



EASY REFERENCE - SAFETY PRODUCTS - USA

ABB Safety Products



ENGINEERED
TO OUTFIT

Important Notice

Important information, the connection diagrams and application examples in this document are only general recommendations from ABB. The conditions of a specific application could make alternative connections more suitable.

With regards to the stated functional safety levels, they can only be guaranteed under the assumption that the installation complies with all other functional safety requirements, such as product selection, product placement, cable installation, environmental effects on the system etc.

ABB does not accept any responsibility for any errors or lack of information in this document. It is the responsibility of the machine builder to make sure the correct functional safety levels are achieved.

Click here for the latest release of the
[“Easy Reference”](#)

ABB Jokab Safety

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Easy Reference overview

How to use the Easy Reference

Easy and Convenient



Link to
Adobe Reader

Easy
Reference

Using the Easy Reference

- The Easy Reference is meant to be an easy-to-use presentation of ABB Safety products to take with you and use when discussing machine safety applications.
- Go to the link below to access the latest version of the Easy Reference.
- Save the Easy Reference to your device.
- Designed to fit on the screen of your phone, tablet, or computer. Not available in print form.
- Interactive links to web site information, such as manuals, videos, brochures, and data sheets.
- Easily open links and email them.
- Can be used for presentations, design discussions, reference, and training.
- Trouble activating the links? Try downloading Adobe Reader at <http://get.adobe.com/reader/>

Introduction

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INTRODUCTION

Introduction

Why ABB Jokab Safety?



First Safety Relay



Timer Reset and First Light Beam

- ✓ **History in safety** - Been in safety since 1988. 1000s upon 1000s of safety system out in field.
- ✓ **Comprehensive offering** – got a great mix of products to cover these simpler solutions, different technologies, many different way to create a solution for the same thing.
- ✓ **Scalable solutions** – technology of traditional single/dual channel, OSSD, DYNlink, safety relays, safety PLC etc.... Range of basic to more advanced products.
- ✓ **Full Solutions** – Allows our customers and sales to offer not only machine safety but breakers, power supplies, ERC etc.... Customers don't have to piece solutions together from different suppliers.
- ✓ **Global Availability** – Global certifications as well as a global presence.

Introduction

Machine Safety - Why, How and Where

Why do we need Machine Safety?

- Protects **workers** from injury
- Protects the **company** from potential lawsuits
- Correctly installed can even increase **productivity**

How does Machine Safety accomplish the why?

- Using certified products (self certified and 3rd party certified)
- Use approved design methods to comply with safety standards (many examples in product manuals)

Where is machine safety used?

- General Machinery, Robot Cells, Powered Conveyors, Packaging Machines, Presses

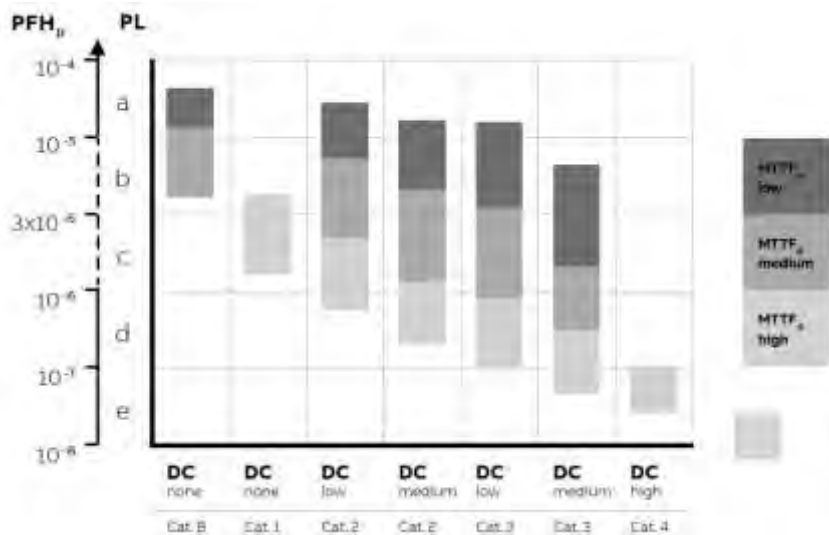


Introduction

What standard do I use ISO 13849 or EN60621?

PL (PERFORMANCE LEVEL) - IS A TECHNOLOGY-NEUTRAL CONCEPT THAT CAN BE USED FOR ELECTRICAL, MECHANICAL, PNEUMATIC AND HYDRAULIC SAFETY SOLUTIONS.

SIL (SAFETY INTEGRITY LEVEL) - CAN, HOWEVER, ONLY BE USED FOR ELECTRICAL, ELECTRONIC OR PROGRAMMABLE SAFETY SOLUTIONS.



Safety Integrity Level, SIL	Probability of dangerous Failure per Hour (PFH _d)
3	≥10 ⁻⁶ to <10 ⁻⁷
2	≥10 ⁻⁷ to <10 ⁻⁸
1	≥10 ⁻⁸ to <10 ⁻⁹

There is a method in IEC/EN 62061 for assigning the Safety Integrity Level.

Severity (Se)	Class (Cl)				
	3-4	5-7	8-10	11-13	14-15
4	SIL2	SIL2	SIL2	SIL3	SIL3
3		(OM)	SIL1	SIL2	SIL3
2			(OM)	SIL1	SIL2
1				(OM)	SIL1

Cl=Fr+Pr+Av
OM=Other Measures

02

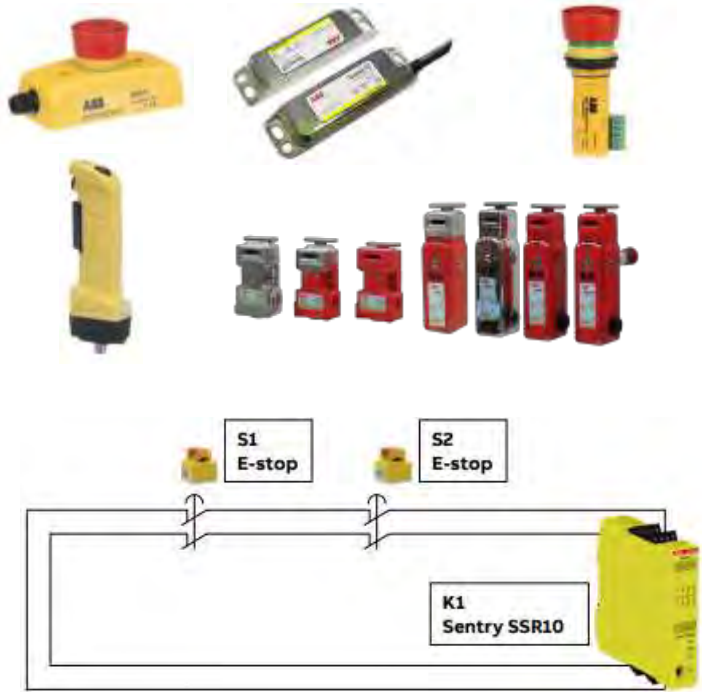
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TECHNOLOGY

Machine Safety Training

Machine Safety – Technology Available

Single/Dual Channel



OSSD(Output signal switching device)

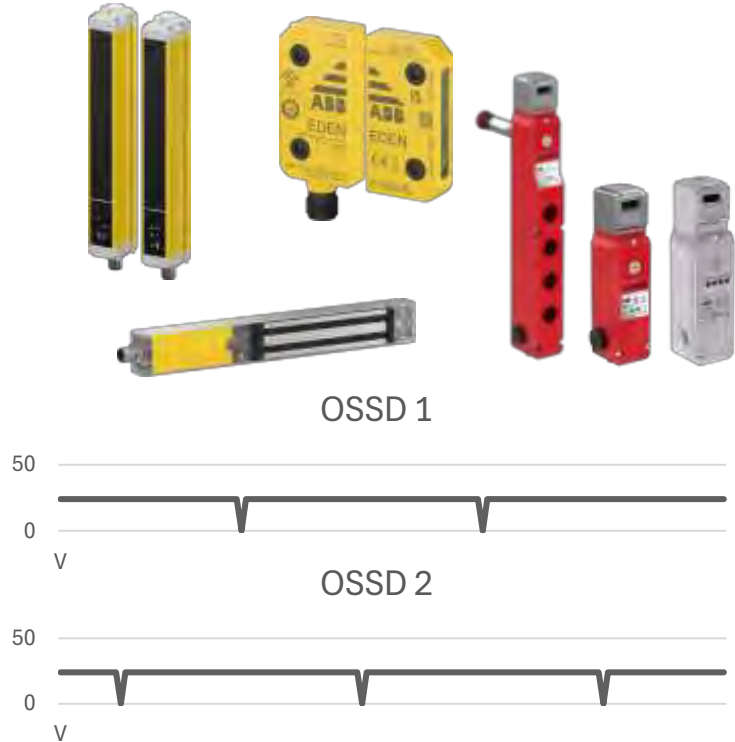
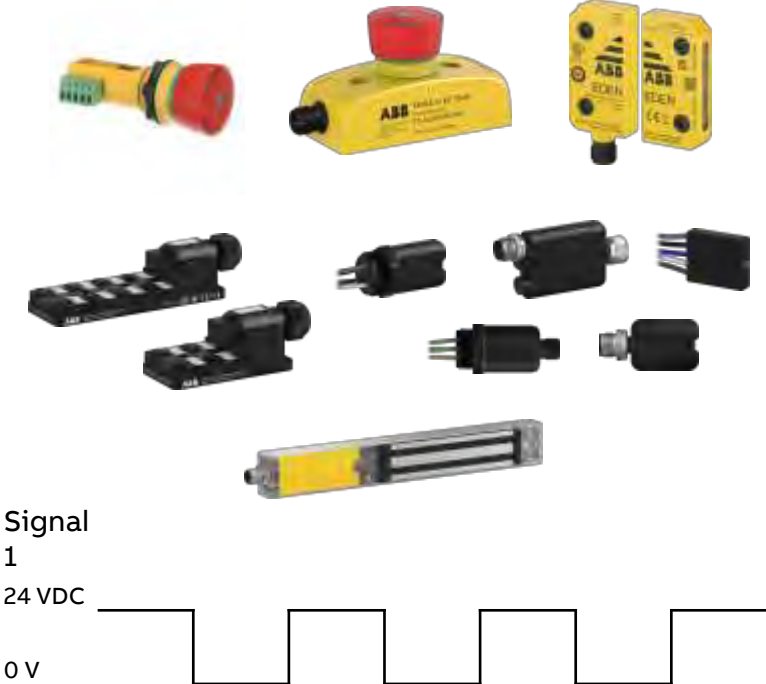


ABB DYNlink



Machine Safety Training

OSSD and Dynamic Link products vs Dual Contacts in a PLe (category 4) circuit with 1 stop condition and 3 doors to monitor.

Dual Contacts Solution



OSSD Solution



Dynamic Link Solution

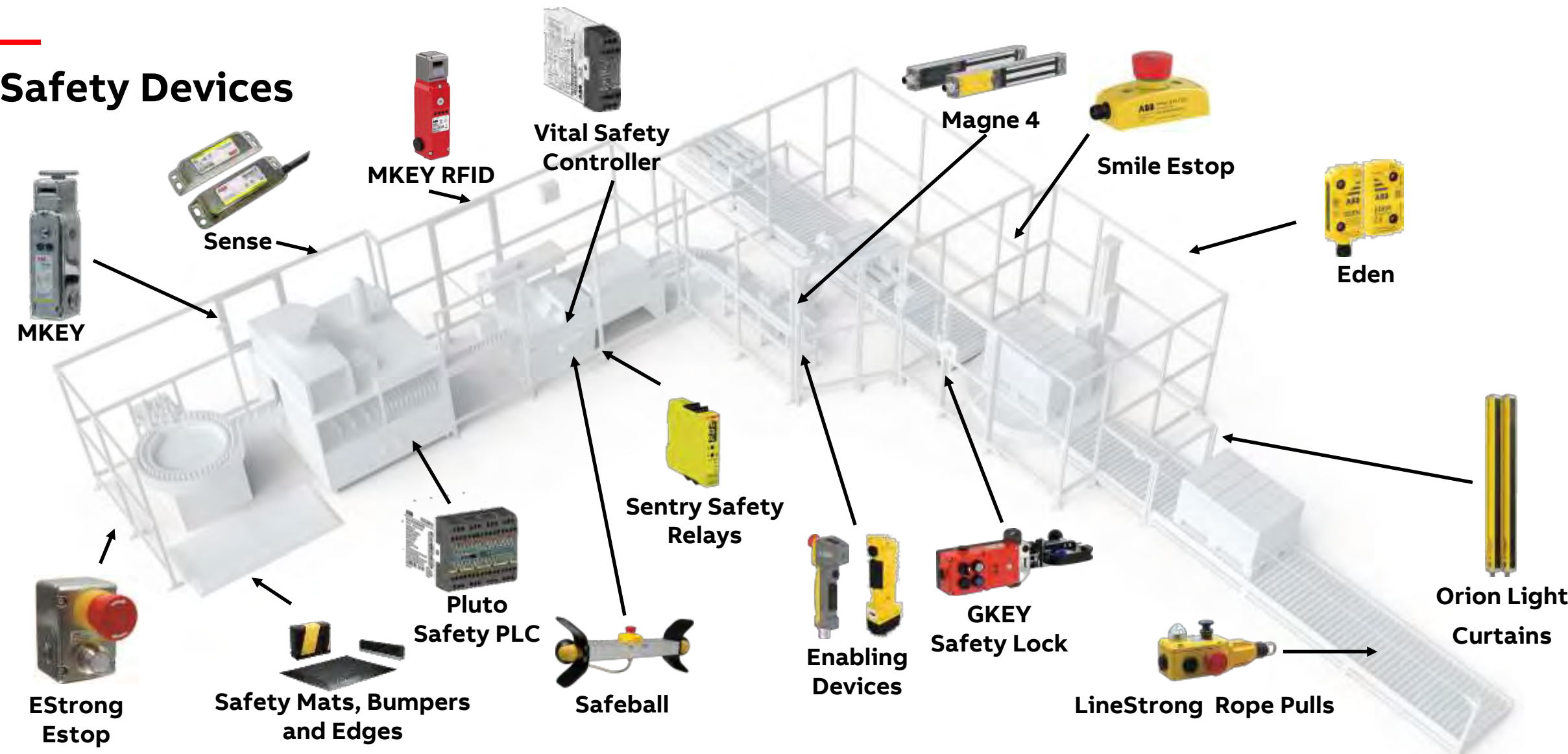


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PRODUCT

Safety Devices

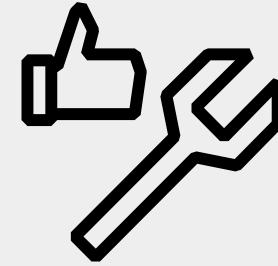


Easily find product information by clicking on product image above.

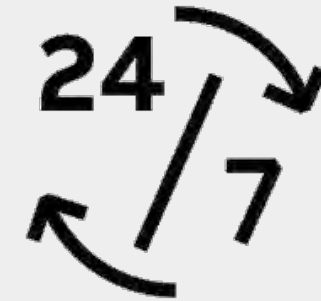
Eden

Non-contact RF Safety Sensor

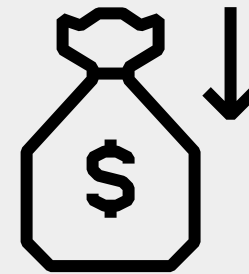
Flexible RFID sensor with highest safety level



Easy to Install



Continuous Operation



Affordable Range

Eden

Non-contact RF Safety Sensor

Flexible RFID sensor with highest safety level



Application

- Interlocking (Monitors) moveable guards (ex. Doors and Hatches).
- Safe Position Monitoring.

Key Benefits and Features

- The Suitable in harsh environments (IP67/69K and -40 to +70 °C).
- “C” versions with coated electronics for rapid temperatures changes(thermal shock), up to 95% humidity.
- Intuitive LED Diagnostics built in and information outputs.
- Large sensing distance reduces misalignment issues (15mm +/- 2mm).
- 360-degree sensing for a variety of mounting possibilities.
- Simplify installation with M12 connectors.
- PLe/Cat 4/SIL3 (highest level of safety) even with several devices in series.
- Reduced wiring by almost half with DynLink signal, OSSD versions available.
- No mechanical wear.
- 2 types of Evas are available depending on the application. Eva General Code all have the same code inside of them. The Eva Unique Code has 1 of 10,000 codes inside of it.

Eden

Flexible RFID sensor with highest safety level

Eden (C) OSSD and DYN



Eden OSSD and DYN Info

Information signals for individual status.
Eden OSSD Info can be connected to a safety relay or safety PLC.
Eden DYN Info can be connected to a Vital controller or Pluto Safety PLC.



Eden OSSD and DYN Reset

Local reset via the appropriated Smile Reset button connected to it.
Eden OSSD Reset can be connected to a safety relay or safety PLC.
Eden DYN Reset can be connected to a Vital controller or Pluto Safety PLC.



Eden DYN Status

Individual status for up to 120 devices (30 per statusbus input, 4 per Pluto).
Eden DYN Status can be connected to a Pluto Safety PLC only.



Eden C OSSD and DYN Info

Information signals for individual status. C version for increased resistance in demanding environments.
Eden OSSD Info can be connected to a safety relay or safety PLC.
Eden DYN Info can be connected to a Vital controller or Pluto Safety PLC.

Eden

Flexible RFID sensor with highest safety level

Eden (C) OSSD

NOTES

See cable section at end of Easy Reference Guide for [5 and 8 Pin Cables](#).



Type	Voltage	M12 Connection	For Single application	For series applications	Local Reset (with Smile Reset)	Actuator	Coated Electronics	Accessory	Ordering Code
Adam OSSD Info	24VDC	5 pin	•						2TLA020051R5400
Adam OSSD Info	24VDC	8 pin	•	•					2TLA020051R5700
Adam OSSD Reset	24VDC	8 pin	•	•	•				2TLA020051R5900
Adam C OSSD Info	24VDC	5 pin	•				•		2TLA020051R5401
Adam C OSSD Info	24VDC	8 pin	•	•			•		2TLA020051R5701
Eva General Code			•	•		•			2TLA020046R0800
Eva Unique Code			•	•		•			2TLA020046R0900
Eva C General Code			•	•		•	•		2TLA020046R0801
Eva C Unique Code			•	•		•	•		2TLA020046R0901
M12-3H Y Splitter	24VDC	5/8 pin		•				•	2TLA020055R0800
JSOP-1	24VDC	5 pin						•	2TLA020053R7000

Eden

Flexible RFID sensor with highest safety level

Eden (C) DYN

NOTES

See cable section at end of Easy Reference Guide for [5 Pin Cables](#).



Type	Voltage	M12 Connection	For Single application	For series applications	Local Reset (with Smile Reset)	Actuator	Accessory	Coated Electronics	Pluto Only	Ordering Code
Adam DYN Info	24VDC	5 pin	•	•						2TLA020051R5100
Adam C DYN Info	24VDC	5pin	•	•				•		2TLA020051R5101
Adam DYN Status	24 VDC	5 pin	•	•					•	2TLA020051R5200
Adam DYN Reset	24VDC	5 pin	•	•	•					2TLA020051R5300
Eva General Code			•	•		•				2TLA020046R0800
Eva Unique Code			•	•		•				2TLA020046R0900
Eva C General Code			•	•		•		•		2TLA020046R0801
Eva C Unique Code			•	•		•		•		2TLA020046R0901
M12-3A Y Splitter	24VDC	5 pin		•			•			2TLA020055R0000
M12-3B Y Splitter	24VDC	5 pin					•			2TLA020055R0100
M12-3S Y Splitter	24VDC	5 pin					•		•	2TLA020055R0600
Vital 1 Controller	24VDC		•	•						2TLA020052R1000

Eden

Flexible RFID sensor with highest safety level

Associated Devices

Associated Logic Devices

Single Stop Condition

Eden (C) OSSD – [Sentry Safety Relays](#)

Eden (C) DYN – [Vital 1](#)

Multiple Stop Conditions or Advanced Logic

Eden (C) OSSD and DYN – [Pluto](#)

Accessories

Eden (C) OSSD and DYN - [5 and 8 Pin Cables](#)

Eden (C) OSSD – [OCB](#)

Eden (C) DYN – [Tina 4A/8A](#)

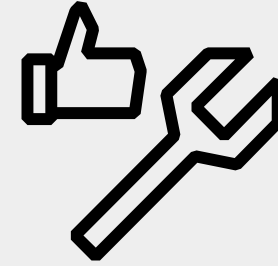
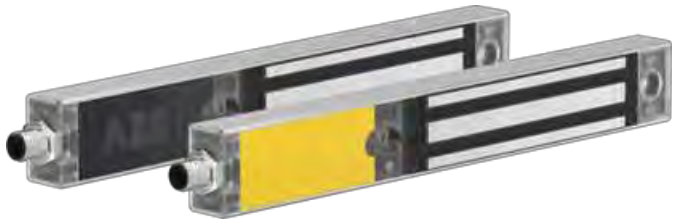
Resource Links

	Website	Flyer	Manual	Configurator
Eden DYN	Website	Flyer	Manual	Configurator
Eden OSSD	Website	Flyer	Manual	Configurator
Misc Resources	Old to new Eden conversion	Food and Bev Zone		

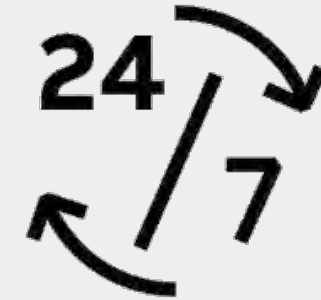
Magne

Process Lock

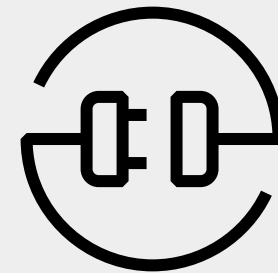
Robust Magnetic Process Lock with RFID



Easy to Install



Continuous Operation

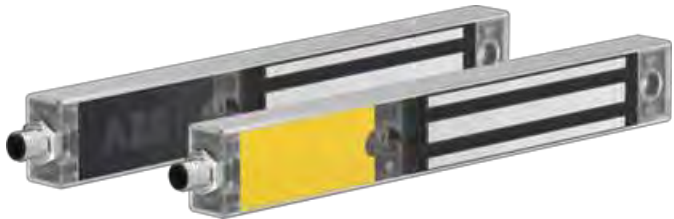


Optimum Interface

Magne

Process Lock

Robust Magnetic Process Lock with RFID



Application

- Interlocking (Monitors) moveable guards (ex. Doors and Hatches).
- Power to lock prevents disturbances of the production process.

Key Benefits and Features

- Integrated interlocking reduces cabling.
- M12 connectors for quick and correct connection.
- Electromagnets offer larger mounting tolerances than mechanical locks.
- Anchor plate with only one mounting hole for even more flexibility.
- Well visible LED diagnostics reduce downtime when troubleshooting.
- Strong holding force, up to 1500 N.
- Simple troubleshooting with optional signals for status information.
- Sealed aluminum housing, IP67.
- Robust design without mechanical moving parts, i.e., fewer parts subject to wear.
- PLe/Cat 4/SIL3 (highest level of safety) even with several devices in series.
- 2 types of Evas are available depending on the application. Eva General Code all have the same code inside of them. The Eva Unique Code has 1 of 10,000 codes inside of it.



Magne

Robust Magnetic Process Lock with RFID

Magne OSSD and DYN



Magne OSSD Info

Information lines out of device for status. LED indication for locked and safety status.
Magne OSSD Info can be connected to a safety relay or safety PLC.



Magne DYN Info

Information lines out of device for status. LED indication for locked and safety status.
Magne DYN Info can be connected to a Vital controller or Pluto safety PLC.



Magne 3X Non-Safe Lock

Information line out for locked status.
Magne 3X has no built in Eden for safety.

Magne

Robust Magnetic Process Lock with RFID

Magne

NOTES

See cable section at end of Easy Reference Guide for [5 and 8 Pin Cables](#).

Anchor plate and Eva must be ordered separately.

3X version is a non safe version.



Magne, Eva and JSM D23 installed on a sliding door.

Type	Voltage	M12 Connection	For Single application	For series applications	Actuator Accessory	Ordering Code
Magne 3X	24 VDC	5 pin	●	●		2TLA042022R2700
Magne 4 OSSD Info	24 VDC	8 pin	●	●		2TLA042022R4600
Magne 4X DYN Info	24VDC	5 pin	●	●		2TLA042022R3000
Magne 4 DYN Info	24VDC	8 pin	●	●		2TLA042022R3400
Magne 4 DYN Info 2	24 VDC	8 pin	●	●		2TLA042022R3410
Eva General Code			●	●	●	2TLA020046R0800
Eva Unique Code			●	●	●	2TLA020046R0900
JSMD21C for 32D and 32E anchor plate					●	2TLA042023R0510
JSMD24					●	2TLA042023R0300
JSMD27					●	2TLA042023R1000
JSMD23 for sliding door					●	2TLA042023R0200
Anchor 32D					●	2TLA042023R0410
Anchor 32E with permanent magnet					●	2TLA042023R0420



Magne

Robust Magnetic Process Lock with RFID

Associated Devices

Associated Logic Devices

Single Stop Condition

Magne OSSD – [Sentry Safety Relays](#)

Magne DYN – [Vital 1](#)

Multiple Stop Conditions or Advanced Logic

Magne OSSD and DYN - [Pluto](#)

Accessories

Magne OSSD and DYN - [5 and 8 Pin Cables](#)

Magne OSSD – [OCB](#)

Magne DYN – [Tina 4A/8A](#)

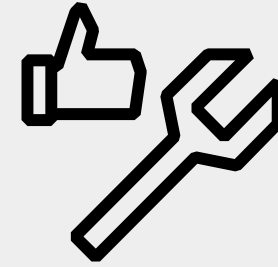
Resource Links

	Website	Flyer	Manual	Configurator
Magne DYN	Website	Flyer	Manual	Configurator
Magne OSSD	Website	Flyer	Manual	Configurator
Misc Resources	Old to new conversion			

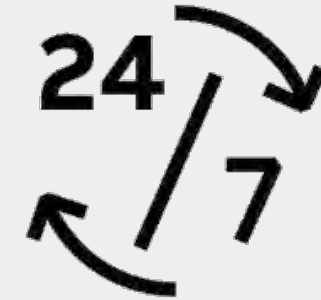
Orion

Light Curtains and Grids

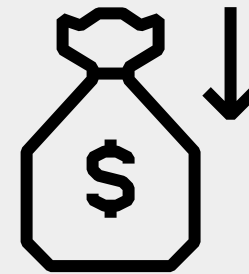
Reduce complexity, cost and downtime



Easy to Install



Continuous Operation



Cost Effective Solution

Orion

Light Curtains and Grids

Reduce complexity, cost and downtime



Application

- Monitor opening on machinery (rather than doors) where there is frequent interaction.
- Orion 1B/E When hazard is close to the opening where the light curtain is located.
- Orion 2B/E,3 For perimeter guarding of machines (hazard farther away).

Key Benefits and Features

- Easy connection with M12 connectors.
- Alignment help and a wide angle within the limits of a Type 4 device facilitate alignment. Rotation brackets also simplify alignment.
- Muting and blanking(Orion 1 Only) for extended models. 1 button teach for blanking.
- Visible alignment level on display, the alignment can be improved before the occurrence of an unwanted stop.
- Extensive error indication reduces troubleshooting time.
- Protective tubes and lens shields protect the devices in harsh environments.
- Orion Base units are cost effective safety light curtains with automatic/manual reset functions and external device monitoring (EDM) built in.
- Local reset can be connected directly to the light curtain.

Orion

Reduce complexity, cost and downtime

Orion Light Curtains



Orion 1 Base

Basic light curtain available in 14mm and 30mm resolution. Built in external device monitoring (EDM) and auto/manual reset. 6m range (14mm models) and 19m range (30mm models).

Orion Base can be connected to a Safety Relay, Safety Contactors, Force Guided Relays or Safety PLC.



Orion 1 Extended

Advanced light curtain available in 14mm and 30mm resolution. Built in external device monitoring (EDM), auto/manual reset, muting, blanking and cascading. 7m range (14mm models) and 20m range (30mm models).

Orion Extended can be connected to a Safety Relay, Safety Contactors, Force Guided Relays or Safety PLC.



Orion 2 Base

Basic light curtain for perimeter application available in 2, 3 and 4 beams. Built in external device monitoring (EDM) and auto/manual reset. 50m operating distance.

Orion Base can be connected to a Safety Relay, Safety Contactors, Force Guided Relays or Safety PLC.



Orion 2 Extended

Extended light curtain for perimeter applications available in 2, 3 and 4 beams. Built in external device monitoring (EDM), auto/manual reset as well as muting. 50m operating distance.

Orion Extended can be connected to a Safety Relay, Safety Contactors, Force Guided Relays or Safety PLC.

Orion

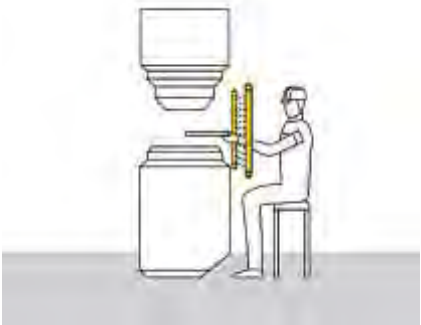
Reduce complexity, cost and downtime

Orion 1 Base

NOTES

See cable section at end of Easy Reference Guide for [5 and 8 Pin Cables](#) (5 pin transmitter and 8 pin receiver).

Standard “L” brackets come with base models.



Type	Voltage	Protective Height (mm/ Inch)	Safety Outputs	EDM	Auto/Manual Reset	Ordering Code (14mm)	Ordering Code (30mm)
Orion1-4-X-015-B	24VDC	150/5.9	2 OSSD	●	●	2TLA022300R0000	2TLA022302R0000
Orion1-4-X-030-B	24VDC	300/11.8	2 OSSD	●	●	2TLA022300R0100	2TLA022302R0100
Orion1-4-X-045-B	24VDC	450/17.7	2 OSSD	●	●	2TLA022300R0200	2TLA022302R0200
Orion1-4-X-060-B	24VDC	600/23.6	2 OSSD	●	●	2TLA022300R0300	2TLA022302R0300
Orion1-4-X-075-B	24VDC	750/29.5	2 OSSD	●	●	2TLA022300R0400	2TLA022302R0400
Orion1-4-X-090-B	24VDC	900/35.4	2 OSSD	●	●	2TLA022300R0500	2TLA022302R0500
Orion1-4-X-105-B	24VDC	1050/41.3	2 OSSD	●	●	2TLA022300R0600	2TLA022302R0600
Orion1-4-X-120-B	24VDC	1200/47.2	2 OSSD	●	●	2TLA022300R0700	2TLA022302R0700
Orion1-4-X-135-B	24VDC	1350/53.1	2 OSSD	●	●	2TLA022300R0800	2TLA022302R0800
Orion1-4-X-150-B	24VDC	1500/59.0	2 OSSD	●	●	2TLA022300R0900	2TLA022302R0900
Orion1-4-X-165-B	24VDC	1650/64.9	2 OSSD	●	●	2TLA022300R1000	2TLA022302R1000
Orion1-4-X-180-B	24VDC	1800/70.9	2 OSSD	●	●	2TLA022300R1100	2TLA022302R1100

Orion

Reduce complexity, cost and downtime

Orion 1 Extended

NOTES

See cable section at end of Easy Reference Guide for [5 and 12 Pin Cables](#) (5 pin transmitter and 12 pin receiver).

Standard “L” brackets come with extended models.

For muting applications, we recommend using an Orion Base with a S20 Pluto to control the muting function. In blanking situations use the M12-C02PT6RB.



Type	Voltage	Protective Height (mm/ Inch)	Safety Outputs	EDM	Auto/ Manual Reset	Blanking	Muting	Cascading	Ordering Code (14mm)	Ordering Code (30mm)
Orion1-4-X-030-E	24VDC	300/11.8	2 OSSD	●	●	●	●	●	2TLA022301R0100	2TLA022303R0100
Orion1-4-X-045-E	24VDC	450/17.7	2 OSSD	●	●	●	●	●	2TLA022301R0200	2TLA022303R0200
Orion1-4-X-060-E	24VDC	600/23.6	2 OSSD	●	●	●	●	●	2TLA022301R0300	2TLA022303R0300
Orion1-4-X-075-E	24VDC	750/29.5	2 OSSD	●	●	●	●	●	2TLA022301R0400	2TLA022303R0400
Orion1-4-X-090-E	24VDC	900/35.4	2 OSSD	●	●	●	●	●	2TLA022301R0500	2TLA022303R0500
Orion1-4-X-105-E	24VDC	1050/41.3	2 OSSD	●	●	●	●	●	2TLA022301R0600	2TLA022303R0600
Orion1-4-X-120-E	24VDC	1200/47.2	2 OSSD	●	●	●	●	●	2TLA022301R0700	2TLA022303R0700
Orion1-4-X-135-E	24VDC	1350/53.1	2 OSSD	●	●	●	●	●	2TLA022301R0800	2TLA022303R0800
Orion1-4-X-150-E	24VDC	1500/59.0	2 OSSD	●	●	●	●	●	2TLA022301R0900	2TLA022303R0900
Orion1-4-X-165-E	24VDC	1650/64.9	2 OSSD	●	●	●	●	●	2TLA022301R1000	2TLA022303R1000
Orion1-4-X-180-E	24VDC	1800/70.9	2 OSSD	●	●	●	●	●	2TLA022301R1100	2TLA022303R1100

Orion

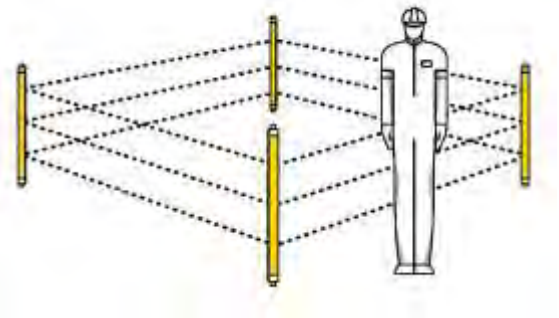
Reduce complexity, cost and downtime

Orion 2 Base

NOTES

See cable section at end of Easy Reference Guide for [5 and 8 Pin Cables](#) (5 pin transmitter and 8 pin receiver).

Standard “L” brackets come with base models.



Type	Voltage	Protective Height (number of beams)	Safety Outputs	EDM	Auto/Manual Reset	Ordering Code
Orion2-4-K2-050-B	24VDC	500mm (2 Beams)	2 OSSD	●	●	2TLA022304R0000
Orion2-4-K3-080-B	24VDC	800mm (3 Beams)	2 OSSD	●	●	2TLA022304R0100
Orion2-4-K4-090-B	24VDC	900mm (4 Beams)	2 OSSD	●	●	2TLA022304R0200
Orion2-4-K4-120-B	24VDC	1200mm (4 Beams)	2 OSSD	●	●	2TLA022304R0300

Orion

Reduce complexity, cost and downtime

Orion 2 Extended

NOTES

See cable section at end of Easy Reference Guide for [5 and 8 Pin Cables](#) (5 pin transmitter and 8 pin receiver).

Standard “L” brackets come with extended models.

For muting applications, we recommend using an Orion Base with a S20 Pluto to control the muting function. In blanking situations use the M12-C02PT6RB.



Type	Voltage	Protective Height (number of beams)	Safety Outputs	EDM	Auto/Manual Reset	Ordering Code
Orion2-4-K2-050-E	24VDC	500mm (2 Beams)	2 OSSD	●	●	2TLA022305R0000
Orion2-4-K3-080-E	24VDC	800mm (3 Beams)	2 OSSD	●	●	2TLA022305R0100
Orion2-4-K4-090-E	24VDC	900mm (4 Beams)	2 OSSD	●	●	2TLA022305R0200
Orion2-4-K4-120-E	24VDC	1200mm (4 Beams)	2 OSSD	●	●	2TLA022305R0300

Orion

Reduce complexity, cost and downtime

Orion Accessories

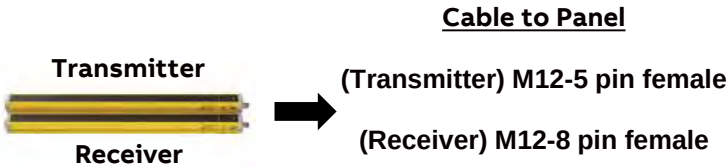


Type	For base model	For extended model	Cable	Bracket	Connection to base transmitter	Connection to base receiver	Connection to extended transmitter	Connection to extended receiver	Ordering Code
M12-C02PT2T	•	•					•		2TLA022315R0100
M12-C02PT6RB	•	•						•	2TLA022315R0200
M12-C02PT62RM	•	•						•	2TLA022315R0300
PT-C1PT	•	•					•	•	2TLA022315R1000
PT-C05PT	•	•					•	•	2TLA022315R1100
PT-C005PT	•	•					•	•	2TLA022315R1200
M12-CT01BA	•	•				•			2TLA022315R3000
JSM-ORION03	•			•					2TLA022310R0100
Mirrors 14/30	•	•							See brochure
Stands	•	•							See brochure
M12-5 Female Cable	•	•	•		•		•		See Cable Section
M12-8 Female Cable	•		•			•			See Cable Section
M12-12 Female Cable		•	•					•	See Cable Section

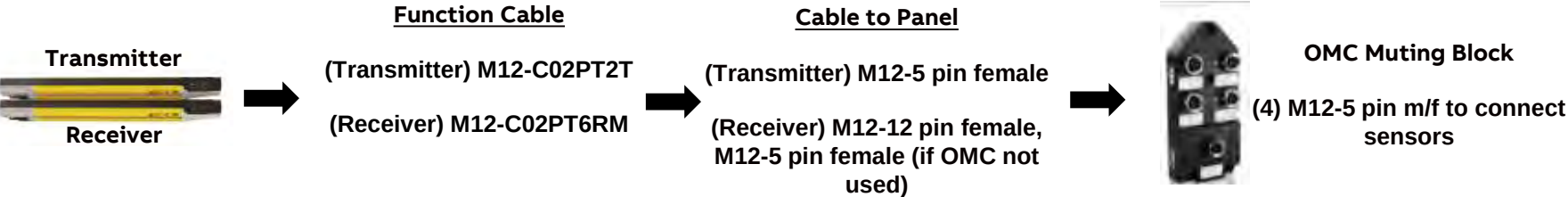
Orion

Reduce complexity, cost and downtime

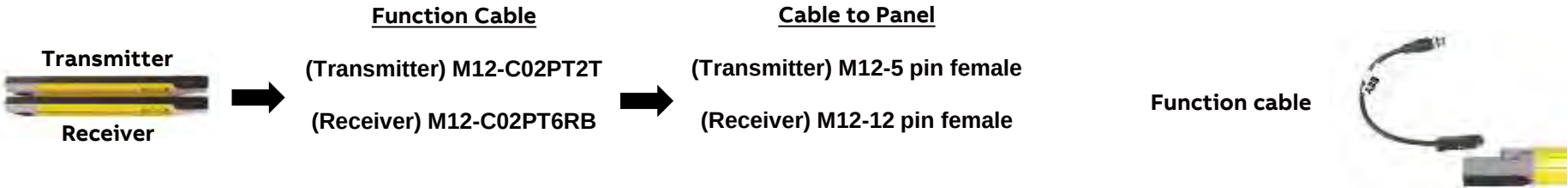
Orion 1 and 2 Base



Orion 1 Extended Muting



Orion 1 Extended Blanking



Orion

Reduce complexity, cost and downtime

Associated Devices

Associated Logic Devices

Single Stop Condition

[Sentry Safety Relays](#)

[Vital 1](#) + [Tina 10](#)

Multiple Stop Conditions or Advanced Logic

[Pluto](#)

Accessories

[5, 8 and 12 Pin Cables](#)

[Orion Accessories](#)

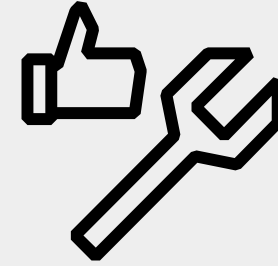
Resource Links

	Website	Flyer	Manual
Orion 1 Base	Website	Flyer	Manual
Orion 1 Extended	Website	Flyer	Manual
Orion 2 Base	Website	Flyer	Manual
Orion 2 Extended	Website	Flyer	Manual
Misc Resources	Old to new conversion	Connection Examples	

GKEY

Mechanical safety lock

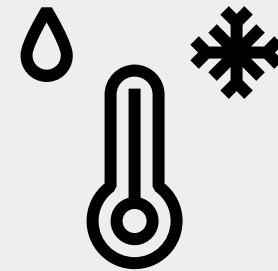
Mechanical safety lock with RFID for demanding environments



Easy to Install



Safety and Protection



Reliable in Extreme Conditions

GKEY

Mechanical safety lock

Mechanical safety lock with RFID for demanding environments



Application

- Interlocking (Monitors) moveable guards (ex. Doors and Hatches).
- Power to unlock model for keeping door locked in machines with long stopping time.

Key Benefits and Features

- Combine locking and control all in a single housing and cable.
- Modular design allows you to order just what you need.
- ABB Compact Series push button can be used.
- M20 conduit entry.
- Escape release button and manual unlocking included.
- Safe locking and interlocking function reaching PLe/SIL3.
- Can be padlocked to prevent closing the lock while performing work in the hazard area.
- Power to unlock keeps doors locked even as a result of e.g. power loss which makes GKEY a safety lock.
- Hold guards closed with up to 3000N (674lbf) of force.
- LED indication as well as built-in RFID actuator for high-level coding of the key.
- Made of die cast aluminum alloy with a robust construction.
- Ideal for use in mechanically demanding environments e.g. Sliding handle GKEY accessory minimizes moving parts.

GKEY

Mechanical safety lock with RFID for demanding environments

GKEY

NOTES

For a complete safety lock, switch and mounting plate (ordered separately). Rear handle, spring catch, pilot devices and blanking plugs are available (ordered separately).



Type	Voltage	Accessory	Illuminated	Minimum quantity when ordered	Ordering Code
GKey4 RU (QTY 1)	24VDC		•		2TLA050304R0002
FHS Mounting Plate (QTY 1)		•			2TLA050310R0032
RHS Rear Handle (QTY 1)		•			2TLA050040R0510
SCS Spring Loaded Catch (QTY 1)		•			2TLA050040R0511
Emergency Stop (QTY 1)	24VDC	•			CE3T-10R-02
2 Position Selector (QTY 10)	24VDC	•			C2SS1-10B-20
Green Push Button (QTY 10)	24VDC	•	•	•	CP1-11G-10
Yellow Push Button (QTY 10)	24VDC	•	•	•	CP1-11Y-10
Blue Push Button (QTY 10)	24VDC	•	•	•	CP1-11L-10
Clear Push Button (QTY 10)	24VDC	•	•	•	CP1-11C-10
Black Push Button (QTY 10)	24VDC	•		•	CP1-10B-10
Blanking Plug (QTY 10)		•		•	MA1-8130
Legend Holder (without insert) (QTY 100)		•		•	KA1-8120
M20 Cable Gland (QTY 1)		•			2TLA050040R0002
Tina 2B (QTY 1)	24VDC	•	•		2TLA020054R1100



GKEY

Mechanical safety lock with RFID for demanding environments

Associated Devices

Associated Logic Devices

Single Stop Condition

[Sentry Safety Relays](#)

[Vital 1](#) + [Tina 2B](#)

Multiple Stop Conditions or Advanced Logic

[Pluto](#)

Accessories

[Bulk Cables](#)

[GKEY Accessories](#)

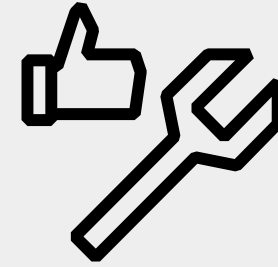
Resource Links

	Website	Flyer	Manual	Configurator
GKEY	Website	Flyer	Manual	Configurator
Misc Resources	Knox to GKEY conversion			

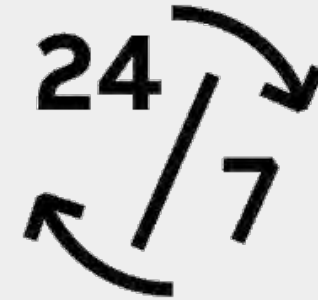
MKEY

Mechanical Key Switch

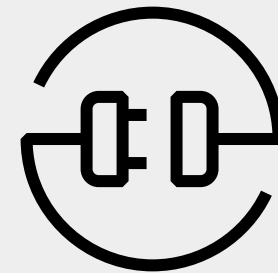
Simple and robust mechanical key switches



Easy to Install



Continuous Operation



Optimum Interface

MKEY

Mechanical Key Switch

Simple and robust mechanical key switches



Application

- Interlocking (Monitors) moveable guards (ex. Doors and Hatches).

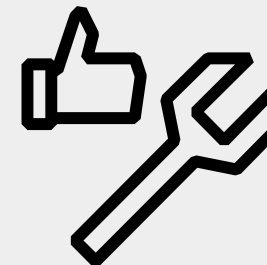
Key Benefits and Features

- Many types of actuators available depending on application.
- Easy mounting with rotating head.
- Cam system in switches all rotate the same direction reducing wear giving long mechanical life and good tolerance to misalignment.
- “Double wide seal gaskets” enables switches to keep its IP rating for the life of the switch.
- IP69K stainless steel models available.
- Available in all industry standard footprints with 1/2NPT conduit entry.
- Can be connected to a safety relay or safety PLC.

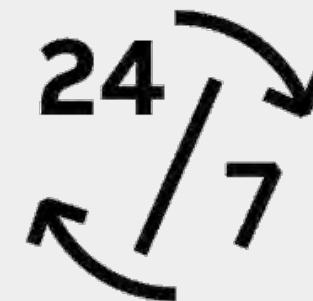
MKEY

Mechanical Key Switch

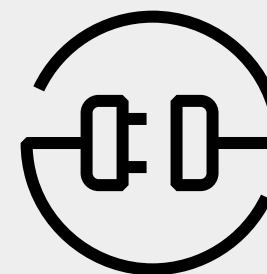
Simple and robust mechanical key switches



Easy to Install



Continuous Operation



Optimum Interface

MKEY

Mechanical Key Switch

Simple and robust mechanical key switches



Application

- Interlocking (Monitors) moveable guards (ex. Doors and Hatches).
- Power to lock models to prevent disturbances of the production process.
- Power to unlock models for keeping door locked in machines with long stopping time.

Key Benefits and Features

- Many types of actuators available depending on application.
- Easy mounting with rotating head.
- Available in Spring-lock and electro-magnetic lock.
- Cam system in switches all rotate the same direction reducing wear giving long mechanical life and good tolerance to misalignment.
- “Double wide seal gaskets” enables switches to keep its IP rating for the life of the switch.
- IP69K stainless steel models available.
- Holding force of up to 2000N.
- Available in industry standard footprints, 1/2NPT conduit entry.
- MKEY can be connected to a safety relay or safety PLC.
- Models that use a power to unlock can be used as a safety lock
- MKEY 8ER comes with an integrated emergency escape button, it is always possible to open the door from inside the dangerous zone.

MKEY

Simple and robust mechanical key switches

MKEY



MKEY 1

Small footprint makes it easy to install in restricted space. Plastic body.

MKEY can be connected to a safety relay or safety PLC.



MKEY 2

Small footprint makes it easy to install in restricted space. Plastic body. Hinged actuator built into switch.

MKEY can be connected to a safety relay or safety PLC.



MKEY 4

Plastic body. Head of switch can either be plastic or stainless steel. Available with 2 options for holding force.

MKEY can be connected to a safety relay or safety PLC.



MKEY 5(Z)

Plastic body or fully stainless steel. Head of switch can either be plastic or stainless steel. Available with 2 options for holding force.

MKEY can be connected to a safety relay or safety PLC.

MKEY

Simple and robust mechanical key switches

MKEY



MKEY 6(Z)

Metal body or fully stainless steel. Head of switch can be stainless steel. Available with 2 options for holding force.

MKEY can be connected to a safety relay or safety PLC.



MKEY 8/8M/8ER/8Z

Solenoid locking gate switch. Metal body or fully stainless steel. Available in power to lock or power to unlock. A rear emergency release version is also available.

MKEY can be connected to a safety relay or safety PLC.



MKEY 9/9M

Solenoid locking gate switch. Plastic body with stainless steel head. Available in power to lock or power to unlock.

MKEY can be connected to a safety relay or safety PLC.

MKEY

Simple and robust mechanical key switches

MKEY Gate Switches

NOTES

- All switches have ½ NPT conduit entry.
- “Z” in the part description indicates it is stainless steel & IP69k.
- + Indicates Holding force of 40N (9lbs).
- Safety switches with standard keys are listed on this page. Other variations are available but may be subject to minimum quantities.



Type	Contacts	With angle key	With standard key	40N Holding Force	Plastic Head	Stainless Steel Head
MKEY 1	2NC + 1NO	•			2TLA050021R1100	N/A
MKEY 2	2NC + 1NO		•		2TLA050020R1000	N/A
MKEY 4	2NC + 1NO		•		2TLA050001R1100	2TLA050001R1110
MKEY 4 +	2NC + 1NO	•	•		2TLA050001R1101	2TLA050001R1111
MKEY 5	2NC + 1NO		•		2TLA050003R1100	2TLA050003R1110
MKEY 5 +	2NC + 1NO		•	•	2TLA050003R1101	2TLA050003R1111
MKEY 5 SS	2NC + 1NO		•		N/A	2TLA050003R1120
MKEY 5 SS +	2NC + 1NO		•	•	N/A	2TLA050003R1121
MKEY 6	2NC + 1NO	•	•		2TLA050005R1130	2TLA050005R1140
MKEY 6 +	2NC + 1NO	•	•	•	2TLA050005R1131	2TLA050005R1141
MKEY 6 SS	2NC + 1NO	•	•		N/A	2TLA050005R1120
MKEY 6 SS +	2NC + 1NO	•	•	•	N/A	2TLA050005R1121

MKEY

Simple and robust mechanical key switches

MKEY Solenoid Locking Switches

NOTES

All switches have ½ NPT conduit entry.

Commonly ordered safety switches with standard keys and 24VDC solenoid are listed on this page.

“Z” in the part description indicates it is stainless steel & IP69k.

Safety switches with standard keys are listed on this page. Other variations are available but may be subject to minimum quantities.



Type	Contacts	Power to Lock	Power to Unlock	Rear Release	Stainless Steel Body	Metal Body	Plastic Body	Standard Head	Stainless Steel Head
MKEY 8	4NC + 2NO	●				●		2TLA050011R1132	N/A
MKEY 8	4NC + 2NO	●				●		N/A	2TLA050011R1142
MKEY 8Z	4NC + 2NO	●		●				N/A	2TLA050011R1122
MKEY 8ER	4NC + 2NO	●	●			●		2TLA050015R1132	N/A
MKEY 8ERZ	4NC + 2NO	●		●				N/A	2TLA050015R1122
MKEY 8M	2NC + 1NO	●	●			●		2TLA050013R1132	N/A
MKEY 8M	2NC + 1NO	●				●		N/A	2TLA050013R1142
MKEY 9	2NC + 2NO		●				●	N/A	2TLA050007R1112
MKEY 9M	2NC + 2NO	●					●	N/A	2TLA050009R1112

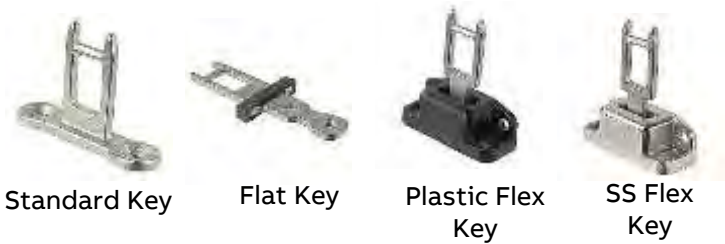
MKEY

Simple and robust mechanical key switches

MKEY Accessories

NOTES

Order specialty key separately.



Type	MKEY 1	MKEY 4	MKEY 5	MKEY 6	MKEY 8	MKEY 9	Accessory	Plastic Head
Std Key for Plastic Head		●	●					2TLA050040R0201
Std Key for SS Heads				●	●	●		2TLA050040R0202
Flat Key		●	●	●	●	●		2TLA050040R0220
Plastic Flex Key		●	●	●	●	●		2TLA050040R0221
Metal Flex Key		●	●	●	●	●		2TLA050040R0203
SS Flex Key		●	●	●	●	●		2TLA050040R0204
Angle Key MKEY 1 Only	●							2TLA050040R0200
Flat Key MKEY 1 Only	●							2TLA050040R0222
Plastic Flex Key MKEY 1 Only	●							2TLA050040R0223
1/2 NPT 316 SS Cable Gland							●	2TLA050040R0001
MKEY 8Z Manual Release Key							●	2TLA050040R0400

MKEY

Simple and robust mechanical key switches

Associated Devices

Associated Logic Devices

Single Stop Condition

[Sentry Safety Relays](#)

Multiple Stop Conditions or Advanced Logic

[Pluto](#)

Accessories

[Bulk Cables](#)

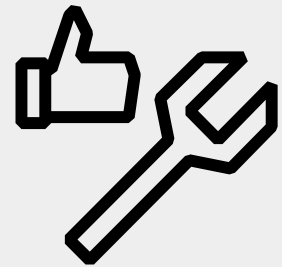
[MKEY Accessories](#)

Resource Links

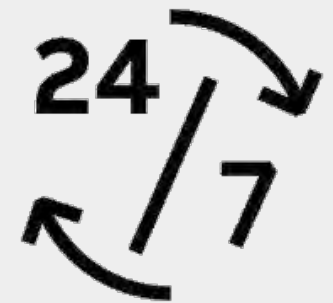
	Website	Flyer	Manual
MKEY 1	Website	Flyer	
MKEY2	Website	Flyer	
MKEY 4	Website	Flyer	
MKEY 5	Website	Flyer	Manual
MKEY 5Z	Website	Flyer	
MKEY 6	Website	Flyer	
MKEY 6Z	Website	Flyer	
MKEY 8	Website	Flyer	Manual
MKEY 8M	Website	Flyer	Manual
MKEY 8Z	Website	Flyer	Manual
MKEY 8ER/ERZ	Website	Flyer	Manual
MKEY 9	Website	Flyer	Manual
MKEY 9M	Website	Flyer	Manual

MKEY RFID

Mechanical safety lock
Dual interlock and safety lock with RFID



Easy to Install



Continuous Operation



Safety and Protection

MKEY RFID

Mechanical safety lock

Dual interlock and safety lock with RFID



Application

- Interlocking (Monitors) moveable guards (ex. Doors and Hatches).
- Power to unlock models for keeping door locked in machines with long stopping time.

Key Benefits and Features

- Extensive LED indication and status helps reduce downtime.
- Unique RFID codes on switch and actuator prevents unwanted bypass.
- Robust design utilizing a stainless-steel head helps increase life of the switch.
- Offer customers the latest in technology (OSSD outputs and RFID) for a safety lock.
- Different body materials allows you to pick the right switch for the right application.
- Customize the pilot device installation model with ABB compact series to suit customer needs.
- Simplified installation with M12 connectors (most models).
- PLe/Cat 4/SIL3 (highest level of safety) even with several devices in series.
- Rotatable head (8 different mounting positions).

MKEY RFID

Dual interlock and safety lock with RFID

MKEY RFID



MKEY 8 RF

Solenoid locking gate switch. Power to unlock. Metal body with stainless steel head. Available with M12 quick connect or M20 cable entry.

MKEY can be connected to a safety relay or safety PLC.



MKEY 8Z RF

Solenoid locking gate switch. Power to unlock. Stainless steel body and head. Available with M12 quick connect or M20 cable entry

MKEY can be connected to a safety relay or safety PLC.



MKEY 9 RF

Solenoid locking gate switch. Power to unlock. Plastic body with stainless steel head. Available with M12 quick connect or M20 cable entry.

MKEY can be connected to a safety relay or safety PLC.



MKEY 10 RF

Solenoid locking gate switch. Power to unlock. Metal body with stainless steel head. Model available with rear emergency release.

MKEY can be connected to a safety relay or safety PLC.

MKEY RFID

Dual interlock and safety lock with RFID

MKEY RFID

NOTES

24VDC solenoid are listed on this page.

“Z” in the part description indicates it is stainless steel & IP69k.

Key is ordered separately



Type	Safety Outputs	Power to Unlock Rear Release	Stainless Steel Body Metal Body	Plastic Body	Stainless Steel Head	M12 Connector	M20 Threads	Stainless Steel Head
MKEY 9RF	2 OSSD	●		●	●	●	2TLA050007R0602	
MKEY 9RFQC	2 OSSD	●		●	●	●	2TLA050007R2602	
MKEY 8RF	2 OSSD	●	●		●	●	2TLA050011R0612	
MKEY 8RFQC	2 OSSD	●	●		●	●	2TLA050011R2612	
MKEY 8ZRF	2 OSSD	●	●		●	●	2TLA050011R0622	
MKEY 8ZRFQC	2 OSSD	●	●		●	●	2TLA050011R2622	
MKEY 10RF	2 OSSD	●	●		●	●	2TLA050012R0612	
MKEY 10RFER	2 OSSD	● ●	●		●	●	2TLA050012R0652	

MKEY RFID

Dual interlock and safety lock with RFID

MKEY RFID Accessories

NOTES



Type	MKEY 8RF	MKEY 9RF	MKEY 8RFZ	MKEY 10RF	MKEY 10RFER	Plastic Head
Std MKEY RFID Key	•	•	•	•		2TLA050040R0240
Flex MKEY RFID Key	•	•	•	•		2TLA050040R0241
Slide Bolt Left Hand	•	•				2TLA050040R0503
Slide Bolt Right Hand	•	•				2TLA050040R0504
Slide Bolt Left Hand				•	•	2TLA050040R0505
Slide Bolt Right Hand				•	•	2TLA050040R0506
Die cast rotary handle left	•	•				2TLA050040R0600
Die cast rotary handle right	•	•				2TLA050040R0601
Die cast rotary handle left				•	•	2TLA050040R0604
Die cast rotary handle right				•	•	2TLA050040R0605
Stainless steel rotary handle left			•			2TLA050040R0602
Stainless steel rotary handle right			•			2TLA050040R0603

MKEY RFID

Dual interlock and safety lock with RFID

MKEY RFID Accessories

NOTES



Type	MKEY 8RF	MKEY 9RF	MKEY 8RFZ	MKEY 10RF	MKEY 10RFER	Plastic Head
Rear escape release die cast left	•	•		•	•	2TLA050040R0610
Rear escape release die cast right	•	•		•	•	2TLA050040R0612
Rear escape release stainless steel left			•			2TLA050040R0611
Rear escape release stainless steel right			•			2TLA050040R0613
Rear Handle for slide bolts						2TLA050040R0510
Spring Loaded Catch for slide bolts						2TLA050040R0511



MKEY RFID

Dual interlock and safety lock with RFID

Associated Devices

Associated Logic Devices

Single Stop Condition

[Sentry Safety Relays](#)

Multiple Stop Conditions or Advanced Logic

[Pluto](#)

Accessories

[Bulk Cables](#)

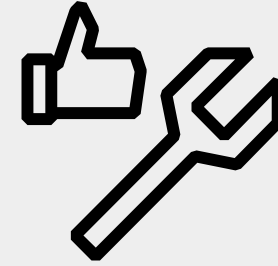
[MKEY RFID Accessories](#)

Resource Links

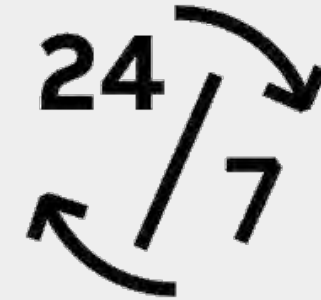
	Website	Flyer	Manual
MKEY RFID	Website	Flyer	Manual

Sense

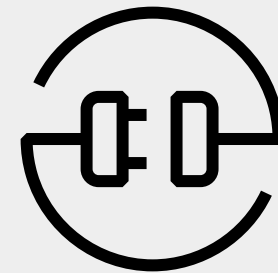
Non-contact Magnetic Safety Sensor
Simple magnetic non-contact sensor



Easy to Install



Continuous Operation



Optimum Interface

Sense

Non-contact Magnetic Safety Sensor Simple magnetic non-contact sensor



Application

- Interlocking (Monitors) moveable guards (ex. Doors and Hatches).
- Safe Position Monitoring.

Key Benefits and Features

- Available in all industry standard footprints (Stainless Steel (Z) and Plastic housing). Different models allow for easier installation with different sensing angles.
- Commonly stocked with 5m flying lead cables and M12 8pin 250mm pig tail Quick Connect
- All fitted with back plates to prevent the shrinkage of encapsulation often caused by temperature fluctuation.
- Stainless steel 316 body and a IP67/IP69K rating available, resistant to harsh environments with both dirt and water.
- Hygienic designs available.
- Sense can be connected to a safety relay (e.g Sentry Safety Relay) or safety PLC (e.g Pluto Safety PLC).
- Both magnetic (reed switches) and coded (transistors).
- No mechanical wear.

Sense

Simple magnetic non-contact sensor

Sense



Sense 1/2

Available in plastic body only. Sense 1 has LED, transistor outputs and coded sensing. Sense 2 is standard reed switches output.

Sense can be connected to a safety relay or safety PLC.



Sense 3/4

Available in plastic or stainless-steel body. Sense 3 has LED, transistor outputs and coded sensing. Sense 4 is standard reed switches output.

Sense can be connected to a safety relay and safety PLC.



Sense 5/6

Available in plastic or stainless-steel body. Sense 5 has LED, transistor outputs and coded sensing. Sense 6 is standard reed switches output.

Sense can be connected to a safety relay or safety PLC.



Sense 7/8

Available in plastic body or stainless-steel body. Sense 7 has LED, transistor outputs and coded sensing. Sense 8 is standard reed switches output.

Sense can be connected to a safety relay or safety PLC.



Sense

Simple magnetic non-contact sensor

Sense



Sense 9/10

Available in plastic or stainless-steel body. Sense 9 has LED, transistor outputs and coded magnetic sensing. Sense 10 is standard reed switches output.
Sense can be connected to a safety relay or safety PLC.



Sense 11/12

Available in plastic or stainless-steel body. Sense 11 has LED, transistor outputs and coded magnetic sensing. Sense 12 is standard reed switches output.
Sense can be connected to a safety relay or safety PLC.

Sense

Simple magnetic non-contact sensor

Sense Coded

NOTES

“Z” in the part description indicates it is stainless steel & IP69k.

Non-contact switches shown all have 5m or QC cables. Other variations are available but may be subject to minimum quantities.

All odd number of Sense switches have a coded actuator.



Type	Contacts	Plastic Body	Stainless Steel Body	Hygienic Body	LED	Ordering Code, 5m cable	Ordering Code, M12 8 pin QC 250mm cable
Sense 1 RT	2NC + 1NO	●			●	2TLA050050R5108	2TLA050050R2108
Sense 1 LT	2NC + 1NO	●			●	2TLA050050R5107	2TLA050050R2107
Sense 3	2NC + 1NO	●			●	2TLA050052R5100	2TLA050052R2100
Sense 3Z	2NC + 1NO		●		●	2TLA050052R5120	2TLA050052R2120
Sense 3Z Food	2NC + 1NO		●	●	●	2TLA050052R5150	2TLA050052R2150
Sense 5	2NC + 1NO	●			●	2TLA050054R5100	2TLA050054R2100
Sense 5Z	2NC + 1NO		●		●	2TLA050054R5120	2TLA050054R2120
Sense 7	2NC + 1NO	●			●	2TLA050056R5100	2TLA050056R2100
Sense 7Z	2NC + 1NO		●		●	2TLA050056R5120	2TLA050056R2120
Sense 9	2NC + 1NO	●			●	2TLA050058R5100	2TLA050058R2100
Sense 9Z	2NC + 1NO		●		●	2TLA050058R5120	2TLA050058R2120
Sense 9Z Food	2NC + 1NO		●	●	●	2TLA050058R5150	2TLA050058R2150
Sense 11	2NC + 1NO	●			●	2TLA050060R5100	2TLA050060R2100
Sense 11Z	2NC + 1NO		●		●	2TLA050060R5120	2TLA050060R2120

Sense

Simple magnetic non-contact sensor

Sense Un-coded

NOTES

“Z” in the part description indicates it is stainless steel & IP69k.

Non-contact switches shown all have 5m or QC cables. Other variations are available but may be subject to minimum quantities.

All even number of Sense switches have an un-coded actuator.



Type	Contacts	Plastic Body	Stainless Steel Body	Hygienic Body	Ordering Code, 5m cable	Ordering Code, M12 8 pin QC 250mm cable
Sense 2 RT	2NC + 1NO	●			2TLA050070R5108	2TLA050070R2108
Sense 2 LT	2NC + 1NO	●			2TLA050070R5107	2TLA050070R2107
Sense 4	2NC + 1NO	●			2TLA050072R5100	2TLA050072R2100
Sense 4Z	2NC + 1NO		●		2TLA050072R5120	2TLA050072R2120
Sense 4Z Food	2NC + 1NO		●	●	2TLA050072R5150	2TLA050072R2150
Sense 6	2NC + 1NO	●			2TLA050074R5100	2TLA050074R2100
Sense 6Z	2NC + 1NO		●		2TLA050074R5120	2TLA050074R2120
Sense 8	2NC + 1NO	●			2TLA050076R5100	2TLA050076R2100
Sense 8Z	2NC + 1NO		●		2TLA050076R5120	2TLA050076R2120
Sense 10	2NC + 1NO	●			2TLA050078R5100	2TLA050078R2100
Sense 10Z	2NC + 1NO		●		2TLA050078R5120	2TLA050078R2120
Sense 10Z Food	2NC + 1NO		●	●	2TLA050078R5150	2TLA050078R2150
Sense 12	2NC + 1NO	●			2TLA050080R5100	2TLA050080R2100
Sense 12Z	2NC + 1NO		●		2TLA050080R5120	2TLA050080R2120

Sense

Simple magnetic non-contact sensor

Associated Devices

Associated Logic Devices

Single Stop Condition

[Sentry Safety Relays](#)

Multiple Stop Conditions or Advanced Logic

[Pluto](#)

Accessories

[8 Pin Cables](#)

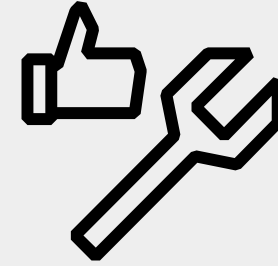
Resource Links

	Website	Flyer (Plastic)	Flyer (SS)	Flyer (SS Food)	Manual
Sense 1	Website	Flyer	N/A	N/A	N/A
Sense 2	Website	Flyer	N/A	N/A	N/A
Sense 3(Z)	Website	Flyer	Flyer	Flyer	N/A
Sense 4(Z)	Website	Flyer	Flyer	Flyer	N/A
Sense 5(Z)	Website	Flyer	Flyer	N/A	N/A
Sense 6(Z)	Website	Flyer	Flyer	N/A	N/A
Sense 7(Z)	Website	Flyer	Flyer	N/A	Manual
Sense 8(Z)	Website	Flyer	Flyer	N/A	N/A
Sense 9(Z)	Website	Flyer	Flyer	Flyer	N/A
Sense 10(Z)	Website	Flyer	Flyer	Flyer	N/A
Sense 11(Z)	Website	Flyer	Flyer	N/A	N/A
Sense 12(Z)	Website	Flyer	Flyer	N/A	N/A

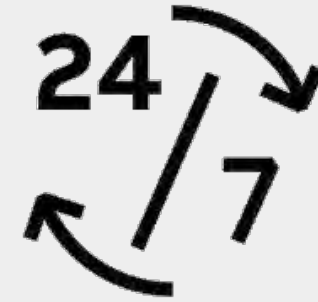
Inca and Smile

Emergency Stop

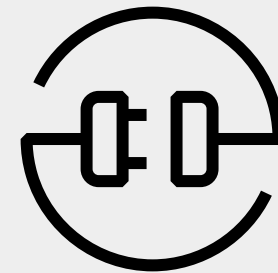
Emergency stop for enclosure installation (Inca)
and Compact Emergency Stop (Smile)



Easy to Install



Continuous Operation



Optimum Interface

Inca and Smile

Emergency Stop

Emergency stop for enclosure installation (Inca) and Compact Emergency Stop (Smile)



Application

- Stopping unsafe machine function in order to prevent an accident or reduce its consequences.

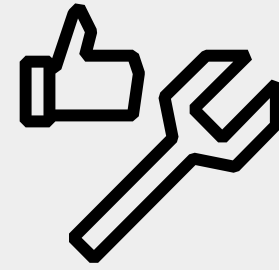
Key Benefits and Features

- Compact size.
- Easy connection with removable terminal blocks (Inca Only) or M12 connectors (Smile).
- Helps reduce downtime with extensive LED indication. Tina modules have auxiliary information lines.
- Tina versions with DYNlink technology allows connection to a Vital Safety Controller or Pluto Safety PLC. Dual channel models can connect to a Safety Relay or Pluto Safety PLC
- Statusbus (Individual status for up to 120 devices (30 per Statusbus input, 4 per Pluto) version also available.
- Easy to reach highest safety level Cat.4/PLe/SIL3 with up to 30 safety devices in series with Tina (DYNlink) model to a Vital Safety Controller or 10 safety devices in series to a Pluto Safety PLC input.
- Quick installation with centered mounting holes (Smile).

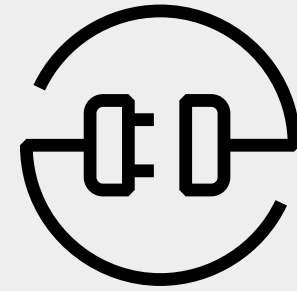
Smile 41

Emergency Stop

Compact emergency stop/push-button box for remote mounting



Easy to Install



Optimum Interface

Smile 41

Emergency Stop

Compact emergency stop/push-button box for remote mounting



Application

- Stopping unsafe machine function in order to prevent an accident or reduce its consequences.
- Auxiliary push buttons can be used for things like resetting, request to enter, etc ...

Key Benefits and Features

- Compact size.
- Quick installation with centered mounting holes.
- Easy connection with M12 connectors.
- Primarily used with Pluto Safety PLC with “Illuminated Button” feature.
- Comes with color filters (blue, green, white, red, yellow) for different functions (e.g. request to enter, reset, stop etc...).

Smile and Inca

Emergency stop for enclosure installation and Compact Emergency Stop

Smile and Inca Emergency Stops



Smile and Smile Tina

Smile emergency stop for remote mounting. LED status on each device. Tina versions has information line for status.

Smile can be connected to a safety relay or safety PLC. Smile Tina can be connected to a Vital controller or Pluto Safety PLC.



Inca and Inca Tina v2

Inca emergency stop for panel mounting. LED status on each device. Tina versions has information line for status.

Inca can be connected to a safety relay or safety PLC. Inca Tina can be connected to a Vital controller or Pluto Safety PLC.



Smile Reset

Smile reset for remote mounting. LED on device can be used for status. Comes with color filters and can be used for things like resetting, request to enter, etc...

Smile Reset comes in many versions and can be connected to Safety Relays, Pluto Safety PLC, Orion Light Curtains or Edens.



Smile 41

Smile for remote mounting. Comes with a dual channel estop (2NC) and 3 auxiliary buttons. LED on device can be used for status. Comes with color filters and can be used for things like resetting, request to enter, etc...

Smile 41 must be connected to Pluto Safety PLC.

Smile and Inca

Emergency stop for enclosure installation and Compact Emergency Stop

Smile and Smile Tina

NOTES

See cable section at end of Easy Reference Guide for [5 Pin Cables](#).



Type	Voltage	M12 Connection	For Single application	For series applications	Dual Channel 2NC DYNlink	Ordering Code
Smile 11EA Tina	24VDC	5 pin	•	•	•	2TLA030050R0000
Smile 12EA Tina	24 VDC	5 pin male/female		•	•	2TLA030050R0200
Smile 11SA Tina	24VDC	5 pin	•	•	•	2TLA030050R0500
Smile 11EA	24VDC	5 pin	•	•	•	2TLA030051R0000
Smile 12EA	24VDC	5 pin male/female		•	•	2TLA030051R0200
Smile 11SA	24VDC	5 pin	•	•	•	2TLA030051R0900

Smile and Inca

Emergency stop for enclosure installation and Compact Emergency Stop

Inca and Inca Tina

NOTES

Inca and Inca Tina are designed to fit in a 22.5mm hole.



Type	Voltage	Connection	For Single application	For series applications	Dual Channel 2NC	DYNlink	Accessory	Ordering Code
Inca 1 Tina V2	24VDC	5 pin	●	●		●		2TLA030054R0010
Inca 1S Tina V2	24 VDC	5 pin	●	●		●		2TLA030054R0210
Inca 1	24 VDC	5 pin	●	●	●			2TLA030054R0100
Inca 1S	24 VDC	5 pin	●	●	●			2TLA030054R0300
Elevated Yellow Surround							●	2TLA030054R0400
Flat Yellow Surround							●	2TLA030054R0900

Smile and Inca

Emergency stop for enclosure installation and Compact Emergency Stop

Smile Reset and Smile 41

NOTES

Smile 11 RA is used with a Safety Relays or Vital Controller. Smile 11RB and Smile 41 are used with Pluto Safety PLC.

See cable section at end of Easy Reference Guide for [5 and 8 Pin Cables](#).



Type	Voltage	M12 Connection	Pluto Only	Adam DYN and OSSD 5 pin Reset	Adam OSSD 8 pin Reset	Orion 1 Base	Orion 2 Base, 2 and 3 Extended	Orion 3 Base	Ordering Code
Smile 11RA	24VDC	5 pin							2TLA030053R0000
Smile 11RB	24VDC	5 pin	•						2TLA030053R0100
Smile 11RF	24VDC	5 pin(x2)		•					2TLA030053R2600
Smile 11RG	24VDC	8 pin(x2)			•				2TLA030053R2700
Smile 11RO1	24VDC	5 pin				•			2TLA022316R3000
Smile 11RO2	24VDC	5 pin					•		2TLA022316R3100
Smile 11RO3	24VDC	5 pin						•	2TLA022316R3200
Smile 41 EWWWP	24VDC	8 pin	•						2TLA030057R0100

Smile and Inca

Emergency stop for enclosure installation and Compact Emergency Stop

Associated Devices

Associated Logic Devices

Single Stop Condition

Smile and Inca– [Sentry Safety Relays](#)

Smile and Inca Tina– [Vital 1](#)

Multiple Stop Conditions or Advanced Logic

Smile(Tina), Inca(Tina), Smile 41- [Pluto](#)

Accessories

[5 and 8 Pin Cables](#)

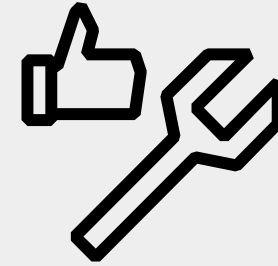
Resource Links

	Website	Flyer	Manual
Smile	Website	Flyer	Manual
Smile Tina	Website	Flyer	Manual
Smile 41	Website		Manual
Inca	Website	Flyer	Manual
Inca Tina	Website	Flyer	Manual

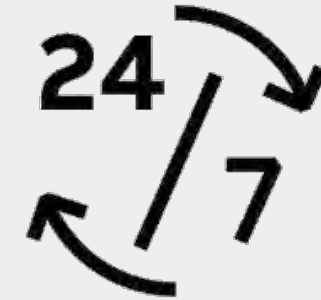
LineStrong

Rope Pull Emergency Stop

Robust Rope Pull emergency stop switches



Easy to Install



Continuous Operation



Safety and Protection

LineStrong

Rope Pull Emergency Stop

Robust Rope Pull emergency stop switches



Application

- Stopping unsafe machine function in order to prevent an accident or reduce its consequences.
- Provide emergency stop protection over long spans.

Key Benefits and Features

- Quick installation with Quick Link rope system.
- Many models available to suit the application needs.
- Many available accessories like Quick Link rope system, estop, pulleys etc.. to make installation easier.
- Stainless Steel versions (IP69K) for the food industry.
- “Double wide seal gaskets” enables switch to keep its IP rating for the life of the switch.
- Available in dual head for “daisy chain” configuration along long conveyors.
- Red/Green Status LED available to see status easily from a distance.
- Monitors for a cable break. Contacts will not be held in a normally closed position due to a failure of the spring mechanism and/or welding of the contacts.
- Cable tension indication viewing window.
- Easy reach of the emergency stop function along machines and conveyors.

LineStrong

Robust Rope Pull emergency stop switches

LineStrong



LineStrong 1

LineStrong with 2NC + 2NO. LED status is available. Optional estop can be installed on device. For installations up to 50m.

LineStrong can be connected to a safety relay or safety PLC.



LineStrong 2 (Z)

LineStrong with 2NC + 2NO. LED status is available. Optional estop can be installed on device. For installations up to 80m. “Z” stainless-steel version can handle up to 100m.

LineStrong can be connected to a safety relay or safety PLC.



LineStrong 3 (Z)

LineStrong with 4NC + 2NO. LED status is available. Optional estop can be installed right on device. L and R versions for installations up to 125m. “D” version can handle up to 200m. “DZ” version can handle up to 250m.

LineStrong can be connected to a safety relay or safety PLC.

LineStrong

Robust Rope Pull emergency stop switches

LineStrong 1 and LineStrong 2(Z)

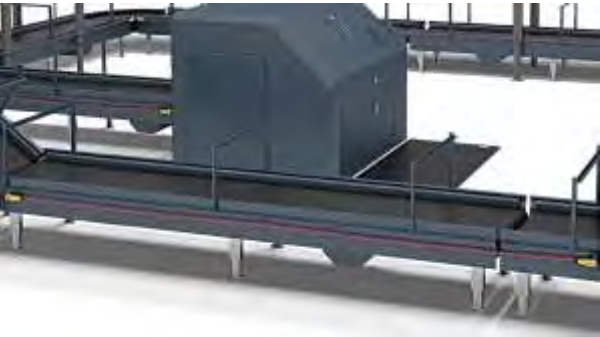
NOTES

LED versions on this page are 24VDC. 110VAC and 230VAC are also available.

Emergency stop is ordered separately.

“Z” in the part description indicates it is stainless steel and IP69K.

All rope pulls have ½ NPT conduit entry.



Type	Voltage	Conduit Entry	Contacts	For Single application	For series applications	LED 24VDC	Ordering Code
LineStrong 1		½ NPT	2NC+2NO	●	●		2TLA050200R1030
LineStrong 1 with LED	24VDC	½ NPT	2NC+2NO	●	●	●	2TLA050200R1232

Type	Voltage	Conduit Entry	Contacts	For Single application	For series applications	LED 24VDC	Ordering Code
LineStrong 2Z		½ NPT	4NC+2NO	●	●		2TLA050202R1020
LineStrong 2		½ NPT	4NC+2NO	●	●		2TLA050202R1030
LineStrong 2Z with LED	24VDC	½ NPT	4NC+2NO	●	●	●	2TLA050202R1222
LineStrong 2 with LED	24VDC	½ NPT	4NC+2NO	●	●	●	2TLA050202R1232

LineStrong

Robust Rope Pull emergency stop switches

LineStrong 3L(Z), R(Z) and D(Z)

NOTES

LED versions on this page are 24VDC. 110VAC and 230VAC are also available.

Emergency stop ordered separately.

“Z” in the part description indicates it is stainless steel and IP69K.

All rope pulls have ½ NPT conduit entry.



Type	Voltage	Conduit Entry	Contacts	For Single application	For series applications	LED 24VDC	Ordering Code
LineStrong 3DZ		½ NPT	4NC+2NO	●	●		2TLA050204R1020
LineStrong 3D		½ NPT	4NC+2NO	●	●		2TLA050204R1030
LineStrong 3DZ with LED	24VDC	½ NPT	4NC+2NO	●	●	●	2TLA050204R1222
LineStrong 3D with LED	24VDC	½ NPT	4NC+2NO	●	●	●	2TLA050204R1232
LineStrong 3LZ		½ NPT	4NC+2NO	●	●		2TLA050206R1020
LineStrong 3L		½ NPT	4NC+2NO	●	●		2TLA050206R1030
LineStrong 3LZ with LED	24VDC	½ NPT	4NC+2NO	●	●	●	2TLA050206R1222
LineStrong 3L with LED	24VDC	½ NPT	4NC+2NO	●	●	●	2TLA050206R1232
LineStrong 3RZ		½ NPT	4NC+2NO	●	●		2TLA050208R1020
LineStrong 3R		½ NPT	4NC+2NO	●	●		2TLA050208R1030
LineStrong 3RZ with LED	24VDC	½ NPT	4NC+2NO	●	●	●	2TLA050208R1222
LineStrong 3R with LED	24VDC	½ NPT	4NC+2NO	●	●	●	2TLA050208R1232

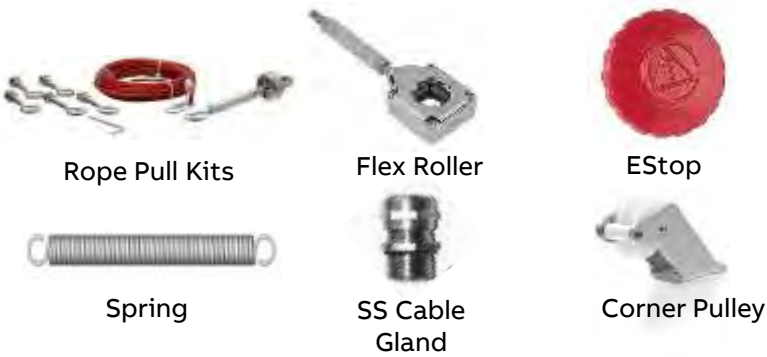
LineStrong

Robust Rope Pull emergency stop switches

LineStrong Accessories

NOTES

- (1) Tensioner & (1) Quick link included with kits 50M or less.
- (2) Tensioners included with kits greater than 50M (no Quick Link).



Type	Eyebolts	Tensioner/ Gripper	Allen Key	Ordering Code Stainless Steel	Ordering Code Galvanized
5m Rope Pull Kit	3	1	1	2TLA050210R0020	2TLA050210R0030
10m Rope Pull Kit	5	1	1	2TLA050210R0120	2TLA050210R0130
15m Rope Pull Kit	7	1	1	2TLA050210R0220	2TLA050210R0230
20m Rope Pull Kit	9	1	1	2TLA050210R0320	2TLA050210R0330
30m Rope Pull Kit	12	1	1	2TLA050210R0420	2TLA050210R0430
50m Rope Pull Kit	20	1	1	2TLA050210R0520	2TLA050210R0530
80m Rope Pull Kit	30	2	2	2TLA050210R0620	2TLA050210R0630
100m Rope Pull Kit	37	2	2	2TLA050210R0720	2TLA050210R0730
126m Rope Pull Kit	45	2	2	2TLA050210R0820	2TLA050210R0830
Rope Tensioner				2TLA050210R4020	2TLA050210R4030
Corner Pulley				2TLA050210R6020	2TLA050210R6030
Safety Spring				2TLA050211R0004	N/A
Flex Roller				2TLA858006R1300	N/A
½ NPT Cable Gland				2TLA050040R0001	N/A
Estop (for all Linestrongs)				N/A	2TLA050211R0005



LineStrong

Robust Rope Pull emergency stop switches

Associated Devices

Associated Logic Devices

Single Stop Condition

[Sentry Safety Relays](#)

Multiple Stop Conditions or Advanced Logic

[Pluto](#)

Accessories

[Bulk Cable](#)

[Linestrong Accessories](#)

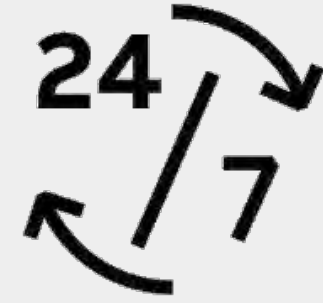
Resource Links

	Website	Flyer	Manual
Linestrong 1	Website	Flyer	Manual
Linestrong 2	Website	Flyer	Manual
LineStrong 2Z	Website	Flyer	Manual
Linestrong 3D	Website	Flyer	Manual
Linestrong 3DZ	Website	Flyer	Manual
LineStrong 3L/R	Website	Flyer	Manual
LineStrong 3LZ/RZ	Website	Flyer	Manual

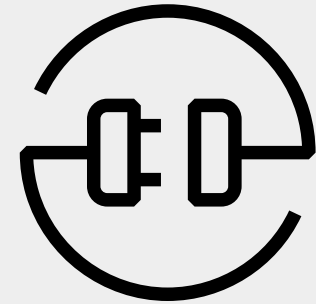
EStrong

Emergency Stop

Robust emergency stop for harsh environments



Continuous Operation



Optimum Interface



Safety and Protection

EStrong

Emergency Stop

Robust emergency stop for harsh environments



Application

- Stopping unsafe machine function in order to prevent an accident or reduce its consequences.

Key Benefits and Features

- Easy visual indicator with LED on enclosure to show status.
- IP69K rating and stainless steel.
- Ideally suited for industries that have special demands, such as food processing or the chemical industry, thanks to its robust design.
- EStrong uses a special lid that is mechanical linked to the emergency stop safety mechanism. This means that the safety contacts will open if the lid is removed.

EStrong

Robust emergency stop for harsh environments

EStrong Z Emergency Stop



EStrong Z Emergency Stop

EStrong emergency stop for remote mounting with 2NC + 2NO contacts. LED status is available. Fully 316 stainless steel and IP67/IP69K rating.

EStrong can be connected to a safety relay or safety PLC.

EStrong

Robust emergency stop for harsh environments

EStrong Z Emergency Stop

NOTES

All emergency stops have ½ NPT conduit entry.

LED versions on this page are 24VDC. 110VAC and 230VAC are also available.



Type	Voltage	Contacts	LED 24VDC	LED 110VAC	LED 230VAC	Accessory	Ordering Code
EStrong	24VDC	2NO+2NC					2TLA050220R1020
EStrong with LED	24VDC	2NO+2NC	●				2TLA050220R1222
½ NPT SS Cable Gland						●	2TLA050040R0001



EStrong

Robust emergency stop for harsh environments

Associated Devices

Associated Logic Devices

Single Stop Condition

[Sentry Safety Relays](#)

Multiple Stop Conditions or Advanced Logic

[Pluto](#)

Accessories

[Bulk Cable](#)

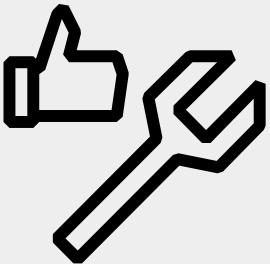
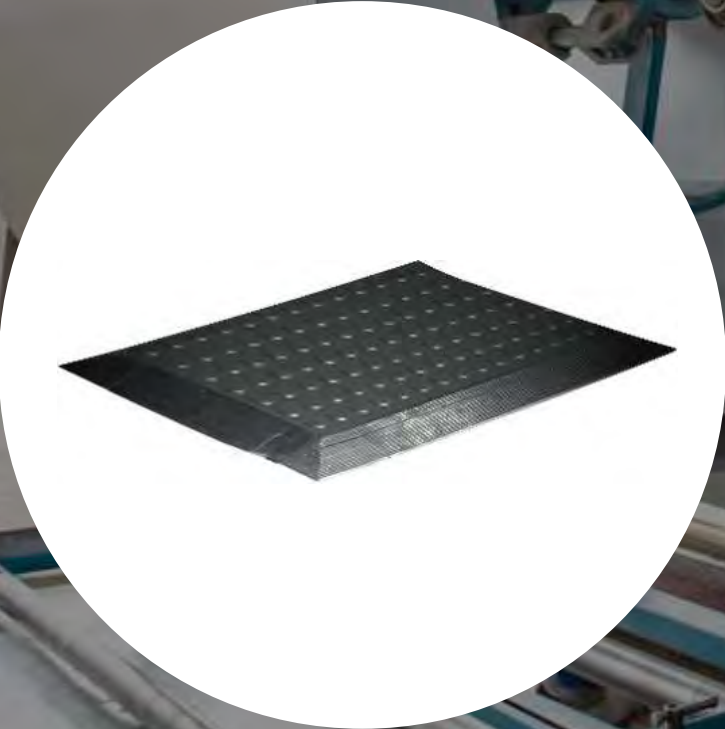
Resource Links

	Website	Flyer	Manual
EStrong	Website	Flyer	Manual

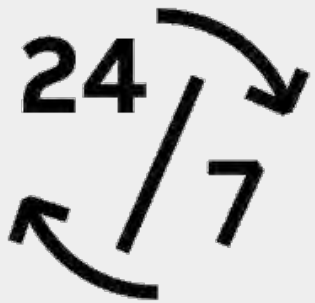
ASK

Safety Mat

Durable and slip free safety mat



Easy to Install



Continuous Operation

ASK

Safety Mat

Durable and slip free safety mat



Application

- Used inside hazard zones around e.g. presses, robots and production lines to prevent the machine from running when someone is in the hazard zone.

Key Benefits and Features

- Available with integrated rubber ramp rail or external aluminum trim.
- Designed so built-in ramp rail can be cut off in case of a “butt cut” design (placing two mats side-by-side).
- 32 different standard sizes and styles.
- Custom mats available upon demand.
- 4 Conductor 10m cable with flying leads come out long side center.
- Euro Dot slip-free surface comes standard.
- Rugged design gives safety mats excellent resistance to oil, water and grease.

ASK

Durable and slip free safety mat

Safety Mats



Safety Mat with built in ramp rail

Safety mat with built in ramp rail. Ramp rail can be cut off if mats are needed to be butted together. 4 conductor 10m cable comes out long side center with flying leads.

Safety mats can be connected to a safety relay or safety PLC.



Safety Mat with blunt cut

Safety mat with blunt cut. Mats can be butted together. Aluminum ramp rail (ordered separately) and corner connectors use to secure mat. 4 conductor 10m cable comes out long side center with flying leads.

Safety mats can be connected to a safety relay or safety PLC.

ASK

Durable and slip free safety mat

Safety Mats

NOTES

The US Safety Mats differ from the Safety Mats listed in the European catalogs.

Sizes in descriptions is active area. Add extra length for integrated trim models when sizing a mat for an area. Integrated trim add 1.4”(34mm) to each side. Aluminum trim add 2.4”(62mm) per side.



Type	Voltage	Active Area (in Inches)	Safety Mat w/o Trim (Blunt)	Safety Mat with Integrated Trim
Safety mat 12” x 12”	24VDC	12” x 12	2TLA858003R2800	2TLA858003R2900
Safety mat 24” x 24”	24VDC	24” x 24”	2TLA858002R3800	2TLA858002R5600
Safety mat 24” x 30”	24VDC	24” x 30”	2TLA858002R3900	2TLA858002R5700
Safety mat 24” x 36”	24VDC	24” x 36”	2TLA858002R4000	2TLA858002R5800
Safety mat 24” x 42”	24VDC	24” x 42”	2TLA858002R4100	2TLA858002R5900
Safety mat 24” x 48”	24VDC	24” x 48”	2TLA858002R4200	2TLA858002R6000
Safety mat 24” x 60”	24VDC	24” x 60”	2TLA858002R4300	2TLA858002R6100
Safety mat 30” x 30”	24VDC	30” x 30”	2TLA858002R4400	2TLA858002R6200
Safety mat 30” x 36”	24VDC	30” x 36”	2TLA858002R4500	2TLA858002R6300
Safety mat 30” x 42”	24VDC	30” x 42”	2TLA858002R4600	2TLA858002R6400
Safety mat 30” x 48”	24VDC	30” x 48”	2TLA858002R4700	2TLA858002R6500



ASK

Durable and slip free safety mat

Safety Mats

NOTES

Custom safety mats contact Jokab.service@us.abb.com for pricing.



Type	Voltage	Active Area (in Inches)	Safety Mat w/o Trim (Blunt)	Safety Mat with Integrated Trim
Safety mat 36" x 36"	24VDC	36" x 36"	2TLA858002R4800	2TLA858002R6600
Safety mat 36" x 42"	24VDC	36" x 42"	2TLA858002R4900	2TLA858002R6700
Safety mat 36" x 48"	24VDC	36" x 48"	2TLA858002R5000	2TLA858002R6800
Safety mat 36" x 60"	24VDC	36" x 60"	2TLA858002R5100	2TLA858002R6900
Safety mat 42" x 42"	24VDC	42" x 42"	2TLA858002R5200	2TLA858002R7000
Safety mat 42" x 48"	24VDC	42" x 48"	2TLA858002R5300	2TLA858002R7100
Safety mat 48" x 48"	24VDC	48" x 48"	2TLA858002R5400	2TLA858002R7200
Safety mat 48" x 60"	24VDC	48" x 60"	2TLA858002R5500	2TLA858002R7300
Trim Corner Connector			2TLA858002R7400	N/A
Aluminum Trim 4-foot piece			2TLA858009R2800	N/A
Aluminum Trim 7-foot piece			2TLA858009R2900	N/A



ASK

Durable and slip free safety mat

Associated Devices

Associated Logic Devices

Single Stop Condition

[Sentry Safety Relays - USR10 or USR22](#)

Multiple Stop Conditions or Advanced Logic

[Pluto](#)

Accessories

[Trim](#)

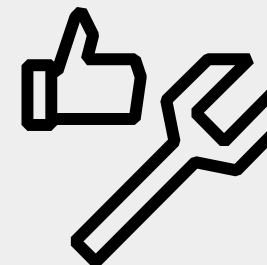
Resource Links

	Website	Flyer	Manual
ASK	Website	Flyer	Manual

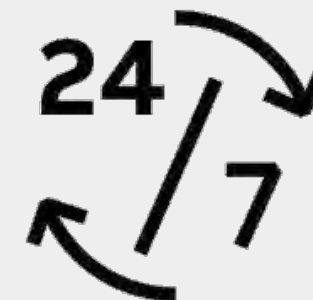
TT

Safety Edges

Preassembled and durable



Easy to Install



Continuous Operation

TT

Safety Edges

Preassembled and durable



Application

- Used to prevent crushing injuries.
- Mounted on leading edges of large doors or moving machinery such as CNC machines or roller doors.

Key Benefits and Features

- The twin cable connection (5m cable out on each side).
- Preassembled (no gluing required), supplied with matching aluminum support profile.
- 2 different styles (25mm x 30mm, 25mm x 45mm)
- Can be wired to a safety relay or safety PLC.
- Made of TPE that has a good resistance to ozone, weather and certain chemicals.



TT

Preassembled and durable

Safety Edges



Safety Edge TT 25-30

Safety edge that is 25mm wide by 30mm high.
Comes with 5m flying lead cable coming out of each end.

Safety edges can be connected to a safety relay or safety PLC.



Safety Edge TT 25-45

Safety edge that is 25mm wide by 45mm high.
Comes with 5m flying lead cable coming out of each end.

Safety edges can be connected to a safety relay or safety PLC.

TT

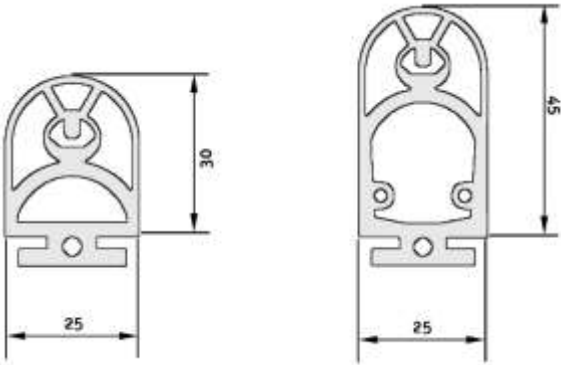
Preassembled and durable

Safety Edges

NOTES

The US Safety Edges differ from the Safety Edges listed in the European catalogs.

Ordered as one part number, preassembled (no gluing required), supplied with matching aluminum support profile.



Type	Voltage	Length (in Inches)	TT25-30	TT25-45
Safety Edge, 12" w/rail,5m cables	24VDC	12"	2TLA858008R5400	2TLA858008R9100
Safety Edge, 13" w/rail,5m cables	24VDC	13"	2TLA858008R5500	2TLA858008R9200
Safety Edge, 14" w/rail,5m cables	24VDC	14"	2TLA858008R5600	2TLA858008R9300
Safety Edge, 15" w/rail,5m cables	24VDC	15"	2TLA858008R5700	2TLA858008R9400
Safety Edge, 16" w/rail,5m cables	24VDC	16"	2TLA858008R5800	2TLA858008R9500
Safety Edge, 17" w/rail,5m cables	24VDC	17"	2TLA858008R5900	2TLA858008R9600
Safety Edge, 18" w/rail,5m cables	24VDC	18"	2TLA858008R6000	2TLA858008R9700
Safety Edge, 19" w/rail,5m cables	24VDC	19"	2TLA858008R6100	2TLA858008R9800
Safety Edge, 20" w/rail,5m cables	24VDC	20"	2TLA858008R6200	2TLA858008R9900
Safety Edge, 21" w/rail,5m cables	24VDC	21"	2TLA858008R6300	2TLA858009R0000
Safety Edge, 22" w/rail,5m cables	24VDC	22"	2TLA858008R6400	2TLA858009R0100
Safety Edge, 23" w/rail,5m cables	24VDC	23"	2TLA858008R6500	2TLA858009R0200
Safety Edge, 24" w/rail,5m cables	24VDC	24"	2TLA858008R6600	2TLA858009R0300
Safety Edge, 25" w/rail,5m cables	24VDC	25"	2TLA858008R6700	2TLA858009R0400
Safety Edge, 26" w/rail,5m cables	24VDC	26"	2TLA858008R6800	2TLA858009R0500
Safety Edge, 27" w/rail,5m cables	24VDC	27"	2TLA858008R6900	2TLA858009R0600
Safety Edge, 28" w/rail,5m cables	24VDC	28"	2TLA858008R7000	2TLA858009R0700
Safety Edge, 29" w/rail,5m cables	24VDC	29"	2TLA858008R7100	2TLA858009R0800
Safety Edge, 30" w/rail,5m cables	24VDC	30"	2TLA858008R7200	2TLA858009R0900



TT

Preassembled and durable

Safety Edges

NOTES



Type	Voltage	Length (in Inches)	TT25-30	TT25-45
Safety Edge, 31" w/rail,5m cables	24VDC	31"	2TLA858008R7300	2TLA858009R1000
Safety Edge, 32" w/rail,5m cables	24VDC	32"	2TLA858008R7400	2TLA858009R1100
Safety Edge, 33" w/rail,5m cables	24VDC	33"	2TLA858008R7500	2TLA858009R1200
Safety Edge, 34" w/rail,5m cables	24VDC	34"	2TLA858008R7600	2TLA858009R1300
Safety Edge, 35" w/rail,5m cables	24VDC	35"	2TLA858008R7700	2TLA858009R1400
Safety Edge, 36" w/rail,5m cables	24VDC	36"	2TLA858008R7800	2TLA858009R1500
Safety Edge, 37" w/rail,5m cables	24VDC	37"	2TLA858008R7900	2TLA858009R1600
Safety Edge, 38" w/rail,5m cables	24VDC	38"	2TLA858008R8000	2TLA858009R1700
Safety Edge, 39" w/rail,5m cables	24VDC	39"	2TLA858008R8100	2TLA858009R1800
Safety Edge, 40" w/rail,5m cables	24VDC	40"	2TLA858008R8200	2TLA858009R1900
Safety Edge, 41" w/rail,5m cables	24VDC	41"	2TLA858008R8300	2TLA858009R2000
Safety Edge, 42" w/rail,5m cables	24VDC	42"	2TLA858008R8400	2TLA858009R2100
Safety Edge, 43" w/rail,5m cables	24VDC	43"	2TLA858008R8500	2TLA858009R2200
Safety Edge, 44" w/rail,5m cables	24VDC	44"	2TLA858008R8600	2TLA858009R2300
Safety Edge, 45" w/rail,5m cables	24VDC	45"	2TLA858008R8700	2TLA858009R2400
Safety Edge, 46" w/rail,5m cables	24VDC	46"	2TLA858008R8800	2TLA858009R2500
Safety Edge, 47" w/rail,5m cables	24VDC	47"	2TLA858008R8900	2TLA858009R2600
Safety Edge, 48" w/rail,5m cables	24VDC	48"	2TLA858008R9000	2TLA858009R2700



TT

Preassembled and durable

Associated Devices

Associated Logic Devices

Single Stop Condition

[Sentry Safety Relays - USR10 or USR22](#)

Multiple Stop Conditions or Advanced Logic

[Pluto](#)

Accessories

N/A

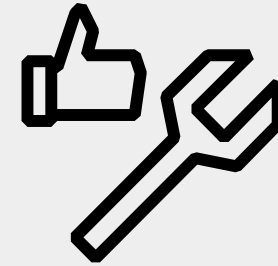
Resource Links

	Website	Flyer	Manual
TT	Website	Flyer	Manual

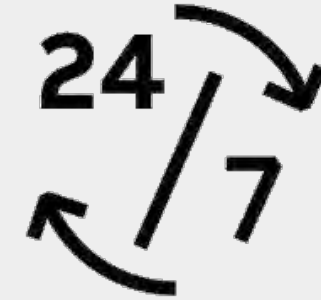
ASB

Safety Bumper

Customized Safety Bumper



Easy to Install



Continuous Operation

ASB

Safety Bumper

Customized Safety Bumper



Application

- Used to prevent crushing injuries.
- Mounted on leading edges of large doors or moving machinery such as automated guided vehicles.

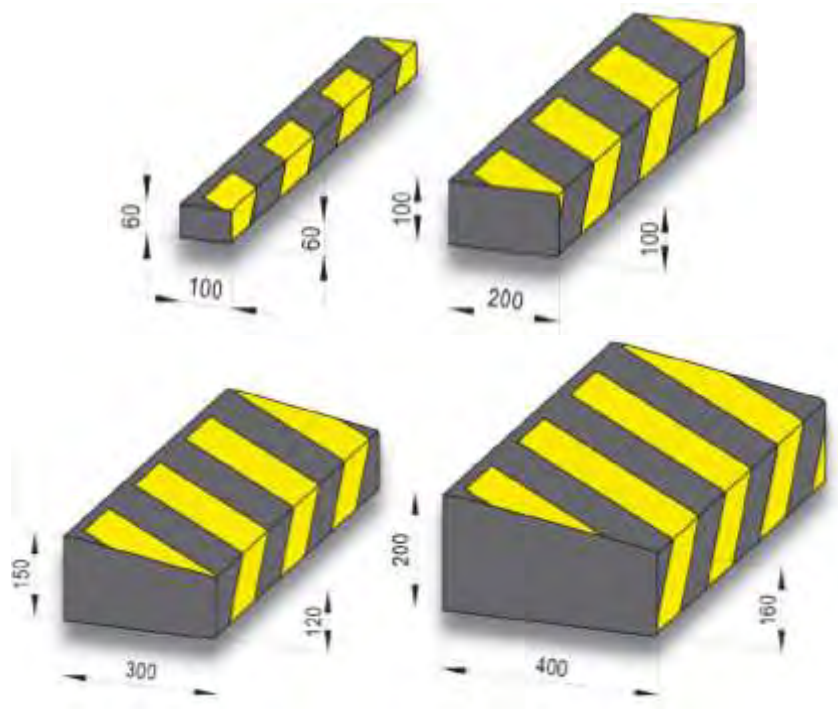
Key Benefits and Features

- The twin cable connection (5m cable out on each side with M8 connector + M8 cable with flying leads) makes it easy to connect several safety bumpers in series.
- Preassembled (no gluing required), supplied with matching aluminum support profile.
- 4 different styles (60mm x 100mm, 100mm x 200mm, 150mm x 300mm and 200mm x 400mm).
- Can be wired to a safety relay or safety PLC.
- Outer material is an artificial leather that provides excellent resistance to most liquids, oils and chemicals.
- Models with special outer material and foam for use in outdoor applications.

ASB

Customized Safety Bumper

Safety Bumpers



Additional Features

- Preassembled (no gluing required), supplied with matching aluminum support profile.
- 4 different styles (60mm x 100mm, 100mm x 200mm, 150mm x 300mm and 200mm x 400mm).
- The twin cable connection (5m cable out of each side with M8 connector + M8 cable with flying leads) makes it easy to connect several safety bumpers in series.
- Can be wired to a safety relay or safety PLC.
- The US Safety Bumpers differ from the Safety bumpers listed in the European catalogs. There are no standard bumpers available. Contact Jokab.service@us.abb.com for pricing.



ASB

Customized Safety Bumper

Associated Devices

Associated Logic Devices

Single Stop Condition

[Sentry Safety Relays - USR10 or USR22](#)

Multiple Stop Conditions or Advanced Logic

[Pluto](#)

Accessories

N/A

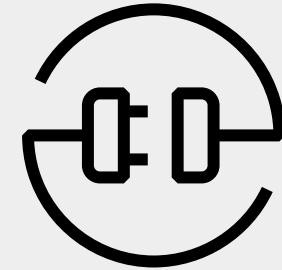
Resource Links

	Website	Manual
GKEY	Website	Manual

Safeball

One or two-hand control device

Innovative and ergonomic machine control



Optimum Interface



Safety and Protection

Safeball

One or two-hand control device

Innovative and ergonomic machine control



Application

- Hold to run (Single Safeball).
- Two Hand control (2 Safeballs).
- Both stationary and mobile applications.

Key Benefits and Features

- Flexible mounting with JSMC5 allowing the Safeball™ to be oriented in the most ergonomic position.
- Low activation force.
- Optional protection coat allows the Safeball™ to be used in harsh environments.
- Can reduce the need for shrouding to prevent defeat, as the design helps reduce the ability to push all four push buttons in a two- Safeball™ design.
- Highest level of safety with approved safety relay or safety PLC.
- M12 connection for easy installation (JSTD25).
- 3 models to choose from depending on controller and application. Possibility of Emergency stop button (JSTD25).
- “Spoons” guard Safeball™ from damage if dropped (JSTD25).

Safeball™

Innovative and ergonomic machine control

Safeball™



Safeball™

Safeball™ available in 4 models. 3 models with NO+NC with different cable variation. 1 model with 2NO with short leads. Can be used for both single and two hand control.

Safeball™ can be connected to a safety relay or safety PLC.



Safeball™ Station

Safeball™ station available in 3 models. These station can be used as fixed devices or as a mobile devices. Used for two hand control.

Safeball™ station can be connected to a safety relay or safety PLC.

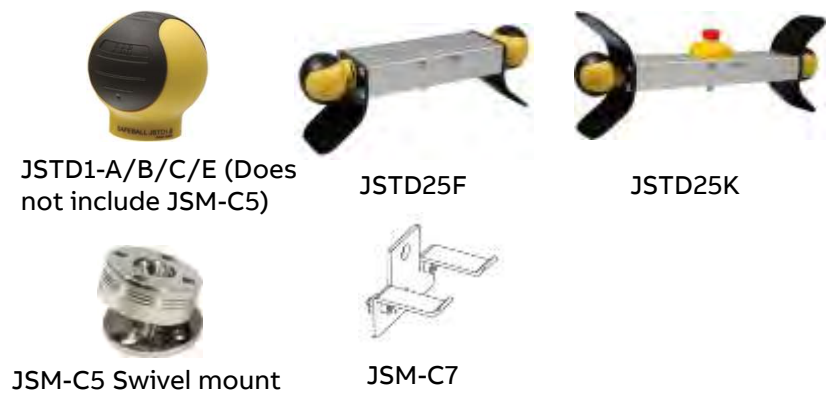
Safeball™

Innovative and ergonomic machine control

Safeball™

NOTES

Consult the manual for wiring /cabling considerations.



Type	Voltage	2m cable	10m cable	.2m leads	5 pin M12 (Station)	8 pin M12 (Station)	1NO +1NC(Safeball)	2NO (Safeball)	Station with 2NO + 2NC	Station with 2NO and 2NC with estop	Accessory	Ordering Code
JSTD1-A	24VDC	●					●					2TLA020007R3000
JSTD1-B	24VDC			●			●					2TLA020007R3100
JSTD1-C	24VDC		●				●					2TLA020007R3200
JSTD1-E	24VDC	●		●				●				2TLA020007R3400
JSM-C5											●	2TLA020007R0900
JSM C7 Shelf for JSTD25F/H/K											●	2TLA020007R1200
JSTD25F	24VDC				●				●			2TLA020007R6000
JSTD25H	24VDC					●			●			2TLA020007R6300
JSTD25K	24VDC					●				●		2TLA020007R6900
Safeball Protection Coat											●	2TLA020007R1900



Safeball™

Innovative and ergonomic machine control

Associated Devices

Associated Logic Devices

Single Stop Condition

[Sentry Safety Relays - SSR20, SSR20M, USR10 or USR22](#)

Multiple Stop Conditions or Advanced Logic

[Pluto](#)

Accessories

[Safeball Protection Coat and Shelf](#)

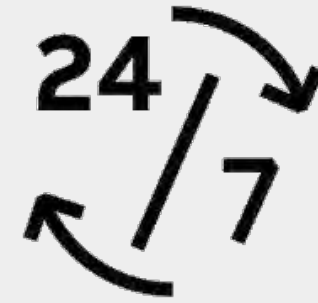
Resource Links

	Website	Flyer	Manual
GKEY	Website	Flyer	Manual

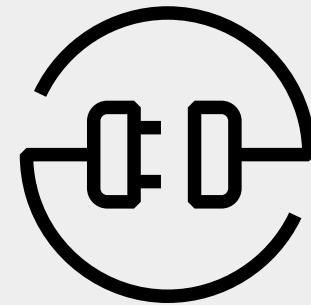
JSHD4 and HD5

Three-position devices

Ergonomic three-position device



Continuous Operation



Optimum Interface



Safety and Protection

JSHD4 and HD5

Three-position devices

Ergonomic three-position device



Application

- Limited movement of machine when in the hazardous area.
- Operator in full control.

Key Benefits and Features

- Red/green LEDs available to give visual status to operators.
- Auxiliary buttons for additional functions.
- Modular Design and various connection options.
- Optional protection coat allows the JSHD4 to be used in harsh environments.
- Allows the operators to safely inspect the manufacturing process without completely stopping the machine.
- An “anti-tamper” option is available that detects if the JSHD4 is held in the middle position by a human hand rather than other means (e.g. elastic band).
- Highest Level of Safety Category 4/Plc.
- Integrated emergency stop and flashlight available (HD5).
- Fiberglass Reinforced Plastic minimizes breakage and anti-condensation membrane prevents moisture from building up inside (HD5).
- No sharp edges or places where dirt and bacteria can be accumulated (HD5).
- Home position sensor detects HD5 in its holster.



JSHD4 and HD5

Ergonomic three-position device

Enabling Device



JSHD4 Enabling Handle

JSHD4 enabling handle is available in 5 models. Can come with red/green LEDs and a maximum of 2 extra buttons (top and front).

JSHD4 enabling handle can be connected to a safety relay (anti-tamper board recommended) or safety PLC.



Bottom

Bottom for enabling handle is available in many different options. They can have cable glands or with quick connects (M12, ITT Cannon).



Enabling Device Accessories

A wide variety of accessories for enabling devices from holster options to an anti-tamper board.



JSHD4 and HD5

Ergonomic three-position device

HD5 Enabling Device



HD5 Enabling Device

HD5 enabling device is available in 3 models. Can come with red/green LEDs, 2 extra buttons, motion sensor, emergency stop and flashlight.

HD5 enabling device can be connected to a safety relay or safety PLC.



HD5 Accessories

A wide variety of accessories for the HD5 from holster options to cables.

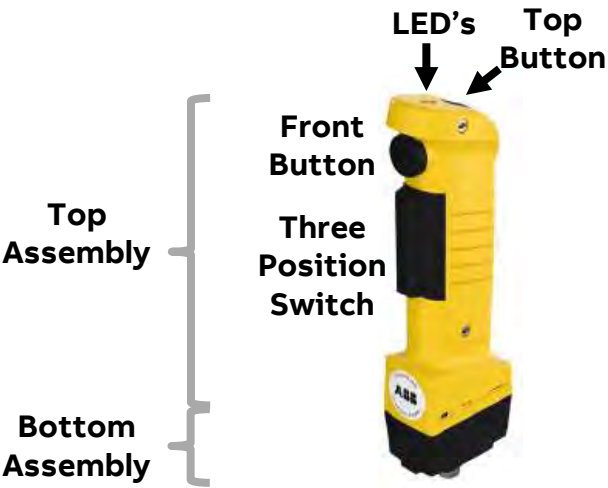
JSHD4 and HD5

Ergonomic three-position device

Enabling Device Handle

NOTES

In the USA we stock the enabling device handle and bottom part. We do not stock full assemblies.



Type	Voltage	LEDs	Top Button	Front Button	Anti-tamper can be used	Ordering Code
JSHD4-1	24VDC					2TLA020006R2100
JSHD4-2	24VDC	•	•	•	•	2TLA020006R2200
JSHD4-3	24VDC	•			•	2TLA020006R2300
JSHD4-4	24VDC			•	•	2TLA020006R2400
JSHD4-5	24VDC		•		•	2TLA020006R2500

Steps for ordering:

- **STEP 1** - Select the desired Handle from among the 5 Standard Handles
- **STEP 2** - Select the desired “Base”. Use the Chart from data sheet to double check which “Base” options are available for the Handle selected.
- **STEP 3** - Select the optional “Accessories”.

JSHD4 and HD5

Ergonomic three-position device

Enabling Device Bottom

NOTES

The USA we stock the enabling device handle and bottom part. We do not stock full assemblies.

See description for cabling requirements.

AE Bottom (2TLA020005R1400) and AK Bottom (2TLA020005R1900) cannot use Anti-Tamper Board.

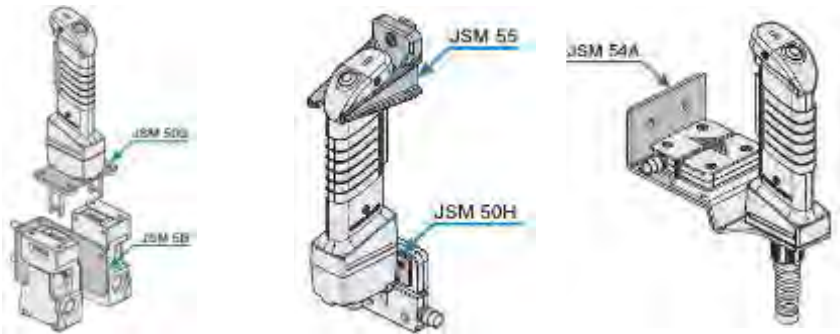


Type	Accessory	Cable Gland	With PCB 10 screw connections	With PCB 16 screw connections	M12 5 pin	M12 8 pin	With Estop	Cannon Connector	Geared to replace older JSHD4 models	Eva Plate	Ordering Code
AA Bottom		•									2TLA020005R1000
AH Bottom		•	•								2TLA020005R1700
AJ Bottom		•		•							2TLA020005R1800
AC Bottom					•						2TLA020005R1200
AD Bottom						•					2TLA020005R1300
AB Bottom								•			2TLA020005R1100
AK Bottom								•	•		2TLA020005R1900
AL Bottom		•	•							•	2TLA020005R2000

JSHD4 and HD5

Ergonomic three-position device

Enabling Device Accessories



Type	Ordering Code
JSM55 Wall Bracket	2TLA040005R0500
JSM5B Bracket for MKEY 4/5	2TLA040005R0700
JSM54A Adam Wall Bracket	2TLA020205R2800
JSM50G Bottom Plate for MKEY 4/5	2TLA020205R6300
JSM50H Eva Bracket	2TLA020205R6400
JSHD4 Protection Coat	2TLA020200R4600



JSHD4 and HD5

Ergonomic three-position device

HD5 Enabling Device

NOTES

All models come with M23 connector. 19 pin for the fully loaded model. 12 pin for all others.



HD5-S-111 with HD5-M-002

Type	Voltage	Enabling Device	Holder	Cable	Emergency Stop with LED	Home Position Sensor	Motion Sensor	Two Top Buttons	Passive Holder	Active Holder	5m straight M23	10m straight M23	2.5m spiral M23	5m spiral M23	10m spiral M23	12 pin	19 pin	Ordering Code
HD5-S-102	24VDC	•			•											•		2TLA023001R0000
HD5-S-104	24VDC	•						•								•		2TLA023001R0200
HD5-S-111	24VDC	•			•	•	•	•									•	2TLA023001R0100
HD5-M-001			•							•								2TLA920509R0001
HD5-M-002			•						•									2TLA920509R0002
M23-SPC12-0.5/25	24VDC			•									•			•		2TLA023100R0000
M23-SPC12-10/50	24VDC			•										•		•		2TLA023200R0000
JSD-TK100S-12	24VDC			•												•	•	2TLA930034R0000
JSD-TK5-12	24VDC			•							•					•		2TLA930050R0000
JSD-TK10-12	24VDC			•								•				•		2TLA930051R0000
M23-STC12-0250	24VDC			•									•			•		2TLA023300R0000
JSD-TK5-12	24VDC			•							•					•		2TLA930050R0000
M23-SPC19-05/25	24VDC			•										•			•	2TLA023400R0000
M23-SPC19-10/50	24VDC			•											•		•	2TLA023500R0000
JSD-TK5-19	24VDC			•							•						•	2TLA930057R0000



JSHD4 and HD5

Ergonomic three-position device

Associated Devices

Associated Logic Devices

Single Stop Condition

[Sentry Safety Relays](#)

Multiple Stop Conditions or Advanced Logic

[Pluto](#)

Accessories

[JSHD4 Accessories](#)

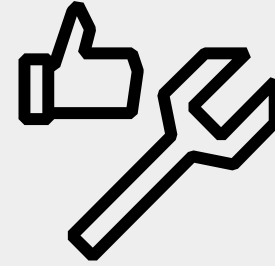
Resource Links

	Website	Flyer	Manual
JSHD4	Website	Flyer	Manual
HD5	Website	Flyer	Manual
	Old to new model		

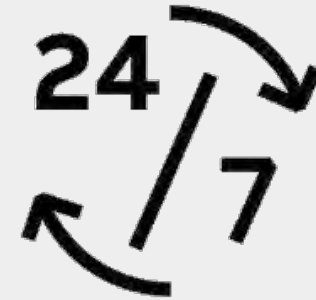
Sentry

Safety Relay

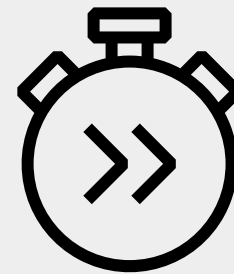
Powerful and easy to use



Easy to Install



Continuous Operation



Speed up your Projects

Sentry

Safety Relay

Powerful and easy to use



Application

- Monitoring safety devices (ex. Light Curtains, Gate Switches, Emergency Stops).
- Expanding safe outputs (for not only safety relay but as well Safety Controllers).
- Advanced Timing functions (ex. Off delay, on delay, timed bypass and timed reset).

Key Benefits and Features

- Quick connection and replacement.
- Intuitive push in connection.
- Easy selection of reset.
- No intermediary control relay/contactors needed due to high current capacity outputs.
- Easy to reach highest level of safety PLe/SIL3.
- Extensive troubleshooting status information.
- Simple troubleshooting with display.
- Vibration resistant and maintenance free connection (push in).
- Accurate timer functions.
- Simple and quick reset of multiple relays.
- Twice as fast to install (Push in).
- Handle ferruled and rigid cables (Push in).
- No tools required for installation (Push in).

Sentry

Powerful and easy to use

Sentry Safety Relays



BSR - Basic Safety Relays

BSR safety relays are cost effective for basic applications such as emergency stops and expansion of safety outputs.



SSR - Single Function Safety Relays

SSR safety relays are easy-to-use and designed for specific applications such as 1 or 2 channel devices, OSSD and two-hand control devices.



TSR - Timer Safety Relays

TSR safety relays are advanced safety timers with excellent accuracy.



USR - (Configurable) Universal Safety Relays

USR safety relays can be configured to combine all the functions of a BSR, TSR or SSR safety relay.

Sentry

Powerful and easy to use

Sentry Safety Relays (Screw Terminals)

NOTES

- a) No monitoring of two-channel fault, e.g. max Category 3 without fault exclusion.
- b) Off-delay, On-delay, Time bypass or Time reset Configurable model with display.
- c) 85-265 VAC/ 120-275 VDC.



Type	Voltage	Timer	Safety Outputs	Expansion of Safe Outputs	Manual Reset	Two Hand device	Safety Mats, Edges and Bumpers	Dual Channel OSSD Devices	Dual Channel NO/NC	Dual Channel 2NC Single Channel	Ordering Code
BSR10	24VDC		3NO+1NC	•						a) •	2TLA010040R0000
BSR11	24 VDC		4 NO	•						a) •	2TLA010040R0200
BSR23	24VDC		4NO+1NC	•						• •	2TLA010041R0600
SSR10	24VDC		3NO+1NC	•	•			•		• •	2TLA010050R0000
SSR20	24VDC		3NO+1NC		•	•				• •	2TLA010051R0000
SSR32	24VDC	Off delay 0.5s	2NO+2NO Delayed		•			•		• •	2TLA010052R0400
SSR42	24VDC	Off delay 1.5s	2NO+2NO Delayed		•			•		• •	2TLA010053R0400
SSR10M	c)		3NO+1NC	•	•					•	2TLA010050R0100
SSR20M	c)		3NO+1NC		•	•					2TLA010051R0100
TSR10	24VDC	0-999s b)	3NO+1NC	•				•		• •	2TLA010060R0000
TSR20	24VDC	Off delay 0.5s or 1.5s	3NO+1NC	•				•		• •	2TLA010061R0000
TSR20M	c)	Off delay 0.5s or 1.5s	3NO+1NC	•						•	2TLA010061R0100
USR10	24VDC	0-999s b)	3NO + 1NC		•	•	•	•	•	• •	2TLA010070R0000
USR22	24VDC	0-999s b)	2NO+2NO Delayed		•	•	•	•	•	• •	2TLA010070R0400

Sentry

Powerful and easy to use

Sentry Safety Relays (Push In Terminals)

NOTES

- a) No monitoring of two-channel fault, e.g. max Category 3 without fault exclusion.
- b) Off-delay, On-delay, Time bypass or Time reset Configurable model with display.
- c) 85-265 VAC/ 120-275 VDC.



Type	Voltage	Timer	Safety Outputs	Expansion of Safe Outputs	Manual Reset	Two Hand device	Safety Mats, Edges and Bumpers	Dual Channel OSSD Devices	Dual Channel NO/NC	Dual Channel 2NC Single Channel	Ordering Code
BSR10P	24VDC		3NO+1NC	•						a) •	2TLA010040R0001
BSR11P	24 VDC		4 NO	•						a) •	2TLA010040R0201
BSR23P	24VDC		4NO+1NC	•						• •	2TLA010041R0601
SSR10P	24VDC		3NO+1NC	•	•			•		• •	2TLA010050R0001
SSR20P	24VDC		3NO+1NC		•	•				• •	2TLA010051R0001
SSR32P	24VDC	Off delay 0.5s	2NO+2NO Delayed		•			•		• •	2TLA010052R0401
SSR42P	24VDC	Off delay 1.5s	2NO+2NO Delayed		•			•		• •	2TLA010053R0401
SSR10MP c)			3NO+1NC	•	•					•	2TLA010050R0101
SSR20MP c)			3NO+1NC		•	•					2TLA010051R0101
TSR10P	24VDC	0-999s b)	3NO+1NC	•				•		• •	2TLA010060R0001
TSR20P	24VDC	Off delay 0.5s or 1.5s	3NO+1NC	•				•		• •	2TLA010061R0001
TSR20MP c)		Off delay 0.5s or 1.5s	3NO+1NC	•						•	2TLA010061R0101
USR10P	24VDC	0-999s b)	3NO + 1NC		•	•	•	•	•	• •	2TLA010070R0001
USR22P	24VDC	0-999s b)	2NO+2NO Delayed		•	•	•	•	•	• •	2TLA010070R0401



Sentry Safety Relays

Powerful and easy to use

Associated Devices

Associated Input Devices

[Eden OSSD](#), [Magne 4 OSSD](#), [MKEY](#), [Sense](#), [GKEY](#), [Inca and Smile](#), [EStrong](#), [LineStrong](#), [Orion](#), [JSHD4 and HD5](#), [Safeball](#), [Safety Mats](#), [Safety Edges](#), [Safety Bumpers](#)

Accessories

[OCB](#)

Resource Links

	Website	Flyer	Manual
Sentry	Website	Flyer	Manual
	Old ABB Safety Relays to New	Example Drawings	

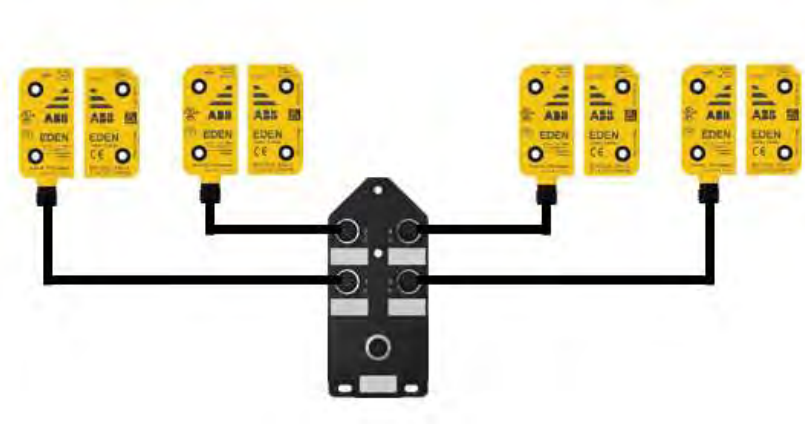
OCB

Connection Block

OCB

NOTES

See cable section at end of Easy Reference Guide for [5, 8 and 12 Pin Cables](#).



Type	Voltage	M12 Connection	For Single application	For series applications	Local Reset (with Smile Reset)	Actuator	Accessory	Ordering Code
OCB-1A	24VDC	5 pin	•					2TLA020055R3000
OCB-2A	24VDC	8 pin	•	•				2TLA020055R3100
OCB-3A	24 VDC	8 pin	•	•	•			2TLA020055R3200
OCB-4A			•	•		•		2TLA020055R3300
JSOP-8			•	•		•		2TLA020055R2400
JST2	24VDC	5/8 pin		•			•	2TLA030051R1300



OCB

Connection Block

Associated Devices

- Associated Logic Devices
- Single Stop Condition
 - [Sentry Safety Relays](#)
- Multiple Stop Conditions or Advanced Logic
 - [Pluto](#)

Resource Links

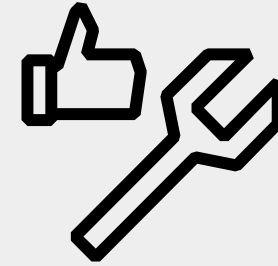
	Website	Flyer	Manual
OCB -1A	Website	Flyer	Manual
OCB -2A	Website	Flyer	Manual
OCB -3A	Website	Flyer	Manual
OCB -4A	Website	Flyer	Manual



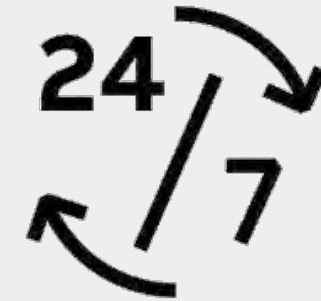
Vital

Safety Controller

A simple way to reach the highest level of safety



Easy to Install



Continuous Operation



Safety and Protection

Vital

Safety Controller

A simple way to reach the highest level of safety



Application

- Used to control as single stop condition.
- Use for DYNlink capable devices.

Key Benefits and Features

- Easily add new or non-DYNlink devices with Tina adaptors to an existing system. No programming needed.
- Reduced wiring with using DYNlink devices and accessories.
- DYNlink devices uses M12 connectors which makes for easier connections
- Advanced Diagnostics with use of DYNlink devices– Flashing Lights guide you to the problem.
- No configuration required if exchanging devices
- Detachable terminal blocks speed up replacement
- TUV-tested to the highest level of safety with DYNlink devices, up to 30 DYNlink devices can be attached to one Vital Safety Controller in series.
- Cannot be bypassed at the controller

Vital

A simple way to reach the highest level of safety

Vital Safety Controller



Vital Safety Controller

Vital safety controller for DYNlink devices such as Eden DYN, Smile Tina, Inca Tina etc... Single stop condition for all devices in the safety circuit.



Tina Adaptors

Tina adaptors bring in non-DYNlink devices such as light curtains, dual channel estops, safety mats etc.. into the DYNlink loop.



Vital

A simple way to reach the highest level of safety

Vital Safety Controller

Type	Voltage	Safety Outputs	Manual and Auto Reset	DYNlink Devices	Ordering Code
Vital 1	24VDC	2NO	•	•	2TLA020052R1000



Tina adapters

Dual Channel to Dynlink adapters

Pluto and Vital Accessories

NOTES

Original Tina 10A/B/C have been replaced with Version 2.

Tina 11/12 work like a Tina 4A/8A but for only two devices.

Tina 5A is no longer available but there are options for replacement. [Click here for options.](#)



Type	Voltage	For Estops	For Gate Switches	For Light Curtains	For Safety Mats	For Bypass	Port Block	For Magne	Ordering Code
Tina 1A	24 VDC						●		2TLA020054R0000
Tina 2A	24VDC	●	●						2TLA020054R0100
Tina 2B	24VDC	●	●						2TLA020054R1100
Tina 3A	24VDC	●	●						2TLA020054R0200
Tina 3Aps	24VDC	●	●						2TLA020054R1400
Tina 4A	24VDC						●		2TLA020054R0300
Tina 7A	24VDC	●							2TLA020054R0700
Tina 8A	24VDC						●		2TLA020054R0500
Tina 10A V2	24VDC			●					2TLA020054R1210
Tina 10B V2	24VDC			●					2TLA020054R1310
Tina 10C V2	24VDC			●					2TLA020054R1610
Tina 11A	24VDC						●		2TLA020054R1700
Tina 12A	24VDC						●		2TLA020054R1800



Vital

A simple way to reach the highest level of safety

Associated Devices

Associated Input Devices

- [Eden DYN](#)
 - [Inca and Smile Tina](#)
 - [Magne 4 DYN](#)
- ### Accessories
- [Tinas](#)

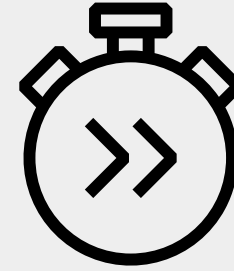
Resource Links

	Website	Flyer	Manual
Vital	Website	Flyer	Manual
Tina	Website		

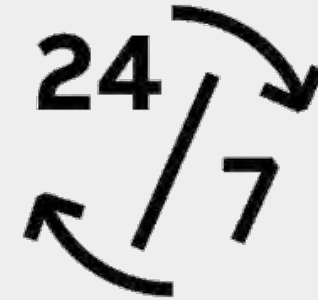
Pluto

Programmable Safety Controller

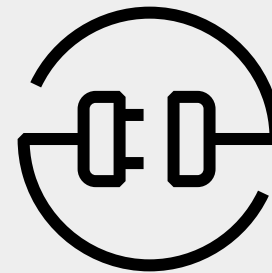
Compact, powerful and user-friendly Safety PLC



Speed up Installation



Continuous Operation



Optimum Interface

Pluto

Programmable Safety Controller

Compact, powerful and user-friendly Safety PLC



Application

- Used to control multiple stop conditions.
- Control a single machine or multiple machines.

Key Benefits and Features

- A, B, & D models are Safety Bus capable, Up to 32 Pluto's on a network, D models with analog safe inputs (0-10VDC, 4-20mA).
- S models are stand-alone without Safety Bus network connectivity for smaller projects.
- Unexpected features for its size, like real programming and speed monitoring, enables replacement of more complex PLC systems in some applications.
- Use less IO with DYNlink devices allowing series connection of up to 10 devices to a single input.
- Online monitoring from any Pluto in the system and remote monitoring and control with an Ethernet gateway.
- Easily exchange Pluto programmable safety controller in the field without the use of a computer both in networked and stand-alone systems (ID PROG tag needed).
- No charge for Pluto Manager Programming Software.
- Gateways for many protocols (DeviceNET, Ethernet, EtherCAT, ProfiNET, ProfiBus, Modbus TCP, etc.) provide a two-way communication between the Pluto safety/other field buses.
- Able to use DYNlink capable devices, dual channel devices, StatusBus functionality.
- TUV approved safety function blocks. Able to achieve highest level of safety PL e/SIL 3.

Pluto safety PLC

Compact, powerful and user-friendly Safety PLC

Pluto Safety PLC



S20v2, S46v2

S models with no safety bus (stand alone). DYNlink and dual channel devices can be used with Pluto. Different sized models depending on input/output requirements.



Pluto A20v2, B20v2, B46v2

A/B models with safety bus (networkable). DYNlink and dual channel devices can be used with Pluto. Different sized models depending on input/output requirements.



Pluto D20, D45

D models with safety bus (networkable). DYNlink and dual channel devices can be used with Pluto. Both models with safe analog inputs. D45 also has high speed counter inputs. Different sized models depending on input/output requirements.



Pluto B22, O2

B22 and O2 models with safety bus (networkable). DYNlink and dual channel devices can be used with Pluto. B22 just have safe inputs and non-safe outputs. No safety outputs. O2 has 2 safe inputs (typically used for monitoring external devices) and 2 banks of safe relay outputs.

Pluto safety PLC

Compact, powerful and user-friendly Safety PLC

Pluto Safety PLC

NOTES

Pluto A20 v2 has current monitoring for mute lamp (x2).

Smaller model are 45mm wide and larger are 90mm wide.



Type	Voltage	Input/Output Total	Safety Outputs	With Bus	With ASI	Safety Inputs	Configurable (Safe In/Non-Safe Out)	Safety Relay Outputs	Safety Transistor Outputs	Safe Analog Inputs	High Speed Counter	Ordering Code
Pluto S20 v2	24VDC	20	4			8	8	2	2			2TLA020070R4700
Pluto S46 v2	24 VDC	46	6			24	16	4	2			2TLA020070R1800
Pluto B20 v2	24VDC	20	4	●		8	8	2	2			2TLA020070R4600
Pluto B22	24VDC	22	0	●		14	8		2			2TLA020070R4800
Pluto B46 v2	24VDC	46	6	●		24	16	4	2			2TLA020070R1700
Pluto D20	24VDC	20	4	●		8	8	2	2	4		2TLA020070R6400
Pluto D45	24VDC	45	6	●		24	15	4	2	8	4	2TLA020070R6600
Pluto ASI	24VDC	12	4	●	●	4	4	2	2			2TLA020070R1100
Pluto B42 ASI	24VDC	42	6	●	●	20	16	4	2			2TLA020070R1400
Pluto O2	24VDC	6	2	●		2	2	2				2TLA020070R8500

Pluto safety PLC

Compact, powerful and user-friendly Safety PLC

Pluto Gateways

NOTES

Gateways are used with safety bus (networkable) versions of the Plutos.

Models with remote monitoring allow for help with troubleshooting (e.g. monitoring of condition of Pluto's, downloading PLC program and upgrading operating system).



Type	Voltage	Profibus	Canbus	Devicenet	Ethernet	EtherCat	Profinet	Modbus TCP	Remote Monitoring	Ordering Code
Gate P2	24VDC	●								2TLA020071R8000
Gate C2	24 VDC		●							2TLA020071R8100
Gate D2	24VDC			●						2TLA020071R8200
Gate E1P	24VDC				●				●	2TLA020071R9000
Gate EC	24VDC					●			●	2TLA020071R9100
Gate PN	24VDC						●		●	2TLA020071R9300
Gate MT	24VDC							●	●	2TLA020071R9400

Pluto safety PLC

Compact, powerful and user-friendly Safety PLC

Pluto Accessories

NOTES

Download the latest version of [Pluto Manager](#) on our website under the Pluto Manager tab.

Registration can be obtained by emailing Jokab.service@us.abb.com. Please include company information.



2TLA020070R2600
IDFIX-2K10

Used for easy replacement
of stand-alone Pluto
Use R or R/W for networks



2TLA020070R5800
USB Programming Cable

Type	For Singe Pluto	For multiple Plutos	Ordering Code
IDFIX-R	•	•	2TLA020070R2000
IDFIX-RW	•	•	2TLA020070R2100
IDFIX-2K5	•		2TLA020070R2400
IDFIX-2K10	•		2TLA020070R2600
IDFIX-DATA	•	•	2TLA020070R2300
R120	•	•	2TLA020070R2200
Canbus Cable			See cable section
USB Programming Cable			2TLA020070R5800
Pluto Manager	•	•	Free Download

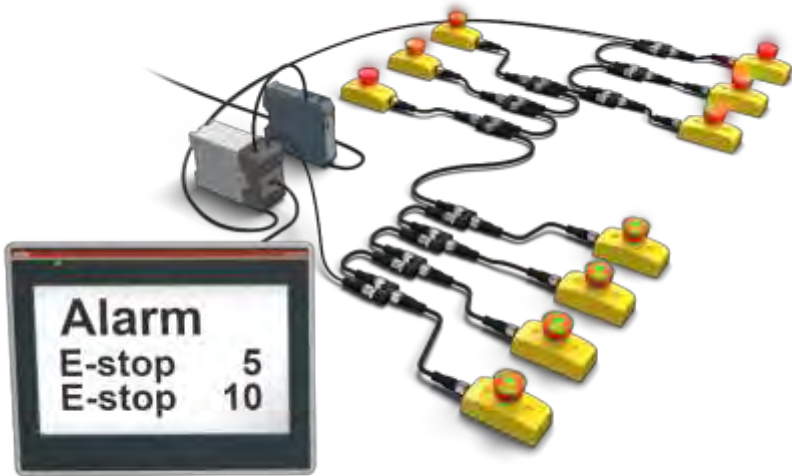
Pluto safety PLC

Compact, powerful and user-friendly Safety PLC

Statusbus

Features

- Status of up to 30 devices connected to one input on the Pluto programmable safety controller.
- Up to four inputs on the Pluto can be configured for StatusBus = 120 StatusBus Devices.
- Status of safety system is easily sent to HMI to be displayed, help reducing downtime.
- M12 connectors for easy installation.
- Smile, Inca, & Eden have Statusbus models available.



Pluto safety PLC

Compact, powerful and user-friendly Safety PLC

Statusbus

NOTES

HMI’s supporting Modbus ASCII can be used to display status directly using Pluto programming port.

Using the Tina 4A/8A makes wiring for StatusBus easy. You can connect the StatusBus pins easily inside the Tina 4A/8A. See description for cable connections.



Smile StatusBus



INCA StatusBus



Eden StatusBus



FIXA Programming Tool
Optional Not Required



M12-3S
Y-Connector



Tina 4A/8A
Safety Port Block

Type	Voltage	Estop Remote	Estop Panel Mount	Doors /hatches	Actuator	Accessory	Ordering Code
Smile 11EC Tina	24VDC	●					2TLA030050R0900
Inca 1EC Tina	24 VDC		●				2TLA030054R1400
Adam StatusBus	24VDC			●			2TLA020051R5200
Eva General Code	24VDC				●		2TLA020046R0800
Eva Unique Code	24VDC				●		2TLA020046R0900
FIXA						●	2TLA020072R2000
M12-3S	24VDC	●	●			●	2TLA020055R0600
Tina 1A	24VDC					●	2TLA020054R0000
Tina 4A	24VDC	●	●			●	2TLA020054R0300
Tina 8A	24VDC	●	●			●	2TLA020054R0500

Pluto Safety PLC

Compact, powerful and user-friendly Safety PLC

Associated Devices

Associated Input Devices

[Eden](#), [Magne 4](#), [MKEY](#), [Sense](#), [GKEY](#), [Inca and Smile](#), [EStrong](#), [LineStrong](#), [Orion](#), [JSHD4 and HD5](#), [Safeball](#), [Safety Mats](#), [Safety Edges](#), [Safety Bumpers](#)

Accessories

[Gateways](#)

[ID Tags and Programming Cables](#)

Resource Links

	Website	Flyer	Manual
Pluto	Website	Flyer	Hardware Manual, Programming Manual
	Ethernet Gateway Manual	Gateway Manual	Statusbus Brochure

Cables

Cables – Single Ended

NOTES

E.g. M12-C201 = M12-C, 20m, 5 pin female

Cable Description Decoder – M12-CABC			
M12-C	A – Length	B – Connector	C – Connector
	03=0.3m	1=5 pin female	1=5 pin female
	1=1m	2=5 pin male	2=5 pin male
	3=3m	3=8 pin female	3=8 pin female
	6=6m	4=8 pin male	4=8 pin male
	10=10m	5=12 pin female	5=12 pin female
	20=20m	6=12 pin male	6=12 pin male



Type	5 pin M12 female	5 pin M12 male	5 pin 90-degree M12 female	8 pin M12 female	8 pin M12 male	12 pin M12 female	6m length	10m length	20m length	Harsh Environment	Ordering Code
M12-C61	●						●				2TLA020056R0000
M12-C101	●							●			2TLA020056R1000
M12-C201	●								●		2TLA020056R1400
M12-C61HE	●						●			●	2TLA020056R8000
M12-C101HE	●							●		●	2TLA020056R8100
M12-C62		●					●				2TLA020056R0200
M12-C102		●						●			2TLA020056R1200
M12-C61v2			●				●				2TLA020056R0600
M12-C63		●	●	●			●				2TLA020056R3000
M12-C103				●				●			2TLA020056R4000
M12-C203				●					●		2TLA020056R4100
M12-C104					●			●			2TLA020056R4200
M12-C65						●	●				2TLA020056R7200
M12-C105						●		●			2TLA020056R7300
M12-C205						●			●		2TLA020056R7500

Cables

Cables – Double Ended

NOTES

E.g. M12-C112 = M12-C, 1m, 5 pin female, 5 pin male

Cable Description Decoder – M12-CABC			
M12-C	A – Length	B – Connector	C – Connector
	03=0.3m	1=5 pin female	1=5 pin female
	1=1m	2=5 pin male	2=5 pin male
	3=3m	3=8 pin female	3=8 pin female
	6=6m	4=8 pin male	4=8 pin male
	10=10m	5=12 pin female	5=12 pin female
	20=20m	6=12 pin male	6=12 pin male



Type	5 pin	8 pin	0.06m length	0.3m length	1m length	3m length	6m length	10m length	20m length	Ordering Code
M12-C00612	●		●				●			2TLA020056R6300
M12-C0312	●			●						2TLA020056R5800
M12-C112	●				●				●	2TLA020056R2000
M12-C312	●					●				2TLA020056R2100
M12-C612	●						●			2TLA020056R2200
M12-C1012	●							●		2TLA020056R2300
M12-C2012	●								●	2TLA020056R2400
M12-C00634		●	●							2TLA020056R6400
M12-C134		●			●					2TLA020056R5000
M12-C334		●				●				2TLA020056R5100



Cables

Cables – Field Wirables



Type	Field Wirable Female	Field Wirable Male	5 pin	8 pin	Ordering Code
M12-C01	•		•		2TLA020055R1000
M12-C02		•	•		2TLA020055R1100
M12-C03	•			•	2TLA020055R1600
M12-C04		•		•	2TLA020055R1700

Cables

Cables – Bulk

NOTES

Spools of cables are not stocked in the USA.



Type	Cable 5 conductor	Cable 8 conductor	Cable 9 conductor	Cable 13 conductor	Canbus	Ordering Code
Canbus 50m					●	2TLA020070R6805
Canbus 100m					●	2TLA020070R6810
Canbus 500m					●	2TLA020070R6850
C5 cable 10m	●					2TLA020057R0001
C5 cable 50m	●					2TLA020057R0005
C5 cable 100m	●					2TLA020057R0010
C5 cable 200m	●					2TLA020057R0020
C5 cable 500m	●					2TLA020057R0050
C8 cable 50m		●				2TLA020057R1005
C8 cable 100m		●				2TLA020057R1010
C8 cable 200m		●				2TLA020057R1020
C8 cable 500m		●				2TLA020057R1050
C9 cable 150m			●			2TLA020057R1515
C9 cable 350m			●			2TLA020057R1535
C13 cable 100m				●		2TLA020057R2010
C13 cable 350m				●		2TLA020057R2025

— 04

ADDITIONAL RESOURCES

Additional Resources

Additional information links

Catalogs, Brochures

[ABB Jokab “Easy Reference”](#)

[ABB Jokab Panorama US](#)

[ABB solutions for control panels](#)

[Machine Safety Handbook](#)

[OEM Control Panel Products Flipbook](#)

Video Links

[ABB JOKAB SAFETY - Your best partner for machine safety](#)

[ABB Machine Safety Solutions](#)

[How to configure ABB Sentry safety relays](#)

[ABB's Orion light guards](#)

[Pluto D45 Safety PLC combines Process and Functional Safety](#)

[Sentry & Eden Video](#)

[Eden C for demanding environments](#)

[Eden - reliable safety](#)

[Sentry Push in Terminal Video](#)

[HD5 Developed for Harsh Environments](#)

[Magne Magnetic Locking](#)

[Eden teaching – how to teach and erase codes from Adam](#)

Sales Bundles

[Eden Multiple](#)

[Eden Single](#)

[JSHD4/HD5](#)

[LineStrong](#)

[Magne](#)

[MKEY RFID](#)

[Orion](#)

[DYNlink homerun solution](#)

[Emergency stop solution](#)

[DYNlink connection block solution](#)

[DYNlink daisy chain solution](#)

7 Episodes on “Your First Pluto Project”

[Your first Pluto project: Episode 1 – Intro Hardware](#)

[Your first Pluto project : Episode 2 – Adding Pluto units](#)

[Your first Pluto project: Episode 3 – IO configuration](#)

[Your first Pluto project : Episode 4 – Variable names](#)

[Your first Pluto project : Episode 5 – PLC code](#)

[Your first Pluto project: Episode 6 – Compiler](#)

[Your first Pluto project: Episode 7 – Download and Monitor](#)

Additional Resources

Additional information links

Articles

[Safe bowling with Jokab](#)

[Less is more when it comes to machine safety](#)

[Simplifying safety](#)

[Superior safety: From switches to sensors](#)

[Automating packaging for Baltic food company](#)

[4 Benefits of a Safety PLC](#)

[Think twice about bolt-on solutions](#)

[Are you selecting and installing your rope-pull safety switches correctly?](#)

Application Examples

[Application Guide](#)

[Total solution for a robotic training cell](#)

[Supervision of hatches for composting machine with Eden and Pluto](#)

[Speed monitoring of radio controlled vehicles with Pluto](#)

[Packaging line with robots and safety](#)

Stocking Guide

[Link](#)

Connection Diagrams and Certificates

[Connection diagrams and certificates\(at bottom of this page\)
2D and 3D Files, EPLAN](#)

European Catalogs (Differs from US offering)

[European main catalog \(European\)](#)

Configurator

[Eden OSSD](#)

[Eden DynLink](#)

[Gkey](#)

[Magne](#)

Additional Information

[Machine directives, Sistema, etc...](#)

Life Cycle Management

[Link](#)

Additional Resources

Educational links and Support

MyLearning (You will need to register)

[Link](#)

[9CSC024613 - Sentry Safety Relays](#)

[9CSC026191 - LineStrong Rope Pulls](#)

[9CSC027257 - Emergency Stops and Pilot Devices](#)

[9CSC026042 - JSHD4 Enabling Device](#)

[9CSC026377 - HD5 Enabling Device](#)

[9CSC024753 - Magne Process Locks](#)

[9CSC022929 - Eden Non-Contact Safety Sensor](#)

[9CSC026600 - Orion Light Curtain and Grids](#)

[9CSC027258 - Pressure Sensitive Devices](#)

[9CSC023789 - Process Locks and Safety Locks](#)

[9CSC026701 - Overview](#)

Support

Technical Support

Phone – 1-888-385-1221 Option 1

Email – eppc.support@us.abb.com

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