

CONTROL SECTION 8

Electronic relays and controls

Timers, power supplies, relays,
limit switches



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Time relays

CT-S range



CT-MVS.21P



CT-MBS.22P



CT-ERS.21P



CT-AHS.22P



CT-SDS.23P

Selection table (continued)

Type*	Order number*																
CT-MVS.21●	1SVR7#0020R0200																
CT-MVS.22●	1SVR7#0020R3300																
CT-MVS.23●	1SVR7#0021R2300																
CT-MVS.12●	1SVR7#0020R3100																
CT-MXS.22●	1SVR7#0030R3300																
CT-MFS.21●	1SVR7#0010R0200																
CT-MBS.22●	1SVR7#0010R3200																
CT-WBS.22●	1SVR7#0040R3300																
CT-ERS.21●	1SVR7#0100R0300																
CT-ERS.22●	1SVR7#0100R3300																
CT-ERS.12●	1SVR7#0100R3100																
CT-APS.21●	1SVR7#0180R0300																
CT-APS.22●	1SVR7#0180R3300																
CT-APS.12●	1SVR7#0180R3100																
CT-AHS.22●	1SVR7#0110R3300																
CT-ARS.11●	1SVR7#0120R3100																
CT-ARS.21●	1SVR7#0120R3300																
CT-SDS.22●	1SVR7#0210R3300																
CT-SDS.23●	1SVR7#0211R2300																
Time range																	
0.05 s - 10 min																■	■
0.05 s - 300 h	■	■	■	■	2	■	■	■	■	■	■	■	■	■	■		
Supply voltage																	
24-48 V DC		■		■	■		■	■		■	■		■	■			■
24-240 V AC		■		■	■		■	■		■	■		■	■			■
24-240 V AC/DC	■						■			■			■			■	
380-440 V AC			■														■
Output																	
c/o contact		2	2	2	1	2	2	2	2	2	2	1	2	2	1	2	1
n/o contact																	2

* **Order number and type**
 All devices are available either with push-in terminals (P-type) or double-chamber cage connection terminals (S-type).

Terminal	Type	Order number
Push-in	● = P	■ = 4
Screw	● = S	■ = 3

Monitoring relays

Single-phase voltage



CM-ESS.MP



CM-EFS.2

Selection table

Type	Order number	CM-ESS.1S	CM-ESS.1P	CM-ESS.1S	CM-ESS.1P	CM-ESS.1S	CM-ESS.1P	CM-ESS.2S	CM-ESS.2P	CM-ESS.2S	CM-ESS.2P	CM-ESS.2S	CM-ESS.2P	CM-ESS.MS	CM-ESS.MP	CM-EFS.2S	CM-EFS.2P
	1SVR730830R0300																
	1SVR740830R0300																
	1SVR730831R0300																
	1SVR740831R0300																
	1SVR730831R1300																
	1SVR740831R1300																
	1SVR730830R0400																
	1SVR740830R0400																
	1SVR730831R0400																
	1SVR740831R0400																
	1SVR730831R1400																
	1SVR740831R1400																
	1SVR730830R0500																
	1SVR740830R0500																
	1SVR730750R0400																
	1SVR740750R0400																
Rated control supply voltage U_c																	
24 - 240 V AC/DC		■	■						■	■				■	■	■	■
110 - 130 V AC				■	■					■	■						
220 - 240 V AC						■	■					■	■				
Measuring ranges AC/DC																	
3 - 30 V		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
6 - 60 V		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
30 - 300 V		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
60 - 600 V		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Monitoring function																	
Over- or undervoltage		■	■	■	■	■	■	■	■	■	■	■	■	■	■		
Windows voltage monitoring																■	■
Latching															sel	sel	sel
Open-circuit or closed-circuit principle															sel	sel	sel
Timing functions for tripping delay																	
ON-delay, 0.1 - 30 s								adj	adj	adj	adj	adj	adj	adj	adj		
ON- or OFF-delay, 0.1 - 30 s																sel	sel
Output																	
c/o contact		1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2
Connection type																	
Push-in terminals			■		■		■		■		■		■		■		■
Double-chamber cage connection terminals		■		■		■		■		■		■		■		■	

adj: adjustable
sel: selectable

Monitoring relays

Three-phase multi-functional



CM-MPS.23P



CM-MPN.52P

Selection table

Type	Order number	15VR730885R1300	15VR740885R1300	15VR730885R3300	15VR740885R3300	15VR730884R1300	15VR740884R1300	15VR730884R3300	15VR740884R3300	15VR730885R4300	15VR740885R4300	15VR730884R4300	15VR740884R4300	15VR750487R8300	15VR760487R8300	15VR750488R8300	15VR760488R8300	15VR750489R8300	15VR760489R8300
CM-MPS.11S	CM-MPS.11P	CM-MPS.21S	CM-MPS.21P	CM-MPS.31S	CM-MPS.31P	CM-MPS.41S	CM-MPS.41P	CM-MPS.23S	CM-MPS.23P	CM-MPS.43S	CM-MPS.43P	CM-MPN.52S	CM-MPN.52P	CM-MPN.62S	CM-MPN.62P	CM-MPN.72S	CM-MPN.72P		
Rated control supply voltage U_c																			
Phase to phase																			
160-300 V AC					■	■													
300-500 V AC								■	■				■	■					
350-580 V AC														■	■				
450-720 V AC																■	■		
530-820 V AC																		■	■
Phase to neutral																			
90-170 V AC	■	■																	
180-280 V AC			■	■						■	■								
Rated frequency																			
50/60 Hz	■	■	■	■	■	■	■	■						■	■	■	■	■	■
50/60/400 Hz										■	■	■	■						
Suitable for monitoring																			
Mains with harmonic content										■	■	■	■						
Single-phase mains	■	■	■	■						■	■								
Three-phase mains	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Monitoring function																			
Phase failure	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Phase sequence	sel	sel	sel	sel	sel	sel	sel	sel	sel	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj
Automatic phase sequence correction										adj	adj	adj	adj	adj	adj	adj	adj	adj	adj
Overvoltage	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Undervoltage	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Unbalance	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Interrupted neutral monitoring ¹	■	■	■	■						■	■								
Thresholds																			
Adjustable (adj)	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj
Timing functions for tripping delay																			
On- or OFF delay	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj
Connection type																			
Push-in terminals		■		■		■		■		■		■		■		■		■	
Double-chamber cage connection terminals	■		■		■		■		■		■		■		■		■		■

¹ The relay detects by means of a phase unbalance the interruption of the neutral conductor. The external conductor voltage towards the neutral conductor is measured too.

adj: adjustable
sel: selectable

Monitoring relays

Grid feeding



CM-UFD.M*M

Selection table

Type	Order number					
CM-UFD.M22M	1SVR560731R3700					
CM-UFD.M31	1SVR560730R3401					
CM-UFD.M31M	1SVR560731R3701					
CM-UFD.M33	1SVR560730R3402					
CM-UFD.M33M	1SVR560731R3702					
CM-UFD.M34M	1SVR560731R3703					
Rated control supply voltage U_c						
24-240 V AC/DC		■	■	■	■	■
Standard						
CEI 0-21		■				
VDE AR-N 4105, VDE AR-N 4110			■	■		
ENA G98, G99					■	■
DRRG standard of DEWA						■
Rated frequency						
DC or 50 Hz		■	■	■		
DC or 50/60 Hz					■	■
Modbus RTU						
		■		■		■
Suitable for monitoring						
Single-phase mains		■	■	■	■	■
Three-phase mains		■	■	■	■	■
Monitoring function						
Over-/undervoltage		■	■	■	■	■
Over-/underfrequency		■	■	■	■	■
ROCOF (rate of change of frequency)		■	■	■	■	■
10 minutes average value		■	■	■	■	■
Vector shift			■	■	■	■
Thresholds						
		adj	adj	adj	adj	adj

Monitoring relays

Insulation



CM-IWS.1



CM-IWS.2



CM-IWN.1

Selection table

Type	Order number	CM-IWS.2S	CM-IWS.2P	CM-IWS.1S	CM-IWS.1P	CM-IWN.1S	CM-IWN.1P	CM-IWM.10	CM-IWM.11
	1SVR730670R0200								
	1SVR740670R0200								
	1SVR730660R0100								
	1SVR740660R0100								
	1SVR750660R0200								
	1SVR760660R0200								
	1SVR470670R1000								
	1SVR470670R1100								
Rated control supply voltage U_c									
24 - 240 V AC/DC		■	■	■	■	■	■		
24 V DC								■	■
Measuring voltages									
250 V AC (L-PE)				■	■				
400 V AC (L-PE)		■	■			■	■		
690 V AC (L-PE)						■ ¹	■ ¹	■ ²	
1000 V AC (L-PE)									■ ³
300 V DC (L-PE)				■	■				
600 V DC (L-PE)						■	■		
690 V DC (L-PE)								■ ²	
1000 V DC (L-PE)						■ ¹	■ ¹		■ ³
Measuring range									
1 - 100 kΩ		■	■	■	■	■	■		
2 - 200 kΩ						■	■		
2 - 250 kΩ								■	■
System leakage capacitance, max.									
10 μF		■	■	■	■				
20 μF						■	■		
1000 μF								■	
3000 μF									■
Output									
1 c/o		■	■	■	■				
1 x 2 c/o or 2 x 1 c/o						■	■		
2 c/o								■	■
Operating principle									
Open-circuit principle		■	■	■	■			■	■
Open- or closed-circuit principle adjustable						■	■		

¹ With coupling unit CM-IVN screw version CM-IVN.S: 1SVR750669R9400
push-in version CM-IVN.P: 1SVR760669R9400

² Allowed voltage range of the supervised network: 0-760 V AC / 0-1000 V

³ Allowed voltage range of the supervised network: 0-1100 V AC / 0-1500 V DC

(Table continued on next page)

Monitoring relays

Insulation



CM-IWS.1



CM-IWS.2



CM-IWN.1

Selection table (continued)

Type	Order number	1	2	3	4	5	6	7	8
CM-IWS.2S	1SVR730670R0200								
CM-IWS.2P	1SVR740670R0200								
CM-IWS.1S	1SVR730660R0100								
CM-IWS.1P	1SVR740660R0100								
CM-IWN.1S	1SVR750660R0200								
CM-IWN.1P	1SVR760660R0200								
CM-IWM.10	1SVR470670R1000								
CM-IWM.11	1SVR470670R1100								
Test									
Front-face button or control input		■	■	■	■	■	■	■	■
Reset									
Front-face button or control input		■	■	■	■	■	■	■	■
Fault storage / latching configurable		■	■	■	■	■	■		
Non volatile storage configurable		■	■	■	■	■	■		
Interrupted wire detection						■	■	■	■
Threshold values configurable		1	1	1	1	2	2	2	2
Control input (measuring input deactivation)									■
Connection type									
Push-in terminals			■		■		■		
Double-chamber cage connection terminals		■		■		■			
Screw terminals								■	■

Monitoring relays

Temperature



CM-TCS

Selection table

Type	Order number	1SVR 730 740 R9100	1SVR 740 740 R9100	1SVR 730 740 R0100	1SVR 740 740 R0100	1SVR 730 740 R9200	1SVR 740 740 R9200	1SVR 730 740 R0200	1SVR 740 740 R0200	1SVR 730 740 R9300	1SVR 740 740 R9300	1SVR 730 740 R0300	1SVR 740 740 R0300	1SVR50740R01100	1SVR60740R01100	1SVR750740R01200	1SVR60740R01200
CM-TCS.21S		■				■				■							
CM-TCS.21P		■										■					
CM-TCS.11S			■														
CM-TCS.11P			■														
CM-TCS.22S				■													
CM-TCS.22P					■												
CM-TCS.12S						■											
CM-TCS.12P							■										
CM-TCS.23S								■									
CM-TCS.23P									■								
CM-TCS.13S										■							
CM-TCS.13P											■						
CM-TCN.011S														■			
CM-TCN.011P														■			
CM-TCN.012S															■		
CM-TCN.012P															■		
Rated control supply voltage U_c																	
24 V AC/DC		■	■			■	■			■	■						
24-240 V AC/DC				■	■			■	■			■	■	■	■	■	■
Sensor circuits (2 or 3 wire)																	
Number of temperature sensors		1	1	1	1	1	1	1	1	1	1	1	1	3	3	3	3
Number of thresholds		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Measuring temperature range																	
-50...+50°C		■	■	■	■												
0...+100°C						■	■	■	■								
0...+200°C										■	■	■	■				
-200°C...+850°C														■	■	■	■
Monitoring function																	
Overtemperature		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Undertemperature		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Window temperature		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Operating principle																	
Open or closed-circuit principle		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Output contacts																	
c/o		2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3
Display NFC														■	■	■	■
Modbus RTU																■	■

Monitoring relays

Liquid level



CM-ENE MIN



CM-ENS.3x

Selection table

Type	Order code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
CM-ENE MIN	15VR 550 855 R9500																						
CM-ENE MIN	15VR 550 850 R9500																						
CM-ENE MIN	15VR 550 851 R9500																						
CM-ENE MAX	15VR 550 855 R9400																						
CM-ENE MAX	15VR 550 850 R9400																						
CM-ENE MAX	15VR 550 851 R9400																						
CM-ENS.11S	15VR 730 850 R0100																						
CM-ENS.11P	15VR 740 850 R0100																						
CM-ENS.13S	15VR 730 850 R2100																						
CM-ENS.13P	15VR 740 850 R2100																						
CM-ENS.21S	15VR 730 850 R0200																						
CM-ENS.21P	15VR 740 850 R0200																						
CM-ENS.23S	15VR 730 850 R2200																						
CM-ENS.23P	15VR 740 850 R2200																						
CM-ENS.31S	15VR 730 850 R0300																						
CM-ENS.31P	15VR 740 850 R0300																						

Rated control supply voltage U _c		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
24-240 V AC/DC																						
24 V AC		■																				
110-130 V AC			■																			
220-240 V AC				■																		

Sensor circuit		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Number of electrodes (including ground reference)		2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3

Response sensitivity range		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
0-100 kOhm		■	■	■	■	■	■														
5-100 kOhm								adj	adj	adj	adj										
0.1-1000 kOhm															adj	adj	adj	adj	adj	adj	adj

Monitoring function		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Dry running protection		■	■	■				■	■	■	■	■	■	■	■	■	■	■	■	■	■
Overflow protection					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Liquid level control					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

Operating principle		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Open-circuit principle		■	■	■				■	■	■	■										
Closed-circuit principle					■	■	■														
Open- or closed-circuit principle																sel	sel	sel	sel	sel	sel

Adjustable ON-/OFF-delay		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
0.1-10 s																					■	■

Output contacts		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
n/o		1	1	1	1	1	1															
c/o (SPDT)																					2	2

Connection type		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Push-in terminals										■		■		■		■		■		■	
Double-chamber cage connection terminals										■		■		■		■		■		■	
Screw		■	■	■	■	■	■														

adj: adjustable
sel: selectable

Monitoring relays

Accessories



Bar electrode



Suspension electrode

Ordering details

Accessories

Description	For type	Width in mm	For devices	Type	Order code	Pkg qty	Weight (1 pc) g (oz)
Adapter for screw mounting	CM-S CM-S.S/P	22.5	–	ADP.01	1SVR430029R0100	1	18.4 (0.65)
	CM-N CM-N.S/P	45	–	ADP.02	1SVR440029R0100	1	36.7 (1.30)
	CM-S, CM-N CM-S.S/P CM-N.S/P	–	without DIP switches	MAR.01	1SVR366017R0100	10	0.19 (0.007)
Marker label	CM-S, CM-N	–	with DIP switches	MAR.02	1SVR430043R0000	10	0.13 (0.005)
	CM-S.S/P CM-N.S/P	–	with DIP switches	MAR.12	1SVR730006R0000	10	0.152 (0.335)
	CM-S	22.5	–	COV.01	1SVR430005R0100	1	5.2 (0.18)
Sealable transparent cover	CM-N	45	–	COV.02	1SVR440005R0100	1	7.7 (0.27)
	CM-S.S/P	22.5	–	COV.11	1SVR730005R0100	1	4.0 (0.129)
	CM-N.S/P	45	–	COV.12	1SVR750005R0100	1	7 (0.247)

Bar electrodes

Description	Material no.	Type	Order code	Weight (1 pc) kg (lb)
Compact support for 3 bar electrodes	–	CM-KH-3	1SVR450056R6000	0.06 (0.132)
Distance plate for 3 bar electrodes		CM-AH-3	1SVR450056R7000	0.06 (0.132)
Counter nut for 1" thread		CM-GM-1	1SVR450056R8000	0.06 (0.132)
Length: 300 mm	1.4301	CM-SE-300	1SVR450056R0000	0.08 (0.176)
Length: 600 mm	1.4301	CM-SE-600	1SVR450056R0100	0.08 (0.176)
Length: 1000 mm	1.4301	CM-SE-1000	1SVR450056R0200	0.08 (0.176)

Suspension electrodes

Description	Connection	Material no.	Type	Order code	Weight (1 pc) kg (lb)
CM-HE suspension electrode high-alloy steel, material no. 1.4104 (according to EN 10088-1)	Screw	1.4104	CM-HE	1SVR402902R0000	0.074 (0.163)
CM-HC suspension electrode high-alloy steel, material no. 1.4104 (according to EN 10088-1)	Crimp	1.4104	CM-HC	1SVR402902R1000	0.09 (0.198)
CM-HCT suspension electrode suitable for drink water high-alloy steel, material no. 1.4301 (according to EN 10088-1)	Crimp	1.4301	CM-HCT	1SVR402902R2000	0.09 (0.198)

Monitoring relays

Accessories



CM-CT

Plug-in current transformers CM-CT

- Without primary conductor though with foot angle, insulating protective cap and bar fastening screws
- Primary / rated current from 50 A to 600 A
- Secondary current of 1 A or 5 A
- Class 1



CM-CT with mounted accessories



CM-CT-A mounted on DIN rail

Ordering details

Rated primary current	Secondary current	Burden class	Type	Order code	Weight (1 pc) g (oz)
50 A	1 A	1 VA / 1	CM-CT 50/1	1SVR450116R1000	0.31 (0.683)
75 A		1.5 VA / 1	CM-CT 75/1	1SVR450116R1100	0.31 (0.683)
100 A		2.5 VA / 1	CM-CT 100/1	1SVR450116R1200	0.276 (0.608)
150 A		2.5 VA / 1	CM-CT 150/1	1SVR450116R1300	0.32 (0.705)
200 A		2.5 VA / 1	CM-CT 200/1	1SVR450116R1400	0.222 (0.489)
300 A		5 VA / 1	CM-CT 300/1	1SVR450117R1100	0.29 (0.639)
400 A		5 VA / 1	CM-CT 400/1	1SVR450117R1200	0.27 (0.595)
500 A		5 VA / 1	CM-CT 500/1	1SVR450117R1300	0.29 (0.639)
600 A		5 VA / 1	CM-CT 600/1	1SVR450117R1400	0.24 (0.529)
50 A		5 A	1 VA / 1	CM-CT 50/5	1SVR450116R5000
75 A	1.5 VA / 1		CM-CT 75/5	1SVR450116R5100	0.31 (0.683)
100 A	2.5 VA / 1		CM-CT 100/5	1SVR450116R5200	0.31 (0.683)
150 A	2.5 VA / 1		CM-CT 150/5	1SVR450116R5300	0.28 (0.617)
200 A	5 VA / 1		CM-CT 200/5	1SVR450116R5400	0.29 (0.639)
300 A	5 VA / 1		CM-CT 300/5	1SVR450117R5100	0.252 (0.556)
400 A	5 VA / 1		CM-CT 400/5	1SVR450117R5200	0.26 (0.573)
500 A	5 VA / 1		CM-CT 500/5	1SVR450117R5300	0.208 (0.459)
600 A	5 VA / 1		CM-CT 600/5	1SVR450117R5400	0.21 (0.463)

Accessories

Description	Type	Order code	Weight (1 pc) g (oz)
Snap-on fastener for DIN rail mounting of CM-CT	CM-CT A	1SVR450118R1000	0.009 (0.02)

Primary switch mode
Single-phase



CP-S.1

Selection table

		Order number	1SVR320361R1000	1SVR320561R1000	1SVR320661R1000	1SVR320761R1000	1SVR320861R1000
			CP-S.1				
Rated output current	3 A		■				
	5 A			■			
	10 A				■		
	20 A					■	
	40 A						■
Rated output power	72 W		■				
	120 W			■			
	240 W				■		
	480 W					■	
	960 W						■
Rated input voltage	100-240 V AC		■	■	■	■	■
	100-250 V DC		■	■	■	■	■
	110-240 V AC						■
	110-250 V DC						■
Features	Power reserve design		■	■	■	■	■
	Adjustable output voltage		■	■	■	■	■
	Integrated input fuse		■	■	■	■	■
	Short-circuit stable		■	■	■	■	■
	Fold-forward behavior (U/I)		■	■	■	■	■
	Power factor correction		no	act	act	act	act
	Signalling contact		■	■	■	■	■
	Parallel connection		3	3	3	3	3
	Serial connection		2	2	2	2	2
	Coated PCBA		■	■	■	■	■

pas = passive, act = active

Primary switch mode power supplies

Single-phase



CP-C.124/5.0
CP-C.124/5.0-C



CP-C.124/10.0
CP-C.124/10.0-C



CP-C.124/20.0
CP-C.124/20.0-C



CP-C.124/5.0
light grey



CP-C.124/10.0
light grey



CP-D 12/0.83, CP-D 24/0.42 CP-D 12/2.1, CP-D 24/1.3 CP-D 24/2.5



CP-E 5/0.75 CP-E 12/2.5 CP-E 48/5.0 CP-E 24/20.0

Selection table

	Order number																												
	1SVR427041R1000	1SVR427043R1200	1SVR427041R0000	1SVR427043R0100	1SVR427044R0200	1SVR427045R0400	1SVR427033R3000	1SVR427032R1000	1SVR427035R1000	1SVR427030R0000	1SVR427031R0000	1SVR427032R0000	1SVR427034R0000	1SVR427035R0000	1SVR427036R0000	1SVR427030R2000	1SVR427031R2000	1SVR427034R0000	1SVR427035R2000	1SVR360563R1001	1SVR360663R1001	1SVR360763R1001	1SVR360563R2001	1SVR360663R2001	1SVR360763R2001	1SVR361563R1001	1SVR361663R1001	1SVR361763R1001	
Single-phase																													
	CP-D						CP-E												CP-C.1										
Rated output voltage																													
5 V DC							■																						
12 V DC	■	■						■	■																				
24 V DC			■	■	■	■				■	■	■	■	■	■							■	■	■	■	■	■	■	■
48 V DC																	■	■	■	■									
Rated output current																													
0.42 A			■																										
0.625 A																■													
0.75 A										■																			
0.83 A	■																												
1.25 A											■																		
1.3 A				■																									
2.1 A		■																											
2.5 A				■				■	■			■																	
3 A						■	■																						
4.2 A						■																							
5 A																													
10 A													■																
20 A															■														
Rated output power																													
10 W	■		■																										
15 W							■																						
18 W											■																		
25 W		■																											
30 W				■				■			■																		
60 W					■							■																	
100 W						■																							
120 W												■																	
240 W																													
480 W																													
Rated input voltage																													
100-240 V AC	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
115/230 V AC auto select																													
115-230 V AC																													

(Table continued on next page)

Primary switch mode power supplies

Single-phase



CP-D 12/0.83, CP-D 24/0.42 CP-D 12/2.1, CP-D 24/1.3 CP-D 24/2.5



CP-E 5/0.75 CP-E 12/2.5 CP-E 48/5.0 CP-E 24/20.0

CP-C.1 24/5.0
CP-C.1 24/5.0-C



CP-C.1 24/10.0
CP-C.1 24/10.0-C



CP-C.1 24/20.0
CP-C.1 24/20.0-C



CP-C.1 24/5.0
light grey



CP-C.1 24/10.0
light grey

Selection table (continued)

Order number	Single-phase																							
	CP-D						CP-E						CP-C.1											
1SVR427041R1000																								
1SVR427043R1200																								
1SVR427041R0000																								
1SVR427043R0100																								
1SVR427044R0200																								
1SVR427045R0400																								
1SVR427033R3000																								
1SVR427032R1000																								
1SVR427035R1000																								
1SVR427030R0000																								
1SVR427031R0000																								
1SVR427032R0000																								
1SVR427034R0000																								
1SVR427035R0000																								
1SVR427036R0000																								
1SVR427030R2000																								
1SVR427031R2000																								
1SVR427034R0000																								
1SVR427035R2000																								
1SVR360563R1001																								
1SVR360663R1001																								
1SVR360763R1001																								
1SVR360563R2001																								
1SVR360663R2001																								
1SVR360763R2001																								
1SVR361563R1001																								
1SVR361663R1001																								
1SVR361763R1001																								

DC input voltage range

90-300 V DC																								
90-375 V DC																								
120-375 V DC																								
210-375 V DC																								

Features

Power reserve design																								
Adjustable output voltage																								
Integrated input fuse																								
Short-circuit stable																								
Fold-forward behavior (U/I)																								
Fold-back behavior (hiccup)																								
Power factor correction																								
Signalling contact																								
Extended temp. range																								
Parallel connection																								
Serial connection																								
Coated PCBA																								

pas: passive
act: active

Primary switch mode power supplies

Three-phase



CP-T 24/5.0



CP-T 24/10.0, CP-T 48/5.0



CP-T 24/20.0, CP-T 48/10.0

Selection table

	Order number	15VR427054R0000	15VR427055R0000	15VR427056R0000	15VR427057R0000	15VR427054R2000	15VR427055R2000	15VR427056R2000
Three-phase								
CP-T								
Rated output voltage								
24 V DC		■	■	■	■			
48 V DC						■	■	■
Rated output current								
5 A		■				■		
10 A			■				■	
20 A				■				■
40 A					■			
Rated output power								
120 W		■						
240 W			■			■		
480 W				■			■	
960 W					■			■
Rated input voltage								
3 x 400-500 V AC		■	■	■	■	■	■	■
DC input voltage range								
480-820 V DC		■	■	■	■	■	■	■
Features								
Adjustable output voltage		■	■	■	■	■	■	■
Integrated input fuse		■	■	■	■	■	■	■
Short-circuit stable		■	■	■	■	■	■	■
Fold forward behavior (U/I)		■	■	■		■	■	
Fold back behavior (hiccup)		■	■	■	■	■	■	■
Extended temp. range		■	■	■	■	■	■	■
Signalling contact		■	■	■	■			
Parallel connection			2	2	2	2	2	2
Serial connection			2	2	2	2	2	2

Power supplies

CP-S.3 and CP-S.DC



CP-S.3

Ordering details - power supplies

Description	Rated input voltage	Rated output voltage	Rated output current	Output power	Power reserve	Coated PCBA	Order code
CP-S.3 24/5.0	3~ 400 - 500 V AC	24 V DC	5.0 A	120 W	150 % I _N for up to 5 s	Yes	1SVR340567R1000
CP-S.3 24/10.0			10.0 A	240 W			1SVR340667R1000
CP-S.3 24/20.0			20.0 A	480 W			1SVR340767R1000
CP-S.3 24/40.0			40.0 A	960 W			1SVR360060R2001



CP-S.DC

Ordering details - power supplies

Description	Rated input voltage	Rated output voltage	Rated output current	Output power	Power reserve	Coated PCBA	Order code
CP-S.DC 24/20.0	600 V DC, 420 - 870 V DC	24 V DC	20.0 A	480 W	150 % I _N for up to 5 s	Yes	1SVR320766R1000

Electronic protection devices

EPD24



EPD24-TB-101-3A

Description

The protection devices EPD24 extend the ABB product range of modular DIN rail components by electronic overcurrent protection modules for selective protection of 24 V DC load circuits. This protection is achieved by a combination of active electronic current limitation in the case of a short circuit and an overload deactivation from $1.1 \times I_n$ upwards.

If a fault occurs in a load circuit, the protection device EPD24 will detect this rapidly and reliably, then disable the power output transistor and hence interrupt the current flow in the defective circuit. The maximum possible overcurrent is always limited to 1.3...1.8 times the selected rated current. An activation of capacitive loads up to 20,000 μF is possible, deactivation only occurring in the case of overloads or short circuits. Selective deactivation of the defective current circuit means undefined error states and a complete system stop are prevented.

Ordering details

Rated current I_n A	bbn 40 16779 EAN	Type	Order code	Pkg qty	Weight (1 pc.) kg (lb)
0.5	829960	EPD24-TB-101-0.5A	2CDE601101R2905	4	0.065 (1.433)
1	829984	EPD24-TB-101-1A	2CDE601101R2001	4	0.065 (1.433)
2	830003	EPD24-TB-101-2A	2CDE601101R2002	4	0.065 (1.433)
3	830027	EPD24-TB-101-3A	2CDE601101R2003	4	0.065 (1.433)
4	830041	EPD24-TB-101-4A	2CDE601101R2004	4	0.065 (1.433)
6	830065	EPD24-TB-101-6A	2CDE601101R2006	4	0.065 (1.433)
8	830089	EPD24-TB-101-8A	2CDE601101R2008	4	0.065 (1.433)
10	830102	EPD24-TB-101-10A	2CDE601101R2010	4	0.065 (1.433)
12	830126	EPD24-TB-101-12A	2CDE601101R2012	4	0.065 (1.433)

Description	bbn 40 16779 EAN	Type	Order code	Pkg qty	Weight (1 pc.) kg (lb)
Busbars for LINE+ and 0 V, grey insulation, length 500 mm ¹	830140	EPD-BB500	2CDE605100R0500	10	0.2 (0.441)
Signal bars for aux. contacts, grey insulation, length 21 mm	830164	EPD-SB21	2CDE605200R0021	10	0.4 (0.882)

¹ Max. load with one line entry $I_{max} = 50 \text{ A}$ (recommended: mid line entry)
Max. load with two line entries $I_{max} = 63 \text{ A}$

Electronic protection devices

EPD24



EPD24-A4 0.5-12,
Power jumper for 24 V DC and signal
jumper for 0 V, signal and reset

Selective protection of 24 V DC load circuits

Electronic protection devices are used for the reliable protection of standard components in industrial automation applications with 24 V DC. The EPD24 offer selective overcurrent protection for the loads connected and react to short circuit or overload more rapidly than the supplying switch mode power supply; they then selectively switch off the electrical circuit affected. In this way straightforward, quick troubleshooting is made possible.

The 4-channel devices feature very high efficiency and significantly reduced power loss. With a rated current setting from 0.5 to 12 A, a width of 25 mm, seamless expandability by means of jumpers, front-top wiring and straightforward combination with ABB switch mode power supplies, they ensure a uniform portfolio.

Characteristics

- 4-channel electronic protection device
- 24 V DC supply terminal
- Variable rated currents can be set on **Advanced** from 0.5 A to 12 A or on **Entry** from 1 A to 10 A
- Selective load protection using electronic trip characteristic curve
- **Advanced** with active linear current limiting, total current max. 48 A
- **Entry** with time-controlled tripping, total current max. 40 A
- Integrated fail-safe element matched to the maximum rated current
- Very high efficiency
- No derating up to 60 °C ambient temperature
- Switching on of capacitive loads up to 40,000 μF at 12 A rated current
- ON/OFF/Reset button with multicolor LED status indicator
- Signal output (13, 14) with 1 NO contact for group signaling
- Reset input (RST) for remote resetting of tripped channels
- All connection terminals equipped with push-in terminals
- Several devices can be combined using power jumpers for supply and signal jumpers for 0 V, signal and reset
- **Entry** and **Advanced** devices can be combined using jumpers



UL 508
CSA C22.2 No. 14
Ind. Cont. Eq.
E321314



Ordering details

Electronic protection devices

Type	Function	Input	Characteristics	Channels	Rated current	Order code
EPD24-E4 1-10	Entry	24 V DC	Time-controlled tripping	4	1–10 A	2CDE601102R0110
EPD24-A4 0.5-12	Advanced	24 V DC	Active current limiting	4	0.5–12 A	2CDE601102R0512

Accessories

Type	Characteristics	Order code
EPD24 jumpers (1 sets)	1 power jumper for 24 V DC and 3 signal jumpers for 0 V, signal and reset	2CDE605300R0010
EPD24 jumpers (5 sets)	5 power jumpers for 24 V DC and 15 signal jumpers for 0 V, signal and reset	2CDE605300R0050
EPD24 jumpers (25 sets)	25 power jumpers for 24 V DC and 75 signal jumpers for 0 V, signal and reset	2CDE605300R0250

Pluggable interface relays

CR-S range



How to use the selection table

Choose the desired control supply voltage from the column "Control voltage", e.g. "5 V DC".

Choose the desired kind of connection terminal from the column "Connection terminal", e.g. "spring".

Choose the desired material of contact from the column "Contact Material" e.g. "gold plated".

Control voltage	Connection terminal	Contact material	Socket type	Socket order code	Relay type	Relay order code
5 V DC	screw	standard	CR-S006/024VDC1SS	1SVR405521R1100	CR-S005VDC1R	1SVR405501R1010
		gold plated	CR-S006/024VDC1SS	1SVR405521R1100	CR-S005VDC1RG	1SVR405501R1020
	spring	standard	CR-S006/024VDC1SZ	1SVR405521R1200	CR-S005VDC1R	1SVR405501R1010
		gold plated	CR-S006/024VDC1SZ	1SVR405521R1200	CR-S005VDC1RG	1SVR405501R1020
12 V AC	screw	standard	CR-S012/024VADC1SS	1SVR405521R3100	CR-S012VDC1R	1SVR405501R2010
		gold plated	CR-S012/024VADC1SS	1SVR405521R3100	CR-S012VDC1RG	1SVR405501R2020
	spring	standard	CR-S012/024VADC1SZ	1SVR405521R3200	CR-S012VDC1R	1SVR405501R2010
		gold plated	CR-S012/024VADC1SZ	1SVR405521R3200	CR-S012VDC1RG	1SVR405501R2020



Example

When you have chosen 5 V DC as control supply voltage, spring connection as connection terminal and gold plated as contact material the following order codes and type designators are valid:

Socket: CR-S006/024VDC1SZ, 1SVR405521R1200

Relay: CR-S005VDC1RG, 1SVR405501R1020

Pluggable interface relays

CR-S range



CR-S socket



CR-S relay

CR-S range relay assemblies

Control voltage	Connection terminal	Contact material	Socket type	Socket order code	Relay type	Relay order code	
5 V DC	screw	standard	CR-S006/024VDC1S5	1SVR405521R1100	CR-S005VDC1R	1SVR405501R1010	
		gold plated	CR-S006/024VDC1S5	1SVR405521R1100	CR-S005VDC1RG	1SVR405501R1020	
	spring	standard	CR-S006/024VDC1SZ	1SVR405521R1200	CR-S005VDC1R	1SVR405501R1010	
		gold plated	CR-S006/024VDC1SZ	1SVR405521R1200	CR-S005VDC1RG	1SVR405501R1020	
12 V DC	screw	standard	CR-S006/024VDC1S5 or CR-S012/024VADC1S5	1SVR405521R1100 or 1SVR405521R3100	CR-S012VDC1R	1SVR405501R2010	
		gold plated	CR-S006/024VDC1S5 or CR-S012/024VADC1S5	1SVR405521R1100 or 1SVR405521R3100	CR-S012VDC1RG	1SVR405501R2020	
	spring	standard	CR-S006/024VDC1SZ or CR-S012/024VADC1SZ	1SVR405521R1200 or 1SVR405521R3200	CR-S012VDC1R	1SVR405501R2010	
		gold plated	CR-S006/024VDC1SZ or CR-S012/024VADC1SZ	1SVR405521R1200 or 1SVR405521R3200	CR-S012VDC1RG	1SVR405501R2020	
	12 V AC	screw	standard	CR-S012/024VADC1S5	1SVR405521R3100	CR-S012VDC1R	1SVR405501R2010
			gold plated	CR-S012/024VADC1S5	1SVR405521R3100	CR-S012VDC1RG	1SVR405501R2020
spring		standard	CR-S012/024VADC1SZ	1SVR405521R3200	CR-S012VDC1R	1SVR405501R2010	
24 V DC	screw	standard	CR-S012/024VADC1S5	1SVR405521R3100	CR-S012VDC1R	1SVR405501R2010	
		gold plated	CR-S012/024VADC1S5	1SVR405521R3100	CR-S012VDC1RG	1SVR405501R2020	
	spring	standard	CR-S012/024VADC1SZ	1SVR405521R3200	CR-S012VDC1R	1SVR405501R2010	
		gold plated	CR-S012/024VADC1SZ	1SVR405521R3200	CR-S012VDC1RG	1SVR405501R2020	
	24 V AC	screw	standard	CR-S006/024VDC1S5 or CR-S012/024VADC1S5	1SVR405521R1100 or 1SVR405521R3100	CR-S024VDC1R	1SVR405501R3010
			gold plated	CR-S006/024VDC1S5 or CR-S012/024VADC1S5	1SVR405521R1100 or 1SVR405521R3100	CR-S024VDC1RG	1SVR405501R3020
spring		standard	CR-S006/024VDC1SZ or CR-S012/024VADC1SZ	1SVR405521R1200 or 1SVR405521R3200	CR-S024VDC1R	1SVR405501R3010	
		gold plated	CR-S006/024VDC1SZ or CR-S012/024VADC1SZ	1SVR405521R1200 or 1SVR405521R3200	CR-S024VDC1RG	1SVR405501R3020	
48 V AC/DC	screw	standard	CR-S012/024VADC1S5	1SVR405521R3100	CR-S024VDC1R	1SVR405501R3010	
		gold plated	CR-S012/024VADC1S5	1SVR405521R3100	CR-S024VDC1RG	1SVR405501R3020	
	spring	standard	CR-S012/024VADC1SZ	1SVR405521R3200	CR-S024VDC1R	1SVR405501R3010	
		gold plated	CR-S012/024VADC1SZ	1SVR405521R3200	CR-S024VDC1RG	1SVR405501R3020	
	60 V AC/DC	screw	standard	CR-S048/060VADC1S5	1SVR405521R5100	CR-S048VDC1R	1SVR405501R4010
			gold plated	CR-S048/060VADC1S5	1SVR405521R5100	CR-S048VDC1RG	1SVR405501R4020
spring		standard	CR-S048/060VADC1SZ	1SVR405521R5200	CR-S048VDC1R	1SVR405501R4010	
		gold plated	CR-S048/060VADC1SZ	1SVR405521R5200	CR-S048VDC1RG	1SVR405501R4020	
110-125 V AC/DC	screw	standard	CR-S048/060VADC1S5	1SVR405521R5100	CR-S060VDC1R	1SVR405501R5010	
		gold plated	CR-S048/060VADC1S5	1SVR405521R5100	CR-S060VDC1RG	1SVR405501R5020	
	spring	standard	CR-S048/060VADC1SZ	1SVR405521R5200	CR-S060VDC1R	1SVR405501R5010	
		gold plated	CR-S048/060VADC1SZ	1SVR405521R5200	CR-S060VDC1RG	1SVR405501R5020	
	220-240 V AC/DC	screw	standard	CR-S110/125VADC1S5	1SVR405521R6100	CR-S060VDC1R	1SVR405501R5010
			gold plated	CR-S110/125VADC1S5	1SVR405521R6100	CR-S060VDC1RG	1SVR405501R5020
spring		standard	CR-S110/125VADC1SZ	1SVR405521R6200	CR-S060VDC1R	1SVR405501R5010	
		gold plated	CR-S110/125VADC1SZ	1SVR405521R6200	CR-S060VDC1RG	1SVR405501R5020	
220-240 V AC/DC	screw	standard	CR-S220/240VADC1S5	1SVR405521R7100	CR-S060VDC1R	1SVR405501R5010	
		gold plated	CR-S220/240VADC1S5	1SVR405521R7100	CR-S060VDC1RG	1SVR405501R5020	
	spring	standard	CR-S220/240VADC1SZ	1SVR405521R7200	CR-S060VDC1R	1SVR405501R5010	
		gold plated	CR-S220/240VADC1SZ	1SVR405521R7200	CR-S060VDC1RG	1SVR405501R5020	

CR-S optocoupler range relay assemblies



CR-S optocoupler

Control voltage	Connection terminal	Output characteristics	Socket type	Socket order code	Opto type	Opto order code
24 V DC	screw	Transistor 100 mA - 48 V DC	CR-S012/024VADC1S5	1SVR405521R3100	CR-S024VDC1TRA	1SVR405510R3050
			CR-S012/024VADC1SZ	1SVR405521R3200	CR-S024VDC1TRA	1SVR405510R3050
	spring	MOS-FET 2 A - 24 V DC	CR-S012/024VADC1S5	1SVR405521R3100	CR-S024VDC1MOS	1SVR405510R3060
			CR-S012/024VADC1SZ	1SVR405521R3200	CR-S024VDC1MOS	1SVR405510R3060
	screw	Triac 2 A - 240 V AC	CR-S012/024VADC1S5	1SVR405521R3100	CR-S024VDC1TRI	1SVR405510R3070
			CR-S012/024VADC1SZ	1SVR405521R3200	CR-S024VDC1TRI	1SVR405510R3070

Pluggable interface relays

CR-S range



CR-S complete interface relay



The complete versions of the CR-S range comprise of a pluggable interface relay, socket and marker.

CR-S complete versions

Type	Order code	Relay				Socket					
		CR-S024VDC1R	CR-S024VDC1RG	CR-S060VDC1R	CR-S060VDC1RG	CR-S012/024VADC1SS	CR-S012/024VADC1SZ	CR-S110/125VADC1SS	CR-S110/125VADC1SZ	CR-S220/240VADC1SS	CR-S220/240VADC1SZ
	1SVR405501R3010										
	1SVR405501R3020										
	1SVR405501R5010										
	1SVR405501R5020										
	1SVR405521R3100										
	1SVR405521R3200										
	1SVR405521R6100										
	1SVR405521R6200										
	1SVR405521R7100										
	1SVR405521R7200										

Complete versions

Order code	Type	CR-S024VDC1R	CR-S024VDC1RG	CR-S060VDC1R	CR-S060VDC1RG	CR-S012/024VADC1SS	CR-S012/024VADC1SZ	CR-S110/125VADC1SS	CR-S110/125VADC1SZ	CR-S220/240VADC1SS	CR-S220/240VADC1SZ
1SVR405541R3110	CR-S024VADC1CRS	■				■					
1SVR405541R3120	CR-S024VADC1CRGS		■			■					
1SVR405541R3210	CR-S024VADC1CRZ	■					■				
1SVR405541R3220	CR-S024VADC1CRGZ		■				■				
1SVR405541R6110	CR-S110VADC1CRS			■				■			
1SVR405541R6120	CR-S110VADC1CRGS				■			■			
1SVR405541R6210	CR-S110VADC1CRZ			■					■		
1SVR405541R6220	CR-S110VADC1CRGZ				■				■		
1SVR405541R7110	CR-S230VADC1CRS			■						■	
1SVR405541R7120	CR-S230VADC1CRGS				■					■	
1SVR405541R7210	CR-S230VADC1CRZ			■							■
1SVR405541R7220	CR-S230VADC1CRGZ				■						■

Pluggable interface relays and optocouplers

CR-P range



CR-P complete version



The complete versions of the CR-P range comprise of a pluggable interface relay, socket, holder, marker and a function module.

CR-P complete versions

Type	Order code	Relay	Socket	Function module	Holder
	1SVR405601R4000		1SVR405650R1000	1SVR405652R0000	1SVR405659R0000
	1SVR405601R1000		1SVR405650R0000	1SVR405652R1000	
	1SVR405606R1000		1SVR405650R0200	1SVR405652R9100	
	1SVR405601R8000			1SVR405655R0000	
	1SVR405601R0000			1SVR405655R1000	
	1SVR405601R2000			1SVR405654R0100	
	1SVR405601R3000			1SVR405655R0100	
	1SVR405606R3000			1SVR405655R1100	
	1SVR405650R1000	CR-PSS			
	1SVR405650R0000	CR-PLS			
	1SVR405650R0200	CR-PLC			
	1SVR405652R0000	CR-P/M 42			
	1SVR405652R1000	CR-P/M 42V			
	1SVR405652R9100	CR-P/M 42CV			
	1SVR405655R0000	CR-P/M 62C			
	1SVR405655R1000	CR-P/M 62CV			
	1SVR405654R0100	CR-P/M 92			
	1SVR405655R0100	CR-P/M 92C			
	1SVR405655R1100	CR-P/M 92CV			
	1SVR405659R0000	CR-PH			

Complete versions

Order code	Type	Relay	Socket	Function module	Holder
1SVR405601R4010	CR-P012DC2SS42V	■	■	■	■
1SVR405601R1010	CR-P024DC2SS42V	■	■	■	■
1SVR405601R1013	CR-P024DC2LS42	■	■	■	■
1SVR405601R1011	CR-P024DC2LS42V	■	■	■	■
1SVR405601R1012	CR-P024DC2LC42	■	■	■	■
1SVR405606R1010	CR-P024DC2GLC42V	■	■	■	■
1SVR405606R1013	CR-P024DC2GLC62C	■	■	■	■
1SVR405606R1011	CR-P024DC2GLC62CV	■	■	■	■
1SVR405601R8010	CR-P110DC2SS42CV	■	■	■	■
1SVR405601R0010	CR-P024AC2SS62CV	■	■	■	■
1SVR405601R2010	CR-P120AC2SS92CV	■	■	■	■
1SVR405601R3110	CR-P230AC2SS92CV	■	■	■	■
1SVR405601R3011	CR-P230AC2LS92CV	■	■	■	■
1SVR405601R3012	CR-P230AC2LC92	■	■	■	■
1SVR405606R3013	CR-P230AC2GLC92	■	■	■	■
1SVR405606R3012	CR-P230AC2GLC92C	■	■	■	■
1SVR405606R3010	CR-P230AC2GLC92CV	■	■	■	■

Pluggable interface relays and optocouplers

CR-M range



CR-M

CR-M pluggable relays without LED

Type	Order code
CR-M012DC2	1SVR405611R4000
CR-M024DC2	1SVR405611R1000
CR-M048DC2	1SVR405611R6000
CR-M060DC2	1SVR405611R4200
CR-M110DC2	1SVR405611R8000
CR-M125DC2	1SVR405611R8200
CR-M220DC2	1SVR405611R9000
CR-M024AC2	1SVR405611R0000
CR-M048AC2	1SVR405611R5000
CR-M110AC2	1SVR405611R7000
CR-M120AC2	1SVR405611R2000
CR-M230AC2	1SVR405611R3000
CR-M012DC3	1SVR405612R4000
CR-M024DC3	1SVR405612R1000
CR-M048DC3	1SVR405612R6000
CR-M060DC3	1SVR405612R4200
CR-M110DC3	1SVR405612R8000
CR-M125DC3	1SVR405612R8200
CR-M220DC3	1SVR405612R9000
CR-M024AC3	1SVR405612R0000
CR-M048AC3	1SVR405612R5000
CR-M060AC3	1SVR405612R5200
CR-M110AC3	1SVR405612R7000
CR-M120AC3	1SVR405612R2000
CR-M230AC3	1SVR405612R3000
CR-M012DC4	1SVR405613R4000
CR-M024DC4	1SVR405613R1000
CR-M048DC4	1SVR405613R6000
CR-M060DC4	1SVR405613R4200
CR-M110DC4	1SVR405613R8000
CR-M125DC4	1SVR405613R8200
CR-M220DC4	1SVR405613R9000
CR-M024AC4	1SVR405613R0000
CR-M048AC4	1SVR405613R5000
CR-M110AC4	1SVR405613R7000
CR-M120AC4	1SVR405613R2000
CR-M230AC4	1SVR405613R3000

Input voltage	CR-M012DC2	CR-M024DC2	CR-M048DC2	CR-M060DC2	CR-M110DC2	CR-M125DC2	CR-M220DC2	CR-M024AC2	CR-M048AC2	CR-M110AC2	CR-M120AC2	CR-M230AC2	CR-M012DC3	CR-M024DC3	CR-M048DC3	CR-M060DC3	CR-M110DC3	CR-M125DC3	CR-M220DC3	CR-M024AC3	CR-M048AC3	CR-M060AC3	CR-M110AC3	CR-M120AC3	CR-M230AC3	CR-M012DC4	CR-M024DC4	CR-M048DC4	CR-M060DC4	CR-M110DC4	CR-M125DC4	CR-M220DC4	CR-M024AC4	CR-M048AC4	CR-M110AC4	CR-M120AC4	CR-M230AC4				
12 V DC	■												■														■														
24 V DC		■												■														■													
48 V DC			■												■														■												
60 V DC				■												■														■											
110 V DC					■												■														■										
125 V DC						■												■														■									
220 V DC							■												■														■								
24 V AC								■												■													■								
48 V AC									■												■													■							
60 V AC										■												■													■						
110 V AC											■												■													■					
120 V AC												■												■													■				
230 V AC													■													■												■			

Output rating	CR-M012DC2	CR-M024DC2	CR-M048DC2	CR-M060DC2	CR-M110DC2	CR-M125DC2	CR-M220DC2	CR-M024AC2	CR-M048AC2	CR-M110AC2	CR-M120AC2	CR-M230AC2	CR-M012DC3	CR-M024DC3	CR-M048DC3	CR-M060DC3	CR-M110DC3	CR-M125DC3	CR-M220DC3	CR-M024AC3	CR-M048AC3	CR-M060AC3	CR-M110AC3	CR-M120AC3	CR-M230AC3	CR-M012DC4	CR-M024DC4	CR-M048DC4	CR-M060DC4	CR-M110DC4	CR-M125DC4	CR-M220DC4	CR-M024AC4	CR-M048AC4	CR-M110AC4	CR-M120AC4	CR-M230AC4			
250 V 6 A																											■	■	■	■	■	■	■	■	■	■	■	■	■	■
250 V 10 A													■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
250 V 12 A	■	■	■	■	■	■	■	■	■	■	■	■														■														

Output contacts	CR-M012DC2	CR-M024DC2	CR-M048DC2	CR-M060DC2	CR-M110DC2	CR-M125DC2	CR-M220DC2	CR-M024AC2	CR-M048AC2	CR-M110AC2	CR-M120AC2	CR-M230AC2	CR-M012DC3	CR-M024DC3	CR-M048DC3	CR-M060DC3	CR-M110DC3	CR-M125DC3	CR-M220DC3	CR-M024AC3	CR-M048AC3	CR-M060AC3	CR-M110AC3	CR-M120AC3	CR-M230AC3	CR-M012DC4	CR-M024DC4	CR-M048DC4	CR-M060DC4	CR-M110DC4	CR-M125DC4	CR-M220DC4	CR-M024AC4	CR-M048AC4	CR-M110AC4	CR-M120AC4	CR-M230AC4			
c/o	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	4		
Gold plated contacts																																								

Additional features	CR-M012DC2	CR-M024DC2	CR-M048DC2	CR-M060DC2	CR-M110DC2	CR-M125DC2	CR-M220DC2	CR-M024AC2	CR-M048AC2	CR-M110AC2	CR-M120AC2	CR-M230AC2	CR-M012DC3	CR-M024DC3	CR-M048DC3	CR-M060DC3	CR-M110DC3	CR-M125DC3	CR-M220DC3	CR-M024AC3	CR-M048AC3	CR-M060AC3	CR-M110AC3	CR-M120AC3	CR-M230AC3	CR-M012DC4	CR-M024DC4	CR-M048DC4	CR-M060DC4	CR-M110DC4	CR-M125DC4	CR-M220DC4	CR-M024AC4	CR-M048AC4	CR-M110AC4	CR-M120AC4	CR-M230AC4			
LED																																								
Free-wheeling diode																																								

Pluggable interface relays and optocouplers

CR-M range



CR-M

CR-M pluggable relays with LED

Type	Order code
CR-M012DC2L	1SVR405611R4100
CR-M012DC2LD	1SVR405611R4400
CR-M024DC2L	1SVR405611R1100
CR-M024DC2LD	1SVR405611R1400
CR-M048DC2L	1SVR405611R6100
CR-M048DC2LD	1SVR405611R6400
CR-M060DC2L	1SVR405611R4300
CR-M110DC2L	1SVR405611R8100
CR-M110DC2LD	1SVR405611R8400
CR-M125DC2L	1SVR405611R8300
CR-M125DC2LD	1SVR405611R8500
CR-M220DC2L	1SVR405611R9100
CR-M220DC2LD	1SVR405611R9400
CR-M012AC2L	1SVR405611R0300
CR-M024AC2L	1SVR405611R0300
CR-M048AC2L	1SVR405611R5100
CR-M110AC2L	1SVR405611R7100
CR-M120AC2L	1SVR405611R2100
CR-M230AC2L	1SVR405611R3100

Input voltage	
12 V DC	■ ■
24 V DC	
48 V DC	■ ■
60 V DC	
110 V DC	■ ■
125 V DC	
220 V DC	■ ■
12 V AC	
24 V AC	
48 V AC	
60 V AC	
110 V AC	
120 V AC	
230 V AC	■

Output rating	
250 V 6 A	
250 V 10 A	
250 V 12 A	■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■

Output contacts	
c/o	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Gold plated contacts	

Additional features	
LED	■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■
Free-wheeling diode	■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■

Pluggable interface relays and optocouplers

CR-M range



CR-M

CR-M pluggable relays with gold plated contacts

Type	Order code
CR-M024DC4G	1SVR405618R1000
CR-M024AC4G	1SVR405618R0000
CR-M110AC4G	1SVR405618R7000
CR-M230AC4G	1SVR405618R3000
CR-M230AC4G	1SVR405618R3000
CR-M012DC4LG	1SVR405618R4100
CR-M024DC4LG	1SVR405618R1100
CR-M048DC4LG	1SVR405618R6100
CR-M060DC4LG	1SVR405618R4300
CR-M110DC4LG	1SVR405618R8100
CR-M125DC4LG	1SVR405618R8300
CR-M220DC4LG	1SVR405618R9100
CR-M024AC4LG	1SVR405618R0100
CR-M048AC4LG	1SVR405618R5100
CR-M110AC4LG	1SVR405618R7100
CR-M120AC4LG	1SVR405618R2100
CR-M230AC4LG	1SVR405618R3100
CR-M012DC4LDG	1SVR405618R4400
CR-M024DC4LDG	1SVR405618R1400

Input voltage	
12 V DC	■
24 V DC	■
48 V DC	■
60 V DC	■
110 V DC	■
125 V DC	■
220 V DC	■
24 V AC	■
48 V AC	■
60 V AC	■
110 V AC	■
120 V AC	■
230 V AC	■

Output rating	
250 V 6 A	■
250 V 10 A	■
250 V 12 A	■

Output contacts	
c/o	4
Gold plated contacts	■

Additional features	
LED	■
Free-wheeling diode	■

Pluggable interface relays and optocouplers

CR-M range



CR-M complete version



The complete versions of the CR-M range comprise of a pluggable interface relay, socket, holder, marker and where applicable a function module.

CR-M complete versions

Complete versions		Type	Order code	Relay	Socket	Function module	Holder
		CR-M012DC4LDG	1SVR405618R4400				
		CR-M024DC4	1SVR405613R1000				
		CR-M024DC4G	1SVR405618R1000				
		CR-M024DC4LG	1SVR405618R1100				
		CR-M024DC4LDG	1SVR405618R1400				
		CR-M024AC4	1SVR405613R0000				
		CR-M230AC4	1SVR405613R3000				
		CR-M230AC4G	1SVR405618R3000				
		CR-M230AC4LG	1SVR405618R3100				
		CR-M4SS	1SVR405651R3000				
		CR-M4LS	1SVR405651R3100				
		CR-M4LC	1SVR405651R3200				
		CR-P/M 22	1SVR405651R0000				
		CR-P/M 42	1SVR405652R0000				
		CR-P/M 42V	1SVR405652R1000				
		CR-P/M 42CV	1SVR405652R9100				
		CR-P/M 62CV	1SVR405655R1000				
		CR-P/M 92	1SVR405654R0100				
		CR-P/M 92CV	1SVR405655R1100				
		CR-MH	1SVR405659R1000				

Order code	Type	Relay	Socket	Function module	Holder
1SVR405618R4410	CR-M012DC4LDGSS	■			■
1SVR405613R1010	CR-M024DC4SS42V		■		■
1SVR405613R1011	CR-M024DC4LS42V		■		■
1SVR405613R1012	CR-M024DC4LC42			■	■
1SVR405618R1011	CR-M024DC4GSS42V		■		■
1SVR405618R1010	CR-M024DC4GLC62CV			■	■
1SVR405618R1110	CR-M024DC4LGLC22			■	■
1SVR405618R1410	CR-M024DC4LDGSS		■		■
1SVR405613R0010	CR-M024AC4LS62CV			■	■
1SVR405613R3110	CR-M230AC4SS92CV		■		■
1SVR405613R3011	CR-M230AC4LS92CV		■		■
1SVR405613R3012	CR-M230AC4LC92			■	■
1SVR405618R3112	CR-M230AC4GSS92CV		■		■
1SVR405618R3110	CR-M230AC4LGLC			■	■
1SVR405618R3111	CR-M230AC4LGSS		■		■

Boxed optocouplers

R600 range



R600 - 6 mm



R600 - 12 mm

Selection table

Type	Order number
OBIC0100-5-12VDC	1SNA645047R0000
OBRI0100-5-12VDC	1SNA645547R0200
OBIC0100-24VDC	1SNA645021R2600
OBRI0100-24VDC	1SNA645521R2000
OBIC0100-48-60VUC	1SNA645049R1200
OBRI0100-48-60VUC	1SNA645549R1400
OBIC0100-115-230	1SNA645022R2700
OBRI0100-115-230	1SNA645522R2100
OBOC2000-5-12VDC	1SNA645050R1700
OBOC2000-5-12VDC	1SNA645550R1100
OBOC2000-24VUC	1SNA645051R0400
OBOC2000-24VUC	1SNA645025R2200
OBOC5000-24VDC	1SNA645024R2100
OBROC2000-24VDC	1SNA645551R0600
OBROC2000-24VUC	1SNA645525R2400
OBROC5000-24VDC	1SNA645524R2300
OBOC2000-48-60VUC	1SNA645053R0600
OBROC2000-48-60VUC	1SNA645553R0000
OBOC2000-115VUC	1SNA645054R0700
OBOC5000-115VUC	1SNA645058R1300
OBOC2000-230VUC	1SNA645026R2300
OBROC2000-230VUC	1SNA645526R2500
OBROC5000-230VUC	1SNA645559R1600
OBOA1000-24VDC	1SNA645027R2400
OBOA2000-24VDC	1SNA645029R0600
OBROA1000-24VDC	1SNA645527R2600
OBROA2000-24VDC	1SNA645529R0000
OBOA1000-115VUC	1SNA645062R0700
OBOA1000-230VUC	1SNA645028R0500

Input voltage	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
5-12 V DC	■	■																												
24 V DC			■	■																										
48-60 V DC					■	■																								
115-230 V DC																														
115 V DC																														
230 V DC																														
24 V AC																														
48-60 V AC																														
115-230 V AC																														
115 V AC																														
230 V AC																														

Output rating	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
100 mA	■	■	■	■	■	■	■	■																						
1 A																														
2 A																														
5 A																														

Output voltage	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
58 V DC	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
230 V AC																														
400 V AC																														

Terminal type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Screw	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Spring		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

Kind of output	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Transistor	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
MOS-FET																														
Triac																														

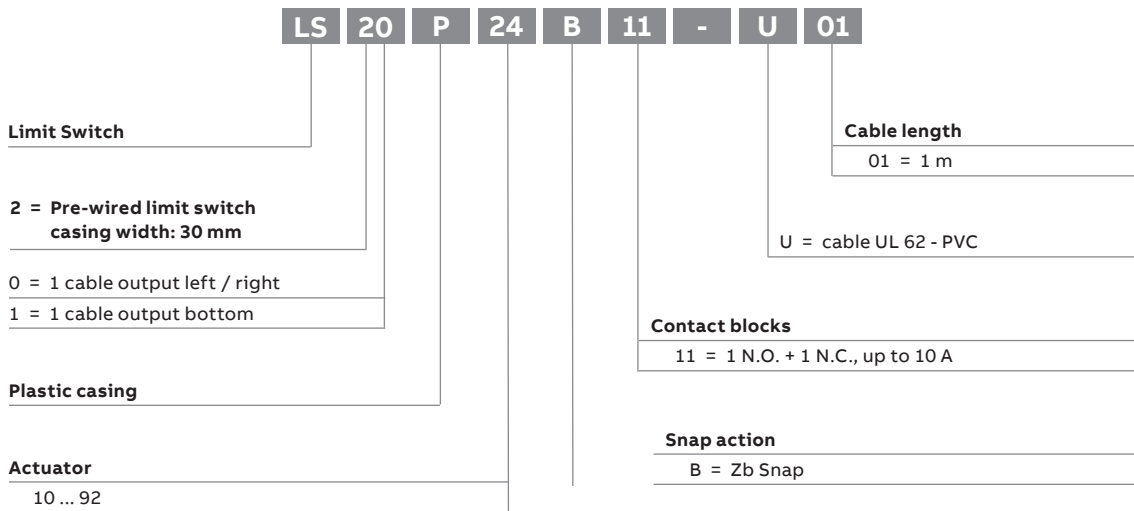
Limit switches

Overview

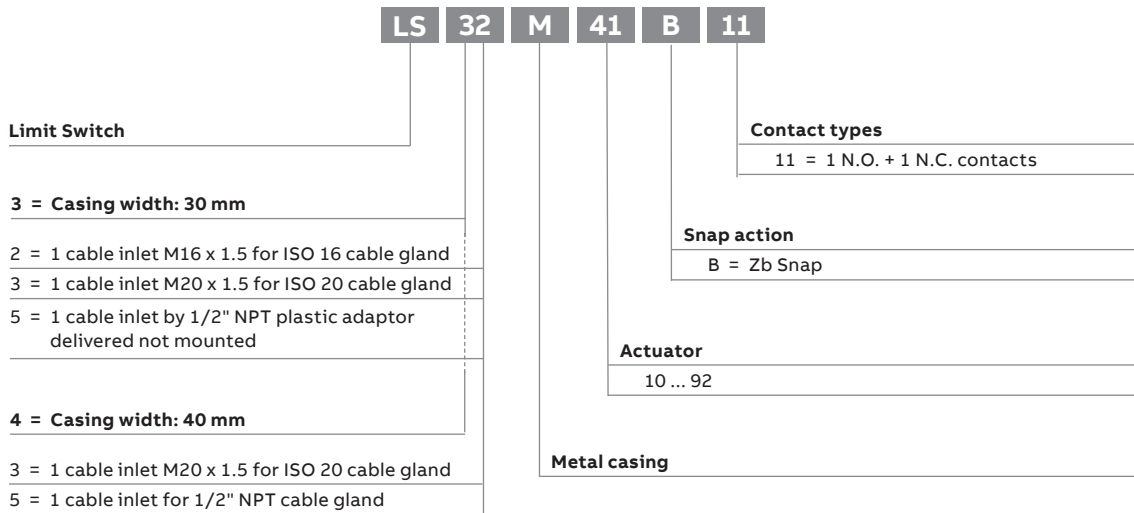
Limit switches are electromechanical devices. The contacts are mechanically linked to an actuator for visible operations. By combining different types of actuators and casings, our limit switches are perfectly suited to a large variety of applications.



Prewired LS2..



Cable inlet LS3.., LS4..



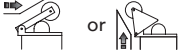
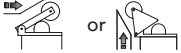



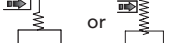
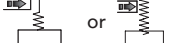


This represents an overview of ABB's limit switches offering. Please reference the **Limit Switches catalog** for the complete portfolio.

Limit switches

Overview

Actuators and movements to be detected

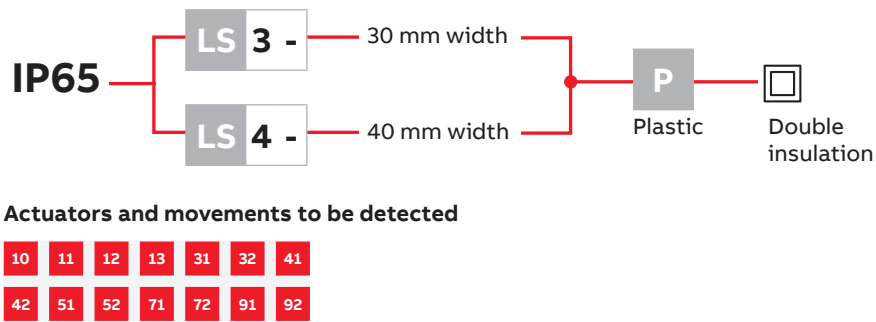
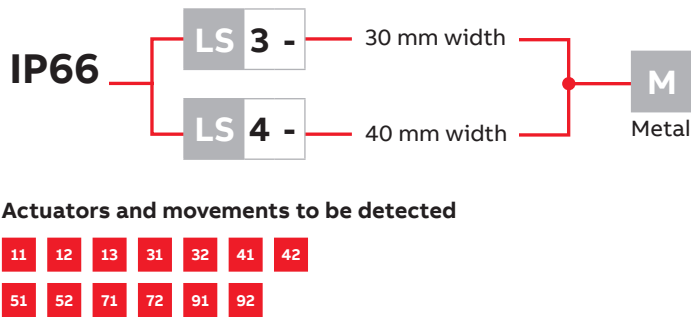
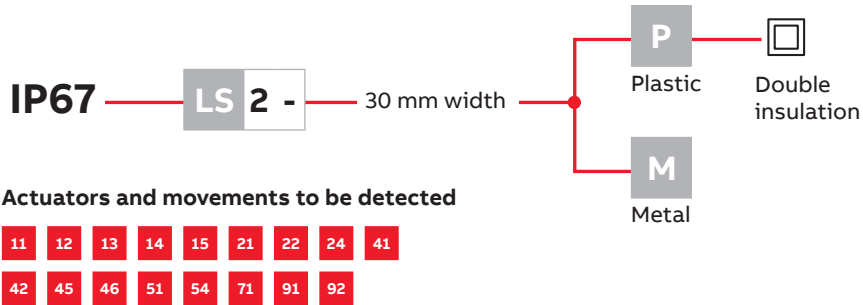
Actuator type	Symbol	Actuator number	Comments*
Plungers		10 11 21	Plastic or metal plunger
Roller plungers		12 13 14 15 22 24	Plastic or metal roller Roller or ball at the tip
Roller levers + plunger	 or 	31 32	For horizontal or vertical movement
Roller levers		41 42 45 46	Plastic, metal or rubber roller Different roller diameters Different lever sizes and shape
Adjustable roller levers		51 52	Plastic, metal or rubber roller Different roller diameters
Rod Levers		71 72	Metal, fiber glass or nylon rod Different rod diameters
Spring rod levers	 or 	91 92	Plain or insulated spring tip

* NOTE: a same number can be a slightly different actuator from one range to the other. For accurate description of the actuator, please refer to the ordering details pages.
Ex: actuator n°13 is a plastic roller plunger for LS20 and LS30 but a metal roller plunger for LS40 ranges.


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Limit switches

Overview



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Double insulation 
 A **Class II** or **double insulated** electrical appliance does not require a safety connection to electrical earth (ground).

The degree of protection required for electrical equipment depends on the environmental characteristics.

Ingress Protection	First digit solids protection	Second digit liquids protection
IP	6 Dust Tight	5 Low pressure water jet
		6 Powerful water jets
		7 Temporary immersion (up to 1 m)

Limit switches

Stocked switches



Limit switches

Casing width	Electrical connection	Casing material	Actuator type	Contact type	Contact block	Ordering code
20mm	Pre-wired	Metal	45mm rubber roller lever	Snap action	1 NC+1NO	LS20M42B11-U02
30mm	1/2" NPT	Plastic	n/a	Slow action	1 NC+1NO	LS35P80D11-S
30mm	1/2" NPT	Plastic	Adj 3mm SS rod lever	Snap action	1 NC+1NO	LS35P71B11
30mm	1/2" NPT	Plastic	18mm plastic roller lever	Snap action	1 NC+1NO	LS35P41B11
30mm	1/2" NPT	Plastic	18mm plastic roller lever	Snap action	2 NC	LS35P41B02-R
30mm	1/2" NPT	Metal	Adj 18mm plastic roller lever	Snap action	1 NC+1NO	LS35M51B11
30mm	1/2" NPT	Plastic	Adj 18mm plastic roller lever	Snap action	1 NC+1NO	LS35P51B11
30mm	1/2" NPT	Plastic	Adj 18mm plastic roller lever	Snap action	2 NC	LS35P51B02
30mm	Pre-wired	Metal	Plain steel plunger	Snap action	1 NC+1NO	LS20M11B11-U03
30mm	1/2" NPT	Plastic	Plain steel plunger	Snap action	1 NC+1NO	LS35P11B11
30mm	1/2" NPT	Plastic	Plastic roller plunger	Snap action	1 NC+1NO	LS35P13B11
30mm	1/2" NPT	Plastic	Plastic roller, steel plunger	Snap action	1 NC+1NO	LS35P31B11
30mm	1/2" NPT	Plastic	Plastic roller, steel plunger	Slow action	1 NC+1NO	LS35P32D11-R
30mm	1/2" NPT	Plastic	Spring rod	Snap action	1 NC+1NO	LS35P91B11
30mm	1/2" NPT	Plastic	Straight key	Snap action	1 NC+1NO	LS35P16B11
40mm	1/2" NPT	Metal	w/out head	Snap action	1 NC+1NO	LS45M00B11
40mm	1/2" NPT	Metal	Adj 3mm SS rod lever	Snap action	1 NC+1NO	LS45M71B11
40mm	1/2" NPT	Plastic	Adj 3mm SS rod lever	Snap action	2 NC+1NO	LS45P71B11
40mm	1/2" NPT	Metal	Adj 18mm plastic roller lever	Snap action	1 NC+1NO	LS45M51B11
40mm	1/2" NPT	Plastic	Adj 18mm plastic roller lever	Snap action	1 NC+1NO	LS45P51B11
40mm	1/2" NPT	Metal	18mm plastic roller lever	Snap action	1 NC+1NO	LS45M41B11
40mm	1/2" NPT	Metal	Adj 22mm SS ball-bearing roller	Snap action	1 NC+1NO	LS45M53B11
40mm	1/2" NPT	Metal	Adj 45mm rubber roller lever	Snap action	1 NC+1NO	LS45M54B11
40mm	1/2" NPT	Metal	Adj 52mm rubber roller lever	Snap action	1 NC+1NO	LS45M52B11
40mm	1/2" NPT	Metal	Plastic roller plunger	Snap action	1 NC+1NO	LS45M13B11
40mm	1/2" NPT	Metal	Spring rod	Snap action	1 NC+1NO	LS45M91B11
40mm	1/2" NPT	Metal	SS lateral plunger	Snap action	1 NC+1NO	LS45M21B11
60mm	1/2" NPT	Metal	Adj 18mm plastic roller lever	Snap action	1 NC+1NO	LS75P41B11
60mm	1/2" NPT	Metal	Pull action w/ring	Snap action	1 NC+1NO	LS75M98B11-A
Yellow free movement IPS footswitch					1 NC+1NO	IPSY1A11

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