

MAIN CATALOG

Safety Products

ABB Jokab Safety



Non-contact safety sensor

Eden

Eden is a non-contact safety sensor used as interlocking device for e.g. doors and safe position monitoring.

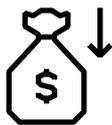
Eden consists of two parts: Adam and Eva. Adam senses the presence of Eva without mechanical contact and therefore without any wear. The compact size of Eden and its 360° mounting possibility make it easy to use in most applications.

Different models of Eden are available for different types of control modules. All Eden models make it very easy to reach PL e, often using fewer components than other solutions.

All Eden models have an IP67/IP69K sealing.



Continuous operation



Affordable range



Easy to install

Easier troubleshooting

Extensive LED indication and status information reduce downtime.

Local reset function

The integrated reset function reduces the number of cables and PLC inputs.

Large mounting tolerance

A 360° mounting possibility with generous tolerances facilitates mounting.

No wear, no mechanical breakage

Non-contact sensing means no mechanical wear and the large sensing tolerance gives a better tolerance to vibrations, resulting in fewer unwanted process stops.

PL e with fewer components

Series connection with PL e, local reset and DYNlink signal allow to considerably reduce the number of components needed to reach PL e.

Fast connection

M12 connectors, local reset and accessories speed up installation.

Applications

Eden

Applications

Doors and hatches

Eden monitors whether the hatch is open or closed. The dangerous movement is stopped as soon as the hatch is opened.



Position control

Eden can be used to monitor the position of a machine when someone is in the work area. This can be useful when removing power to the machine causes problems like a long restart time.

As long as the machine remains in the safe position monitored by Eden, a person can be allowed to enter the hazardous area even though the machine is still powered. If the machine leaves the safe position while the person is still in the hazardous area, power is removed from the machine.



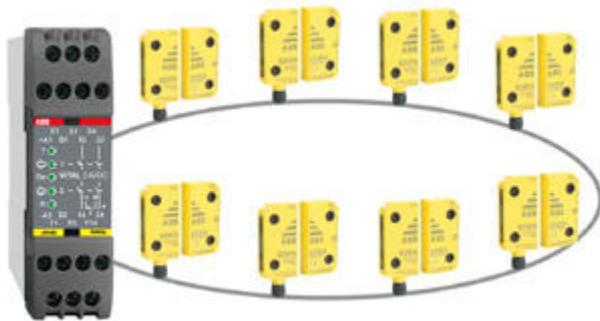
Features

Eden

Features

Easy PL e with Eden safety sensor

- Eden sensors can be connected in series while maintaining Cat. 4.
- Only one Eden per guard is necessary to reach PL e (instead of two key switches).
- Eden reaches PL e without any need for periodic checks (see ISO/TR 24119).



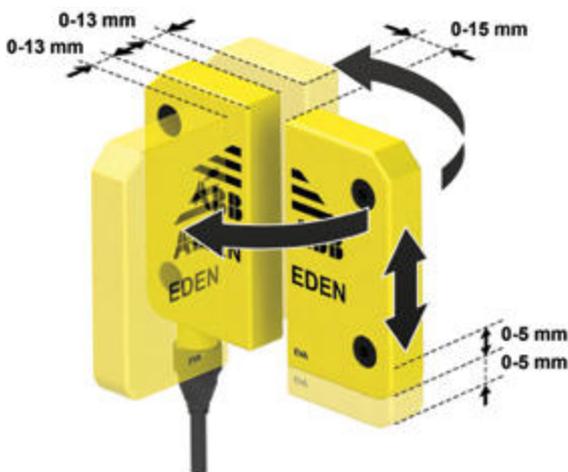
Low or high level coded sensor

Eva is available with General code or Unique code. If a new Adam is paired with an Eva general code at start up, Adam will accept all Eva with general code as a valid actuator. Eden will then classify as a low level coded sensor.

If a new Adam is paired with an Eva Unique code at startup, Adam will only accept this specific Eva as a valid actuator. In this case Eden is classified as a high level coded sensor. A high level coded sensor should be used when the motivation to defeat a sensor cannot be eliminated (see EN ISO 14119:2013).

360° mounting possibility

Eden offers 360° mounting possibility with generous tolerances.



Local reset button

A local reset button with integrated LED can be connected directly to Adam Reset instead of to the safety control module. In this way, each Eden can easily have its own reset button, which saves cable length and safety relays/PLC inputs. Adam Reset monitors the reset function and manages the LED in the reset button in the following way:

- on** - Adam and Eva are not in contact
- flashing** - Adam and Eva in contact, waiting for reset
- off** - Adam and Eva in contact and reset

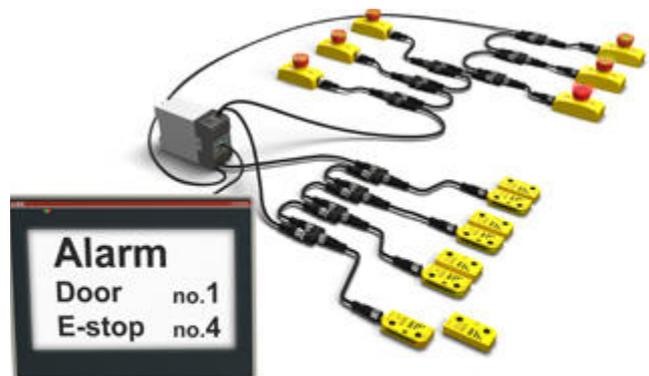
Info signal and extensive indication facilitate troubleshooting

All Eden models offer extensive LED indication to help troubleshooting and localizing which doors/hatches are opened. The LED on Adam lights in green or red depending on status:

- green** - valid Eva within range
- red** - valid Eva out of range
- flashing red/green** - valid Eva within range, but no valid safety signal received (loop broken “upstream”)

Simple status information with StatusBus

StatusBus is a simple and cost effective way to collect the status information of safety sensors. The StatusBus functionality is available with some DYNlink devices and allows to collect the status of each individual safety device, even when connected in series. A single input on Pluto safety PLC can collect the status of up to 30 safety devices. The devices are connected using standard cable and M12-5 connectors. No specific bus cable or extra communication module is necessary.



Models

Eden

Models

Eden DYN

Eden DYN consists of an Adam DYN and an Eva (general or unique code).

Adam DYN uses the ABB Jokab Safety DYNlink signal that allows to connect several safety products in series while maintaining PL e using only one channel. DYNlink signals must be used with Vital safety controller or Pluto safety PLC.

Up to 30 Adam DYN can be connected in series to Vital and up to 10 Adam DYN can be connected in series to one input of Pluto.

All products using the DYNlink signal can easily be connected in series and mixed in the same loop with a maintained PL e. Tina adapters allow to use other products in a DYNlink loop, and a wide range of connection accessories simplifies the cabling.



Eden DYN

Eden OSSD

Eden OSSD consists of an Adam OSSD and an Eva (general or unique code).

Adam OSSD can be used with all safety relays and safety PLCs compatible with OSSD signals (commonly used for light guards). Up to 30 Adam OSSD can be connected in series, and since OSSD devices monitor their own outputs for short circuits, a Cat. 4/PL e can still be reached.



Eden OSSD

Ordering information

Eden



2TLC010045V0201

Adam DYN-Info M12-5

Adam

Type of safety controller	StatusBus	Info signal	Local reset	Series connection	Connector male	Type	Order code
Pluto	x	x ¹⁾		x	M12-5	Adam DYN-Status M12-5	2TLA020051R5200
Pluto or Vital		x		x	M12-5	Adam DYN-Info M12-5	2TLA020051R5100
			x	x	M12-5	Adam DYN-Reset M12-5	2TLA020051R5300
OSSD compatible (incl. Pluto and Sentry)		x			M12-5	Adam OSSD-Info M12-5	2TLA020051R5400
			x	x	M12-8	Adam OSSD-Info M12-8	2TLA020051R5700
				x	M12-5	Adam OSSD-Reset M12-5	2TLA020051R5600
			x	x	M12-8	Adam OSSD-Reset M12-8	2TLA020051R5900

1) Pin 5 can be used as a standard info signal or StatusBus.

Eva

Code description	Code level	Type	Order code
General code. (Eva is interchangeable)	Low level	Eva General code	2TLA020046R0800
Unique code. (Prevents defeat/fraud)	High level	Eva Unique code	2TLA020046R0900

Accessories

Description	Type	Order code
Mounting plate for conventional door/hatch and folding door. Two pieces are needed for a complete set.	JSM D4H	2TLA040033R3600
Mounting plate for folding doors. Used together with one piece of JSM D4H.	JSM D4J	2TLA042020R4000
Sliding lock for Eden on conventional doors. (Eden is not included.)	JSM D20	2TLA020302R1000
Mounting converting plate from Eden E to Eden OSSD or Eden DYN	DA 3A	2TLA020053R0600
Heat shrinking tubes for M12 connectors. Protects M12 connectors in harsh environments and provides extra protection against tampering.	M12 Safety seal	2TLA020053R0800
Wrench for tightening of M12 connectors according to specified torque: 0.6 Nm.	M12 Torque wrench	2TLA020053R0900
Handheld terminal for addressing, configuration and testing of StatusBus devices, DYN-link devices and conventional PNP devices.	FIXA	2TLA020072R2000

Spare parts (included with main product on delivery)

Description	Type	Order code
Distance plate in yellow PBT (4 pcs).	DA 1B	2TLA020053R0700
Black distance rings to be mounted in Adam and Eva mounting holes (4 pcs).	DA 2B	2TLA020053R0300

Reset buttons for local reset

Description	Type	Order code
Reset button for Adam with 5 pins	Smile 12RF	2TLA030053R2600
Reset button for Adam with 8 pins	Smile 12RG	2TLA030053R2700



2TLC010040F0201

JSM D20 Eden slide lock



2TLC010040F0201

FIXA



2TLC12727F0201

Distance plate



2TLC12727F0201

Smile 12RG Reset button

Cables and connectors

Eden



M12-C61

2TLC172831F0201



M12-C61HE

2TLC010039F0201



M12-C334

2TLC172831F0201



M12-C01

2TLC172657F0201



C5 cable

2TLC010039F0201

Cable with connectors

Connector	Female/male	Length	Special feature	Type	Order code
M12-5	Female	3 m		M12-C31	2TLA020056R0500
		6 m		M12-C61	2TLA020056R0000
		10 m	Harsh environment, halogen free	M12-C61HE	2TLA020056R8000
		20 m	Harsh environment, halogen free	M12-C101HE	2TLA020056R8100
	Female + male	0.3 m		M12-C201	2TLA020056R1400
		0.06 m		M12-C0312	2TLA020056R5800
		1 m		M12-C00612	2TLA020056R6300
		3 m		M12-C112	2TLA020056R2000
		6 m		M12-C312	2TLA020056R2100
		10 m		M12-C612	2TLA020056R2200
		16 m	Angled female connector	M12-C1012V2	2TLA020056R6700
		20 m		M12-C1612	2TLA020056R5400
		6 m		M12-C2012	2TLA020056R2400
		10 m		M12-C62	2TLA020056R0200
M12-8	Female	3 m		M12-C102	2TLA020056R1200
		6 m		M12-C33	2TLA020056R2900
		10 m		M12-C63	2TLA020056R3000
		20 m		M12-C103	2TLA020056R4000
	Female + male	0.06 m		M12-C203	2TLA020056R4100
		1 m		M12-C00634	2TLA020056R6400
		3 m		M12-C134	2TLA020056R5000
				M12-C334	2TLA020056R5100

Separate cables and connectors

Description	Type	Order code
Connectors		
M12-5 pole female, straight	M12-C01	2TLA020055R1000
M12-5 pole male, straight	M12-C02	2TLA020055R1100
M12-8 pole female, straight	M12-C03	2TLA020055R1600
M12-8 pole male, straight	M12-C04	2TLA020055R1700
Cable with 5 conductors		
10 m cable with 5 x 0.34 shielded conductors	C5 cable 10 m	2TLA020057R0001
50 m cable with 5 x 0.34 shielded conductors	C5 cable 50 m	2TLA020057R0005
100 m cable with 5 x 0.34 shielded conductors	C5 cable 100 m	2TLA020057R0010
200 m cable with 5 x 0.34 shielded conductors	C5 cable 200 m	2TLA020057R0020
500 m cable with 5 x 0.34 shielded conductors	C5 cable 500 m	2TLA020057R0050
Cable with 8 conductors		
50 m cable with 8 x 0.34 shielded conductors	C8 cable 50 m	2TLA020057R1005
100 m cable with 8 x 0.34 shielded conductors	C8 cable 100 m	2TLA020057R1010
200 m cable with 8 x 0.34 shielded conductors	C8 cable 200 m	2TLA020057R1020
500 m cable with 8 x 0.34 shielded conductors	C8 cable 500 m	2TLA020057R1050

Connection Accessories

Eden



2TLA020053R7100

JSOP-2 Terminator

Connection accessories

Description	Type	Order code
Y-connector for series connection of DYNlink devices with M12-5 connectors, e.g. Eden.	M12-3A	2TLA020055R0000
Y-connector for series connection of DYNlink devices with the StatusBus function.	M12-3S	2TLA020055R0600
Y-connector for series connection of Adam OSSD M12-8 with M12-8 cables	M12-3G	2TLA020055R0700
Y-connector for series connection of Adam OSSD M12-8 with M12-5 cables	M12-3H	2TLA020055R0800
Termination plug M12-5. For Adam OSSD with M12-3H. Connects pin 1 with pin 2 and 4.	JSOP-1 Terminator	2TLA020053R7000
Termination plug M12-8. For Adam OSSD with M12-3G. Connects pin 2 with pin 3 and 4.	JSOP-2 Terminator	2TLA020053R7100

Technical data

Eden

Technical data

Eden DYN, Eden OSSD	
Approvals	
Conformity	 2006/42/EC - Machinery 2014/30/EU - EMC 2011/65/EU - RoHS EN ISO 12100:2010, EN ISO 13849-1:2015, EN 62061:2005/A2:2015, EN 60204-1:2006+A1:2009, EN 60664-1:2007, EN 61000-6-2:2005, EN 61000-6-4:2007, EN 60947-5-3:2013, EN ISO 14119:2013, EN 61508:2010
Functional safety data	
EN/IEC 61508:2010	SIL3, PFH _D = 4.5 x 10 ⁻⁹
EN/IEC 62061:2005+A1:2013	SILCL3, PFH _D = 4.5 x 10 ⁻⁹
EN ISO 13849-1:2008	PL e, Cat. 4, PFH _D = 4.5 x 10 ⁻⁹
Electrical data	+24 VDC Tolerance: +14.4...+27.6 VDC
Mechanical data	
Operating temperature	-40 °C...+70 °C (storage/operation)
Protection class	IP67 and IP69K
Humidity range	35 to 85% (no icing, no condensation)
Material	
Housing	Polybutylene terephthalate (PBT)
Moulding	Epoxy
Weight	Eva: 70 g, Adam: 80 g
Assured release distance (S _{ar})	25 mm
Assured operating distance (S _{ao})	10 mm
Rated operating distance (S _n)	15 ± 2mm
Recommended distance between Adam and Eva	7 mm
Min distance between two Eden	100 mm

More information

For more information, e.g. the complete technical information, see product manual for:

Eden DYN [2TLC172271M0201](#)

Eden OSSD [2TLC172272M0201](#)

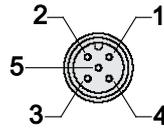
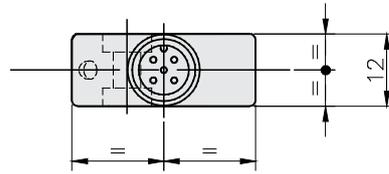
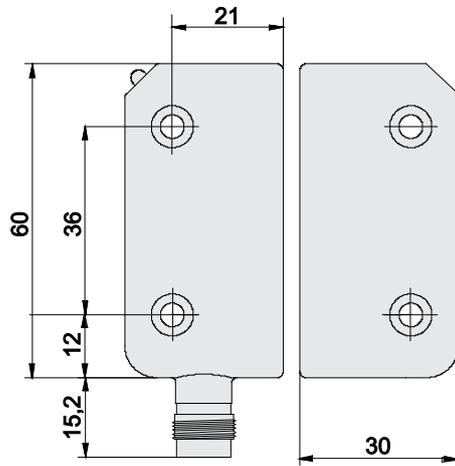
Connection diagrams

For Eden connection diagrams please see <https://library.abb.com/>

Dimension drawings

Eden

Dimension drawings



Adam M12-5 male connector.
(Note that some models have 8 pins instead.)

All dimensions in mm