



K

Field Switching,
Sensing & Safety

Interactive Catalogue



Field Switching, Sensing & Safety



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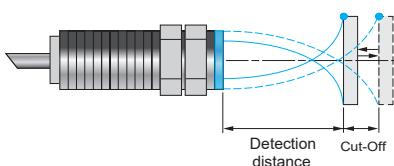


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Inductive proximity sensors



Inductive sensors used for metal object detection. Operational integrity is maintained even in harsh environments e.g. presence of oils, powders, liquids and vibrations etc. Commonly utilized in various types of industrial machinery/ applications for position monitoring (e.g. *textile machines, transport systems, packaging machines and automation systems*).

- Protection degree: IP67
- Ambient limits: -25°C ... +70°C
- LED indication: Incorporated
- Housing: Nickel-plated brass (*PFM/PFK - AISI 303 / AISI 316L stainless steel housing*)
- Short circuit and polarity reversal protection



AB1/AP-3A



AD1/AP-3A



AE1/CP-1A



AE6/AP-3A



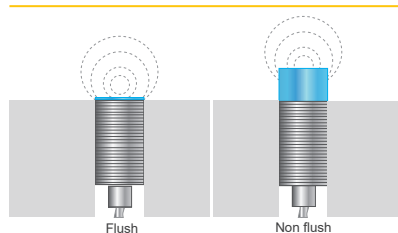
AM6/AP-3H

type	supply voltage	flush	non flush	detection distance	NPN	PNP	NO	NC	connector	body length (mm)	price
M4 proximity switches (standard detection range)											
Standard detection range		cable connection (2m)									
AB1/AP-3A	10 - 30 VDC	•		1 mm		•	•		cable	22	1 420.00
AB1/CP-3A	10 - 30 VDC	•		1 mm		•		•	cable	22	1 420.00
M5 proximity switches (standard detection range)											
Standard detection range		cable connection (2m)									
AD1/AP-3A	10 - 30 VDC	•		1.5 mm		•	•		cable	31	910.00
AD1/CP-3A	10 - 30 VDC	•		1.5 mm		•		•	cable	31	954.00
M8 proximity switches											
Standard detection range		cable connection (2m)									
AE1/AP-1A	10 - 30 VDC	•		1.5 mm		•	•		cable	46	534.00
AE1/CP-1A	10 - 30 VDC	•		1.5 mm		•		•	cable	46	534.00
AE1/AP-2A	10 - 30 VDC		•	2.5 mm		•	•		cable	46	534.00
AE1/CP-2A	10 - 30 VDC		•	2.5 mm		•		•	cable	46	534.00
Long detection range		cable connection (2m)									
AE6/AP-3A*	10 - 30 VDC	•		2 mm		•	•		cable	36	646.00
AE6/CP-3A*	10 - 30 VDC	•		2 mm		•		•	cable	36	646.00
AE6/AP-4A*	10 - 30 VDC		•	4 mm		•	•		cable	36	646.00
AE6/CP-4A*	10 - 30 VDC		•	4 mm		•		•	cable	36	646.00
		M8 (3pin) plug connection									
AE6/AP-3F*	10 - 30 VDC	•		2 mm		•	•		M8 plug	40	690.00
AE6/CP-3F*	10 - 30 VDC	•		2 mm		•		•	M8 plug	40	690.00
AE6/AP-4F*	10 - 30 VDC		•	4 mm		•	•		M8 plug	40	690.00
AE6/CP-4F*	10 - 30 VDC		•	4 mm		•		•	M8 plug	40	690.00
M12 proximity switches											
Standard detection range		cable connection (2m)							standard body		
AM1/AP-1A	10 - 30 VDC	•		2 mm		•	•		cable	50	459.00
AM1/CP-1A	10 - 30 VDC	•		2 mm		•		•	cable	50	490.00
AM1/AN-1A	10 - 30 VDC	•		2 mm		•	•		cable	50	490.00
AM1/CN-1A	10 - 30 VDC	•		2 mm		•		•	cable	50	490.00
AM1/AP-2A	10 - 30 VDC		•	4 mm		•	•		cable	50	490.00
AM1/CP-2A	10 - 30 VDC		•	4 mm		•		•	cable	50	490.00
AM1/AN-2A	10 - 30 VDC		•	4 mm		•	•		cable	50	490.00
AM1/CN-2A	10 - 30 VDC		•	4 mm		•		•	cable	50	490.00
Long detection range		cable connection (2m)							standard body		
AM6/AP-3A*	10 - 30 VDC	•		4 mm		•	•		cable	40	601.00
AM6/CP-3A*	10 - 30 VDC	•		4 mm		•		•	cable	40	601.00
AM6/AP-4A*	10 - 30 VDC		•	8 mm		•	•		cable	40	601.00
AM6/CP-4A*	10 - 30 VDC		•	8 mm		•		•	cable	40	601.00
		M12 (4pin) plug connection									
AM6/AP-3H*	10 - 30 VDC	•		4 mm		•	•		M12 plug	53	605.00
AM6/CP-3H*	10 - 30 VDC	•		4 mm		•		•	M12 plug	53	646.00
AM6/AP-4H*	10 - 30 VDC		•	8 mm		•	•		M12 plug	53	646.00
AM6/CP-4H*	10 - 30 VDC		•	8 mm		•		•	M12 plug	53	646.00
2 wire version		M12 (4pin) plug connection									
AM1/A0-1H	10 - 30 VDC	•		2 mm		•	•		M12 plug	75	640.00
AM1/A0-2H*	10 - 30 VDC	•		4 mm		•	•		M12 plug	75	640.00
AM1/A0-3H*	10 - 30 VDC	•		4 mm		•	•		M12 plug	75	801.00
AM1/A0-4H*	10 - 30 VDC	•		8 mm		•	•		M12 plug	75	801.00
NO + NC output		M12 (4pin) plug connection									
AM1/BP-1H	10 - 30 VDC	•		2 mm		•	•		M12 plug	65	646.00
AM1/BP-2H	10 - 30 VDC	•		4 mm		•	•		M12 plug	65	646.00

* Long detection range

For NPN version, replace the "P" with "N" – See sensor connectors and cables page

Inductive proximity sensors



PM3/00-1H



AK1/CP-1A



PK3/00-1H



PFK1/BP-3H



Inductive proximity sensors - Ø M12 and M18

type	supply voltage	flush	non flush	detection distance	NPN	PNP	NO	NC	connector	body length (mm)	price
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M12 proximity switches

Decout version	NPN/PNP/NO/NC (on one sensor)	M12 (4pin) plug connection		
PM3/00-1H	10 - 30 VDC	•	2 mm	• • • •
PM3/00-2H	10 - 30 VDC	•	4 mm	• • • •
AC version		cable connection - 3 wire (2m)		
VM2/A0-1B	20 - 253 VAC	•	2 mm	TRIAC • •
VM2/C0-1B	20 - 253 VAC	•	2 mm	TRIAC • •
VM2/A0-2B	20 - 253 VAC	•	4 mm	TRIAC • •
VM2/C0-2B	20 - 253 VAC	•	4 mm	TRIAC • •

For food and beverage applications

M12 (4pin) plug connection

- AISI 316L (DIN 1.4404) stainless steel housing
- IP67 (EN60529) - IP68 (1m - 7 days) - IP69K protection degree
- -40°C...+80°C (up to 100°C for short exposure during cleaning process)

PFM1/BP-3H*	10 - 30 VDC	•	4 mm	• • • •	M12 plug	65	1 210.00
PFM1/BP-4H*	10 - 30 VDC	•	8 mm	• • • •	M12 plug	65	1 260.00

See sensor connectors and cables page

M18 cylindrical proximity switches

Standard detection range

cable connection - 3 wire (2m)

AK1/AP-1A	10 - 30 VDC	•	5 mm	• • • •	cable	50	579.00
AK1/CP-1A	10 - 30 VDC	•	5 mm	• • • •	cable	50	579.00
AK1/AN-1A	10 - 30 VDC	•	5 mm	• • • •	cable	50	579.00
AK1/CN-1A	10 - 30 VDC	•	5 mm	• • • •	cable	50	579.00
AK1/AP-2A	10 - 30 VDC	•	8 mm	• • • •	cable	50	579.00
AK1/CP-2A	10 - 30 VDC	•	8 mm	• • • •	cable	50	579.00
AK1/AN-2A	10 - 30 VDC	•	8 mm	• • • •	cable	50	579.00
AK1/CN-2A	10 - 30 VDC	•	8 mm	• • • •	cable	50	579.00

Short body - NO + NC

cable connection - 4 wire (2m)

AK6/BP-1A	10-30 VDC	•	5 mm	• • • •	cable	39	660.00
AK6/BN-1A	10-30 VDC	•	5 mm	• • • •	cable	39	660.00
AK6/BP-2A	10-30 VDC	•	8 mm	• • • •	cable	39	740.00
AK6/BN-2A	10-30 VDC	•	8 mm	• • • •	cable	39	740.00

Long detection range - NO + NC

M12 (4pin) plug connection

AK6/BP-3H*	10 - 30 VDC	•	8 mm	• • • •	M12 plug	49	800.00
AK6/BN-3H*	10 - 30 VDC	•	8 mm	• • • •	M12 plug	49	854.00
AK6/BP-4H*	10 - 30 VDC	•	12 mm	• • • •	M12 plug	49	854.00
AK6/BN-4H*	10 - 30 VDC	•	12 mm	• • • •	M12 plug	49	854.00

2 wire version

M12 (4pin) plug connection

AK1/A0-1H	10 - 30 VDC	•	5 mm	• • • •	M12 plug	64	737.00
AK1/A0-2H	10 - 30 VDC	•	8 mm	• • • •	M12 plug	64	737.00
AK1/A0-3H*	10 - 30 VDC	•	8 mm	• • • •	M12 plug	64	890.00
AK1/A0-4H*	10 - 30 VDC	•	12 mm	• • • •	M12 plug	64	890.00

Decout version

NPN/PNP/NO/NC (on one sensor)

M12 (4pin) plug connection

PK3/00-1H	10 - 30 VDC	•	5 mm	• • • •	M12 plug	72	1 160.00
PK3/00-2H	10 - 30 VDC	•	8 mm	• • • •	M12 plug	72	1 160.00

AC version

cable connection

VK2/A0-1B	20 - 253 VAC	•	5 mm	TRIAC • •	cable	77	1 170.00
VK2/C0-1B	20 - 253 VAC	•	5 mm	TRIAC • •	cable	77	1 170.00
VK2/A0-2B	20 - 253 VAC	•	8 mm	TRIAC • •	cable	77	1 170.00
VK2/C0-2B	20 - 253 VAC	•	8 mm	TRIAC • •	cable	77	1 170.00

For food and beverage applications

M12 (4pin) plug connection

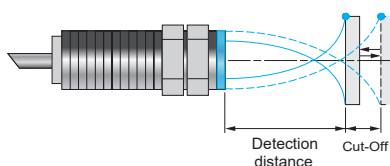
- AISI 316L (DIN 1.4404) stainless steel housing
- IP67 (EN60529) - IP68 (1m - 7 days) - IP69K protection degree
- -40°C...+80°C (up to 100°C for short exposure during cleaning process)

PFK1/BP-3H*	10 - 30 VDC	•	8 mm	• • • •	M12 plug	63	1 470.00
PFK1/BP-4H*	10 - 30 VDC	•	12 mm	• • • •	M12 plug	63	1 550.00

* Long detection range

See sensor connectors and cables page

Inductive proximity sensors



Inductive proximity sensors

Inductive sensors are used for metal object detection. Operational integrity is maintained even in harsh environments e.g. presence of oils, powders, liquids and vibrations etc. Commonly utilized in various types of industrial machinery/ applications for position monitoring (e.g. *textile machines, transport systems, packaging machines and automation systems*).

General features:

- Protection degree: IP67
- Ambient limits: -25°C...+70°C
- LED indication: Incorporated
- Housing: Nickel-plated brass
- Short circuit and polarity reversal protection



AT6/BP-3H



AT6/BP-4H



AK6/D2-5H



IL8/AP-3A



IL1/AP-3A

type	supply voltage	flush	non flush	detection distance	NPN	PNP	NO	NC	connector	body length (mm)	price
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M30 cylindrical proximity switches

Standard detection range

cable connection (2m)

AT1/AP-1A	10 - 30 VDC	•		10 mm		•	•		cable	60	760.00
AT1/CP-1A	10 - 30 VDC	•		10 mm		•		•	cable	60	760.00
AT1/AN-1A	10 - 30 VDC	•		10 mm	•		•		cable	60	760.00
AT1/CN-1A	10 - 30 VDC	•		10 mm	•			•	cable	60	760.00
AT1/AP-2A	10 - 30 VDC		•	15 mm		•	•		cable	60	760.00
AT1/CP-2A	10 - 30 VDC		•	15 mm		•		•	cable	60	760.00
AT1/AN-2A	10 - 30 VDC		•	15 mm	•		•		cable	60	760.00
AT1/CN-2A	10 - 30 VDC		•	15 mm	•			•	cable	60	760.00

Long detection range - NO + NC

M12 (4pin) plug connection

AT6/BP-3H*	10 - 30 VDC	•		15 mm		•	•	•	M12 plug	60	1 080.00
AT6/BP-4H*	10 - 30 VDC		•	20 mm		•	•	•	M12 plug	60	1 080.00
AT6/BN-3H*	10 - 30 VDC	•		15 mm	•		•	•	M12 plug	60	1 080.00
AT6/BN-4H*	10 - 30 VDC		•	20 mm	•		•	•	M12 plug	60	1 080.00

2 wire version

M12 (4pin) plug connection

AT1/A0-1H	10 - 30 VDC	•		10 mm	•	•	•		M12 plug	76	1 200.00
AT1/A0-2H	10 - 30 VDC		•	15 mm	•	•	•		M12 plug	76	1 200.00
AT1/A0-3H*	10 - 30 VDC	•		15 mm	•	•	•		M12 plug	76	1 290.00
AT1/A0-4H*	10 - 30 VDC		•	20 mm	•	•	•		M12 plug	76	1 290.00

AC version

cable connection

VT2/A0-1B	20 - 253 VAC	•		10 mm	TRIAC	•			cable	80	1 590.00
VT2/C0-1B	20 - 253 VAC		•	10 mm	TRIAC		•		cable	80	1 590.00
VT2/A0-2B	20 - 253 VAC	•		15 mm	TRIAC	•			cable	80	1 590.00
VT2/C0-2B	20 - 253 VAC		•	15 mm	TRIAC		•		cable	80	1 590.00

* Long detection range

See sensor connectors and cables page

Analog output proximity switches

1 x 0-10V and 1 x 4-20mA output

- Voltage 0 - 10 VDC and Current 4 - 20mA outputs (*in the same device*)
- Wide usable detection ranges: M12 (6 mm) and M18 (10 mm)
- Excellent resolution (*no digitalisation*)

M12 proximity switches

M12 (4pin) plug connection

AM1/D2-5H	15 - 30 VDC	•		0...6 mm	0-10V	4-20mA			M12 plug	60	4 200.00
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M18 proximity switches

M12 (4pin) plug connection

AK6/D2-5H	15 - 30 VDC	•		0...10 mm	0-10V	4-20mA			M12 plug	49	4 400.00
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Rectangular housing inductive proximity switches

8 x 8 x 40 mm rectangular body

cable connection (2 m)

IL8/AP-3A	10 - 30 VDC	•		2 mm		•	•		cable	40	1 790.00
IL8/CP-3A	10 - 30 VDC	•		2 mm		•		•	cable	40	897.00
IL8/AN-3A	10 - 30 VDC	•		2 mm	•		•		cable	40	1 790.00
IL8/CN-3A	10 - 30 VDC	•		2 mm	•			•	cable	40	1 790.00

28 x 10 x 16 mm rectangular body

(aligns with standard mechanical micro switch)

IL1/AP-3A	10 - 30 VDC	•		3 mm		•	•		cable	28	686.00
IL1/CP-3A	10 - 30 VDC	•		3 mm		•		•	cable	28	686.00
IL1/AN-3A	10 - 30 VDC	•		3 mm	•		•		cable	28	686.00
IL1/CN-3A	10 - 30 VDC	•		3 mm	•			•	cable	28	686.00

Capacitive proximity sensors



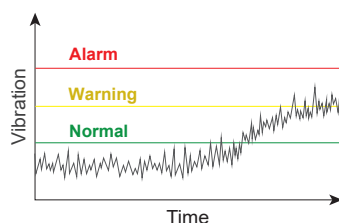
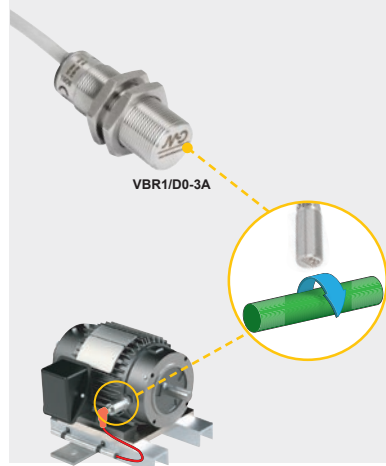
C12P/00-3E



C30P/BN-1E



CQ55/BP-3E



Capacitive proximity sensors are utilised in detection of a variety of materials, whether in solid or liquid state (e.g. *water, wood, metals, granules, powders, etc...*) Performance is upheld even through plastic or glass barriers. The robust nature of the technology ensures extremely high electromagnetic compatibility (EMC), high shock/vibration resistance, minimalistic sensitivity to dust and moisture. This ensures reliable object detection even in harsh environments.

- Detects powders, granulates, liquids and solids
- Sensitivity adjustment
- Short circuit and polarity reversal protection
- Protection degree: IP67/68/69K
- Ambient limits: -25°C/-20°C...+85°C
- LED indication: Incorporated
- Housing material: Thermoplastic polyester

type	supply voltage	flush	non flush	detection distance	NPN	PNP	NO	NC	connector	body length (mm)	price
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M12 Capacitive proximity switches

M12 (4pin) plug connection

- Adjustable sensitivity via Teach-in button
- Automatic detection of NPN or PNP load

C12P/00-3E	10 - 40 VDC	•		0.5...8 mm	•	•	•	•	M12 plug	80	1 780.00
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M18 Capacitive proximity switches

M12 (4pin) plug connection

- Adjustable sensitivity via potentiometer
- Standard output: NO and NC

C18P/BP-1E	10 - 40 VDC	•		3...8 mm		•	•	•	M12 plug	83	1 750.00
C18P/BN-1E	10 - 40 VDC	•		3...8 mm	•		•	•	M12 plug	83	1 750.00
C18P/BP-2E	10 - 40 VDC		•	3...12 mm		•	•	•	M12 plug	91	1 670.00
C18P/BN-2E	10 - 40 VDC		•	3...12 mm	•		•	•	M12 plug	91	1 670.00

AC version

cable connection (2m)

C18P/A0-1A	20 - 250 VAC	•		3...8 mm	SCR	•			cable	87	2 220.00
C18P/C0-1A	20 - 250 VAC	•		3...8 mm	SCR		•		cable	87	2 220.00
C18P/A0-2A	20 - 250 VAC		•	3...12 mm	SCR	•			cable	99	2 140.00
C18P/C0-2A	20 - 250 VAC		•	3...12 mm	SCR		•		cable	99	2 140.00

M30 Capacitive proximity switches

M12 (4pin) plug connection

- Adjustable sensitivity via potentiometer
- Standard output: NO and NC

C30P/BP-1E	10 - 40 VDC	•		2...16 mm		•	•	•	M12 plug	79	2 140.00
C30P/BN-1E	10 - 40 VDC	•		2...16 mm	•		•	•	M12 plug	79	2 140.00
C30P/BP-2E	10 - 40 VDC		•	4...25 mm		•	•	•	M12 plug	91	2 020.00
C30P/BN-2E	10 - 40 VDC		•	4...25 mm	•		•	•	M12 plug	91	2 020.00

AC version

cable connection (2m)

C30P/00-1A	20 - 250 VAC	•		2...16 mm	SCR	•	•		cable	79	2 630.00
C30P/00-2A	20 - 250 VAC		•	4...25 mm	SCR	•	•		cable	91	2 440.00

Cubic capacitive sensors (flat pack housing)

- Adjustable sensitivity via potentiometer
- Standard output: NO and NC

CQ55 series cubic sensors (flat body)		M12 (4pin) plug connection				58 x 35 x 15 mm					
CQ55/BP-3E	10 - 40 VDC	•		4...25 mm		•	•	•	M12 plug	58	2 350.00
CQ55/BN-3E	10 - 40 VDC	•		4...25 mm	•		•	•	M12 plug	58	2 350.00

M18 VBR/INC series - Vibration and inclination sensor

IP67

VBR series shock and vibration sensor incorporates a MEMS 3-axis accelerometer to monitor all accelerations and vibrations. Designed to be easy to use without any special training for operators.

- Programmable operating range:
- Reference axis:
- Frequency range:
- Fully programmable in all its functions, thresholds, alarms and node addresses
- 1 output RS485 (addressable) 57600 Baud rate - 1 bit stop - parity
- 1 analogue output (programmable voltage or current)

VBR	INC
±2g, ±4g, ±8g, ±16g	360° - 0.025° resolution
3 (X, Y, Z)	1 direction
0 ... 400Hz	< 3 msec

VBR1/D0-3A	24 VDC	vibration sensor	0 - 10V	4-20mA	cable	40.5	5 970.00
INC1/D0-3A	24 VDC	inclination sensor	0 - 10V	4-20mA	cable	50.5	7 550.00

1250Hz available on request

Mounting accessories for VBR/INC sensors

ST18-S	bracket	M18 mounting bracket/housing for above VBR/INC sensor	131.00
ST18-V	bracket	M18 metal mounting bracket for above VBR/INC sensor	101.00

Cylindrical photoelectric sensors



FAI6/BP-0A



FAI6/BN-2E



MV2/A0-0A



MVC/A0-0A

Photoelectric sensors transmit a beam which is reflected back from a detected object (**diffused**), reflector (**retro-reflective**) or used with a separate transmitter and receiver (**through-beam**), typically used for long range detection.

- Protection degree: IP67 (EN60529)
- Ambient limits: -25°C...+70°C
- Supply protection: Polarity reversal, transient, short circuit
- LED indication: Incorporated
- Housing material: PBT (*plastic*) available in metal (*on request only*)

type	supply voltage	sensitivity adj.	diffused	retro-reflective	polarised retro	through-beam	detection distance (mm)	NPN	PNP	NO	NC	connector	price
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M18 FA series axial beam 10 - 30 VDC IP67 (EN60529) Ø18 mm x 65/80 mm

Diffuse reflection

proximity type detection (no transmitter or reflector required)

FAR2/BN-0A	10 - 30 VDC		•				100 mm	•	•	•	•	cable (2m)	1 080.00
FAR2/BP-0A	10 - 30 VDC		•				100 mm		•	•	•	cable (2m)	1 080.00
FAI6/BN-0A	10 - 30 VDC		•				400 mm	•		•	•	cable (2m)	1 190.00
FAI6/BP-0A	10 - 30 VDC		•				400 mm		•	•	•	cable (2m)	1 190.00
FAI6/BN-2E*	10 - 30 VDC		•				400 mm	•		•	•	M12 plug	1 400.00
FAI6/BP-2E*	10 - 30 VDC		•				400 mm		•	•	•	M12 plug	1 400.00
FAI7/BN-0E	10 - 30 VDC	•	•				400 mm	•		•	•	M12 plug	1 400.00
FAI7/BP-0E	10 - 30 VDC	•	•				400 mm		•	•	•	M12 plug	1 400.00
FAI8/BN-2E*	10 - 30 VDC	•	•				800 mm	•		•	•	M12 plug	1 770.00
FAI8/BP-2E*	10 - 30 VDC	•	•				800 mm		•	•	•	M12 plug	1 770.00
FAI8/BN-0E	10 - 30 VDC	•	•				1000 mm	•		•	•	M12 plug	1 520.00
FAI8/BP-0E	10 - 30 VDC	•	•				1000 mm		•	•	•	M12 plug	1 520.00

With adjustable background suppression

FARS/BP-0E	10 - 30 VDC	•	•				30...130		•	•	•	M12 plug	2 310.00
FARW/BP-0E	10 - 30 VDC	•	•				35...350		•	•	•	M12 plug	2 800.00

Retro-reflective

used together with a reflector

FAIC/BN-0A	10 - 30 VDC			•			5 meters	•	•	•	•	cable (2m)	1 110.00
FAIC/BP-0A	10 - 30 VDC			•			5 meters		•	•	•	cable (2m)	1 110.00
FAIC/BN-2E*	10 - 30 VDC			•			4 meters	•		•	•	M12 plug	1 320.00
FAIC/BP-2E*	10 - 30 VDC			•			4 meters		•	•	•	M12 plug	1 320.00

Retro-reflective (polarised)

used together with a reflector

FARP/BN-0A	10 - 30 VDC			•			4 meters	•		•	•	cable (2m)	1 300.00
FARP/BP-0A	10 - 30 VDC			•			4 meters		•	•	•	cable (2m)	1 300.00

Through beam (receiver)

requires an emitter and receiver

FAIZ/BN-0A	10 - 30 VDC				•		20 meters	•		•	•	cable (2m)	1 030.00
FAIZ/BP-0A	10 - 30 VDC				•		20 meters		•	•	•	cable (2m)	1 030.00
FAIZ/BP-2E*	10 - 30 VDC				•		15 meters		•	•	•	M12 plug	1 220.00
FAIH/00-0A	10 - 30 VDC				•		20 meters		emitter			cable (2m)	887.00
FAIH/00-2E*	10 - 30 VDC				•		15 meters		emitter			M12 plug	1 100.00

* Radial optic (90° transmission)

M18 MV series axial beam 20 - 253 VAC IP67 (EN60529) Ø18 mm x 79 mm

Diffuse reflection

proximity type detection (no transmitter or reflector required)

MV2/A0-0A	20 - 253 VAC		•				100 mm	TRIAC	•			cable (2m)	2 050.00
MV2/C0-0A	20 - 253 VAC		•				100 mm	TRIAC		•		cable (2m)	2 050.00
MV4/A0-0A	20 - 253 VAC		•				200 mm	TRIAC	•			cable (2m)	2 050.00
MV4/C0-0A	20 - 253 VAC		•				200 mm	TRIAC		•		cable (2m)	2 050.00
MV6/A0-0A	20 - 253 VAC		•				400 mm	TRIAC	•			cable (2m)	2 140.00
MV6/C0-0A	20 - 253 VAC		•				400 mm	TRIAC		•		cable (2m)	2 140.00

Retro-reflective

used together with a reflector

MVC/A0-0A	20 - 253 VAC			•			4 meters	TRIAC	•			cable (2m)	2 140.00
MVC/C0-0A	20 - 253 VAC			•			4 meters	TRIAC		•		cable (2m)	2 140.00

Through beam (receiver)

requires a transmitter and receiver

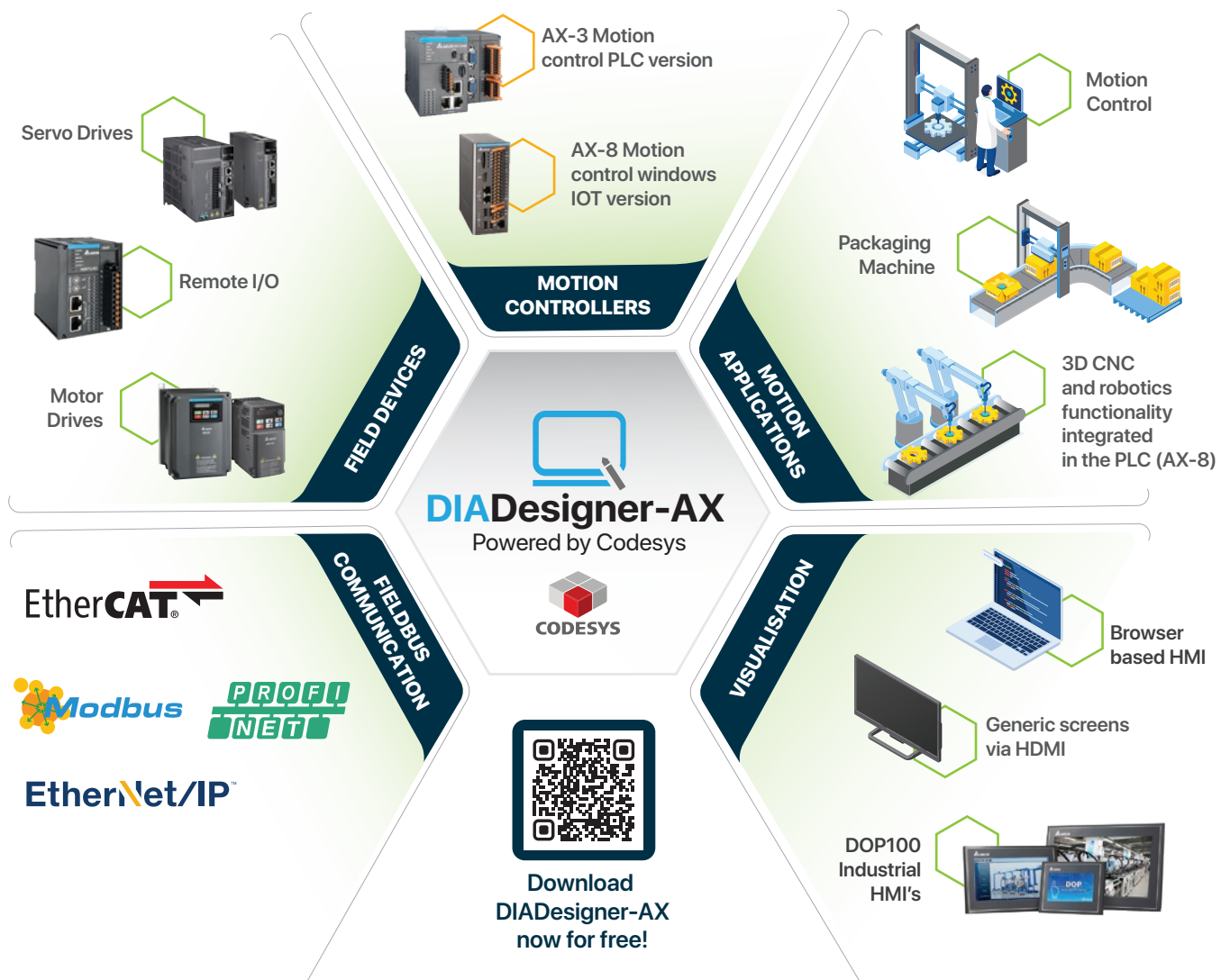
MVR/A0-0A	20 - 253 VAC				•		16 meters	TRIAC	•			cable (2m)	1 920.00
MVR/C0-0A	20 - 253 VAC				•		16 meters	TRIAC		•		cable (2m)	1 920.00
MVE/00-0A	20 - 253 VAC				•		16 meters		emitter			cable (2m)	1 550.00

For mounting accessories, cables, connectors and reflectors see pages K-11, K-23...24

The comprehensive automation software

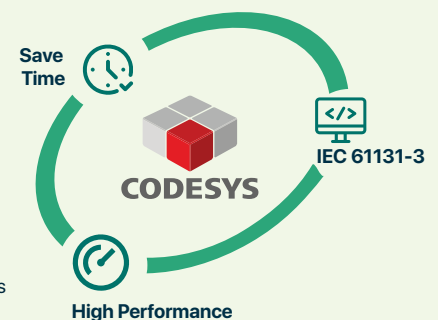


DIADesigner AX powered by Codesys offers a comprehensive PLC and motion-control software development solution. With adherence to the IEC 61131-3 standard, users can expect a familiar and internationally recognised programming environment. It is the perfect platform for integrating components like Delta PLCs, HMIs, servos, motor drives, and remote I/O, making it a versatile choice for automation projects.



DIADesigner-AX key features:

- Comprehensive Editors: Supports all IEC 61131-3 editors (FBD, LD, ST, SFC) and their variants
- Proven Libraries: Extensive library concept for reusable applications
- Advanced Debugging: Fast optimization and testing with extensive debugging and online features
- Device Compatibility: Intergrate devices from various manufacturers
- Versatile POU's: Support for single and multi-axis movements with PLCOpen POU's
- Dynamic Monitoring: Additional POU's for monitoring dynamic data, error tracking, and CAM controllers



Cubic photoelectric sensors



S3N mini series - Photoelectric cubic sensors



Robust housing

SN3...

New



SN3...

S3N mini series - Cubic photoelectric sensors

Top performances series in a rugged, miniaturized standard housing. Complete solution for any detection application in any automation industry. Available with trimmer and Teach-in models with high connectivity features thanks to extended IO-Link communication.

General features:

- Bright LED and Safe Laser emission models - for easy alignment
- Smart BGS and clear detection functions
- Single, Double trimmer & Push Button models - for easy setup
- Rugged IP67 Plastic Polymer Fibre glass reinforced miniature case
- IO-Link with extended Smart Tasks
- Sensitivity adjustment via 1 or 9 turn trimmer
- Compact dimensions: (H) 31 x (W) 11 x (D) 19 mm



Scan to watch video

type	supply voltage	diffused	polarised retro	through-beam	background suppression	transparent objects	mark reader	detection distance (mm)	NPN	PNP	light ON	dark ON	connector	price
Diffused narrow beam 635 nm red LED emission														
S3N-PR-5-C01-PL	10...30 VDC	•						1...250 mm	•	•			M8 plug	3 250.00
S3N-PR-5-C01-PD	10...30 VDC	•						1...250 mm	•		•		M8 plug	3 250.00
S3N-PR-5-C01-N	10...30 VDC	•						1...250 mm	•		•	•	M8 plug	3 760.00
S3N-PR-5-C11-PL	10...30 VDC	•						0...1 m	•	•	•		M8 plug	3 230.00
Polarized retroreflective 635 nm red LED emission														
S3N-PR-5-B01-PL	10...30 VDC		•					0.05...7 m	•	•	•		M8 plug	3 270.00
S3N-PR-5-B01-PD	10...30 VDC		•					0.05...7 m	•		•		M8 plug	3 270.00
S3N-PR-5-B01-N	10...30 VDC		•					0.05...7 m	•		•	•	M8 plug	3 800.00
Through beam emitter and receiver 635 nm red LED emission														
S3N-PR-5-FG01-PL	10...30 VDC			•				0...20 m	•	•	•		M8 plug	5 630.00
S3N-PR-5-FG01-PD	10...30 VDC			•				0...20 m	•		•		M8 plug	5 630.00
S3N-PR-5-FG01-N	10...30 VDC			•				0...20 m	•		•	•	M8 plug	6 370.00
Background suppression 635 nm red LED emission														
S3N-PR-5-M01-PL	10...30 VDC				•			10...800 mm	•	•	•		M8 plug	5 200.00
S3N-PR-5-M01-PD	10...30 VDC				•			10...800 mm	•		•		M8 plug	5 200.00
S3N-PR-5-M01-N	10...30 VDC				•			10...800 mm	•		•	•	M8 plug	5 910.00
Polarized retroreflective for clear objects 635 nm red LED emission														
S3N-PR-5-T51-PL	10...30 VDC					•		0...2 m	•	•	•		M8 plug	5 130.00
S3N-PR-5-T51-PD	10...30 VDC					•		0...2 m	•		•		M8 plug	5 130.00
S3N-PR-5-T51-N	10...30 VDC					•		0...2 m	•		•	•	M8 plug	5 770.00
Laser emission sensors														
Polarized retroreflective 650 nm LASER Red class 1														
S3N-PH-5-B01-P	10...30 VDC		•					0.1...12 m	•	•	•		M8 plug	6 120.00
S3N-PH-5-B01-N	10...30 VDC		•					0.1...12 m	•		•	•	M8 plug	6 120.00
Through beam emitter and receiver 650 nm LASER Red class 1														
S3N-PH-5-FG01-P	10...30 VDC			•				0...30 m	•	•	•		M8 plug	8 080.00
S3N-PH-5-FG01-N	10...30 VDC			•				0...30 m	•		•	•	M8 plug	8 080.00
Background suppression 650 nm LASER Red class 1														
S3N-PH-5-M01-P	10...30 VDC				•			10...500 mm	•	•	•		M8 plug	7 140.00
S3N-PH-5-M01-N	10...30 VDC				•			10...500 mm	•		•	•	M8 plug	7 140.00
Accessories for S3N sensors														
95A151340	reflector	R4 - prismatic refl. 47x47 mm - frame 51x61 mm											for reflex	250.00
95A151360	reflector	R7 - microprismatic refl. 38x40 mm - frame 51x61 mm											for laser	891.00
S940700075	reflector	R5 - prismatic refl. Ø 75 mm - frame Ø 82 mm											for reflex	206.00
95ACC0024	mnt bracket	S3N L-shaped mnt bracket											ST-1051	961.00
95ACC0025	mnt bracket	S3N protection mnt bracket-horizontal											ST-1049	1 540.00
95ACC0026	mnt bracket	S3N protection mnt bracket-vertical U shaped											QM ST-103	1 540.00
95ACC0033	mnt bracket	S3N bracket for M03 products over the belt app.											ST-1053	1 730.00

See sensor connectors and cables page

Cubic photoelectric sensors



New



SN3...



SN3...

IO-Link



S3N mini series - Photoelectric IO-Link communication

Top performances series in a rugged, miniaturized standard housing. Complete solution for any detection application in any automation industry. Available with trimmer and Teach-in models with high connectivity features thanks to extended IO-Link communication.

- Bright LED and Safe Laser emission models - for easy alignment
- Smart BGS and clear detection functions
- Single, Double trimmer & Push Button models - for easy setup
- Very fast and very precise RGB Contrast sensor
- Rugged IP67 Plastic Polymer Fiber glass reinforced miniature case
- IO-Link with extended Smart Tasks
- IO-Link models have Teach-In push button
- Compact dimensions: (H) 31 x (W) 11 x (D) 19 mm

type	supply voltage	diffused polarised retro through-beam background suppression transparent objects mark reader	detection distance (mm)	communication interface	connector	price
Diffused narrow beam 635 nm red LED emission						
S3N-PR-5-C03-OZ	10...30 VDC	•	1...250 mm	IO-Link	M8 plug	5 820.00
S3N-PR-5-C13-OZ	10...30 VDC	•	0...1 m	IO-Link	M8 plug	5 760.00
Polarized retroreflective 635 nm red LED emission						
S3N-PR-5-B03-OZ	10...30 Vdc	•	0.05...7 m	IO-Link	M8 plug	5 920.00
Through beam emitter and receiver 635 nm red LED emission						
S3N-PR-5-FG03-OZ	10...30 VDC	•	0...20 m	IO-Link	M8 plug	10 400.00
Background suppression 635 nm red LED emission						
S3N-PR-5-M03-OZ	10...30 VDC	•	25...180 mm	IO-Link	M8 plug	6 840.00
Polarized retroreflective for clear objects 635 nm red LED emission						
S3N-PR-5-T53-OZ	0...30 VDC	•	0...2 m	IO-Link	M8 plug	6 920.00
Contrast sensor RGB blue (460 nm) / green (525 nm) / red (633 nm)						
S3N-PR-5-W03-OZ	10...30 VDC	•	12 mm ±3 mm	IO-Link	M8 plug	23 800.00
Laser emission sensors						
Polarized retroreflective 650 nm LASER Red class 1						
S3N-PH-5-B03-OZ	10...30 VDC	•	0.1...12 m	IO-Link	M8 plug	8 120.00
Through beam emitter and receiver 650 nm LASER Red class 1						
S3N-PH-5-FG03-OZ	10...30 VDC	•	0...30 m	IO-Link	M8 plug	14 200.00
Background suppression 650 nm LASER Red class 1						
S3N-PH-5-M03-OZ	10...30 VDC	•	22...130 mm	IO-Link	M8 plug	10 800.00

S3N mini: Position tracking applications

IO-Link

- Easy installation
- Extended configuration
- Real time monitoring
- Predictive maintenance



Cubic photoelectric sensors



Footprint comparison

Photoelectric sensors transmit a beam which is reflected back from a detected object (**diffused**), reflector (**retro-reflective**) or used with a separate transmitter and receiver (**through-beam**), typically used for long range detection.

- Sensitivity: Adjustable (*trimmer*)
- Ambient limits: -25°C...+70°C
- Supply protection: Polarity reversal, impulse overvoltage, short circuit
- LED indication: Yellow (*output status*) / green (*supply present*)

type	supply voltage	diffused	retro-reflective	polarised retro	through-beam	detection distance (mm)	NPN	PNP	NO	NC	connector	price
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QM series - Miniature cubic sensor IP67 (EN60529) (H)40.6 x (W)21 x (D)13 mm

- Miniaturize high performance photoelectric sensors
- 2 kHz switching frequency
- Selectable LO/DO output state
- M8 (4pin) plug connection

Diffuse reflection

proximity type detection (no transmitter or reflector required)

QMR5/0P-0F*	10 - 30 VDC	•	•	•	•	30...200	•	•	•	•	M8 plug	2 190.00
QMR7/0N-0F	10 - 30 VDC	•	•	•	•	400 mm	•	•	•	•	M8 plug	1 770.00
QMR7/0P-0F	10 - 30 VDC	•	•	•	•	400 mm	•	•	•	•	M8 plug	1 770.00
QMR8/0N-0F	10 - 30 VDC	•	•	•	•	1 meter	•	•	•	•	M8 plug	1 850.00
QMR8/0P-0F	10 - 30 VDC	•	•	•	•	1 meter	•	•	•	•	M8 plug	1 850.00
QMI9/0P-0F	10 - 30 VDC	•	•	•	•	1.5 meter	•	•	•	•	M8 plug	1 960.00

* With adjustable background suppression

Retro-reflective

used together with a reflector

QMIC/0P-0F	10 - 30 VDC	•	•	•	•	7 meter	•	•	•	•	M8 plug	1 970.00
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Retro-reflective (polarised)

used together with a reflector

QMRN/0N-0F	10 - 30 VDC	•	•	•	•	5 meter	•	•	•	•	M8 plug	1 970.00
QMRN/0P-0F	10 - 30 VDC	•	•	•	•	5 meter	•	•	•	•	M8 plug	1 970.00

Retro-reflective

(transparent objects)

QMRL/0N-0F	10 - 30 VDC	•	•	•	•	0.4...4 m	•	•	•	•	M8 plug	2 320.00
QMRL/0P-0F	10 - 30 VDC	•	•	•	•	0.4...4 m	•	•	•	•	M8 plug	2 320.00

Through beam

(transmitter and receiver kit)

QMRHD/0N-0F	10 - 30 VDC	•	•	•	•	20 meter	•	•	•	•	M8 plug	3 020.00
QMRHD/0P-0F	10 - 30 VDC	•	•	•	•	20 meter	•	•	•	•	M8 plug	3 020.00

QF series - For food and beverage applications (H)31.4 x (W)21 x (D)11 mm

- M8 (4pin) plug connection
- -26°C...+60°C (*without freeze*)
- IP67 (EN60529) - IP68 (1m - 7 days) - IP69K protection degree
- AISI 316L (DIN 1.4404) stainless steel housing - Active head PPSU
- Approvals: CE cULus, ECOLAB, IEC60947-5-2

Diffuse reflection

proximity type detection (no transmitter or reflector required)

QFI4/BP-1F	10 - 30 VDC	•	•	•	•	20...200	•	•	•	•	M8 plug	2 560.00
QFRS/BP-1F*	10 - 30 VDC	•	•	•	•	25...200	•	•	•	•	M8 plug	3 250.00
QFR8/BP-1F	10 - 30 VDC	•	•	•	•	0.1...1 m	•	•	•	•	M8 plug	2 610.00

* With adjustable background suppression

Retro-reflective (polarised)

used together with a reflector

QFRN/BP-1F	10 - 30 VDC	•	•	•	•	6 meter	•	•	•	•	M8 plug	2 610.00
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Accessories for above QM / QF series

ST 101	metal	vertical mounting L shaped bracket for sensors	QM/QF	145.00
ST 102	metal	side mounting vertical L bracket for sensors	QM/QF	145.00
ST 103	metal	vertical mount with protective cover bracket for	QM/QF	355.00
ST 104	metal	horizontal mount protective cover bracket for	QM/QF	275.00
STQMO	adaptor	vertical/horizontal diaphragms (0.5-1-2) for	QM/QF	466.00

Mounting accessories and reflectors see page K-11 (reflectors sold separately)

See sensor connectors and cables page



QMR7/0P-0F



QMRN/0N-0F



QMIC/0N-0F



ECOLAB



QFRS/BP-1F

Cubic photoelectric sensors



Q5018/B0-0E



Q50RN/0T-0A

Photoelectric sensors transmit a beam which is reflected back from a detected object (**diffused**), reflector (**retro-reflective**) or used with a separate transmitter and receiver (**through-beam**), typically used for long range detection.

type	supply voltage	diffused	retro-reflective	polarised retro	through-beam	detection distance (mm)	NPN	PNP	NO	NC	connector	price
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Q50 - Compact cubic universal photoelectric sensor

- Universal photoelectric sensor, excellent performance and high versatility
- Totally protected against electrical damage
- Sensitivity: Adjustable
- Dimensions: 50 x 50 x 17 mm
- Protection degree: IP67 (EN60529)
- Mounting: Bracket included

DC supply 10...30 VDC

- Revolving M12 (4 pin) connector (for rear or bottom cable entry)

Diffuse reflection

proximity type detection (no transmitter or reflector required)

Q5018/B0-0E	10 - 30 VDC	•	•	•	•	0.3...2 m	•	•	•	•	M12 plug	1 910.00
Q501S/B0-0E*	10 - 30 VDC	•	•	•	•	120...500	•	•	•	•	M12 plug	3 480.00

* With adjustable background suppression

Retro-reflective - (polarised)

used together with a reflector

Q50RN/B0-0E	10-30 VDC	•	•	•	•	0.2...6 m	•	•	•	•	M12 plug	2 140.00
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Through beam (receiver)

requires a transmitter and receiver

Q50ID/B0-0E	10 - 30 VDC	•	•	•	•	20 meter	•	•	•	•	M12 plug	1 740.00
Q50IH/00-0E	10 - 30 VDC	•	•	•	•	20 meter	•	•	•	•	M12 plug	1 470.00

Multi-voltage supply 12...240 VDC / 24...240 VAC

- Relay - SPDT output (3A / 240 VAC)

Diffuse reflection

proximity type detection (no transmitter or reflector required)

Q5018/0T-0A	multi-voltage	•	•	•	•	0.3...2 m	SPDT				cable	2 300.00
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Retro-reflective - (polarised)

used together with a reflector

Q50RN/0T-0A	multi-voltage	•	•	•	•	0.2...6 m	SPDT				cable	2 530.00
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Through beam (receiver)

requires a transmitter and receiver

Q50ID/0T-0A	multi-voltage	•	•	•	•	20 meter	SPDT				cable	2 250.00
Q50IH/0T-0A	multi-voltage	•	•	•	•	20 meter	emitter				cable	1 520.00

QF series

Metallic cubic miniaturized photoelectric sensors

For harsh environments or food and beverage applications

ECOLAB



Cubic photoelectric sensors



QX3/A0-1A



QXR/A0-1A



BS8/00-0C



ST300D



RL 110

type	supply voltage	diffused	retro-reflective	polarised retro	through-beam	detection distance (mm)	NPN	PNP	NO	NC	connector	price
QX series (rectangular) IP65 (EN60529) 40 x 15 x 23 mm												
Diffuse reflection		proximity type detection (no transmitter or reflector required)										
QX3/A0-1A	10 - 30 VDC	•				300 mm	•	•	•		cable (2m)	3 310.00
QX3/C0-1A	10 - 30 VDC	•				300 mm	•	•		•	cable (2m)	3 310.00
Retro-reflective		used together with a reflector										
QXC/A0-1A	10 - 30 VDC		•			5 meter	•	•	•		cable (2m)	3 380.00
QXC/C0-1A	10 - 30 VDC		•			5 meter	•	•		•	cable (2m)	3 380.00
Through beam (receiver)		requires a transmitter and receiver										
QXR/A0-1A	10 - 30 VDC				•	8 meter	•	•	•		cable (2m)	3 310.00
QXR/C0-1A	10 - 30 VDC				•	8 meter	•	•		•	cable (2m)	3 310.00
QXX/00-1A	10 - 30 VDC				•	8 meter	emitter				cable (2m)	2 210.00
BS/BV series (rectangular) cubic photoelectric sensors 37 x 16 x 64/70 mm												
• Sensitivity:		Adjustable										
• LED indication:		Incorporated										
• Protection degree:		IP65 (EN60529)										
• Supply protection:		Transient, short circuit (BS)										
Diffuse reflection		proximity type detection (no transmitter or reflector required)										
BS6/00-0C	10 - 30 VDC	•				400 mm	•	•	•	•	cable (2m)	2 660.00
BS8/00-0C	10 - 30 VDC	•				1.6 meter	•	•	•	•	cable (2m)	2 740.00
BV4/00-0C	20 - 253 VAC	•				200 mm	TRIAC		•	•	cable (2m)	3 320.00
BV6/00-0C	20 - 253 VAC	•				400 mm	TRIAC		•	•	cable (2m)	3 440.00
Retro-reflective		used together with a reflector										
BSC/00-0C	10 - 30 VDC		•			8 meter	•	•	•	•	cable (2m)	2 660.00
BVC/00-0C	20 - 253 VAC		•			8 meter	TRIAC		•	•	cable (2m)	3 440.00
Mounting accessories - (below) See sensor connectors and cables page												
DC sensor tester												
The ST300D is a compact and highly flexible accessory for DC sensor testing. Suitable for offline functionality testing on photoelectric, proximity and ultrasonic sensors. The unit comes equipped with an onboard (non-removable) Li-ion battery.												
type	supply voltage	description				NPN	PNP	NO	NC	connector	price	
ST300D	24 VDC	DC sensor functionality tester				•	•			terminal post	3 950.00	
Accessories for proximity / photoelectric / ultrasonic sensor												
Mounting accessories for sensors												
ST 02	plastic	adjustable swivel mounting bracket for all								M18 sensors	261.00	
ST 18-A	metal	axial mounting bracket for all								M18 sensors	36.60	
ST 18-C	metal	right angled mounting bracket for all								M18 sensors	49.00	
ST 30-A	metal	axial mounting bracket for all								M30 sensors	99.00	
ST 30-C	metal	right angled mounting bracket for all								M30 sensors	122.00	
ST 01	metal	mounting bracket for rectangular sensors								BS - BV	48.00	
ST 80	metal	top mount bracket for rectangular sensors								RX	102.00	
ST 81	metal	side mount bracket for rectangular sensors								RX	102.00	
ST 101	metal	vertical mounting L shaped bracket for sensors								QM/QF	145.00	
ST 102	metal	side mounting vertical L bracket for sensors								QM/QF	145.00	
ST 103	metal	vertical mount with protective cover bracket for								QM/QF	355.00	
ST 104	metal	horizontal mount protective cover bracket for								QM/QF	275.00	
STQMO	adaptor	vertical/horizontal diaphragms (0.5-1-2) for								QM/QF	466.00	
ST 03	adaptor	right angled beam adaptor for photoelectric								M18 sensors	326.00	
ST 03U	adaptor	right angled beam deflector for ultrasonic								M18 sensors	892.00	
Reflectors for photoelectric switches						(H)	(W)	(D)	Ø			
RL 103	02232510	round	reflector	—	7.4	—	34.5			174.00		
RL 104	02292510	round	reflector	—	—	6.5	46			190.00		
RL 110	80392510	round	reflector	—	—	7.3	84			206.00		
RL 113G	00042510	square	reflector	61	51	8	—			222.00		
RL 107	03132510	square	reflector	100	100	9	—			411.00		
RL 112G	03312510	rectangular	reflector	73	19	8.2	—			222.00		
RL 116	00082510	rectangular	reflector	60	40	8	—			269.00		

Ultrasonic sensors



UQ1A/G6-0E



UK6A/HP-0EUL



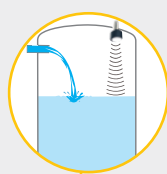
UK6A/HP-0EUL



UK1D/G6-0ESY



UT2F/G6-0ESY



UT5L/G6-1ESY

Ultrasonic sensors IP67 (EN60529)

Ultrasonic transducer emits an ultrasonic signal which is reflected back by the target towards the sensor. The trigger circuit measures the time between the emission and the detection of the signal.

Since the speed of the ultrasonic beam in air is known, it is easy to have an indication of the presence of the target, as well as a measure of the distance between sensor and target.

A Teach-in button is used to set working distance, output status (NO/NC) and slope of analog output and to change the function.

All models are temperature compensated to ensure reliability throughout the entire detection range and are totally resin filled for applications subject to vibration offering an IP67 protection degree.

General features:

- Sensitivity: Adjustable (via external Teach-in)
- Ambient limits: -20°C... +70°C
- Supply protection: Polarity reversal, transient, short circuit
- LED indication: Orange (output/regulation), green (echo reception)
- Housing material: PBT plastic (AISI 316L stainless steel available on request only)

type	supply voltage	detection distance (mm)	description	NPN	PNP	NO	NC	0...10V	4...20mA	connector	price
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M18 UQ1 series - Cubic ultrasonic sensor with head

(H) 53 x (W) 20 x (D) 38 mm

Analog + Digital NO/NC output

M12 (4pin) plug connection

UQ1A/G6-0E	10 - 30 VDC	40...300	ultrasonic sensor		•	•	•	•		M12 plug	5 530.00
UQ1C/G6-0E	10 - 30 VDC	60...800	ultrasonic sensor		•	•	•	•		M12 plug	3 770.00
UQ1D/G6-0E	10 - 30 VDC	80...1.200	ultrasonic sensor		•	•	•	•		M12 plug	4 240.00
UQ1A/G7-0E	10 - 30 VDC	40...300	ultrasonic sensor		•	•	•	•		M12 plug	5 530.00
UQ1C/G7-0E	10 - 30 VDC	60...800	ultrasonic sensor		•	•	•	•		M12 plug	5 930.00
UQ1D/G7-0E	10 - 30 VDC	80...1.200	ultrasonic sensor		•	•	•	•		M12 plug	6 470.00

M18 UK6 series - Cylindrical ultrasonic sensors

UK6 series - M18 short body

M12 (4pin) plug connection

M18 x 60.3 mm

Digital NO/NC output

UK6A/HP-0EUL	10 - 30 VDC	40...300	ultrasonic sensor		•	•	•	•		M12 plug	3 580.00
UK6C/HP-0EUL	10 - 30 VDC	60...800	ultrasonic sensor		•	•	•	•		M12 plug	3 710.00
UK6D/HP-0EUL	10 - 30 VDC	80...1.200	ultrasonic sensor		•	•	•	•		M12 plug	4 200.00

Analog output

UK6A/H1-0EUL	10 - 30 VDC	40...300	ultrasonic sensor					•		M12 plug	3 920.00
UK6C/H1-0EUL	10 - 30 VDC	60...800	ultrasonic sensor					•		M12 plug	4 050.00
UK6D/H1-0EUL	10 - 30 VDC	80...1.200	ultrasonic sensor					•		M12 plug	4 550.00
UK6A/H2-0EUL	10 - 30 VDC	40...300	ultrasonic sensor					•		M12 plug	3 920.00
UK6C/H2-0EUL	10 - 30 VDC	60...800	ultrasonic sensor					•		M12 plug	4 050.00
UK6D/H2-0EUL	10 - 30 VDC	80...1.200	ultrasonic sensor					•		M12 plug	4 550.00

UK1 series - M18 standard body

M12 (4pin) plug connection

M18 x 91.6 mm

Analog + Digital NO/NC output

UK1D/G6-0ESY	10 - 30 VDC	150...1.600	ultrasonic sensor		•	•	•	•		M12 plug	7 060.00
UK1D/G7-0ESY	10 - 30 VDC	150...1.600	ultrasonic sensor		•	•	•	•		M12 plug	7 060.00
UK1F/G6-0ESY	10 - 30 VDC	200...2.200	ultrasonic sensor		•	•	•	•		M12 plug	8 220.00
UK1F/G7-0ESY	10 - 30 VDC	200...2.200	ultrasonic sensor		•	•	•	•		M12 plug	8 220.00

M30 UT series - Standard body (with larger heads for longer distance detection)

M30 x 99 mm

- M30 - standard body UT1 or with larger head - UT2 (38.8 mm) UT5 (61 mm)
- Synchronism - up to 10 sensors connected on the same SYNC wire

Analog + Digital NO/NC output

M12 (5pin) plug connection

UT1B/G6-0ESY	10 - 30 VDC	250...3.500	ultrasonic sensor		•	•	•	•		M12 plug	8 350.00
UT1B/G7-0ESY	10 - 30 VDC	250...3.500	ultrasonic sensor		•	•	•	•		M12 plug	8 350.00
UT2F/G6-0ESY	10 - 30 VDC	350...6.000	ultrasonic sensor		•	•	•	•		M12 plug	13 500.00
UT2F/G7-0ESY	10 - 30 VDC	350...6.000	ultrasonic sensor		•	•	•	•		M12 plug	13 500.00
UT5L/G6-1ESY*	10 - 30 VDC	600...8.000	ultrasonic sensor		•	•	•	•		M12 plug	19 100.00
UT5L/G7-1ESY	10 - 30 VDC	600...8.000	ultrasonic sensor		•	•	•	•		M12 plug	19 100.00

* Mechanical dimension M30 x 115 mm

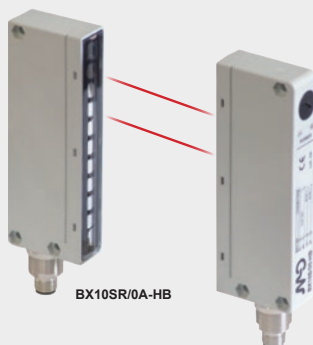
Mounting accessories see page K-11

See sensor connectors and cables page

Photoelectric area & fork sensors



CR0/0B-1V



BX10SR/0A-HB



FC5R/DP-0506-1F



FC6I/0B-0506-1F



FC7I/0B-M304-0F

Photoelectric area and fork sensors

type	supply voltage	slit/fork				detection distance (mm)	NPN	PNP	NO	NC	connector	price
		diffused	retro-reflective	polarised retro	through-beam							

CR0 series - Area sensors

CR0 series retroreflective polarised area sensors

IP67 (EN60529)

CR0 area sensors are retroreflective and work in conjunction with RL106G reflector (*supplied*). Comprises of synchronised photo element arrays for mutual interference avoidance.

- Nominal detection distance: 0.2 ... 4.5 meter
- Controlled height: 69 mm
- Minimum detectable object: 3...6 mm @ 2m - 3...10 mm @ 4.5m
- Connection: 250 mm pigtail with M12 5pin plug
- Dimensions: (H) 107 X (W) 20 X (D) 36 mm

CR0/0B-1V	16...30 VDC	☐	☐	☒	☐	0.2...4.5 m	☒	☒	☒	☒	M12 plug	5 260.00
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CRX area sensor available on request

BX series - Through-beam area sensors

(H) 145 x (W) 20 x (D) 45 mm

BX area sensors are supplied as two parts - emitter and receiver elements. The optics comprise of synchronised photo element arrays for mutual interference avoidance. Ideal as a solution for irregular shaped object detection.

- Nominal detection distance: 0.3... 2 meter
- Controlled height: 90 mm
- Minimum detectable object: **BX4** Ø15 mm / **BX10** Ø5 mm
- Sensitivity: Adjustable (*trimmer*)
- LED indication: Green (*supply*) - red (*alarm sync.*) - yellow (*area stable*)
- Supply protection: Polarity reversal, transient, short circuit (*auto reset*)
- Protection degree: IP67 (EN60529)

BX04 area sensor

BX04SR/0A-HB	10... 26 VDC	☐	☐	☒	☐	0.3...2 m	☒	☒	☒	☒	M12 plug	8 000.00
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BX10 area sensor

BX10SR/0A-HB	10... 26 VDC	☐	☐	☒	☐	0.3...2 m	☒	☒	☒	☒	M12 plug	10 300.00
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Available with 4 and 6 meter detection distances on request

Available in IP69K version (food and beverage) on request

See sensor connectors and cables page

FC series - Fork sensors

type	supply voltage	slit/fork		NPN	PNP	NO	NC	connector	price
		depth	width						

FC5 series - For object detection without regulation

- Minimum size object detection: 0.8 mm
- Switching frequency: 4 KHz
- Connector: M8 plug connection (3 pin)

FC5R/DP-0506-1F	12...24 VDC	60 mm	☐	50 mm	☐	☒	☒	M8 plug	2 730.00
FC5R/DP-0806-1F	12...24 VDC	60 mm	☐	80 mm	☐	☒	☒	M8 plug	2 910.00
FC5R/DP-1212-1F	12...24 VDC	124 mm	☐	120 mm	☐	☒	☒	M8 plug	3 380.00

FC6 series - For object detection with regulation

- Minimum size object detection: 0.2 mm
- Switching frequency: 10 KHz
- Connector: M8 plug connection (4 pin)

FC6I/0B-0304-1F	12...24 VDC	42 mm	☐	30 mm	☒	☒	☒	M8 plug	4 740.00
FC6I/0B-0306-1F	12...24 VDC	59 mm	☐	30 mm	☒	☒	☒	M8 plug	4 850.00
FC6I/0B-0506-1F	12...24 VDC	59 mm	☐	50 mm	☒	☒	☒	M8 plug	4 920.00
FC6I/0B-0510-1F	12...24 VDC	95 mm	☐	50 mm	☒	☒	☒	M8 plug	5 550.00
FC6I/0B-0806-1F	12...24 VDC	59 mm	☐	80 mm	☒	☒	☒	M8 plug	5 430.00
FC6I/0B-0810-1F	12...24 VDC	95 mm	☐	80 mm	☒	☒	☒	M8 plug	5 780.00

FC7/8 series - Fork sensors for label detection

- Minimum object detection: 2 mm (*gap between labels*) / 2 mm (*label size*)
- FC7: Photoelectric type label detection (*opaque labels*)
- FC8: Ultrasonic type label detection (*transparent labels*)

FC7I/0B-M304-0F	12...24 VDC	42 mm	☐	3 mm	☒	☒	☒	M8 plug	2 780.00
FC8U/0B-M307-1F	12...24 VDC	69 mm	☐	3 mm	☒	☒	☒	M8 plug	13 600.00

See sensor connectors and cables page

Photoelectric sensor with onboard processing



AI enabled
MLAS - Machine
Learning Assisted
Setting



New



MR-5-150...

Smart vision sensor - SMART-VS+ series

The **Smart-VS+** is an intelligent smart vision sensor, simple and easy to integrate into any application. It can be handled and used like a standard photoelectric sensor, but is powerful and smart with a multiprocessor platform supporting (AI) Artificial Intelligence technology.

Customised machine learning algorithms empower the detection system, enabling very complex and accurate object classification, ensuring very simple setup procedure without having to take care of programming or setting thresholds of different vision tools. All complex functionalities are performed by the Smart-VS **"brain"**.

The detection function is accomplished by three simple steps. The initial step is the "GOOD" condition teaching and the second step is "BAD" condition teaching, the third will turn the sensor in learning and normal run status ready to detect "GOOD" or "BAD" scenarios. Place the objects in front of the sensor and press a button to change acquisition steps until the sensor starts to think and act precisely.

Application mainly related to print and apply applications to detect the presence or absence of labels or text printing, in liquid filling machines to detect the presence / absence of any type of cap on any type of bottles, vials, flasks, phials of any material made of glass, plastic or with bright dark colour shiny surfaces with different dimensions.

General features:

- Green/Red LED spot for GOOD/BAD part
- Ethernet point to point communication available
- Machine Learning assisted trigger for sensor set up
- TEACH button and comprehensive UI with 5 status LEDs
- 50...150 mm operating distance with electronic focus control
- Easy and Intuitive WEB Server GUI for maintenance and job setting
- Bright and visible red LED pointer and powerful white polarized illuminator
- No vision tools, skilled installers or programming required just photosensor like setting

type	supply voltage	max. images to handle (GOOD+BAD)	detection distance (mm)	Inputs and Outputs	connector	price
SMART-VS+ Smart vision sensor (H) 58 x (W) 47.1 x (D) 38 mm						
MR-5-150-WH-O	10...30 VDC	6 images	50...150 mm	3 Out+2 In + Ethernet	M12 plug	76 100.00
PL-5-150-WH-O	10...30 VDC	20 images	50...150 mm	3 Out+2 In + Ethernet	M12 plug	95 500.00
Accessories						
type	gender	no. pins	plug angle	cable length	description	price
95A900052	female	17	straight	3 meter	M12 connector	3 040.00
95A900053	female	17	straight	5 meter	M12 connector	3 950.00
93A050124	male	8	straight	5 meter	M12 connector	7 820.00
93A050128	male	8	straight	5 meter	M12-RJ45 conn.	5 770.00
93ACC0230	—	—	—	—	fixed bracket	1 990.00

Application types

Label presence detection



Bottle orientation detection



Cap presence detection



Print-on label detection.



Smart-VS+

The new vision for your smart manufacturing



Scan to watch





LE40XZ...



LE40SZ...



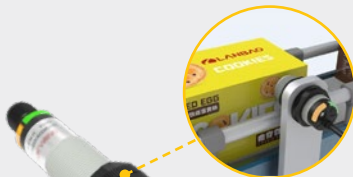
LE80XZ...



LR12XA...



LR18XA...



CR18XSCN...

Inductive proximity sensors

Inductive sensors are used for metal object detection. Operational integrity is maintained even in harsh environments e.g. presence of oils, powders, liquids and vibrations etc. Commonly mounted on machines tools, textile machines, transport systems packaging machines and all automation applications.

- Protection degree: IP65/67
- Ambient limits: -25°C... +70°C
- LED indication: Incorporated
- Supply protection: Polarity reversal, short circuit, power surge

type	supply voltage	flush	non flush	detection distance	NPN	PNP	NO	NC	connector	body length (mm)	price
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Rectangular housing inductive proximity switches

IP67

40 x 40 mm rectangular body

DC standard version

terminal block connection

LE40XZSF15DPR-D	10-30 VDC	•		15 mm		•	•	•	terminal	120	1 050.00
LE40XZSN20DPR-D	10-30 VDC		•	20 mm		•	•	•	terminal	129	1 050.00
LE40XZSN20DNR-D	10-30 VDC		•	20 mm		•	•	•	terminal	129	1 050.00

Short body version

M12 plug connection

LE40SZSN20DPR-E2	10-30 VDC		•	20 mm		•	•	•	M12 plug	66	1 050.00
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AC version

terminal block connection

LE40XZSN20ATO-D	20-250 VAC		•	20 mm			•		terminal	129	1 100.00
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80 x 80 x 50 mm square body

terminal block connection

IP67

DC version

LE80XZSN50DPR-D	10-30 VDC		•	50 mm		•	•	•	terminal	98	2 210.00
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AC version

LE80XZSN50ATO-D	20-250 VAC		•	50 mm			•	•	terminal	98	2 270.00
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NAMUR proximity switches

IP67

NAMUR inductive sensors are two-wire non amplified D.C. devices containing only the oscillator and are adapted to control an electronic amplified threshold circuit "which" can be utilised in hazardous areas.

M12 cylindrical body

LR12XAF02FLCN	8.2 VDC	•		2 mm				•	cable (2m)	31	654.00
LR12XAN04FLCN	8.2 VDC		•	4 mm				•	cable (2m)	35	654.00

M18 cylindrical body

LR18XAF05FLCN	8.2 VDC	•		5 mm				•	cable (2m)	32	710.00
LR18XAN08FLCN	8.2 VDC		•	8 mm				•	cable (2m)	32	710.00

Capacitive proximity sensors

IP67

Capacitive proximity sensors are used to detect a variety of materials, whether in liquid or solid state (e.g. water, wood, metals, granules, powders, etc...) Performance is upheld even when operating through plastic or glass barriers.

The robust nature of the technology ensures extremely high electromagnetic compatibility (EMC), high shock/vibration resistance and minimal sensitivity to dust and moisture. This ensures reliable object detection in harsh industrial environments.

M18 - Capacitive proximity sensors

CR18XSCF08DPRY-E2	10-30 VDC	•		0...8 mm		•	•	•	M12 plug	70	1 550.00
CR18XSCN12DPRY-E2	10-30 VDC		•	0...12 mm		•	•	•	M12 plug	84	1 550.00
CR18XSCN12DNRY-E2	10-30 VDC		•	0...12 mm	•		•	•	M12 plug	84	1 550.00
CR18SCF05ATO	20-250 VAC	•		0...5 mm			•		cable (2m)	70	1 430.00
CR18SCN08ATO	20-250 VAC		•	0...8 mm			•		cable (2m)	84	1 430.00

M30 - Capacitive proximity sensors

CR30XSCF15DPRY-E2	10-30 VDC	•		0...15 mm			•	•	M12 plug	62	1 600.00
CR30XSCN25DPRY-E2	10-30 VDC		•	0...25 mm		•	•	•	M12 plug	79	1 600.00
CR30XSCN25DNRY-E2	10-30 VDC		•	0...25 mm			•	•	M12 plug	79	1 600.00



New



PSE-BC30DPBR-E3



PSE-GM2DPBB-E3



PR18S...

Photoelectric sensors transmit a single beam which is reflected or interrupted by an infringing object. Diversified detection methods include diffuse reflection, through-beam, retro-reflection, polarized reflection and transparent object detection.

type	supply voltage	diffused	retro-reflective	polarised retro	through-beam	detection distance (mm)	NPN	PNP	NO	NC	connector	price
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PSE series - Standard compact sensors

M8 - 4-pin connector

PSE series designed with universal housing, an ideal replacement for a wide variety of sensors through a vast range of applications.

One click distance setting for accurate and fast installation equipped with an M12 plug for quick and efficient changeover for reduced production stoppage time.

- Light source: Red light (640 nm)
- Supply protection: Short-circuit, overload and reverse polarity protected
- Dimensions: 33 x 10.6 x 20 mm
- Feature: Visible light spot for easy calibration / alignment

Diffuse reflective *proximity type detection (no transmitter or reflector required)*

PSE-BC30DPBR-E3	12-24 VDC	•				300 mm		•	•	•	M8 plug	955.00
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Retro-reflective *used together with a reflector (supplied with reflector)*

PSE-PM3DPBR-E3	12-24 VDC			•		3 meter		•	•	•	M8 plug	1 050.00
PSE-GM2DPBB-E3*	12-24 VDC		•			2 meter		•	•	•	M8 plug	1 790.00

* Transparent object detection

Thru-beam (long range) *not supplied as a set (emitter bought separately)*

PSE-TM10DPBR-E3	12-24 VDC				•	10 meter		•	•	•	M8 plug	1 100.00
PSE-TM20DPBR-E3	12-24 VDC				•	30 meter		•	•	•	M8 plug	1 190.00
PSE-TM10DR-E3*	12-24 VDC				•	10 meter					Emitter	1 100.00
PSE-TM20D-E3*	12-24 VDC				•	30 meter					Emitter	1 190.00

PR18S series - Cylindrical sensors

Ø 18 mm x 68 mm

PR18S series cylindrical sensors - utilized on long and short range detection applications. The standard M18 housing ensures easy adaptability to a vast amount of applications.

Due to the non-contact nature of operation (*unlike limit switches*) the service life is longer, thusly ensuring good return on investment.

- Supply protection: Overload and reverse polarity protected
- Light source: Infrared LED
- Output indication: LED
- Connection: M12 - 4-pin connector
- Housing material: M12 - 4-pin connector
- Feature: Excellent anti-interference performance

Diffuse-reflective *proximity type detection (no transmitter or reflector required)*

Sender and receiver within the same housing, beam reflects on detected object.

PR18S-BC10DPR-E2	12-24 VDC	•				100 mm		•	•	•	M12 plug	863.00
PR18S-BC40DPC-E2	12-24 VDC	•				400 mm		•	•	•	M12 plug	863.00
PR18S-BC40DPO-E2	12-24 VDC	•				400 mm		•	•	•	M12 plug	863.00

Retro-reflective *utilisation with a reflector (must be ordered separately)*

Sender and receiver within the same housing, beam transmission returned via reflector.

PR18S-DM3DPC-E2	12-24 VDC		•			3 meter		•	•	•	M12 plug	909.00
PR18S-DM3DPO-E2	12-24 VDC		•			3 meter		•	•	•	M12 plug	909.00

Through-beam (long range) *not supplied as a set (emitter ordered separately)*

Sender and receiver in different housing, detection through beam interruption.

PR18S-TM20DPC	12-24 VDC			•		20 meter		•	•	•	M12 plug	1 050.00
PR18S-TM20DPO	12-24 VDC			•		20 meter		•	•	•	M12 plug	1 050.00
PR18S-TM20D*	12-24 VDC					20 meter					Emitter	1 050.00

* Sender / Emitter

Accessories

ZJP-8	33 x 30 mm	PSE/PSR mounting rack	PSE sensors	35.30
ZJP-9	M18 x 37 mm	PSS/PSM mounting rack	PR sensors	35.30
TD-02	40 x 65 mm	surface mount reflector for photo sensors	PR/PSE sensors	99.00
TD-09	40 x 60 mm	surface mount reflector for photo sensors	PR/PSE sensors	72.00

See sensor connectors and cables page

* Transparent object detection

PSE-GM2DPBB-E3 - sensor



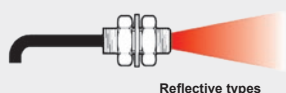
Fibre-optic sensors



FX102P-Z



FX551P

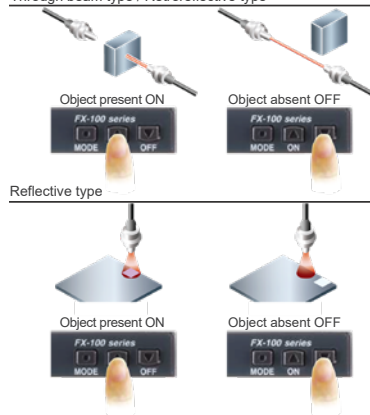


Reflective types



Through beam types

Through beam type / Retroreflective type



FX series - Fibre optic amplifier

DIN rail mounting

Significantly improved stability and operation ease, due to industry's top emission power.

- 3 times higher emission power
- 1.6 times longer detection range than conventional models
- Simplified functions for ease of usage improvement

- Connection: Connector with cable (*supplied separately*)
- Sensitivity setting: 2-point teaching / limit teaching / Full-auto teaching (*manual setting FX5 series*)
- Timer function: ON-delay, OFF-delay, One shot, no timer (*selectable*) 0.1ms - 32sec, 1-1000ms **FX1 series**

type	supply voltage	detection distance (mm)	NPN	PNP	light-on	dark-on	connector	price
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Amplifier for optical fibres **FX1 (H) 66.4 x (W) 9 x (D) 32 - FX5 (H) 75 x (W) 10 x (D) 32 mm**

FX102P-Z	12 - 24 VDC	dependant on fibre used	☐	☐	☐	☐	M8 plug	3 320.00
FX551P	12 - 24 VDC	dependant on fibre used	☐	☐	☐	☐	connector	5 030.00

Accessories for above FX551 amplifiers

CN-73-C2	main cable with connector for above amplifier (2 meter)	connector	435.00
CN-73-C5	main cable with connector for above amplifier (5 meter)	connector	506.00
CN-71-C2	sub cable with connector for above amplifier (2 meter)	connector	361.00

Optical fibre sensors for above amplifiers

Due to the vast range of optical fibres available, we illustrate a basic range (*indicated below*).
Vast range of available optical fibre sensors available, request fibre guide, available as a PDF file.

type	supply voltage	diffused	retro-reflective	polarised retro	through-beam	detection distance (mm)	cuttable fibre	head type	fibre length	price
						FX102	FX551 hyper mode			

Reflective types *proximity type detection (no transmitter or reflector required)*

Cylindrical threaded body (straight)			(IP67)							
FD-31	M3		140	515	yes	cylindrical	2 meter		1 630.00	
FD-41	M4		140	515	yes	cylindrical	2 meter		1 630.00	
FD-61	M6		410	1400	yes	cylindrical	2 meter		1 630.00	

Square threaded body (right angled)

FD-R31G	M3	☐	☐	☐	☐	150	530	yes	square	2 meter	2 670.00
FD-R41	M4	☐	☐	☐	☐	170	710	yes	square	2 meter	3 520.00

Protective tube (for FD series reflective fibres)

FDP-N500	M4	non-corrosive stainless steel protective tube for	0.5 meter	763.00
FDP-N1000	M4	non-corrosive stainless steel protective tube for	1.0 meter	876.00
FDP-N1500	M4	non-corrosive stainless steel protective tube for	1.5 meter	1 010.00

Thru-beam types

supplied as a set with transmitter and receiver

Cylindrical threaded body (straight)											
FT-31	M3	☐	☐	☐	☒	340	1200	yes	cylindrical	2 meter	1 630.00
FT-42	M4	☐	☐	☐	☒	800	3600	yes	cylindrical	2 meter	1 470.00

Square threaded body (right angled)

FT-R31	M3	☐	☐	☐	☐	340	1000	yes	square	2 meter	3 020.00
FT-R43	M4	☐	☐	☐	☐	640	3000	yes	square	2 meter	2 670.00

High temperature fibres

FT-H20-WM1	+200°C	☐	☐	☐	☐	300	1600	no	cylindrical	1 meter	9 970.00
FT-H35-M2S6	+350°C	☐	☐	☐	☐	490	1200	no	cylindrical	2 meter	14 700.00

Expansion lenses (for through beam type fibres) *-60°C...+350°C*

For fibres: FT-42/43, FT-H20-WM1, FT-H35-M2S6

FX-LE1	M4	fibre expansion lens side view 90° beam axis	FT-42/43	385.00
FX-SV1	M4	fibre expansion lens (5 times increased detection)	FT-42/43	621.00

Protective tube (for FT series through beam fibres)

FTP-500	M4	non-corrosive stainless steel protective tube for	0.5 meter	763.00
FTP-1000	M4	non-corrosive stainless steel protective tube for	1.0 meter	876.00
FTP-1500	M4	non-corrosive stainless steel protective tube for	1.5 meter	1 010.00

Fibre accessories

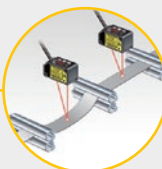
FX-CT1	fibre cutting tool (to cut fibres to desired length)	79.00
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LX-101-P-Z



EX-L221-P



Material slack detection



HG-C1050-P

LX-100 - Mark sensor (can detect any mark)

The **LX-100** mark sensor detects any marking or colour, the sensor is equipped with red, green and blue LED. In addition, it utilises a coaxial reflective optics system to realise high precision detection when used with 1/4000 resolution 12-bit A/D converter.

type	supply voltage	diffused	retro-reflective	polarised retro	through-beam	detection distance (mm)	NPN	PNP	light-on	dark-on	connector	price
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LX-100 series - Mark / Colour sensor

- Detection: 3 LEDs: red, green, blue
- Detection modes: 2 (*selectable*): Mark mode and Colour mode
- Sensitivity: 2-level teaching/Limit teaching - Mark / 1-level teaching - colour
- LED indication: 4-digit red LED display and various LED indicators
- Dimensions: 35 x 24 x 57 mm
- Response time: Mark mode - 45 µs \ Colour mode 150 µs

Mark/colour sensor M12 - 4-pin connector (*supplied separately*)

LX-101-P-Z	12 - 24 VDC					10...±3 mm	☐	☒	☐	☐	M12 plug	9 820.00
MSLX1	bracket	metallic (<i>side mount</i>)	mounting bracket for above								LX-101	737.00

Note: LX-101 can be used in conjunction with ASDA-A3 for high speed mark position applications.

EX-L200 series - Miniature laser sensor (ultra compact) - amplifier integrated

Due to the customised IC and optical design, high precision detection is fulfilled with directivity and visibility achievable only by laser. Class 1 (IEC / JIS / FDA) laser is safe to use, no need to separate the area of sensor usage.

- Detection: Minute object detection (*high precision - high accuracy*)
- Easy beam-axis alignment: Visible beam
- Sensitivity: Adjustable (*to eliminate background detection*)
- Supply protection: Short-circuit / reverse polarity protection
- LED indication: Orange and green LED indicators
- Ultra compact: 29.9 x 8.2 x 1³ mm

Spot reflective type (Ø1 mm at a detection distance of 300 mm)

- Minimum detection object - 0.01 mm

EX-L221-P	12 - 24 VDC	☐	☒	☐	☐	45...300 mm	☐	☒	☐	☐	cable (2m)	7 810.00
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Thru-beam *supplied as a set with transmitter and receiver*

- Minimum detection object - 0.03 mm

EX-L211-P	12 - 24 VDC	☐	☐	☐	☒	1 meter	☐	☒	☐	☐	cable (2m)	8 050.00
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NPN output available on request (remove "P" from the part number)

MS-EX201	bracket	L shaped metallic mounting bracket for sensor									EX-L2...	160.00
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HG-C series - Micro laser distance/measurement sensor (with built-in amplifier) IP67

HG-C measurement sensors measure and indicate measured values in mm as well as analog voltage outputs. The data can be used for various calculations and storage (*logging*) when the output is sent to a PLC + analog unit.

- Reliable detection in 10 µm precision (*for HG-C1030-P*)
- Indicates real measurements
- Equipped with 0 - 5V analog output
- Compact and light weight: 44 x 20 x 25 mm

type	supply voltage	repeatability	measurement center distance (mm)	measurement range (mm)	NPN	PNP	light-on	dark-on	connector	price
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HG-C1030-P	12 - 24 VDC	10 µm	30	±5	☐	☒	☐	☐	cable (2m)	24 600.00
HG-C1050-P	12 - 24 VDC	30 µm	50	±15	☐	☒	☐	☐	cable (2m)	24 600.00
HG-C1100-P	12 - 24 VDC	70 µm	100	±35	☐	☒	☐	☐	cable (2m)	24 600.00
HG-C1200-P	12 - 24 VDC	200 µm	200	±80	☐	☒	☐	☐	cable (2m)	27 500.00
HG-C1400-P	12 - 24 VDC	300 µm	400	±200	☐	☒	☐	☐	cable (2m)	32 100.00

MS-HG-01 bracket for above HG-C micro laser sensors

NPN available on request (remove "P" from the part number)

Note: I/O link available on request

See sensor connectors and cables page

Pressure transmitters



Pressure transmitters/sensors IP67

- Compact, rugged construction
- Accuracy: $\pm 0.3\%$ fs
- Response time: < 2 ms, (1 ms typical)
- Medium temperature range: $-15^{\circ}\text{C} \dots +125^{\circ}\text{C}$ / 525 ($-15^{\circ}\text{C} \dots +85^{\circ}\text{C}$)
- Material: Connection stainless steel 1.4404 / AISI 316L
- Conformity: EN 61326-2-3 / IEC 68-2-27 / IEC 68-2-29 / IEC 68-2-6 / UL E325110

type	pressure range (bar) ¹⁾	power supply	output DC ²⁾	electrical connection ³⁾	description	pressure connection ⁴⁾	price
Type 525/28 compact pressure transmitter based on well proven ceramic technology developed by Huba Control. Transmitter suitability extends across a broad spectrum of industries.							
• Medium: Liquids and gases							
Type 528 pressure range: -1...0...60 Bar (external thread) Ø24 x 40.9 mm							
528.9010033411	-1 ... 0	7 - 33 VDC	4 - 20 mA	M12x1	transmitter	G 1/4"	2 140.00
528.9120033411	0 ... 1.6	7 - 33 VDC	4 - 20 mA	M12x1	transmitter	G 1/4"	2 140.00
528.9140033411	0 ... 2.5	7 - 33 VDC	4 - 20 mA	M12x1	transmitter	G 1/4"	2 140.00
528.9150033411	0 ... 4	7 - 33 VDC	4 - 20 mA	M12x1	transmitter	G 1/4"	2 140.00
528.9170033411	0 ... 6	7 - 33 VDC	4 - 20 mA	M12x1	transmitter	G 1/4"	2 140.00
528.9300033411	0 ... 10	7 - 33 VDC	4 - 20 mA	M12x1	transmitter	G 1/4"	2 140.00
528.9310033411	0 ... 16	7 - 33 VDC	4 - 20 mA	M12x1	transmitter	G 1/4"	2 140.00
528.9320033411	0 ... 25	7 - 33 VDC	4 - 20 mA	M12x1	transmitter	G 1/4"	2 140.00
528.9330033411	0 ... 40	7 - 33 VDC	4 - 20 mA	M12x1	transmitter	G 1/4"	2 140.00
528.9400033411	0 ... 60	7 - 33 VDC	4 - 20 mA	M12x1	transmitter	G 1/4"	2 140.00



528.9300033411

Type 520 pressure range: 0 - 1000 Bar Ø24 x 46.7 mm							
Type 520 compact pressure transmitter based on Huba Control developed thick film technology with fully welded pressure measurement cell. Meets high burst protection demands and is ideal for refrigeration applications suitable for use in all types of refrigerants including ammonia.							
• Welded without sealing parts (no elastomer seals)							
• Medium: Liquids, gases and refrigerants (including ammonia)							
520.906S033401	-1 ... 9	7 - 33 VDC	4 - 20 mA	M12x1	transmitter	G 1/4"	2 350.00
520.917S033401	0 ... 6	7 - 33 VDC	4 - 20 mA	M12x1	transmitter	G 1/4"	2 350.00
520.930S033401	0 ... 10	7 - 33 VDC	4 - 20 mA	M12x1	transmitter	G 1/4"	2 350.00
520.931S033401	0 ... 16	7 - 33 VDC	4 - 20 mA	M12x1	transmitter	G 1/4"	2 350.00
520.932S033401	0 ... 25	7 - 33 VDC	4 - 20 mA	M12x1	transmitter	G 1/4"	2 350.00
520.933S033401	0 ... 40	7 - 33 VDC	4 - 20 mA	M12x1	transmitter	G 1/4"	2 350.00
520.940S033401	0 ... 60	7 - 33 VDC	4 - 20 mA	M12x1	transmitter	G 1/4"	2 350.00
520.941S033401	0 ... 100	7 - 33 VDC	4 - 20 mA	M12x1	transmitter	G 1/4"	2 860.00
520.942S033401	0 ... 160	7 - 33 VDC	4 - 20 mA	M12x1	transmitter	G 1/4"	2 860.00
520.943S033401	0 ... 250	7 - 33 VDC	4 - 20 mA	M12x1	transmitter	G 1/4"	2 860.00
520.954S033401	0 ... 400	7 - 33 VDC	4 - 20 mA	M12x1	transmitter	G 1/4"	2 860.00
520.955S033401	0 ... 600	7 - 33 VDC	4 - 20 mA	M12x1	transmitter	G 1/4"	2 860.00



520.930S033401

Explosion proof version EC type examination certificate: SEV 10 ATEX 0145							
• Intrinsic safety: Ex II 1/2 G Ex ia IIC T4 Ga/Gb / Ex II 1/2 D Ex ia IIC T125°C Da/Db							
520.917S043401	0 ... 6	7 - 33 VDC	4 - 20 mA	M12x1	transmitter	G 1/4"	3 680.00
520.930S043401	0 ... 10	7 - 33 VDC	4 - 20 mA	M12x1	transmitter	G 1/4"	3 680.00
520.931S043401	0 ... 16	7 - 33 VDC	4 - 20 mA	M12x1	transmitter	G 1/4"	3 680.00
520.932S043401	0 ... 25	7 - 33 VDC	4 - 20 mA	M12x1	transmitter	G 1/4"	3 680.00
520.933S043401	0 ... 40	7 - 33 VDC	4 - 20 mA	M12x1	transmitter	G 1/4"	3 680.00
520.934S043401	0 ... 60	7 - 33 VDC	4 - 20 mA	M12x1	transmitter	G 1/4"	3 680.00



520.917S043401

Accessories for transmitters other connectors and cables see page K-23...24

Heat sink for high temperature applications

Heat sink effectively reduces temperatures of hot media, permitting usage of transmitters in applications with temperatures in excess of 200°C.

105074	G 1/4" heat sink for transmitters in high temperature applications (L +101 mm)	2 680.00
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¹⁾ Other pressure ranges available on request

²⁾ Other outputs available on request: 0 - 5V, 0 - 10V, Radiometric 10 ... 90%

³⁾ Other electrical connections available: DIN EN 175301-803-A/C, RAST2.5, Swift, M12 x 1, with cable

⁴⁾ Pressure connections: inside/outside thread: 1/4"-18NPT, 1/2"-14NPT, G1/4", G1/2", M20 x 1.5, R 1/4 to DIN 2999



105074

Electronic programmable pressure switches

Drinking water application safe



Type 712, 713

Type 520

Type 540

Type 235



548.9300152401



540.943S052401



712.911103210



713.9301015111

Pressure transmitter with display and programmable switching outputs

The **548/540** series μ P-regulated, programmable pressure transmitter has a robust industry design, easily adjustable parameters (*via function keys in the configuration menu*) with up to two programmable switching points. All units are equipped with a large 4 digit display assuring reliable, accurate readings.

- Compact, rugged construction
- Clearly readable display (*rotatable 180°*) - 7 segment LED, 4 digits for pressure and parameter values
- Programmable time delay functions rise and switch off delay 0 - 50 s, response time 5 ... 500 ms
- Electrical connection: M12 x 1 (5 pin) See *sensor connectors and cables page*
- 1 x Analog signal output 4 ... 20 mA (0 ... 10 V available on request)
- 2 x programmable switching outputs NO or NC (250 mA)
- Medium: Liquids and gasses -20°C... +80°C
- Protection standard: IP67 - IEC 60529
- Conformity: EN 61326-2-3 / IEC 68-2-27 / IEC 68-2-6 / UL 61610-1

type	pressure range (bar) ¹⁾	supply VDC	output DC ²⁾	electrical connection ³⁾	description	pressure connection ⁴⁾	price
Type 548 pressure range: 0 - 40 Bar (H) 73 x (W) 41 x (D) 42 mm							
Based on the well proven ceramic technology developed by Huba Controls.							
• Accuracy:		± 0.3 % fs					
• Overload:		≤ 10 Bar 4 x fs > 10 Bar 3.5 x fs					
548.9300152401	0 ... 10	17 - 33	4 - 20 mA	M12x1 PNP	transmitter	G 1/4"	6 210.00
548.9310152401	0 ... 16	17 - 33	4 - 20 mA	M12x1 PNP	transmitter	G 1/4"	6 210.00
548.9320152401	0 ... 25	17 - 33	4 - 20 mA	M12x1 PNP	transmitter	G 1/4"	6 210.00
548.9330152401	0 ... 40	17 - 33	4 - 20 mA	M12x1 PNP	transmitter	G 1/4"	6 210.00

Type 540 pressure range: 0 - 600 Bar (H) 73 x (W) 41 x (D) 42 mm							
Based on Huba Control developed thick film technology with fully welded pressure measurement cell.							
• Accuracy:		± 0.3 % fs					
• Overload:		3 x fs (max. 1500 Bar) rupture pressure 6 x fs (max. 2500 Bar)					
540.941S052401	0 ... 100	17 - 33	4 - 20 mA	M12x1 PNP	transmitter	G 1/4"	6 320.00
540.943S052401	0 ... 250	17 - 33	4 - 20 mA	M12x1 PNP	transmitter	G 1/4"	6 320.00
540.955S052401	0 ... 600	17 - 33	4 - 20 mA	M12x1 PNP	transmitter	G 1/4"	6 320.00
Other pressure ranges available on request.							

Level detection pressure transmitters

- Medium temperature range: -20°C... +80°C
- Accuracy: ± 0.25 % fs
- Drinking water approval: KTW, W270, WRAS, ACS
- Protection class: (IP68) Cable PE-HD
- Material: Stainless Steel 1.4404 / AISI 316L - Ceramic sensor Al₂O₃ (99.6%)

type	pressure range (bar) ¹⁾	supply VDC	output DC ²⁾	electrical connection ³⁾	description	cable length	price
Type 712 - Level detection pressure transmitters Ø23.4 x 116 mm							
Type 712 level detection pressure transmitters are manufactured using a relative and absolute pressure measuring cell. Diesel oil (Ex version).							
• Medium:		Fuel oil, ultra-light/heavy - SN 181 160-2, Diesel oil, Drinking water					
712.913101210	0.0 ... 0.3	10 - 30	4 - 20 mA	cable	transmitter	5 meter	10 200.00
712.911103210	0.0 ... 1.0	10 - 30	4 - 20 mA	cable	transmitter	15 meter	8 730.00
712.912104210	0.0 ... 1.6	10 - 30	4 - 20 mA	cable	transmitter	20 meter	9 370.00

Type 713 - Level detection pressure transmitters Ø18.5 x 138 mm							
Type 713 pressure level transmitter used for continuous fluid level measurement of ground and drinking water. The compact design permits use in applications with restricted access as small as 20 mm i.d. pipes. Available with enhanced energy efficient ratiometric and digital outputs, for battery powered applications.							
• Applicable in ¾ inch pipes							
• Continuous level measurement							
• Suitable for ground and drinking water							
• Excellent linearity and long term stability							
• Medium: Liquids		(suitable for drinking water and borehole application)					
713.9301013111	0 ... 10	10 - 30	4 - 20 mA	cable	transmitter	80 meter	21 700.00
713.9301015111	0 ... 10	10 - 30	4 - 20 mA	cable	transmitter	100 meter	23 400.00
713.9301016111	0 ... 10	10 - 30	4 - 20 mA	cable	transmitter	125 meter	25 600.00
713.9301017111	0 ... 10	10 - 30	4 - 20 mA	cable	transmitter	150 meter	27 700.00
713.9301018111	0 ... 10	10 - 30	4 - 20 mA	cable	transmitter	175 meter	29 900.00
713.9311018111	0 ... 16	10 - 30	4 - 20 mA	cable	transmitter	175 meter	29 300.00

Differential pressure transmitters



699.931011010

Differential pressure transmitter

Type 699 transmitters are available in switchable pressure ranges, with or without digital display. They include customer specific adjustment possibilities. Specially developed sensors for each pressure range ensure accurate long term stable measurement and provide the perfect platform for use in air conditioning technology.

- Fast, easy mounting. (*housing incorporates integral wall or ceiling mount bracket*)
- Switchable response curve (*linear or root-extracted*)
- Adjustable measurement range
- Switchable output signals
- Resettable Zero Point (*reset button*)
- Full scale adjustable

Application fields

- Check air flows, monitor filters and fan systems
- Measuring slightest differential pressures in ventilation and air conditioning ducts
- Pressure supervision in labs, production, storage and clean rooms (*conversion: 100 Pa = 1 mbar*)



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type	pressure range (mbar) ¹⁾	supply VDC	output DC ²⁾	electrical connection ³⁾	description	pressure connection ⁴⁾	price
Type 699 - Differential pressure transmitter (H) 75 x (W) 92 x (D) 47.9 mm							
• Medium:		Air and neutral gases - temperature range: 0°C... 70°C					
• Response time:		< 20 ms					
• Output:		4 ... 20 mA ²⁾ (<i>others available on request 0 ... 5/10V</i>)					
• Degree of protection:		IP54 according to EN 60529					
• Conformity:		EN 61326-1, UL 60730-1, UL 60730-2-6					
• Supply:		13...33 VDC / 24 VAC ± 15%					
699.931014010	0.3/0.5/1	13 - 33	4 - 20 mA	screw term.	transmitter	Ø6.2 mm	3 320.00
699.913014010	1/3/5	13 - 33	4 - 20 mA	screw term.	transmitter	Ø6.2 mm	3 320.00
699.915014010	5/10/16	13 - 33	4 - 20 mA	screw term.	transmitter	Ø6.2 mm	3 320.00
699.931011010	0.3/0.5/1	13 - 33	0 - 10V	screw term.	transmitter	Ø6.2 mm	3 320.00
699.913011010	1/3/5	13 - 33	0 - 10V	screw term.	transmitter	Ø6.2 mm	3 320.00
699.915011010	5/10/16	13 - 33	0 - 10V	screw term.	transmitter	Ø6.2 mm	3 320.00

As above with LCD Digital display

699.931024110	0.3/0.5/1	13 - 33	4 - 20 mA	screw term.	transmitter	Ø6.2 mm	4 760.00
699.913024110	1/3/5	13 - 33	4 - 20 mA	screw term.	transmitter	Ø6.2 mm	4 760.00
699.915024110	5/10/16	13 - 33	4 - 20 mA	screw term.	transmitter	Ø6.2 mm	4 760.00
699.931021110	0.3/0.5/1	13 - 33	0 - 10V	screw term.	transmitter	Ø6.2 mm	4 760.00
699.913021110	1/3/5	13 - 33	0 - 10V	screw term.	transmitter	Ø6.2 mm	4 760.00
699.915021110	5/10/16	13 - 33	0 - 10V	screw term.	transmitter	Ø6.2 mm	4 760.00

¹⁾ Other pressure ranges available on request ²⁾ Other outputs available on request (0 ... 5/10V)

Accessories for type 699 above

104312	connection kit for vent duct (<i>metal</i>) 90° angled - including 2 m long tube	362.00
100064	connection kit for vent duct (<i>plastic</i>) straight - including 2 m long tube	242.00

Type 692 - Differential pressure sensor (H) 95 x (Ø) 44 mm

Type 692 pressure transmitters feature unique, well proven ceramic technology. The wide pressure range together with several standard output signals make these transmitters ideal for applications across a broad spectrum of industries. For the measurement of pressure differentials in HVAC systems.

- Robust stainless steel enclosure
- High resistance to extreme temperatures
- High measurement accuracy
- Very low temperature sensitivity

Type 692 - Differential pressure transmitter EN 61326-2-3 compact design

- Response time: < 5 ms
- Medium: Liquids and neutral gases -15°C... +85 °C
- Output: 4...20 mA²⁾ (*others available on request 0 ... 5/10V*)
- Electrical connection: DIN EN 175301-803-A connector (*female not supplied with transmitter*)
- Degree of protection: IP65 according to EN 60529

type	range BAR	max BAR	power supply	output (DC) ²⁾	electrical connection ³⁾	description	screw fitting	price
692.912007141	0...1	5	11-33	4 - 20 mA	DIN plug	transmitter	Ø6 mm	10 000.00
692.916007141	0...2.5	12	11-33	4 - 20 mA	DIN plug	transmitter	Ø6 mm	10 000.00
692.919007141	0...6	12	11-33	4 - 20 mA	DIN plug	transmitter	Ø6 mm	10 000.00
692.930007141	0...10	20	11-33	4 - 20 mA	DIN plug	transmitter	Ø6 mm	10 000.00

Accessories for above 692 transmitters

103510	DIN EN 175301-803-A female connector for type 692 transmitters	180.00
101999	mounting bracket (<i>including screws</i>) for type 692 transmitters	274.00



699.931024110



692.912007141 + 103510

Flow sensors



210.906441K



210...



236...



604.9000000

Flow sensors for liquid medium

Huba Control flow sensors are based on the Karman Vortex trail principle and are available in various options. No moving parts, the flow sensor is not sensitive to debris with marginal pressure loss combined with high accuracy.

- Protection class: (IP65)
- Medium temperature: < +125 °C
- Measuring principle: Vortex - Piezoelectric sensor element
- Excellent media resistance: Measuring element not in contact with the media
- Drinking water approval: KTW, W270, WRAS, ACS
- Accuracy at < 50% fs: < 1 % fs (>50% - 2% measuring value)
- Material: Fibreglass-reinforced plastic, sensor paddle ETFE
- Electrical connection: M12 x 1 - 4 pin (See sensor connectors and cables page)
- Flow medium: Heating water with standard additives, drinking water
- Flow pipe connection: External thread K connection G ½ ... G 1¼" (others on request)



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type	nominal diameter	measuring range (l/min)	power supply	output DC ²⁾	description	connect	price
Type 210 - Fibreglass-reinforced plastic				PA6T/6I (40% GF)			
Type 210 flow sensor for liquid media							
210.906441K	DN 6	0.5 ... 10	8 - 33 VDC	4 - 20 mA	flow sensor	G ½"	3 440.00
210.908441K	DN 8	0.9 ... 15	8 - 33 VDC	4 - 20 mA	flow sensor	G ½"	3 440.00
210.910441K	DN 10	1.8 ... 32	8 - 33 VDC	4 - 20 mA	flow sensor	G ½"	3 440.00
210.915441K	DN 15	3.5 ... 50	8 - 33 VDC	4 - 20 mA	flow sensor	G ¾"	3 440.00
210.920441K	DN 20	5.0 ... 85	8 - 33 VDC	4 - 20 mA	flow sensor	G 1"	3 440.00
210.925441K	DN 25	9.0 ... 150	8 - 33 VDC	4 - 20 mA	flow sensor	G 1¼"	3 440.00
²⁾ other outputs available on request 0 - 10V, Frequency square pulse output							
Above flow switches can be provided with additional internal PT1000 temperature sensor							+ 470.00

Type 236 - Brass bodied flow sensors

The Type 236 is based on the Type 210 but incorporates a brass housing. The vortex sensor has a rugged construction of brass connection.

- Brass (CuZn40PbZ), PA6T/6I (40% GF)

Type 236 Brass bodied flow sensors

236.910441K	DN 10	1.8 ... 32	8 - 33 VDC	4 - 20 mA	flow sensor	G ½"	5 380.00
236.911441K	DN 10	2.0 ... 40	8 - 33 VDC	4 - 20 mA	flow sensor	G ½"	5 380.00
236.932441K	DN 32	14 ... 240	8 - 33 VDC	4 - 20 mA	flow sensor	G 1½"	7 000.00
Above flow switches can be provided with additional internal PT1000 temperature sensor.							+ 470.00

See sensor connectors and cables page

Type 604 - Mechanical pressure switches

Type 604 pressure switch is used as a Δp flow switch in ventilation ducts for the control of filters and fans in primary and secondary control systems for the control of air dampers. Ideally suited to protect heating coils from overheating and for monitoring industrial air cooling circuits.

- Easy to install, user friendly snap cover
- Case geometry permits easy cable entry - cable strain relief integrated
- Supplied with Combi-bracket for vertical or horizontal installation
- For ventilation and air conditioning plants (monitor differential pressure under/over pressure)
- To monitor air filters and air flow

- Medium: Air and neutral gases -30°C...+85 °C
- Electrical contact: 1 x changeover contact - 5A 250 VAC (resistive)
- Protection class: (IP54) (with cover)
- Conformity: EN 61326-2-3, EN 60730-1

type	pressure range ¹⁾		switch	electrical connection ³⁾	description	pressure connection ⁴⁾	price
	mbar	Pa					
Type 604 - Mechanical pressure switch				(H) 52 x (Ø) 81			
• Tolerable overload on one side:			50 mbar				
• Pressure connection:			PVC nipples - Ø6.2 mm				
604.9000000	0.2 ... 3	20 ... 300	1 ch/over	screw term.	pressure switch	Ø6.2 mm	795.00
604.9100000	0.5 ... 5	50 ... 500	1 ch/over	screw term.	pressure switch	Ø6.2 mm	795.00
604.9200000	1 ... 10	100 ... 1000	1 ch/over	screw term.	pressure switch	Ø6.2 mm	795.00
604.9400000	5 ... 20	500 ... 2000	1 ch/over	screw term.	pressure switch	Ø6.2 mm	795.00
604.9500000	10 ... 50	1000 ... 5000	1 ch/over	screw term.	pressure switch	Ø6.2 mm	795.00

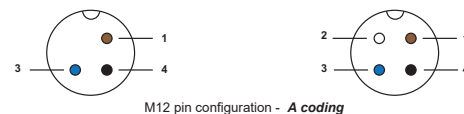
Note: Other pressure ranges available on request

Accessories for type 604 above

104312	connection kit for vent duct (metal) 90° angled - including 2 m long tube	362.00
100064	connection kit for vent duct (plastic) straight - including 2 m long tube	242.00

M8 and M12 - Round sensor connectors

- Contact resistance: $\geq 10\text{m}\Omega$
- Protection degree: IP67/68
- Operating temperature: $-25^{\circ}\text{C} \dots +85^{\circ}\text{C}$
- Termination: Screw clamp terminal
- Contact material: Gold plated phosphor brass/bronze
- Body material: 60% glass fibre reinforced Polyamide



type	gender	No. pins	term.	plug angle	nominal current	rated voltage AC/DC	description	price
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M8 assembly connectors (A coding) IP67/68

• Plastic body:	PA66+GF	• Cable Ø: Ø 3...5.5 mm						
080103-02-001	female	3	screw	straight	3A	60V	M8 connector	175.00
080104-02-001	female	4	screw	straight	3A	60V	M8 connector	179.00
080103-01-001	male	3	screw	straight	3A	60V	M8 connector	172.00
080104-01-001	male	4	screw	straight	3A	60V	M8 connector	175.00

M8 panel mount connectors (through hole) (A coding) IP67/68

080103-04-004	female	3	cable (5 m)	straight	3A	60V	M8 panel mount	183.00
080104-04-004	female	4	cable (5 m)	straight	3A	60V	M8 panel mount	190.00
080103-03-003	male	3	solder	straight	3A	60V	M8 panel mount	183.00
080104-03-003	male	4	solder	straight	3A	60V	M8 panel mount	190.00

M12 assembly connectors (A coding) IP67/68

• Plastic body:	PA66+GF	• Cable Ø: Ø 3...8 mm						
120103-02-022	female	3	screw	straight	4A	250V	M12 connector	184.00
120104-02-022	female	4	screw	straight	4A	250V	M12 connector	188.00
120105-02-022	female	5	screw	straight	4A	60V	M12 connector	192.00
120108-02-022	female	8	screw	straight	2A	30V	M12 connector	203.00
120104-02-024	female	4	screw	90°	4A	250V	M12 connector	188.00
120105-02-024	female	5	screw	90°	4A	60V	M12 connector	192.00
120108-02-024	female	8	screw	90°	2A	30V	M12 connector	238.00
120103-01-022	male	3	screw	straight	4A	250V	M12 connector	180.00
120104-01-022	male	4	screw	straight	4A	250V	M12 connector	184.00
120105-01-022	male	5	screw	straight	4A	60V	M12 connector	188.00
120108-01-022	male	8	screw	straight	2A	30V	M12 connector	199.00
120104-01-024	male	4	screw	90°	4A	250V	M12 connector	184.00
120105-01-024	male	5	screw	90°	4A	60V	M12 connector	188.00

M12 metallic body assembly connectors (A coding)

• Gland:	PG9 with shield	• Cable Ø: Ø 6...8 mm						
• Termination:	Solder terminal							
120104-02-006	female	4	solder	straight	4A	250V	M12 connector	254.00
120105-02-006	female	5	solder	straight	4A	60V	M12 connector	259.00
120108-02-006	female	8	solder	straight	2A	30V	M12 connector	275.00
120104-01-006	male	4	solder	straight	4A	250V	M12 connector	254.00
120105-01-006	male	5	solder	straight	4A	60V	M12 connector	259.00
120108-01-006	male	8	solder	straight	2A	30V	M12 connector	275.00

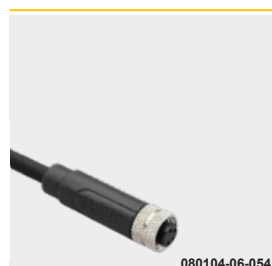
M12 metallic circular connectors (A coding) IP67/68

• M16 x 1.5 rear mounting								
120104-04-001	female	4	solder	straight	4A	250V	M12 panel mount	223.00
120105-04-001	female	5	solder	straight	4A	60V	M12 panel mount	233.00
120108-04-001	female	8	solder	straight	2A	30V	M12 panel mount	257.00
120104-03-001	male	4	solder	straight	4A	250V	M12 panel mount	215.00
120105-03-001	male	5	solder	straight	4A	60V	M12 panel mount	223.00
120108-03-001	male	8	solder	straight	2A	30V	M12 panel mount	250.00

Cable multi-core sensor cable - PUR (Polyurethane)

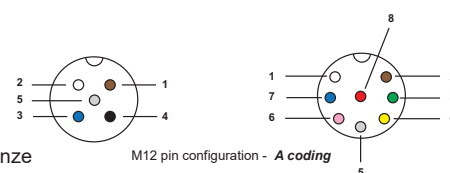
type	(mm ²)	cores	colour	insul.	material	wire colours	price per meter
CA00142	0.34	3	black	cable (1m)	PUR	brown-blue-black	49.00
CA00015	0.34	4	black	cable (1m)	PUR	brown-white-blue-black	52.00
CA00148	0.34	5	black	cable (1m)	PUR	brown-white-blue-black-grey	54.00
CA00103	0.25	8	black	cable (1m)	PUR	pnk-red-yel-brn-wht-blu-grm-gry	50.00

Sensor connectors & cables



M8 and M12 - Round sensor connectors

- Contact resistance: $\geq 10\text{m}\Omega$
- Protection degree: IP67/68
- Operating temperature: $-25^{\circ}\text{C} \dots +85^{\circ}\text{C}$
- Termination: Moulded on cable
- Contact material: Gold plated phosphor brass/bronze
- PUR cable: High flexibility, oil and abrasion resistant



type	gender	No. pins	colour	plug angle	cable material	cable length	description	price
M8 sensor cable with female connector (A coding)								
080103-06-027	female	3	black	straight	PUR	2 meter	M8 sensor cable	220.00
080103-06-020	female	3	black	straight	PUR	5 meter	M8 sensor cable	391.00
080103-06-058	female	3	black	90°	PUR	2 meter	M8 sensor cable	220.00
080103-06-024	female	3	black	90°	PUR	5 meter	M8 sensor cable	391.00
080104-06-054	female	4	black	straight	PUR	2 meter	M8 sensor cable	220.00
080104-06-029	female	4	black	straight	PUR	5 meter	M8 sensor cable	443.00
080104-06-063	female	4	black	90°	PUR	2 meter	M8 sensor cable	220.00
080104-06-036	female	4	black	90°	PUR	5 meter	M8 sensor cable	443.00

M12 sensor cable with female connector (A coding)								
120104-06-053	female	4	black	straight	PUR	2 meter	M12 sensor cable	220.00
120104-06-061	female	4	black	straight	PUR	5 meter	M12 sensor cable	443.00
120104-06-624	female	4	black	straight	PUR	7.5 meter	M12 sensor cable	537.00
120104-06-625	female	4	black	straight	PUR	10 meter	M12 sensor cable	685.00
120104-06-017	female	4	black	90°	PUR	2 meter	M12 sensor cable	220.00
120104-06-010	female	4	black	90°	PUR	5 meter	M12 sensor cable	400.00
120104-06-924	female	4	black	90°	PUR	7.5 meter	M12 sensor cable	537.00
120104-06-925	female	4	black	90°	PUR	10 meter	M12 sensor cable	685.00
120105-06-075	female	5	black	straight	PUR	2 meter	M12 sensor cable	220.00
120105-06-053	female	5	black	straight	PUR	5 meter	M12 sensor cable	443.00
120105-06-127	female	5	black	90°	PUR	2 meter	M12 sensor cable	220.00
120105-06-055	female	5	black	90°	PUR	5 meter	M12 sensor cable	443.00
120108-06-008	female	8	black	straight	PUR	2 meter	M12 sensor cable	285.00
120108-06-009	female	8	black	straight	PUR	5 meter	M12 sensor cable	481.00
120108-06-115	female	8	black	90°	PUR	2 meter	M12 sensor cable	285.00
120108-06-119	female	8	black	90°	PUR	5 meter	M12 sensor cable	481.00

M12 round connectors - for power applications (S & K coding)								
• Contact resistance: $\geq 3\text{m}\Omega$ • Protection degree: IP67/68 • Operating temperature: $-25^{\circ}\text{C} \dots +85^{\circ}\text{C}$ • Termination: Solder terminal								
type	gender	No. pins	poles	contact coding	nominal current	rated voltage	description	price

M12 power assembly connectors (S & K coding) IP67/68								
• Plastic body: Insulation PA66+GF • Wire gauge: max. 1.5 mm² • Cable Ø: Ø 3...8 mm								
120504-01-001	male	4	3+PE	S	12A	630 VAC	M12 connector	237.00
121305-01-001	male	5	4+PE	K	12A	630 VAC	M12 connector	397.00
120504-02-001	female	4	3+PE	S	12A	630 VAC	M12 connector	245.00
121305-02-001	female	5	4+PE	K	12A	630 VAC	M12 connector	426.00

M12 metallic panel mount power connectors (S & K coding) IP67/68								
• Metallic panel mount circular connectors • M16 x 1.5 rear mounting								
120504-03-001	male	4	3+PE	S	12A	630 VAC	M12 connector	237.00
121305-03-001	male	5	4+PE	K	12A	630 VAC	M12 connector	397.00
120504-04-001	female	4	3+PE	S	12A	630 VAC	M12 connector	245.00
121305-04-001	female	5	4+PE	K	12A	630 VAC	M12 connector	426.00

Temperature controllers



DTK4848R01

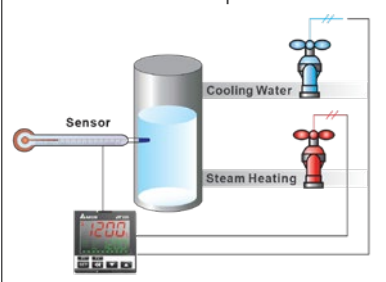


DT320...



DT360...

Simultaneous temperature control



Temperature controllers

type	panel size (mm) W x H	description	output 1	output 2	price
DTK series - "Standard" temperature controller 100 - 240 VAC 50/60Hz (60 mm deep)					
• Universal sensor inputs:		Thermocouple: Type (K-J-T-E-N-R-S-B-L-U-TXK) Platinum RTD: Pt100, JPt100			
• LCD display:		Process Value (PV) Red colour - Set point (SV) Green colour			
• Control method:		PID, ON/OFF, Manual control mode			
• Alarms:		1 alarm output (9 selectable alarm modes)			
• Display:		High resolution LCD display			
• Speed:		High speed sampling time (100ms)			
DTK4848R01	48 48	standard temperature controller	relay (5A AC1)	—	1 050.00
DTK4848V01	48 48	standard temperature controller	12 VDC pulse	—	1 220.00
DTK4848C01	48 48	standard temperature controller	4-20mA	—	1 220.00
DTK4896R01	48 96	standard temperature controller	relay (5A AC1)	—	1 350.00
DTK4896V01	48 96	standard temperature controller	12 VDC pulse	—	1 350.00
DTK4896C01	48 96	standard temperature controller	4-20mA	—	1 350.00
DTK7272R01	72 72	standard temperature controller	relay (5A AC1)	—	1 510.00
DTK7272V01	72 72	standard temperature controller	12 VDC pulse	—	1 510.00
DTK9696R01	96 96	standard temperature controller	relay (5A AC1)	—	1 720.00
DTK9696V01	96 96	standard temperature controller	12 VDC pulse	—	1 720.00
DTA/DTB series - Temperature controllers					
DTA4896R0	48 96	standard temperature controller	relay	—	1 800.00
DTA9648R0	96 48	standard temperature controller	relay	—	1 800.00
DTB4824RR	48 24	advanced temperature controller	relay	relay	1 880.00

DT3 series - Advanced "high speed intelligent" temperature controller 100 - 240 VAC 50/60Hz

New DT3 series temperature controller designed with upgraded hardware and higher specifications offering smart operation, fast response, simple expandability and user-defined function keys.

- Built-in sensor input modes: Thermocouple: K, J, T, E, N, R, S, B, L, U, TXK
Platinum RTD: Pt100, JPt100, RTD: Cu50, Ni120
Analog input: 0-5 V, 0-10 V, 0-20 mA, 4-20 mA, 0-50 mV
- Various Control Modes: Auto Tuning, FUZZY, Manual, On/Off, PID Process Control, Self Tuning
- Various Output Modes: Relay, Voltage pulse, Current DC, Linear voltage
- Communication: RS-485 communication MODBUS ASCII / RTU protocol
- Display: Large 3-colour LCD Display
- IP protection: IP66 protection level and CE, UL certified
- Output: Dual output control function for heating and cooling
- Detection: Heater disconnection detection
- Sampling rate: 100ms

			output 1	output 2	
DT320RA-0200	48 48	advanced temperature controller	relay	see output 2 options (below)	1 770.00
DT320VA-0200	48 48	advanced temperature controller	12 VDC pulse		1 770.00
DT340RA-0200	48 96	advanced temperature controller	relay		2 310.00
DT340VA-0200	48 96	advanced temperature controller	12 VDC pulse		2 310.00
DT360RA-0200	96 96	advanced temperature controller	relay		2 540.00
DT360VA-0200	96 96	advanced temperature controller	12 VDC pulse		2 540.00

Note: 24 VDC (change 7th digit "A" of part number to "D" for 24 VDC application on request)

Expansion facilities and accessories for above DT3 controllers

- Max 1 extra output card
- Max 2 optional cards

Replace the last 4 digits for additional options: (first 2 digits identify the output - Last 2 digits the options)

Example: V213 = voltage output with event and remote set up input

0233 = no extra control output but with retransmission output and remote set up input

- R200	Relay output	(5A 250 VAC)	output card	DT3-R	265.00
- V200	Voltage pulse output	(14 VDC pulse)	output card	DT3-V	265.00
- C200	DC current output	(4 - 20mA)	output card	DT3-C	265.00
- L200	Linear voltage output	(0 - 10VDC)	output card	DT3-L	265.00
- 0210	Event input 1		option card	DT3-EVENT	265.00
- 0220	CT input 1		option card	DT3-CT1	265.00
- 0230	Retransmission output		option card	DT3-RETRANS	265.00
- 0203	Remote setup input		option card	DT3-REMOTE	265.00
DT3-CT30A	30A	current transformer for heater disconnection or overcurrent detection			383.00
DT3-CT100A	100A	current transformer for heater disconnection or overcurrent detection			515.00

Temperature controllers



DTM series

New



DTM series - Multi-Loop modular temperature controller

With increasingly complex temperature control application requirements, Delta introduces the DTM series, multi-loop modular temperature controller, designed for ease of application and installation. Data collection by host and total isolation between channels improves communication speed and stability. From hardware to software, the intuitive design enables a quick start, while advanced functions provide data management flexibility with communication address customisation.

The DTM series consists of host, measurement module, I/O module and extension cassette. A fully extended DTM group consists of a host plus 7 measurement modules and 8 I/O modules, for up to 64 points temperature control. Modules simply slide onto one another to expand the system to total user requirements for simplified wiring.

The DTM series controller is an ideal solution for advanced and complex temperature control applications, where several groups can be connected via RS-485 or Ethernet for temperature control of up to 1 000 points.

DTM series Multi-Loop modular temperature controller

type	supply voltage	temp control points	communication	description	price
Host module CPU (H) 114 x (W) 71 x (D) 81 mm					
- Supports up to 7 measurement modules + 8 I/O modules - incorporates cassette slots to receive up to 2 extension cassettes (<i>with 4 outputs each</i>) - Communication: RS-485 or RS-485 + Ethernet (<i>model dependant</i>) - Internal interconnects for 24 V supply and communication signal transmission to other modules - Input sensor support - Thermocouple: K, J, T, E, N, R, S, B, L, U, TXK - Platinum RTD: Pt100, JPt100, Ni120, Cu50 - Analog input: 0-10 V, 0-5 V, 0-50 mV, 0-20 mA, 4-20 mA					
DTMR04	24 VDC	4-channel	RS-485	host temperature module	5 520.00
DTMR08	24 VDC	8-channel	RS-485	host temperature module	8 330.00
DTME04	24 VDC	4-channel	RS-485 + Ethernet	host temperature module	8 510.00
DTME08	24 VDC	8-channel	RS-485 + Ethernet	host temperature module	11 400.00
UC-PRG015-01A	cable	Mini USB cable for programming (1.5 meter)			216.00
Measurement modules (H) 113 x (W) 70 x (D) 80 mm					
DTMN04	fm host	4-channel	— —	measurement module	5 290.00
DTMN08	fm host	8-channel	— —	measurement module	8 100.00
I/O modules					
Provide outputs for measurement modules, plug-into (<i>cassettes</i>) or slide-on (<i>modules</i>)					
type	supply voltage	output points	outputs	description	price
Extension cassettes - for measurement modules (H) 48 x (W) 25 x (D) 77 mm					
Plug into host and measurement modules, providing outputs (without increasing dimensions)					
DTM-BDV	fm host	4-channel	0/12 V pulse voltage	plug-in output cassette	877.00
DTM-BDR	fm host	4-channel	2 A relay contact	plug-in output cassette	877.00
DTM-BDC	fm host	4-channel	4 - 20 mA output	plug-in output cassette	877.00
DTM-BDL	fm host	4-channel	0 - 10 V output	plug-in output cassette	877.00
I/O module clips onto host or measurement modules (H) 113 x (W) 30 x (D) 80 mm					
Slides onto right side of measurement modules, providing outputs					
DTM-DOV	fm host	8-channel	0/12 V pulse voltage	slide-on I/O Module	2 020.00
DTM-DOR	fm host	8-channel	2 A relay contact	slide-on I/O Module	2 020.00
DTM-DOC	fm host	8-channel	4 - 20 mA output	slide-on I/O Module	2 020.00
DTM-DOL	fm host	8-channel	0 - 10 V output	slide-on I/O Module	2 020.00
DTC series - "Modular" temperature controller (H) 90 x (W) 25.2 x (D) 60 mm					
DTC features modular, wire-saving structure able to monitor multiple temperature points in parallel. Modular extensions, providing user configurable outputs according to actual requirements Programmable PID control allows users up to 64 groups of different temperature and control time.					
- PID, programmable PID, On/Off, Manual control - Analog inputs: 0-5V, 0-10V, 0-20mA, 4-20mA, 0-50mA - Communication: RS-485 communication, 2.400 - 38.400 bps					
DTC1000R	24 VDC	2-channel	3A SPST relay	main unit temp controller	1 580.00
DTC1000C	24 VDC	2-channel	DC current, 4-20 mA	main unit temp controller	1 580.00
DTC2000R	24 VDC	2-channel	3A SPST relay	extension unit	1 580.00
DTC2000C	24 VDC	2-channel	DC current, 4-20 mA	extension unit	1 580.00

Thermocouple sensors



type	sensor type	fitting type	probe type	type	cable length	description	probe dia. Ø	SUS304 length (mm)	price
RTD (PT100) sensors					<i>sensor probe/tube: SUS304 material</i>				
SJ-301/P505P	PT100	none	(1)	PVC	1	plain tube sensor	5	50	654.00
SJ-301/P505P3	PT100	none	(1)	PVC	3	plain tube sensor	5	50	784.00
SJ-301/P510T	PT100	none	(1)	teflon	1	plain tube sensor	5	100	741.00
SJ-301/P510T3	PT100	none	(1)	teflon	3	plain tube sensor	5	100	937.00
SJ-301/P520T	PT100	none	(1)	teflon	1	plain tube sensor	5	200	741.00
SJ-301/P520T3	PT100	none	(1)	teflon	3	plain tube sensor	5	200	937.00
SJ-302/P510T	PT100	M8 thread	(3)	teflon	1	threaded coupling	5	100	741.00
SJ-302/P510T3	PT100	M8 thread	(3)	teflon	3	threaded coupling	5	100	937.00
SJ-302/P520T	PT100	M8 thread	(3)	teflon	1	threaded coupling	5	200	741.00
SJ-302/P520T3	PT100	M8 thread	(3)	teflon	3	threaded coupling	5	200	937.00
SJ-305/P520T	PT100	1/4" PT	(4)	teflon	1	threaded adj. coupling	5	200	1 400.00
SJ-305/P520T3	PT100	1/4" PT	(4)	teflon	3	threaded adj. coupling	5	200	1 590.00
KN-1/2PT-8-200-PT	PT100	1/2" PT	(6)	terminal box		screw terminal box	8	200	1 750.00
KN-1/2PT-8-300-PT	PT100	1/2" PT	(6)	terminal box		screw terminal box	8	300	1 830.00
Type "J" thermocouples					<i>sensor probe/tube: SUS304 material</i>				
SJ-100/J505B	type J	none	(1)	braid	1	plain tube sensor	5	50	214.00
SJ-100/J505B3	type J	none	(1)	braid	3	plain tube sensor	5	50	305.00
SJ-100/J510B	type J	none	(1)	braid	1	plain tube sensor	5	100	214.00
SJ-100/J510B3	type J	none	(1)	braid	3	plain tube sensor	5	100	305.00
SJ-100/J520B	type J	none	(1)	braid	1	plain tube sensor	5	200	214.00
SJ-100/J520B3	type J	none	(1)	braid	3	plain tube sensor	5	200	305.00
SJ-105/J510B	type J	M8 thread	(3)	braid	1	threaded coupling	5	100	214.00
SJ-105/J510B3	type J	M8 thread	(3)	braid	3	threaded coupling	5	100	305.00
SJ-105/J520B	type J	M8 thread	(3)	braid	1	threaded coupling	5	200	214.00
SJ-105/J520B3	type J	M8 thread	(3)	braid	3	threaded coupling	5	200	305.00
SJ-106/JM8B	type J	screw-in	(2)	braid	1	screw-in sensor	M8	—	131.00
SJ-106/JM8B3	type J	screw-in	(2)	braid	3	screw-in sensor	M8	—	223.00
SJ-107/J5BB	type J	bayonet	(5)	braid	1	bayonet fixing sensor	5	—	218.00
SJ-107/J5BB3	type J	bayonet	(5)	braid	3	bayonet fixing sensor	5	—	310.00
KN-1/2PT-8-200-J	type J	1/2" PT	(6)	terminal box		screw terminal box	8	200	1 570.00
KN-1/2PT-8-300-J	type J	1/2" PT	(6)	terminal box		screw terminal box	8	300	1 660.00
Type "K" thermocouples					<i>sensor probe/tube: SUS304 material</i>				
SJ-100/K505B	type K	none	(1)	braid	1 m	plain tube sensor	5	50	192.00
SJ-100/K505B3	type K	none	(1)	braid	3 m	plain tube sensor	5	50	284.00
SJ-100/K510B	type K	none	(1)	braid	1 m	plain tube sensor	5	100	192.00
SJ-100/K510B3	type K	none	(1)	braid	3 m	plain tube sensor	5	100	284.00
SJ-100/K520B	type K	none	(1)	braid	1 m	plain tube sensor	5	200	192.00
SJ-100/K520B3	type K	none	(1)	braid	3 m	plain tube sensor	5	200	284.00
SJ-105/K510B	type K	M8 thread	(3)	braid	1 m	threaded coupling	5	100	192.00
SJ-105/K510B3	type K	M8 thread	(3)	braid	3 m	threaded coupling	5	100	284.00
SJ-105/K520B	type K	M8 thread	(3)	braid	1 m	threaded coupling	5	200	192.00
SJ-105/K520B3	type K	M8 thread	(3)	braid	3 m	threaded coupling	5	200	284.00
SJ-106/KM8B	type K	screw-in	(2)	braid	1 m	screw-in sensor	M8	—	131.00
SJ-106/KM8B3	type K	screw-in	(2)	braid	3 m	screw-in sensor	M8	—	223.00
SJ-107/K5BB	type K	bayonet	(5)	braid	1 m	bayonet fixing sensor	5	—	218.00
SJ-107/K5BB3	type K	bayonet	(5)	braid	3 m	bayonet fixing sensor	5	—	310.00
KN-1/2PT-8-200-K	type K	1/2" PT	(6)	terminal box		screw terminal box	8	200	1 570.00
KN-1/2PT-8-300-K	type K	1/2" PT	(6)	terminal box		screw terminal box	8	300	1 660.00
Thermocouple wire					<i>supplied in any length - priced per meter</i>				
RTD/T19W	PT100	teflon		teflon coated wire		19/0.13RTD-AFF-3C	(per meter)		131.00
TC-IC-H/S	type J	braided		steel braided covered		thermocouple wire	(per meter)		61.00
TC-CA-H/S	type K	braided		steel braided covered		thermocouple wire	(per meter)		61.00
Thermocouple connectors									
M-7-J	type J	male		thermocouple connector		plug	black		88.00
F-7-J	type J	female		thermocouple connector		socket	black		96.00
M-7-K	type K	male		thermocouple connector		plug	yellow		88.00
F-7-K	type K	female		thermocouple connector		socket	yellow		96.00
AC05-1/2				threaded sliding coupling for probe	1/2" PT	ID dia	5	—	872.00
AC05-1/4				threaded sliding coupling for probe	1/4" PT	ID dia	5	—	610.00

Pressure sensors



Display color for upper / lower limit
(green / red)

Parameter Setup
(orange)



Various Unit Conversion



DPA...

DPA series - Compact miniature pressure sensors

Delta's new-generation and slim pressure sensor is small in size and light, supporting many installation methods. DPA features high measurement accuracy, excellent stability, high shock and vibration resistance, good over-load capacity, anti-corrosion and heat resistance, and can work with all Delta's industrial automation products in hi-tech electronics industry, general processing industry, food packaging industry and automatic assembly industry.

Various unit conversion

The DPA series offers 6 kinds of globally adopted pressure units for measurement and display.

3-colour LCD display (green, red, orange)

The large LCD with a green, red and orange 3-colour LCD display allows users to set the display colour according to the ambient environment, such as when the pressure is within normal range or exceeds the allowed range. The display's colour is orange when in parameter setup mode. This makes it easy for reading and reduces operation errors.

Safety control mode

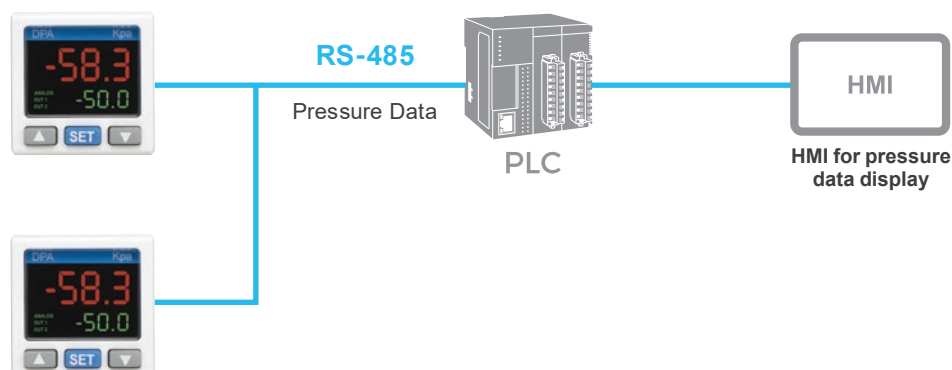
The safety control mode prevents operators from carelessly touching relevant parameters and affecting the operation and production of the equipment.

Functions:

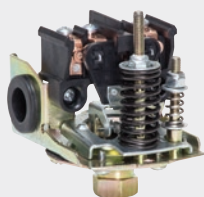
- RS485 port, 2 x digital outputs (NPN or PNP) and 1 x analog output (1 - 5V or 4 - 20mA)
- Various unit conversion functions (kPa, kg/cm², bar, mmHg, psi, inchHg)
- Selectable LED (3 colours) set different colours for different parameters
- 10 sets of output response times available (2ms - 5.000ms)
- Connection: 1/8 PT, inner pore M5
- Safety control function (to prevent unwanted parameter changes)
- For air pressure applications only

type	pressure	output type		description	price
	range (kPa)	2 x digital	1 x analog		
Multifunction miniature pressure sensor (H) 30 x (W) 30 x (D) 26 mm					
2 x digital and 1 x 4 - 20mA output					
DPA01P-P	-100 - 100kPa	PNP	4 - 20mA	mini pressure sensor	2 000.00
DPA10P-P	-100 - 1000kPa	PNP	4 - 20mA	mini pressure sensor	2 000.00
DPA01N-P	-100 - 100kPa	NPN	4 - 20mA	mini pressure sensor	2 000.00
DPA10N-P	-100 - 1000kPa	NPN	4 - 20mA	mini pressure sensor	2 000.00
2 x digital and 1 x 1 - 5V					
DPA01Q-P	-100 - 100kPa	PNP	+1 - 5V	mini pressure sensor	2 000.00
DPA01M-P	-100 - 100kPa	NPN	+1 - 5V	mini pressure sensor	2 000.00
DPA10M-P	-100 - 1000kPa	NPN	+1 - 5V	mini pressure sensor	2 000.00
Accessories for pressure sensors					
DPA-PFKIT	panel mount accessory			(31 x 31 mm cut-out)	42.00
DPA-FMKIT	surface mount support bracket			(all sides mounting)	20.90

Real-time Data Collection: Pressure Data via RS-485



Pressure switches



LF16-1...



LF18-1...



LF55...



FS52

LF10 series - Air pressure switches

(IP20)

Pressure switches used to regulate tank pressures between two preset values on small (up to 200psi) electrically driven air compressors. Supplied with unloader valve (preventing starting under load) and manual auto-off override switch.

- Visible contact / no wire looping / ample wiring space
- Automatic unloader valve / manual "auto-off" override facility
- 2 x NC contacts 12A 240 VAC

type	operating pressure		differential range PSI	factory setting PSI	pipe fitting female ¹⁾	contact rating 240V	price
	min ON	max OFF					
	PSI	PSI					
LF10-1H11123-80	25	100	20-35	55-80	1/4 NPT	12A	339.00
LF10-1H11123-115	35	150	30-40	85-115	1/4 NPT	12A	339.00
LF10-1H11123-150	50	175	35-55	110-150	1/4 NPT	12A	339.00

LF16 series - Water pump pressure switch

IP20

LF16 pressure switches provide time tested, reliable control for automatic water systems. Universally accepted for use as original equipment on water well pumps or pumping systems.

- Visible contact / no wire looping / ample wiring space
- Automatic unloader valve / manual "auto-off" override facility
- 2 x NC contacts 16A 240 VAC

LF16-111-40PSI	20	80	15-30	20-40	1/4 NPT	16A	339.00
LF16-111-50PSI	20	80	15-30	30-50	1/4 NPT	16A	339.00
LF16-111-60PSI	20	80	15-35	40-60	1/4 NPT	16A	339.00

LF19/18 series - Air compressor pressure switch

IP44

Designed to regulate tank pressure between two preset values on three-phase electrically driven compressors.

- Non-metallic, corrosion-resistant cover
- Automatic unloader valve / manual "auto-off" override facility

type	Bar	Bar	Bar	Bar	Bar	240V	price
LF19 - 1 phase pressure switch		2 x NC contacts 16A		250 VAC			
LF19-111121-3BAR	1	6	2.0-4.0	1-3	G1/4"	16A	284.00
LF19-111121-4BAR	5	14	8.0-10.0	1.8-4	G1/4"	16A	284.00
LF18 - 3 phase pressure switch		3 x NC contacts 16A		400 VAC			
LF18-111121-5BAR	2	8	1.0-3.0	3.8-5	G1/4"	16A	378.00
LF18-111121-7BAR	3	11	1.4-4.0	5.6-7	G1/4"	16A	378.00
LF18-111121-10BAR	4	16	1.8-4.5	8-10	G1/4"	16A	378.00

1 BAR = 14.5 PSI

¹⁾ Other pipe fittings available on request

LF55 series - Pressure switch for refrigeration systems

LF55 series pressure switches are used with fluorinated refrigerants to control the pressure of compressors in refrigeration system, can also used in air and water applications.

- Medium: Refrigerant, air, water, oil -10°C...+100°C
- Contact: SPDT 10A 250 VAC

type	Bar	Bar	Bar	Bar		fitting	250V	price
				OFF	ON			
LF5503	-0.5	3	0.35-1.5	2.0	1.0	M12 X 1.25	10A	551.00
LF5506	-0.5	6	0.6-4	3.0	2.0	M12 X 1.25	10A	551.00
LF5510	1	10	1-3	6.0	5.0	M12 X 1.25	10A	551.00
LF5516	3	16	1-4	10.0	8.0	M12 X 1.25	10A	551.00
LF5520	5	20	2-5	16.0	13.0	M12 X 1.25	10A	551.00

FS series - Liquid flow switches (paddle type)

Designed for managing liquid flow changes of water, ethylene glycol or other non-hazardous liquids in pipes. When liquid flow is higher or lower than pre-set value a SPDT switch operates.

- Supplied with 3 fitted paddles for Ø25...75 mm pipes +spare for pipes up to Ø 200 mm
- Adjustable flow setting for different requirements
- Brass 1" NPT connection (available in stainless steel for ammonia and other medium)
- Max liquid pressure: 1 Bar - can be used in multiple applications

FS51	IP33	paddle type liquid flow switch		1" NPT	10A	805.00
FS52	IP55	paddle type liquid flow switch		1/2" NPT	10A	1 060.00

Micro switches

Miniature snap-action micro switches

- Snap-action micro switch with wiping contacts, silver alloy

type	current lth	actuator	length	description	contacts	price
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CMV series - Snap-action micro switches

10A 250 VAC changeover

- Terminals: Fast-on 187 (4.8 x 0.5 mm)
- Mounting: Ø3 mm - 22.2 x 10.3 mm apart (*diagonal*)

CMV100D	10A	0	standard plunger	—	miniature micro switch	SPDT	23.70
CMV101D	10A	1	short plain lever	35.6 mm	miniature micro switch	SPDT	28.20
CMV105D	10A	5	long plain lever	62.2 mm	miniature micro switch	SPDT	28.20
CMV104D	10A	4	short roller lever	20.1 mm	miniature micro switch	SPDT	31.60
CMV103D	10A	3	long roller lever	34.0 mm	miniature micro switch	SPDT	30.50

16A 250 VAC changeover

- Terminals: Fast-on 250 (6.35 x 0.8 mm)

CMV16001C	16A	0	standard plunger	—	miniature micro switch	SPDT	31.60
CMV16011C	16A	1	short plain lever	35.6 mm	miniature micro switch	SPDT	30.50
CMV16051C	16A	5	long plain lever	62.2 mm	miniature micro switch	SPDT	31.60
CMV16041C	16A	4	short roller lever	20.1 mm	miniature micro switch	SPDT	32.70
CMV16031C	16A	3	long roller lever	34.0 mm	miniature micro switch	SPDT	36.10

CM series - Standard snap-action micro switch

- Terminals: Screw-type terminals
- Mounting: Ø4 mm - 25.4 mm apart (*horizontal*)

CM1300	15A	F	pin plunger		standard micro switch	SPDT	100.00
CM1305	15A	G	extended plunger		standard micro switch	SPDT	124.00
CM1306	15A	H	button plunger		standard micro switch	SPDT	96.00
CM1307	15A	I	ext. panel mnt plunger		standard micro switch	SPDT	134.00
CM1308	15A	J	ext. panel mnt roller plunger		standard micro switch	SPDT	150.00
CM1309	15A	K	ext. p/mnt roller plunger 90°		standard micro switch	SPDT	154.00
CM1701	15A	L	long plain lever		standard micro switch	SPDT	98.00
CM1703	15A	M	long roller lever		standard micro switch	SPDT	107.00
CM1704	15A	N	short roller lever		standard micro switch	SPDT	103.00
CM1705	15A	P	long wire lever		standard micro switch	SPDT	116.00
CM1743	15A	O	short roller (<i>collapsible</i>)		standard micro switch	SPDT	114.00

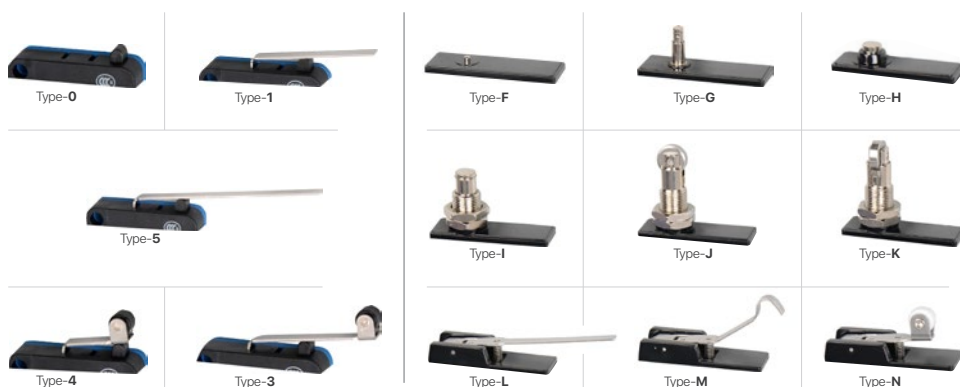
CAP-Y					CM switch terminal cover		13.60
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CZ-7 series - Micro switch 10A 250 VAC

- Rated insulated voltage: Ui-380V
- Terminals: Screw terminals (IP40)
- Rated thermal current: 10A (lth IEC94751) 250 VAC
- Mounting: Ø4 mm...25.4 mm apart (*horizontal*)

CZ-7310	10A	I	ext. panel mnt plunger		standard micro switch	SPDT	173.00
CZ-7311	10A	J	ext. panel mnt roller plunger		standard micro switch	SPDT	208.00
CZ-7312	10A	K	ext. p/mnt roller plunger 90°		standard micro switch	SPDT	208.00
CZ-7120	10A	L	long plain lever		standard micro switch	SPDT	153.00
CZ-7121	10A	M	long roller lever		standard micro switch	SPDT	141.00
CZ-7141	10A	N	short roller lever		standard micro switch	SPDT	155.00
CZ-7144	10A	O	short roller (<i>collapsible</i>)		standard micro switch	SPDT	164.00

Actuator - Types



Limit Switches



KB A1 S11

KB B2 S11

KB C2 S11



KB E2 S11

KB F2 S11

KB M1 S11



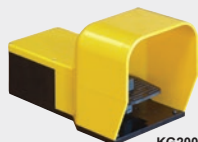
KM E2 S11



KM H1 S11



KG100S11



KG200S11



KR200S11

Limit switches designed to satisfy all requirements comprising quick installation, easy wiring and simple setup. The innovative locking bayonet mechanism permits to remove and reposition the operating head in the required configuration with no tools. The auxiliary contact blocks are removable assuring remarkable wiring ease.

- Replaceable actuator heads, 45° axial rotation of operating heads
- Direct operating operation; safety function according to IEC/EN 60947-5-1
- Ith 10A – IP65 – Ui 690 VAC – M20 cable entry

type	description		contacts	price
KB series - Plastic body bottom entry		(1 x M20)	IP65	
- Body dimensions: (H) 69 x (W) 30 x (D) 30 mm		fixing hole distance:	20 mm	
KB A1 S11	top plunger	industrial limit switch	1NO + 1NC	340.00
KB B2 S11	top roller plunger (metal)	industrial limit switch	1NO + 1NC	408.00
KB C2 S11	top plunger roller lever (metal)	industrial limit switch	1NO + 1NC	411.00
KB D2 S11	roller side push level (metal)	industrial limit switch	1NO + 1NC	411.00
KB E2 S11	rotating roller lever (metal)	industrial limit switch	1NO + 1NC	444.00
KB F2 S11	rotating roller lever (adjustable)	industrial limit switch	1NO + 1NC	464.00
KB H1 S11	ceramic rotating rod roller lever	industrial limit switch	1NO + 1NC	658.00
KB L2 S11	rotating rod lever (adjustable)	industrial limit switch	1NO + 1NC	454.00
KB M1 S11	omni-directional wobble stick	industrial limit switch	1NO + 1NC	446.00
KB P1 L11	hinge operating (short cylinder)	industrial limit switch	1NO + 1NC	1 270.00
KB P2 L11	hinge operating (long cylinder)	industrial limit switch	1NO + 1NC	1 330.00

KM series - Metallic body bottom entry (1 x M20) IP65				
- Body dimensions: (H) 69 x (W) 30 x (D) 30 mm			fixing hole distance: 20 mm	
KM A1 S11	top plunger	industrial limit switch	1NO + 1NC	467.00
KM B2 S11	top roller plunger	industrial limit switch	1NO + 1NC	537.00
KM C2 S11	top plunger roller lever	industrial limit switch	1NO + 1NC	543.00
KM E2 S11	rotating roller lever	industrial limit switch	1NO + 1NC	576.00
KM F2 S11	rotating roller lever (adjustable)	industrial limit switch	1NO + 1NC	598.00
KM H1 S11	ceramic rotating rod roller lever	industrial limit switch	1NO + 1NC	811.00
KM L2 S11	rotating rod lever (adjustable)	industrial limit switch	1NO + 1NC	588.00
KM M1 S11	omni-directional wobble stick	industrial limit switch	1NO + 1NC	578.00

Spare – contact blocks (interchangeable) - excluding KB Q1 L11

KX B S11	contact block	snap action	1NO + 1NC	294.00
KX B S02	contact block	snap action	2 NC	463.00
KX B A11	contact block	slow break (make before break)	1NO + 1NC	254.00
KX B L11	contact block	slow break	1NO + 1NC	254.00
KX B L21	contact block	slow break	2NO + 1NC	515.00

Industrial foot switches thermoplastic and metallic IP54

KG and KR series of foot switches are robust and reliable control devices designed for a wide range of industrial applications. Engineered for durability and ease of use, these foot switches allow for hands-free operation, improving safety and efficiency in the workplace.

The KG series is ideal for general-purpose use, providing a straightforward and effective solution for controlling machinery and equipment. In contrast, the KR series offers enhanced protection with a reinforced housing, making it suitable for more demanding environments where additional durability is required.

- Self-extinguishing double insulation polymer thermoplastic
- Cable entry: M20 x 1.5

KG series - Thermoplastic foot switches

• Self-extinguishing double insulation thermoplastic				
KG100S11	open-type industrial foot switch	thermoplastic	1NO + 1NC	1 430.00
KG200S11	closed-type industrial foot switch	thermoplastic	1NO + 1NC	1 710.00

KR series - Metallic foot switches

• Aluminium zinc alloy body				
KR100S11	open-type industrial foot switch	diecast	1NO + 1NC	2 670.00
KR200S11	closed-type industrial foot switch	diecast	1NO + 1NC	3 190.00

Additional charges

KGX01	kit for adding a second contact block to foot switches	–		67.00
KGX02	contact block mounting bracket	–		137.00
KX B S11	additional contact block for above foot switches	1NO + 1NC		294.00

S3N

MINIATURE PHOTOELECTRIC SENSOR



S3N is the new Datasensing miniature photoelectric sensor line with state of art detection features, rugged mechanics, complete optical functions, bright red LED or safe Laser class 1 emission. Available with Teach-in push button and smart IO-Link, offering advanced parametrization and monitoring functionalities, with predictive maintenance for your automation system.

Features



**Compact
Dimensions**



**Smart and
Easy**



**Mechanical
Roughness**



**Logistics
Applications**



Automation



**Packaging
Applications**

The S3N series features IO-Link connectivity, the key to seamless integration and advanced monitoring.

- Easy installation - Plug-and-play functionality
- Adjust parameters, remote diagnostics
- Real-time monitoring: Track sensor status and detection data in real time
- Predictive maintenance: Identify potential problems early



Limit switches

E series industrial limit switches are suitable for most environmental conditions due to their solid construction, IP66 certification and proven reliability over decades of fieldwork.

- Protection degree: IP66
- Rated thermal current: 10A (Ith IEC947-5-1)
- Conformity: EN 50047, UNI EN 1088, EN ISO 12100-1, IEC529
- Contact blocks with positive opening of the NC contact according to IEC/EN 60947-5-1, VDE 0660-200

type	actuator type	description	contact	price
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E100 series - Industrial limit switches IP66 CENELEC EN50047

Body dimensions: (H) 77.5 x (W) 30.5 x (D) 33 mm fixing hole distance: 20/22 mm
Cable entry: 1 x bottom entry - PG13.8

Thermoplastic body (IP66)

E10000AI	top steel plunger actuator	limit switch	1NO + 1NC	356.00
E10000BI	top steel roller plunger actuator	limit switch	1NO + 1NC	440.00
E10000CI	roller lever side action	limit switch	1NO + 1NC	409.00
E10000DI	roller lever vertical action	limit switch	1NO + 1NC	425.00
E10000EI	rotary roller arm lever	limit switch	1NO + 1NC	435.00
E10000EI50	rotary Ø50 mm rubber roller arm lever	limit switch	1NO + 1NC	523.00
E10000II	offset rotary roller arm lever	limit switch	1NO + 1NC	435.00
E10000FI	adjustable length rotary roller arm lever	limit switch	1NO + 1NC	462.00
E10000HI	adjustable rotary Ø6 mm rod lever	limit switch	1NO + 1NC	610.00
E10000LI	flexible spring rod actuator rod	limit switch	1NO + 1NC	569.00
E10001SCI	safety switch for hinges	limit switch	1NO + 1NC	782.00

Diecast metal body (IP66)

E10000AM	top steel plunger actuator	limit switch	1NO + 1NC	539.00
E10000BM	top steel roller plunger actuator	limit switch	1NO + 1NC	623.00
E10000CM	roller lever side action	limit switch	1NO + 1NC	567.00
E10000DM	roller lever vertical action	limit switch	1NO + 1NC	597.00
E10000EMRA	rotary (metal) roller arm lever	limit switch	1NO + 1NC	762.00
E10000IMRA	offset rotary (metal) roller arm lever	limit switch	1NO + 1NC	880.00
E10000IM50	rotary Ø50 mm rubber roller arm lever	limit switch	1NO + 1NC	680.00
E10000FM	adjustable length rotary roller arm lever	limit switch	1NO + 1NC	610.00
E10000HM	adjustable rotary Ø6 mm rod lever	limit switch	1NO + 1NC	807.00
E10000LM	flexible spring rod actuator rod	limit switch	1NO + 1NC	763.00

E300 series - Industrial limit switches IP66 diecast metal body

Body dimensions: (H) 89.5 x (W) 52 x (D) 35.5 mm fixing hole distance: 40 mm
Cable entry: 2 side + 1 x bottom entry - PG13.8

E30000AM	top steel plunger actuator	limit switch	1NO + 1NC	757.00
E30000BM	top steel roller plunger actuator	limit switch	1NO + 1NC	763.00
E30000CM	roller lever side action	limit switch	1NO + 1NC	795.00
E30000EMRA	rotary (metal) roller arm lever	limit switch	1NO + 1NC	835.00
E30000FM	adjustable length rotary roller arm lever	limit switch	1NO + 1NC	876.00
E30000LM	flexible spring rod actuator rod	limit switch	1NO + 1NC	918.00

E400 series - Industrial limit switches IP66 diecast metal body - CENELEC EN50041

Body dimensions: (H) 106.5 x (W) 40 x (D) 36 mm fixing hole distance: 2 x 30 mm
Cable entry: 1 x bottom entry - PG13.8

E40000AM	top steel plunger actuator	limit switch	1NO + 1NC	738.00
E40000BM	top steel roller plunger actuator	limit switch	1NO + 1NC	762.00
E40000CM	roller lever side action	limit switch	1NO + 1NC	787.00
E40000DM	roller lever vertical action	limit switch	1NO + 1NC	854.00
E40000EMRA	rotary (metal) roller arm lever	limit switch	1NO + 1NC	1 330.00
E40000IM50	rotary Ø50 mm rubber roller arm lever	limit switch	1NO + 1NC	858.00
E40000FM	adjustable length rotary roller arm lever	limit switch	1NO + 1NC	775.00
E40000HM	adjustable rotary Ø6 mm rod lever	limit switch	1NO + 1NC	951.00
E40000LM	flexible spring rod actuator rod	limit switch	1NO + 1NC	862.00
E40000LSM	Cats whisker actuator	limit switch	1NO + 1NC	868.00



E10100BI



E30100EMRA



E40100AM

Safety limit & foot switches



E40108TBM



E10001SCI



ELEM00



Z5



PDNS11BX10



PDKS11BX10



LK20K13

Safety limit switches

- Protection degree: IP66
- Body Material: Plastic or Metal body limit switches
- Rated thermal current: 10A lthe (IEC947-5-1)
- Mechanical life: 20 million operations

type	actuator type	description	contact	price
Pull wire safety switches				
Pull wire safety switches guarantee the safety of operator who is able to control the immediate stop of machinery at any point in the operating zone.				
1) Tension wire until both contacts are in the closed position				
2) When wire is pulled one contact (A) opens and switch is latched (<i>resettable via front button</i>)				
3) If wire breaks, the other contact (B) opens				
<i>Both contacts should be wired in series</i>				
E10108TBI	latching (<i>resettable by button</i>) pull wire	plastic limit switch	1NO + 1NC	1 330.00
E40108TBM	latching (<i>resettable by button</i>) pull wire	metal limit switch	1NO + 1NC	1 610.00
Key actuated switches 5 way key actuated switches are used on gates, sliding doors and other devices to protect access to dangerous parts of machines. The key is applied to the moving protection barrier and has to be removed from the switch on every opening thus operating a positive opening or the NC contact.				
E10101S5I	key actuated safety switch	plastic limit switch	1NO + 1NC	717.00
Hinge operated switches used to guarantee operator safety, applied to machinery fitted with protection barriers with application directly to the hinge of the enclosure. The switches hinged socket accepts an 8 mm shaft.				
E10001SCI	safety switch for hinges	plastic limit switch	1NO + 1NC	782.00
Spare contact blocks for all limit switches				
ELEM00	standard snap action	contact block	1NO+1NC	272.00
ELEM03	slow action	contact block	2NO	296.00
Accessories for above limit switches				
Z5	angled key for key actuated safety limit switches			156.00
Z52	adjustable key for key actuated safety limit switches			208.00
<i>For pull wire switch accessories (see page K-43...44)</i>				

Industrial foot switches IP65

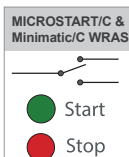
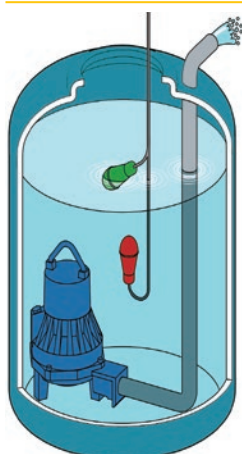
EMAS foot operated switches are ideal for all industrial applications. They are supplied as open type or with plastic or diecast foot protection, preventing inadvertent operation.

Internal cams are provided to accommodate up to 3 x contact blocks, two with simultaneous operation and one with delayed switching.

- Mechanical life: 1.000.000 operations
- Electrical life: 100.000 operations min.
- Operating temperature: -5°C...+60°C
- Rated thermal current: 10A lthe (IEC 947-51)
- Conformity to standards: EN 60947-5-1, VDE0660, UL508

type	description	protection cover	contact configuration	price
Open type foot switch IP65				
PDNS11BX10	open type industrial foot switch	no	1NO + 1NC	727.00
Protected foot switches IP65				
PPKS11BX10	protected type industrial foot switch	thermoplastic	1NO + 1NC	989.00
PDKS11BX10	protected type industrial foot switch	diecast	1NO + 1NC	1 460.00
Contact blocks for above foot switches				
Up to two additional contact blocks can added to foot switches: 1 x simultaneous operation and 1 x with delayed switching for two speed operations.				
LK20K13	snap action contact block for foot switches		1NO + 1NC	162.00

Float switches



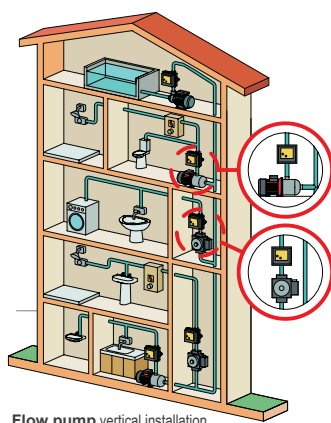
MATIC float switches feature a patented inner chamber filled with Polyurethane foam preventing ingress of humidity and water condensation within the switch.

IMQ, ECC, CENELC, VDE, CE approved.

type	cable length	differential degrees	contact rating	description	dimensions (mm) (H) (W/Ø) (D)			price
MICROSTART/C level regulator for clean water								
- Can be used for emptying and filling (<i>SPDT contact</i>) - Counterweight: Supplied complete with cable fixing - Protection degree: IP68 - Max. water temperature: 55°C - Electrical contact: 10 (4) A 250 VAC (<i>rated voltage</i>) - Max working pressure: 10 Bar								
ACB05P10	5 meter	30°	10 (4) A	float switch for clean water	160	70	52	432.00
ACB10P10	10 meter	30°	10 (4) A	float switch for clean water	160	70	52	679.00
Minimatic/C WRAS WRAS approved for drinking water								
- Tested and certified by WRAS - Counterweight: Supplied complete with cable fixing								
AAB05W10	5 meter	30°	10 A	float switch for drinking water	172	80	56	828.00
AAB10W10	10 meter	30°	10 A	float switch for drinking water	172	80	56	1 510.00
Little Mercury submerged float switches for sewer water								
For regulation of particularly turbulent industrial waters containing residues of suspended agglomerates or of sewer waters.								
- Internal weight fixing the rotation centre (<i>gravity centre</i>) close to the cable connection. - Two switches used: 1 for high level and 1 for low level control - Protection degree: IP68 - Max. water temperature: 55°C - Electrical contact: 10 A 250 VAC (<i>rated voltage</i>) - Max working pressure: 10 Bar								
Little Mercury MC internal micro switch with self-cleaning contacts								
AEA05P00	5 meter	15°	10 (4) A	float switch for sewer water	138	76	—	1 680.00
AEA10P00	10 meter	15°	10 (4) A	float switch for sewer water	138	76	—	2 090.00
Little EX ATEX float switch for use in Diesel oil								
For regulation of particularly diesel oil, water and hydrocarbon mixture, motor oils, tools machine oils, etc.								
- ATEX Certified: Group and category tool II 1G - Ex ia Group of striking IIC - Special blue cable for the immersion in hydrocarbons mixture (3 x 1 NEOPREN)								
AHA05	5 meter	15°	21.4 mA	float switch for diesel oil	138	76	—	1 930.00
AHA10	10 meter	15°	21.4 mA	float switch for diesel oil	138	76	—	2 600.00
Matic V MC level regulator for water up to 130°C								
Outer casing made in 304 AISI stainless steel and electric with outer SILICON sheath resistant to high temperatures.								
- ATEX Certified Group and category tool II 1G - Ex ia Group of striking IIC - Protection degree: IP68 - Electric contact: Max 0.25 A - 60 V (<i>rated voltage</i>) - Max working pressure: 4 Bar								
AFA05S00	5 meter	10°	0.25 A	float switch for clean water	—	75	—	3 070.00
AFA10S00	10 meter	10°	0.25 A	float switch for clean water	—	75	—	3 840.00
Matic P/MC float switch for autoclaves and pipings								
Due to its small diameter it can be introduced into a tank through a Ø30 mm hole and disposed either horizontally or vertically (<i>with counterweight</i>).								
- Protection degree: IP68 - Electric contact: Max 0.25 A - 60 V (<i>rated voltage</i>) - Max working pressure: 8 Bar								
AGD05S00	5 meter	5°	0.25 A	float level switch	182	28.5	—	2 340.00
AGD10S00	10 meter	5°	0.25 A	float level switch	182	28.5	—	3 110.00
Accessories for float switches								
CNTRWT/100	100g	standard cable fixing counterweight for float switches						49.00
CNTRWT/360	360g	stainless steel cable fixing counterweight for float switches						397.00



Flow switches



Flow pump vertical installation



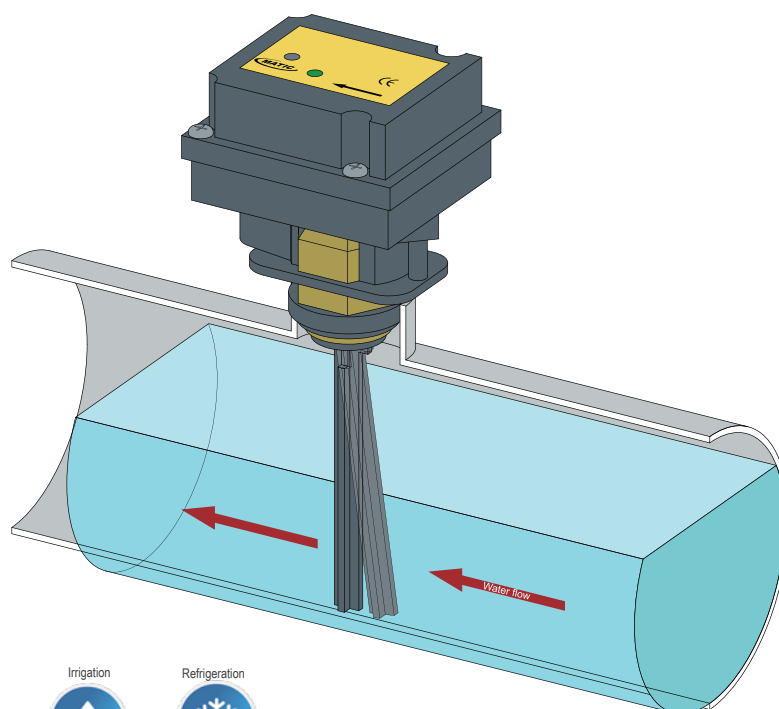
FBA315



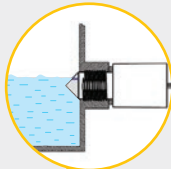
EDA

type	supply voltage	max. pressure	max. temp	description	price
FLOW PUMP - Flow switches for circulation and centrifugal pumps					
FLOW PUMP				<i>in-line flow switch</i>	
For the control of electric pumps connected to accumulation tanks to increase flow or pressure. Controls the start-up or switching off of the motor in correspondence to water requirements, assuring a constant flow. The highly sensitive switch permits control of flow as low as three litres per minute. When a tap is opened and water flows at over three litres per minute, it starts the motor and if flow drops below three litres per minute (<i>due to closing tap or empty accumulation tank</i>) it stops the motor. Manufactured entirely of glass reinforced polyamide with brass threaded input/output joint G1 for vertical in-line connection to liquid piping. • Incorporated start button • Minimum flow: 3 litres / min. (<i>max. 80 litres/min.</i>) • Motor load: 10 (4) A 250 VAC • Start-up delay: 0...10 sec (<i>adjustable</i>)					
FBA315	220 VAC	8 Bar	85°C	in-line flow switch 1" inch pipe thread	1 530.00
FLOW MATIC/H10AR paddle-type flow switch					
Designed for the control of fluid movement by circulator or centrifugal electric pumps. The high sensitivity switch permits control of flow as low as 20 litres per minute. They incorporate a brass threaded G1 joint for piping from one inch and over. The electric contact is housed externally to the flow switch and is moved by a magnet located on the head of the switch. The glass reinforced polyamide paddle can be cut to size in 25 mm segments to the diameter of pipe. • Incorporated test button • Minimum flow: 20 litres / min. • Relay: 10 (4) A 250 VAC NO + NC • Electric housing: IP54 • Start-up delay: 0...10 sec (<i>adjustable</i>)					
EDA	250 VAC	10 Bar	100°C	paddle flow switch 1" screw connection	2 050.00

Paddle-type flow switch



Level measurement



FS-IR1902D...



LS-264



LS-317



LS-064A



LS-318-1



LS-052-1

Optical level sensors emit an internal infrared light beam within a prism then measure the amount of light returned. In dry conditions the LED projects an infrared light beam which is fully reflected back to the receiver by the prism. Conversely, when the prism comes in contact with liquid, the light is dispersed with less light reaching the receiver, triggering the contacts.

Benefits of Optical level sensors are the absence of moving parts, compact dimensions, very slight switching hysteresis ensuring high reliability and repeatability.

- Developed for monitoring the presence (or) absence of transparent liquids and chemicals.
- Extremely accurate for point level detection in high-stress environments in any sized tank
- Using infrared light and no moving parts whatsoever, Immune to electromagnetic interference
- Simply fit and forget

type	supply voltage	mounting thread	PNP NO NC	NPN NO NC	description	price
Optical level sensor IP67						
• Simple, compact, and robust, detects high/low levels in any sized container • Features transient over-voltage, short circuit protection, • LED Status indication • Dry run detection						
Operating temp:		-20°C...+80°C				
Termination:		Cable (2 meter)				
Body Material:		PS (Polysulfone)				
FS-IR1902D-PNP NO	10 - 30 VDC	M12	•		optical liquid level sensor	370.00
FS-IR1902D-PNP NC	10 - 30 VDC	M12		•	optical liquid level sensor	370.00
FS-IR1902D-NPN NO	10 - 30 VDC	M12		•	optical liquid level sensor	370.00
FS-IR1902D-NPN NC	10 - 30 VDC	M12			optical liquid level sensor	370.00

Magnetic Float switches (reed type)

When the magnetic field (caused by an internal permanent magnet) is moved into the proximity of the sealed reed switch inside the stationary stem, the reed switch contacts close the electrical circuit. The float switches are extremely compact, simple and easy to install and not effected by electrical interference and withstand chemicals.

Safe - Convenient - Low cost N.O. (reversible by reversing float)

Electrical connection: 300 mm cable
Switch current/voltage: 70 VA
Max voltage: 250 VAC / 200 VDC
Accuracy: ± 2 mm in water

type	mounting	thread size (mm)	pressure withstand	description	price
Plastic (top/bottom mount)					
Float size:		(H) 24 x (Ø) 20 mm			
Operating temperature:		-10°C...+70°C			
Short stem - float switch 36 mm		Internal mounting			
LS-264	top/bottom	M10	8 Bar	vertical mount float switch	181.00
Long stem - float switch 55 mm		Internal mounting			
LS-297	top/bottom	M10	8 Bar	vertical mount float switch	196.00

Stainless steel - vertically mount float switches

Float size: (H) 28 mm (Ø) 28 mm
Operating temperature: -30°C...+125°C
Material: SUS 304 stainless steel

Short stem - float switch 40 mm		Internal mounting			
LS-317	top/bottom	G1/8"	20 Bar	vertical mount float switch	795.00
Long stem - float switch 100 mm		Internal mounting			
LS-064A	top/bottom	G1/8"	20 Bar	vertical mount float switch	795.00
Long stem - float switch 100 mm		External mounting			
LS-318-1	top/bottom	NPT 1"	20 Bar	vertical mount float switch	700.00
Bent stem (90°) - float switch 75 mm		Internal mounting			
LS-052-1	top/bottom	G1/8"	20 Bar	vertical mount float switch	735.00

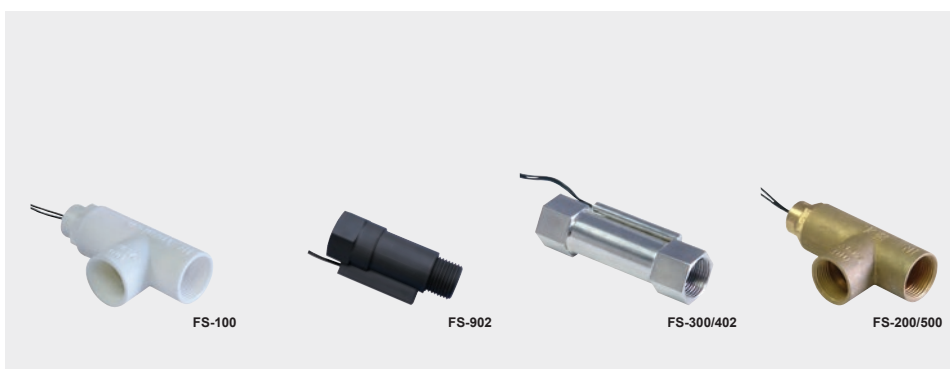
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Reed-type flow switches

Electrical connection: 300 mm cable
Switch rating: 0.8A max
Switch current: 1.5A
Switch voltage: 250 VAC / 200 VDC

Material: Plastic
 Brass
 Stainless

Liquid medium: Clean water



type	for domestic use		heavy duty		
Model	FS-100	FS-902	FS-300	FS-402	FS-500
Fitting	NPT3/4"	1/2"NPT for inlet 1/2" NPT for outlet	NPT3/4"	NPT1/2"	NPT1/2"
Flow switches housing	plastic PPR	plastic PBT	SUS304	SUS304	brass - C37700
Operating pressure	120 PSI max	140 PSI max	250 PSI max	250 PSI max	150 PSI max
Temperature range	-10°C...80°C	-10°C...105°C	-20°C...120°C	-20°C...120°C	-10°C...120°C
Medium (liquid)	clean water	clean water	clean water	clean water	clean water
Contact form	form A S.P.S.T.	form A S.P.S.T.	form A S.P.S.T.	form A S.P.S.T.	form A S.P.S.T.
Carry current	1.5A	1.0A	1.5A	1.5A	1.5A
Switch current	0.8A max	0.7A max	0.8A max	0.8A max	0.8A max
Switch voltage	220 VAC/DC	220 VAC/DC	220 VAC/DC	220 VAC/DC	220 VAC/DC
Power rating	50VA	50VA	50VA	50VA	50VA
Operating flow rating	1.5L/min	0.75 - 2L/min	1.0 - 8L/min	1.2 - 4L/min	1 - 4L/min
Setting flow value accuracy	±10%	±10%	±10%	±10%	±10%
Maximum flow	15L/min (pressure drop is 10 PIS)	10L/min (pressure drop is 10 PIS)	10L/min (pressure drop is 10 PIS)	10L/min (pressure drop is 10 PIS)	15L/min (pressure drop is 10 PIS)
Mounting shock	30g for 11ms duration	30g for 11ms duration	30g for 11ms duration	30g for 11ms duration	30g for 11ms duration
Mounting vibration	35 to 500Hz	35 to 500Hz	35 to 500Hz	35 to 500Hz	35 to 500Hz
Duration of cycle	100.000 cycles	100.000 cycles	100.000 cycles	100.000 cycles	100.000 cycles
Price	488.00	506.00	1 190.00	1 220.00	1 070.00



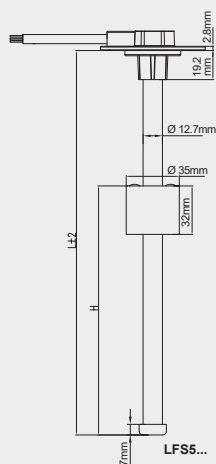
... Continued... Nylon (side mount) hinged type

type	mounting size (mm)	thread withstand	pressure	mounting	description	price
Can be used for "high" or "low" level detection (by turning float direction "up" or "down").						
Float size:		(L) 47 mm (Ø) 17 mm				
Operating temperature:		-10°C...+75°C				
Material:		Nylon				
LS-147	side mount	M16	8 Bar	internal	horizontal mount float switch	341.00
LS-148	side mount	NPT 1/2"	8 Bar	external	horizontal mount float switch	347.00

Stainless steel SUS 304 (side mount) hinged type

Can be used for "high" or "low" level detection (by turning float direction "up" or "down").						
Float size:		(L) 47 mm (Ø) 17 mm				
Operating temperature:		-30°C...+125°C				
LS-154-1	side mount	M16	10 Bar	internal	horizontal mount float switch	942.00
LS-055-1	side mount	NPT 1/2"	10 Bar	external	horizontal mount float switch	879.00

Fuel level sensors



Red	Signal (out)
Black	Common (input)
White	Low level alarm output



LFTN...



LF01-200

LFS5 series - Fuel level sensor

(IP67)

S5 series level sensors employ a magnetic field principle to sense the fuel level depth and to operate the low level alarm signal. The sensors feature long life, unaffected by vibration and are anti explosive.

- Low level alarm contact: 500 mA
- Output signal: 0 - 190 Ω or 4-20mA
- Accuracy: 12 mm

Material: Main body made of SU304 stainless steel

Mounting: Standard SAE 5 hole mounting flange (supplied with M5 screws and NBR gasket)

type	sensor length	output signal	supply	description	price
0 - 190Ω resistance output			-40°C ...+85°C		
LFS5-150	150 mm	0 - 190Ω	—	magnetic fuel level sensor	1 180.00
LFS5-200	200 mm	0 - 190Ω	—	magnetic fuel level sensor	1 250.00
LFS5-250	250 mm	0 - 190Ω	—	magnetic fuel level sensor	1 350.00
LFS5-300	300 mm	0 - 190Ω	—	magnetic fuel level sensor	1 440.00
LFS5-350	350 mm	0 - 190Ω	—	magnetic fuel level sensor	1 690.00
LFS5-400	400 mm	0 - 190Ω	—	magnetic fuel level sensor	1 780.00
LFS5-500	500 mm	0 - 190Ω	—	magnetic fuel level sensor	2 090.00
LFS5-600	600 mm	0 - 190Ω	—	magnetic fuel level sensor	2 430.00
LFS5-800	800 mm	0 - 190Ω	—	magnetic fuel level sensor	3 250.00
LFS5-1000	1000 mm	0 - 190Ω	—	magnetic fuel level sensor	3 990.00
LFS5-1200	1200 mm	0 - 190Ω	—	magnetic fuel level sensor	4 760.00
LFS5-1400	1400 mm	0 - 190Ω	—	magnetic fuel level sensor	5 470.00
LFS5-1600	1600 mm	0 - 190Ω	—	magnetic fuel level sensor	6 610.00
LFS5-2000	2000 mm	0 - 190Ω	—	magnetic fuel level sensor	8 170.00

4 - 20mA output

supply voltage: 24 - 32V

-40°C...+85°C

LFS5-150/4-20	150 mm	4 - 20mA	24 VDC	magnetic fuel level sensor	1 330.00
LFS5-200/4-20	200 mm	4 - 20mA	24 VDC	magnetic fuel level sensor	1 400.00
LFS5-300/4-20	300 mm	4 - 20mA	24 VDC	magnetic fuel level sensor	1 590.00
LFS5-400/4-20	400 mm	4 - 20mA	24 VDC	magnetic fuel level sensor	1 930.00
LFS5-500/4-20	500 mm	4 - 20mA	24 VDC	magnetic fuel level sensor	2 240.00
LFS5-600/4-20	600 mm	4 - 20mA	24 VDC	magnetic fuel level sensor	2 580.00
LFS5-800/4-20	800 mm	4 - 20mA	24 VDC	magnetic fuel level sensor	3 400.00
LFS5-1000/4-20	1000 mm	4 - 20mA	24 VDC	magnetic fuel level sensor	4 140.00
LFS5-1200/4-20	1200 mm	4 - 20mA	24 VDC	magnetic fuel level sensor	4 910.00
LFS5-1400/4-20	1400 mm	4 - 20mA	24 VDC	magnetic fuel level sensor	5 620.00
LFS5-1600/4-20	1600 mm	4 - 20mA	24 VDC	magnetic fuel level sensor	6 840.00
LFS5-2000/4-20	2000 mm	4 - 20mA	24 VDC	magnetic fuel level sensor	8 700.00

Other lengths available on request

LFTN series - Fuel tank level sensors

IP67

LFTN series sensors employ a magnetic field principle to detect fuel level depth and to operate a low level alarm signal. The sensor also incorporates a suction pipe, return pipe and breather pipe into the same mounting flange as the sensor.

type	sensor length	output signal	fuel pipes (bulge fitting)			description	price
			suction	return	breather		
LFTN-150	150 mm	0 - 190Ω	10 mm	10 mm	6 mm	fuel level sensor	1 490.00
LFTN-200	200 mm	0 - 190Ω	10 mm	10 mm	6 mm	fuel level sensor	1 740.00
LFTN-250	250 mm	0 - 190Ω	10 mm	10 mm	6 mm	fuel level sensor	1 970.00
LFTN-300	300 mm	0 - 190Ω	10 mm	10 mm	6 mm	fuel level sensor	2 150.00
LFTN-400	400 mm	0 - 190Ω	10 mm	10 mm	6 mm	fuel level sensor	2 510.00
LFTN-500	500 mm	0 - 190Ω	10 mm	10 mm	6 mm	fuel level sensor	2 950.00
LFTN-600	600 mm	0 - 190Ω	10 mm	10 mm	6 mm	fuel level sensor	1 400.00
LFTN-700	700 mm	0 - 190Ω	10 mm	10 mm	6 mm	fuel level sensor	3 430.00

LF01 series - Mechanical fuel level gauges (aluminium alloy)

-40°C...+85°C

LF01 mechanical fuel gauges work on a float connected to a swivel rod which indicates fuel level as the float adjusts to the fuel level.

- Mounting: 6 hole mounting flange (M45x2 thread to accept gauge)

LF01-150	150 mm	gauge	mechanical fuel level gauge	779.00
LF01-200	200 mm	gauge	mechanical fuel level gauge	798.00
LF01-250	250 mm	gauge	mechanical fuel level gauge	832.00
LF01-300	300 mm	gauge	mechanical fuel level gauge	851.00
LF01-400	400 mm	gauge	mechanical fuel level gauge	935.00
LF01-500	500 mm	gauge	mechanical fuel level gauge	1 010.00
LF01-600	600 mm	gauge	mechanical fuel level gauge	1 080.00
LF01-700	700 mm	gauge	mechanical fuel level gauge	1 140.00

Other lengths available on request

Occupancy sensors



EE804A



EE805A



EE820



EE860



EER503



Occupancy sensors

- Detect movement
- Measure ambient light
- Automatically switch lights "on" (if ambient is below pre-set level and movement is detected)
- Automatically switch lights "off" (if no movement is detected after a pre-set time delay period)
- Complies with:
 - IEC 60669-1 and IEC 60669-2-1
 - Supply voltage: 230 VAC 50Hz
 - Switch current: 8/10/16A 230V (AC1)
 - Lux adjustment: 5 - 1000 lux

type	mounting	description		rated current	price
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EE804A / EE805A series - Motion detectors

EE804A and EE805A are 360° indoor movement detectors with a built-in light sensitive switching function. Ideal for use in interior circulation areas such as corridors, entrance halls, bathrooms etc.

- Operating time delay: 5s - 15 min
- Detection range: 6 meter radius (at 2.5 meters high) 360°

EE804A	surface	105.5 mm dia.	economical motion detector	8A	742.00
EE805A	flush	75 mm hole	economical motion detector	8A	790.00

EE820 series - Basic motion detectors IP55

Wall mounting with numerous mounting possibilities for indoor or outdoor applications.

- Operating time delay: Pulse, 5s -15 min
- Detection range: 16 meter frontal /8 meter lateral (at 2.5 meters high)

EE820	surface	140°	wall mnt. basic occupancy sensor	10A	977.00
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EE860 - Enhanced motion detectors IP55

Offers vertical and horizontal adjustment and area limitation with shutters suitable for indoor or outdoor applications. Wall, inner/outer corner, ceiling mount. Setting and adjustments made via concealed potentiometers or remote control.

- Operating time delay: 5s - 15 min
- Detection range: 16 meter frontal / 10 meter lateral (at 2.5 meters high)
- Sensitivity adjustment: 20%...100%

EE860	surface	220°	wall mnt. basic occupancy sensor	16A	1 560.00
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Accessories

EE825	corner mount accessory (inner/outer)	EE820	108.00
EE827	ceiling mount accessory	EE820	141.00
EE855	corner mount accessory (inner/outer)	EE860	108.00
EE806	IR remote control for enhanced series	EE820	888.00

High-performance combined presence and motion detector

High-performance presence detectors combine detection of presence and motion in an area. Ideally suited for offices where human presence detection is utilised to maintain lighting conditions. Motion detection enhances the overall detection range of the sensors.

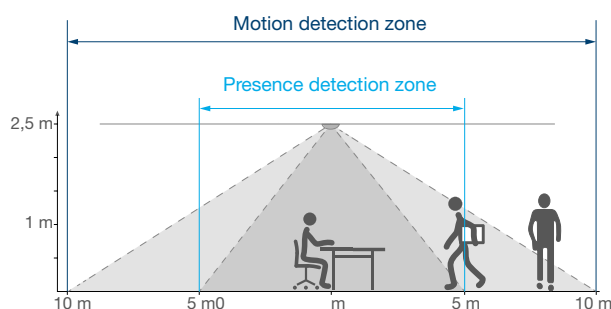
Compact flush mount presence detector

Compact flush device mounts through a 68 mm hole for very neat installation. Settings and adjustments made via concealed potentiometers or remote control.

- Operating time delay: 5 min - 1 hour
- Detection range: Presence 10 meter radius (at 2.5 meters high)
Motion 20 meter radius (at 2.5 meters high)

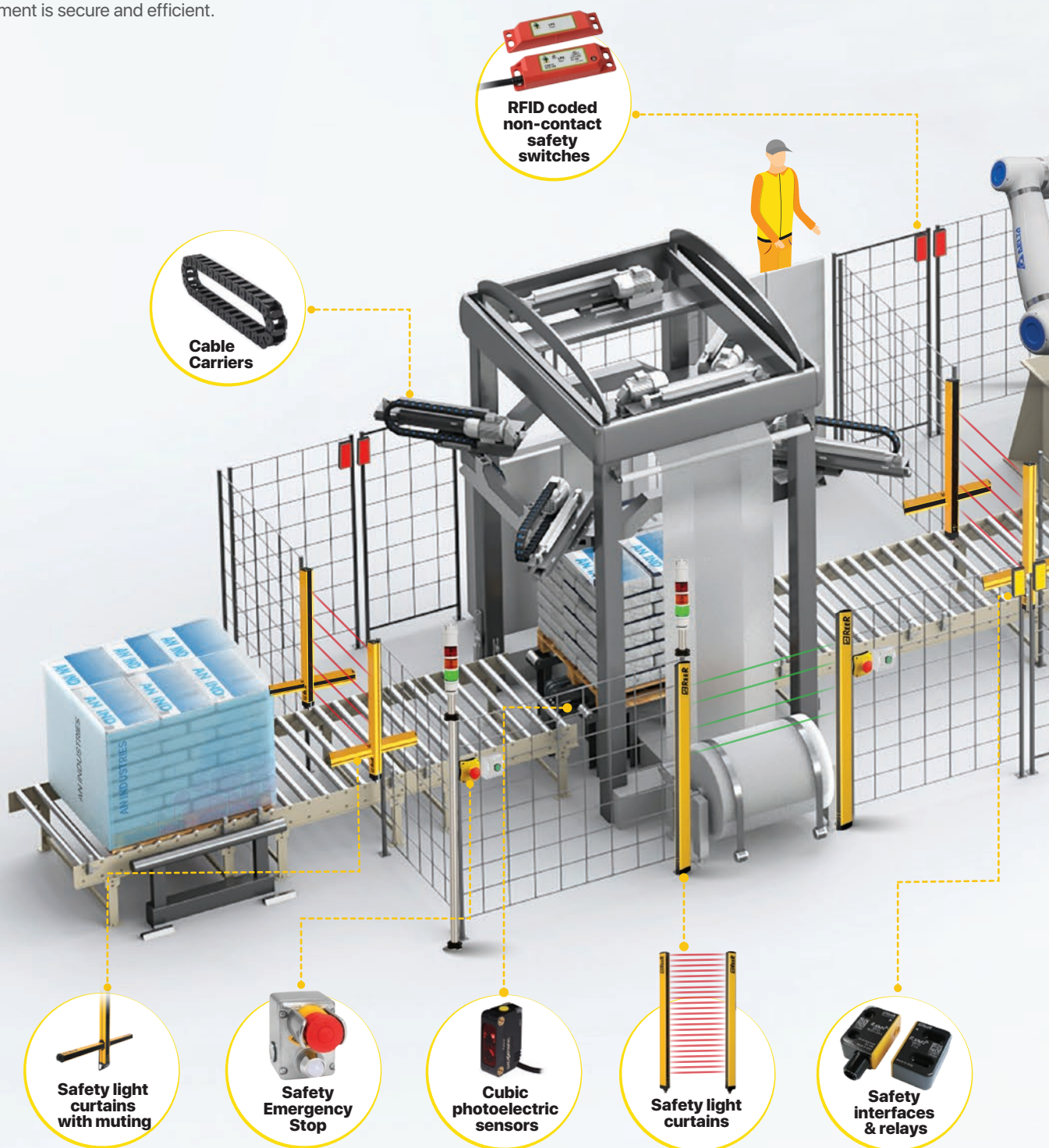
EER503	flush	68 mm hole	360° enhanced presence detector	10A	1 900.00
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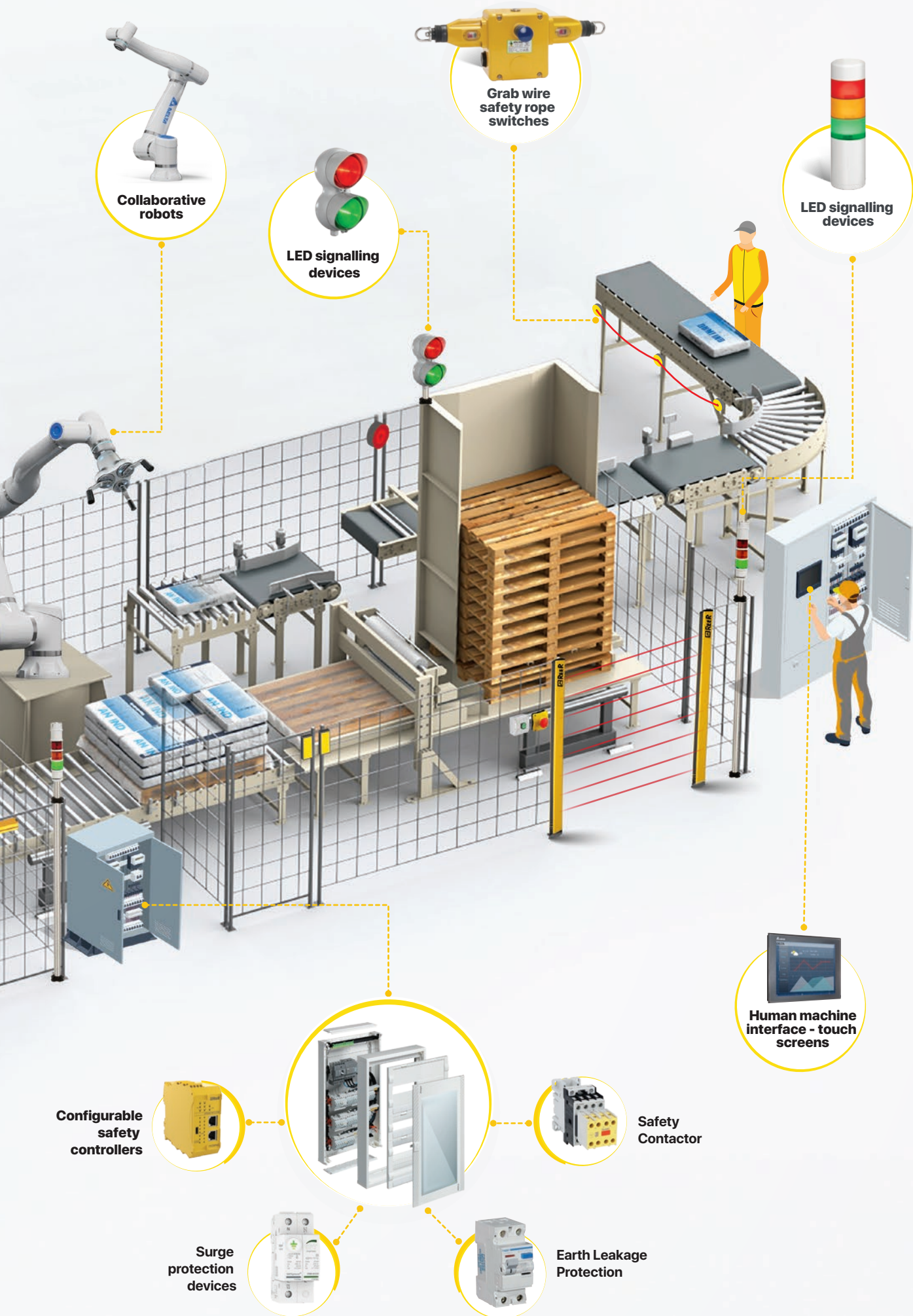
Motion detection / Presence detection



Prioritising Safety in Process Automation

In today's fast-paced industrial environments, ensuring the safety of both people and machinery is paramount. A safe workplace not only protects employees but also enhances productivity and reduces downtime. Our comprehensive range of safety products is designed to meet the rigorous demands of a safety-conscious employer. From advanced sensor technology to reliable emergency systems, our solutions are sourced from globally recognised manufacturers, ensuring your process automation environment is secure and efficient.





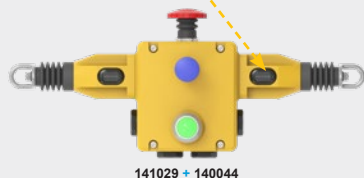
Grab wire safety rope switches



Robustness in harsh environmental conditions



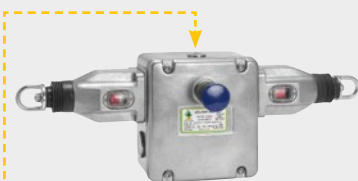
Tension indicator



141029 + 140044



141054...



145025



140044

Guardian line series - Safety rope switches

All IDEM safety rope emergency stop switches conform to **ISO13850 (EN418)** and **EN60947-5-5** standards. They provide positive mechanical linkage between switch contacts and the wire rope as per **EN60947-5-1**. Pre-tensioning the rope using a tensioner/gripper device, clamps the rope and hooks onto the switch eyebolt.

Correct tension is observed through the indicator window on the switch, once tensioned, switch contacts can be set to operational condition (*safety contacts closed, auxiliary contacts open*) by pressing the blue reset button on the switch cover.

All Safety rope switches incorporate wire-breakage monitoring, pulling or breakage of the rope, positively opens safety contacts closing auxiliary contacts, mechanically latching the switch which can only be returned to the operational condition by pressing blue reset button as required by ISO13850. ATEX versions available on request.

- Rugged die-cast metal body (painted yellow) or stainless steel 316
- Enclosure protection: IP67, IP69K (stainless steel versions)
- Ambient temperature: -25...+80°C
- Typical operating force: <125N (<300 mm deflection)
- Mechanical life: 1.000 000
- Thermal current (Ith): 10A
- Rated insulation voltage: 500V
- Spare replacement lid: With or without LED (*available on request*)
- Standards: EN60947-5-1/-5-5, EN62061 (*up to SIL3*), UL508, ISO13850, ISO13849-1 (*up to PLe*)

type	contacts		mounting position	max. protection length		LED indication	price
	NC	NO		1 switch	2 switches		

GLH series - Heavy duty safety rope switches

Heavy duty safety rope pull switch protect long conveyor lengths. Robust housings survive indoor or outdoor use including washdown (*IP67 rating*). Lengths over 2 km can be achieved with less than 20 switches, shorter rope spans up to 200m can be achieved using just one switch providing a cost effective solution.

Robust housings survive indoor and outdoor use, including washdown to IP67 and IP69K (*on stainless steel versions only*).

- Rope span (per switch): 100m (*single head*) - 200m (*dual head*)
- Mounting / position: 4 x M5 / any position
- Cable/conduit entry: 4 x M20 cable entries

Note: Optional bi-colour LED indicates switch status from a distance

Indication of rope status: Steady - Green = machine running
Flashing - Red = machine stopped

GLH - Die-cast housing

	4	2		200m	250m	—	7 250.00
141041	4	2	centre	200m	250m	•	7 900.00
141029*	4	2	centre	200m	250m	•	4 080.00
141037	4	2	left	100m	125m	—	4 730.00
141053*	4	2	left	100m	125m	•	4 080.00
141038	4	2	right	100m	125m	—	4 730.00
141054*	4	2	right	100m	125m	•	

GLH-SS - Stainless Steel 316 housing

	4	2		200m	250m	—	10 900.00
145025	4	2	centre	200m	250m	•	11 800.00
145029*	4	2	centre	200m	250m	•	8 470.00
145037	4	2	left	100m	125m	—	9 440.00
145053*	4	2	left	100m	125m	•	8 470.00
145038	4	2	right	100m	125m	—	9 440.00
145054*	4	2	right	100m	125m	•	

* LED indication - provide voltage requirement by adding following to end of part number:
A = 24 VDC / B = 110VAC / C = 230 VAC

Accessories - For rope operated switches

Accessories - Rope tensioner/gripper (quick fixing) - for rope operated switches

type	description	length (mm)	material	price
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Tensioning of the rope is achieved using IDEM's patented tensioner/gripper accessory. Traditional turnbuckle/clamp systems are difficult to tension and adjust, requiring frequent re-tensioning or maintenance, making viewing of the switch tension window difficult.

IDEM's tensioner/gripper accessory offers greater reliability, significantly reducing installation time by offering an eyehook, tensioner thimble and high strength gripper in one assembly, enabling rapid connection to the switch eyebolts with fast accurate tensioning of the rope while in close proximity to the viewing window of the switch.

140020	rope tensioner/gripper for rope switches	190...248	galvanised	1 340.00
140019	rope tensioner/gripper for rope switches	190...248	stainless steel	2 130.00
140044	red emergency-stop mushroom pushbutton		twist release	568.00
140140	red SS emergency-stop mushroom pushbutton		twist release	1 450.00

Accessories for rope switches



142052



144009A



140019



140043



140021



140099



140047-S



140004



140057

GLS series - Standard duty safety rope switches

Guardian Line – General / standard duty safety rope switch is suitable to protect conveyor lengths up to 80m using two switches or 60m using a single switch. An emergency stop button can be fitted on either side, offering a traditional emergency stop function on the switch.

An optional bi-colour LED is also available to indicate the switch status from a distance. Rugged internal sealing and a robust LED lens permits the use of high pressure hosing, suitable for indoor and outdoor use.

- Rope span (*per switch*): 60m (*single switch*) - 80m (*dual switch*)
- Cable/conduit entry: 3 x M20 cable entries

type	contacts		mounting position	max. protection length		description	LED indication	price
	NC	NO		1 switch	2 switches			
GLS Die-cast housing (IP67)								
142052	2	2	left/right	60m	80m	rope switch	—	3 500.00
142058*	2	2	left/right	60m	80m	rope switch	•	4 150.00
GLS-SS Stainless steel 316 housing (IP69K)								
144003	2	2	left/right	60m	80m	rope switch	—	6 960.00
144009*	2	2	left/right	60m	80m	rope switch	•	7 920.00
* LED indication - provide voltage requirement by adding following to end of part number: A = 24 VDC / B = 110VAC / C = 230 VAC								

* LED indication - provide voltage requirement by adding following to end of part number:
A = 24 VDC / B = 110VAC / C = 230 VAC

GLM series - Mini duty safety rope switches

Compact, robust die-cast safety rope pull switch to protect short conveyor lengths up to 50m using two switches or 30m using a single switch, providing a reliable, cost-effective safety solution for conveyor systems. An emergency stop button can be fitted to the side of the switch to offering a traditional emergency stop function close to the switch.

143001	2	1	left/right	30m	50m	rope switch	—	2 840.00
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Mounting accessories for rope operated switches

type	description		length (mm)	material	price
140020	rope tensioner/gripper for rope operated switches		190...248	galvanised	1 340.00
140019	rope tensioner/gripper for rope operated switches		190...248	stainless steel	2 130.00
140021	universal pulley for rope operated switches		77 mm	stainless steel	911.00
140064	universal pulley for rope operated switches		77 mm	galvanised	596.00
140045	standard eyebolt for rope operated switches (8 pack)		84 mm	stainless steel	937.00
140046	standard eyebolt for rope operated switches (8 pack)		84 mm	galvanised	487.00
140099	roller eyebolt with nuts (non adjusting)		71 mm	die cast metal	887.00
140048	roller eyebolt with nuts (adjustable)		107-140 mm	die cast metal	1 140.00
140047-S	pigtail eyebolt (short) M10 46 mm thread (1 /pack)		114 mm	stainless steel	136.00
140043	safety spring for rope operated switches		220 mm	stainless steel	625.00
140165	mounting brackets for rope op. switches (1 /pack)		127 mm	stainless steel	444.00
140059	anti-tamper screwdriver for rope operated switches		T20	—	71.00

✦ GLM and GLS series can be mounted using one bracket. GLHD needs two.

Steel cable (polypropylene covered) for rope operated switches

4.0 mm outside diameter. steel inner - polypropylene cover

140037	insulated steel cable for rope operated switches	30m	steel/PVC	1 370.00
140038	insulated steel cable for rope operated switches	50m	steel/PVC	1 890.00
140040	insulated steel cable for rope operated switches	100m	steel/PVC	3 280.00
140068	insulated steel cable for rope operated switches	500m	steel/PVC	11 100.00

Rope kits for rope operated switches

Rope kits Rope kits comprise: tensioner/gripper assembly + allen key, quick link (up to 50m), length rope terminated one end and No. eyebolts required for length of rope

type	length	description		No. of eyebolts	tension/gripper	price
140004	20m	rope kit for rope operated switches		9	1 + QL	3 150.00
140005	30m	rope kit for rope operated switches		12	1 + QL	3 560.00
140006	50m	rope kit for rope operated switches		20	1 + QL	4 240.00
140007	80m	rope kit for rope operated switches		30	2	4 730.00
140008	100m	rope kit for rope operated switches		37	2	5 140.00
140009	126m	rope kit for rope operated switches		45	2	5 690.00

Contact blocks (spare) for rope operated switches

140057	2	1	3 pole	contact block for rope operated switch	end fixing	512.00
140061	2	2	4 pole	contact block for rope operated switch	side fixing	646.00
140062	3	1	4 pole	contact block for rope operated switch	side fixing	646.00
140063	4	—	4 pole	contact block for rope operated switch	side fixing	646.00

Conveyor belt alignment switches



Belt alignment monitoring



500001



174401



230001



232025A

Conveyor belt alignment switches

Conveyor belt alignment switches are mounted on sections of plant conveyors to protect against excessive belt drift due to unintentional movement. Should the belt position drift, the roller arm of the switch will move to a pre-determined position causing activation of a control circuit providing positively opening NC safety contacts (to **EN60947-5-1**) at the point of tripping.

2 internal contact blocks, one to provide a **"WARNING"** signal the other to provide a **"STOP"** signal.

Rugged die-cast metal body (*painted yellow*) or Stainless Steel 316

Switching range:	"Warning" signal	10...18°	(factory setting 14°)
	"Stop" signal	15...35°	(factory setting 25°)
Operating torque:	Medium duty	1.8Nm...2.8Nm	(factory setting 1.8Nm)
	Heavy duty	3.0Nm...5.0Nm	(factory setting 3.0Nm)
• Enclosure protection:	IP67 - IP69K (<i>in stainless steel</i>)		
• Ambient temperature:	-25...+80°C		
• Vibration resistance:	10-500Hz 0.35 mm		
• Shock resistance:	11ms 15g		
• Mechanical life:	150.000 operations		
• Thermal current (Ith):	10A		
• LED indication:	Available on request		
• Standards:	EN60947-5-1, EN620		
• Spare replacement lid:	With or without LED (<i>available on request</i>)		

type	contacts		roller dimensions		factory settings			duty	price
	NC	NO	Ø	length	torque	warning	stop		

Python line series - Conveyor belt alignment switches

- Cable/conduit entry: 4 x M20 cable entries

Die-cast (*painted yellow*) housing

500001	2	2	35 mm	120 mm	1.8Nm	14°	25°	medium	8 720.00
500005	2	2	35 mm	230 mm	3.0Nm	14°	25°	heavy	10 500.00

Stainless steel 316 housing

501001	2	2	35 mm	120 mm	1.8Nm	14°	25°	medium	13 800.00
501005	2	2	35 mm	230 mm	3.0Nm	14°	25°	heavy	15 200.00

HLM-CBA series - Mini belt alignment switches

- Heavy duty die cast bodies (*painted red*)
- High mechanical life over 500.000 cycles
- Standards: ISO14119, EN60947-5-1, EN60204-1, ISO13849-1, EN62061, UL508

174401	2	2	22 mm	70 mm	1.10Nm			plastic roller	4 140.00
174451	2	2	22 mm	70 mm	1.40Nm			stainless steel roller	5 080.00

Emergency stop stations

IDEM's emergency stop switches provide robust emergency stop protection for machines and exposed conveyors. They are suitable for use within all industry sectors.

- Yellow Polyester (*IP67*) or stainless steel 316 body (*IP69K*)
- Safety trip mechanism opens safety contacts if lid removed - extra degree of anti-tamper
- Button protection shroud version with padlock holes to enable "Lock Out"
- 3 and 4 pole contact blocks provide positively operated switch contacts
- ATEX versions available on request

Ambient temperature:	-25...+80°C		
Mechanical life:	1.500.000 operations		
Thermal current (Ith):	10A		
Cable/conduit entry:	2 x M20 (<i>3-pole</i>) / 3 x M20 (<i>4-pole</i>)		
Standards:	EN60947-5-1, EN60947-5-5, EN62061 UL508, ISO13850, ISO13849-1		

Polyester housing

(*IP67*)

230001	2	1						plastic (<i>polyester</i>) emergency stop station	839.00
230003	2	1						plastic (<i>polyester</i>) emergency stop station with button shroud	1 010.00

Stainless steel housing

(*IP69K*)

231001	2	1						stainless steel E-stop station	3 820.00
231005	2	1						SS E-stop station with button shroud	4 050.00
232019*	3	1						SS E-stop station with dual colour LED	5 080.00
232023*	2	2						SS E-stop station dual colour LED/button shroud	5 310.00
232025*	3	1						SS E-stop station dual colour LED/button shroud	5 310.00
232023-AS	2	2						SS E-stop station dual colour LED (<i>steady</i>)/button shroud	5 190.00

* Please provide voltage requirement by adding following to end of part number:

A = 24 VDC / B = 110 VAC / C = 230 VAC

Tongue-operated switches



140107



200007-SS



208007



140111

202001-SS



205001



140108



140110

Tongue-operated switches (connects to most safety relays)

IDEM Tongue-operated safety interlock switches fit to the leading edge of sliding, hinged or lift off machine guards to provide positively operated switching contacts and a tamper resistant (*not easily defeatable*) key mechanism. Used independently to provide positively operated contacts to **EN60947-5-1** or in combination with any dual channel safety monitoring relays to provide up to category **4 PLe ISO13849-1**.

The switch is mounted to the frame of the guard or machine, and the actuator profile is fitted to the moving part (*frame*) of the guard and aligned to match a cam mechanism within the switch entry aperture, providing a positively operated (*not easily defeatable*) interlock switch. Inserting the actuator into the switch closes the safety contacts enabling the machine start circuit. Withdrawing the actuator positively opens the safety contacts.

Positive break contacts to EN60947-5-1 High functional safety to ISO13849-1

- Actuators for switches ordered separately (*see accessories section below*)
- Cable/conduit entry: 3 x M20 cable entries

type	No. entry	contacts		description	dimensions (mm)			price
	positions	NC	NO		(H)	(W)	(D)	

Type KP - Kobra Tongue-operated switches (non-locking)

KP and K-SS switches provide industry standard fixing points and a rotating head for up to 4 actuator entry positions. The double seal gasket and stainless steel internal screws reduce the likelihood of rust build up inside the switch. IDEM's patented CAM system ensures long term reliability, even under harsh environmental conditions.

- Enclosure protection: IP67 - rugged polyester body with stainless steel head
- Ambient temperature: -25...+80°C
- Thermal current (Ith): 10A
- Rated Ins/withstand voltage: 500 VAC/2500 VAC
- Standards: ISO14119, EN60947-5-1, EN60204-1, ISO13849-1, EN62061, UL508

200007-SS	4	3	1	Tongue-operated switches	98	58	34.5	1 610.00
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Type K-SS stainless steel Tongue-operated switches

- Enclosure protection: IP69K - rugged stainless steel 316 body

208007	4	3	1	SS Tongue-operated switches	98	58	37.5	3 680.00
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KLM series - Guard locking switch (Metal)

Solenoid locking interlock safety switch featuring Guard Holding up to 3000N (300Kg) (F1Max)

KLM guard locking safety switches have rugged die cast housings with a high holding force of 3000N to keep medium/large guard doors closed until hazards are removed. The slim profile is designed to fit on 50 mm frame sections or where space is restricted. The head rotates providing up to 8 actuator entry positions. 2 independent contact blocks individually monitor lock and door status.

Internal switch selectable for power feed to LED or as a voltage free auxiliary circuit to indicate lock status.

- Enclosure protection: IP67 - Rugged polyester body with stainless steel head
- Solenoid supply voltage: 24 VAC/DC or 230 VAC (*available in 110 VAC on request*)
- Ambient temperature: -25...+50°C
- Thermal current (Ith): 10A
- Rated Ins/withstand voltage: 500 VAC/2500 VAC
- Manual release: 1 manual release

202001-SS	8	3	1	locking interlock safety switches	24 VDC	176	46	47	5 940.00
202007-SS	8	3	1	locking interlock safety switches	230 VAC	176	46	47	6 050.00

KL3-SS series - Stainless steel Tongue-operated switches

In accordance with EHEDG (*European Hygienic Engineering & Design Group*) guidelines for hygienic design, mirror-polished surface to Ra10 designed to cope with direct food splash and cleaning in tough applications of food processing industries.

IP69K enclosure protection permits high pressure hosing with detergent at high temperature.

- Enclosure protection: IP69K - Mirror polished 316 stainless steel

205001	8	3	1	locking interlock safety switches	24 VDC	177	48	47	11 900.00
205007	8	3	1	locking interlock safety switches	230 VAC	177	48	47	12 100.00

Accessories for above Tongue-operated switches

140123	—	manual release key (<i>front and side</i>) for	KLM and KL3-SS	414.00
140107	standard	standard actuator only	all tongue switches	188.00
140108	flat	flat actuator only	all tongue switches	188.00
140110	flexible	die-cast heavy duty flexible actuator only	all tongue switches	674.00
140111	flexible	stainless steel heavy duty flexible actuator only	all tongue switches	1 350.00

RFID coded non-contact safety switches



405104



110004



114004



172007

RFID coded non-contact safety switches 24VDC SIL 3 - SILCL 3 - PLe - Cat. 4

RFID non-contact safety sensors provide highly-reliable, tamper-proof personnel protection for monitoring protective doors, gates and guards, they uniquely identify passive RFID transponders ensuring high coding levels and effective protection.

Master coded: The actuator is free and not specifically assigned to the sensor
Unique coding: Factory programmed and permanently assigned to sensor during set-up

- Output: 2 NC safety outputs and 1 NO auxiliary output
- Connection type: M12 connector - (Pigtail M12/8-pin - 250 mm), See sensor connectors and cables page
- High EMC immunity and IP67/IP69K protection ensure excellent reliability in harsh environments.
- Resistant to aggressive media, e.g. cleaning agents used in the food and packaging industry

type	model	detection distance	circuits	description	dimensions (mm) (H) (W) (D)			price
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RFID safety switches supplied as sensor/actuator combination

SPF - universal (22 mm fixing centres)

405104	SPF	14 mm	2NC/1NO	RFID coded safety switch	50	25	13	3 650.00
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LPF - European industry standard fitting (78 mm fixing centres)

404104	LPF	14 mm	2NC/1NO	RFID coded safety switch	88	25	13	3 710.00
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Coded non contact safety switches 24 VDC

IDEM coded non contact safety switches, enable conformance to **EN60947-5-3** to be used as directed by **ISO12100**, **ISO14121** and **EN60204-1**.

They have coded magnetic detection. Providing a wide detection distance and high tolerance to misalignment. Used in combination with most dual channel safety monitoring relays (up to PLe as per **ISO13849-1**).

- Compact and robust high specification polyester housing
- Visual LED switch status indication (*on coded version only*)
- Coded magnetic operation – Tamper resistant.
- Supplied as sensor/actuator combination

MPC - Miniature industry standard (22 mm fixing centres)

114104	MPC	14 mm	2 NC	compact coded safety switches	36	26	13	2 530.00
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LPC - European industry standard fitting (78 mm fixing centres)

110004	LPC	14 mm	2 NC	rectangular coded safety switches	88	25	13	2 570.00
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Magnetic non-contact switches (*non coded*) Up to: PLe ISO13849-1

IDEM's magnetic non-contact safety interlocks are designed to conform to **IEC 60947-5-3** and be used as directed by **ISO12100**, **ISO14121** and **ISO14119**. They feature magnet and reed technology, providing a high tolerance to misalignment and extreme temperatures.

MPR - Miniature industry standard (22 mm fixing centres)

114004	MPR	12 mm	2 NC	compact magnetic switches	36	26	13	2 260.00
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LPR - European industry standard fitting (78 mm fixing centres)

110012	LPR	12 mm	2 NC	rectangular magnetic switches	88	25	13	3 010.00
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Normally closed (NC) circuits are closed when the actuator is present

Safety limit switches (*die-cast metal body*)

type	model	detection distance	circuits	description	dimensions (mm) (H) (W) (D)			price
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172007	LSMM	12 mm	2NC/1NO	roller plunger limit switch	73	35	16	1 110.00
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Non contact sensors - Position monitoring



Rope-operated pull lever safety switches



Rope-operated pull lever limit switches (IP65)

- Heavy-duty metal body
- Supplied with cable gland (PG11)

type	description	operating force (N)	contacts	price
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PLNU series - Heavy-duty non-latching rope-operated limit switches

- Direct (*positive*) opening action - safety function according to IEC/EN 60947-5-1
- Thermal current: lth: 10A Ui: 400 VAC
- Dimensions: (H) 89 x (W) 84 x (D) 40.5 mm

PLNU1AT25W	rope operated limit switch (<i>non-latching</i>)	25N	1NO + 1NC	1 380.00
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P2LU series - Heavy-duty latching rope-operated limit switches

Latching (*hand reset*) limit switches EN 418 compliant

- Latching with push button "Reset" facility on switch
- Thermal current: lth: 6A Ui: 400 VAC

P2LU series (H) 175 x (W) 85 x (D) 47 mm

P2LU1SAT75AG	rope operated limit switch (<i>latching/hand reset</i>)	7.5 kg	1NO + 1NC	2 930.00
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P2LU1SAT15AG	rope operated limit switch (<i>latching/hand reset</i>)	15 kg	1NO + 1NC	2 930.00
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Heavy duty rope-operated limit switches with pre-tensioning facility EN418 compliant

- 2 NC contacts (*when pre-tensioned*) 1 opens if rope breaks the other opens when rope is pulled
- Large field of overlap for easier regulation of pre-tensioning
- Latching with push button "Reset" facility on switch
- Thermal current: lth: 6A Ui: 400 VAC

PLN series - 60N (H) 82 x (W) 104 x (D) 40.5 mm

PLN131311	rope operated limit switch (<i>latching/hand reset</i>)	60N - 6kg	1NO + 1NC	1 740.00
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P2L series - 120N (H) 161 x (W) 100 x (D) 48.5 mm

P2L131312	rope operated limit switch (<i>latching/hand reset</i>)	120N - 12kg	1NO + 1NO	3 200.00
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Accessories for rope-operated switches

P33032	adjustable rope terminal clamp Ø 5 mm			30.50
P33033	rope eye of Ø 5 mm (<i>cable end thimble</i>)			12.60
P33034	turn buckle M6 x 60 for rope tensioning			138.00
P33035	threaded eye bolt M8 guide for rope			47.00
P33036	steel rope 0.5 mm PVC sheathed (<i>red insulated</i>)	(100 meter)		6 060.00

Safety limit switches (*slow break*)

Quickly and easily detect the position of moving parts and safely install machinery.

KB Q1 L11	slotted lever actuator	safety limit switch	1 NO + 1 NC	737.00
KB N1 L11	key operated (<i>straight key</i>)	safety limit switch	1 NO + 1 NC	745.00
KB N2 L11	key operated (<i>angled key</i>)	safety limit switch	1 NO + 1 NC	745.00

Spare keys for safety limit switches

KX N1	straight key	for safety limit switches	—	113.00
KX N2	angled key	for safety limit switches	—	116.00
KX N3	straight "T" key	for safety limit switches	—	86.00
KX N4	angled "T" key	for safety limit switches	—	86.00

RS1 series - Rope operated limit switches (H) 104 x (W) 30.5 x (D) 35 mm IP65

- Double-insulated housing glass fibre-reinforced self extinguishing
- Self-cleaning silver-alloy contacts, Snap action contacts
- Thermal current: lth: 10A Ui: 250 VAC

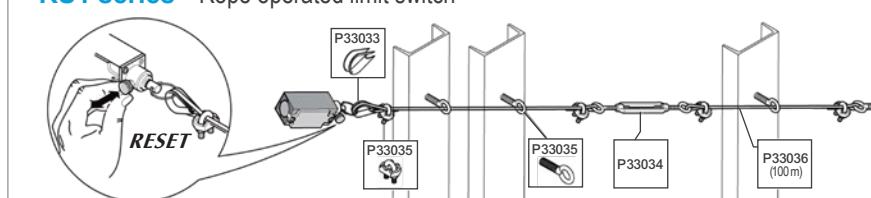
Non-latching rope operated limit switches (*snap action*)

RS11310	rope operated limit switch (<i>non latching</i>)	25N	1NO + 1NC	1 110.00
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Latching (*hand reset*) limit switches EN 418 compliant

RS131310	rope operated limit switch (<i>latching/hand reset</i>)	25N	1NO + 1NC	1 230.00
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RS1 series - Rope operated limit switch



Safety light curtains



SAFETY LEVEL	SAFETY LEVEL
TYPE 4	TYPE 2
SIL 3 - SILCL 3 PL e - Cat. 4	SIL 1 - SILCL 1 PL c - Cat. 2



EOS series - Safety light curtains

EOS series is a compact safety light curtain range with competitive performance and innovative features. Includes models with integrated safety functions such as self-monitoring static outputs, control of external contactors (EDM) and selectable automatic or manual restart. 2 safety PNP static outputs. Easy connection and installation thanks to the M12 connectors and the use of unshielded cables up to 100 meters.

- Power supply: 24 VDC $\pm$ 20%
- Dimensions: (W) 28 x (D) 30 mm
- Restart: Selectable manual/automatic Start/Restart
- Status display: LEDs for light curtain's status and diagnostic
- Integrated function: Integrated External Device Monitoring (EDM) function
- Mounting: Via back slot with provided standard mounting brackets
- Connection: Emitter: M12 5-pin - Receiver: M12 8-pin (see pages K-23...24)
- OSSD safety outputs: 2 PNP - 400 mA at 24 VDC with short-circuit, overload, polarity reversal protection



type	resolution	protected height	No. beams	description	overall height	connection type	price
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For finger and hand detection - Safety light curtains

IP65/67

EOS2 X - Safety light curtain with built-in control functions - Type 2

- Detection: Hand detection (30 mm resolution)
- Maximum range: Selectable 4/12 meter
- Safety Level: Type 2, SIL 1/SILCL 1, PL c, Cat. 2

1320211	30 mm	310 mm	16	safety light curtain	363 mm	M12 plug	12 600.00
1320212	30 mm	460 mm	23	safety light curtain	513 mm	M12 plug	14 800.00
1320213	30 mm	610 mm	31	safety light curtain	663 mm	M12 plug	17 000.00
1320214	30 mm	760 mm	38	safety light curtain	813 mm	M12 plug	19 600.00
1320215	30 mm	910 mm	46	safety light curtain	963 mm	M12 plug	22 100.00
1320217	30 mm	1210 mm	61	safety light curtain	1263 mm	M12 plug	27 000.00
1320219	30 mm	1510 mm	76	safety light curtain	1563 mm	M12 plug	32 300.00

EOS4 X - Safety light curtain with built-in control functions - Type 4

- Detection: Finger detection (14 mm resolution)
- Maximum range: Selectable 3/6 meter
- Safety Level: Type 4, SIL 3/SILCL 3, PL e, Cat. 4

1310010	14 mm	160 mm	15	safety light curtain	213 mm	M12 plug	18 000.00
1310011	14 mm	310 mm	30	safety light curtain	363 mm	M12 plug	23 400.00
1310012	14 mm	460 mm	45	safety light curtain	513 mm	M12 plug	28 700.00
1310013	14 mm	610 mm	60	safety light curtain	663 mm	M12 plug	33 900.00
1310014	14 mm	760 mm	75	safety light curtain	813 mm	M12 plug	39 300.00
1310015	14 mm	910 mm	90	safety light curtain	963 mm	M12 plug	44 600.00
1310016	14 mm	1060 mm	105	safety light curtain	1113 mm	M12 plug	49 600.00
1310017	14 mm	1210 mm	120	safety light curtain	1263 mm	M12 plug	55 200.00

- Detection: Hand detection (30 mm resolution)
- Maximum range: Selectable 4/12 meter
- Safety Level: Type 4, SIL 3/SILCL 3, PL e, Cat. 4

1310211	30 mm	310 mm	16	safety light curtain	363 mm	M12 plug	15 000.00
1310212	30 mm	460 mm	23	safety light curtain	513 mm	M12 plug	17 500.00
1310213	30 mm	610 mm	31	safety light curtain	663 mm	M12 plug	20 000.00
1310214	30 mm	760 mm	38	safety light curtain	813 mm	M12 plug	22 900.00
1310215	30 mm	910 mm	46	safety light curtain	963 mm	M12 plug	25 900.00
1310217	30 mm	1210 mm	61	safety light curtain	1263 mm	M12 plug	31 700.00
1310219	30 mm	1510 mm	76	safety light curtain	1563 mm	M12 plug	37 500.00

Note: Heights (from 160 to 2200 mm) and extended range up to 20 meters available on request.

For access control / body protection - Safety light curtains

IP65/67

EOS2 X - Safety light curtain with built-in control functions - Type 2 - Max range: 12 meter

1320610	—	510 mm	2	safety light curtain	653 mm	M12 plug	11 800.00
1320612	—	910 mm	4	safety light curtain	1053 mm	M12 plug	15 000.00

EOS4 X - Safety light curtain with built-in control functions - Type 4 - Max range: 12 meter

1310610	—	510 mm	2	safety light curtain	653 mm	M12 plug	13 000.00
1310612	—	910 mm	4	safety light curtain	1053 mm	M12 plug	17 100.00

EOS4 XH - Safety light curtain with built-in control functions - Type 4 - Max range: 20 meter

1310660	—	510 mm	2	safety light curtain	653 mm	M12 plug	15 300.00
1310662	—	910 mm	4	safety light curtain	1053 mm	M12 plug	19 000.00

Mounting accessories for safety light curtains (std L-shaped brackets included with light curtains)

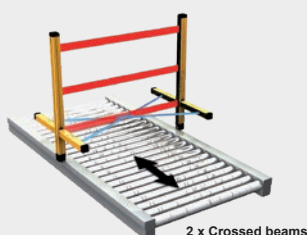
1310980	SFB E180	brackets	set of (4) x 180° swivel brackets for	EOS2/4	1 270.00
1310969	SFB FAST	brackets	set of (4) x FAST coupling brackets for	EOS2/4	2 390.00
1310973	SAV 8E	dampers	set of (8) vibration dampers for	EOS2/4	820.00
1310976	SFB 4E	brackets	set of (4) x adjustable brackets for	EOS2/4	477.00
1310997	FE 4	brackets	set of (4) flat brackets for	EOS2/4	874.00

Safety light curtains with muting

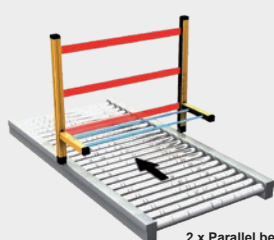


SAFETY LEVEL
TYPE 4
SIL 3 - SILCL 3
PL e - Cat. 4

New



2 x Crossed beams



2 x Parallel beams

Safegate - Safety light curtains (with integrated muting functionality)

Safety light curtains with integrated Muting function for human material differentiation applications. Safegate guarantees the integration of the muting sensors directly to the safety light curtain.

Programmable models (SMPO) functional parameters configuration can be managed via Safegate Configuration Software (SCS).

Hardware configuration:

No programming necessary, allows parameterisation and muting logic configuration.

Software configuration:

Allows configuration of functional parameters, muting and additional functions (e.g. Filters, delays, partial muting etc).

3 Pre-Configured Muting Logic:

Exit-Only (Parallel or Crossed Beams), Entry-Exit (Parallel Beams), Entry-Exit (Crossed Beams).

Muting sensors:

MA Muting Arms, MZ Muting Brackets, any dark-on M12 5-pole photocell

General features:

- Power supply: 24 VDC $\pm$ 20%
- Dimensions: (W) 50 x (D) 55 mm
- Restart: Selectable (manual/automatic) Start/Restart
- Status display: LEDs for light curtain status and diagnostics
- Integrated function: External Device Monitoring (EDM) function
- Muting: Integrated muting function
- Mounting: Via back slot with provided standard mounting brackets
- Connection: Emitter: M12 5-pin - Receiver: M12 12-pin (see pages K-23...24)
- OSSD safety outputs: 2 PNP - 400 mA at 24 VDC with short-circuit, overload, polarity reversal protection



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type	protected height	No. beams	description	overall height	connection type	price
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For access control - Safety light curtain with integrated muting function

IP65/67

SAFEGATE SMPO - Integrated status lamp and programmable functions – Type 4

							12 meter
1390680	510 mm	2	safety light curtain	710 mm	M12 plug	26 000.00	
1390682	910 mm	4	safety light curtain	1110 mm	M12 plug	31 500.00	
Hand detection 30 mm resolution							
1390283	610 mm	31	safety light curtain	720 mm	M12 plug	33 900.00	
1390285	910 mm	46	safety light curtain	1020 mm	M12 plug	38 900.00	
1390287	1210 mm	61	safety light curtain	1320 mm	M12 plug	43 900.00	
1390905	–	–	USB to M12 5 pin cable	(2 meter)		1 220.00	

MA muting arms - with integrated photocells

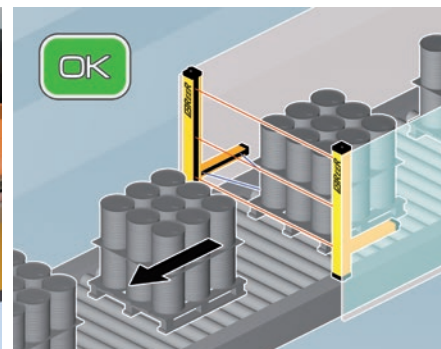
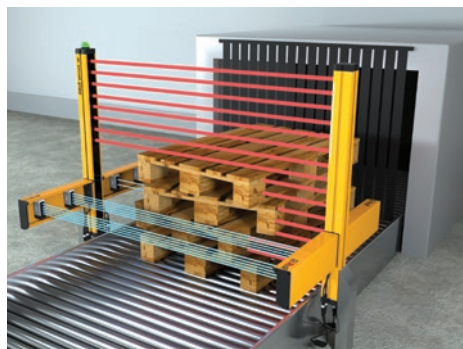
type	muting logic	No. beams	description	maximum range	connection type	price
1390800	exit - only	2	crossed beams photocells	2.5 m	M12 plug	8 410.00
1390802	entry - exit	2	crossed beams photocells	2.5 m	M12 plug	12 700.00
1390804	exit - only	2	parallel beams photocells	3.5 m	M12 plug	8 610.00
1390805	entry - exit	4	parallel beams photocells	3.5 m	M12 plug	15 900.00

MZ muting brackets - with integrated M5 5-beam photocells

1390808	exit - only	2	crossed beams photocells	3.5 m	M12 plug	9 830.00
1390809	entry - exit	2	crossed beams photocells	3.5 m	M12 plug	13 300.00
1390810	entry - exit	4	parallel beams photocells	3.5 m	M12 plug	19 300.00

Human material differentiation

- Restriction of unauthorised access into dangerous zones





FREE DESIGNER SOFTWARE included with M1/M1S units

Mosaic - A unique safety controller: Modular, Expandable, Configurable

Mosaic is a modular configurable safety controller capable of managing all safety functions of machinery or plants. Made up of a Master unit which can operate as a stand-alone device or control up to 14 expansion units in a system.

Capable of monitoring several safety sensors and signals such as: light curtains - photocells - laser scanners - emergency stops - electromechanical switches - safety door switches - magnetic switches - safety mats and edges - two-hand controls - hand grip switches - encoders and proximities for safety speed control - load cells - pressure switches - temperature, flow and level measurements (*regardless of brand*).

- Power supply: 24V DC $\pm$ 20%
- Safety level: SIL 3, PL e, SILCL 3, Cat. 4
- Connections: Removable (*screw terminal*) blocks
- Mounting: DIN rail mounting according to EN 50022-35 standard
- Dimensions: (H) 99 x (W) 22.5 x (D) 114 mm

Advantages

- Tamper-proof system configuration
- Reduced control panel dimension, design and construction time
- Logic configured via graphic interface, eliminating laborious wiring as with traditional solutions
- **Simulation function** allows to validate system functionality without connecting to a machine



Scan to watch video

type	model	digital inputs	Start / Restart inputs	OSSD safety outputs	status outputs	description	price
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Mosaic master units

Master units can operate as stand-alone device or expanded with additional I/O modules.

M1 - Standard master unit

- 2 pairs SIL 3 OSSD safety outputs (*PNP 400 mA*)
- 2 inputs for Start/Restart interlock and external device monitoring (*EDM*)
- 2 programmable digital status outputs (*PNP 100 mA*)
- 4 test outputs (*for sensor monitoring*)

1100000	M1	8	2	2 pairs	2	standard master controller	9 050.00
1100005	MZERO	16	4	4 pairs	4	standalone safety controller	13 300.00

M1S/M1S COM - Enhanced master unit

- 4 single SIL 3 OSSD or (*2 pairs*) safety outputs (*PNP 400 mA*)
- 4 inputs for Start/Restart interlock and external device monitoring (*EDM*)
- 4 programmable digital status outputs (*PNP 100 mA*)
- 4 test outputs (*for sensor monitoring*)
- Remote monitoring and built-in Ethernet IP, Modbus TCP, EtherCAT and Profinet (*M1S COM only*)

1100003	M1S	8	4	4 or (<i>2 pairs</i>)	4	enhanced master controller	11 400.00
1100006	M1S COM	8	4	4 or (<i>2 pairs</i>)	4	master controller builtin comms	17 100.00

Accessories for M1/M1S/COM master units

1100060	MCM	memory card to store or duplicate master unit configuration as a backup					977.00
1100061	MSC	rear bus connector required to connect to any expansion module					377.00
1100039	USB	USB configuration cable for M1S/M1S COM (Type C, length 1.8 m)					645.00
1100062	USB	USB configuration cable for M1/MZERO (A-mini B, length 1.8 m)					445.00

Mosaic - Expansion modules

Input/output expansion modules		provides additional digital inputs and outputs to the master unit					
1100010	M18O2	2x pairs SIL 3 OSSD safety outputs, 8x digital inputs, 2x status outputs					7 470.00
1100011*	M18O4	4x single SIL 3 OSSD safety outputs, 8x digital inputs, 4x status outputs					8 600.00
1100021	M116	16x digital inputs and 4x test outputs (<i>for sensor monitoring</i>)					7 170.00
1100025*	MA4	4x 4-20mA (or 0-10V) analogue inputs (<i>for analogue sensors</i>)					19 700.00

* Only compatible with M1S and M1SCOM enhanced Master unit.

1100031	MO4	4x pairs SIL 3 OSSD safety outputs, 4x status output					8 410.00
1100032	MO4LHC	4x single high current SIL 3 OSSD safety outputs (2A), 8x status output					9 050.00

Status outputs		provides additional non-safety outputs to the master unit					
1100092	MOS16	16x programmable digital (<i>non-safety</i>) signal outputs					6 340.00

Safety relays		provides safety relay outputs with guided contacts					
1100041	MR4	4x safety relay outputs with guided contacts (6A 250 VAC)					5 150.00
1100043	MOR4S8	4x configurable safety relay outputs with guided contacts					9 050.00

Communication		for connection to the most common industrial Field-bus systems			
1100050	MBP	Profibus DP	module for diagnostics and data communication		10 100.00
1100051	MBD	DeviceNET	module for diagnostics and data communication		12 700.00
1100052	MBC	CANopen	module for diagnostics and data communication		9 350.00
1100054	MBEI	EtherNET IP	module for diagnostics and data communication		7 410.00
1100082	MBMR	Modbus RTU	module for diagnostics and data communication		11 700.00
1100133	MBE COM	Multi-protocol	Ethernet IP, Modbus TCP, EtherCAT and Profinet		5 870.00





Safety interfaces and relays

Allows four different operating modes offering the possibility to connect and control different types of safety devices including: Safety Light Curtains, Solid-State-Output Devices (*i.e. RFID safety switch*), Dual-Channel Emergency Stops, Two-Hand Controls and Type 2 Safety Photocells

- Power supply: 24 VDC $\pm$ 20%
- Electrical connection: On terminal block
- Dimensions: Relays - (H) 101 x (W) 35 x (D) 120 mm
Interfaces - (H) 99 x (W) 22.5 (35 mm - ADSRM) x (D) 114 mm



Multifunction safety relay



1330801

1330904



R-Safe RFID sensor

Serial connection - Up to 16 sensors with individual status output



Magnus MG S
1291001



Magnus MG B
1291011

type	model	no. of inputs	safety inputs	safety outputs	status outputs	description	price
Multifunction safety Interface				DIN rail mounting		PL e - Cat. 4	
1330941	SR SELECT	2	2	2NO	1	multifunction	4 420.00
Safety interface for emergency stop buttons and safety switches						PL e - Cat. 4	
1330913	ADSRE4	1	2 of 1	3NO+1NC	—	auto / manual start restart	4 300.00
1330803	SR E4	1	2	2NO	—	auto/manual start restart	3 560.00
Safety interface for safety light curtains						Type 4 - SIL 3 - SILCL 3 - PL e - Cat. 4	
1330801	SR ZERO	—	2	2NO+1NC	1	relay module for EOS X	2 460.00
1330802	SR ZERO A	—	2	2NO	1	relay module for EOS X	1 970.00
1330900	SR ONE	—	2	2NO	1	relay module for EOS X	3 500.00
1330904	SR ONE M	6	4	2NO	2	muting safety light curtain	4 780.00
Safety speed monitoring interface						(H) 108 x (W) 22.5 x (D) 114.5 mm	
1100078	SVMRO	2	2	2NO	2	over/zerospeed detection	11 000.00
1100088	SVMROU	2	2	2NO	2	underspeed detection	11 000.00
Safety interface for two-hand control						PL e - Cat. 4 Type III C (EN574)	
1330805	SR T	1	2	2NO	—	two hand control	3 810.00

RFID safety switches 24 VDC SIL 3 - SILCL 3 - PL e - Cat. 4

R-Safe RFID non-contact safety sensors ensure reliable, tamper-proof protection by monitoring protective doors, gates, and guards, uniquely identifying passive RFID transponders for high coding levels and effective anti-manipulation. Offers easy installation and integration into safety systems up to PL e/SIL 3, with sensors capable of being individually coded in two ways.



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- Generic coding:** The actuator is free and not specifically assigned to the sensor (*one actuator can work with multiple sensors*)
- Teach-in coding:** Programmed via teach-in and permanently assigned to sensor during set-up
- Indication: Super bright LED status indicators for immediate diagnostics
 - Output: 2 safety inputs and outputs and 1 diagnostic output
 - Connection type: M12 Connector, M12 Pigtail, cable
 - Mounting: Screw mounting **S** - inter-axis 22 mm
 - Can be installed individually or in series with up to 16 units (*accessories required*)
 - IP67 and IP69K protection (*cable versions only*) ensure excellent reliability in harsh environments

BASIC: Automatic restart / **PLUS:** Selectable Manual/Automatic restart and serial status output

type		switching distance (mm)	description	dimensions (mm) (H) (W) (D)			price
R-Safe RFID							
<i>supplied as sensor/actuator combination</i>							
1295016	BASIC C S G C	12...25	Generic coding, M12 connector	28.5	57	18	2 560.00
1295006	PLUS C S G C	12...25	Generic coding, M12 connector	28.5	57	18	2 810.00
1295013	BASIC C S G P	12...25	Generic coding, M12 pigtail	28.5	57	18	2 890.00
1295003	PLUS C S G P	12...25	Generic coding, M12 pigtail	28.5	57	18	3 180.00
1295010	BASIC C S G 5	12...25	Generic coding, 5 m cable	28.5	57	18	2 800.00
1295000	PLUS C S G 5	12...25	Generic coding, 5 m cable	28.5	57	18	3 060.00
1295007	PLUS C S T C	12...25	Teach-In coding, M12 connector	28.5	57	18	2 950.00
1295004	PLUS C S T P	12...25	Teach-In coding, M12 pigtail	28.5	57	18	3 340.00
1295001	PLUS C S T 5	12...25	Teach-In coding, 5 m cable	28.5	57	18	3 200.00
Magnetic safety switches		24 VDC	<i>(robust thermoplastic enclosure (PBT))</i>				
• Coded magnetic operation – tamper resistant • Sensor with M8/4pin connector: 2 x NO contacts							
1291000	MGS20	3...10	MGS compact mag. safety switches	36	13	26	1 170.00
1291001	MGSM	3...10	MGS mag. unit for above switches	36	13	26	388.00
1291010	MGB20	4...16	MGB rectangular mag. safety switches	88	25	14	1 100.00
1291011	MGBM	4...16	MGB mag. unit for above switches	88	25	14	316.00

Safety lockout hasps



BD-K01



BD-K45



BD-D04



BD-G01



BD-P01



(Excluding lockout hasps, tags etc...)

BD-B102

Safety lockout hasps

Safety lockout hasps permit multiple padlocks to be used when isolating one energy source. The lockout hasp is placed through the isolating point and closed.

Each person carrying out maintenance or service attaches their unique individually keyed padlock through the lockout hasp, thereby ensuring complete safety during maintenance operations. The hasp can only be removed once all padlocks have been removed.

type	jaw size Ø	colour	accepts padlocks shackle Ø	number	description	price
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Lockout hasp (steel PA coated)

- Scissor action hasp with Ø25 mm or 38 mm jaw size
- Accepts padlocks with a shackle diameter up to 9 mm (*up to 6 padlocks can be attached*)
- Manufactured from high tensile steel, electroplated to prevent rust
- Padlock section nylon PA coated (*red*) for improved grip and visibility

BD-K01	25 mm	red	9 mm	6	safety lockout hasp	52.00
BD-K02	38 mm	red	9 mm	6	safety lockout hasp	65.00

Nylon lockout hasp (Ø3 mm shackle)

- Made from hard nylon /ABS - highly visible
- Recommended for electrical panels MCCBs, motor protection circuit breakers

BD-K45	(H) 48 mm	yellow	9 mm	4	nylon slider hasp	71.00
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Stainless steel butterfly lockout hasp (316 Stainless steel)

- Marine grade 316 stainless steel
- Fits most switchgear
- Sturdy and durable for use in corrosive environments and mines

BD-K33	(H) 48 mm	red	5 mm	7	heavy duty SS hasp	183.00
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Circuit breaker lockouts

- Fits most existing types of European and Asian circuit breakers
- Recommended for use in combination with a padlock for added safety

BD-D01	pin-out ≤ 12 mm	red	7 mm	1	std MCB lockout	23.60
BD-D04	pin-out ≤ 20 mm	red	7 mm	1	wide MCB lockout	23.60
BD-D11	toggle ≤ 16 mm	red	7 mm	1	MCCB clamp-on lockouts	59.00
BD-D12	toggle ≤ 41 mm	red	7 mm	1	MCCB clamp-on lockouts	89.00

Lockout padlocks (supplied with two keys per lock)

Maximum security lockout padlocks made for tough environmental situations

- Contain "DANGER" standard labels front and back
- Stainless steel shackle

BD-G01	38 x 20 mm	red	6.2 mm	medium	shackle safety padlock	89.00
BD-G21	76 x 20 mm	red	6.2 mm	long	shackle safety padlock	107.00
BD-G22	76 x 20 mm	yellow	6.2 mm	long	shackle safety padlock	107.00
BD-G41	150 mm	red	3.2 mm	SS cable	shackle safety padlock	121.00
BD-G42	150 mm	yellow	3.2 mm	SS cable	shackle safety padlock	121.00

For other colours replace last digit with: 3= blue, 4= green, 5= black, 6= white, 7= orange, 8= purple

Lockout tags use with padlocks to indicate equipment has been locked and should not be operated

- Visible "Danger / Do not operate" warning, also "Name / department / Date" for self marking
- Tag resistant to common industrial chemicals, PET coated with 10 mm buttonhole for padlocks

BD-P01	145 x 75 mm	red/wht	10 mm	1	danger lockout tags	6.50
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Integrated lockout stations for storing lockout padlocks, hasps and tags

- Made of engineering plastic PC, durable one-piece design

BD-B101	5 hook positions each accommodate 2 padlocks or 4 hasps and several tags	795.00
BD-B102	14 hook positions each accommodate 2 padlocks or 4 hasps and several tags	1 300.00

Electric slider / Heavy Duty hasp



SM1P006 + BD-K45



HMW630JR + BD-K33

Smoke detectors



Q01-4



Q05-4



8011-3



QA31-4



AH-0217



AH-03127-BS



NQ418

Photoelectric smoke detectors

type	supply voltage	standby current	alarm	description	price
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Q series smoke detectors

EN54 compliant

- Dual, bicolour LEDs (green: standby / red: alarm) offer 360° detection
- Standard detector (4 wire) with relay output 0.8A - 30 VDC / 0.4A - 250 VAC
- Made of high endurance, solid and colour-fast fire-proof plastic
- Termination base (with captive screws) for easy installation
- Passed strict EMC tests, illuminating false alarms caused by interference from nearby devices

Smoke detector

(Ø)102 mm x (H) 48 mm

Q01-4*	12 - 30 VDC	25 - 75µA	45 mA	photoelectric smoke detector	655.00
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Combination smoke and heat detector

(Ø)102 mm x (H) 54 mm

Q05-4*	12 - 30 VDC	55 - 85µA	45 mA	combination smoke + heat detector	770.00
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8011 series smoke detectors

EN54 compliant

- Dual LEDs offer 360° detection
- Standard detector 2 wire – available in 4 wire (relay output) on request
- Made of high endurance, solid and colour-fast fire-proof plastic
- Termination base (with captive screws) for easy installation

Smoke detector

(Ø)102 mm x (H) 47 mm

8011-3*	12 - 30 VDC	25 - 75µA	40 mA	photoelectric smoke detector	501.00
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Accessories for above smoke detectors

06MB	Flush mount frame	for sensors	Q01-4, Q05-4, 8011-3	116.00
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QA31 series single station smoke detector

EN54 compliant

- Advanced photoelectric technology for precise detection
- Equipped with 9 VDC battery and 220 VAC power plug
- Low-battery warning (flashing LED indicates battery replacement)
- Built-in manual test button, buzzer (90dB/meter) and flashing LED
- Standard detector (4 wire) with relay output 0.8A - 30 VDC / 0.4A - 250 VAC
- Independent stand-alone device – can be installed without any wiring

Single station smoke detector

(Ø)105 mm x (H) 40 mm

QA31-4	100 - 220 VAC and/or 9V battery supply		photoelectric smoke detector	693.00
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Manual call point “in case of fire” break-glass devices

- Surface mount with plastic film on glass (H) 88 x (W) 88 x (D) 52 mm
- Test key inserts from bottom
- Suitable for majority of conventional fire alarm systems
- Operating contact 6A 250 VAC

AH-0217*	emergency “break glass” manual call point enclosure			316.00
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Audible and visual indicating devices

Audible sounder and beacon

IP44

Electronic sounder designed for use with fire alarm, security and industrial signalling systems.

- 32 - signal tones selectable by Dip switch
- High sound output with low current consumption
- Volume control as standard (0 - 20dB adjustable)
- Two sets of input and output terminals for easy installation

AH-03127-S*	24 VDC	14.5mA	surface mount (Ø92.5 mm) electronic sounder	924.00
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AH-03127-BS*	24 VDC	14.5mA	electronic sounder and illuminated beacon	1 080.00
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Fire alarm bell

- Bell with ABS plastic base for easy mounting and total insulation from electricity
- Motor energised, low power consumption, long operating life

NQ418*	24 VDC	28mA	4" (100 mm) bell 90dB @1meter	324.00
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NQ618*	24 VDC	28mA	6" (152 mm) bell 90dB @1meter	501.00
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* Works in conjunction with fire control systems

