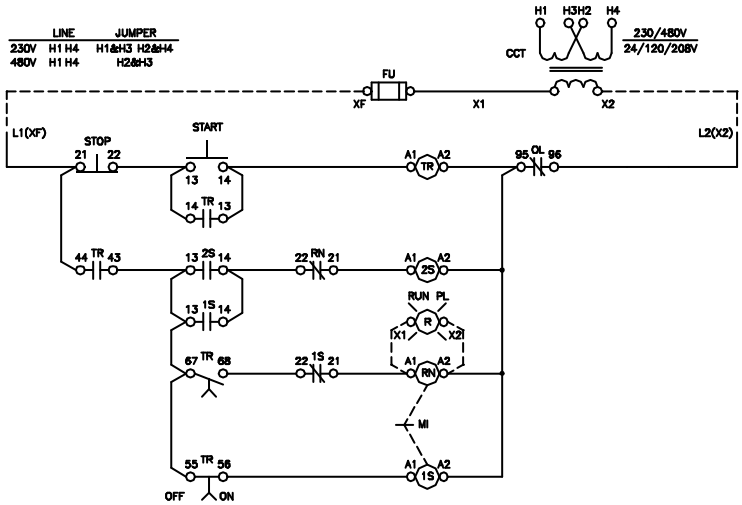
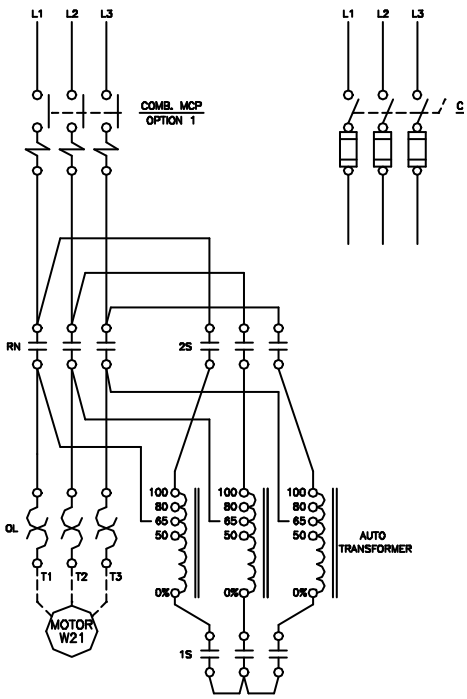
Technical Information

Electrical Wiring Diagrams

Reduced Voltage Starters – Autotransformer





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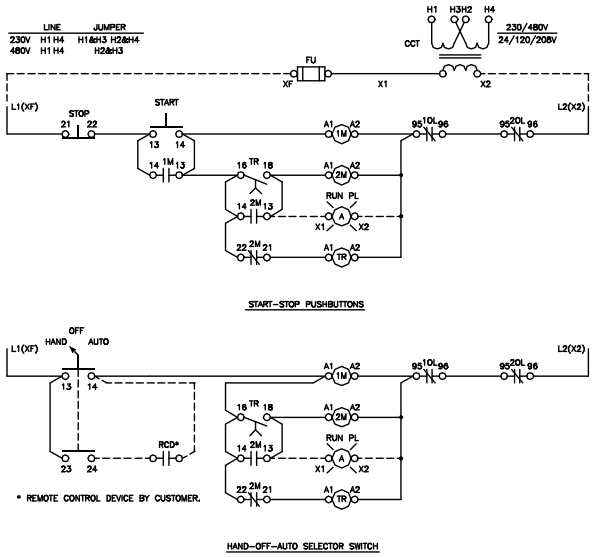
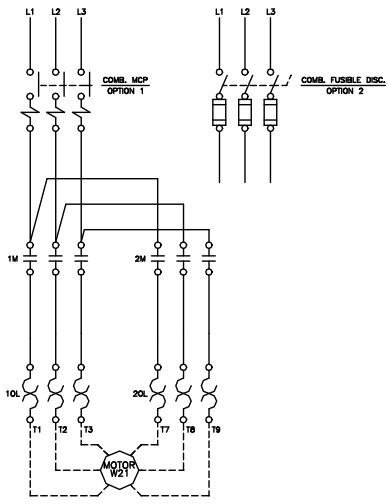
Technical Information

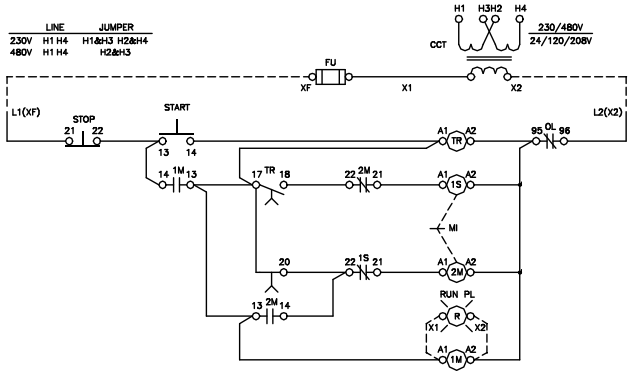
Electrical Wiring Diagrams

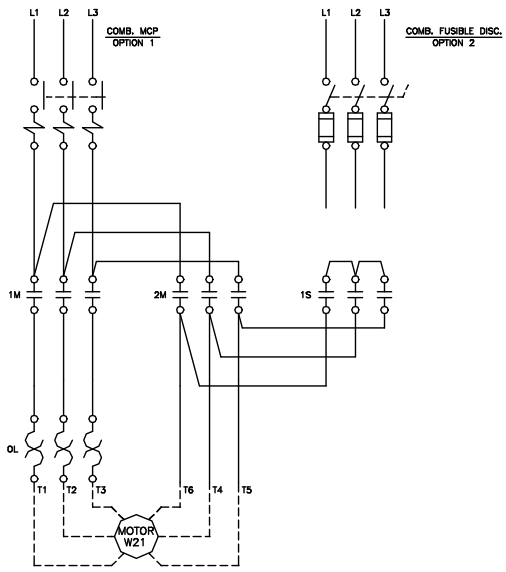
Reduced Voltage Starters – Part Winding





Reduced Voltage Starters – Wye Delta





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Warranty Policy for Automation Products

WEG USA General Terms and Conditions available at www.weg.net apply to all orders.

No-Fault Warranty

WEG Power and Control Products are covered under a "No-Fault" warranty process. Please see the table below for specific information on products covered by this warranty program. For products that meet the requirements of the "No-Fault" program WEG will provide replacement, free of cost.

This warranty claim is offered one time, per end-user, per application. In the event of repeated product failure please contact the WEG Automation Service Department to assist in review and resolution

of the issue.

The following information must be provided within the warranty period of the product and no more than 30 days after the failure occurrence via e-mail to the WEG Automation Service Department to initiate the warranty claim (automationtech@weg.net):

- A picture of the label with serial number information from the failed product
- The original WEG invoice number / copy of the invoice for the failed product
- A Brief description of the issue with the product – for use in our quality evaluation process

Power & Control Products

Product	Product Reference	Covered Products
Circuit Breakers and Disconnects	DWB, UBW, UMBW, MSW, MSWB	Limited to $100 value
Contactors, Motor Protectors, Relays	MPW, CWC, CWB, CWBN, CWBS, CWM, CWMN, RW, RTW17, ERWT, RMW17, PRW, ERNW, RNW, SSW01	
Starters	ESW, PESW	
	ESWC, ESWE, ESWF, ESWX	
Operator Devices and Terminal Blocks	CSW, BTW	
Capacitors	UCWT, BCW	

Warranty Service

If a WEG product requires warranty service due to defective materials or workmanship, WEG will, at its option, either repair or replace the defective product. By "replace", WEG Automation Service Department will be shipping a replacement product. WEG is not responsible for any expenses incurred in installation, removal from service, transportation (freight) or consequential expenses.

Warranty on Products not included in "No-Fault" Warranty Process

WEG Automation products are warranted against defects in workmanship and materials for eighteen (18) months from invoicing date if the following requirements are met:

- Suitable transportation, handling and storage;
- Correct installation within the specified environmental conditions and without the presence of:
  - Direct exposure to sunlight, rain, high humidity, or sea-air
  - Inflammable or corrosive gases or liquids
  - Excessive vibrations
  - Dust, metallic particles, and oil mist
  - See your user manual for additional installation requirements
- Operation within the designed capacity limits
- Performance of scheduled preventive maintenance
- Repairs and/or modifications only made by authorized WEG service, proof required for warranty
- In the case of any deficiency, the equipment must be available for sufficient time for the technician to identify the cause of the failure and undertake the proper repairs
- The purchaser must report any faults immediately so that WEG Automation can verify the workmanship or material failure.

Limited Warranty

WEG Electric Corp. is proud of all our product lines. WEG and its employees are committed to our customers and users to provide the best designed and manufactured motors, drives and controls. WEG provides a limited warranty on our products against defects in materials and workmanship for a specific period from the date of purchase. If a product date code is within its stated warranty period (18 months, 36 months, etc.), no proof of purchase is required. Otherwise, a copy of the invoice is necessary to show the date of purchase. Purchases of WEG products from unauthorized dealers or distributors, even of otherwise "new" WEG products, voids warranty coverage. WEG's authorized distributors are shown under "Support" "Where to Buy" on our website at www.weg.net

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Warranty Policy for Automation Products

Return Policy

WEG products that are purchased from our stocking warehouses must be returned within 90 days, freight to be paid by customer. Returned products must be unused, and in undamaged original packaging. If products are ordered incorrectly by the customer and need to be returned to stock, then a 20% re-stocking charge will be applied. If the returned products are deemed not to be in unused, undamaged condition, or in original packaging, then additional fees will be applied (up to and including full price of item). Returns on any modified products will not be allowed. Any products that are ordered as specials (with features that would not allow them to be stocked items) cannot be returned.

Credit and Replacements

For any possible warranty failure, WEG Automation service department must be advised and it will be sending replacements, at WEG's discretion. Customer cannot purchase a new drive and claim the credit reimbursement, automation service needs to handle the replacements, free of cost to customer. Later failure analysis will be made and the warranty determination will be communicated to the customer. If would be determined that is not warranty, customer will need to pay for the replacement unit.

Proper Storage of Products

When automation products are not immediately installed, they should be stored in their normal upright position in a dry even temperature location, free of dust, gases and corrosive atmosphere. Drives stored for a period exceeding one year should have the reforming process done prior to the installation, for more info, please contact automation service department.

Limitation of Warranty

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES OF QUALITY AND PERFORMANCE, WRITTEN, ORAL OR IMPLIED, AND ALL OTHER WARRANTIES INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ARISING FROM COURSE OF DEALING OR USAGE OF TRADE ARE HEREBY DISCLAIMED BY WEG. THE FOREGOING OBLIGATION TO REPAIR OR REPLACE WEG PRODUCTS OR PARTS SHALL BE THE SOLE AND EXCLUSIVE REMEDY OF THE PURCHASER, ITS CUSTOMERS, OR USERS OF THE PRODUCTS OR PARTS.

Contact WEG Automation Service

Toll-Free: 1-877-934-3748 or email by automationtech@weg.net

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