



# LS position switches

## MCS pressure switches, sensors

Eaton safety and position switches are used wherever positions must be determined precisely. Available in various construction types, the sensors and proximity switches are non-contact for reliable switching. A wide spectrum of inductive, capacitive, optoelectronic and mechanical sensors with a multitude of connection variants for direct and alternating voltage with two or three conductors covers nearly every application.

### **Safety / position switches LS-Titan**

Determine positions reliably +++ Cage clamp and screw terminal technology +++ Metal or insulated versions +++ Positive opening contacts +++ Easy mounting of the various operating heads → Page 3/2

### **Safety door switch, safety / position switches**

Safety for personnel and processes +++ Secures and locks protective doors +++ Switches off safely in case of emergencies +++ Prevents unwanted manipulation → Page 3/12

### **MCS pressure switches**

Pressure monitoring of fluid and gaseous media, i.e air pressure +++ Two adjustable operating points (ON/OFF operating point) +++ 1-pole or 3-pole, to control auxiliary circuits or switch loads → Page 3/31

### **Sensors, proximity switches**

Inductive, capacitive and optical object recognition +++ Cylindrical construction types from 4 – 30 mm +++ Cubical construction types +++ AC and DC variants → Page 3/36



## System overview

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## System overview

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## Description

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## Ordering

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## Ordering

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## Dimensions

Pressure switches	3/34
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## Technical data

Pressure switches	3/35
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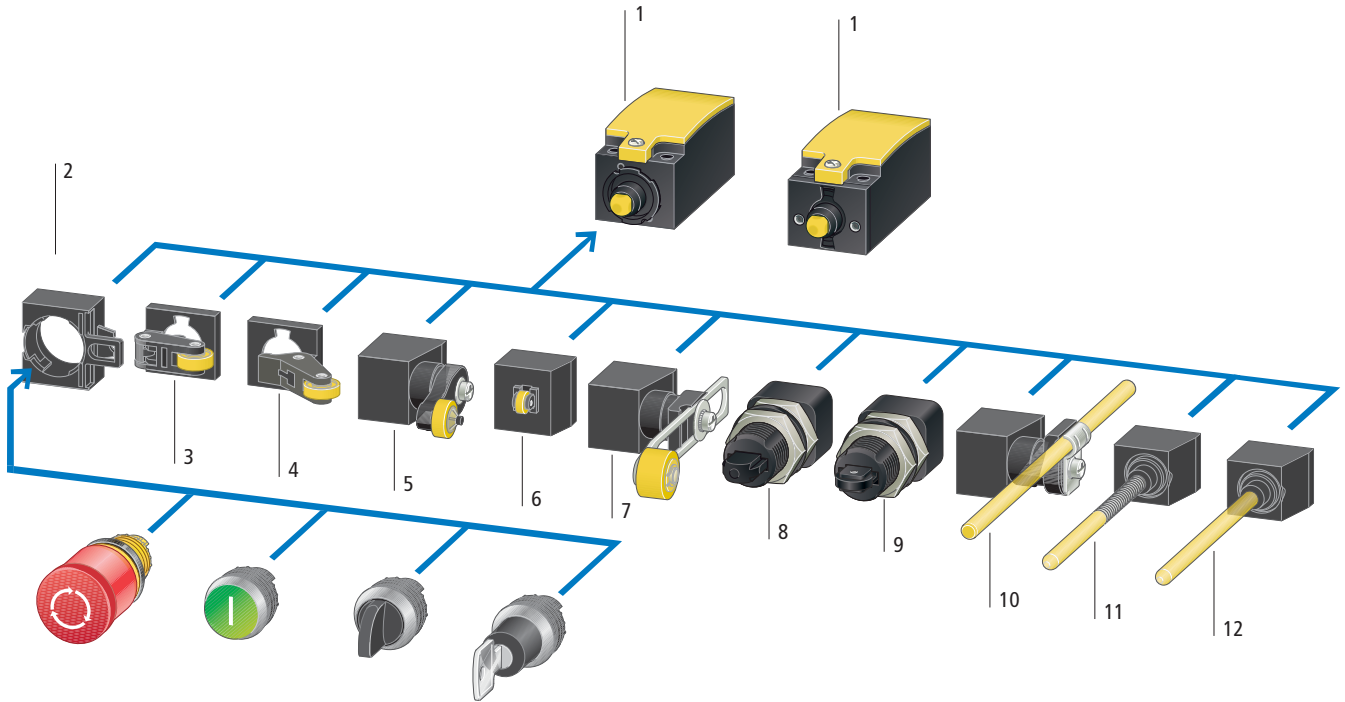
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## Accessories

Ordering	3/105
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System overview



LS, LSM

Basic units

<b>Basic Unit</b>	1
According to EN 50047	
With screw-on cover	
Contact configuration: 1N/O / 1NC, 2N/O, 2NC	
Cage Clamp, Screw terminals technology	
As snap-action or standard-action switch	
As electronic snap-action switch, (individually adjustable)	
As 4-20 mA analog signal encoder	
As 0-10 VDC analog signal encoder	
→ Page 3/3	

Operating heads

Can be rotated by 90°

<b>Fixing adapters</b>	2
Actuation through front element RMQ-Titan®	
<b>Roller lever</b>	3
For one-sided operation with higher operating speed	
<b>Angled roller lever</b>	4
For actuation along the unit axis	
<b>Rotary lever</b>	5
For transverse actuation, for pendulum movements	
→ Page 3/5	

Operating heads

Can be rotated by 90°

<b>Roller plunger</b>	6
For transverse actuation with low actuating force	
<b>Adjustable roller lever</b>	7
For length adjustment as required	
<b>Rounded plunger, center fixing</b>	8
For mounting in enclosure wall or mounting plate drilling M18 x 1	
<b>Roller plunger, center fixing</b>	9
For mounting in enclosure wall or mounting plate drilling M18 x 1	
<b>Actuating rod</b>	10
On conveyor belts for lightweight goods	
<b>Spring rod</b>	11
For flexible actuation from all sides	
<b>Actuating rod</b>	12
Withdrawable mechanism from front	
→ Page 3/5	

LS, LSM product features

- Modular system
- IP65 and IP66 protection type (except LSM)

Totally insulated

- Personnel protection
- Positive operation
- ☹ Safety function with positively opening contacts to IEC/EN 60947-5-1 up to Category 4 to EN 954-1

- Suitable for use with electronic units to IEC/EN 61131-2
- Devices for world markets

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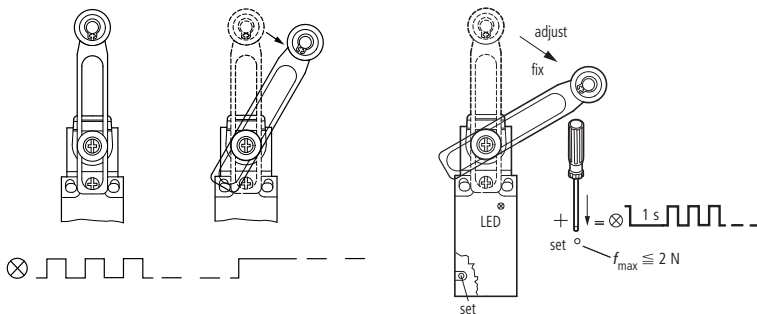
Ordering



Contact configuration	Circuit symbol	Contact travel ■ = Contact closed □ = Contact open	Color Enclosure cover	Part no. Article no.	Price See price list	Std. pack
<p>☉ Safety function safety function to IEC/EN 60947-5-1</p> <p>N/O = normally open contact      NC = normally closed contact</p>						
<b>Basic unit, expandable</b>						
Operating point electronically adjustable, IP66, IP67						
Basic unit Visible status display, comparable with positive opening function Partly short-circuit-proof, restart after reset						
	1 N/O	1 NC				<b>LSE-11</b> 266121 2 off <sup>1)</sup>
	—	2 NC				<b>LSE-02</b> 266122 2 off <sup>1)</sup>

Notes

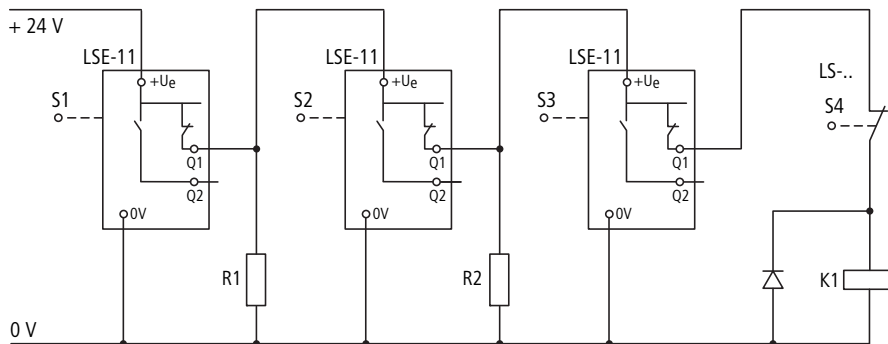
LSE-11 and LSE-02: Individual operating point adjustment:



The following applies to LSE-11 and LSE-02: ensure that the power supply operates correctly when setting the operating point.

Circuit example of series connection:

LSE-11 and LSE-02 can be used in safety-oriented circuits.



S1 is connected to 24 V DC  
 S2, S3 each switch with a delay of 0.7 s  
 R1, R2 e.g. series resistor element M22-XLED60 (2820 Ω/0.5 W)

<sup>1)</sup> Operating heads → Page 3/9

Information relevant for export to North America



Product Standards

UL File No.  
 UL CCN  
 CSA File No.  
 CSA Class No.  
 NA Certification  
 Degree of Protection

IEC/EN 60947-5; UL 508;  
 CSA-C22.2 No. 14; CE marking  
 E29184  
 NKCR  
 12528  
 3211-03  
 UL Listed, CSA certified  
 IEC: IP66, 67, UL/CSA Type 3R,  
 4X (indoor use only), 12, 13

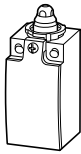


Contact configuration	Circuit symbol	Contact travel ■ = Contact closed □ = Contact open	Color Enclosure covers	Enclosure	Connection type	Part no. Article no.	Price See price list	Std. pack
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⊕ Positive opening safety function according to IEC/EN 60947-5-1  
N/O = normally open    NC = normally closed contact

**Basic unit, expandable**

**Rounded plunger, IP66, IP67**



–	2 NC ⊕			Yellow	plastic	Cage Clamp	<b>LS-02</b> 266107	10 off	1)2)
–	2 NC ⊕			Black		Cage Clamp	<b>LS-02-SW</b> 272009	10 off	1)2)
–	2 NC ⊕			Yellow		Screwed terminal	<b>LS-S02</b> 106729	10 off	2)
–	2 NC ⊕			Black		Screwed terminal	<b>LS-S02-SW</b> 106782	10 off	2)
–	2 NC ⊕			Yellow	metal	Cage Clamp	<b>LSM-02</b> 266142	2 off	1)2)
–	2 NC ⊕			Yellow	plastic EN 50047 Form B	Cage Clamp	<b>LS-02A</b> 116702	10 off	1)2)
–	2 NC ⊕			Yellow		Screwed terminal	<b>LS-S02A</b> 116703	10 off	2)
1 N/O	1 NC ⊕			Yellow	plastic	Cage Clamp	<b>LS-11</b> 266109	10 off	1)2)
1 N/O	1 NC ⊕			Black		Cage Clamp	<b>LS-11-SW</b> 272006	10 off	1)2)
1 N/O	1 NC ⊕			Yellow		Screwed terminal	<b>LS-S11</b> 106783	10 off	2)
1 N/O	1 NC ⊕			Black		Screwed terminal	<b>LS-S11-SW</b> 106807	10 off	2)
1 N/O	1 NC ⊕			Yellow	metal EN 50047 Form B	Cage Clamp	<b>LSM-11</b> 266144	2 off	1)2)
1 N/O	1 NC ⊕			Yellow	plastic EN 50047 Form B	Cage Clamp	<b>LS-11A</b> 116704	10 off	1)2)
1 N/O	1 NC ⊕			Yellow		Screwed terminal	<b>LS-S11A</b> 116705	10 off	2)
1 N/O	1 NC ⊕			Yellow	plastic	Cage Clamp	<b>LS-11D</b> 266114	10 off	1)2)
1 N/O	1 NC ⊕			Black		Cage Clamp	<b>LS-11D-SW</b> 272007	10 off	1)2)
1 N/O	1 NC ⊕			Yellow		Screwed terminal	<b>LS-S11D</b> 106791	10 off	2)
1 N/O	1 NC ⊕			Black		Screwed terminal	<b>LS-S11D-SW</b> 106797	10 off	2)
1 N/O	1 NC ⊕			Yellow	metal	Cage Clamp	<b>LSM-11D</b> 266149	2 off	1)2)
1 N/O	1 NC ⊕			Yellow	plastic	Cage Clamp	<b>LS-11DA</b> 292361	10 off	1)2)
1 N/O	1 NC ⊕			Yellow	plastic	Screwed terminal	<b>LS-S11DA</b> 106795	1 off	2)
1 N/O	1 NC ⊕			Yellow	metal	Cage Clamp	<b>LSM-11DA</b> 292363	1 off	1)2)
1 N/O	1 NC ⊕			Yellow	plastic EN 50047 Form B	Cage Clamp	<b>LS-11S</b> 266105	10 off	1)2)
1 N/O	1 NC ⊕			Black	plastic EN 50047 Form B	Cage Clamp	<b>LS-11S-SW</b> 272020	10 off	1)2)
1 N/O	1 NC ⊕			Yellow	plastic EN 50047 Form B	Screwed terminal	<b>LS-S11S</b> 106798	10 off	2)
1 N/O	1 NC ⊕			Black	plastic EN 50047 Form B	Screwed terminal	<b>LS-S11S-SW</b> 106806	10 off	2)
1 N/O	1 NC ⊕			Yellow	metal EN 50047 Form B	Cage Clamp	<b>LSM-11S</b> 266140	2 off	1)2)

**Notes**

1) Cage Clamp is a registered trademark of Wago Kontakttechnik, 32432 Minden, Germany. Accessories for the Cage Clamp terminals from Wago: Jumper insert, grey, Wago article no. 264-402  
2) Operating heads → Page 3/9

**Information relevant for export to North America**

	Product Standards UL File No. UL CCN CSA File No. CSA Class No. NA Certification Degree of Protection	IEC/EN 60947-5; UL 508; CSA-C22.2 No. 14; CE marking E29184 NKCR 12528 3211-03 UL Listed, CSA certified IEC: IP66, 67, UL/CSA Type 3R, 4X (indoor use only), 12, 13
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Contact configuration		Circuit symbol	Contact travel		Color Enclosure covers	Enclosure	Connection type	Part no. Article no.	Price See price list	Std. pack
⊕ Positive opening safety function according to IEC/EN 60947-5-1 N/O = normally open contact	⊖ NC = normally closed contact		■ = Contact closed	□ = Contact open						
<b>Complete units</b>										
<b>Rounded plunger, IP66, IP67 (front fixing)</b>										
	—	2 NC ⊖			●	plastic	Cage Clamp	<b>LS-02/F</b> 292365		1 off
	—	2 NC ⊖			●	plastic	Screwed terminal	<b>LS-S02/F</b> 106780		1 off
	—	2 NC ⊖			●	metal	Cage Clamp	<b>LSM-02/F</b> 292371		1 off
	1 N/O	1 NC ⊖			●	plastic	Cage Clamp	<b>LS-11/F</b> 290176		1 off
	1 N/O	1 NC ⊖			●	plastic	Screwed terminal	<b>LS-S11/F</b> 106784		1 off
	1 N/O	1 NC ⊖			●	metal	Cage Clamp	<b>LSM-11/F</b> 292372		1 off
	1 N/O	1 NC ⊖			●	plastic	Screwed terminal	<b>LS-S11D/F</b> 106792		1 off
	1 N/O	1 NC ⊖			●	plastic	Cage Clamp	<b>LS-11D/F</b> 292366		1 off
	1 N/O	1 NC ⊖			●	metal	Cage Clamp	<b>LSM-11D/F</b> 292373		1 off
	1 N/O	1 NC ⊖			●	plastic	Cage Clamp	<b>LS-11DA/F</b> 292369		1 off
	1 N/O	1 NC ⊖			●	plastic	Screwed terminal	<b>LS-S11DA/F</b> 106796		1 off
	1 N/O	1 NC ⊖			●	metal	Cage Clamp	<b>LSM-11DA/F</b> 292376		1 off
	1 N/O	1 NC ⊖			●	plastic	Cage Clamp	<b>LS-11S/F</b> 292367		1 off
	1 N/O	1 NC ⊖			●	plastic	Screwed terminal	<b>LS-S11S/F</b> 106799		1 off
	1 N/O	1 NC ⊖			●	metal	Cage Clamp	<b>LSM-11S/F</b> 292374		1 off
<b>Roller plungers, IP66, IP67</b>										
	1 N/O	1 NC ⊖			●	plastic EN 50047 Form C	Cage Clamp	<b>LS-11/P</b> 266112		2 off
	1 N/O	1 NC ⊖			●	plastic EN 50047 Form C	Screwed terminal	<b>LS-S11/P</b> 106788		2 off
	1 N/O	1 NC ⊖			●	metal EN 50047 Form C	Cage Clamp	<b>LSM-11/P</b> 266147		2 off
	1 N/O	1 NC ⊖			●	plastic EN 50047 Form C	Cage Clamp	<b>LS-11S/P</b> 266118		2 off
	1 N/O	1 NC ⊖			●	plastic EN 50047 Form C	Screwed terminal	<b>LS-S11S/P</b> 106801		2 off
	1 N/O	1 NC ⊖			●	metal EN 50047 Form C	Cage Clamp	<b>LSM-11S/P</b> 266153		2 off
<b>Spring rod actuator IP66, IP67</b>										
Do not use spring-rod actuator as a safety position switch; admissible only with snap-action contact.										
	1 N/O	1 NC ⊖			●	plastic	Cage Clamp	<b>LS-11S/S</b> 266104		2 off
	1 N/O	1 NC ⊖			●	plastic	Screwed terminal	<b>LS-S11S/S</b> 106805		2 off
	1 N/O	1 NC ⊖			●	metal	Cage Clamp	<b>LSM-11S/S</b> 266139		2 off

**Notes**

- 1) Cage Clamp is a registered trademark of Wago Kontakttechnik, 32432 Minden. Accessories for the Cage Clamp terminals from Wago: Jumper insert, grey, Wago article no. 264-402
- 2) The operating head can be rotated at 90° intervals to adapt to the specified operating direction.

**Information relevant for export to North America**

Product Standards IEC/EN 60947-5; UL 508; CSA-C22.2 No. 14; CE marking  
 UL File No. E29184  
 UL CCN NKCR  
 CSA File No. 12528  
 CSA Class No. 3211-03  
 NA Certification UL Listed, CSA certified  
 Degree of Protection IEC: IP66, 67, UL/CSA Type 3R, 4X (indoor use only), 12, 13



Contact configuration  
⊕ Positive opening safety function according to IEC/EN 60947-5-1  
N/O = normally open contact  
NC = normally closed contact

Circuit symbol

Contact travel  
■ = Contact closed  
□ = Contact open

Color Enclosure cover

Enclosure

Connection type

Part no. Article no.

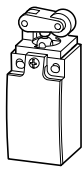
Price See price list

Std. pack

Complete units

Roller lever IP66, IP67

Long



-	2 NC ⊖			Yellow	plastic	Cage Clamp	LS-02/L 266108	2 off	1) 2)
-	2 NC ⊖			Yellow	plastic	Screwed terminal	LS-S02/L 106781	2 off	2)
-	2 NC ⊖			Yellow	metal	Cage Clamp	LSM-02/L 266143	2 off	1) 2)
1 N/O	1 NC ⊖			Yellow	plastic EN 50047 Form E	Cage Clamp	LS-11/L 266110	2 off	1) 2)
1 N/O	1 NC ⊖			Yellow	plastic EN 50047 Form E	Screwed terminal	LS-S11/L 106785	2 off	2)
1 N/O	1 NC ⊖			Yellow	metal EN 50047 Form E	Cage Clamp	LSM-11/L 266145	2 off	1) 2)
1 N/O	1 NC ⊖			Yellow	plastic	Cage Clamp	LS-11D/L 266115	2 off	1) 2)
1 N/O	1 NC ⊖			Yellow	plastic	Screwed terminal	LS-S11D/L 106793	2 off	2)
1 N/O	1 NC ⊖			Yellow	metal	Cage Clamp	LSM-11D/L 266150	2 off	1) 2)
1 N/O	1 NC ⊖			Yellow	plastic EN 50047 Form E	Cage Clamp	LS-11S/L 266116	2 off	1) 2)
1 N/O	1 NC ⊖			Yellow	plastic EN 50047 Form E	Screwed terminal	LS-S11S/L 106800	2 off	2)
1 N/O	1 NC ⊖			Yellow	metal EN 50047 Form E	Cage Clamp	LSM-11S/L 266151	2 off	1) 2)

Short

1 N/O	1 NC ⊖			Yellow	plastic	Cage Clamp	LS-11/LS 290173	2 off	1) 2)
1 N/O	1 NC ⊖			Yellow	plastic	Screwed terminal	LS-S11/LS 106787	1 off	2)
1 N/O	1 NC ⊖			Yellow	plastic	Cage Clamp	LS-11D/LS 290174	1 off	1) 2)
1 N/O	1 NC ⊖			Yellow	plastic	Screwed terminal	LS-S11D/LS 106794	1 off	2)

Large

1 N/O	1 NC ⊖			Yellow	plastic	Cage Clamp	LS-11/LB 290175	1 off	1) 2)
1 N/O	1 NC ⊖			Yellow	plastic	Screwed terminal	LS-S11/LB 106786	1 off	2)

Notes

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Accessories for the Cage Clamp terminals from Wago: Jumper insert, grey, Wago article no. 264-402  
2) The operating head can be rotated at 90° intervals to adapt to the specified operating direction.

Information relevant for export to North America



Product Standards

UL File No.  
UL CCN  
CSA File No.  
CSA Class No.  
NA Certification  
Degree of Protection

IEC/EN 60947-5; UL 508; CSA-C22.2 No. 14;  
CE marking  
E29184  
NKCR  
12528  
3211-03  
UL Listed, CSA certified  
IEC: IP66, 67, UL/CSA Type 3R, 4X  
(indoor use only), 12, 13

HPL03007EN



Contact configuration	Circuit symbol	Contact travel ■ = Contact closed □ = Contact open	Color Enclosure covers	Enclosure	Connection type	Part no. Article no.	Price See price list	Std. pack	
<p>⊖ Positive opening safety function according to IEC/EN 60947-5-1</p> <p>N/O = normally open contact      NC = normally closed contact</p>									
<b>Complete units</b>									
<b>Rotary lever, IP66, IP67</b>									
	1 N/O	1 NC ⊖			yellow	plastic EN 50047 Form A	Cage Clamp	<b>LS-11/RL</b> 266111	2 off  1)2)
	1 N/O	1 NC ⊖			yellow	metal EN 50047 Form A	Cage Clamp	<b>LSM-11/RL</b> 266146	2 off  1)2)
	1 N/O	1 NC ⊖			yellow	plastic EN 50047 Form A	Screwed terminal	<b>LS-S11/RL</b> 106789	2 off  2)
	1 N/O	1 NC ⊖			yellow	plastic EN 50047 Form A	Cage Clamp	<b>LS-11S/RL</b> 266117	2 off  1)2)
	1 N/O	1 NC ⊖			yellow	plastic EN 50047 Form A	Screwed terminal	<b>LS-S11S/RL</b> 106802	2 off  2)
	1 N/O	1 NC ⊖			yellow	metal EN 50047 Form A	Cage Clamp	<b>LSM-11S/RL</b> 266152	2 off  1)2)
<b>Adjustable roller levers, IP66, IP67</b>									
	1 N/O	1 NC ⊖			yellow	plastic	Cage Clamp	<b>LS-11/RLA</b> 266113	2 off  1)2)
	1 N/O	1 NC ⊖			yellow	plastic	Screwed terminal	<b>LS-S11/RLA</b> 106790	2 off  2)
	1 N/O	1 NC ⊖			yellow	metal	Cage Clamp	<b>LSM-11/RLA</b> 266148	2 off  1)2)
	1 N/O	1 NC ⊖			yellow	plastic	Cage Clamp	<b>LS-11S/RLA</b> 266119	2 off  1)2)
	1 N/O	1 NC ⊖			yellow	plastic	Screwed terminal	<b>LS-S11S/RLA</b> 106803	2 off  2)
	1 N/O	1 NC ⊖			yellow	metal	Cage Clamp	<b>LSM-11S/RLA</b> 266154	2 off  1)2)
<b>Actuating rod IP66, IP67</b>									
	1 N/O	1 NC ⊖			yellow	plastic	Cage Clamp	<b>LS-11S/RR</b> 266106	4 off  1)2)
	1 N/O	1 NC ⊖			yellow	plastic	Screwed terminal	<b>LS-S11S/RR</b> 106804	4 off  2)
	1 N/O	1 NC ⊖			yellow	metal	Cage Clamp	<b>LSM-11S/RR</b> 266141	4 off  1)2)
<b>Customer specific complete units IP66, IP67</b>									
(*) Use-definable customer ID or stock no.: up to 10 characters					plastic	—		<b>LS-COMBINATION-*</b> 266168	1 off  1)2)

**Notes**

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Accessories for the Cage Clamp terminals from Wago: Jumper insert, grey, Wago article no. 264-402
- 2) The operating head can be rotated at 90° intervals to adapt to the specified operating direction.

**Information relevant for export to North America**



Product Standards

UL File No.  
UL CCN  
CSA File No.  
CSA Class No.  
NA Certification  
Degree of Protection

IEC/EN 60947-5; UL 508; CSA-C22.2 No. 14;  
CE marking  
E29184  
NKCR  
12528  
3211-03  
UL Listed, CSA certified  
IEC: IP66, 67, UL/CSA Type 3R, 4X  
(indoor use only), 12, 13





Contact configuration  
Circuit symbol

Circuit symbol

Contact travel  
■ = Contact closed  
□ = Contact open

Color  
Enclosure cover

Enclosure type

Connection type

Part no.  
Article no.

Price  
See price list

Std. pack

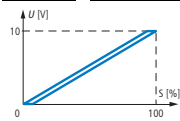
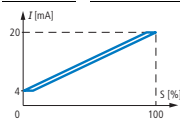
⊕ Positive opening safety function according to IEC/EN 60947-5-1

N/O = normally open contact  
NC = normally closed contact

**Basic unit, expandable**

Analog electronic position switches IP66, IP67

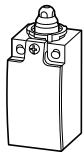
Basic unit  
Visual status indication  
Q1 = Analog output  
Q2 = Diagnostics output  
(the diagnostics output has a 0 V signal in the event of a fault.)



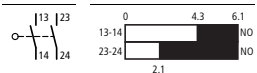
Yellow circle, plastic, Cage Clamp, LSE-AI 269461, 2 off

Yellow circle, plastic, Cage Clamp, LSE-AU 274096, 2 off

**Rounded plunger, IP66, IP67**



2 N/O



Yellow circle, plastic, Cage Clamp, LS-20 266120, 10 off

2 N/O

Black circle, plastic, Cage Clamp, LS-20-SW 272008, 10 off

2 N/O

Yellow circle, Screwed terminal, LS-S20 106808, 1 off

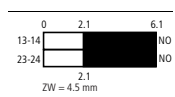
2 N/O

Black circle, Screwed terminal, LS-S20-SW 106812, 10 off

2 N/O

Yellow circle, metal, Cage Clamp, LSM-20 266155, 2 off

2 N/O



Yellow circle, plastic, Cage Clamp, LS-20A 292362, 1 off

2 N/O

Yellow circle, plastic, Screwed terminal, LS-S20A 106810, 10 off

2 N/O

Yellow circle, metal, Cage Clamp, LSM-20A 100051, 2 off

2 N/O



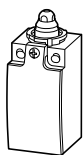
Yellow circle, plastic EN 50047 Form B, Cage Clamp, LS-20B 116706, 10 off

2 N/O

Yellow circle, plastic EN 50047 Form B, Screwed terminal, LS-S20B 116707, 10 off

**Basic unit, not expandable**

Rounded plunger, IP66, IP67 (front fixing)



2 N/O



Yellow circle, plastic, Cage Clamp, LS-20/F 292368, 1 off

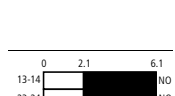
2 N/O

Yellow circle, plastic, Screwed terminal, LS-S20/F 106809, 1 off

2 N/O

Yellow circle, metal, Cage Clamp, LSM-20/F 292375, 1 off

2 N/O



Yellow circle, plastic, Cage Clamp, LS-20A/F 292370, 1 off

2 N/O

Yellow circle, plastic, Screwed terminal, LS-S20A/F 106811, 1 off

2 N/O

Yellow circle, metal, Cage Clamp, LSM-20A/F 292377, 1 off

**Notes**

- 1) Cage Clamp is a registered trademark of Wago Kontakttechnik, 32432 Minden. Accessories for the Cage Clamp terminals from Wago: Jumper insert, grey, Wago article no. 264-402
- 2) Operating heads → Page 3/9

**Information relevant for export to North America**












































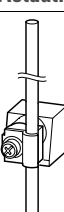








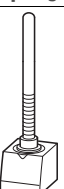












Product Standards

UL File No.  
UL CCN  
CSA File No.  
CSA Class No.  
NA Certification  
Degree of Protection

IEC/EN 60947-5; UL 508; CSA-C22.2 No. 14;  
CE marking  
E29184  
NKCR  
12528  
3211-03  
UL Listed, CSA certified  
IEC: IP66, 67, UL/CSA Type 3R, 4X  
(indoor use only), 12, 13

HPL03009EN

		plastic	Price	Std. pack	metal	Price	Std. pack	Notes
		Part no. Article no.	See price list		Part no. Article no.	See price list		
	For installation in M18 × 1 enclosure wall or mounting plate drilling	<b>LS-XZS</b> 114024					1 off  	The operating head can be rotated at 90° intervals to adapt to the specified operating direction.  <b>Information relevant for export to North America</b>   Product Standards IEC/EN 60947-5; UL 508; CSA-C22.2 No. 14; CE marking E29184 UL File No. E29184 UL CCN NKCR CSA File No. 12528 CSA Class No. 3211-03 NA Certification UL Listed, CSA Certified
	For installation in M18 × 1 enclosure wall or mounting plate drilling	<b>LS-XZRS</b> 114025					1 off  	
	–	<b>LS-XP</b> 266125		10 off  	<b>LSM-XP</b> 266158		10 off  	
	Large	<b>LS-XLB</b> 290178		5 off  				
	Short	<b>LS-XLS</b> 290177		1 off  				
	Long	<b>LS-XL</b> 266123		10 off  	<b>LSM-XL</b> 266156		10 off  	
	–	<b>LS-XLA</b> 266124		10 off  	<b>LSM-XLA</b> 266157		10 off  	
	–	<b>LS-XRL</b> 266126		5 off  	<b>LSM-XRL</b> 266159		5 off  	
	D = 18 mm	<b>LS-XRLA</b> 266127		4 off  	<b>LSM-XRLA</b> 266160		4 off  	
	D = 30 mm	<b>LS-XRLA30</b> 266128		5 off  				
	D = 40 mm (rubber)	<b>LS-XRLA40R</b> 266130		5 off  				
	D = 40 mm	<b>LS-XRLA40</b> 266129		5 off  				
	Rod from insulated material	<b>LS-XRR</b> 266131		4 off  	<b>LSM-XRR</b> 266161		4 off  	
	Metal rod	<b>LS-XRRM</b> 266132		4 off  	<b>LSM-XRRM</b> 266162		4 off  	
	Not to be used as a safety position switch Use only in conjunction with snap-action contact.	<b>LS-XS</b> 266133		5 off  	<b>LSM-XS</b> 266163		5 off  	
	–	<b>LS-XOR</b> 290190		1 off  				
	Actuation through front element RMQ-Titan®	<b>M22-LS</b> 266137		10/1 off  			UL/CSA certification not required	



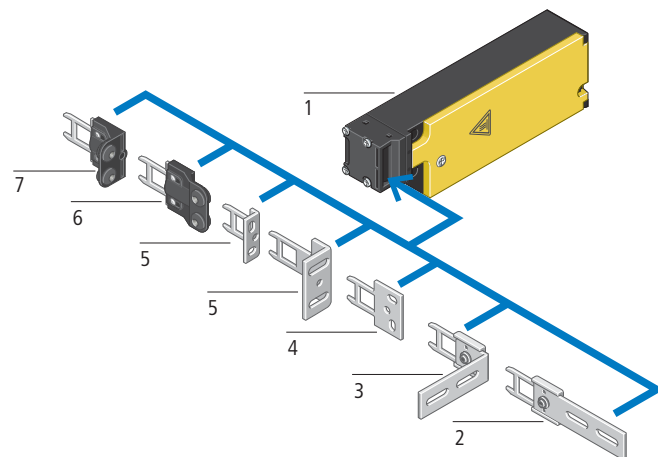


Description		Part no. Article no.	Price See price list	Std. pack	Notes	Information relevant for export to North America 	
<b>Screw connection to fit M20 to 1/2"</b>							
	M20 Screw connector for American pipe thread Metal 1/2"	<b>V1 1/2"/M20-NA</b> 225269		10 off 	The screw connection is for grounding; no total insulation For connection thread lengths up to 9 mm	Product Standards UL 508; CSA-C22.2 No. 14 UL File No. E29184 UL CCN NKCR CSA File No. 12528 CSA Class No. 3211-03 NA Certification UL Listed, CSA Certified Specially designed for NA✓	
	M20 Screw connector for American pipe thread Molded material 1/2"	<b>V1 1/2"/M20</b> 225270		10 off 	For connection thread lengths up to 9 mm	UL/CSA certification not required	
<b>M20 diaphragm bolt, IP65</b>							
	With built in push-through diaphragm External diameter of cable up to 13 mm IP65 with cable inserted	<b>EMS20</b> 225271		25 off	—		
<b>Screw closure M20</b>							
	(self-sealing grommet) For tightening/loosening using a standard spanner for sealing grommet plugs	<b>LS-X20</b> 266134		25 off	—		
<b>Plug connector M12x1, IP66</b> Molded material I <sub>th</sub> = 4 A Fuse: 6 A gG/gL							
4-pole U <sub>e</sub> = 250 V		For use with					
	LS	"A" coded  Standard to IEC/EN 60947-5-2	<b>M12A</b> 266135	10 off	M12A, M12B 		
	LS	"B"-coded 	<b>M12B</b> 266136	10 off			
5-pole U <sub>e</sub> = 125 V							
	LSM	"A" coded  Standard to IEC/EN 60947-5-2	<b>M12A5</b> 272202	10 off	M12A5, M12B5 		
	LSM	"B"-coded 	<b>M12B5</b> 272203	10 off			
<b>Cage clamp twin NC contacts</b>							
	—	For opening two terminals simultaneously	<b>LS-XTW</b> 290179	1 off 	—	UL/CSA certification not required	
<b>Adapter plate, thickness 2.5 mm</b>							
	For additional fixing with sideways operation, together with locating plate FS-AT (order separately)	<b>LS-XAP</b> 114026		1 off 	—		
<b>Locating plate</b>							
	For fixing with side motion	<b>FS-AT</b> 019610		20 off 	—		

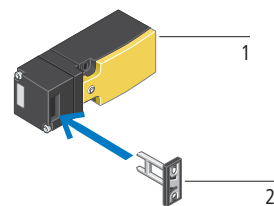


System overview

LS-...ZBZ

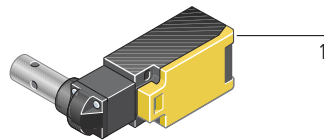
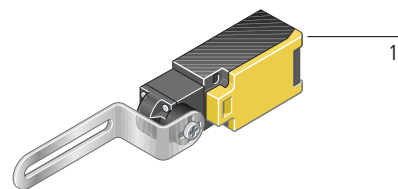


LS-...ZB

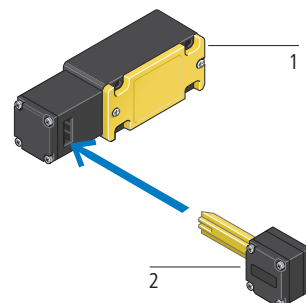


LSR-...TKG

LSR-...TS



LS4...ZB



LS-...ZBZ

<b>Basic Unit</b> Spring or magnet-powered interlock For increased personnel and process protection Tamper-proof Multiple coded actuators Contact configuration: 1 N/O / 1 NC or 2 NC → Page 3/16	<b>Angled flexible actuator</b> For doors that do not close precisely → Page 3/17	<b>Flat compensating actuator</b> For increased tolerance compensation in the direction of door closure → Page 3/17
<b>Flat flexible actuator</b> For doors that do not close precisely → Page 3/17	<b>Flat actuator</b> For sliding doors → Page 3/17	<b>Angled compensating actuator</b> For increased tolerance compensation in the direction of door closure → Page 3/17
<b>Angled actuator</b> For swing doors → Page 3/17		

LS-...ZB

<b>Complete unit</b> For personnel protection Contact configuration: 1 NC, 1 N/O / 1 NC or 2 NC 5 directions of operation possible → Page 3/18	<b>Actuator</b> Multiple coding protection against tampering
--	---

LSR-...TKG, LSR-...TS

<b>Complete unit</b> For personnel protection Contact configuration: 1 N/O / 1 NC or 2 NC For swing doors with fixed connection to the door/hinge pin Multiple coded actuators Contact configuration: 1 N/O / 1 NC or 2 NC LSR-...TKG → Page 3/18 LSR-...TS → Page 3/18
--

LS4...ZB

<b>Complete unit</b> Narrow enclosure version For personnel protection Contact configuration: 1 NC, 1 N/O / 1 NC → Page 3/16	<b>Actuator</b> Multiple coding For horizontal or vertical operation
--	--

Product features

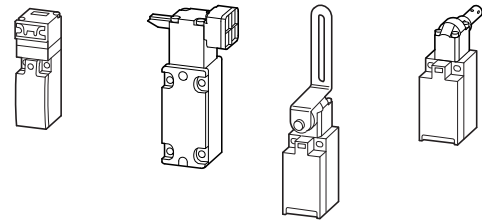
- Interlocking unit to EN 1088
- For use in safety circuits
- ⊕ Positive opening safety function according to IEC/EN 60947-5-1

- Protection type IP65
- Operating head can be turned 4 x 90°
- With M20 x 1.5 connecting thread

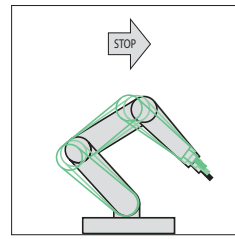
totally insulated



LS...ZB LS4/ZB LSR...TKG LSR...TS

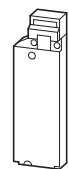


"Personnel protection" by monitoring of the protective mechanism

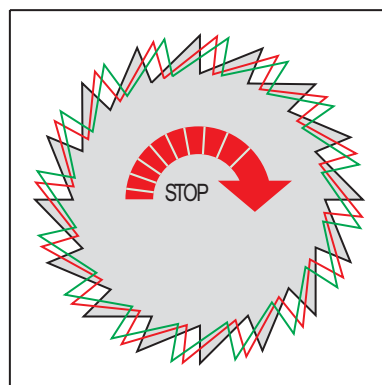


- Door open
- LS...ZB disconnects power
- No danger

LS/ZBZ

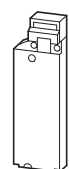


"Increased personnel protection" by monitoring and interlocking the protective mechanism

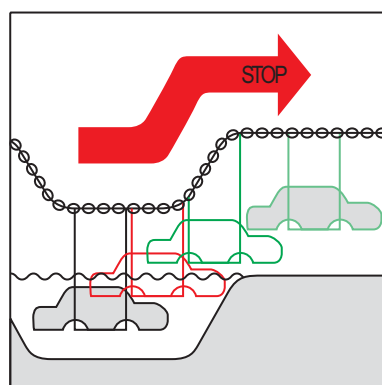


- Stop command
- Waiting time
- Machine is stopped
- Protective mechanism open
- No danger

LS/ZBZ

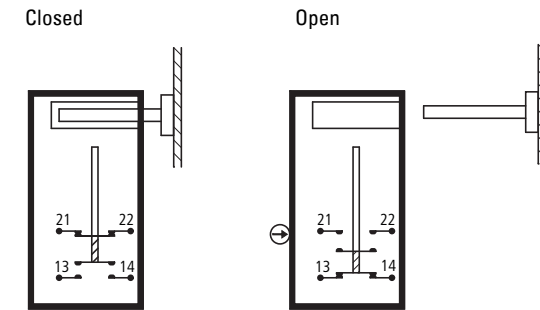


"Increased personnel protection" by monitoring and interlocking the protective mechanism



- Stop command
- Waiting time
- Process sequence halted
- Protective mechanism open
- Product OK

LS...ZB

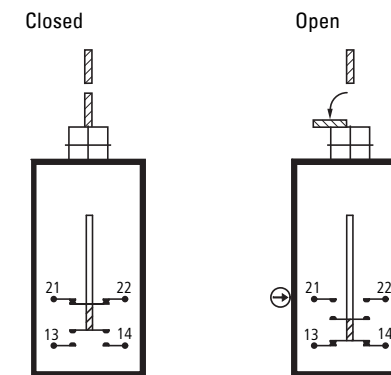


- Personnel protection
- Door open → Enabling contact (21-22) opening positively
- Door open → Enabling contact safely open; tamperproof against simple tools
- Door close → Triple coded actuator closes the enabling contact

Switch must never be used as a mechanical stop!

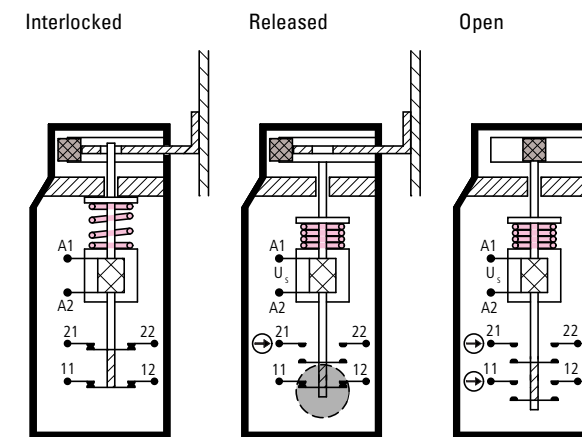


LSR...TKG LSR...TS



- Personnel protection
- Open of guard mechanism → Enabling contact (21-22) opening positively
- Guard mechanism open → Enabling contact safely open; tamperproof against simple tools
- Closing of guard mechanism → Closes enabling contact (21-22)

LS-S02...FT-ZBZ, spring-powered interlock (closed-circuit current principle)

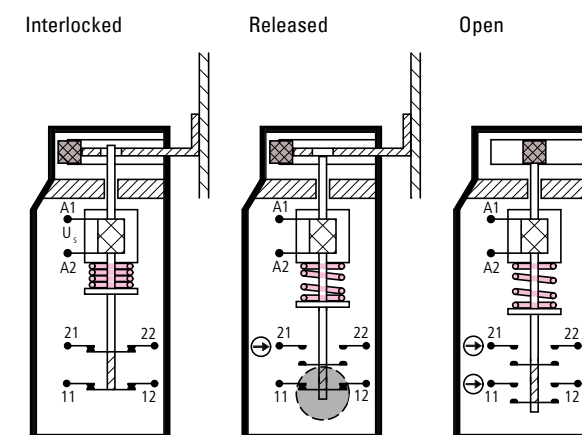


- Increased personnel protection with separate signal for door position
- Door closed and interlocked → De-energized: even with mains failure or wire breakage: door interlocked = safe state Enabling contact (21-22)
- To unlock door → Applies voltage to coil (A1, A2) e.g. via zero-speed monitor, enabling contact (21-22) opens
- Door open → Both contacts blocked in the open position, even with tampering with simple tools
- Door close → Triple-coded actuator cancels enabling contact inhibit; door position contact (11-12) closes
- Interlock door → Disconnect coil voltage: 1st actuator interlocked 2nd enabling contact closed → Enable only when door locked

Switch must never be used as a mechanical stop!



LS-S02...MT-ZBZ, magnet-powered interlock (operating current principle)



- Process protection + increased personnel protection with separate signal for door position
- Door closed and interlocked → Energized: Enables immediate access in the event of mains failure and wire breakage. Both contacts closed
- To unlock door → Applies voltage to coil (A1, A2) e.g. via zero-speed monitor, enabling contact (21-22) opens
- Door open → Only possible once it is released, door position contact (11-12) opens
- Door close → Triple-coded actuator cancels enabling contact inhibit; door position contact (11-12) closes
- Interlock door → Disconnect coil voltage: 1st actuator interlocked 2nd enabling contact closed → Enable only when door locked

Switch must never be used as a mechanical stop!





Contact configuration	Circuit symbol	Rated control voltage for magnet drive $U_s$	Part no. Article no.	Price See price list	Std. pack
⊕ Safety function by positive opening according to IEC/EN 60947-5-1 N/O = normally open contact    NC = normally closed contact		V			

**Basic units with spring-powered interlock (closed-circuit principle) IP65**

- With interlock monitoring and auxiliary release mechanism
- Monitoring of door position: continuous

	1 N/O	1 NC ⊕		24 V DC	<b>LS-S11-24DFT-ZBZ/X</b> 106829	1 off 
	–	2 NC ⊕		24 V DC	<b>LS-S02-24DFT-ZBZ/X</b> 106823	
	1 N/O	1 NC ⊕		120 V 50/60 Hz	<b>LS-S11-120AFT-ZBZ/X</b> 106825	
	–	2 NC ⊕		120 V 50/60 Hz	<b>LS-S02-120AFT-ZBZ/X</b> 106778	
	1 N/O	1 NC ⊕		230 V 50/60 Hz	<b>LS-S11-230AFT-ZBZ/X</b> 106827	
	–	2 NC ⊕		230 V 50/60 Hz	<b>LS-S02-230AFT-ZBZ/X</b> 106821	

**Basic units with magnet-powered interlock (open-circuit principle) IP65<sup>1)</sup>**

- With interlock monitoring
- Monitoring of door position: continuous

	1 N/O	1 NC ⊕		24 V DC	<b>LS-S11-24DMT-ZBZ/X</b> 106830	1 off 
	–	2 NC ⊕		24 V DC	<b>LS-S02-24DMT-ZBZ/X</b> 106824	
	1 N/O	1 NC ⊕		120 V 50/60 Hz	<b>LS-S11-120AMT-ZBZ/X</b> 106826	
	–	2 NC ⊕		120 V 50/60 Hz	<b>LS-S02-120AMT-ZBZ/X</b> 106820	
	1 N/O	1 NC ⊕		230 V 50/60 Hz	<b>LS-S11-230AMT-ZBZ/X</b> 106828	
	–	2 NC ⊕		230 V 50/60 Hz	<b>LS-S02-230AMT-ZBZ/X</b> 106822	

**Notes**

Electric circuitry with DIL contactors and ESR5 safety relay  
 → Safety manual TB02000-009, Article no. 119906

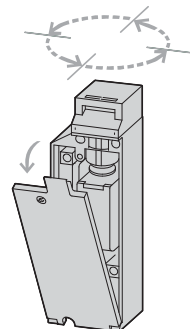
With the actuator inserted, the N/O contact is open and the NC contact is closed.



**Switch must never be used as a mechanical stop!**

<sup>1)</sup> Time control of the release operation possible using ESR5-NV30-30

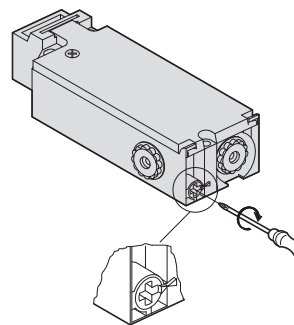
The operating head can be rotated manually in 90° steps to suit the specified level of actuation.



In the event of a loss of voltage, (e.g. during commissioning), the spring-powered LS-...-FT-ZBZ can be released with a screwdriver.

The auxiliary release mechanism must be sealed!

→ Instructional leaflet AWA 1310-2354



For protection type IP65, use V-M20 cable glands with max 9 mm long thread.















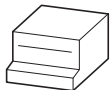

Cable gland V-M20 → Page 2/46

**Information relevant for export to North America**



Product Standards	IEC/EN 60947-5; UL 508; CSA-C22.2 No. 14; CE marking
UL File No.	E29184
UL CCN	NKCR
CSA File No.	12528
CSA Class No.	3211-03
NA Certification	UL Listed, CSA Certified
Degree of Protection	IEC: IP65, UL/CSA Type 3R, 4X (indoor use only), 12, 13

HPL03017EN

	Part no. Article no.	Price  See price list	Std. pack	Notes	Information relevant for export to North America 
<b>Actuators</b>					
For combination with LS-...ZBZ/X basic units Stainless steel					
Flat actuator For sliding doors 	<b>LS-XG-ZBZ</b> 106833		10 off 	-	Product Standards IEC/EN 60947-5; UL 508; CSA-C22.2 No. 14; CE marking E29184 UL File No. NKCR UL CCN 12528 CSA File No. 3211-03 CSA Class No. UL Listed, CSA Certified NA Certification
Angled actuator For swing doors above 250 mm width 	Short <b>LS-XW-ZBZ</b> 106839		10 off 	From width: 350 mm	
	Long <b>LS-XWA-ZBZ</b> 106838		10 off 	From width: 550 mm	
Angled, flexible actuator For doors that do not close precisely 	<b>LS-XF-ZBZ</b> 106832		10 off 	-	
Flat, flexible compensating actuator For doors that do not close precisely 	<b>LS-XFG-ZBZ</b> 106831		10 off 	-	
Flat, compensating actuator With increased tolerance in closing direction for door that does not close precisely. 	<b>LS-XNG-ZBZ</b> 106834		1 off 	-	
Angled compensating actuator With increased tolerance in closing direction for door that does not close precisely. 	<b>LS-XNW-ZBZ</b> 106835		10 off 	-	
<b>Accessories</b>					
Dust protection cap Prevents ingress of foreign matter into the unit head 	<b>LS-XSK-ZBZ</b> 106837		10 off 	-	UL/CSA certification not required







Contact configuration	Circuit symbol	Contact travel	Approval mark	Connection type	Part no. Article no.	Price	Std. pack	
<p>⊕ Positive opening safety function according to IEC/EN 60947-5-1</p> <p>N/O = normally open contact    NC = normally closed contact</p>		<p>■ = Contact closed</p> <p>□ = Contact open</p>				See price list		
<b>Hasp-operated safety switch LSR-.../TKG, IP65</b>								
	-	2 NC ⊕				Screwed terminal	LSR-S02-1-I/TKG 106848	1 off
	1 N/O	1 NC ⊕				Screwed terminal	LSR-S11-1-I/TKG 106847	1 off
<b>Hinge-operated switch LSR-.../TS, IP65</b>								
	-	2 NC ⊕				Screwed terminal	LSR-S02-1-I/TS 106852	1 off
	1 N/O	1 NC ⊕				Screwed terminal	LSR-S11-1-I/TS 106851	1 off
<b>Safety position switches LS-...-ZB, IP65</b>								
	-	2 NC ⊕				Cage Clamp	LS-02-ZB <sup>1)</sup> 106817	2 off
	-	2 NC ⊕				Screwed terminal	LS-S02-ZB <sup>1)</sup> 106874	2 off
	1 N/O	1 NC ⊕				Cage Clamp	LS-11-ZB <sup>1)</sup> 106819	2 off
	1 N/O	1 NC ⊕				Screwed terminal	LS-S11-ZB <sup>1)</sup> 106876	2 off
	1 N/O	1 NC ⊕				Cage Clamp	LS-11S-ZB <sup>1)</sup> 106870	2 off
	1 N/O	1 NC ⊕				Screwed terminal	LS-S11S-ZB <sup>1)</sup> 106877	2 off
<b>Safety position switches LS4.../ZB, IP65</b>								
	1 N/O	1 NC ⊕				Screwed terminal	LS4/S11-1/I/ZB <sup>2)</sup> 106857	1 off
	1 N/O	1 NC ⊕				Screwed terminal	LS4/S11-1/IA/ZB <sup>2)</sup> 106858	1 off
	1 N/O	2 NC ⊕				Screwed terminal	LS4/S12-7/IB/ZB <sup>2)</sup> 106859	1 off

**Notes**

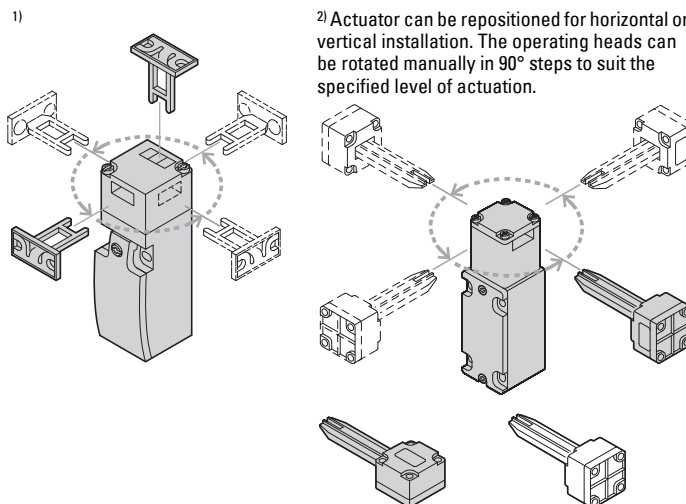
Electric circuitry with contactors DIL and safety relay ESR5  
 → Safety manual TB02000-009, Article no. 119906



**Switch must never be used as a mechanical stop!**

For protection type IP65 use cable glands V-M20 with max. 9 mm connection thread length.  
 Cable gland V-M20 → Page 2/46

With the actuator inserted, the N/O contact is open and the NC contact is closed.



<sup>2)</sup> Actuator can be repositioned for horizontal or vertical installation. The operating heads can be rotated manually in 90° steps to suit the specified level of actuation.

**Information relevant for export to North America**



Product Standards

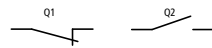
UL File No.  
 UL CCN  
 CSA File No.  
 CSA Class No.  
 NA Certification  
 Degree of Protection

IEC/EN 60947-5;  
 UL 508; CSA-C22.2 No. 14;  
 CE marking  
 E29184  
 NKCR  
 12528  
 3211-03  
 UL Listed, CSA Certified  
 IEC: IP65, UL/CSA Type 3R,  
 4X (indoor use only), 12, 13

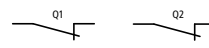
Engineering



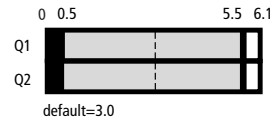
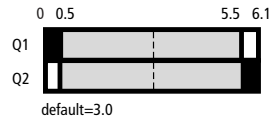
LSE-11



LSE-02



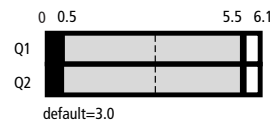
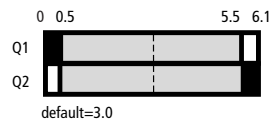
Basic units



Operating heads

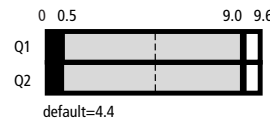
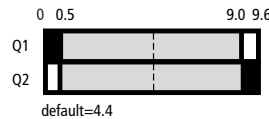
Roller plunger

- LS-XP
- LSM-XP
- LS-XOR



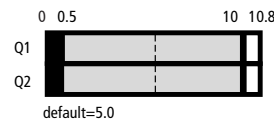
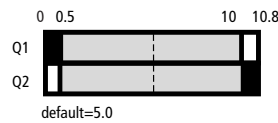
Roller lever

- LS-XL
- LSM-XL
- LS-XLS
- LS-XLB



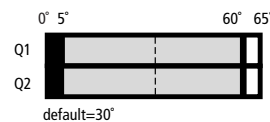
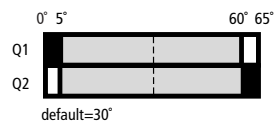
Angled roller lever

- LS-XLA
- LSM-XLA



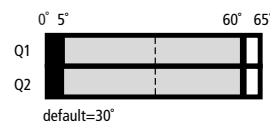
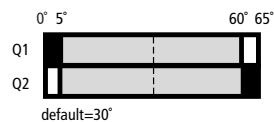
Rotary lever

- LS-XRL
- LSM-XRL



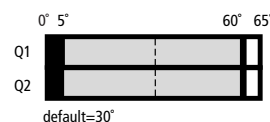
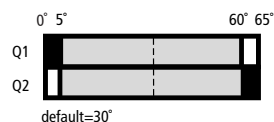
Adjustable roller lever

- LS-XRLA
- LSM-XRLA
- LS-XRLA30
- LS-XRLA40
- LS-XRLA40R



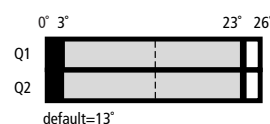
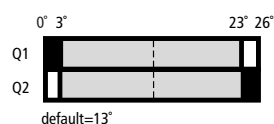
Actuating rod

- LS-XRR
- LSM-XRR
- LS-XRRM
- LSM-XRRM



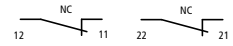
Spring rod actuator

- LS-XS
- LSM-XS

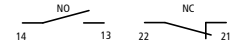


Notes: LS-(S)02A,  
LS-(S)11A → Page 3/4  
LS-(S)20B → Page 3/8

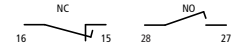
LS-02  
LS-S02  
LSM-02



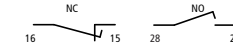
LS-11  
LS-S11  
LSM-11



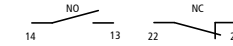
LS-11D  
LS-S11D  
LSM-11D



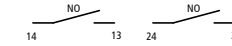
LS-11DA  
LS-S11DA  
LSM-11DA



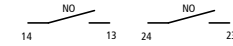
LS-11S  
LS-S11S  
LSM-11S



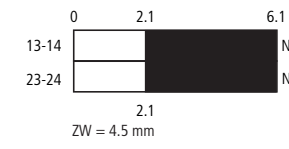
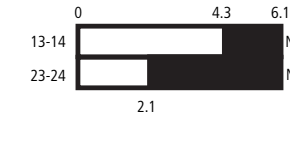
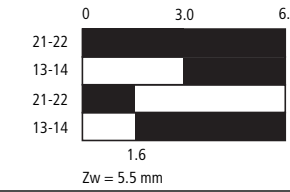
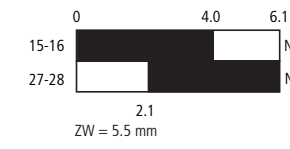
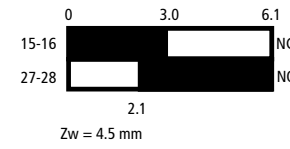
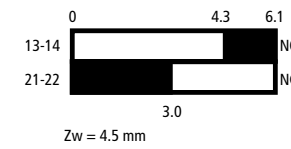
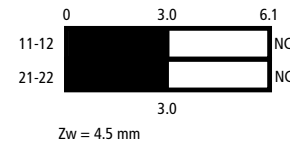
LS-20  
LS-S20  
LSM-20



LS-20A  
LS-S20A  
LSM-20A



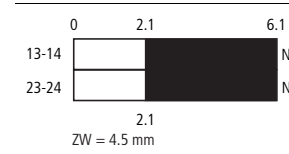
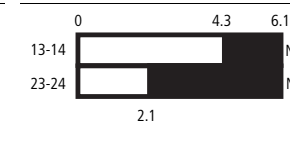
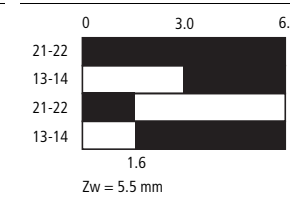
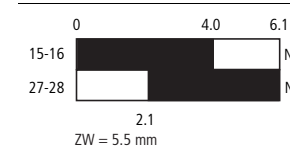
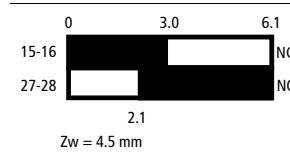
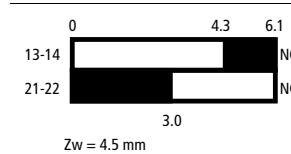
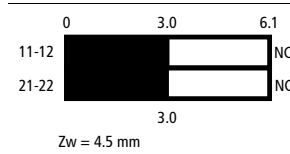
Basic units



Operating heads

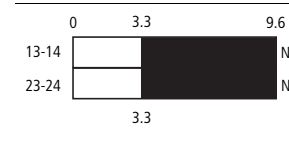
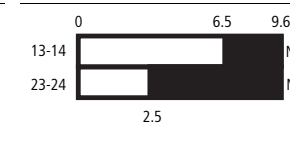
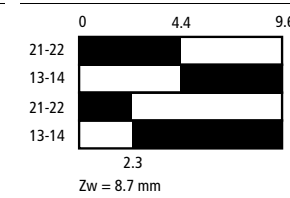
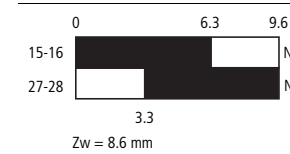
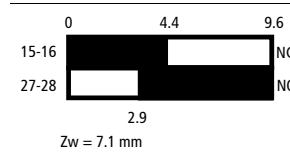
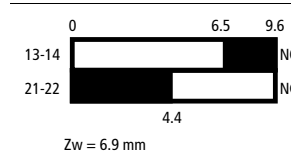
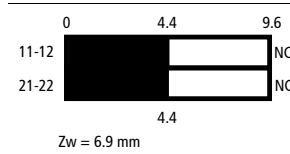
Roller plunger

LS-XP  
LSM-XP

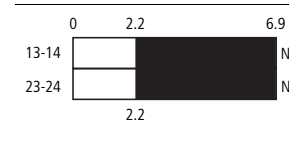
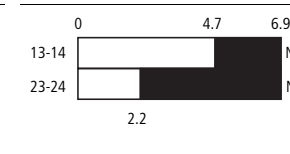
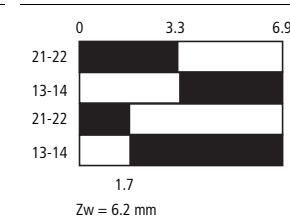
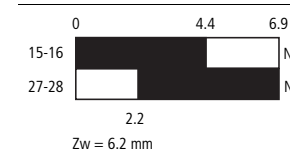
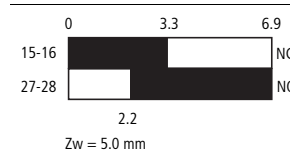
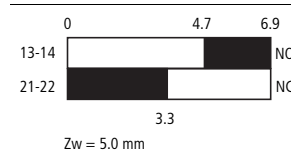
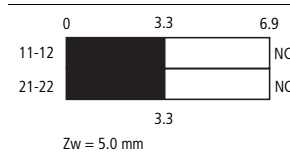


Roller lever

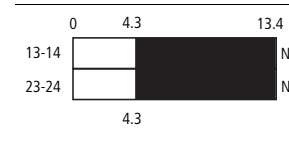
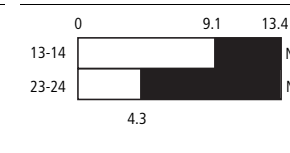
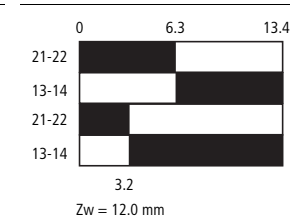
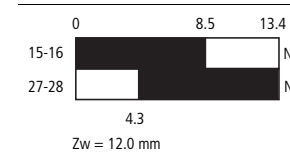
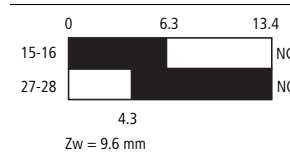
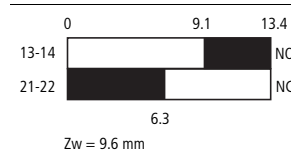
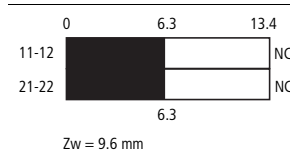
LS-XL, LSM-XL



Roller lever, short  
LS-XLS

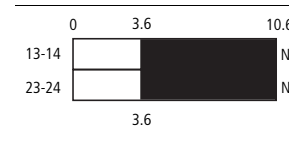
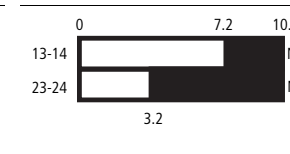
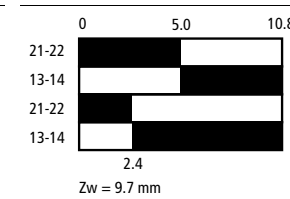
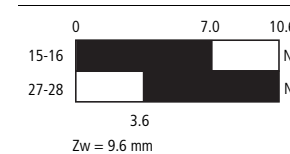
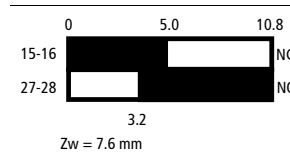
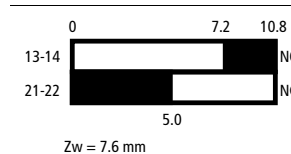
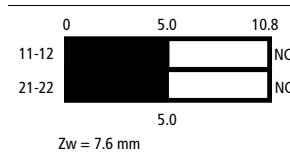


Roller lever, large  
LS-XLB



Angled roller lever

LS-XLA, LSM-XLA



Rotary lever

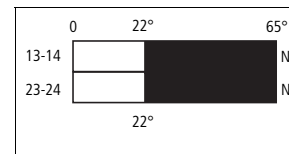
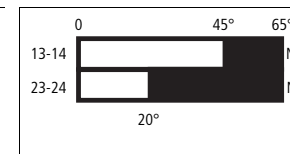
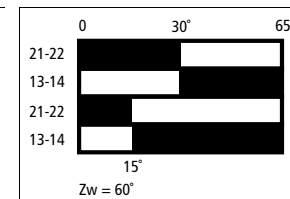
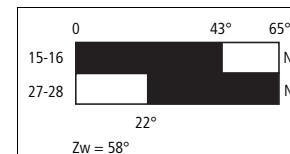
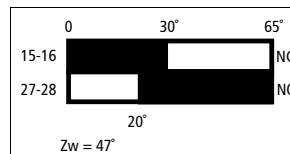
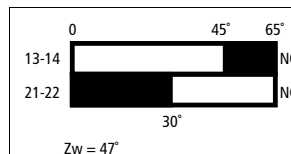
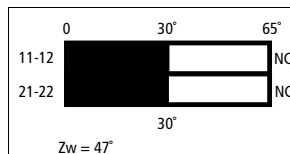
LS-XRL, LSM-XRL

Adjustable roller lever

LS-XRLA, LSM-XRLA,  
LS-XRLA30, LS-XRLA40,  
LS-XRLA40R

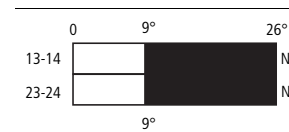
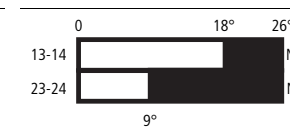
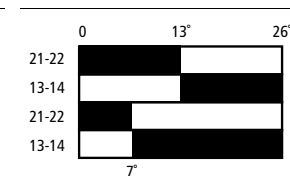
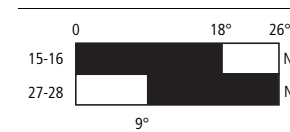
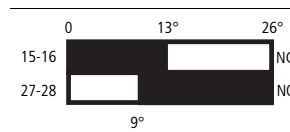
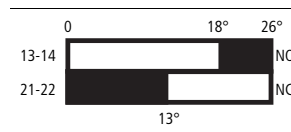
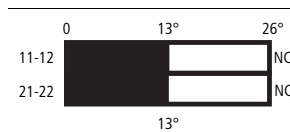
Actuating rod

LS-XRR, LSM-XRR,  
LS-XRRM, LSM-XRRM



Spring rod actuator

LS-XS, LSM-XS



## Technical data

				Complete units IP66, IP67			
				LS, LSM	LSE11 LSE02	LSE-AI	LSE-AU
<b>General</b>							
Standards				IEC/EN 60947	IEC/EN 60947 EN 61000-4	IEC/EN 60947 EN 61000-4	IEC/EN 60947 EN 61000-4
Climatic proofing				Damp heat, constant, to IEC 60068-2-78, Damp heat, cyclic, to IEC 60068-2-30			
Ambient temperature			°C	-25 - +70	-25 - +70	-25 - +70	-25 - +70
Mounting position				Any	Any	Any	Any
Protection type				IP66, IP67	IP66, IP67	IP66, IP67	IP66, IP67
Terminal capacity of screw terminal and Cage Clamp							
Solid			mm <sup>2</sup>	1 x (0.5 - 2.5)	1 x (0.5 - 2.5)	1 x (0.5 - 2.5)	1 x (0.5 - 2.5)
Flexible with ferrule to DIN 46228			mm <sup>2</sup>	1 x (0.5 - 1.5)	1 x (0.5 - 1.5)	1 x (0.5 - 1.5)	1 x (0.5 - 1.5)
<b>Power supply</b>							
Rated voltage			U <sub>e</sub> V DC	–	12...30	24 (-15...+20 %)	24 (-15...+20 %)
Rated operational current							
12 V			I <sub>e</sub> mA	–	15	–	–
24 V			I mA	–	18	28...45	24
30 V			I mA	–	19	–	–
<b>Contacts/switching capacity</b>							
Rated impulse withstand voltage			U <sub>imp</sub> V AC	4000	–	–	–
Rated insulation voltage			U <sub>i</sub> V	400	–	–	–
Overvoltage category/pollution degree				III/3	III/3	–	–
Rated operational current							
AC-15		24 V	I <sub>e</sub> A	6	–	–	–
		230 V/240 V	I <sub>e</sub> A	6	–	–	–
		400 V/415 V	I <sub>e</sub> A	4	–	–	–
DC-13		24 V	I <sub>e</sub> A	3	0.2	–	–
		110 V	I <sub>e</sub> A	0.8	–	–	–
		220 V	I <sub>e</sub> A	0.3	–	–	–
Analog output Q1							
Output voltage (max. 10 mA)			V DC	–	–	–	0...10
Output current			mA	–	–	4 - 20	–
Fault scenario			V	–	–	0	0
Resolution				Steps	–	100	100
Step tolerance				Steps	–	<1	<1
Shunt resistor, resistive load				Ω	–	< 400	> 1000
Digital diagnostics output Q2 (positive switching PNP)							
Response threshold			V	–	–	approx. U <sub>e</sub>	approx. U <sub>e</sub>
			mA	–	–	< 200	< 200
Fault scenario			V	–	–	0	0
Control circuit reliability							
At 24 V DC/5 mA			H <sub>F</sub> Fault frequency	< 10 <sup>-7</sup> , < 1 fault in 10 <sup>7</sup> operations	–	–	–
At 5 V DC/1 mA			H <sub>F</sub> Fault frequency	< 10 <sup>-6</sup> , < 1 fault in 5 x 10 <sup>6</sup> operations	–	–	–
Mains frequency				Hz	max. 400	–	–
Short-circuit rating to IEC/EN 60947-5-1							
Max. fuse			A gG/gL	6	–	–	–
Repetition accuracy				mm	± 0.02	± 0.02	± 0.02
<b>UL-File No. E29184</b>							
Rating data for approved types to UL/CSA							
Pilot Duty							
AC operated				A300	–	–	–
DC operated				Q300 (1 A, 250 V DC)	Q300 (0.2 A, 24 V DC)	–	–
UL-approved degrees of protection				NEMA 4, 12, 13	NEMA 4, 12, 13	NEMA 4, 12, 13	NEMA 4, 12, 13



				Complete units IP66, IP67		
				LS, LSM	LSE11 LSE02	LSE-AI LSE-AU
<b>Mechanical data</b>						
Lifespan						
Standard action contact	Operations	x 10 <sup>6</sup>	8	–	–	3
Snap-action contact	Operations	x 10 <sup>6</sup>	8	3 (electronic)	–	–
Contact temperature of roller head		°C	≤ 100	≤ 100	–	≤ 100
Mechanical shock resistance (half-sinusoidal shock, 20 ms)						
Standard action contact		g	25	–	–	–
Snap-action contact		g	–	–	–	–
Basic Unit		g	–	30	–	30
Operating frequency	Operations/h		≤ 6000	≤ 3000	–	≤ 3000
Switching point			–	0.5 - 5.5 mm, freely adjustable	–	–
Hysteresis		mm	–	0.4	–	0.4
Resolution		mm	–	0.04	–	0.06
<b>Drive</b>						
Mechanical						
Actuating force at beginning/end of stroke						
Basic units		N	1.0/8.0	3.5/8.0	–	3.5/8.0
LS(M)-XP		N	1.0/8.0	1.0/8.0	–	1.0/8.0
LS(M)-XL		N	1.0/8.0	1.0/8.0	–	1.0/8.0
LS(M)-XLA		N	1.0/8.0	1.0/8.0	–	1.0/8.0
Actuating torque of rotary drives		Nm	0.2	0.2	–	0.2
Max. operating speed with DIN cam						
Basic unit for angle of actuation	α = 0°/30°	m/s	1/0.5	1/0.5	–	1/0.5
LS(M)-XRL for angle of actuation	α = 0°	m/s	1.5	1.5	–	1.5
LS(M)-XRLA for angle of actuation	α = 30°, L = 125 mm	m/s	1.5	1.5	–	1.5
LS(M)-XRR for	L = 130 mm	m/s	1.5	1.5	–	1.5
LS(M)-XL for angle of actuation	α = 30°/45°	m/s	1	1	–	1
LS(M)-XLA for angle of actuation	α = 30°/45°	m/s	1	1	–	1
LS(M)-XP for angle of actuation	α = 0°/30°	m/s	1/1	1/1	–	1/1
<b>Electromagnetic compatibility (EMC)</b>						
Electrostatic discharge (ESD), to IEC EN 61000-4-2						
Air discharge		kV	–	8	–	8
Contact discharge		kV	–	4	–	4
Electromagnetic fields (RFI), to IEC EN 61000-4-2		V/m	–	10	–	10
Burst, to IEC/EN 61000-4-4						
Supply cables		kV	–	2	–	2
Signal cables		kV	–	2	–	2
High-energy pulses (surge) (IEC/EN 61000-4-5)		kV	–	0.5	–	0.5
Radiated RFI, to IEC/EN 61000-4-6		V	–	10	–	10

**Notes**

Accessories for the Cage Clamp terminals from Wago:  
Power comb, gray, Wago Article No. 264-402

				plug connectors	
				M12A(B)	M12A(B)
<b>General</b>					
Pole				4	5
Protection type				IP66	IP66
Lifespan, mechanical		Operations	> 500	> 500	
<b>Characteristic values</b>					
Rated operating voltage		U <sub>e</sub>	V AC	250	125
Rated operational current		I <sub>e</sub>	A	1	1
Overvoltage category/pollution degree				II/3	II/3

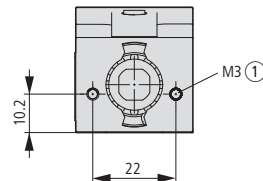
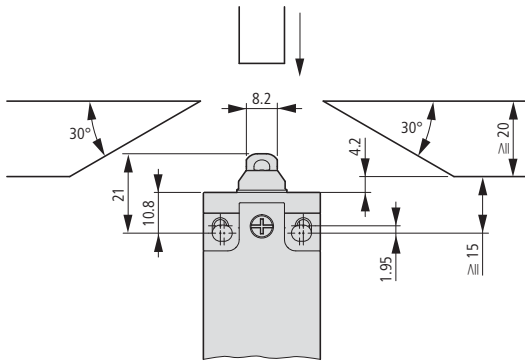


				Safety position switches			
				LS-...ZBZ	LS-...ZB	LS4...ZB	LSR...
<b>General</b>							
Standards				IEC/EN 60947	IEC/EN 60947	IEC/EN 60947	IEC/EN 60947
Climatic proofing				Damp heat, constant, to IEC 60068-2-78, Damp heat, cyclic, to IEC 60068-2-30			
Ambient temperature		°C		-25 - +40	-25 - +70	-25 - +70	-25 - +70
Mounting position				Any	Any	Any	Any
Protection type				IP65	IP65	IP65	IP65
Terminal capacity							
Solid		mm <sup>2</sup>		1 x (0.75 - 2.5) 2 x (0.75 - 1.5)	1 x (0.5 - 1.5) 2 x (0.5 - 1.5)	1 x (0.75 - 2.5) 2 x (0.75 - 1.5)	1 x (0.75 - 2.5) 2 x (0.75 - 1.5)
Flexible with ferrule to DIN 46228		mm <sup>2</sup>		1 x (0.5 - 1.5) 2 x (0.5 - 1.5)	1 x (0.5 - 1.5) 2 x (0.5 - 1.5)	1 x (0.5 - 1.5) 2 x (0.5 - 1.5)	1 x (0.5 - 1.5) 2 x (0.5 - 1.5)
Terminal screw				PH1	PH1	PH1	PH1
Terminal screw tightening torque		Nm		0.9	0.4	0.9	0.9
<b>Contacts/switching capacity</b>							
Rated impulse withstand voltage	$U_{imp}$	V AC		4000	6000	6000	6000
Rated insulation voltage	$U_i$	V		400	500	500	500
Overvoltage category/pollution degree				III/3	III/3	III/3	III/3
Rated operational current							
AC-15	24 V	$I_e$	A	6	6	10	10
	230 V/240 V	$I_e$	A	6	6	6	6
	400 V/415 V	$I_e$	A	4	4	4	4
DC-13	24 V	$I_e$	A	3	3	3	3
	110 V	$I_e$	A	0.8	0.8	0.8	1
	220 V	$I_e$	A	0.3	0.3	0.3	0.5
Mains frequency		Hz		max. 400	max. 400	max. 400	max. 400
Short-circuit rating to IEC/EN 60947-5-1							
Max. fuse		A gG/gL		6	6	6	6
Repetition accuracy		mm		± 0.02	± 0.02	± 0.02	± 0.02
<b>Mechanical data</b>							
Lifespan							
Standard action contact	Operations	$\times 10^6$		1	10	10	20
Snap-action contact	Operations	$\times 10^6$		–	–	–	20
Mechanical shock resistance (half-sinusoidal shock, 20 ms)							
Standard action contact		g		10	25	5	25
Snap-action contact		g		–	2	–	2
Operating frequency	Operations/h			≤ 800	≤ 1800	≤ 1800	≤ 1800
<b>Drive</b>							
<b>Mechanical</b>							
Actuating force at beginning/end of stroke							
ZB/ZBZ (push-in/pull-out)		N		25/15	10/5	15/20	
Mechanical holding force acc. to GS-ET-19 (04/2004)							
XG, XW, XNG		N		1700	–	–	
XWA, XFG, XF		N		1600	–	–	
XNW		N		1200	–	–	
<b>Electro mechanical</b>							
For magnet							
Power consumption							
At 120 V AC		VA		8	–	–	
At 230 V AC		VA		11	–	–	
At 24 V DC		W		8	–	–	
Voltage tolerance		$\times U_s$		0.85 - 1.1			
Magnet duty factor		% DF		100	–	–	
<b>UL-File No. E29184</b>							
Rating data for approved types to UL/CSA 1)							
<b>General Use</b>							
AC operated		V		300	–	–	
AC operated		A		10	–	–	
<b>Pilot Duty</b>							
AC operated				A300	A300	A300	
DC operated				Q300	Q300 (1 A, 250 V DC)	Q300	
UL-approved degrees of protection				NEMA 4, 12, 13	NEMA 12, 13	–	

**Dimensions**

**Basic units, non expandable (front fixing)**

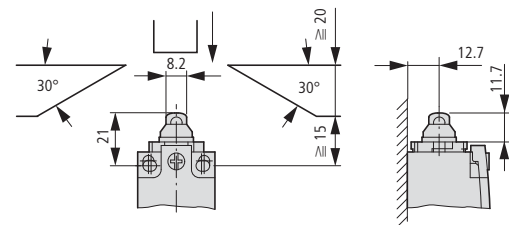
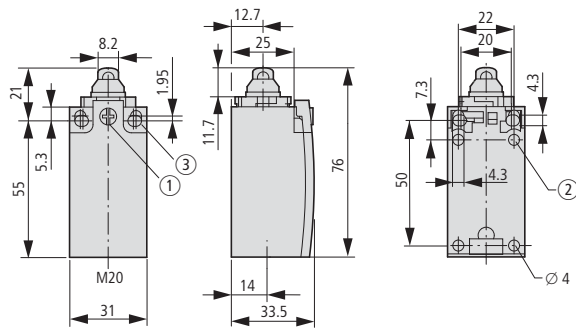
LS(M)-.../F



① Screw-in depth max. 12 mm

**Basic units, expandable,**

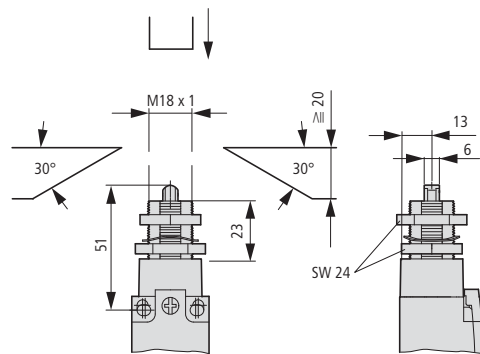
LS-..., LSM-..., LSE-...



- ① Tightening torque of cover screw: 0.8 Nm ±0.2 Nm
  - ② Only with LS (insulated version)
  - ③ Fixing screw 2 x M4 ≥ 30
- $M_A = 1.5 \text{ Nm}$

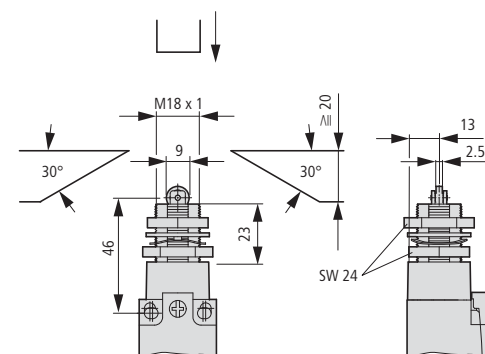
**Rounded plunger, center fixing**

LS-XZS



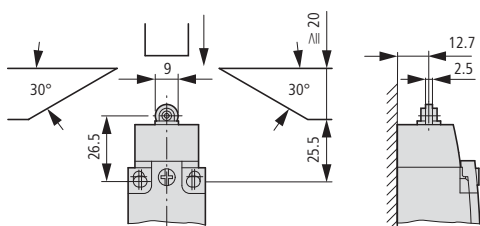
**Roller plunger, center fixing**

LS-XZRS



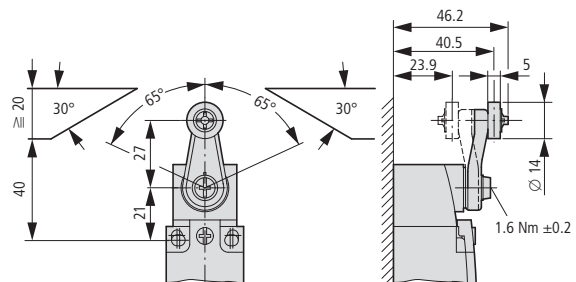
**Roller plunger**

LS(M)-.../P



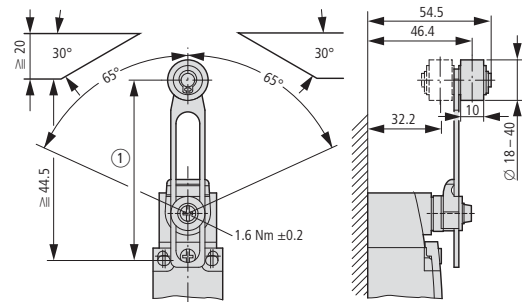
**Rotary lever**

LS(M)-.../RL



**Adjustable roller lever**

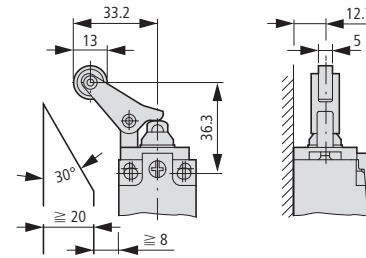
LS(M)-.../RLA



① Setting range from 54.5 to 97

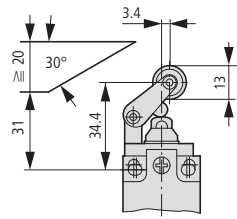
**Angled roller lever**

LS(M)-XLA



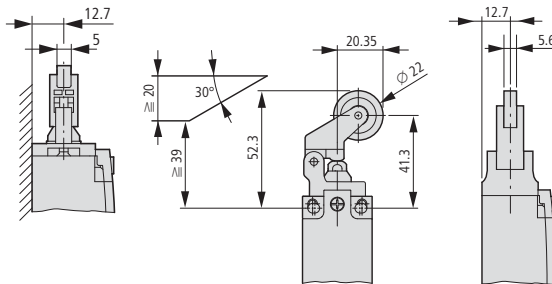
**Roller lever**

LS(M)-.../L



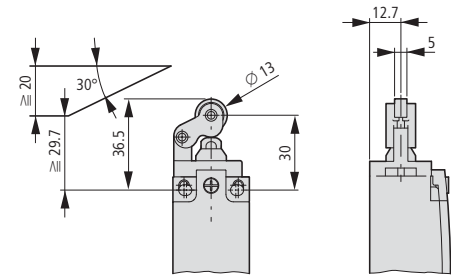
**Roller lever**

LS(M)-.../LB



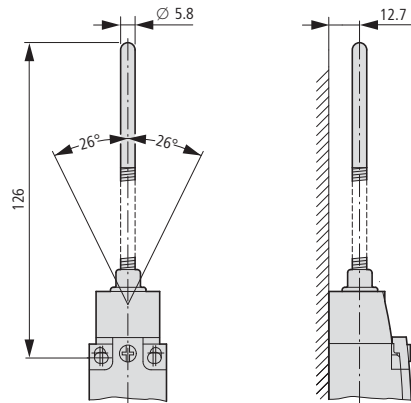
**Roller lever**

LS(M)-.../LS



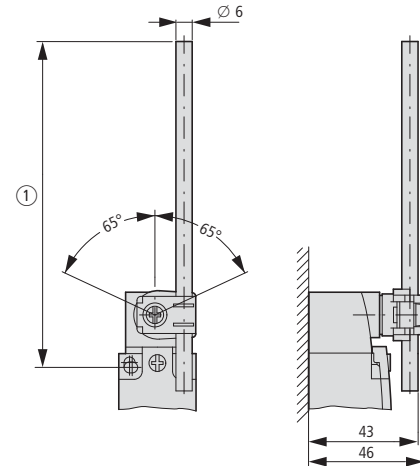
**Spring rod**

LS(M)-.../S



**Actuating rod**

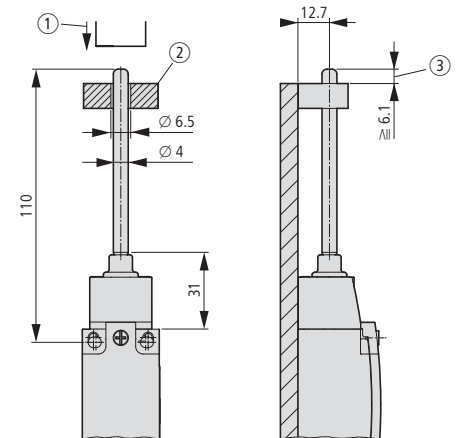
LS(M)-.../RR



① LS.../RR ≤ 150  
LS.../RRM ≤ 210

**Actuating rod**

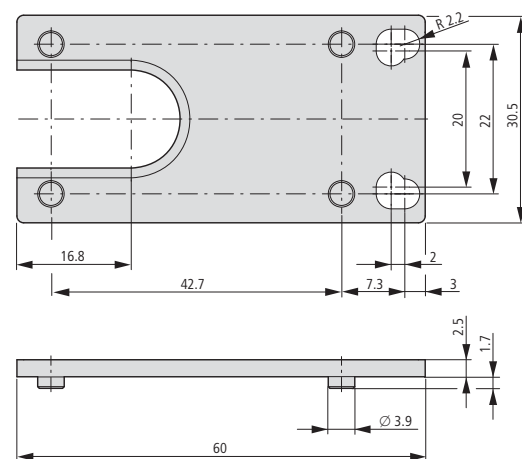
LS(M)-.../OR



① Approach direction, vertical  
② Guide is done by customer, not included  
③ Max. push-through

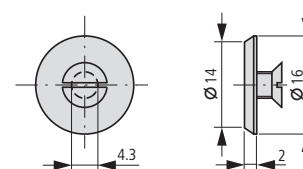
**Adapter plate**

LS-XAP



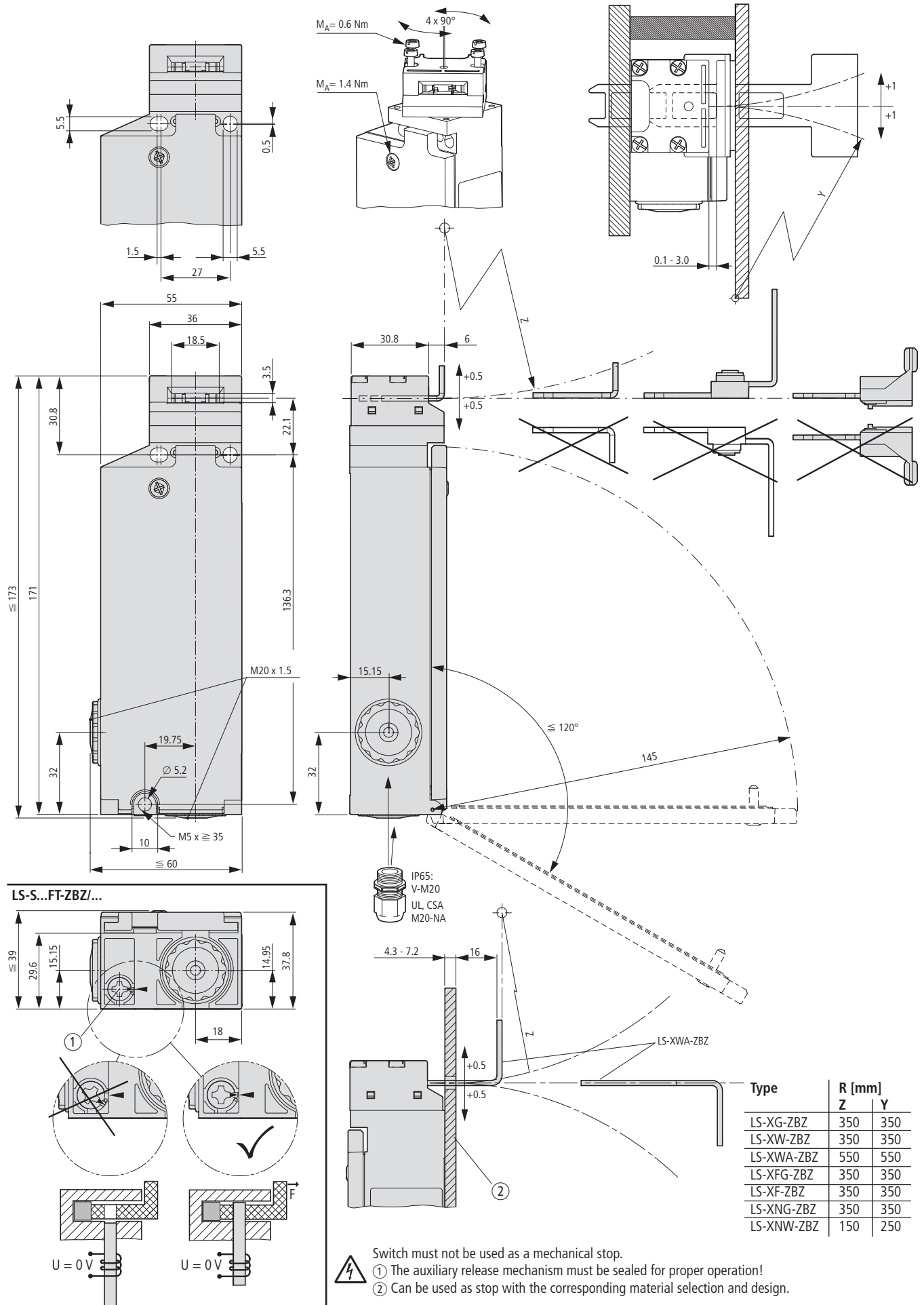
**Locating plate**

FS-AT



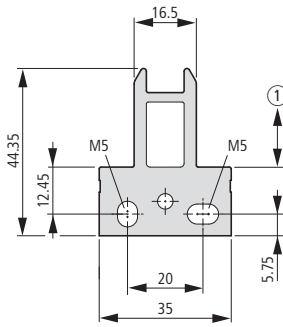


Safety position switches LS...ZBZ

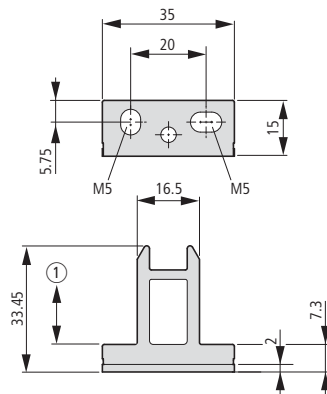


Actuating element

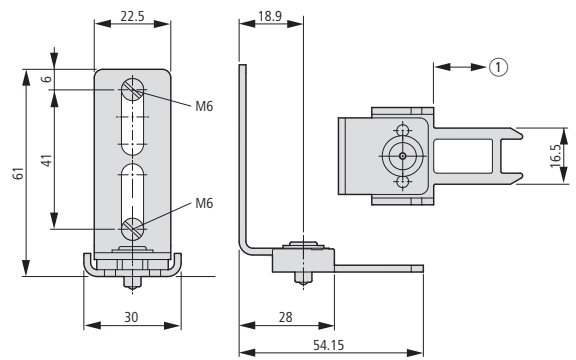
LS-XG-ZBZ



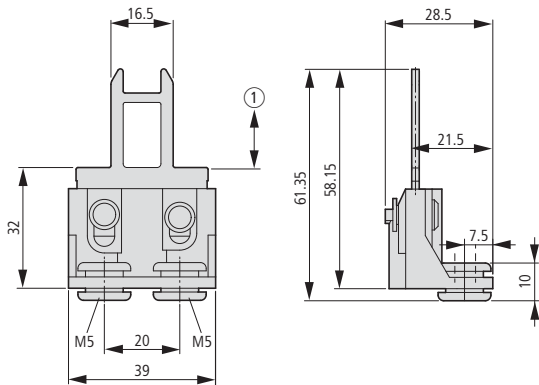
LS-XW-ZBZ



LS-XF-ZBZ

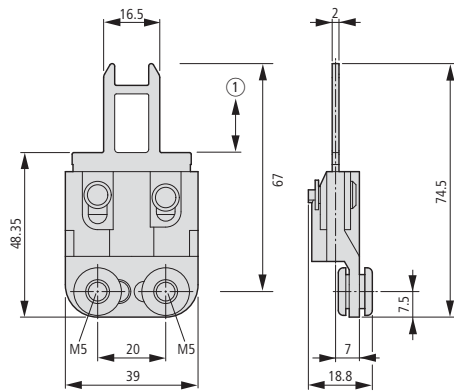


LS-XNW-ZBZ



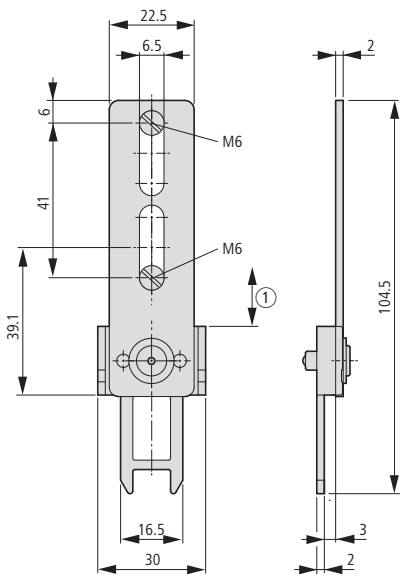
Fixing only allowed with M5 fixing screw and washer according to DIN EN ISO 7093

LS-XNG-ZBZ



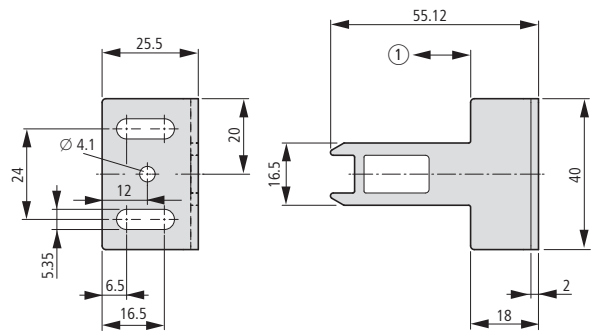
Fixing only allowed with M5 fixing screw and washer according to DIN EN ISO 7093

LS-XFG-ZBZ

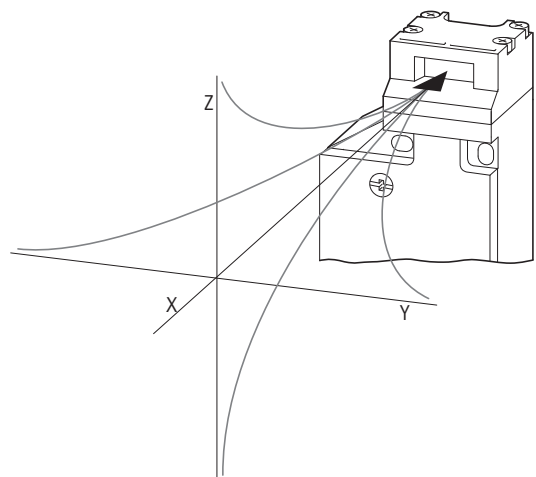


Part no.	R [mm]		
	F [N]	Z	Y
LS-XG-ZBZ	1700	350	350
LS-XW-ZBZ	1700	350	350
LS-XWA-ZBZ	1600	550	550
LS-XFG-ZBZ	1600	350	350
LS-XF-ZBZ	1600	350	350
LS-XNG-ZBZ	1700	350	350
LS-XNW-ZBZ	1200	150	250

LS-XWA-ZBZ



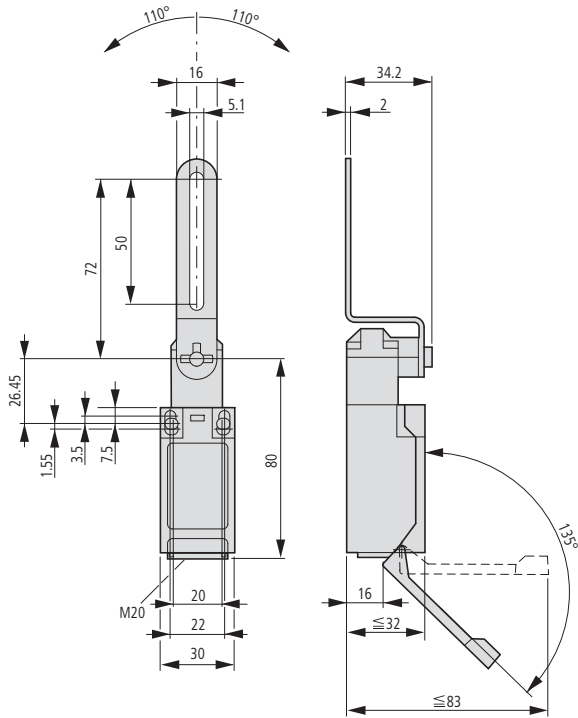
Pin with a 4 mm pin after mounting



① Distance to unit head = 0.1 ... 3.0 mm

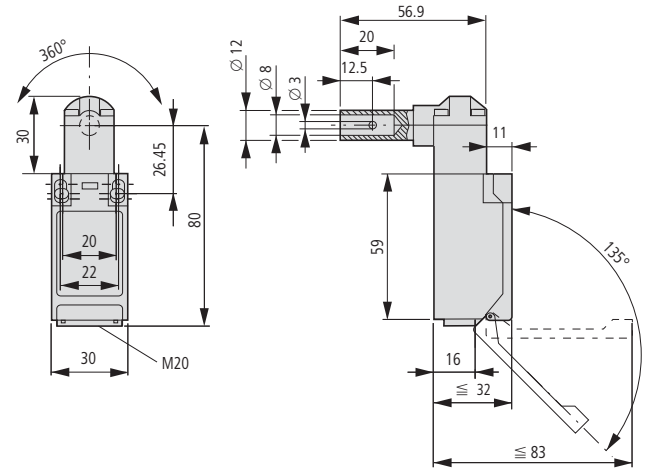
Hasp-operated safety switches

LSR.../TKG



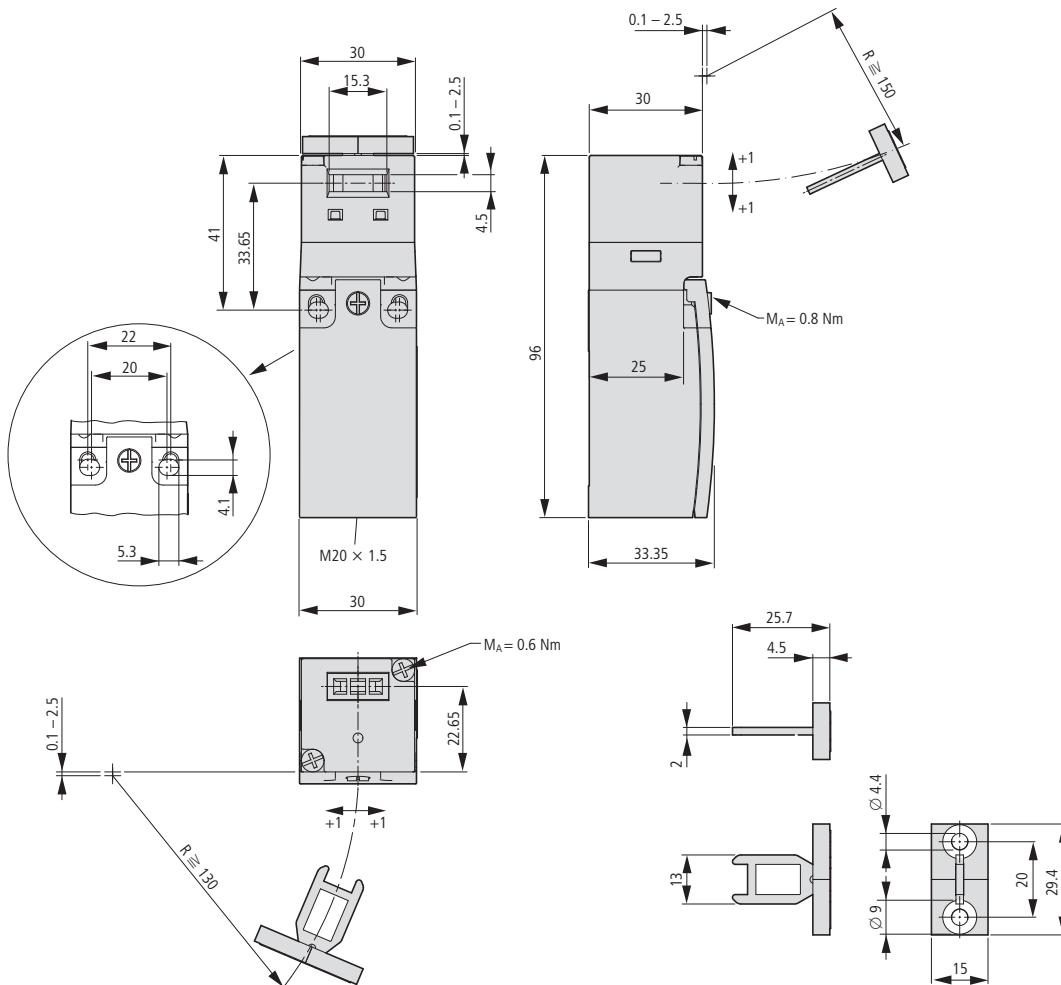
Safety hinge switches

LSR.../TS



Safety position switches

LS...ZB



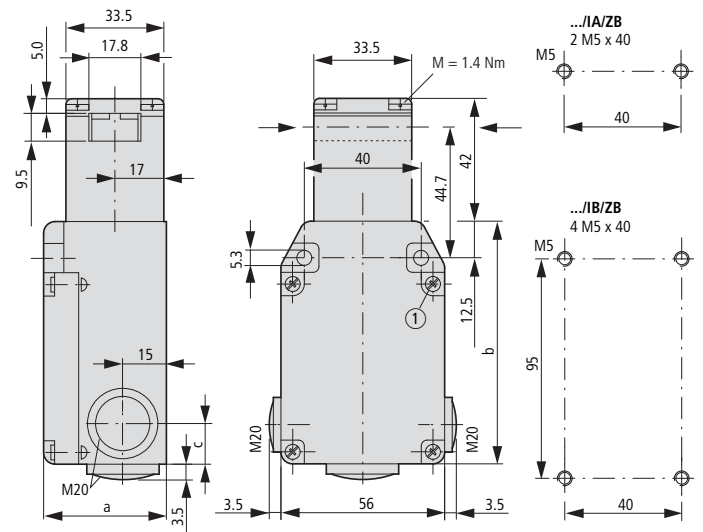
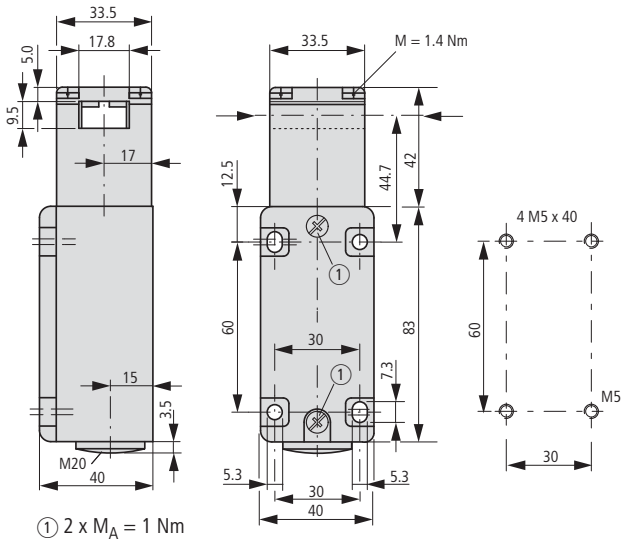
Switch must not be used as a mechanical stop.

Safety position switches

LS4...ZB

LS4/.../IA/ZB

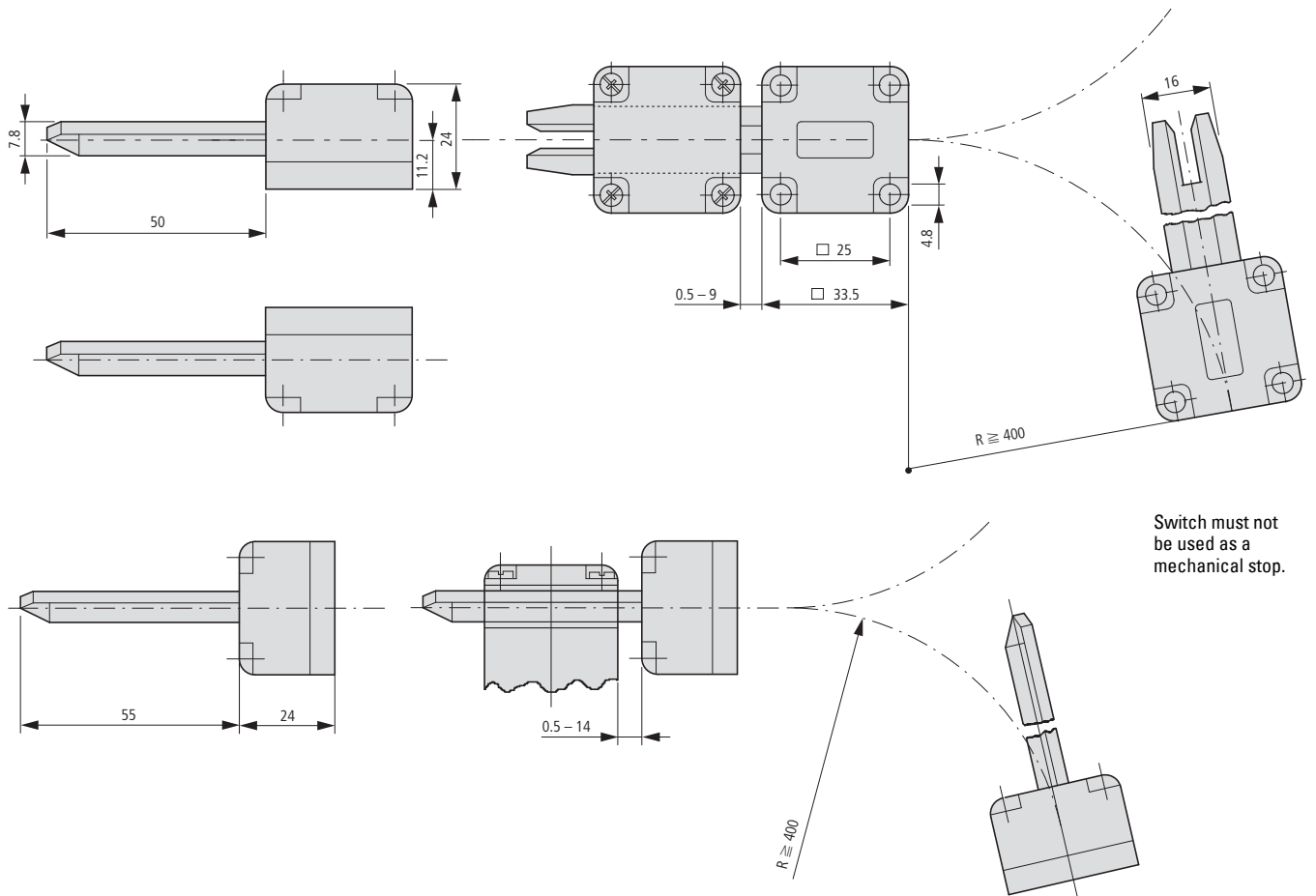
LS4/.../IB/ZB



① 4 x  $M_A = 1 \text{ Nm}$

	a	b	c
LS4/S.../IA/ZB	41.5	83	16.7
LS4/S.../IB/ZB	43	115	29.5

Actuators



Switch must not be used as a mechanical stop.

HPL03031EN



Make and break pressure: **Separately** infinitely adjustable. Pressures can be set to any point within the area of the pressure diagram for the appropriate switch.

Max. operating pressure  
bar

Part no. Article no. Price See price list

Std. pack Notes

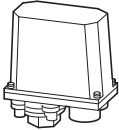
**Pressure switches with main contacts IP65, 3 pole**

		<p>Variable switching differential</p>	<p>7</p>	<p><b>MCSN4</b> 057679</p>	<p>1 off</p>	<p>Features:</p> <ul style="list-style-type: none"> <li>• With terminal cover as standard</li> <li>• 1 insulated protective wire terminal ⊕</li> <li>• 1 insulated N terminal</li> <li>• 2 cable entry knockouts for M20, without cable gland</li> <li>• IP65 in conjunction with V-M20 cable gland</li> <li>• Pressure pipe flange R 1/2"</li> <li>• Please enquire: Pressure pipe flange R 1/4"</li> <li>• Neoprene diaphragm</li> </ul> <p>R 1/4" corresponds to G 1/4 R 1/2" corresponds to G 1/2 to ISO 228-1</p> <p>For use as a motor load switch to IEC/EN 60947-4-1 for:</p>
		<p>With relief valve for 6 mm compression fitting</p>	<p>7</p>	<p><b>MCSN4-V</b> 062425</p>		
		<p>Variable switching differential</p>	<p>15</p>	<p><b>MCSN11</b> 029203</p>		<p><b>Three-phase current AC-3</b></p>
		<p>With relief valve for 6 mm compression fitting</p>	<p>15</p>	<p><b>MCSN11-V</b> 033949</p>		<p><b>Single-phase current</b></p>
		<p>Variable switching differential</p>	<p>25</p>	<p><b>MCSN16</b> 038695</p>		<p><b>Direct current DC-3</b></p>
		<p>With relief valve for 6 mm compression fitting</p>	<p>25</p>	<p><b>MCSN16-V</b> 043441</p>		<p><b>For use as control switch:</b></p>
		<p>Variable switching differential</p>	<p>25</p>	<p><b>MCSN22</b> 048187</p>		<p>Factory setting of cut-in and cut-out pressure via type suffix: → Page 3/33</p>
		<p>With relief valve for 6 mm compression fitting</p>	<p>25</p>	<p><b>MCSN22-V</b> 052933</p>		



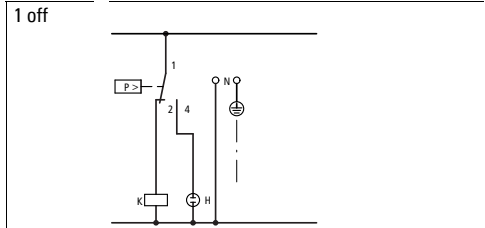
Contacts	Max. operating pressure	Make and break pressure: <b>separately</b> infinitely adjustable. Pressures can be set to any point within the area of the pressure diagram for the appropriate switch.	Variable switching differential	Price	Std. pack	Notes
Number	bar		Part no. Article no.	See price list		

**Pressure switch with auxiliary contacts, IP65**



1 changeover contact	7	<p>Min. switching differential: 0.2 bar Example: Cut-out pressure 3.3 bar Cut-in pressure 2.2 bar</p>
1 changeover contact with gold-plated	7	
2 changeover contacts with gold-plated contacts	7	

<b>MCS4</b> 019711
<b>MCS4-G<sup>1)</sup></b> 058693
<b>MCS4-SOND910-G<sup>1)</sup></b> 087792



- Features:**
- Pressure pipe flange R ¼"
  - If required: pressure pipe flange R ½"
  - IP65 in conjunction with V-M20 cable gland
  - 1 Insulated protective wire terminal ⊕
  - 2 cable entry knockouts for M20
  - Neoprene diaphragm, resistant to aging, air, engine oil, and water  
min. -25 °C, max. +80 °C

1 changeover contact	15	<p>Min. switching differential: 0.3 bar Example: Cut-out pressure 8.5 bar Cut-in pressure 4.5 bar</p>
1 changeover contact with gold-plated	15	
2 changeover contact with gold-plated contacts	15	

<b>MCS11</b> 088527
<b>MCS11-G<sup>1)</sup></b> 058692
<b>MCS11-SOND910-G<sup>1)</sup></b> 087793

Factory setting of cut-in and cut-out pressure via type suffix: → Page 3/33

R ¼" corresponds to G ¼  
R ½" corresponds to G ½ to ISO 228-1

Auxiliary contact to IEC/EN 60947-1



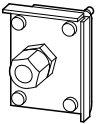

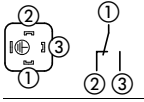
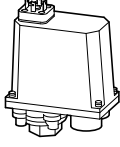
<sup>1)</sup> Gold contacts are specially suitable for switching small voltages and currents from 12 V AC/DC, 0.1 A.

1 changeover contact	25	<p>Min. switching differential: 0.7 bar Example: Cut-out pressure 17.5 bar Cut-in pressure 7.8 bar</p>
1 changeover contact with gold-plated	25	
2 changeover contact with gold-plated contacts	25	

<b>MCS22</b> 098019
<b>MCS22-G<sup>1)</sup></b> 058691
<b>MCS22-SOND910-G<sup>1)</sup></b> 087794

HPL03033EN



For use with	Part no. Article no.	Price See price list	Std. pack	Notes
<b>Pressure pipe flange</b>				
	MCS with R 1/2"	<b>+R1/2"-MCS</b> 001627	1 off	Order no. when ordering basic unit
	MCS with R 1/2"	<b>R1/2"-MCS</b> 031617		Order no. when ordering separately
	MCSN(-V) with R 1/4"	<b>+R1/4"-MCSN</b> 001628		Order no. when ordering basic unit
	MCSN(-V) with R 1/4"	<b>R1/4"-MCSN</b> 033990		Order no. when ordering separately
<b>Pressure pipe flange with pressure gauge connection</b>				
	MCS, MCSN(-V)	<b>+M-MCS</b> 001625	1 off	Order no. when ordering basic unit
	MCS, MCSN(-V)	<b>M-MCS</b> 071913		Order no. when ordering separately
<b>Compression fitting</b>				
	MCS, MCSN	<b>+E8-MCS</b> 001624	1 off	Order no. when ordering basic unit
	MCS, MCSN	<b>E8-MCS</b> 040949		Order no. when ordering separately
<b>Wall fixing bracket</b>				
	MCS, MCSN	<b>+W-MCS</b> 001631	1 off	Order no. when ordering basic unit
	MCS, MCSN	<b>W-MCS</b> 050665	10 off	Order no. when ordering separately
<b>External unit plug, IP65</b>				
3 poles plus earth for socket adapters to DIN 43650-A/ISO 4400 Plug configuration: 				
	MCS MCS...-G Not for use with MCS...SOND910-G	<b>+S3-MCS</b> 201854	1 off	Order no. when ordering basic unit
<b>Pressure setting</b>				
Standard setting of the cut-in and cut-out pressures When ordering, the type reference must include the following details: 1st wildcard $\triangle$ cut-in pressure in bar 2nd wildcard $\triangle$ cut-out pressure in bar				
MCS, MCSN	<b>+PMIN(*)/PMAx(*)</b> 203948		1 off	Order no. when ordering basic unit

**Notes**

**Ordering example**

- Desired part no.: MCS4
  - Required cut-in pressure in bar: 2.2
  - Required cut-out pressure in bar: 3.3
- A maximum of one decimal place after the comma is possible with the pressure definition.  
The correct part no. is:  
**MCS4 + PMIN(2.2)/PMAx(3.3)**



Rating data for approved types to UL/CSA <sup>1)</sup>	Max. pressure  psi <sup>2)</sup>	Rated insulation voltage to UL/CSA  V AC	Maximum motor rating HP = PS					Rated operational current  I <sub>e</sub>  A	Part no. Article no.	Price  See price list	Std. pack
			115 V HP	200 V HP	230 V HP	460 V HP	575 V HP				
<b>MCS(N) pressure switches, IP55</b>											
With transparent hood											
1 pole only for single-phase motors <sup>4)</sup>	65	300	0.25 <sup>3)</sup>	0.5 <sup>3)</sup>	–	–	–	10	<b>MCS4FORMCDN</b> 024457		1 off
	160		0.25 <sup>3)</sup>	0.5 <sup>3)</sup>	–	–	–	10	<b>MCS11FORMCDN</b> 093273		
	315		0.25 <sup>3)</sup>	0.5 <sup>3)</sup>	–	–	–	10	<b>MCS22FORMCDN</b> 014965		
3 pole <sup>4)</sup>	65	600	–	3	3	5	7.5	10	<b>MCSN4FORMCDN</b> 064798		1 off
	160		–	3	3	5	7.5	10	<b>MCSN11FORMCDN</b> 036322		
	230		–	3	3	5	7.5	10	<b>MCSN16FORMCDN</b> 045814		

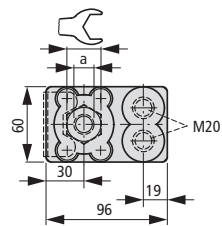
**Notes**


- <sup>1)</sup> Devices for world markets IEC  $\triangle$  UL/CSA
- <sup>2)</sup> In North America, pressure is stated in pounds/inch (psi) (1 bar = 14.5 psi)
- <sup>3)</sup> Heavy Pilot Duty = High switching duty
- <sup>4)</sup> Selection data and application notes  $\rightarrow$  3/32

**Dimensions**

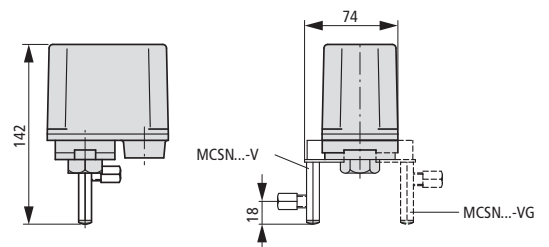
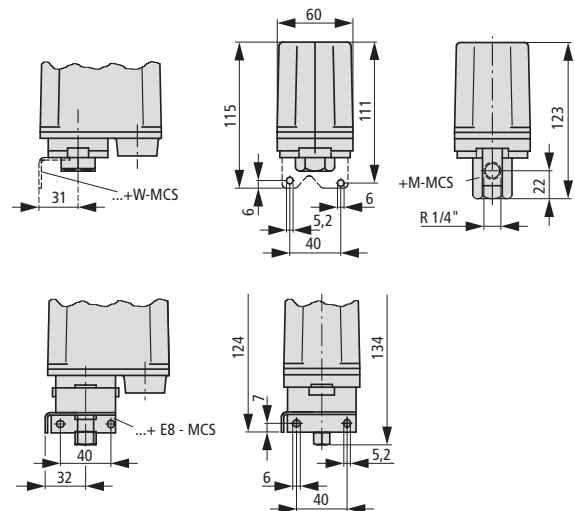
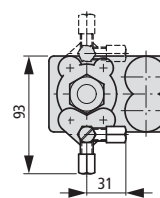
**Pressure switches**

MCS..., MCSN...



Part no.	Pipe in-lead	a	
MSC...	2 x M20	R 1/4"	27
MCSN...	2 x M20	R 1/2"	36

MCSN...V  
With relief valve





			Pressure switches		
			MCS	MCS...SOND910-G	MCSN
<b>General</b>					
Standards			IEC/EN 60947-5-1		
Test pressure		bar	32	32	32
Bursting pressure		bar	90	90	90
Operating frequency	Operations/h		≤ 3000	≤ 3000	≤ 1500
Climatic proofing			Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30		
Ambient temperature		°C	-25 - 70	-25 - 70	-25 - 70
Protection type			IP65	IP65	IP65
Mounting position			Any	Any	Any
Mechanical shock resistance to IEC 60068-2-27	Half-sinusoidal shock 20 ms	g	> 10	> 10	> 10
Vibration resistance acc. to IEC/EN 60068-2-6	Amplitude 1 mm	Hz	36	36	36
Lifespan at 50 % - 12 % pressure differential	Operations	x 10 <sup>6</sup>	1...2	1...2	0.5
Terminal capacity					
Solid		mm <sup>2</sup>	1 x (0.75 - 2.5)	1 x (0.75 - 2.5)	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
Flexible with ferrule to DIN 46228		mm <sup>2</sup>	1 x (0.5 - 1.5)	1 x (0.5 - 1.5)	1 x (0.5 - 1.5) 2 x (0.5 - 1.5)
Terminations			Tunnel-type screw terminal	Tunnel-type screw terminal	Flat terminal with clamping washer
Terminal screw			M3	M3	M4
Terminal screw tightening torque		Nm	0.5	0.5	1.2
<b>Contacts/switching capacity</b>					
Rated impulse withstand voltage	U <sub>imp</sub>	V AC	4000	4000	4000
Rated insulation voltage	U <sub>i</sub>	V	400	400	400
Overvoltage category/pollution degree			III/3	III/3	III/3
Max. short-circuit protective unit					
Fuseless		Part no.	PKZ2/ZM6	PKZ2/ZM6	PKZ2/ZM16
Fuse	gG/gL	A	10	10	20
Type of coordination			–	–	1
AC-15					
Rated operational current					
230 V		A	2	–	–
AC-3					
Rated operational current					
230 V		A	–	–	15
400 V		A	–	–	11.5
Motor rating P					
230 V		kW	–	–	4
400 V		kW	–	–	5.5
DC-13					
Rated operational current					
24 V		A	2	0.8	–
110 V		A	0.25	0.25	–
DC-3					
Rated operational current					
24 V		A	–	–	16
110 V		A	–	–	12.5
250 V		A	–	–	2
Rated frequency	f	Hz	50	50	50



## Description



- ① Outputs with function display on all models.
- ② All models with M12 plug connector or cable (2 m).
- ③ Versions for flush or non-flush mounting available.

### Short description

Eaton's proximity sensors of the Global series have been developed specially for OEM series production. The sensors feature only the functions required for reliable operation. This means that you do not pay for additional, unnecessary functions but get the performance and features you expect from a sensor. Our DC versions feature a short-circuit protective unit and a rating of up to 2000 measuring cycles per second. The outputs of all models are equipped with a function display. The Global series includes models with various diameters from 8 to 30 mm, making it truly versatile in installation. Versions with various ranges are also available. The Global proximity sensors are DC or AC units with a 2- or 3-wire, NPN or PNP configuration. Versions for hard-wiring or with M12 plug connector are available. The DC versions have a rated load current of 100 mA, the AC versions 200 mA.

### Product features







- The Global Proximity Line features solid performance and a basic feature set for reliable, cost-effective sensing.
- Available in a variety of sizes to fit in all of your applications: 8 mm, 12 mm, 18 mm und 30 mm diameters.
- The input voltage of the DC versions is 10 – 30 V DC with a 2- and 3-wire configuration (PNP and NPN).
- The input voltage of the AC versions is 2-AC 20...250 V.
- The operating frequency of the DC versions is 2 kHz.
- Versions for flush or non-flush installation available.
- Connection through cable (2 meters) or M12 plug connector.
- The DC versions feature short-circuit protection.

### Approvals



HPL03037EN

Ordering







	Rated operational voltage	Rated switching distance S <sub>n</sub> mm	Installation type	Switching type	Connection options:	Contact configuration N/O = normally open contact NC = normally closed contact	Material	Part no. Article no.	Price See price list	Std. pack	
<b>E57 Global series</b>											
<b>2-wire</b>											
<b>M12 x 1</b>											
	10 - 30 V DC	2	Flush	–	2 m connection cable	1 N/O	Metal	<b>E57-12GS02-D</b> 135883		1 off  	
		2	Flush	–	plug connector M12 x 1	1 N/O	Metal	<b>E57-12GS02-DBB</b> 135884			
		4	Non-flush	–	2 m connection cable	1 N/O	Metal	<b>E57-12GU04-D</b> 135891			
		4	Non-flush	–	2 m connection cable	1 NC	Metal	<b>E57-12GU04-D1</b> 135892			
		4	Non-flush	–	plug connector M12 x 1	1 N/O	Metal	<b>E57-12GU04-DBB</b> 135893			
		8	Non-flush	–	2 m connection cable	1 NC	Metal	<b>E57-12GE08-D1</b> 135872			
		8	Non-flush	–	plug connector M12 x 1	1 NC	Metal	<b>E57-12GE08-D1DBB</b> 135873			
		8	Non-flush	–	plug connector M12 x 1	1 N/O	Metal	<b>E57-12GE08-DBB</b> 135874			
		8	Non-flush	–	2 m connection cable	1 N/O	Metal	<b>E57-12GE08-D</b> 135871			
	20 - 250 V AC	2	Flush	–	2 m connection cable	1 N/O	Metal	<b>E57-12GS02-A</b> 135879			
		2	Flush	–	plug connector M12 x 1	1 N/O	Metal	<b>E57-12GS02-AAB</b> 135880			
		4	Non-flush	–	2 m connection cable	1 N/O	Metal	<b>E57-12GU04-A</b> 135887			
		4	Non-flush	–	plug connector M12 x 1	1 N/O	Metal	<b>E57-12GU04-AAB</b> 135888			
	<b>M18 x 1</b>										
		10 - 30 V DC	5	Flush	–	2 m connection cable	1 N/O	Metal	<b>E57-18GS05-D</b> 135929		1 off  
5			Flush	–	plug connector M12 x 1	1 N/O	Metal	<b>E57-18GS05-DBB</b> 135930			
8			Non-flush	–	2 m connection cable	1 N/O	Metal	<b>E57-18GU08-D</b> 135937			
8			Non-flush	–	plug connector M12 x 1	1 N/O	Metal	<b>E57-18GU08-DBB</b> 135938			
16			Non-flush	–	2 m connection cable	1 N/O	Metal	<b>E57-18GE16-D</b> 135917			
16			Non-flush	–	2 m connection cable	1 NC	Metal	<b>E57-18GE16-D1</b> 135918			
16			Non-flush	–	plug connector M12 x 1	1 NC	Metal	<b>E57-18GE16-D1DBB</b> 135919			
16			Non-flush	–	plug connector M12 x 1	1 N/O	Metal	<b>E57-18GE16-DBB</b> 135920			
20 - 250 V AC			5	Flush	–	2 m connection cable	1 N/O	Metal	<b>E57-18GS05-A</b> 135925		
		5	Flush	–	plug connector M12 x 1	1 N/O	Metal	<b>E57-18GS05-AAB</b> 135926			
		8	Non-flush	–	2 m connection cable	1 N/O	Metal	<b>E57-18GU08-A</b> 135933			
		8	Non-flush	–	plug connector M12 x 1	1 N/O	Metal	<b>E57-18GU08-AAB</b> 135934			
		16	Non-flush	–	plug connector M12 x 1	1 N/O	Metal	<b>E57-18GE16-AAB</b> 135916			

Information relevant for export to North America



Product Standards  
UL File No.  
UL CCN  
CSA File No.  
CSA Class No.  
NA Certification  
Max. Voltage Rating  
Degree of Protection

UL 508; CSA-C22.2 No. 14; IEC60947-5-2; CE marking  
CSA report applies to both Canada and US  
–  
224447  
4652-84  
CSA certified  
250 V AC, 30 V DC  
IEC: IP67; UL/CSA Type: -

Rated operational voltage	Rated switching distance $S_n$ mm	Installation type	Switching type	Connection options:	Contact configuration N/O = normally open contact NC = normally closed contact	Material	Part no. Article no.	Price See price list	Std. pack		
<b>E57 Global series</b>											
<b>2-wire</b>											
<b>M30 x 1.5</b>											
	10 - 30 V DC	10	Flush	–	2 m connection cable	1 N/O	Metal	<b>E57-30GS10-D</b> 135973	1 off  		
		10	Flush	–	2 m connection cable	1 NC	Metal	<b>E57-30GS10-D1</b> 135974			
		10	Flush	–	plug connector M12 x 1	1 NC	Metal	<b>E57-30GS10-D1DB</b> 135975			
		10	Flush	–	plug connector M12 x 1	1 N/O	Metal	<b>E57-30GS10-DBB</b> 135976			
		15	Non-flush	–	2 m connection cable	1 N/O	Metal	<b>E57-30GU15-D</b> 135983			
		15	Non-flush	–	plug connector M12 x 1	1 N/O	Metal	<b>E57-30GU15-DBB</b> 135984			
		25	Non-flush	–	2 m connection cable	1 N/O	Metal	<b>E57-30GE25-D</b> 135961			
		25	Non-flush	–	2 m connection cable	1 NC	Metal	<b>E57-30GE25-D1</b> 135962			
		25	Non-flush	–	plug connector M12 x 1	1 NC	Metal	<b>E57-30GE25-D1DB</b> 135963			
		25	Non-flush	–	plug connector M12 x 1	1 N/O	Metal	<b>E57-30GE25-DBB</b> 135964			
	20 - 250 V AC	10	Flush	–	2 m connection cable	1 N/O	Metal	<b>E57-30GS10-A</b> 135969			
		10	Flush	–	plug connector M12 x 1	1 N/O	Metal	<b>E57-30GS10-AAB</b> 135970			
		15	Non-flush	–	2 m connection cable	1 N/O	Metal	<b>E57-30GU15-A</b> 135979			
		15	Non-flush	–	plug connector M12 x 1	1 N/O	Metal	<b>E57-30GU15-AAB</b> 135980			
	<b>3-wire</b>										
	<b>M8 x 1</b>										
	10 - 30 V DC	1	Flush	NPN	2 m connection cable	1 N/O	Stainless steel	<b>E57-08GS01-C</b> 135859	1 off  		
		1	Flush	NPN	plug connector M12 x 1	1 N/O	Stainless steel	<b>E57-08GS01-CDB</b> 135860			
		1	Flush	PNP	2 m connection cable	1 N/O	Stainless steel	<b>E57-08GS01-G</b> 135861			
		1	Flush	PNP	plug connector M12 x 1	1 N/O	Stainless steel	<b>E57-08GS01-GDB</b> 135862			
		2	Non-flush	NPN	2 m connection cable	1 N/O	Stainless steel	<b>E57-08GU02-C</b> 135863			
		2	Non-flush	NPN	plug connector M12 x 1	1 N/O	Stainless steel	<b>E57-08GU02-CDB</b> 135864			
		2	Non-flush	PNP	2 m connection cable	1 N/O	Stainless steel	<b>E57-08GU02-G</b> 135865			
		2	Non-flush	PNP	plug connector M12 x 1	1 N/O	Stainless steel	<b>E57-08GU02-GDB</b> 135866			
		3	Flush	NPN	2 m connection cable	1 NC	Stainless steel	<b>E57-08GBE03-C</b> 135850			
		3	Flush	NPN	2 m connection cable	1 N/O	Stainless steel	<b>E57-08GE03-C</b> 135851			
		3	Flush	NPN	plug connector M12 x 1	1 N/O	Stainless steel	<b>E57-08GE03-CDB</b> 135852			
		3	Flush	PNP	2 m connection cable	1 N/O	Stainless steel	<b>E57-08GE03-G</b> 135853			
		3	Flush	PNP	plug connector M12 x 1	1 N/O	Stainless steel	<b>E57-08GE03-GDB</b> 135854			










**Information relevant for export to North America****Product Standards**

UL File No.  
UL CCN  
CSA File No.  
CSA Class No.  
NA Certification  
Max. Voltage Rating  
Degree of Protection

UL 508; CSA-C22.2 No. 14; IEC60947-5-2;  
CE marking  
CSA report applies to both Canada and US  
–  
224447  
4652-84  
CSA certified  
250 V AC, 30 V DC  
IEC: IP67; UL/CSA Type: -

HPL03039EN



Rated operational voltage	Rated switching distance S <sub>n</sub> mm	Installation type	Switching type	Connection options:	Contact configuration N/O = normally open contact NC = normally closed contact	Material	Part no. Article no.	Price See price list	Std. pack
<b>E57 Global series</b>									
<b>3-wire</b>									
<b>M8 x 1</b>									
	10 - 30 V DC	6	Non-flush	NPN	2 m connection cable	1 N/O	Stainless steel	<b>E57-08GE06-C</b> 135855	1 off  
		6	Non-flush	NPN	plug connector M12 x 1	1 N/O	Stainless steel	<b>E57-08GE06-CDB</b> 135856	
		6	Non-flush	PNP	2 m connection cable	1 N/O	Stainless steel	<b>E57-08GE06-G</b> 135857	
		6	Non-flush	PNP	plug connector M12 x 1	1 N/O	Stainless steel	<b>E57-08GE06-GDB</b> 135858	
<b>M12 x 1</b>									
	10 - 30 V DC	2	Flush	NPN	2 m connection cable	1 N/O	Metal	<b>E57-12GS02-C</b> 135881	1 off  
		2	Flush	NPN	plug connector M12 x 1	1 N/O	Metal	<b>E57-12GS02-CDB</b> 135882	
		2	Flush	PNP	2 m connection cable	1 N/O	Metal	<b>E57-12GS02-G</b> 135885	
		2	Flush	PNP	plug connector M12 x 1	1 N/O	Metal	<b>E57-12GS02-GDB</b> 135886	
		4	Non-flush	NPN	2 m connection cable	1 N/O	Metal	<b>E57-12GU04-C</b> 135889	
		4	Non-flush	NPN	plug connector M12 x 1	1 N/O	Metal	<b>E57-12GU04-CDB</b> 135890	
		4	Non-flush	PNP	2 m connection cable	1 N/O	Metal	<b>E57-12GU04-G</b> 135894	
		4	Non-flush	PNP	plug connector M12 x 1	1 N/O	Metal	<b>E57-12GU04-GDB</b> 135895	
		5	Flush	NPN	2 m connection cable	1 N/O	Metal	<b>E57-12GE05-C</b> 135867	
		5	Flush	NPN	plug connector M12 x 1	1 N/O	Metal	<b>E57-12GE05-CDB</b> 135868	
		5	Flush	PNP	2 m connection cable	1 N/O	Metal	<b>E57-12GE05-G</b> 135869	
		5	Flush	PNP	plug connector M12 x 1	1 N/O	Metal	<b>E57-12GE05-GDB</b> 135870	
		10	Non-flush	NPN	2 m connection cable	1 N/O	Metal	<b>E57-12GE10-C</b> 135875	
		10	Non-flush	NPN	plug connector M12 x 1	1 N/O	Metal	<b>E57-12GE10-CDB</b> 135876	
		10	Non-flush	PNP	2 m connection cable	1 N/O	Metal	<b>E57-12GE10-G</b> 135877	
		10	Non-flush	PNP	plug connector M12 x 1	1 N/O	Metal	<b>E57-12GE10-GDB</b> 135878	
<b>M18 x 1</b>									
	10 - 30 V DC	5	Flush	NPN	2 m connection cable	1 N/O	Metal	<b>E57-18GS05-C</b> 135927	1 off  
		5	Flush	NPN	plug connector M12 x 1	1 N/O	Metal	<b>E57-18GS05-CDB</b> 135928	
		5	Flush	PNP	2 m connection cable	1 N/O	Metal	<b>E57-18GS05-G</b> 135931	
		5	Flush	PNP	plug connector M12 x 1	1 N/O	Metal	<b>E57-18GS05-GDB</b> 135932	
		8	Flush	NPN	2 m connection cable	1 N/O	Metal	<b>E57-18GE08-C</b> 135912	
		8	Flush	NPN	plug connector M12 x 1	1 N/O	Metal	<b>E57-18GE08-CDB</b> 135913	
		8	Flush	PNP	2 m connection cable	1 N/O	Metal	<b>E57-18GE08-G</b> 135914	
		8	Flush	PNP	plug connector M12 x 1	1 N/O	Metal	<b>E57-18GE08-GDB</b> 135914	

**Information relevant for export to North America**



Product Standards  
UL File No.  
UL CCN  
CSA File No.  
CSA Class No.  
NA Certification  
Max. Voltage Rating  
Degree of Protection

UL 508; CSA-C22.2 No. 14; IEC60947-5-2; CE marking  
CSA report applies to both Canada and US  
-  
224447  
4652-84  
CSA certified  
250 V AC, 30 V DC  
IEC: IP67; UL/CSA Type: -



Rated operational voltage	Rated switching distance  S <sub>n</sub> mm	Installation type	Switching type	Connection options:	Contact configuration N/O = normally open contact NC = normally closed contact	Material	Part no. Article no.	Price See price list	Std. pack
<b>E57 Global series</b>									
<b>3-wire</b>									
<b>M18 x 1</b>									
	10 - 30 V DC	8	Flush	PNP	plug connector M12 x 1	1 N/O	Metal	<b>E57-18GE08-GDB</b> 135915	1 off 
		8	Non-flush	NPN	2 m connection cable	1 N/O	Metal	<b>E57-18GU08-C</b> 135935	
		8	Non-flush	NPN	plug connector M12 x 1	1 N/O	Metal	<b>E57-18GU08-CDB</b> 135936	
		8	Non-flush	PNP	2 m connection cable	1 N/O	Metal	<b>E57-18GU08-G</b> 135939	
		8	Non-flush	PNP	plug connector M12 x 1	1 N/O	Metal	<b>E57-18GU08-GDB</b> 135940	
		18	Non-flush	NPN	2 m connection cable	1 N/O	Metal	<b>E57-18GE18-C</b> 135921	
		18	Non-flush	NPN	plug connector M12 x 1	1 N/O	Metal	<b>E57-18GE18-CDB</b> 135922	
		18	Non-flush	PNP	2 m connection cable	1 N/O	Metal	<b>E57-18GE18-G</b> 135923	
		18	Non-flush	PNP	plug connector M12 x 1	1 N/O	Metal	<b>E57-18GE18-GDB</b> 135924	
<b>3-wire</b>									
<b>M30 x 1.5</b>									
	10 - 30 V DC	10	Flush	NPN	2 m connection cable	1 N/O	Metal	<b>E57-30GS10-C</b> 135971	1 off 
		10	Flush	NPN	plug connector M12 x 1	1 N/O	Metal	<b>E57-30GS10-CDB</b> 135972	
		10	Flush	PNP	2 m connection cable	1 N/O	Metal	<b>E57-30GS10-G</b> 135977	
		10	Flush	PNP	plug connector M12 x 1	1 N/O	Metal	<b>E57-30GS10-GDB</b> 135978	
		15	Flush	NPN	2 m connection cable	1 N/O	Metal	<b>E57-30GE15-C</b> 135957	
		15	Flush	NPN	plug connector M12 x 1	1 N/O	Metal	<b>E57-30GE15-CDB</b> 135958	
		15	Flush	PNP	2 m connection cable	1 N/O	Metal	<b>E57-30GE15-G</b> 135959	
		15	Flush	PNP	plug connector M12 x 1	1 N/O	Metal	<b>E57-30GE15-GDB</b> 135960	
		15	Non-flush	NPN	2 m connection cable	1 N/O	Metal	<b>E57-30GU15-C</b> 135981	
		15	Non-flush	NPN	plug connector M12 x 1	1 N/O	Metal	<b>E57-30GU15-CDB</b> 135982	
		15	Non-flush	PNP	2 m connection cable	1 N/O	Metal	<b>E57-30GU15-G</b> 135985	
		15	Non-flush	PNP	plug connector M12 x 1	1 N/O	Metal	<b>E57-30GU15-GDB</b> 135986	
		29	Non-flush	NPN	2 m connection cable	1 N/O	Metal	<b>E57-30GE29-C</b> 135965	
		29	Non-flush	NPN	plug connector M12 x 1	1 N/O	Metal	<b>E57-30GE29-CDB</b> 135966	
		29	Non-flush	PNP	2 m connection cable	1 N/O	Metal	<b>E57-30GE29-G</b> 135967	
		29	Non-flush	PNP	plug connector M12 x 1	1 N/O	Metal	<b>E57-30GE29-GDB</b> 135968	

**Information relevant for export to North America**



Product Standards  
UL File No.  
UL CCN  
CSA File No.  
CSA Class No.  
NA Certification  
Max. Voltage Rating  
Degree of Protection

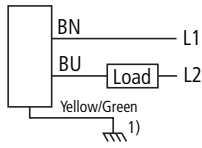
UL 508; CSA-C22.2 No. 14; IEC60947-5-2; CE marking  
CSA report applies to both Canada and US  
-  
224447  
4652-84  
CSA certified  
250 V AC, 30 V DC  
IEC: IP67; UL/CSA Type: -

Engineering



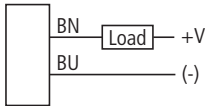
Circuit diagram

E57...-A

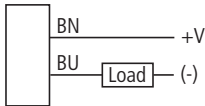


1) Internally connected to enclosure (wiring optional)

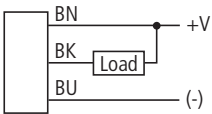
E57...-D  
E57...-D1



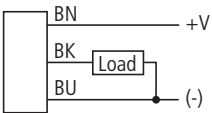
E57...-D  
E57...-D1



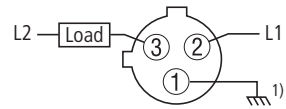
E57...-C



E57...-G

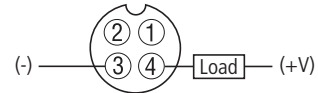


E57...-AAB

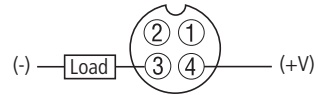


1) Internally connected to enclosure (wiring optional)

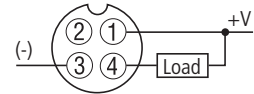
E57...-DDB  
E57...-D1DB



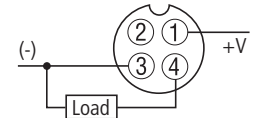
E57...-DDB  
E57...-D1DB



E57...-CDB



E57...-GDB



## Technical data

			E57-...(2-wire)			
			E57-12GS...A	E57-12GU...A	E57-18GS...A	E57-18GU...A
<b>General</b>						
Standards			IEC/EN 60947-5-2			
Ambient temperature		°C	-25 - +70	-25 - +70	-25 - +70	-25 - +70
Protection type			IP67	IP67	IP67	IP67
Mechanical shock resistance		g	30 Shock duration 11 ms			
<b>Characteristic values</b>						
Repetition accuracy of $S_n$		%	1	3	1	3
Temperature drift of $S_n$		%	10	10	10	10
Switching hysteresis of $S_n$		%	15	15	15	15
Rated operating voltage			20 - 250 V AC	20 - 250 V AC	20 - 250 V AC	20 - 250 V AC
Operating current in the switched state at 24 V DC	$I_b$	mA	1.8	1.8	1.8	1.8
Rated operational current	$I_e$	mA	200	200	200	200
Voltage drop at $I_e$	$U_d$	V	8	8	8	8
Switching frequency		Hz	25	25	25	25
Min. load current	$I_e$	mA	5	5	5	5
Residual current due to the load in locked state at 230 V AC or 24 V DC	$I_r$	mA	0.01	0.01	0.01	0.01
Switching state indication		LED	Red	Red	Red	Red
Function			2-wire	2-wire	2-wire	2-wire
Construction type						
Design (outer dimensions)			M12 x 1	M12 x 1	M18 x 1	M18 x 1
Material			Metal	Metal	Metal	Metal

			E57-...(2-wire)		
			E57-18GE...A	E57-30GS...A	E57-30GU...A
<b>General</b>					
Standards			IEC/EN 60947-5-2		
Ambient temperature		°C	-25 - +70	-25 - +70	-25 - +70
Protection type			IP67	IP67	IP67
Mechanical shock resistance		g	30 Shock duration 11 ms		
<b>Characteristic values</b>					
Repetition accuracy of $S_n$		%	1	1	3
Temperature drift of $S_n$		%	10	10	10
Switching hysteresis of $S_n$		%	15	15	15
Rated operating voltage			20 - 250 V AC	20 - 250 V AC	20 - 250 V AC
Operating current in the switched state at 24 V DC	$I_b$	mA	1.8	1.8	1.8
Rated operational current	$I_e$	mA	200	200	200
Voltage drop at $I_e$	$U_d$	V	8	8	8
Switching frequency		Hz	25	25	25
Min. load current	$I_e$	mA	5	5	5
Residual current due to the load in locked state at 230 V AC or 24 V DC	$I_r$	mA	0.01	0.01	0.01
Switching state indication		LED	Red	Red	Red
Function			2-wire	2-wire	2-wire
Construction type					
Design (outer dimensions)			M18 x 1	M30 x 1.5	M30 x 1.5
Material			Metal	Metal	Metal

## Notes

Further technical data can be found in the Online Catalogue at [www.moeller.net](http://www.moeller.net)





			E57...(3-wire)				
			E57-08...	E57-12... E57-12GE...	E57-12GS...	E57-12GU...	E57-18... E57-18GE...
<b>General</b>							
Standards			IEC/EN 60947-5-2				
Ambient temperature		°C	-0 - +60	-25 - +70	-25 - +70	-25 - +70	-25 - +70
Protection type			IP67	IP67	IP67	IP67	IP67
Mechanical shock resistance		g	30 Shock duration 11 ms				
<b>Characteristic values</b>							
Repetition accuracy of S <sub>n</sub>		%	1	1	1	1	1
Temperature drift of S <sub>n</sub>		%	10	10	10	10	10
Switching hysteresis of S <sub>n</sub>		%	15	15	15	15	15
Rated operating voltage			10 - 30 V DC	10 - 30 V DC	10 - 30 V DC	10 - 30 V DC	10 - 30 V DC
Residual ripple of U <sub>e</sub>		%	10	10	10	10	10
Operating current in the switched state at 24 V DC	I <sub>b</sub>	mA	10	10	10	20	10
Rated operational current	I <sub>e</sub>	mA	100	100	100	100	100
Voltage drop at I <sub>e</sub>	U <sub>d</sub>	V	1.5	1.5	1.5	1.5	1.5
Switching frequency		Hz	2000	2000	2000	1000	1000
Residual current due to the load in locked state at 230 V AC or 24 V DC	I <sub>r</sub>	mA	0.01	0.01	0.01	0.01	0.01
Switching state indication		LED	Red	Red	Red	Red	Red
Protective functions			Short-circuit protection Protection against polarity reversal Protection against wire breakage				
Function			3-wire	3-wire	3-wire	3-wire	3-wire
Construction type							
Design (outer dimensions)			M8 x 1	M12 x 1	M12 x 1	M12 x 1	M18 x 1
Material			Stainless steel	Metal	Metal	Metal	Metal

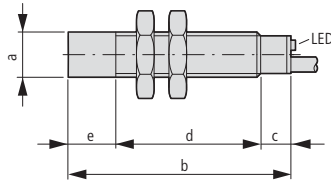
			E57-18...		E57-30...	
			E57-18GS...	E57-18GU...	E57-30GE...	E57-30GS... E57-30GU...
<b>General</b>						
Standards			IEC/EN 60947-5-2			
Ambient temperature		°C	-25 - +70	-25 - +70	-25 - +70	-25 - +70
Protection type			IP67	IP67	IP67	IP67
Mechanical shock resistance		g	30 Shock duration 11 ms			
<b>Characteristic values</b>						
Repetition accuracy of S <sub>n</sub>		%	1	1	1	1
Temperature drift of S <sub>n</sub>		%	10	10	10	10
Switching hysteresis of S <sub>n</sub>		%	15	15	15	15
Rated operating voltage			10 - 30 V DC	10 - 30 V DC	10 - 30 V DC	10 - 30 V DC
Residual ripple of U <sub>e</sub>		%	10	10	10	10
Operating current in the switched state at 24 V DC	I <sub>b</sub>	mA	10	20	10	10
Rated operational current	I <sub>e</sub>	mA	100	100	100	100
Voltage drop at I <sub>e</sub>	U <sub>d</sub>	V	1.5	1.5	1.5	1.5
Switching frequency		Hz	1000	500	500	500
Residual current due to the load in locked state at 230 V AC or 24 V DC	I <sub>r</sub>	mA	0.01	0.01	0.01	0.01
Switching state indication		LED	Red	Red	Red	Red
Protective functions			Short-circuit protection Protection against polarity reversal Protection against wire breakage			
Function			3-wire	3-wire	3-wire	3-wire
Construction type						
Design (outer dimensions)			M18 x 1	M18 x 1	M30 x 1.5	M30 x 1.5
Material			Metal	Metal	Metal	Metal

**Notes**

Further technical data can be found in the Online Catalogue at [www.moeller.net](http://www.moeller.net)

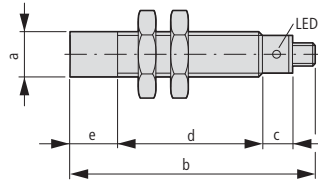
## Dimensions

2 m connection cable



		a	b	c	d	e			a	b	c	d	e
<b>2-wire</b>							<b>3-wire</b>						
20-250 V AC	E57-12GS02-A	M12x1	65	15	50	–	10-30 V DC	E57-08GE03-C	M8x1	46	6	40	–
	E57-12GU04-A	M12x1	60	15	42	8		E57-08GE06-C	M8x1	46	1	41	4
	E57-18GS05-A	M18x1	80	20	60	–		E57-08GE03-G	M8x1	46	6	40	–
	E57-18GU08-A	M18x1	80	20	48	12		E57-08GE06-G	M8x1	46	1	41	4
	E57-30GS10-A	M30	80	20	60	–		E57-08GS01-C	M8x1	45	–	45	–
	E57-30GU15-A	M30	80	20	45	15		E57-08GS01-G	M8x1	45	–	45	–
10-30 V DC	E57-12GS02-D	M12x1	50	–	50	–		E57-08GU02-C	M8x1	45	–	41	4
	E57-12GU04-D	M12x1	50	–	42	8		E57-08GU02-G	M8x1	45	–	41	4
	E57-12GU04-D1	M12x1	50	–	42	8		E57-12GE05-C	M12x1	51	2	49	–
	E57-12GE08-D	M12x1	50	–	42	8		E57-12GE05-G	M12x1	51	2	49	–
	E57-12GE08-D1	M12x1	50	–	42	8		E57-12GE10-C	M12x1	50.5	1.7	41	7.8
	E57-18GS05-D	M18x1	55	5	50	–		E57-12GE10-G	M12x1	50.5	1.7	41	7.8
	E57-18GU08-D	M18x1	55	5	38	12		E57-12GS02-C	M12x1	50	–	50	–
	E57-18GE16-D	M18x1	55	5	38	12		E57-12GS02-G	M12x1	50	–	50	–
	E57-18GE16-D1	M18x1	55	5	38	12		E57-12GU04-C	M12x1	50	–	42	8
	E57-30GS10-D	M30	55	5	50	–		E57-12GU04-G	M12x1	50	–	42	8
	E57-30GU15-D	M30	55	5	35	15		E57-18GE08-C	M18x1	67.5	2.5	65	–
	E57-30GE25-D	M30	55	5	35	15		E57-18GE08-G	M18x1	65.5	2.5	65	–
	E57-30GE25-D1	M30	55	5	35	15		E57-18GE18-C	M18x1	66	2.5	52	11.5
									E57-18GE18-G	M18x1	66	2.5	52
								E57-18GS05-C	M18x1	55	5	50	–
								E57-18GS05-G	M18x1	55	5	50	–
								E57-18GU08-C	M18x1	55	5	38	12
								E57-18GU08-G	M18x1	55	5	38	12
								E57-30GE15-C	M30	69	5	64	–
								E57-30GE15-G	M30	69	5	64	–
								E57-30GE29-C	M30	83	5	64	15
								E57-30GE29-G	M30	83	5	64	15
								E57-30GS10-C	M30	55	5	50	–
								E57-30GS10-G	M30	55	5	50	–
							E57-30GU15-C	M30	55	5	35	15	
							E57-30GU15-G	M30	55	5	35	15	

M12 plug connector



		a	b	c	d	e
<b>2-wire</b>						
20-250 V AC	E57-12GS02-AAB	M12x1	68	16	42	–
	E57-12GU04-AAB	M12x1	68	16	34	8
	E57-18GE16-AAB	M18x1	94	20	48	12
	E57-18GS05-AAB	M18x1	91	20	60	–
	E57-18GU08-AAB	M18x1	91	20	48	12
	E57-30GS10-AAB	M30	80	20	60	–
	E57-30GU15-AAB	M30	91	20	45	15
10-30 V DC	E57-12GS02-DDB	M12x1	69	16	42	–
	E57-12GU04-DDB	M12x1	68	16	34	8
	E57-12GE08-DDB	M12x1	68	16	34	8
	E57-12GE08-D1DB	M12x1	68	10	50	8
	E57-18GS05-DDB	M18x1	76	15	61	–
	E57-18GU08-DDB	M18x1	80	15	49	12
	E57-18GE16-DDB	M18x1	79	15	52	12
	E57-18GE16-D1DB	M18x1	79	15	52	12
	E57-30GS10-DDB	M30	75	15	60	–
	E57-30GU15-DDB	M30	79	15	45	15
	E57-30GE25-DDB	M30	78	15	48	15
	E57-30GE25-D1DB	M30	78	15	48	15

		a	b	c	d	e
<b>3-wire</b>						
10-30 V DC	E57-08GE03-CDB	M8x1	71	26	36	–
	E57-08GE03-CNB	M8x1	61	19	42	–
	E57-08GE03-GDB	M8x1	71	26	35	–
	E57-08GE03-GNB	M8x1	61	19	42	–
	E57-08GE06-CDB	M8x1	71	25	31	4
	E57-08GE06-GDB	M8x1	71	25	31	4
	E57-08GS01-CDB	M8x1	70	21	49	–
	E57-08GS01-GDB	M8x1	70	21	49	–
	E57-08GU02-CDB	M8x1	70	21	45	4
	E57-08GU02-GDB	M8x1	70	21	45	4
	E57-12GE05-CDB	M12x1	69	24	45	–
	E57-12GE05-GDB	M12x1	69	24	45	–
	E57-12GE10-CDB	M12x1	68.5	10.3	36	7.8
	E57-12GE10-GDB	M12x1	68.5	10.3	36	7.8
	E57-12GS02-CDB	M12x1	68	16	52	–
	E57-12GS02-GDB	M12x1	68	16	52	–
	E57-12GU04-CDB	M12x1	68	20	31	8
	E57-12GU04-GDB	M12x1	68	20	31	8
	E57-18GE08-CDB	M18x1	80	6	49	–
	E57-18GE08-GDB	M18x1	80	16	49	–
	E57-18GE18-CDB	M18x1	79	6	37	12
	E57-18GE18-GDB	M18x1	79	6	37	12
	E57-18GS05-CDB	M18x1	76	15	61	–
	E57-18GS05-GDB	M18x1	76	15	61	–
	E57-18GU08-CDB	M18x1	76	15	49	12
	E57-18GU08-GDB	M18x1	80	15	49	12
	E57-30GS10-CDB	M30	79	15	60	–
	E57-30GS10-GDB	M30	75	15	60	–
	E57-30GE15-CDB	M30	80	16	49	–
	E57-30GE15-GDB	M30	80	16	49	–
	E57-30GE29-CDB	M30	95	16	49	15
	E57-30GE29-GDB	M30	95	16	49	15
	E57-30GU15-CDB	M30	75	15	45	15
	E57-30GU15-GDB	M30	75	15	45	15

## Description



① Measuring head angled 90° for difficult measuring tasks



## Short description

Eaton's inductive proximity sensors of the Premium+ series feature an enhanced measuring performance, durability and selection. Unlike the standard sensors, the Premium+ models feature a rugged stainless steel enclosure, impact-resistant front caps and an impact-absorbing sealant. The sensors are now available in versions for AC, AC/DC and DC-only operation, with enclosure diameters of 12, 18 and 30 mm. Their interference immunity is unsurpassed at more than 20 volts/meter. The Premium+ series includes sensors with a specially short, cylindrical enclosure. Despite their small size, they feature the same measuring range as the longer standard sizes. This allows the sensors to be used in applications where mounting space is limited. All sensors are equipped with a LED with 360° visibility.

## Product features

- New, wider product range – models with two-wire, three-wire, AC, DC and AC/DC connection.
- Resistant against mechanical and environmental strain.
- Designed with stainless steel barrel and new potting compound for robust, high temperature, high pressure washdown, as well as intense shock and vibration applications.
- Unmatched high noise immunity eliminates problems associated with electrical noise (all models > 20 Volt/meter).
- Output status lamp is visible through 360° from any direction and at all light conditions.
- AC/DC and DC models have resettable short-circuit and polarity reversal protection.
- Models with 90° measuring head offer unique problem-solving capabilities.
- Large temperature range (-25 to 70 °C).
- Small sizes for space-saving installation available.
- Versions with cable for with cable for hard wiring or M12 plug connector for fast installation and simple replacement.

## Approvals



HPL03047EN

Ordering



Function	Rated operational voltage	Rated switching distance S <sub>n</sub> mm	Installation type	Switching type	Connection options:	Contact configuration N/O = normally open contact NC = normally closed contact	Material	Part no. Article no.	Price See price list	Std. pack
<b>E57 Premium Plus</b>										
<b>2-wire</b>										
<b>M12 x 1</b>										
	20 - 250 V AC	2	Flush	–	2 m connection cable	1 N/O	Stainless steel	<b>E57LAL12A2<sup>1)</sup></b> 135995		1 off 
			Flush	–	plug connector M12 x 1	1 N/O		<b>E57LAL12A2SA<sup>1)</sup></b> 135998		
			Flush	–	2 m connection cable	1 NC		<b>E57LBL12A2<sup>1)</sup></b> 136030		
			Flush	–	plug connector M12 x 1	1 NC		<b>E57LBL12A2SA<sup>1)</sup></b> 136033		
		4	Non-flush	–	2 m connection cable	1 N/O		<b>E57LAL12A2E<sup>1)</sup></b> 135996		
			Non-flush	–	plug connector M12 x 1	1 N/O		<b>E57LAL12A2EA<sup>1)</sup></b> 135997		
			Non-flush	–	2 m connection cable	1 NC		<b>E57LBL12A2E<sup>1)</sup></b> 136031		
			Non-flush	–	plug connector M12 x 1	1 NC		<b>E57LBL12A2EA<sup>1)</sup></b> 136032		
<b>M18 x 1</b>										
	20 - 250 V AC	5	Flush	–	2 m connection cable	1 N/O	Stainless steel	<b>E57LAL18A2<sup>1)</sup></b> 136007		
			Flush	–	2 m connection cable	1 NC		<b>E57LBL18A2<sup>1)</sup></b> 136042		
			Flush	–	M12 plug connector x 1	1 NC		<b>E57LBL18A2SA<sup>1)</sup></b> 136045		
	20 - 250 V AC	5	Flush	–	2 m connection cable	1 N/O		<b>E57RAL18A2<sup>2)</sup></b> 136066		
			Flush	–	2 m connection cable	1 NC		<b>E57RBL18A2<sup>2)</sup></b> 136078		
		8	Non-flush	–	2 m connection cable	1 N/O		<b>E57RAL18A2E<sup>2)</sup></b> 136067		
			Non-flush	–	2 m connection cable	1 NC		<b>E57RBL18A2E<sup>2)</sup></b> 136079		
	20 - 250 V AC	8	Non-flush	–	2 m connection cable	1 N/O		<b>E57LAL18A2E<sup>1)</sup></b> 136008		
			Non-flush	–	plug connector M12 x 1	1 N/O		<b>E57LAL18A2EA<sup>1)</sup></b> 136009		
			Non-flush	–	2 m connection cable	1 NC		<b>E57LBL18A2E<sup>1)</sup></b> 136043		
			Non-flush	–	plug connector M12 x 1	1 NC		<b>E57LBL18A2EA<sup>1)</sup></b> 136044		
	20 - 250 V AC	5	Flush	–	plug connector M12 x 1	1 N/O		<b>E57RAL18A2SA<sup>2)</sup></b> 136069		
			Flush	–	plug connector M12 x 1	1 NC		<b>E57RBL18A2SA<sup>2)</sup></b> 136081		
		8	Non-flush	–	plug connector M12 x 1	1 N/O		<b>E57RAL18A2EA<sup>2)</sup></b> 136068		
			Non-flush	–	plug connector M12 x 1	1 NC		<b>E57RBL18A2EA<sup>2)</sup></b> 136080		

Information relevant for export to North America



- 1) Product Standards  
UL File No.  
UL CCN  
CSA File No.  
CSA Class No.  
NA Certification  
Max. Voltage Rating  
Degree of Protection  
UL 508; CSA-C22.2 No. 14; IEC60947-5-2; CE marking  
E166051  
NRKH, NRKH7  
50513  
3211-03  
UL Listed, CSA certified  
250 V AC  
IEC: IP67, IP69K; UL/CSA Type: -
- 2) Product Standards  
UL File No.  
UL CCN  
NA Certification  
Max. Voltage Rating  
Degree of Protection  
UL 508; IEC60947-5-2; CE marking  
E166051  
NRKH, NRKH7  
UL Listed  
250 V AC  
IEC: IP67, IP69K; UL/CSA Type: 4, 4x, 6, 6P, 12, 13



Function	Rated operational voltage	Rated switching distance S <sub>n</sub> mm	Installation type	Switching type	Connection options:	Contact configuration N/O = normally open contact NC = normally closed contact	Material	Part no. Article no.	Price See price list	Std. pack
<b>E57 Premium Plus</b>										
<b>2-wire</b>										
<b>M30 x 1.5</b>										
	20 - 250 V AC	10	Flush	–	2 m connection cable	1 N/O	Stainless steel	<b>E57LAL30A2</b> <sup>1)</sup> 136018		1 off 
			Flush	–	plug connector M12 x 1	1 N/O		<b>E57LAL30A2SA</b> <sup>1)</sup> 136021		
			Flush	–	2 m connection cable	1 NC		<b>E57LBL30A2</b> <sup>1)</sup> 136054		
			Flush	–	plug connector M12 x 1	1 NC		<b>E57LBL30A2SA</b> <sup>1)</sup> 136057		
			Non-flush	–	2 m connection cable	1 N/O		<b>E57LAL30A2E</b> <sup>1)</sup> 136019		
			Non-flush	–	plug connector M12 x 1	1 N/O		<b>E57LAL30A2EA</b> <sup>1)</sup> 136020		
			Non-flush	–	2 m connection cable	1 NC		<b>E57LBL30A2E</b> <sup>1)</sup> 136055		
			Non-flush	–	plug connector M12 x 1	1 NC		<b>E57LBL30A2EA</b> <sup>1)</sup> 136056		
<b>3-wire</b>										
<b>M12 x 1</b>										
	6 - 48 V DC	2	Flush	NPN	2 m connection cable	1 N/O	Stainless steel	<b>E57LAL12T110</b> <sup>2)</sup> 135999		1 off 
			Flush	NPN	plug connector M12 x 1	1 N/O		<b>E57LAL12T110SD</b> <sup>2)</sup> 136002		
			Flush	PNP	2 m connection cable	1 N/O		<b>E57LAL12T111</b> <sup>2)</sup> 136003		
			Flush	PNP	plug connector M12 x 1	1 N/O		<b>E57LAL12T111SD</b> <sup>2)</sup> 136006		
			Flush	NPN	2 m connection cable	1 NC		<b>E57LBL12T110</b> <sup>2)</sup> 136034		
			Flush	NPN	plug connector M12 x 1	1 NC		<b>E57LBL12T110SD</b> <sup>2)</sup> 136037		
			Flush	PNP	2 m connection cable	1 NC		<b>E57LBL12T111</b> <sup>2)</sup> 136038		
			Flush	PNP	plug connector M12 x 1	1 NC		<b>E57LBL12T111SD</b> <sup>2)</sup> 136041		
		4	Non-flush	NPN	2 m connection cable	1 N/O		<b>E57LAL12T110E</b> <sup>2)</sup> 136000		
			Non-flush	NPN	plug connector M12 x 1	1 N/O		<b>E57LAL12T110ED</b> <sup>2)</sup> 136001		
			Non-flush	PNP	2 m connection cable	1 N/O		<b>E57LAL12T111E</b> <sup>2)</sup> 136004		
			Non-flush	PNP	plug connector M12 x 1	1 N/O		<b>E57LAL12T111ED</b> <sup>2)</sup> 136005		
			Non-flush	NPN	2 m connection cable	1 NC		<b>E57LBL12T110E</b> <sup>2)</sup> 136035		
			Non-flush	NPN	plug connector M12 x 1	1 NC		<b>E57LBL12T110ED</b> <sup>2)</sup> 136036		
			Non-flush	PNP	2 m connection cable	1 NC		<b>E57LBL12T111E</b> <sup>2)</sup> 136039		
			Non-flush	PNP	plug connector M12 x 1	1 NC		<b>E57LBL12T111ED</b> <sup>2)</sup> 136040		

Information relevant for export to North America



- |  |  |
|--|--|
| <p><sup>1)</sup> Product Standards<br/>UL File No.<br/>UL CCN<br/>CSA File No.<br/>CSA Class No.<br/>NA Certification<br/>Max. Voltage Rating<br/>Degree of Protection</p> | <p>UL 508; CSA-C22.2 No. 14; IEC60947-5-2; CE marking<br/>E166051<br/>NRKH, NRKH7<br/>50513<br/>3211-03<br/>UL Listed, CSA certified<br/>250 V AC<br/>IEC: IP67, IP69K; UL/CSA Type: -</p> |
| <p><sup>2)</sup> Product Standards<br/>UL File No.<br/>UL CCN<br/>CSA File No.<br/>CSA Class No.<br/>NA Certification<br/>Max. Voltage Rating<br/>Degree of Protection</p> | <p>UL 508; CSA-C22.2 No. 14; IEC60947-5-2; CE marking<br/>E166051<br/>NRKH, NRKH7<br/>50513<br/>3211-03<br/>UL Listed, CSA certified<br/>48 V DC<br/>IEC: IP67, IP69K; UL/CSA Type: -</p>  |

HPL03049EN







Function	Rated operational voltage	Rated switching distance S <sub>n</sub> mm	Installation type	Switching type	Connection options:	Contact configuration N/O = normally open contact NC = normally closed contact	Material	Part no. Article no.	Price See price list	Std. pack
<b>E57 Premium Plus</b>										
<b>3-wire</b>										
<b>M18 x 1</b>										
	6 - 48 V DC	5	Flush	NPN	2 m connection cable	1 N/O	Stainless steel	<b>E57RAL18T110</b> <sup>1)</sup> 136070		1 off 
			Flush	PNP	2 m connection cable	1 N/O		<b>E57RBL18T111</b> <sup>1)</sup> 136074		
			Flush	NPN	2 m connection cable	1 NC		<b>E57RBL18T110</b> <sup>1)</sup> 136082		
			Flush	PNP	2 m connection cable	1 NC		<b>E57RBL18T111</b> <sup>1)</sup> 136086		
	6 - 48 V DC	5	Flush	NPN	2 m connection cable	1 N/O		<b>E57LAL18T110</b> <sup>2)</sup> 136010		
			Flush	NPN	plug connector M12 x 1	1 N/O		<b>E57LAL18T110SD</b> <sup>2)</sup> 136013		
			Flush	PNP	2 m connection cable	1 N/O		<b>E57LAL18T111</b> <sup>2)</sup> 136014		
			Flush	PNP	plug connector M12 x 1	1 N/O		<b>E57LAL18T111SD</b> <sup>2)</sup> 136017		
			Flush	NPN	2 m connection cable	1 NC		<b>E57LBL18T110</b> <sup>2)</sup> 136046		
			Flush	NPN	plug connector M12 x 1	1 NC		<b>E57LBL18T110SD</b> <sup>2)</sup> 136049		
			Flush	PNP	2 m connection cable	1 NC		<b>E57LBL18T111</b> <sup>2)</sup> 136050		
			Flush	PNP	plug connector M12 x 1	1 NC		<b>E57LBL18T111SD</b> <sup>2)</sup> 136053		
	6 - 48 V DC	8	Non-flush	NPN	2 m connection cable	1 N/O	<b>E57RAL18T110E</b> <sup>1)</sup> 136071			
			Non-flush	PNP	2 m connection cable	1 N/O	<b>E57RAL18T111E</b> <sup>1)</sup> 136075			
			Non-flush	NPN	2 m connection cable	1 NC	<b>E57RBL18T110E</b> <sup>1)</sup> 136083			
			Non-flush	PNP	2 m connection cable	1 NC	<b>E57RBL18T111E</b> <sup>1)</sup> 136087			
			Non-flush	NPN	2 m connection cable	1 N/O	<b>E57LAL18T110E</b> <sup>2)</sup> 136011			
			Non-flush	NPN	plug connector M12 x 1	1 N/O	<b>E57LAL18T110ED</b> <sup>2)</sup> 136012			
			Non-flush	PNP	2 m connection cable	1 N/O	<b>E57LAL18T111E</b> <sup>2)</sup> 136015			
			Non-flush	PNP	plug connector M12 x 1	1 N/O	<b>E57LAL18T111ED</b> <sup>2)</sup> 136016			
			Non-flush	NPN	2 m connection cable	1 NC	<b>E57LBL18T110E</b> <sup>2)</sup> 136047			
			Non-flush	NPN	plug connector M12 x 1	1 NC	<b>E57LBL18T110ED</b> <sup>2)</sup> 136048			
			Non-flush	PNP	2 m connection cable	1 NC	<b>E57LBL18T111E</b> <sup>2)</sup> 136051			
			Non-flush	PNP	plug connector M12 x 1	1 NC	<b>E57LBL18T111ED</b> <sup>2)</sup> 136052			

**Information relevant for export to North America**



- |   |   |
|---|---|
| <p>1) Product Standards<br/>UL File No.<br/>UL CCN<br/>NA Certification<br/>Max. Voltage Rating<br/>Degree of Protection</p>                                    | <p>UL 508; IEC60947-5-2; CE marking<br/>E166051<br/>NRKH, NRKH7<br/>UL Listed<br/>48 V DC<br/>IEC: IP67, IP69K; UL/CSA Type: -</p>  |
| <p>2) Product Standards<br/>UL File No.<br/>UL CCN<br/>CSA File No.<br/>CSA Class No.<br/>NA Certification<br/>Max. Voltage Rating<br/>Degree of Protection</p> | <p>UL 508; CSA-C22.2 No. 14; IEC60947-5-2; CE marking<br/>E166051<br/>NRKH, NRKH7<br/>50513<br/>3211-03<br/>UL Listed, CSA certified<br/>48 V DC<br/>IEC: IP67, IP69K; UL/CSA Type: -</p> |



Function	Rated operational voltage	Rated switching distance S <sub>n</sub> mm	Installation type	Switching type	Connection options:	Contact configuration N/O = normally open contact NC = normally closed contact	Material	Part no. Article no.	Price See price list	Std. pack						
<b>E57 Premium Plus</b>																
<b>3-wire</b>																
<b>M18 x 1</b>																
	6 - 48 V DC	5	Flush	NPN	plug connector M12 x 1	1 N/O	Stainless steel	<b>E57RAL18T110SD</b> <sup>1)</sup> 136073		1 off 						
			Flush	PNP	plug connector M12 x 1	1 N/O		<b>E57RAL18T111SD</b> <sup>1)</sup> 136077								
			Flush	NPN	plug connector M12 x 1	1 NC		<b>E57RBL18T110SD</b> <sup>1)</sup> 136085								
			Flush	PNP	plug connector M12 x 1	1 NC		<b>E57RBL18T111SD</b> <sup>1)</sup> 136089								
		8	Non-flush	NPN	plug connector M12 x 1	1 N/O		<b>E57RAL18T110ED</b> <sup>1)</sup> 136072								
			Non-flush	PNP	plug connector M12 x 1	1 N/O		<b>E57RAL18T111ED</b> <sup>1)</sup> 136076								
			Non-flush	NPN	plug connector M12 x 1	1 NC		<b>E57RBL18T110ED</b> <sup>1)</sup> 136084								
			Non-flush	PNP	plug connector M12 x 1	1 NC		<b>E57RBL18T111ED</b> <sup>1)</sup> 136088								
			<b>3-wire</b>													
			<b>M30 x 1.5</b>													
				6 - 48 V DC	10	Flush		NPN			2 m connection cable	1 N/O	Stainless steel	<b>E57LAL30T110</b> <sup>2)</sup> 136022		1 off 
						Flush		NPN			plug connector M12 x 1	1 N/O		<b>E57LAL30T110SD</b> <sup>2)</sup> 136025		
Flush	PNP	2 m connection cable				1 N/O	<b>E57LAL30T111</b> <sup>2)</sup> 136026									
Flush	PNP	plug connector M12 x 1				1 N/O	<b>E57LAL30T111SD</b> <sup>2)</sup> 136029									
Flush	NPN	2 m connection cable				1 NC	<b>E57LBL30T110</b> <sup>2)</sup> 136058									
Flush	NPN	plug connector M12 x 1				1 NC	<b>E57LBL30T110SD</b> <sup>2)</sup> 136061									
Flush	PNP	2 m connection cable				1 NC	<b>E57LBL30T111</b> <sup>2)</sup> 136062									
Flush	PNP	plug connector M12 x 1				1 NC	<b>E57LBL30T111SD</b> <sup>2)</sup> 136065									
15	Non-flush	NPN				2 m connection cable	1 N/O	<b>E57LAL30T110E</b> <sup>2)</sup> 136023								
	Non-flush	NPN				plug connector M12 x 1	1 N/O	<b>E57LAL30T110ED</b> <sup>2)</sup> 136024								
	Non-flush	PNP				2 m connection cable	1 N/O	<b>E57LAL30T111E</b> <sup>2)</sup> 136027								
	Non-flush	PNP				plug connector M12 x 1	1 N/O	<b>E57LAL30T111ED</b> <sup>2)</sup> 136028								
	Non-flush	NPN			2 m connection cable	1 NC	<b>E57LBL30T110E</b> <sup>2)</sup> 136059									
	Non-flush	NPN			plug connector M12 x 1	1 NC	<b>E57LBL30T110ED</b> <sup>2)</sup> 136060									
	Non-flush	PNP			2 m connection cable	1 NC	<b>E57LBL30T111E</b> <sup>2)</sup> 136063									
	Non-flush	PNP			plug connector M12 x 1	1 NC	<b>E57LBL30T111ED</b> <sup>2)</sup> 136064									

Information relevant for export to North America







- |  |  |
|--|--|
| <p>1) Product Standards<br/>UL File No.<br/>UL CCN<br/>NA Certification<br/>Max. Voltage Rating<br/>Degree of Protection</p> <p>2) Product Standards<br/>UL File No.<br/>UL CCN<br/>CSA File No.<br/>CSA Class No.<br/>NA Certification<br/>Max. Voltage Rating<br/>Degree of Protection</p> | <p>UL 508; IEC60947-5-2; CE marking<br/>E166051<br/>NRKH, NRKH7<br/>UL Listed<br/>48 V DC<br/>IEC: IP67, IP69K; UL/CSA Type: -</p> <p>UL 508; CSA-C22.2 No. 14; IEC60947-5-2; CE marking<br/>E166051<br/>NRKH, NRKH7<br/>50513<br/>3211-03<br/>UL Listed, CSA certified<br/>48 V DC<br/>IEC: IP67, IP69K; UL/CSA Type: -</p> |
|--|--|



HPL03051EN







Function	Rated operational voltage	Rated switching distance S <sub>n</sub> mm	Installation type	Switching type	Connection options:	Contact configuration N/O = normally open contact NC = normally closed contact	Material	Part no. Article no.	Price See price list	Std. pack
<b>E57 Premium Plus Short Series</b>										
<b>2-wire</b>										
<b>M12 x 1</b>										
	20 - 250 V DC 40 - 250 V AC	2	Flush	–	2 m connection cable	1 N/O	Stainless steel	<b>E57SAL12A2</b> 136090		1 off 
			Flush	–	plug connector M12 x 1	1 N/O		<b>E57SAL12A2SA</b> 136093		
			Flush	–	2 m connection cable	1 NC		<b>E57SBL12A2</b> 136138		
			Flush	–	plug connector M12 x 1	1 NC		<b>E57SBL12A2SA</b> 136141		
	20 - 250 V AC	2	Flush	–	2 m connection cable	1 N/O		<b>E57SAL12A4</b> 136094		
			Flush	–	plug connector M12 x 1	1 N/O		<b>E57SAL12A4SA</b> 136097		
			Flush	–	2 m connection cable	1 NC		<b>E57SBL12A4</b> 136142		
			Flush	–	plug connector M12 x 1	1 NC		<b>E57SBL12A4SA</b> 136145		
	20 - 250 V DC 40 - 250 V AC	4	Non-flush	–	2 m connection cable	1 N/O		<b>E57SAL12A2E</b> 136091		
			Non-flush	–	plug connector M12 x 1	1 N/O		<b>E57SAL12A2EA</b> 136092		
			Non-flush	–	2 m connection cable	1 NC		<b>E57SBL12A2E</b> 136139		
			Non-flush	–	plug connector M12 x 1	1 NC		<b>E57SBL12A2EA</b> 136140		
20 - 250 V AC	4	Non-flush	–	2 m connection cable	1 N/O	<b>E57SAL12A4E</b> 136095				
		Non-flush	–	plug connector M12 x 1	1 N/O	<b>E57SAL12A4EA</b> 136096				
		Non-flush	–	2 m connection cable	1 NC	<b>E57SBL12A4E</b> 136143				
		Non-flush	–	plug connector M12 x 1	1 NC	<b>E57SBL12A4EA</b> 136144				
<b>M18 x 1</b>										
	20 - 250 V DC 40 - 250 V AC	5	Flush	–	2 m connection cable	1 N/O	Stainless steel	<b>E57SAL18A2</b> 136106		1 off 
			Flush	–	plug connector M12 x 1	1 N/O		<b>E57SAL18A2SA</b> 136109		
			Flush	–	2 m connection cable	1 NC		<b>E57SBL18A2</b> 136152		
			Flush	–	plug connector M12 x 1	1 NC		<b>E57SBL18A2SA</b> 136155		
	20 - 250 V AC	5	Flush	–	2 m connection cable	1 N/O		<b>E57SAL18A4</b> 136110		
			Flush	–	plug connector M12 x 1	1 N/O		<b>E57SAL18A4SA</b> 136113		
			Flush	–	2 m connection cable	1 NC		<b>E57SBL18A4</b> 136156		
			Flush	–	plug connector M12 x 1	1 NC		<b>E57SBL18A4SA</b> 136159		
	20 - 250 V DC 40 - 250 V AC	8	Non-flush	–	2 m connection cable	1 N/O		<b>E57SAL18A2E</b> 136107		
			Non-flush	–	plug connector M12 x 1	1 N/O		<b>E57SAL18A2EA</b> 136108		
			Non-flush	–	2 m connection cable	1 NC		<b>E57SBL18A2E</b> 136153		
			Non-flush	–	plug connector M12 x 1	1 NC		<b>E57SBL18A2EA</b> 136154		
20 - 250 V AC	8	Non-flush	–	2 m connection cable	1 N/O	<b>E57SAL18A4E</b> 136111				
		Non-flush	–	plug connector M12 x 1	1 N/O	<b>E57SAL18A4EA</b> 136112				
		Non-flush	–	2 m connection cable	1 NC	<b>E57SBL18A4E</b> 136157				
		Non-flush	–	plug connector M12 x 1	1 NC	<b>E57SBL18A4EA</b> 136158				

Information relevant for export to North America



→ Page 3/52









Function	Rated operational voltage	Rated switching distance S <sub>n</sub> mm	Installation type	Switching type	Connection options:	Contact configuration N/O = normally open contact NC = normally closed contact	Material	Part no. Article no.	Price See price list	Std. pack	
<b>E57 Premium Plus Short Series</b>											
<b>2-wire</b>											
<b>M30 x 1.5</b>											
	20 - 250 V DC 40 - 250 V AC	10	Flush	–	2 m connection cable	1 N/O	Stainless steel	<b>E57SAL30A2</b> 136122		1 off 	
			Flush	–	plug connector M12 x 1	1 N/O		<b>E57SAL30A2SA</b> 136125			
			Flush	–	2 m connection cable	1 NC		<b>E57SBL30A2</b> 136168			
			Flush	–	plug connector M12 x 1	1 NC		<b>E57SBL30A2SA</b> 136171			
	20 - 250 V AC	10	Flush	–	2 m connection cable	1 N/O		<b>E57SAL30A4</b> 136126			
			Flush	–	plug connector M12 x 1	1 N/O		<b>E57SAL30A4SA</b> 136129			
			Flush	–	2 m connection cable	1 NC		<b>E57SBL30A4</b> 136172			
			Flush	–	plug connector M12 x 1	1 NC		<b>E57SBL30A4SA</b> 136175			
	20 - 250 V DC 40 - 250 V AC	15	Non-flush	–	2 m connection cable	1 N/O		<b>E57SAL30A2E</b> 136123			
			Non-flush	–	plug connector M12 x 1	1 N/O		<b>E57SAL30A2EA</b> 136124			
			Non-flush	–	2 m connection cable	1 NC		<b>E57SBL30A2E</b> 136169			
			Non-flush	–	plug connector M12 x 1	1 NC		<b>E57SBL30A2EA</b> 136170			
20 - 250 V AC	15	Non-flush	–	2 m connection cable	1 N/O	<b>E57SAL30A4E</b> 136127					
		Non-flush	–	plug connector M12 x 1	1 N/O	<b>E57SAL30A4EA</b> 136128					
		Non-flush	–	2 m connection cable	1 NC	<b>E57SBL30A4E</b> 136173					
		Non-flush	–	plug connector M12 x 1	1 NC	<b>E57SBL30A4EA</b> 136174					
<b>3-wire</b>											
<b>M12 x 1</b>											
	6 - 48 V DC	2	Flush	NPN	2 m connection cable	1 N/O	Stainless steel	<b>E57SAL12T110</b> 136098		1 off 	
			Flush	NPN	plug connector M12 x 1	1 N/O		<b>E57SAL12T110SD</b> 136101			
			Flush	PNP	2 m connection cable	1 N/O		<b>E57SAL12T111</b> 136102			
			Flush	PNP	plug connector M12 x 1	1 N/O		<b>E57SAL12T111SD</b> 136105			
			Flush	PNP	2 m connection cable	1 NC		<b>E57SBL12T111</b> 136148			
			Flush	PNP	plug connector M12 x 1	1 NC		<b>E57SBL12T111SD</b> 136151			
			4	Non-flush	NPN	2 m connection cable		1 N/O			<b>E57SAL12T110E</b> 136099
				Non-flush	NPN	plug connector M12 x 1		1 N/O			<b>E57SAL12T110ED</b> 136100

**Information relevant for export to North America**



Product Standards	UL 508; CSA-C22.2 No. 14; IEC60947-5-2; CE marking
UL File No.	E166051
UL CCN	NRKH, NRKH7
CSA File No.	50513
CSA Class No.	3211-03
NA Certification	UL Listed, CSA certified
Max. Voltage Rating	250 V AC, 250 V DC
Degree of Protection	IEC: IP67, IP69K; UL/CSA Type: 4, 4x, 6, 6P, 12, 13

HPL03053EN

Function	Rated operational voltage	Rated switching distance S <sub>n</sub> mm	Installation type	Switching type	Connection options:	Contact configuration N/O = normally open contact NC = normally closed contact	Material	Part no. Article no.	Price See price list	Std. pack	
<b>E57 Premium Plus Short Series</b>											
<b>3-wire</b>											
<b>M12 x 1</b>											
	6 - 48 V DC	4	Non-flush	PNP	2 m connection cable	1 N/O	Stain-less steel	<b>E57SAL12T111E</b> 136103		1 off  	
			Non-flush	PNP	plug connector M12 x 1	1 N/O		<b>E57SAL12T111ED</b> 136104			
			Non-flush	NPN	2 m connection cable	1 NC		<b>E57SBL12T110E</b> 136146			
			Non-flush	NPN	plug connector M12 x 1	1 NC		<b>E57SBL12T110ED</b> 136147			
			Non-flush	PNP	2 m connection cable	1 NC		<b>E57SBL12T111E</b> 136149			
			Non-flush	PNP	plug connector M12 x 1	1 NC		<b>E57SBL12T111ED</b> 136150			
<b>3-wire</b>											
<b>M18 x 1</b>											
	6 - 48 V DC	5	Flush	NPN	2 m connection cable	1 N/O	Stain-less steel	<b>E57SAL18T110</b> 136114		1 off  	
			Flush	NPN	plug connector M12 x 1	1 N/O		<b>E57SAL18T110SD</b> 136117			
			Flush	PNP	2 m connection cable	1 N/O		<b>E57SAL18T111</b> 136118			
			Flush	PNP	plug connector M12 x 1	1 N/O		<b>E57SAL18T111SD</b> 136121			
			Flush	NPN	2 m connection cable	1 NC		<b>E57SBL18T110</b> 136160			
			Flush	NPN	plug connector M12 x 1	1 NC		<b>E57SBL18T110SD</b> 136163			
			Flush	PNP	2 m connection cable	1 NC		<b>E57SBL18T111</b> 136164			
			Flush	PNP	plug connector M12 x 1	1 NC		<b>E57SBL18T111SD</b> 136167			
			8	Non-flush	NPN	2 m connection cable		1 N/O			<b>E57SAL18T110E</b> 136115
				Non-flush	NPN	2 m connection cable		1 NC			<b>E57SBL18T110E</b> 136161
				Non-flush	NPN	plug connector M12 x 1		1 N/O			<b>E57SAL18T110ED</b> 136116
				Non-flush	PNP	2 m connection cable		1 N/O			<b>E57SAL18T111E</b> 136119
		Non-flush		PNP	plug connector M12 x 1	1 N/O	<b>E57SAL18T111ED</b> 136120				
		Non-flush		NPN	plug connector M12 x 1	1 NC	<b>E57SBL18T110ED</b> 136162				
		Non-flush	PNP	2 m connection cable	1 NC	<b>E57SBL18T111E</b> 136165					
		Non-flush	PNP	plug connector M12 x 1	1 NC	<b>E57SBL18T111ED</b> 136166					

**Information relevant for export to North America**



Product Standards	UL 508; CSA-C22.2 No. 14; IEC60947-5-2; CE marking
UL File No.	E166051
UL CCN	NRKH, NRKH7
CSA File No.	50513
CSA Class No.	3211-03
NA Certification	UL Listed, CSA certified
Max. Voltage Rating	250 V AC, 250 V DC
Degree of Protection	IEC: IP67, IP69K; UL/CSA Type: -



Function	Rated operational voltage	Rated switching distance S <sub>n</sub> mm	Installation type	Switching type	Connection options:	Contact configuration N/O = normally open contact NC = normally closed contact	Material	Part no. Article no.	Price See price list	Std. pack	
<b>E57 Premium Plus Short Series</b>											
<b>3-wire</b>											
<b>M30 x 1.5</b>											
	6 - 48 V DC	10	Flush	NPN	2 m connection cable	1 N/O	Stain-less steel	<b>E57SAL30T110</b> 136130		1 off 	
				PNP	plug connector M12 x 1	1 N/O		<b>E57SAL30T110SD</b> 136133			
			Flush	PNP	2 m connection cable	1 N/O		<b>E57SAL30T111</b> 136134			
			Flush	PNP	plug connector M12 x 1	1 N/O		<b>E57SAL30T111SD</b> 136137			
			Flush	NPN	2 m connection cable	1 NC		<b>E57SBL30T110</b> 136176			
			Flush	NPN	plug connector M12 x 1	1 NC		<b>E57SBL30T110SD</b> 136179			
			Flush	PNP	2 m connection cable	1 NC		<b>E57SBL30T111</b> 136180			
			Flush	PNP	plug connector M12 x 1	1 NC		<b>E57SBL30T111SD</b> 136183			
			15	Non-flush	NPN	2 m connection cable		1 N/O			<b>E57SAL30T110E</b> 136131
				Non-flush	NPN	2 m connection cable		1 NC			<b>E57SBL30T110E</b> 136177
				Non-flush	NPN	plug connector M12 x 1		1 N/O			<b>E57SAL30T110ED</b> 136132
				Non-flush	PNP	2 m connection cable		1 N/O			<b>E57SAL30T111E</b> 136135
				Non-flush	PNP	plug connector M12 x 1		1 N/O			<b>E57SAL30T111ED</b> 136136
				Non-flush	NPN	plug connector M12 x 1		1 NC			<b>E57SBL30T110ED</b> 136178
	15	Non-flush	PNP	2 m connection cable	1 NC	<b>E57SBL30T111E</b> 136181					
		Non-flush	PNP	plug connector M12 x 1	1 NC	<b>E57SBL30T111ED</b> 136182					

**Information relevant for export to North America**



Product Standards	UL 508; CSA-C22.2 No. 14; IEC60947-5-2; CE marking
UL File No.	E166051
UL CCN	NRKH, NRKH7
CSA File No.	50513
CSA Class No.	3211-03
NA Certification	UL Listed, CSA certified
Max. Voltage Rating	250 V AC, 250 V DC
Degree of Protection	IEC: IP67, IP69K; UL/CSA Type: -

Engineering



Circuit diagram

Rated operating voltage

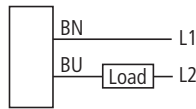
2-wire sensors

20–250 V AC/DC and AC-only  
Example AC connection

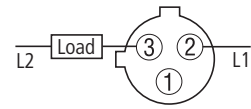
Contacts

N/O and NC

2 m connection cable



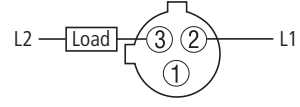
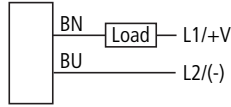
M12 plug connector (front view plug)



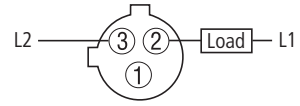
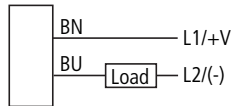
20–250 V AC/DC

Example DC connection

N/O and NC (NPN)



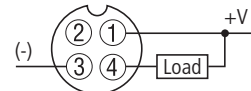
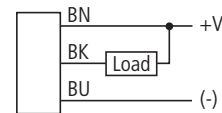
N/O and NC (PNP)



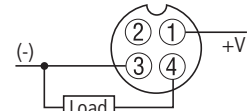
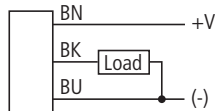
3-wire sensors

6–48 V DC

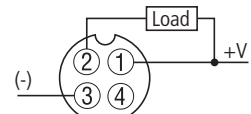
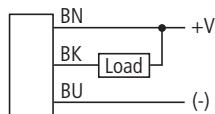
N/O (NPN)



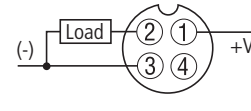
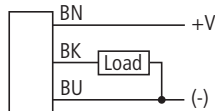
N/O (PNP)



NC (NPN)



NC (PNP)



## Technical data

		E57-L...L12A	E57-L...L12T	E57-S...L12A	E57-S...L12T
<b>General</b>					
Standards		IEC/EN 60947-5-2	IEC/EN 60947-5-2	IEC/EN 60947-5-2	IEC/EN 60947-5-2
Ambient temperature	°C	-25 - +70	-25 - +70	-25 - +70	-25 - +70
Protection type		IP67	IP67	IP67	IP67
Mechanical shock resistance	g	30 Shock duration 11 ms	30 Shock duration 11 ms	30 Shock duration 11 ms	30 Shock duration 11 ms
<b>Characteristic values</b>					
Temperature drift of $S_n$	%	10	10	10	10
Switching hysteresis of $S_n$	%	20	15	20	15
Rated operating voltage		20 - 250 V AC	6 - 48 V DC	40 - 250 V AC 20 - 250 V DC	6 - 48 V DC
Rated operational current	$I_e$	250	500	500	500
Switching frequency	Hz	20	800	20	800
Switching state indication	LED	Red	Red	Red	Red
Function		2-wire	3-wire	2-wire	3-wire
Construction type					
Design (outer dimensions)		M12 x 1	M12 x 1	M12 x 1	M12 x 1
Material		Stainless steel	Stainless steel	Stainless steel	Stainless steel

		E57-L...L18A	E57-L...L18T	E57-S...L18A	E57-S...L18T	E57-R...L18A	E57-R...L18T
<b>General</b>							
Standards		IEC/EN 60947-5-2					
Ambient temperature	°C	-25 - +70	-25 - +70	-25 - +70	-25 - +70	-25 - +70	-25 - +70
Protection type		IP67	IP67	IP67	IP67	IP67	IP67
Mechanical shock resistance	g	30 Shock duration 11 ms					
<b>Characteristic values</b>							
Temperature drift of $S_n$	%	10	10	10	10	10	10
Switching hysteresis of $S_n$	%	20	15	20	15	20	15
Rated operating voltage		40 - 250 V AC 20 - 250 V DC	6 - 48 V DC	40 - 250 V AC 20 - 250 V DC	6 - 48 V DC	20 - 250 V AC	6 - 48 V DC
Rated operational current	$I_e$	250	500	500	500	500	500
Switching frequency	Hz	20	500	20	500	20	500
Switching state indication	LED	Red	Red	Red	Red	Red	Red
Function		2-wire	3-wire	2-wire	3-wire	2-wire	3-wire
Construction type							
Design (outer dimensions)		M18 x 1	M18 x 1	M18 x 1	M18 x 1	M18 x 1	M18 x 1
Material		Stainless steel					

		E57-L...L30A	E57-L...L30T	E57-S...L30A	E57-S...L30T
<b>General</b>					
Standards		IEC/EN 60947-5-2	IEC/EN 60947-5-2	IEC/EN 60947-5-2	IEC/EN 60947-5-2
Ambient temperature	°C	-25 - +70	-25 - +70	-25 - +70	-25 - +70
Protection type		IP67	IP67	IP67	IP67
Mechanical shock resistance	g	30 Shock duration 11 ms	30 Shock duration 11 ms	30 Shock duration 11 ms	30 Shock duration 11 ms
<b>Characteristic values</b>					
Temperature drift of $S_n$	%	10	10	10	10
Switching hysteresis of $S_n$	%	20	15	20	15
Rated operating voltage		20 - 250 V AC	6 - 48 V DC	40 - 250 V AC 20 - 250 V DC	6 - 48 V DC
Rated operational current	$I_e$	250	500	500	500
Switching frequency	Hz	20	300	20	300
Switching state indication	LED	Red	Red	Red	Red
Function		2-wire	3-wire	2-wire	3-wire
Construction type					
Design (outer dimensions)		M30 x 1.5	M30 x 1.5	M30 x 1.5	M30 x 1.5
Material		Stainless steel	Stainless steel	Stainless steel	Stainless steel

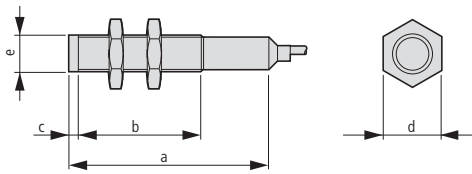
## Notes

Further technical data can be found in the Online Catalogue at [www.moeller.net](http://www.moeller.net)

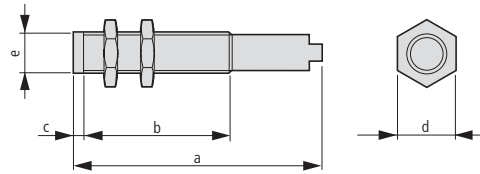
Dimensions



2 m connection cable



M12 plug connector



Construction type	Installation type	Dimensions in (mm)				
		a	b	c	d	e

2-wire, 2 m connection cable

12 mm	Flush	62.4	50.3	-	16.8	M12x1
	Non-flush	72.7	50.3	9.14	16.8	M12x1
18 mm	Flush	64.5	50.9	-	23.8	M18x1
	Non-flush	66.0	37.2	14.1	23.8	M18x1
30 mm	Flush	69.3	50.3	-	35.9	M30x1.5
	Non-flush	69.3	37.8	13.26	35.9	M30x1.5

2-wire, M12 plug connector

12 mm	Flush	68.4	50.3	-	16.8	M12x1
	Non-flush	77.7	50.3	9.14	9.14	M12x1
18 mm	Flush	69.06	50.9	-	23.8	M18x1
	Non-flush	69.4	37.2	14.1	23.8	M18x1
30 mm	Flush	73.8	50.3	-	35.9	M30x1.5
	Non-flush	73.8	37.8	13.26	35.9	M30x1.5

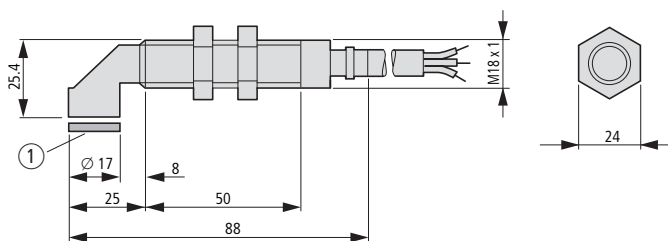
3-wire, 2 m connection cable

12 mm	Flush	62.4	50.3	-	16.8	M12x1
	Non-flush	72.7	50.3	9.14	16.8	M12x1
18 mm	Flush	64.5	50.9	-	23.8	M18x1
	Non-flush	66.0	37.2	14.1	23.8	M18x1
30 mm	Flush	69.3	50.3	-	35.9	M30x1.5
	Non-flush	69.3	37.8	13.26	35.9	M30x1.5

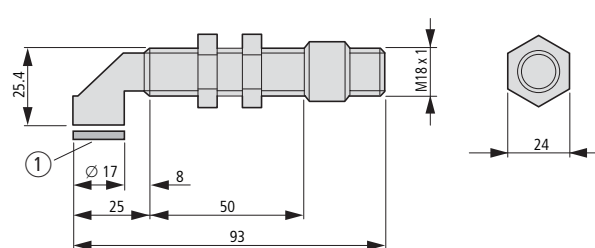
3-wire, M12 plug connector

12 mm	Flush	68.7	50.3	-	16.8	M12x1
	Non-flush	77.7	50.3	9.14	16.8	M12x1
18 mm	Flush	69.3	50.9	-	23.8	M18x1
	Non-flush	69.4	37.2	14.1	23.8	M18x1
30 mm	Flush	74.1	50.3	-	35.9	M30x1.5
	Non-flush	74.1	37.8	13.26	35.9	M30x1.5

E57R...A2...  
E57R...110...  
E57R...111...

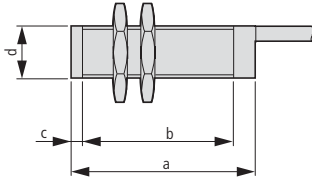


E57R...SA  
E57R...EA  
E57R...SD  
E57R...ED

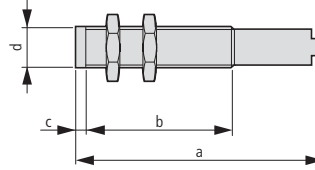


① Sensor surface

## 2 m connection cable



## M12 plug connector



		a	b	c	d
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**2-wire, AC, 2 m connection cable**

12 mm	Flush	51.7	39.6	0.5	M12x1
	Non-flush	51.7	35.1	5	M12x1
18 mm	Flush	35.4	21.82	0.5	M18x1
	Non-flush	35.4	15.32	7	M18x1
30 mm	Flush	40.2	25.15	0.8	M30x1.5
	Non-flush	44.9	17.27	13.26	M30x1.5

**2-wire, AC, M12 plug connector**

12 mm	Flush	57.8	39.6	0.5	M12x1
	Non-flush	57.8	35.1	5	M12x1
18 mm	Flush	40.0	21.82	0.5	M18x1
	Non-flush	40.0	15.32	7	M18x1
30 mm	Flush	44.8	25.15	0.8	M30x1.5
	Non-flush	49.5	17.27	13.26	M30x1.5

**2-wire, AC/DC, 2 m connection cable**

12 mm	Flush	62.4	50.27	-	M12x1
	Non-flush	62.4	45.77	5	M12x1
18 mm	Flush	64.5	50.9	-	M18x1
	Non-flush	64.5	44.4	7	M18x1
30 mm	Flush	69.3	53.8	-	M30x1.5
	Non-flush	69.3	41.4	13.26	M30x1.5

**2-wire, AC/DC, M12 plug connector**

12 mm	Flush	68.4	50.27	-	M12x1
	Non-flush	68.4	45.77	5	M12x1
18 mm	Flush	69.06	50.9	-	M18x1
	Non-flush	69.06	44.4	7	M18x1
30 mm	Flush	73.8	53.8	-	M30x1.5
	Non-flush	73.8	41.4	13.26	M30x1.5

**3-wire, DC, 2 m connection cable**

12 mm	Flush	35.2	23.9	0.5	M12x1
	Non-flush	35.2	18.59	5	M12x1
18 mm	Flush	35.4	21.82	0.5	M18x1
	Non-flush	35.4	15.32	7	M18x1
30 mm	Flush	40.2	21.26	0.8	M30x1.5
	Non-flush	44.9	13.46	13.26	M30x1.5

**3-wire, DC, M12 plug connector**

12 mm	Flush	41.5	23.9	0.5	M12x1
	Non-flush	41.5	18.59	5	M12x1
18 mm	Flush	40.3	21.82	0.5	M18x1
	Non-flush	40.3	15.32	7	M18x1
30 mm	Flush	45.0	21.26	0.8	M30x1.5
	Non-flush	49.7	13.46	13.26	M30x1.5



Description



- ① Two-color 360° output signal lamp
- ② Shock absorbing Ryton face cap material®

Brief description

The iProx is Eaton’s most powerful and versatile inductive, cylindrical sensor. With its mounting microprocessor and unique Smart-Sense™ technology this sensor has three times the range of other sensors in its class and offers unmatched configurability. Both shielded and unshielded versions of the sensor have an extended range so that the sensor can be positioned further away from the target object. This reduces the risk of a collision with the target object and increases operational reliability. The iProx also has many additional functions, which can be activated through the optionally available programming tools. With Windows software ProxView the sensor can be programmed for any application. Sensor characteristics such as range can be set to the nearest tenth of a millimeter. The outputs can be configured as N/O or NC. Even interference immunity and response time can be adjusted. In addition the iProx features a mounting logic for timing delays and speed detection – without complex PLC programming. With its large range, high quality, sophisticated design, and adaptability to its environment, iProx is the ideal choice for demanding applications.







Product features

- Available as DC 3-wire version.
- Reliably detect metal targets at up to three times the range of conventional shielded or unshielded tubular inductive sensors
- Quality construction using a stainless steel barrel, 360° degree dual-color LED indicator, Ryton impact-resistant face cap® and vibration-absorbing potting compound.
- The automatic configuration automatically detects NPN and PNP connections and switches the sensor accordingly and without user intervention.
- Configurable range, band detection, background (metal) object detection, timing delays and speed detection thanks to the microprocessor-based Smart-Sense™ technology.
- Optional computer programming cable and Windows-based ProxView configuration software makes it easy to customize sensors.
- Resistant to high interference levels (up to 20 V/m).
- Resistant to extreme temperatures (-40 °C).

Approvals



## Ordering

	Rated operational voltage	Rated switching distance $S_n$ mm	Installation type	Switching type	Connection options	Contact configuration NC = Normally closed contact N/O = Normally open contact	Material	Part no. Article no.	Price See price list	Std. pack
<b>iProx series</b>										
<b>3-wire</b>										
<b>M12 x 1</b>										
	6 - 48 V DC	4	Flush	NPN PNP	2 m connection cable	1 N/O	Stainless steel	<b>E59-M12A105C02-D1</b> 136205		1 off 
			Flush	NPN PNP	2 m connection cable	1 NC	Stainless steel	<b>E59-M12A105C02-D2</b> 136206		
			Flush	NPN PNP	plug connector M12 x 1	1 N/O	Stainless steel	<b>E59-M12A105D01-D1</b> 136207		
			Flush	NPN PNP	plug connector M12 x 1	1 NC	Stainless steel	<b>E59-M12A105D01-D2</b> 136208		
	6 - 48 V DC	10	Non-flush	NPN PNP	2 m connection cable	1 N/O	Stainless steel	<b>E59-M12C110C02-D1</b> 136209		
			Non-flush	NPN PNP	2 m connection cable	1 NC	Stainless steel	<b>E59-M12C110C02-D2</b> 136210		
			Non-flush	NPN PNP	plug connector M12 x 1	1 N/O	Stainless steel	<b>E59-M12C110D01-D1</b> 136211		
			Non-flush	NPN PNP	plug connector M12 x 1	1 NC	Stainless steel	<b>E59-M12C110D01-D2</b> 136212		
<b>M18 x 1</b>										
	6 - 48 V DC	8	Flush	NPN PNP	2 m connection cable	1 N/O	Stainless steel	<b>E59-M18A108C02-D1</b> 136213		1 off 
			Flush	NPN PNP	2 m connection cable	1 NC	Stainless steel	<b>E59-M18A108C02-D2</b> 136214		
			Flush	NPN PNP	plug connector M12 x 1	1 N/O	Stainless steel	<b>E59-M18A108D01-D1</b> 136215		
			Flush	NPN PNP	plug connector M12 x 1	1 NC	Stainless steel	<b>E59-M18A108D01-D2</b> 136216		
	18	Non-flush	NPN PNP	2 m connection cable	1 N/O	Stainless steel	<b>E59-M18C116C02-D1</b> 136217			
		Non-flush	NPN PNP	2 m connection cable	1 NC	Stainless steel	<b>E59-M18C116C02-D2</b> 136218			
		Non-flush	NPN PNP	plug connector M12 x 1	1 N/O	Stainless steel	<b>E59-M18C116D01-D1</b> 136219			
		Non-flush	NPN PNP	plug connector M12 x 1	1 NC	Stainless steel	<b>E59-M18C116D01-D2</b> 136220			
<b>M30 x 1.5</b>										
	6 - 48 V DC	15	Flush	NPN PNP	2 m connection cable	1 N/O	Stainless steel	<b>E59-M30A115C02-D1</b> 136221		1 off 
			Flush	NPN PNP	2 m connection cable	1 NC	Stainless steel	<b>E59-M30A115C02-D2</b> 136222		
			Flush	NPN PNP	plug connector M12 x 1	1 N/O	Stainless steel	<b>E59-M30A115D01-D1</b> 136223		
			Flush	NPN PNP	plug connector M12 x 1	1 NC	Stainless steel	<b>E59-M30A115D01-D2</b> 136224		
	29	Non-flush	NPN PNP	2 m connection cable	1 N/O	Stainless steel	<b>E59-M30C129C02-D1</b> 136225			
		Non-flush	NPN PNP	2 m connection cable	1 NC	Stainless steel	<b>E59-M30C129C02-D2</b> 136226			
		Non-flush	NPN PNP	plug connector M12 x 1	1 N/O	Stainless steel	<b>E59-M30C129D01-D1</b> 136227			
		Non-flush	NPN PNP	plug connector M12 x 1	1 NC	Stainless steel	<b>E59-M30C129D01-D2</b> 136228			
Programming cable RS232	–	–	–	–	–	–	<b>E59RP1</b> 136229		1 off	
Programming software CD	–	–	–	–	–	–	<b>E59SW1</b> 136230		1 off	

## Information relevant for export to North America



## Product Standards

UL 508; CSA-C22.2 No. 14;  
IEC60947-5-2; CE marking  
UL File No. E166051  
UL CCN NRRKH, NRRKH7  
CSA File No. UL report applies to both Canada and US

CSA Class No.  
NA Certification

Max. Voltage Rating  
Degree of Protection

–  
UL Listed, certified by UL for use in Canada  
48 V DC  
IEC: IP67, IP69K; UL/CSA Type: 4, 4x, 6, 6P, 12, 13

Technical data

			E59-M12A105	E59-M18A108	E59-M12C110	E59-M30A115	E59-M18C116	E59-M30C129
<b>General</b>								
Standards			IEC/EN 60947-5-2					
Ambient temperature		°C	-40 - +70					
Protection type			IP67	IP69K	IP67	IP69K	IP69K	IP69K
Mechanical shock resistance			30 Shock duration 11 ms					
<b>Characteristic values</b>								
Rated switching distance								
Rated switching distance	$S_n$	mm	4	8	10	15	18	29
Repetition accuracy of $S_n$		%	1	1	3	1	3	3
Temperature drift of $S_n$		%	10	10	10	10	10	10
Switching hysteresis of $S_n$		%	15	15	15	15	15	15
Sensing range		mm	–	–	–	–	–	–
Rated operating voltage			6 - 48 V DC	6 - 48 V DC	6 - 48 V DC	6 - 48 V DC	6 - 48 V DC	6 - 48 V DC
Mains frequency								
Residual ripple of $U_e$		%	–	–	–	–	–	–
Operating current in the switched state at 24 V DC	$I_b$	mA	15	15	15	15	15	15
Rated operational current	$I_e$	mA	300	300	300	300	300	300
Voltage drop at $I_e$	$U_d$	V	2.5	2.5	2.5	2.5	2.5	2.5
Switching frequency		Hz	580	390	300	240	150	145
Min. load current	$I_e$	mA	1	1	1	1	1	1
Short-time current (10 ms, 5 Hz)		A	–	–	–	–	–	–
Residual current due to the load in locked state at 230 V AC or 24 V DC	$I_r$	mA	0.15	0.15	0.15	0.15	0.15	0.15
Switching state indication		LED	Red	Red	Red	Red	Red	Red
Operating voltage display		LED	Red	Red	Red	Red	Red	Red
Boundary gain			–	–	–	–	–	–
Protective functions			Short-circuit protection, protection against polarity reversal, wire breakage protection					
Function			3-wire	3-wire	3-wire	3-wire	3-wire	3-wire
Construction type								
Design (outer dimensions)			M12 x 1	M18 x 1	M12 x 1	M30 x 1.5	M18 x 1	M30 x 1.5
Material			Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel

Notes

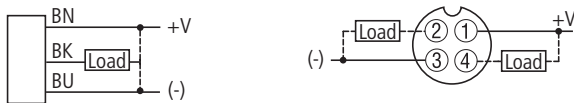
Further technical data can be found in the Online Catalogue at [www.moeller.net](http://www.moeller.net)

Engineering

Circuit diagram

59...C02-D1  
E59...C02-D2

E59...D01-D1  
E59...D01-D2

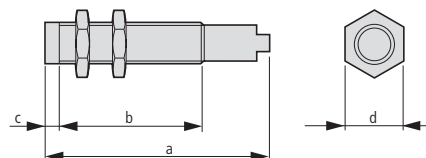
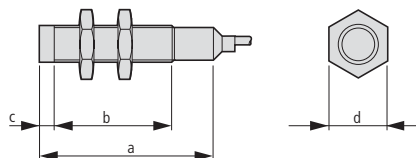


Pins 2 and 4 internally interconnected.

Dimensions

2 m connection cable

M12 plug connector



Construction type	Installation type	a	b	c	d	Construction type	Installation type	a	b	c	d
12 mm	Flush	62.4	50.3	0.5	17	12 mm	Flush	68.7	50.3	0.5	17
	Non-flush	62.4	41.6	9	17		Non-flush	68.7	41.6	9	17
18 mm	Flush	64.5	50.9	0.5	24	18 mm	Flush	69.3	50.9	0.5	24
	Non-flush	64.5	37.4	14	24		Non-flush	69.3	37.4	14	24
30 mm	Flush	69.6	54.1	0.75	36	30 mm	Flush	74.1	54.1	0.75	36
	Non-flush	69.6	35.8	19	36		Non-flush	74.1	35.8	19	36

## Description



- ① High quality stainless steel enclosures.
- ② M12 plug connector available for sizes 6.5 and 8 mm.
- ③ Sizes 5 mm and 8 mm with thread; 4 mm and 6.5 mm without thread.
- ④ Size 6.5 mm supplied complete with mounting bracket.

**Short description**

Eaton's unique inductive proximity sensors have been developed specially for use in extremely small spaces. The wide range of available models with enclosure diameters from 8 mm down to 4 mm covers a multitude of application scenarios. The sensors feature three-wire connections with an input voltage of 10 to 30 V DC. Both shielded and unshielded versions are available.

**Product features**





- Small 4, 5, 6.5 and 8 mm diameters for use in applications with limited space for mounting sensors
- Stainless steel enclosure.
- All models have an output status display.
- Short-circuit and reverse polarity protection.
- High degree of protection IP67.

**Approvals**

HPL03063EN

Ordering



	Rated operational voltage	Rated switching distance S <sub>n</sub> mm	Installation type	Switching type	Connection options	Contact configuration NC = Normally closed contact N/O = Normally open contact	Material	Part no. Article no.	Price See price list	Std. pack
<b>E57 Miniature Series</b>										
<b>3-wire</b>										
<b>4 mm Ø</b>										
	10 - 30 V DC	0.8	Flush	NPN	2 m connection cable	1 N/O	Stainless steel	<b>E57EAL4T110SP</b> 136238		1 off
		0.8	Flush	PNP	2 m connection cable	1 N/O		<b>E57EAL4T111SP</b> 136239		
<b>M5 x 1</b>										
	10 - 30 V DC	0.8	Flush	NPN	2 m connection cable	1 N/O	Stainless steel	<b>E57EAL5T110SP</b> 136240		1 off
		0.8	Flush	PNP	2 m connection cable	1 N/O		<b>E57EAL5T111SP</b> 136241		
<b>6.5 mm Ø</b>										
	10 - 30 V DC	1	Flush	NPN	2 m connection cable	1 N/O	Stainless steel	<b>E57EAL6T110SP</b> 136243		1 off
		2	Non-flush	NPN	2 m connection cable	1 N/O		<b>E57EAL6T110EP</b> 136242		
		1	Flush	PNP	2 m connection cable	1 N/O		<b>E57EAL6T111SP</b> 136245		
		2	Non-flush	PNP	2 m connection cable	1 N/O		<b>E57EAL6T111EP</b> 136244		
<b>M8 x 1</b>										
	10 - 30 V DC	1	Flush	NPN	2 m connection cable	1 N/O	Stainless steel	<b>E57EAL8T110SP</b> 136249		1 off
		1	Flush	NPN	2 m connection cable	1 NC		<b>E57EBL8T110SP</b> 136257		
		1	Flush	NPN	plug connector M12 x 1	1 N/O		<b>E57EAL8T110SD</b> 136248		
		1	Flush	NPN	plug connector M12 x 1	1 NC		<b>E57EBL8T110SD</b> 136256		
		1	Flush	PNP	2 m connection cable	1 N/O		<b>E57EAL8T111SP</b> 136253		
		1	Flush	PNP	2 m connection cable	1 NC		<b>E57EBL8T111SP</b> 136261		
		1	Flush	PNP	plug connector M12 x 1	1 N/O		<b>E57EAL8T111SD</b> 136252		
		1	Flush	PNP	plug connector M12 x 1	1 NC		<b>E57EBL8T111SD</b> 136260		
		2	Non-flush	NPN	2 m connection cable	1 N/O		<b>E57EAL8T110EP</b> 136247		
		2	Non-flush	NPN	2 m connection cable	1 NC		<b>E57EBL8T110EP</b> 136255		
		2	Non-flush	NPN	plug connector M12 x 1	1 N/O		<b>E57EAL8T110ED</b> 136246		
		2	Non-flush	NPN	plug connector M12 x 1	1 NC		<b>E57EBL8T110ED</b> 136254		
		2	Non-flush	PNP	2 m connection cable	1 N/O		<b>E57EAL8T111EP</b> 136251		
		2	Non-flush	PNP	2 m connection cable	1 NC		<b>E57EBL8T111EP</b> 136259		
		2	Non-flush	PNP	plug connector M12 x 1	1 N/O		<b>E57EAL8T111ED</b> 136250		
		2	Non-flush	PNP	plug connector M12 x 1	1 NC		<b>E57EBL8T111ED</b> 136258		

## Technical data

			E57-EAL..., E57-EBL...
<b>General</b>			
Standards			IEC/EN 60947-5
Ambient temperature		°C	-25 - +70
Protection type			IP67
Mechanical shock resistance		g	30 Shock duration 11 ms
<b>Characteristic values</b>			
Repetition accuracy of $S_n$		%	1
Temperature drift of $S_n$		%	10
Switching hysteresis of $S_n$		%	15
Rated operating voltage			10 - 30 V DC
Operating current in the switched state at 24 V DC	$I_b$	mA	10
Rated operational current	$I_e$	mA	200
Voltage drop at $I_e$	$U_d$	V	1.5
Switching frequency		Hz	2000
Residual current due to the load in locked state at 230 V AC or 24 V DC	$I_r$	mA	0.01
Switching state indication		LED	Red
Protective functions			Short-circuit protection
Function			3-wire
Material			Stainless steel

## Notes

Further technical data can be found in the Online Catalogue at [www.moeller.net](http://www.moeller.net)

Engineering

Circuit diagram

Rated operating voltage

3-wire sensors

10 - 30 V DC

Contacts

N/O (NPN)

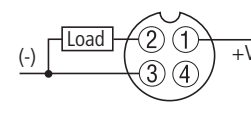
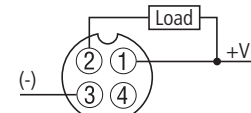
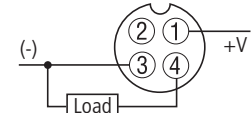
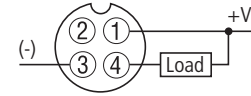
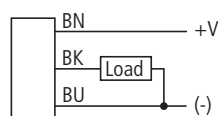
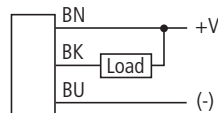
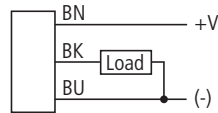
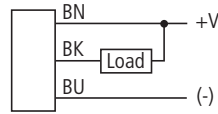
2 m connection cable

M12 plug connector (front view plug)

N/O (PNP)

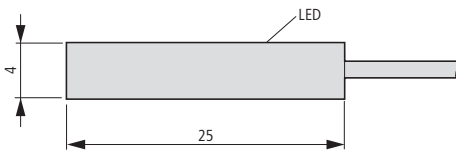
NC (NPN)

NC (PNP)

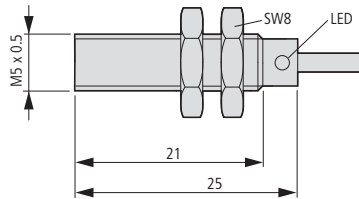


Dimensions

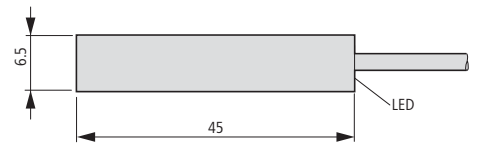
E57EAL4T...



E57EAL5T...

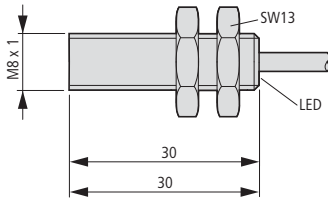


E57EAL6T...



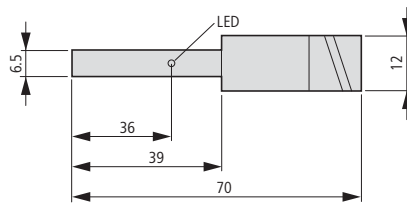
E57...8T...SP

E57...8T...EP

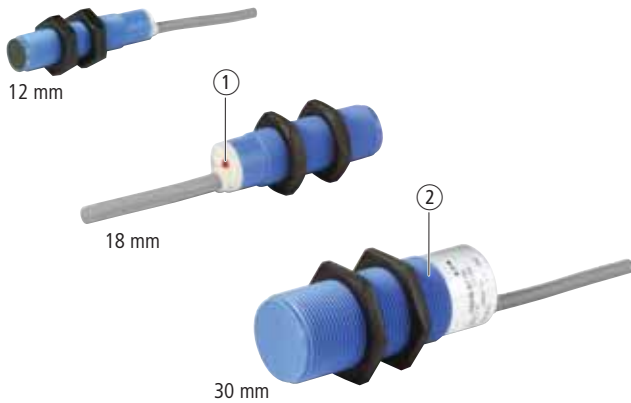


E57...8T...SD

E57...8T...ED



Description



- ① LED for output status.
- ② Corrosion-resistant PBT enclosure

Short description

Cylinder design

Tubular Inductive Proximity Sensors by Eaton's electrical business are constructed of corrosion resistant PBT plastic. They are ideally suited for wash down applications such as those found in food processing plants. They are available in 12 mm, 18 mm and 30 mm diameters. Shielded sensors can be embedded in metallic surfaces.

Approvals



Product features

Cylinder design

- Versions for 2-wire AC voltage or 3-wire DC voltage.
- Threaded tubular enclosures in three diameters allow easy integration into new and existing applications
- Nonmetallic construction offers excellent resistance to corrosion
- All models feature an output signal indicator light.



- ① Sensor head fitted for lateral detection. Can be rotated 90°.
- ② Non-metal enclosure is corrosion-resistant.

Short description

Rectangular design

These sensors from Eaton's electrical business feature PBT resin enclosures for high resistance to corrosion. The enclosure is sized to offer a direct replacement for standard limit switches. The unique sensing head is factory assembled for top sensing, but can be easily converted in the field to any one of four side sensing positions. Models are available with sensing ranges from 15 mm to 40 mm. The sensors can be configured for N/O or NC operation.

Product features






Rectangular design

- Nonmetallic enclosure offers excellent resistance to corrosion.
- Same form factor and mounting as standard limit switches for easy retrofit.
- Sensor head features five sensing positions (top and all four sides) that can be easily changed in the field.
- Long sensing ranges up to 40 mm.


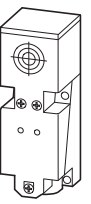


HPL03067EN



Design (outer dimensions)	Rated operational voltage	Rated switching distance  $S_n$ mm	Installation type	Switching type	Connection option	Contact configuration NC = Normally closed contact N/O = Normally open contact P = Normally closed contact/ Normally open closed programmable	Material	Part no. Article no.	Price See price list	Std. pack
<b>E55 Series</b>										
<b>2-wire</b>										
	M12 x 1	20 - 250 V AC	2	Flush	–	2 m connection cable	plastic	E55CAL12A2 135816		1 off
			2	Flush	–			1 NC		
			4	Non-flush	–			1 N/O		
			4	Non-flush	–			1 NC		
	M18 x 1	20 - 250 V AC	5	Flush	–	2 m connection cable	plastic	E55CAL18A2 135822		1 off
			5	Flush	–			1 NC		
			8	Non-flush	–			1 N/O		
			8	Non-flush	–			1 NC		
	M30 x 1.5	20 - 250 V AC	10	Flush	–	2 m connection cable	plastic	E55CAL30A2 135828		1 off
			10	Flush	–			1 NC		
			15	Non-flush	–			1 N/O		
			15	Non-flush	–			1 NC		
<b>3-wire</b>										
	M12 x 1	10 - 30 V DC	2	Flush	NPN	2 m connection cable	plastic	E55CAL12T110 135818		1 off
			2	Flush	PNP			1 N/O		
			2	Flush	PNP			1 NC		
			4	Non-flush	NPN			1 N/O		
			4	Non-flush	PNP			1 N/O		
			4	Non-flush	NPN			1 NC		
			4	Non-flush	PNP			1 NC		
	M18 x 1	10 - 30 V DC	5	Flush	NPN	2 m connection cable	plastic	E55CAL18T110 135824		1 off
			5	Flush	PNP			1 N/O		
			5	Flush	NPN			1 NC		
			8	Non-flush	NPN			1 N/O		
			8	Non-flush	PNP			1 N/O		
			8	Non-flush	NPN			1 NC		
			8	Non-flush	PNP			1 NC		



Design (outer dimensions)	Rated operational voltage	Rated switching distance  S <sub>n</sub> mm	Installation type	Switching type	Connection option	Contact configuration NC = Normally closed contact N/O = Normally open contact P = Normally closed contact/ Normally open closed programmable	Material	Part no. Article no.	Price See price list	Std. pack	
<b>3-wire</b>											
	M30 x 1.5	10 - 30 V DC	10	Flush	NPN	2 m connection cable	plastic	<b>E55CAL30T110</b> 135830		1 off	
			10	Flush	PNP			1 N/O			<b>E55CAL30T111</b> 135832
			10	Flush	NPN			1 NC			<b>E55CBL30T110</b> 135846
			10	Flush	PNP			1 NC			<b>E55CBL30T111</b> 135848
			15	Non-flush	NPN			1 N/O			<b>E55CAL30T110E</b> 135831
			15	Non-flush	PNP			1 N/O			<b>E55CAL30T111E</b> 135833
			15	Non-flush	NPN			1 NC			<b>E55CBL30T110E</b> 135847
			15	Non-flush	PNP			1 NC			<b>E55CBL30T111E</b> 135849
			<b>2-wire</b>								
	40 x 40 x 118	20 - 250 V AC	15	Flush	–	Screwed terminal	plastic	<b>E55BLT1C</b> 135812		1 off	
			20	Non-flush	–			1 P			<b>E55BLT1D</b> 135813
			30	Non-flush	–			1 P			<b>E55BLT1E</b> 135814
			40	Non-flush	–			1 P			<b>E55BLT1F</b> 135815

Technical data



		E55C...L12A	E55C...L12T	E55C...L12T...E	E55C...L18A	E55C...L18T
<b>General</b>						
Standards		IEC/EN 60947-5-2				
Ambient temperature	°C	-25 - +70	-25 - +70	-25 - +70	-25 - +70	-25 - +70
Protection type		IP66	IP66	IP66	IP66	IP66
Mechanical shock resistance	g	30 Shock duration 11 ms				
<b>Characteristic values</b>						
Repetition accuracy of S <sub>n</sub>	%	10	10	10	10	10
Temperature drift of S <sub>n</sub>	%	10	10	10	10	10
Switching hysteresis of S <sub>n</sub>	%	20	20	20	20	20
Rated operating voltage		20 - 250 V AC	10 - 30 V DC	10 - 30 V DC	20 - 250 V AC	10 - 30 V DC
Residual ripple of U <sub>e</sub>	%	10	10	10	10	10
Operating current in the switched state at 24 V DC	I <sub>b</sub> mA	3	–	3	3	–
Rated operational current	I <sub>e</sub> mA	150	200	200	150	200
Voltage drop at I <sub>e</sub>	U <sub>d</sub> V	10	8	8	10	8
Switching frequency	Hz	25	2000	1000	25	1000
Switching state indication	LED	Red	Red	Red	Red	Red
Protective functions			Short-circuit protection Protection against polarity reversal	Short-circuit protection Protection against polarity reversal		Short-circuit protection Protection against polarity reversal
Function		2-wire	3-wire	3-wire	2-wire	3-wire
Construction type						
Design outer dimensions)		M12 x 1	M12 x 1	M12 x 1	M18 x 1	M18 x 1
Connection options		Cable open 2 m connection cable				
Material		plastic				

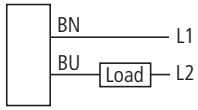
		E55C...L18T...E	E55C...L30T	E55C...L30A	E55C...L30T...E	E55BLT...
<b>General</b>						
Standards		IEC/EN 60947-5-2				
Ambient temperature	°C	-25 - +70	-25 - +70	-25 - +70	-25 - +70	-25 - +70
Protection type		IP66	IP66	IP66	IP66	IP67
Mechanical shock resistance	g	30 Shock duration 11 ms				
<b>Characteristic values</b>						
Repetition accuracy of S <sub>n</sub>	%	10	10	10	10	10
Temperature drift of S <sub>n</sub>	%	10	10	10	10	10
Switching hysteresis of S <sub>n</sub>	%	20	20	20	20	20
Rated operating voltage		10 - 30 V DC	10 - 30 V DC	20 - 250 V AC	10 - 30 V DC	20 - 264 V AC
Residual ripple of U <sub>e</sub>	%	10	10	10	10	10
Operating current in the switched state at 24 V DC	I <sub>b</sub> mA	3	–	3	3	3
Rated operational current	I <sub>e</sub> mA	200	200	150	200	400
Voltage drop at I <sub>e</sub>	U <sub>d</sub> V	8	8	10	8	8
Switching frequency	Hz	500	300	25	150	25
Switching state indication	LED	Red	Red	Red	Red	Red
Protective functions		Short-circuit protection Protection against polarity reversal	Short-circuit protection Protection against polarity reversal		Short-circuit protection Protection against polarity reversal	Short-circuit protection Protection against polarity reversal Protection against wire breakage
Function		3-wire	3-wire	2-wire	3-wire	2-wire
Construction type						
Design (outer Dimensions)		M18 x 1	M30 x 1.5	M30 x 1.5	M30 x 1.5	40 x 40 x 118
Connection options						
Material						

Notes

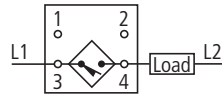
Further technical data can be found in the Online Catalogue at [www.moeller.net](http://www.moeller.net)

Engineering

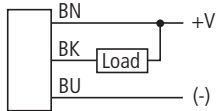
E55CAL...AZ, E55CBL...A2  
E55CAL...A2E, E55CBL...A2E



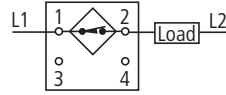
E55BL...



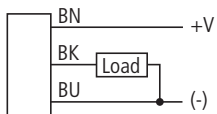
E55CAL...110, E55CBL...110  
E55CAL...110E, E55CBL...110E



E55BL...



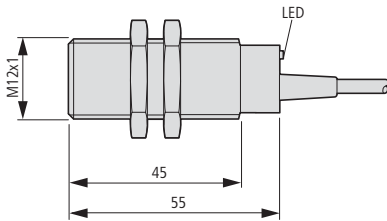
E55CAL...111, E55CBL...111E  
E55CAL...111, E55CBL...111E



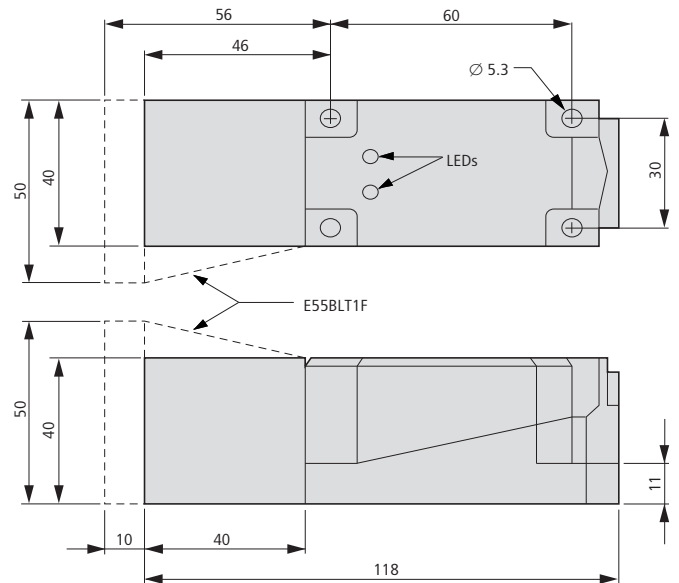
**Note:**  
Switches are supplied configured as N/O. Can be switched internally to NC.

Dimensions

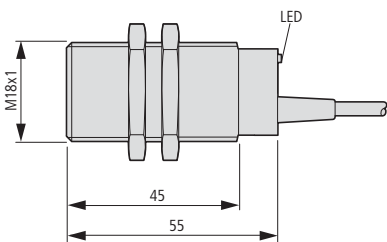
E55CAL12...  
E55CBL12...



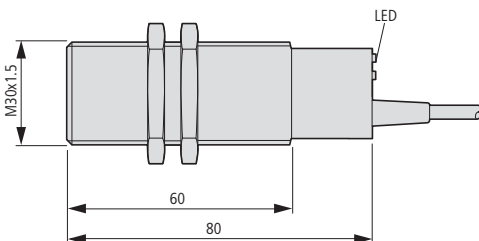
E55BL...

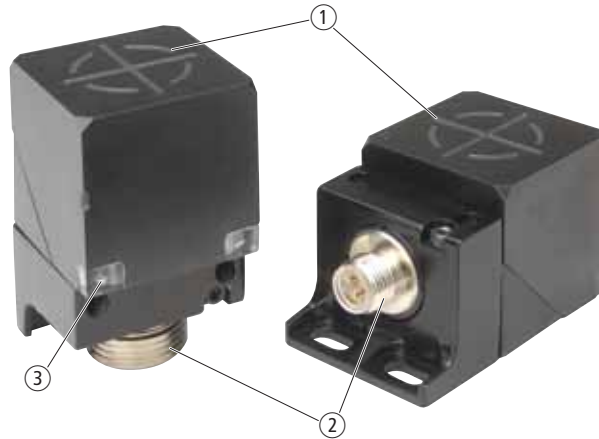


E55CAL18...  
E55CBL18...



E55CAL30...  
E55CBL30...



**Description**

- ① Adjustable sensing head for top- and side-sensing.
- ② M12 Plug connector.
- ③ Two LEDs status indication.

**Short description**

The E52 Cube sensor from Eaton is a powerful inductive proximity sensor. It provides a long sensing range in a compact, standard-conformant enclosure. The outputs of this series are self-configuring as PNP or NPN, without the need for user intervention. The E52 features additional outputs for various connection types to cover many applications with just a few models. Separate indicator lights for voltage and output signal simplify installation and troubleshooting. Five different mounting methods make these sensors exceptionally versatile. The E52 Cube has been developed specially for demanding applications, for example in car production, in bulk material plants and in metal-processing industries.

**Product features**

- Large measuring range up to 40 mm.
- Four-wire models feature additional outputs (1 × NC, 1 × N/O).
- Four-wire DC models feature an automatic configuration function for independent NPN/PNP selection.
- Robust design featuring vibration and impact-absorbing potting compound.
- Ideal for extreme temperatures or high pressure washdown environments.

**Approvals**

Ordering



Function	Design (outer dimensions)	Rated operational voltage	Rated switching distance  $S_n$ mm	Installation type	Switching type	Connection option	Contact configuration NC = Normally closed contact N/O = Normally open contact	Material	Part no. Article no.	Price See price list	Std. pack
<b>E52-Serie</b>											
	4-wire 40 x 40 x 40 Rectangular enclosure	6 - 48 V DC	15	Flush	NPN PNP	M12, "A"-coded plug connectors	1 NC/1 N/O	Zinc/plastic	<b>E52Q-DL15SAD01</b> 135804		1 off
		6 - 48 V DC	15	Non-flush			1 NC/1 N/O		<b>E52Q-DL15UAD01</b> 135805		
		6 - 48 V DC	20	Flush			1 NC/1 N/O		<b>E52Q-DL20SAD01</b> 135806		
		6 - 48 V DC	20	Non-flush			1 NC/1 N/O		<b>E52Q-DL20UAD01</b> 135807		
		6 - 48 V DC	25	Non-flush			1 NC/1 N/O		<b>E52Q-DL25UAD01</b> 135808		
		6 - 48 V DC	30	Non-flush			1 NC/1 N/O		<b>E52Q-DL30UAD01</b> 135809		
		6 - 48 V DC	35	Non-flush			1 NC/1 N/O		<b>E52Q-DL35UAD01</b> 135810		
		6 - 48 V DC	40	Non-flush			1 NC/1 N/O		<b>E52Q-DL40UAD01</b> 135811		

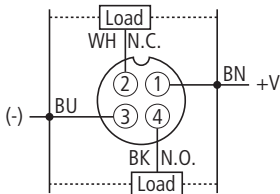
Information relevant for export to North America



Product Standards: UL 508; CSA-C22.2 No. 14; IEC60947-5-2; CE marking  
 UL File No.: E166051  
 UL CCN: NRKH, NRKH7  
 CSA File No.: UL report applies to both Canada and US  
 CSA Class No.: -  
 NA Certification: UL Listed, certified by UL for use in Canada  
 Max. Voltage Rating: 48 V DC  
 Degree of Protection: IEC: IP68; UL Type 4, 4X, 6, 6P, 12, 13

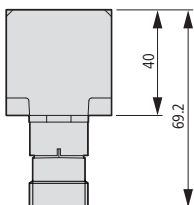
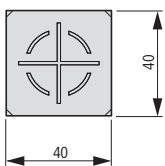
Engineering

E52...



Through autoconfiguration connectable to both +V or (-).

Dimensions



## Technical data

			E52-Series
<b>General</b>			
Standards			IEC/EN 60947-5-2
Ambient temperature		°C	-40 - +70
Protection type			IP67
Mechanical shock resistance		g	30 Shock duration 11 ms
<b>Characteristic values</b>			
Repetition accuracy of $S_n$		%	2
Temperature drift of $S_n$		%	10
Switching hysteresis of $S_n$		%	15
Rated operating voltage			6 - 48 V DC
Operating current in the switched state at 24 V DC	$I_b$	mA	25
Rated operational current	$I_e$	mA	300
Voltage drop at $I_e$	$U_d$	V	2.5
Switching frequency		Hz	100
Residual current due to the load in locked state at 230 V AC or 24 V DC	$I_r$	mA	0.15
Switching state indication		LED	Red
Operating voltage display		LED	Green
Protective functions			Short-circuit protection Protection against polarity reversal Protection against wire breakage
Function			4-wire
Design (outer dimensions)			40 x 40 x 40 Rectangular enclosure
Connection options			M12, "A"-coded plug connectors
Material			plastic
Surface			Zinc alloy

## Notes

Further technical data can be found in the Online-Catalogue at [www.moeller.net](http://www.moeller.net)



## Description



① Indicator lights for current and output status.

### Short description

Eaton's E56 sensors are powerful inductive proximity sensors. The E56 Pancake provides greater sensing ranges than other inductive sensor package types. They are easy to wire and feature self-configuring complementary outputs, which automatically detect an NPN or PNP connection and configure the sensor accordingly without the need for user intervention. Indicator lights for power and output state simplify troubleshooting compared to sensors with only an output indicator. These convenience features and their high performance make the E56 Pancake sensors ideal for applications in which a rugged design and a long range are required.

### Product features

- Longest measuring range on the market – up to 100 mm.
- Three sizes for all application scenarios; max. range 50, 70 or 100 mm.
- Complementary outputs (1 × NC, 1 × N/O) on models with four-wire connection.
- Models with DC voltage four-wire connection feature an automatic configuration function for independent switchover between NPN and PNP.
- Robust design featuring vibration and impact-absorbing potting compound.
- Ideal for extreme temperatures or high pressure washdown environments.



### Approvals





HPL03075EN

Ordering

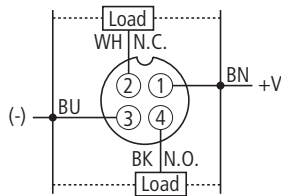
Function	Design (outer dimensions)	Rated operational voltage	Rated switching distance $S_n$ mm	Installation type	Switching type	Connection option	Contact configuration NC = Normally closed contact N/O = Normally open contact	Material	Part no. Article no.	Price See price list	Std. pack
<b>E56 Series</b>											
	4-wire	79 x 79 x 39	6 - 48 V DC	40	Flush	plug connectors	1 NC/1 N/O	plastic	<b>E56ADL40SAD01</b> 136234		1 off
		79 x 79 x 39		50	Non-flush		1 NC/1 N/O				
		109 x 110 x 41		70	Non-flush		1 NC/1 N/O				
		171.5 x 171.5 x 67.4		100	Non-flush		1 NC/1 N/O				

Information relevant for export to North America



Product Standards	UL 508; CSA-C22.2 No. 14; IEC60947-5-2; CE marking
UL File No.	E166051
UL CCN	NRKH, NRKH7
CSA File No.	UL report applies to both Canada and US
CSA Class No.	-
NA Certification	UL Listed, certified by UL for use in Canada
Max. Voltage Rating	48 V DC
Degree of Protection	IEC: IP67, IP69K; UL/CSA Type: 4, 4x, 6, 6P, 12, 13

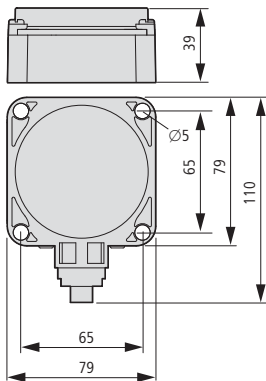
Engineering



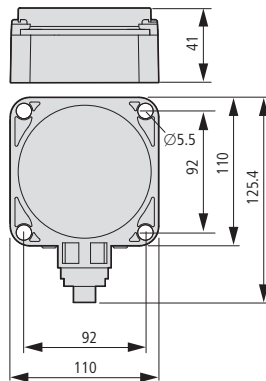
Through autoconfiguration connectable to both +V or (-).

Dimensions

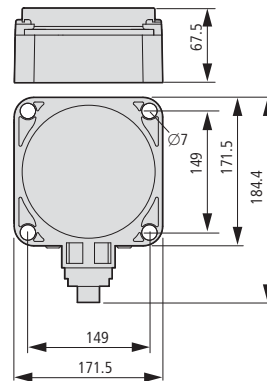
E56ADL40...



E56BDL70...



E56CDL100...



## Technical data

			E56ADL40S	E56ADL40U	E56BDL70U	E56CDL100U
<b>General</b>						
Standards			IEC/EN 60947-5-2			
Ambient temperature		°C	-25 - +70	-25 - +70	-25 - +70	-25 - +70
Protection type			IP67	IP67	IP67	IP67
<b>Characteristic values</b>						
Repetition accuracy of $S_n$		%	2	2	2	2
Temperature drift of $S_n$		%	10	10	10	10
Switching hysteresis of $S_n$		%	15	15	15	15
Rated operating voltage			6 - 48 V DC	6 - 48 V DC	6 - 48 V DC	6 - 48 V DC
Operating current in the switched state at 24 V DC	$I_b$	mA	25	25	25	25
Rated operational current	$I_e$	mA	300	300	300	300
Voltage drop at $I_e$	$U_d$	V	2.5	2.5	2.5	2.5
Switching frequency		Hz	100	100	20	20
Min. load current	$I_e$	mA	1	1	1	1
Residual current due to the load in locked state at 230 V AC or 24 V DC	$I_r$	mA	0.15	0.15	0.15	0.15
Switching state indication		LED	Red	Red	Red	Red
Operating voltage display		LED	Red	Red	Red	Red
Protective functions			Short-circuit protection Protection against polarity reversal			
Function			4-wire	4-wire	4-wire	4-wire
Construction type						
Design (outer dimensions)			79 x 79 x 39	79 x 79 x 39	109 x 110 x 41	171.5 x 171.5 x 67.4
Connection options			M12, "A"-coded plug connectors			
Material			plastic	plastic	plastic	plastic
Surface			PPS	PPS	PPS	PPS

## Notes

Further technical data can be found in the Online Catalogue at [www.moeller.net](http://www.moeller.net)

**Description**



- ① Models with cable or plug connectors available.
- ② All models feature an output signal indicator light.

**Short description**

The capacitive proximity sensors from Eaton’s electrical business are self-contained units designed to detect both metallic and nonmetallic targets. They are ideally suited for liquid level control and for sensing powdered or granulated material. For best operation, they should be used in an environment having relatively constant temperature and humidity.

**Product features**

- Detect liquids, powders and other materials that are difficult or impossible with other sensor types.
  - Corrosion-resistant insulated enclosure.
- Adjustable sensitivity.






- ① With mounting bracket.

**Approvals**





## Ordering

	Rated operational voltage	Rated switching distance $S_n$ mm	Installation type	Switching type	Connection options	Contact configuration NC = Normally closed contact N/O = Normally open contact	Material	Part no. Article no.	Price See price list	Std. pack
<b>E53 Series</b>										
<b>2-wire</b>										
<b>M18 x 1</b>										
	20 - 250 V AC	8	Flush	–	2 m connection cable	1 N/O	plastic	<b>E53KAL18A2</b> 134517		1 off
			Flush	–	plug connector M12 x 1	1 N/O		<b>E53KAL18A2SA</b> 134760		
			Flush	–	2 m connection cable	1 NC		<b>E53KBL18A2</b> 134791		
			Flush	–	plug connector M12 x 1	1 NC		<b>E53KBL18A2SA</b> 134794		
		15	Non-flush	–	2 m connection cable	1 N/O		<b>E53KAL18A2E</b> 134518		
			Non-flush	–	plug connector M12 x 1	1 N/O		<b>E53KAL18A2EA</b> 134519		
			Non-flush	–	2 m connection cable	1 NC		<b>E53KBL18A2E</b> 134792		
			Non-flush	–	plug connector M12 x 1	1 NC		<b>E53KBL18A2EA</b> 134793		
<b>M30 x 1.5</b>										
	20 - 250 V AC	20	Flush	–	2 m connection cable	1 N/O	plastic	<b>E53KAL30A2</b> 134769		1 off
			Flush	–	plug connector M12 x 1	1 N/O		<b>E53KAL30A2SA</b> 134772		
			Flush	–	2 m connection cable	1 NC		<b>E53KBL30A2</b> 134803		
			Flush	–	plug connector M12 x 1	1 NC		<b>E53KBL30A2SA</b> 134806		
		25	Non-flush	–	2 m connection cable	1 N/O		<b>E53KAL30A2E</b> 134770		
			Non-flush	–	plug connector M12 x 1	1 N/O		<b>E53KAL30A2EA</b> 134771		
			Non-flush	–	2 m connection cable	1 NC		<b>E53KBL30A2E</b> 134804		
			Non-flush	–	plug connector M12 x 1	1 NC		<b>E53KBL30A2EA</b> 134805		
<b>3-wire</b>										
<b>M18 x 1</b>										
	10 - 30 V DC	8	Flush	NPN	2 m connection cable	1 N/O	plastic	<b>E53KAL18T110</b> 134761		1 off
			Flush	NPN	plug connector M12 x 1	1 N/O		<b>E53KAL18T110SD</b> 134764		
			Flush	PNP	2 m connection cable	1 N/O		<b>E53KAL18T111</b> 134765		
			Flush	PNP	plug connector M12 x 1	1 N/O		<b>E53KAL18T111SD</b> 134768		
			Flush	NPN	2 m connection cable	1 NC		<b>E53KBL18T110</b> 134795		
			Flush	NPN	plug connector M12 x 1	1 NC		<b>E53KBL18T110SD</b> 134798		
			Flush	PNP	2 m connection cable	1 NC		<b>E53KBL18T111</b> 134799		
			Flush	PNP	plug connector M12 x 1	1 NC		<b>E53KBL18T111SD</b> 134802		

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Rated operational voltage	Rated switching distance  S <sub>n</sub> mm	Installation type	Switching type	Connection options	Contact configuration NC = Normally closed contact N/O = Normally open contact	Material	Part no. Article no.	Price See price list	Std. pack
<b>3-wire</b>									
<b>M18 x 1</b>									
	10 - 30 V DC	15	Non-flush	NPN	2 m connection cable	1 N/O	plastic	<b>E53KAL18T110E</b> 134762	1 off
			Non-flush	NPN	plug connector M12 x 1	1 N/O		<b>E53KAL18T110ED</b> 134763	
			Non-flush	PNP	2 m connection cable	1 N/O		<b>E53KAL18T111E</b> 134766	
			Non-flush	PNP	plug connector M12 x 1	1 N/O		<b>E53KAL18T111ED</b> 134767	
			Non-flush	NPN	2 m connection cable	1 NC		<b>E53KBL18T110E</b> 134796	
			Non-flush	NPN	plug connector M12 x 1	1 NC		<b>E53KBL18T110ED</b> 134797	
			Non-flush	PNP	2 m connection cable	1 NC		<b>E53KBL18T111E</b> 134800	
			Non-flush	PNP	plug connector M12 x 1	1 NC		<b>E53KBL18T111ED</b> 134801	
<b>M30 x 1.5</b>									
	10 - 30 V DC	20	Flush	NPN	2 m connection cable	1 N/O	plastic	<b>E53KAL30T110</b> 134773	1 off
			Flush	NPN	plug connector M12 x 1	1 N/O		<b>E53KAL30T110SD</b> 134776	
			Flush	PNP	2 m connection cable	1 N/O		<b>E53KAL30T111</b> 134777	
			Flush	PNP	plug connector M12 x 1	1 N/O		<b>E53KAL30T111SD</b> 134780	
			Flush	NPN	2 m connection cable	1 NC		<b>E53KBL30T110</b> 134807	
			Flush	NPN	plug connector M12 x 1	1 NC		<b>E53KBL30T110SD</b> 134810	
			Flush	PNP	2 m connection cable	1 NC		<b>E53KBL30T111</b> 134811	
			Flush	PNP	plug connector M12 x 1	1 NC		<b>E53KBL30T111SD</b> 134814	
	10 - 30 V DC	25	Non-flush	NPN	2 m connection cable	1 N/O	plastic	<b>E53KAL30T110E</b> 134774	1 off
			Non-flush	NPN	plug connector M12 x 1	1 N/O		<b>E53KAL30T110ED</b> 134775	
			Non-flush	PNP	2 m connection cable	1 N/O		<b>E53KAL30T111E</b> 134778	
			Non-flush	PNP	plug connector M12 x 1	1 N/O		<b>E53KAL30T111ED</b> 134779	
			Non-flush	NPN	2 m connection cable	1 NC		<b>E53KBL30T110E</b> 134808	
			Non-flush	NPN	plug connector M12 x 1	1 NC		<b>E53KBL30T110ED</b> 134809	
			Non-flush	PNP	2 m connection cable	1 NC		<b>E53KBL30T111E</b> 134812	
			Non-flush	PNP	plug connector M12 x 1	1 NC		<b>E53KBL30T111ED</b> 134813	



Rated operational voltage	Rated switching distance $S_n$ mm	Installation type	Switching type	Connection options	Contact configuration NC = Normally closed contact N/O = Normally open contact	Material	Part no. Article no.	Price See price list	Std. pack
<b>2-wire</b>									
<b>34</b>									
20 - 250 V AC	35	Non-flush	–	2 m connection cable	1 N/O	plastic	<b>E53KAL34A2E</b> 134781		1 off
	35	Non-flush	–	plug connector M12 x 1	1 N/O		<b>E53KAL34A2EA</b> 134782		
	35	Non-flush	–	2 m connection cable	1 NC		<b>E53KBL34A2E</b> 134815		
	35	Non-flush	–	plug connector M12 x 1	1 NC		<b>E53KBL34A2EA</b> 134816		
<b>3-wire</b>									
<b>34</b>									
10 - 30 V DC	25	Flush	NPN	2 m connection cable	1 N/O	plastic	<b>E53KAL34T110</b> 134783		1 off
	25	Flush	NPN	plug connector M12 x 1	1 N/O		<b>E53KAL34T110SD</b> 134786		
	25	Flush	PNP	2 m connection cable	1 N/O		<b>E53KAL34T111</b> 134787		
	25	Flush	PNP	plug connector M12 x 1	1 N/O		<b>E53KAL34T111SD</b> 134790		
	25	Flush	NPN	2 m connection cable	1 NC		<b>E53KBL34T110</b> 134817		
	25	Flush	NPN	plug connector M12 x 1	1 NC		<b>E53KBL34T110SD</b> 134820		
	25	Flush	PNP	2 m connection cable	1 NC		<b>E53KBL34T111</b> 134821		
	25	Flush	PNP	plug connector M12 x 1	1 NC		<b>E53KBL34T111SD</b> 134824		
	35	Non-flush	NPN	2 m connection cable	1 N/O		<b>E53KAL34T110E</b> 134784		
	35	Non-flush	NPN	plug connector M12 x 1	1 N/O		<b>E53KAL34T110ED</b> 134785		
	35	Non-flush	PNP	2 m connection cable	1 N/O		<b>E53KAL34T111E</b> 134788		
	35	Non-flush	PNP	plug connector M12 x 1	1 N/O		<b>E53KAL34T111ED</b> 134789		
	35	Non-flush	NPN	2 m connection cable	1 NC		<b>E53KBL34T110E</b> 134818		
	35	Non-flush	NPN	plug connector M12 x 1	1 NC		<b>E53KBL34T110ED</b> 134819		
	35	Non-flush	PNP	2 m connection cable	1 NC		<b>E53KBL34T111E</b> 134822		
	35	Non-flush	PNP	plug connector M12 x 1	1 NC		<b>E53KBL34T111ED</b> 134823		

Engineering



Circuit diagram Rated operating voltage	Contacts	2 m connection cable	M12 plug connector (front view plug)
<b>2-wire sensors</b> 20–250 V AC/DC	N/O and NC		
<b>3-wire sensors</b> 10–30 V DC	N/O (NPN)		
	N/O (PNP)		
	NC (NPN)		
	NC (PNP)		

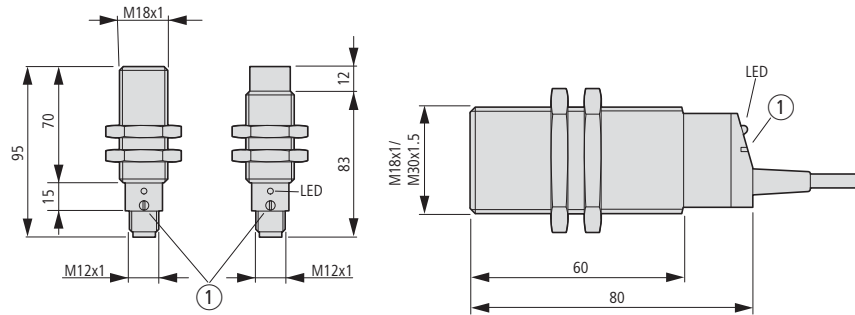
Technical data

	E53...A...	E53...T..
<b>General</b>		
Standards	IEC/EN 60947-5-2	
Ambient temperature	-25 - +70 °C	-25 - +70
Protection type	IP65	
Mechanical shock resistance	30 g Shock duration 11 ms	
<b>Characteristic values</b>		
Repetition accuracy of $S_n$	10 %	
Temperature drift of $S_n$	10 %	
Switching hysteresis of $S_n$	20 %	
Rated operating voltage	20 - 250 V AC	10 - 30 V DC
Residual ripple of $U_e$	10 %	
Rated operational current	$I_e$ mA	300
Voltage drop at $I_e$	$U_d$ V	9
Switching frequency	15 Hz	
Min. load current	$I_e$ mA	5
Switching state indication	LED	
Function	Red	Red
Material	2-wire plastic	3-wire plastic

**Notes** Further technical data can be found in the Online Catalogue at [www.moeller.net](http://www.moeller.net)

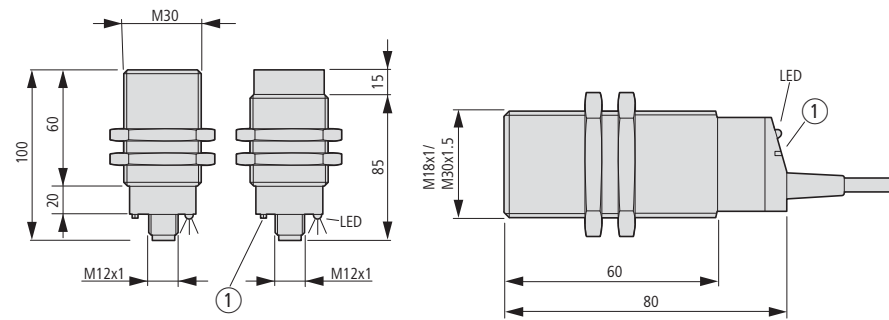
Dimensions

E53KAL18...  
E53KBL18...



① Sensitivity setting

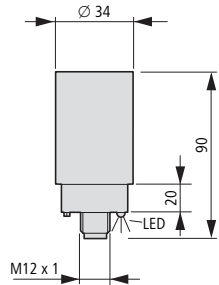
E53KAL30...  
E53KBL30...



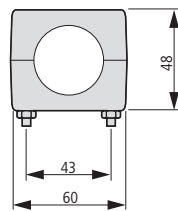
① Sensitivity setting

E53KAL34...  
E53KBL34...

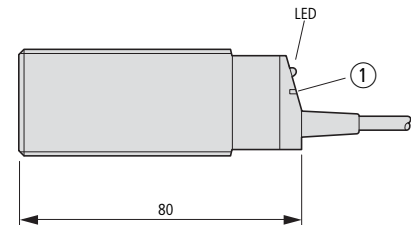
M12 plug connector



Fixing bracket (included as standard)



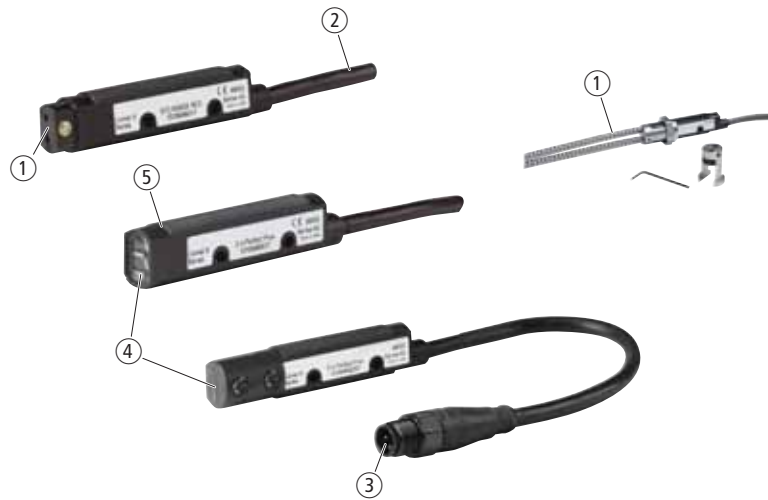
2 m connection cable



① Sensitivity setting



## Description



- ① FO cable versions possible.
- ② Light/dark operation selector switch on all models.
- ③ Models with M12 plug connector.
- ④ Sensing beam 0° or 90°.
- ⑤ Solid polyurethane body for rugged use.

## Short description

Eaton's high-performance photoelectric sensors feature a tubular enclosure with a diameter of 18 mm and are available in a range of versions to solve virtually any sensing problem. The sensors are available in thru-beam, reflex, polarized reflex, diffuse reflective, focused diffuse reflective, wide-angle diffuse reflective, Perfect Prox®, Fine Spot Perfect Prox® and fiber optic sensing versions. The Perfect Prox® sensors are among the most powerful on the market. These sensors reliably detect targets of different color, reflectance, contrast or surface shape at the same range, while ignoring background objects just a fraction of an inch away. The Comet Series includes AC/DC and DC-only models with 2-, 3- and 4-wire circuitry, and with cable or M 12 micro-connector. Each sensor features a Light/ Dark Operation switch and a gain control to provide for quick adjustment to peak optical performance. The unique threaded body with flat sides allows quick mounting in a 19 mm hole or against any flat surface. Internal components are rigidly sealed in a solid encapsulated package for excellent performance in high vibration and high-shock applications.






















## Product features

- Industry standard 18 mm diameter threaded body has flat sides allowing it to be mounted like a tubular sensor or against any flat surface
- Models with a 90° measurement direction can be installed in holes with a depth of only 152 mm.
- Perfect Prox® technology provides exceptional background rejection and application problem-solving.
- Visible sensing beams let you see where the light barrier is aimed for quick flush mounting and alignment.
- Solid polyurethane enclosure completely encapsulates internal circuits for high resistance to shock and vibration.
- Adaptable modulation circuit provides immunity to cross talk from other closely mounted sensors.
- Models available with both AC and DC operation in a single unit – up to 264 volts AC.
- 4-wire DC sensors offer both NPN and PNP outputs.
- Output status indicator visible from a wide 270° angle.

## Approvals



## Ordering

	Rated operating voltage	Switching type	Rated switching distance $S_n$ mm	Connection options	Description	Type of light	Part no. Article no.	Price See price list	Std. pack
<b>Comet series</b>									
M18 x 1, light switching, dark switching, programmable, plastic									
3-wire									
Thru-beam sensor (detector), forward viewing									
	20 - 264 V AC 15 - 30 V DC	NPN	6000	2 m connection cable	-	Visible red	<b>12100A6513</b> 135566		1 off  
			6000	plug connector M12 x 1			<b>12100AQD03</b> 135568		
			24000	2 m connection cable			<b>12102A6513</b> 135574		
			24000	plug connector M12 x 1			<b>12102AQD03</b> 135576		
Thru-beam sensor (source), forward viewing									
	20 - 264 V AC 15 - 30 V DC	NPN	6000	2 m connection cable	-	Visible red	<b>11100A6513</b> 135554		1 off  
			6000	plug connector M12 x 1			<b>11100AQD03</b> 135556		
			24000	2 m connection cable			<b>11102A6513</b> 135562		
			24000	plug connector M12 x 1			<b>11102AQD03</b> 135564		
Thru-beam sensor (detector), right-angle									
	20 - 264 V AC 15 - 30 V DC	NPN	6000	2 m connection cable	-	Visible red	<b>12100R6513</b> 135570		1 off  
			6000	plug connector M12 x 1			<b>12100RQD03</b> 135572		
Thru-beam sensor (source), right-angle									
	20 - 264 V AC 15 - 30 V DC	NPN	6000	2 m connection cable	-	Visible red	<b>11100R6513</b> 135558		1 off  
			6000	plug connector M12 x 1			<b>11100RQD03</b> 135560		
Diffuse reflective sensor, right-angle									
	20 - 264 V AC 15 - 30 V DC	NPN	3000	2 m connection cable	For combination with reflector with polarisation filter	Visible red	<b>14101R6513</b> 135650		1 off  
			3000	plug connector M12 x 1			<b>14101RQD03</b> 135652		
			4500	2 m connection cable	For combination with reflector	<b>14102R6513</b> 135658			
			4500	plug connector M12 x 1		<b>14102RQD03</b> 135660			
Diffuse reflective sensor, forward viewing									
	20 - 264 V AC 15 - 30 V DC	NPN	4500	2 m connection cable	For combination with reflector with polarisation filter	Visible red	<b>14101A6513</b> 135646		1 off  
			4500	plug connector M12 x 1			<b>14101AQD03</b> 135648		
			7600	2 m connection cable	For combination with reflector	Infrared	<b>14100A6513</b> 135642		
				plug connector M12 x 1			<b>14100AQD03</b> 135644		
			7600	2 m connection cable		Visible red	<b>14102A6513</b> 135654		
				plug connector M12 x 1			<b>14102AQD03</b> 135656		
Diffuse reflective sensor, focused, forward viewing									
	20 - 264 V AC 15 - 30 V DC	NPN	40	2 m connection cable	-	Visible red	<b>13102A6513</b> 135590		1 off  
			40	plug connector M12 x 1			<b>13102AQD03</b> 135592		

## Information relevant for export to North America



Product Standards	UL 508; CSA-C22.2 No. 14; IEC60947-5-2; CE marking
UL File No.	E166051
UL CCN	NRKH, NRKH7
CSA File No.	50513
CSA Class No.	3211-07
NA Certification	UL Listed, CSA certified
Max. Voltage Rating	264 V AC, 30 V DC
Degree of Protection	IEC: IP68, IP69K; UL/CSA Type: 1, 2, 3, 4, 4x, 6, 12, 13






















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Rated operating voltage	Switching type	Rated switching distance S <sub>n</sub> mm	Connection options	Description	Type of light	Part no. Article no.	Price See price list	Std. pack
<b>Diffuse reflective sensor, forward viewing</b>								
	20 - 264 V AC 15 - 30 V DC	NPN	50	2 m connection cable	With background suppression (Perfect Prox)	Visible red	13104A6513 135602	1 off 
				plug connector M12 x 1			13104AQD03 135604	
			100	2 m connection cable	-	Infrared	13105A6513 135614	
				plug connector M12 x 1			13105AQD03 135616	
			100	2 m connection cable	-	Infrared	13101A6513 135586	
				plug connector M12 x 1			13101AQD03 135588	
			150	2 m connection cable	-	Infrared	13107AS6513 135626	
				plug connector M12 x 1			13107ASQD03 135628	
			200	2 m connection cable	-	Infrared	13108A6513 135634	
				plug connector M12 x 1			13108AQD03 135636	
			200	2 m connection cable	-	Infrared	13106A6513 135618	
				plug connector M12 x 1			13106AQD03 135620	
			225	2 m connection cable	-	Infrared	13103A6513 135594	
				plug connector M12 x 1			13103AQD03 135596	
			610	2 m connection cable	-	Infrared	13100A6513 135578	
				plug connector M12 x 1			13100AQD03 135580	
<b>Diffuse reflective sensor, right-angle</b>								
	20 - 264 V AC 15 - 30 V DC	NPN	50	2 m connection cable	With background suppression (Perfect Prox)	Visible red	13104R6513 135606	1 off 
				plug connector M12 x 1			13104RQD03 135608	
			100	plug connector M12 x 1	-	Infrared	13104RS5003 135610	
				2 m connection cable			13104RS5013 135612	
			150	2 m connection cable	-	Infrared	13107RS6513 135630	
				plug connector M12 x 1			13107RSQD03 135632	
			200	2 m connection cable	-	Infrared	13108R6513 135638	
				plug connector M12 x 1			13108RQD03 135640	
			200	2 m connection cable	-	Infrared	13106R6513 135622	
				plug connector M12 x 1			13106RQD03 135624	
			225	2 m connection cable	-	Infrared	13103R6513 135598	
				plug connector M12 x 1			13103RQD03 135600	
			610	2 m connection cable	-	Infrared	13100R6513 135582	
				plug connector M12 x 1			13100RQD03 135584	

**Information relevant for export to North America**

	Product Standards	UL 508; CSA-C22.2 No. 14; IEC60947-5-2; CE marking
	UL File No.	E166051
	UL CCN	NRKH, NRKH7
	CSA File No.	50513
	CSA Class No.	3211-07
	NA Certification	UL Listed, CSA certified
	Max. Voltage Rating	264 V AC, 30 V DC
	Degree of Protection	IEC: IP68, IP69K; UL/CSA Type: -

Rated operating voltage	Switching type	Rated switching distance S <sub>n</sub> mm	Connection options	Description	Type of light	Part no. Article no.	Price See price list	Std. pack
<b>Comet series</b>								
M18 x 1, light switching, dark switching, programmable, plastic								
4-wire								
Thru-beam sensor (detector), forward viewing								
	10 - 30 V DC	NPN	6000	2 m connection cable	-	Visible red		1 off  
			6000	plug connector M12 x 1				
		PNP	24000	2 m connection cable				
			24000	plug connector M12 x 1				
Thru-beam sensor (source), forward viewing								
	10 - 30 V DC	NPN	6000	2 m connection cable	-	Visible red		1 off  
			6000	plug connector M12 x 1				
		PNP	24000	2 m connection cable				
			24000	plug connector M12 x 1				
Thru-beam sensor (detector), right-angle								
	10 - 30 V DC	NPN	6000	2 m connection cable	-	Visible red		1 off  
			6000	plug connector M12 x 1				
Thru-beam sensor (source), right-angle								
	10 - 30 V DC	NPN	6000	2 m connection cable	-	Visible red		1 off  
			6000	plug connector M12 x 1				
Diffuse reflective sensor, right-angle								
	10 - 30 V DC	NPN	3000	2 m connection cable	For combination with reflector with polarisation filter	Visible red		1 off  
			3000	plug connector M12 x 1				
		PNP	4500	2 m connection cable	For combination with reflector			
			4500	plug connector M12 x 1				
Diffuse reflective sensor, forward viewing								
	10 - 30 V DC	NPN	4500	2 m connection cable	For combination with reflector with polarisation filter	Visible red		1 off  
			4500	plug connector M12 x 1				
		PNP	7600	2 m connection cable	For combination with reflector	Infrared		
				plug connector M12 x 1				
			7600	2 m connection cable	Visible red			
				plug connector M12 x 1				
Diffuse reflective sensor, focused, forward viewing								
	10 - 30 V DC	NPN	40	2 m connection cable	-	Visible red		1 off  
			40	plug connector M12 x 1				

<sup>1)</sup> Information relevant for export to North America



Product Standards	UL 508; CSA-C22.2 No. 14; IEC60947-5-2; CE marking
UL File No.	E166051
UL CCN	NRKH, NRKH7
CSA File No.	50513
CSA Class No.	3211-07
NA Certification	UL Listed, CSA certified
Max. Voltage Rating	30 V DC
Degree of Protection	IEC: IP68, IP69K; UL/CSA Type: -

HPL03087EN



Rated operating voltage	Switching type	Rated switching distance S <sub>n</sub> mm	Connection options	Description	Type of light	Part no. Article no.	Price See price list	Std. pack
<b>Comet series</b>								
M18 x 1, light switching, dark switching, programmable, plastic								
Diffuse reflective sensor, forward viewing								
	10 - 30 V DC	NPN PNP	50	2 m connection cable	With background suppression (Perfect Prox)	Visible red	13104A6517 <sup>1)</sup>	1 off  
				plug connector M12 x 1			135603	
			100	2 m connection cable	-	Infrared	13105A6517 <sup>1)</sup>	
				plug connector M12 x 1			135605	
			100	2 m connection cable	-	Infrared	13105AQD07 <sup>1)</sup>	
				plug connector M12 x 1			135615	
			150	2 m connection cable	-	Infrared	13107AS6517 <sup>1)</sup>	
				plug connector M12 x 1			135627	
			200	2 m connection cable	-	Infrared	13107ASQD07 <sup>1)</sup>	
				plug connector M12 x 1			135629	
			200	2 m connection cable	-	Infrared	13108A6517 <sup>1)</sup>	
				plug connector M12 x 1			135635	
			225	2 m connection cable	-	Infrared	13108AQD07 <sup>1)</sup>	
				plug connector M12 x 1			135637	
			225	2 m connection cable	-	Infrared	13106A6517 <sup>1)</sup>	
				plug connector M12 x 1			135619	
610	2 m connection cable	-	Infrared	13106AQD07 <sup>1)</sup>				
	plug connector M12 x 1			135621				
610	2 m connection cable	-	Infrared	13103A6517 <sup>1)</sup>				
	plug connector M12 x 1			135595				
610	2 m connection cable	-	Infrared	13103AQD07 <sup>1)</sup>				
	plug connector M12 x 1			135597				
610	2 m connection cable	-	Infrared	13100A6517 <sup>1)</sup>				
	plug connector M12 x 1			135579				
610	2 m connection cable	-	Infrared	13100AQD07 <sup>1)</sup>				
	plug connector M12 x 1			135581				
Diffuse reflective sensor, right-angle								
	10 - 30 V DC	NPN PNP	50	2 m connection cable	With background suppression (Perfect Prox)	Visible red	13104R6517	1 off  
				plug connector M12 x 1			135607	
			100	plug connector M12 x 1	-	Infrared	13104RQD07	
				2 m connection cable			135609	
			150	2 m connection cable	-	Infrared	13104RS5007	
				plug connector M12 x 1			135611	
			200	2 m connection cable	-	Infrared	13104RS5020	
				plug connector M12 x 1			135613	
			200	2 m connection cable	-	Infrared	13107RS6517	
				plug connector M12 x 1			135631	
			225	2 m connection cable	-	Infrared	13107RSQD07	
				plug connector M12 x 1			135633	
			225	2 m connection cable	-	Infrared	13108R6517	
				plug connector M12 x 1			135639	
			610	2 m connection cable	-	Infrared	13108RQD07	
				plug connector M12 x 1			135641	
610	2 m connection cable	-	Infrared	13106R6517				
	plug connector M12 x 1			135623				
610	2 m connection cable	-	Infrared	13106RQD07				
	plug connector M12 x 1			135625				
610	2 m connection cable	-	Infrared	13103R6517				
	plug connector M12 x 1			135599				
610	2 m connection cable	-	Infrared	13103RQD07				
	plug connector M12 x 1			135601				
610	2 m connection cable	-	Infrared	13100R6517				
	plug connector M12 x 1			135583				
610	2 m connection cable	-	Infrared	13100RQD07				
	plug connector M12 x 1			135585				













<sup>1)</sup> Information relevant for export to North America























Product Standards    UL 508; CSA-C22.2 No. 14; IEC60947-5-2; CE marking  
 UL File No.            E166051  
 UL CCN                NRKH, NRKH7  
 CSA File No.         50513  
 CSA Class No.       3211-07  
 NA Certification     UL Listed, CSA certified  
 Max. Voltage Rating 30 V DC  
 Degree of Protection IEC: IP68, IP69K; UL/CSA Type: -

## Ordering



Design (outer dimensions)	Material	Part no. Article no.	Price See price list	Std. pack
<b>Glass fiber adapter</b>				
In combination with reflex sensors 13106A... or 13100A... and E51KF fiber optic				
	—	Metal	<b>G235A-6501</b> 135759	1 off
<b>Glass fiber duplex cable</b>				
	2.4 Ø x 914	PVC	<b>E51KF163</b> 135761	1 off
	2.4 Ø x 914	Stainless steel	<b>E51KF563</b> 135783	1 off
	1.6 Ø x 914	PVC	<b>E51KF183</b> 135763	1 off
	1.6 Ø x 914	Stainless steel	<b>E51KF583</b> 135785	1 off
	0.5 x 3.9 Ø x 914	PVC	<b>E51KF193</b> 135764	1 off
	0.5 x 3.9 Ø x 914	Stainless steel	<b>E51KF593</b> 135786	1 off
	3.2 Ø x 914	PVC	<b>E51KF323</b> 135771	1 off
	3.2 Ø x 914	Stainless steel	<b>E51KF723</b> 135793	1 off
	3.2 Ø x 914	PVC	<b>E51KF313</b> 135770	1 off
	3.2 Ø x 914	Stainless steel	<b>E51KF713</b> 135792	1 off
	0.8 x 9.7 Ø x 914	PVC	<b>E51KF343</b> 135773	1 off
	0.8 x 9.7 Ø x 914	Stainless steel	<b>E51KF743</b> 135795	1 off
	0.5 x 3.9 Ø x 914	Stainless steel	<b>E51KF553</b> 135782	1 off
	0.5 x 3.9 Ø x 914	PVC	<b>E51KF153</b> 135760	1 off
	1.6 Ø x 914	Stainless steel	<b>E51KF573</b> 135784	1 off
	3.2 Ø x 914	Stainless steel	<b>E51KF733</b> 135794	1 off
	1.6 Ø x 914	PVC	<b>E51KF173</b> 135762	1 off
	3.2 Ø x 914	PVC	<b>E51KF333</b> 135772	1 off
	3.2 Ø x 914	Stainless steel	<b>E51KF7A3</b> 135796	1 off
	3.2 Ø x 914	PVC	<b>E51KF3A3</b> 135774	1 off
	3.2 Ø x 914	Stainless steel	<b>E51KF7B3</b> 135797	1 off
	3.2 Ø x 914	PVC	<b>E51KF3B3</b> 135775	1 off
<b>Glass fiber simplex cable</b>				
	2.4 Ø x 914	Stainless steel	<b>E51KF663</b> 135788	1 off
	2.4 Ø x 914	PVC	<b>E51KF263</b> 135766	1 off
	1.6 Ø x 914	Stainless steel	<b>E51KF683</b> 135790	1 off
	1.6 Ø x 914	PVC	<b>E51KF283</b> 135768	1 off
	0.5 x 3.9 Ø x 914	Stainless steel	<b>E51KF693</b> 135791	1 off

HPL03089EN

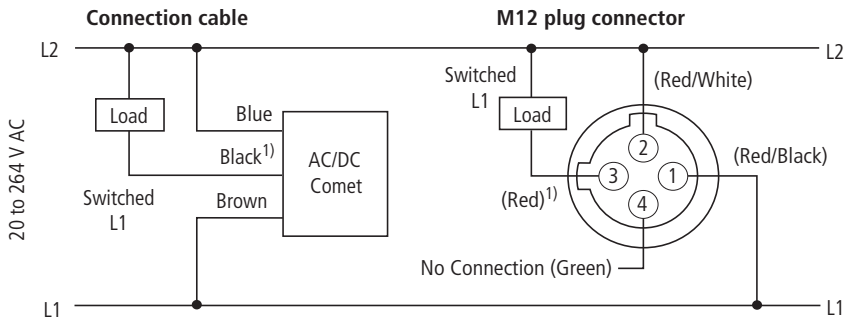
	Design (outer dimensions)	Material	Part no. Article no.	Price See price list	Std. pack
	3.2 Ø x 914	Stainless steel	<b>E51KF823</b> 135799		1 off
	3.2 Ø x 914	PVC	<b>E51KF423</b> 135777		1 off
	0.5 x 3.9 Ø x 914	PVC	<b>E51KF293</b> 135769		1 off
	3.2 Ø x 914	Stainless steel	<b>E51KF813</b> 135798		1 off
	3.2 Ø x 914	PVC	<b>E51KF413</b> 135776		1 off
	0.8 x 9.7 Ø x 914	Stainless steel	<b>E51KF843</b> 135801		1 off
	0.8 x 9.7 Ø x 914	PVC	<b>E51KF443</b> 135779		1 off
	0.5 x 3.9 Ø x 914	Stainless steel	<b>E51KF653</b> 135787		1 off
	0.5 x 3.9 Ø x 914	PVC	<b>E51KF253</b> 135765		1 off
	1.6 Ø x 914	Stainless steel	<b>E51KF673</b> 135789		1 off
	3.2 Ø x 914	Stainless steel	<b>E51KF833</b> 135800		1 off
	1.6 Ø x 914	PVC	<b>E51KF273</b> 135767		1 off
	3.2 Ø x 914	PVC	<b>E51KF433</b> 135778		1 off
	3.2 Ø x 914	Stainless steel	<b>E51KF8A3</b> 135802		1 off
	3.2 Ø x 914	PVC	<b>E51KF4A3</b> 135780		1 off
	3.2 Ø x 914	Stainless steel	<b>E51KF8B3</b> 135803		1 off
	3.2 Ø x 914	PVC	<b>E51KF4B3</b> 135781		1 off
<b>Protective bracket</b>	–	Metal	<b>E58KS5200</b> 135757		1 off
					
<b>Fixing brackets</b>					
	53 x 44	Stainless steel	<b>6161AS5296</b> 135738		1 off
	53 x 44	Stainless steel	<b>6161AS5297</b> 135739		1 off



Engineering

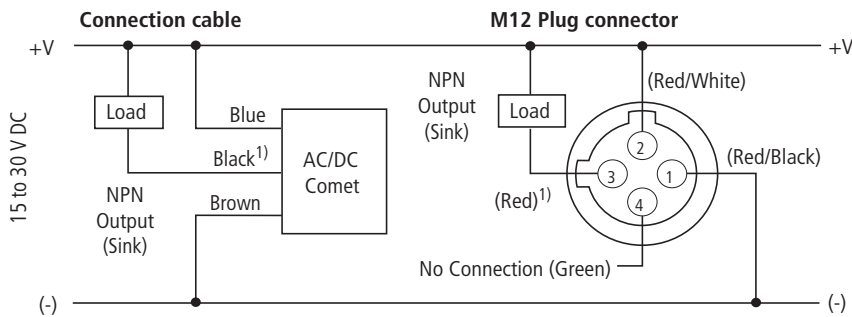
Circuit diagram

AC/DC connection (AC units)



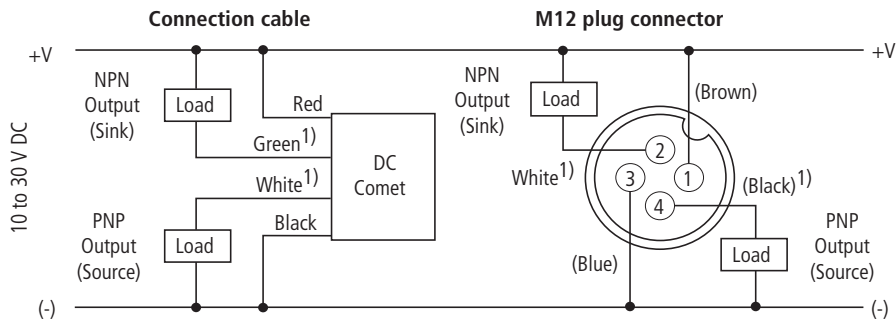
1) Note: Cable not connected on source of thru-beam sensors.

AC/DC connection (DC units)



1) Note: Cable not connected on source of thru-beam sensors.

DC connection (DC units)



1) Note: Cable not connected on source of thru-beam sensors.

**Note:** AC/DC sensors have AC plug connectors. Take into account when using with DC voltage.

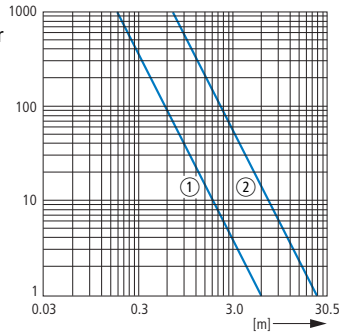




**Excess gain chart**

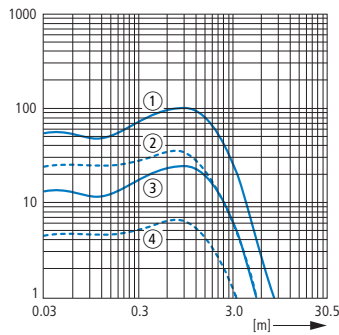
**Thru-beam sensor**

- ① Detector 12100A and 12100R with source 11100A or 11100R
- ② Detector 12102A with source 11102A



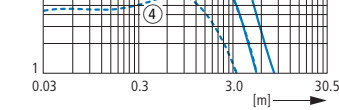
**Reflex sensor**

- (84 mm reflector)
- ① 14100A/14102A
- ② 14102R
- ③ 14101A
- ④ 14101R



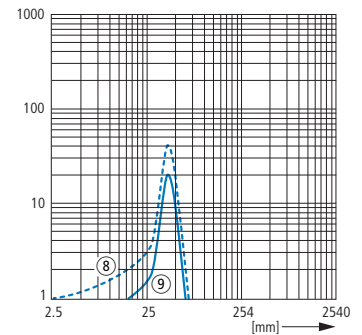
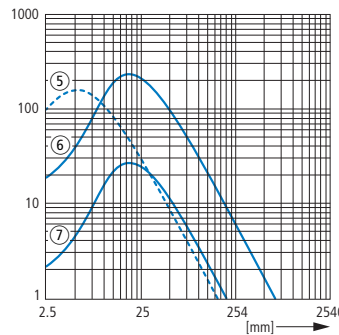
**Diffuse reflective sensor**

- (90 % reflective test card)
- ⑤ 13107
- ⑥ 13100
- ⑦ 13106



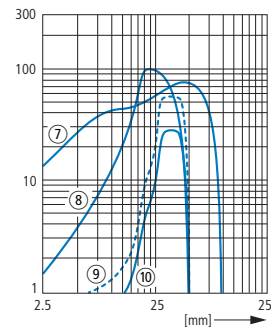
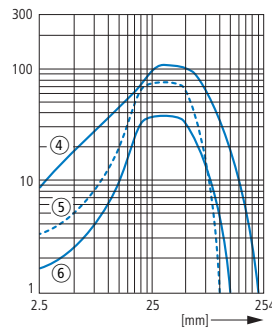
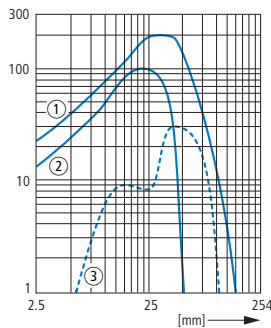
**Focused diffuse reflective sensors**

- (90 % reflective test card)
- ⑧ 13102A typ.
- ⑨ 13102A minimum



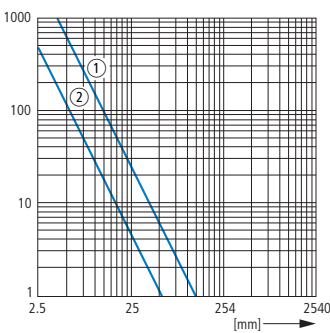
**Perfect Prox®**

- ① 13108A/13108R
- ② 13104A
- ③ 14104RS
- ④ 13103A/13103R
- ⑤ 13101A typ.
- ⑥ 13101A minimum
- ⑦ 13101AS
- ⑧ 13104R
- ⑨ 13105A typ.
- ⑩ 13105A minimum



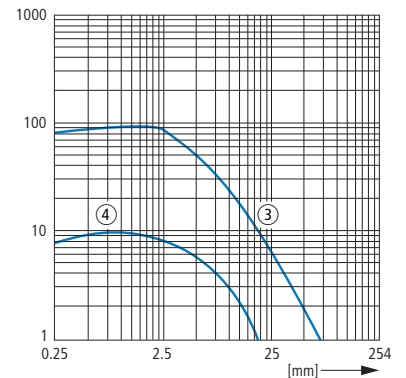
**Thru-beam sensor**

- With single FO cable E51KF823
- ① 13100A Comet
- ② 13106A Comet



**Diffuse reflective sensors**

- With duplex FO cable E51KF723
- ③ 13100A Comet
- ④ 13106A Comet



## Technical data

			3-wire 111 Types	121 Types	131 Types	141 Types
<b>General</b>						
Standards			IEC/EN 60947-5-2			
Ambient temperature		°C	-20 - +70	-40 - +70	-40 - +70	-40 - +70
Protection type			IP67	IP67	IP67	IP67
Mechanical shock resistance		g	100 Shock duration 3 ms			
<b>Characteristic values</b>						
Rated operating voltage			20 - 264 V AC 15 - 30 V DC	20 - 264 V AC 15 - 30 V DC	20 - 264 V AC 15 - 30 V DC	20 - 264 V AC 15 - 30 V DC
Operating current in the switched state at 24 V DC	$I_b$	mA	25	30	30	30
Rated operational current	$I_e$	mA	300	300	300	300
Switching frequency		Hz	–	50	50	50
Switching state indication		LED	–	Red	Red	Red
Operating voltage indication		LED	Red	–	–	–
Protective functions			Short-circuit protection Protection against polarity reversal Protection against wire breakage			
Function			3-wire	3-wire	3-wire	3-wire
Construction type						
Design (outer dimensions)			M18 x 1	M18 x 1	M18 x 1	M18 x 1
Connection options			Cable open 2 m connection cable			
Material			plastic			

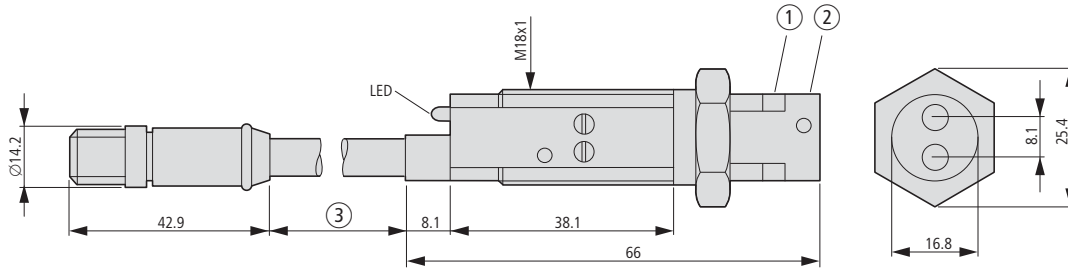
			4-wire 111 Types	121 Types	131 Types	141 Types
<b>General</b>						
Standards			IEC/EN 60947-5-2			
Ambient temperature		°C	-20 - +70	-40 - +70	-40 - +70	-40 - +70
Protection type			IP67	IP67	IP67	IP67
Mechanical shock resistance		g	100 Shock duration 3 ms			
<b>Characteristic values</b>						
Rated operating voltage			10 - 30 V DC	10 - 30 V DC	10 - 30 V DC	10 - 30 V DC
Operating current in the switched state at 24 V DC	$I_b$	mA	25	30	30	30
Rated operational current	$I_e$	mA	100	100	100	100
Switching frequency		Hz	–	142	500	500
Switching state indication		LED	–	Red	Red	Red
Operating voltage indication		LED	Red	–	–	–
Protective functions			Short-circuit protection Protection against polarity reversal Protection against wire breakage			
Function			4-wire	4-wire	4-wire	4-wire
Construction type						
Design (outer dimensions)			M18 x 1	M18 x 1	M18 x 1	M18 x 1
Connection options			Cable open 2 m connection cable			
Material			plastic			

## Notes

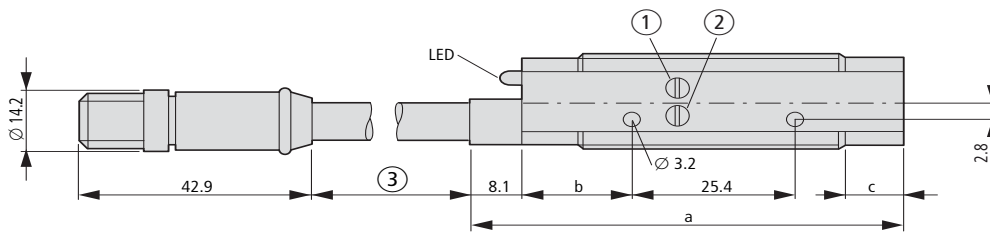
Further technical data can be found in the Online Catalogue at [www.moeller.net](http://www.moeller.net)

Dimensions

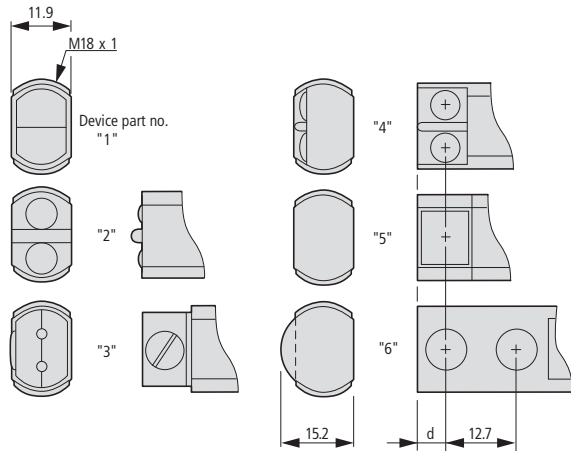
Sensor with installed adapter



- ① Seal
- ② Adapter
- ③ Cable length



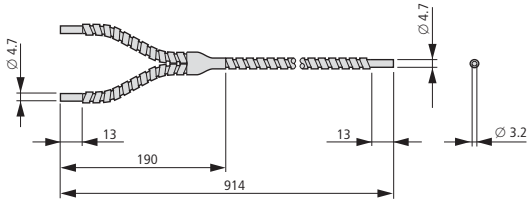
- ① Brightness setting
- ② Gain adjustment
- ③ Cable length



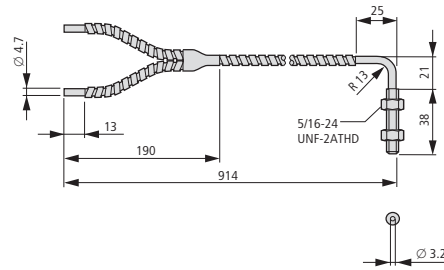
	Dimensions in (mm)				Settings		Housing type
	a	b	c	d	Light/dark	Gain	
11100A...	56	17	6	-	No	No	2
11100R...	65	17	15	5	No	No	4
11102A...	70	17	28	-	No	No	1
12100A...	56	17	6	-	Yes	Yes	2
12100R...	65	17	15	5	Yes	Yes	4
12102A...	66	15	7	-	Yes	Yes	1
13100A..., 13106A...	56	17	6	-	Yes	Yes	2
13100R..., 13106R...	65	17	15	5	Yes	Yes	4
13101A..., 13104A...	66	15	6	-	Yes	No	1
13102A..., 13103A..., 13105A..., 13108A...	66	15	6	-	Yes	Yes	1
13104R...	77	15	28	5	Yes	No	6
14100A..., 14102A...	66	15	7	-	Yes	Yes	1
14101R..., 14102R...	76	15	18	5	Yes	Yes	5
14101A...	67	15	7	-	Yes	Yes	1
15100A..., 15101A...	73	15	15	-	Yes	Yes	3

Glass fiber duplex cable

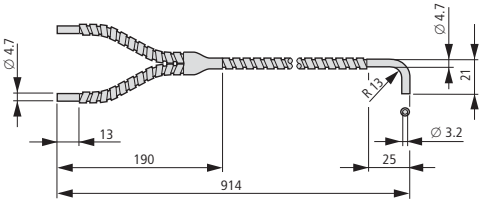
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E51KF713



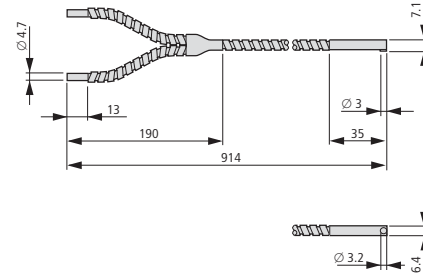
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E51KF7B3



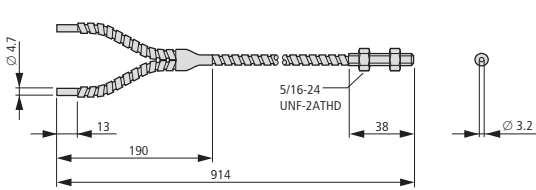
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E51KF733



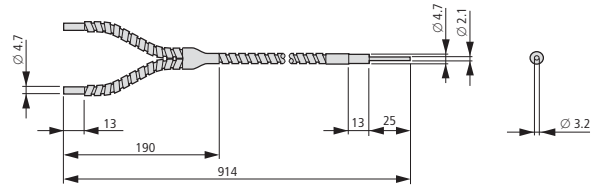
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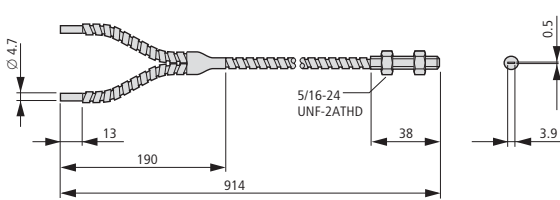
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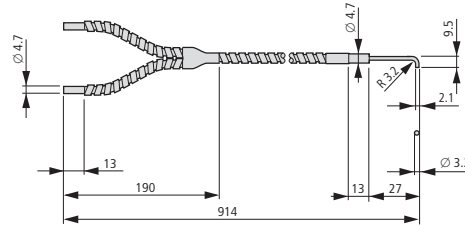
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E51KF583



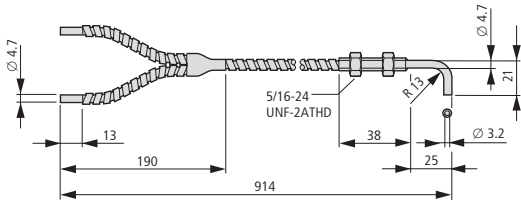
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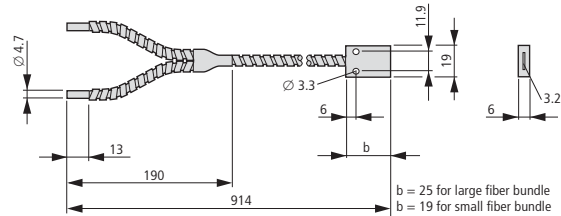
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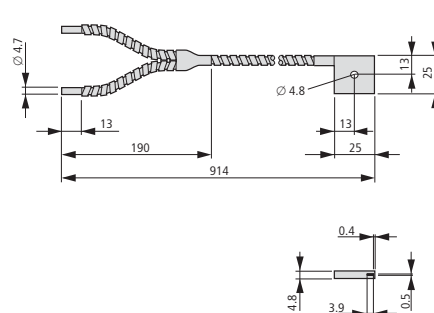
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E51KF7A3



E51KF343  
E51KF743



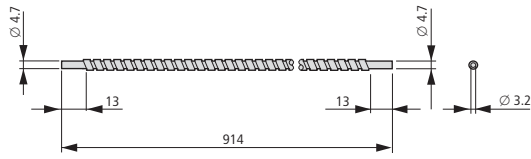
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E51KF553



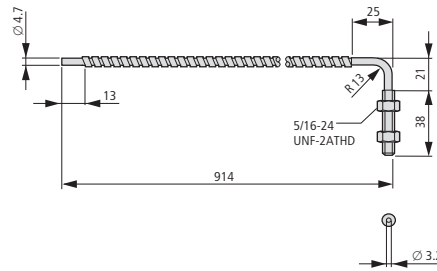


**Glass fiber simplex cable**

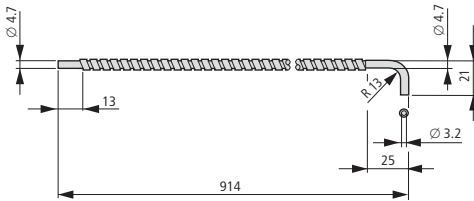
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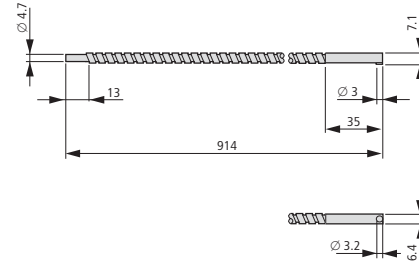
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E51KF8B3



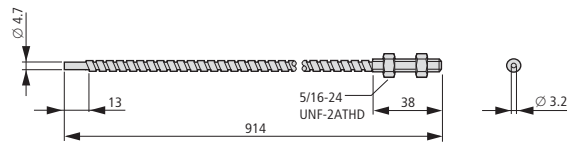
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E51KF833



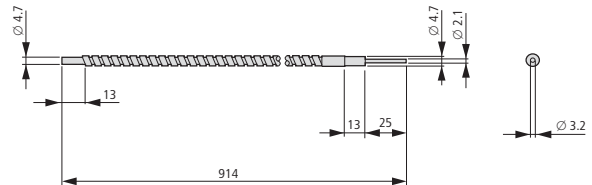
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E51KF663



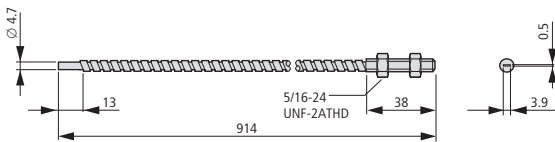
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E51KF823



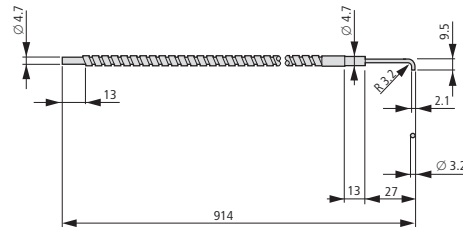
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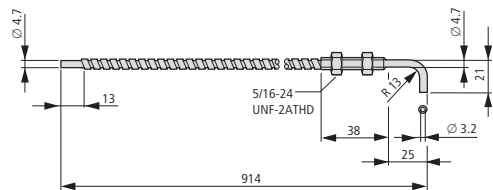
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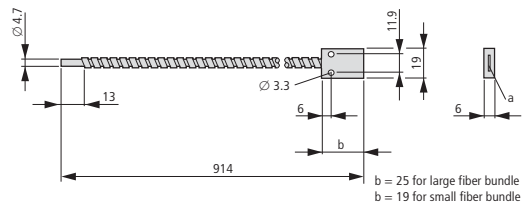
E51KF273  
E51KF673



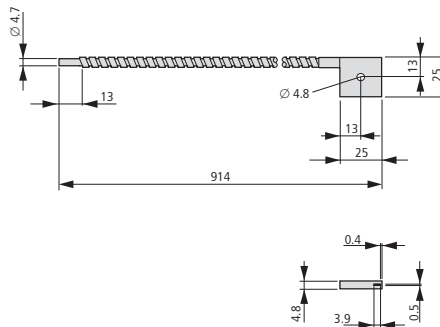
E51KF4A3  
E51KF8A3



E51KF443  
E51KF843

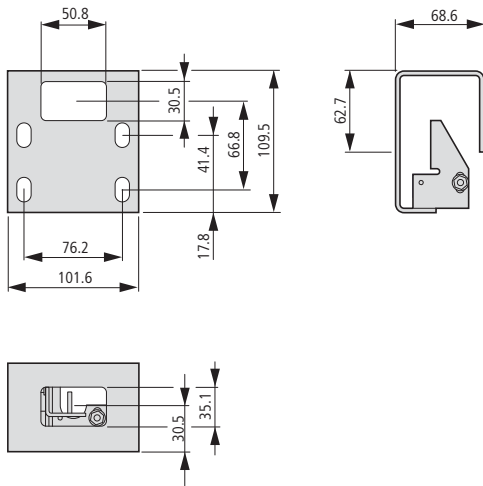


E51KF253  
E51KF653

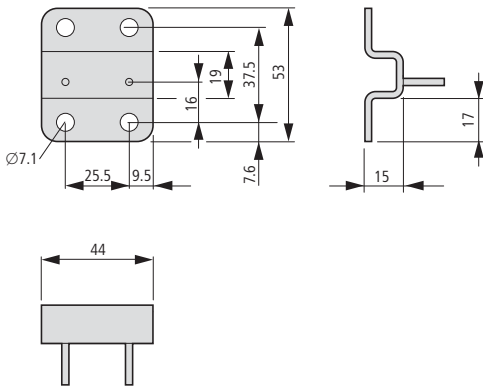


## Dimensions

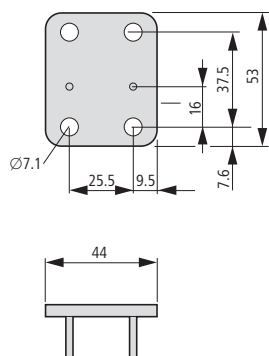
### Protective bracket, adjustable



### Clip-type fixing bracket, raised



### Clip-type fixing bracket, flat



## Description



- ① Tempered glass lens cover protects against abrasion.
- ② Bright 360° function indicator.
- ③ All models with Visible red light.
- ④ All models available in versions with M12 (micro) plug connector.

### Short description

Eaton's E58 series was designed to withstand the harshest physical, chemical and optical environments. Stainless steel, PVDF and tempered glass components are mechanically assembled using Viton® seals to ensure complete sealing and resistance to industry chemicals. All adhesives and potting subject to failure from chemical attack have been eliminated from the design. The result is a sensor highly resistant to chemical attack and moisture intrusion, that can withstand heavy shock and vibration in almost any application. E58 Harsh Duty sensors feature unparalleled optical performance. They are ideal for automotive applications where exposure to lubricants, cutting fluids, coolants and glycols is common. For food processing applications, a smooth enclosure version simplifies high-pressure chemical washdowns, and withstands the use of sanitizers, surfactants, and cleaning agents including diluted bases and acids.

### Product features

- Sensor with a diameter of 18 mm and 30 mm.
- Highly refined optics for long sensing ranges and to see through high levels of contamination – unmatched optical performance
- Perfect Prox® technology provides exceptional background rejection and extremely high excess gain.
- Resistant to the wide range of chemicals used in the automotive, food processing and forest products industries
- Suitable for high temperature, high pressure washdown (82 bar).
- Mechanical Viton seals hold up to extreme temperature variations.
- Visible sensing beam on all models lets you see where the beam is aimed for quick flush mounting and alignment.
- Output status indicator is the brightest available and is visible from any angle and in any illumination condition
- The industry's only background rejection sensors with a 2-wire circuit design
- Four-wire DC sensors feature an NPN and a PNP output

### Approvals





Function	Design (outer dimensions)	Rated operational voltage	Rated switching distance S <sub>n</sub> mm	Switching type	Connection option	Material	Type of light	Switching principle	Part no. Article no.	Price See price list	Std. pack	
<b>E58 Series</b>												
Reflex sensor With background suppression (Perfect Prox)												
	2-wire	M18 x 1	18 - 50 V DC	50	–	plug connector M12 x 1	Stainless steel	Visible red	Dark switching	<b>E58-18DP50-DDP</b> 135668	1 off	
				50	–				Light switching	<b>E58-18DP50-DLP</b> 135669		
				100	–				Dark switching	<b>E58-18DP100-DDP</b> 135662		
				100	–				Light switching	<b>E58-18DP100-DLP</b> 135663		
				M30 x 1.5	150				–	Dark switching		<b>E58-30DP150-DDP</b> 135674
					150				–	Light switching		<b>E58-30DP150-DLP</b> 135675

**Information relevant for export to North America**



**Product Standards**













UL File No.  
UL CCN  
CSA File No.  
CSA Class No.  
NA Certification  
Max. Voltage Rating  
Degree of Protection

UL 508; CSA-C22.2 No. 14;  
IEC60947-5-2; CE marking  
E166051  
NRKH, NRKH7  
UL report applies to both Canada and US  
–  
UL Listed, certified by UL for use in Canada  
50 V DC  
IEC: IP68, IP69K; UL/CSA Type: 1, 2, 3, 3R, 3S, 4, 4X, 6, 6P, 12, 12K, 13

Function	Design (outer dimensions)	Rated operational voltage	Rated switching distance S <sub>n</sub> mm	Switching type	Connection option	Material	Type of light	Switching principle	Part no. Article no.	Price See price list	Std. pack		
<b>E58 Series</b>													
Reflex sensor With background suppression (Perfect Prox)													
	4-wire	M18 x 1	10 - 30 V DC	50	NPN PNP	2m connection cable	Stainless steel	Visible red	Dark switching	<b>E58-18DP50-HD</b> 135670	1 off		
				50	NPN PNP	plug connector M12 x 1			Dark switching	<b>E58-18DP50-HDP</b> 135671			
				50	NPN PNP	2m connection cable			Light switching	<b>E58-18DP50-HL</b> 135672			
				50	NPN PNP	plug connector M12 x 1			Light switching	<b>E58-18DP50-HLP</b> 135673			
				100	NPN PNP	2m connection cable			Dark switching	<b>E58-18DP100-HD</b> 135664			
				100	NPN PNP	plug connector M12 x 1			Dark switching	<b>E58-18DP100-HDP</b> 135665			
				100	NPN PNP	2m connection cable			Light switching	<b>E58-18DP100-HL</b> 135666			
				100	NPN PNP	plug connector M12 x 1			Light switching	<b>E58-18DP100-HLP</b> 135667			
				M30 x 1.5	10 - 30 V DC	150			NPN PNP	2m connection cable		Dark switching	<b>E58-30DP150-HD</b> 135676
						150			NPN PNP	plug connector M12 x 1		Dark switching	<b>E58-30DP150-HDP</b> 135677
						150			NPN PNP	2m connection cable		Light switching	<b>E58-30DP150-HL</b> 135678
						150			NPN PNP	plug connector M12 x 1		Light switching	<b>E58-30DP150-HLP</b> 135679
	280	NPN PNP	2m connection cable			Dark switching	<b>E58-30DPS280-HD</b> 135680						
	280	NPN PNP	plug connector M12 x 1			Dark switching	<b>E58-30DPS280-HDP</b> 135681						
	280	280	NPN PNP	2m connection cable	Light switching	<b>E58-30DPS280-HL</b> 135682							
			NPN PNP	plug connector M12 x 1	Light switching	<b>E58-30DPS280-HLP</b> 135683							



HPL03099EN

Function	Design (outer dimensions)	Rated operational voltage	Rated switching distance S <sub>n</sub> mm	Switching type	Connection option	Material	Type of light	Switching principle	Part no. Article no.	Price See price list	Std. pack
<b>E58 Series</b>											
<b>Polarized reflexsensor</b> For combination with reflector											
	4-wire	M30 x 1.5	10 - 30 V DC	10000	NPN PNP	2m connection cable	Stainless steel	Visible red	Dark switching	<b>E58-30RP10-HD</b> 135684	1 off  
		M30 x 1.5	10 - 30 V DC	10000	NPN PNP	plug connector M12 x 1			Dark switching	<b>E58-30RP10-HDP</b> 135685	
		M30 x 1.5	10 - 30 V DC	10000	NPN PNP	2m connection cable			Light switching	<b>E58-30RP10-HL</b> 135686	
		M30 x 1.5	10 - 30 V DC	10000	NPN PNP	plug connector M12 x 1			Light switching	<b>E58-30RP10-HLP</b> 135687	
<b>Reflex sensor</b> For combination with reflector											
	4-wire	M30 x 1.5	10 - 30 V DC	18000	NPN PNP	2m connection cable	Stainless steel	Visible red	Dark switching	<b>E58-30RS18-HD</b> 135688	1 off  
		M30 x 1.5	10 - 30 V DC	18000	NPN PNP	plug connector M12 x 1			Dark switching	<b>E58-30RS18-HDP</b> 135689	
		M30 x 1.5	10 - 30 V DC	18000	NPN PNP	2m connection cable			Light switching	<b>E58-30RS18-HL</b> 135690	
		M30 x 1.5	10 - 30 V DC	18000	NPN PNP	plug connector M12 x 1			Light switching	<b>E58-30RS18-HLP</b> 135691	
<b>Thru-beam sensor (detector), forward viewing</b>											
	4-wire	M30 x 1.5	10 - 30 V DC	250000	NPN PNP	2m connection cable	Stainless steel	-	Dark switching	<b>E58-30TD250-HD</b> 135692	1 off  
		M30 x 1.5	10 - 30 V DC	250000	NPN PNP	plug connector M12 x 1			Dark switching	<b>E58-30TD250-HDP</b> 135693	
		M30 x 1.5	10 - 30 V DC	250000	NPN PNP	2m connection cable			Light switching	<b>E58-30TD250-HL</b> 135694	
		M30 x 1.5	10 - 30 V DC	250000	NPN PNP	plug connector M12 x 1			Light switching	<b>E58-30TD250-HLP</b> 135695	
<b>Thru-beam sensor (source), forward viewing</b>											
	4-wire	M30 x 1.5	10 - 30 V DC	250000	NPN PNP	2m connection cable	Stainless steel	Visible red	-	<b>E58-30TS250-HA</b> 135696	1 off  
		M30 x 1.5	10 - 30 V DC	250000	NPN PNP	plug connector M12 x 1			-	<b>E58-30TS250-HAP</b> 135697	

**Information relevant for export to North America**



**Product Standards**

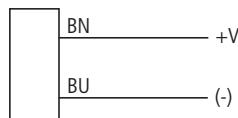
UL File No.  
UL CCN  
CSA File No.  
CSA Class No.  
NA Certification  
Max. Voltage Rating  
Degree of Protection

UL 508; CSA-C22.2 No. 14;  
IEC60947-5-2; CE marking  
E166051  
NRKH, NRKH7  
UL report applies to both Canada and US  
-  
UL Listed, certified by UL for use in Canada  
30 V DC  
IEC: IP68, IP69K; UL/CSA Type: -

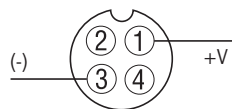
## Engineering

**Circuit diagram**

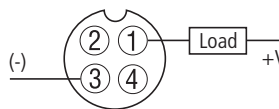
E58...HA



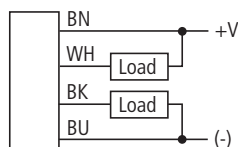
E58...HAP



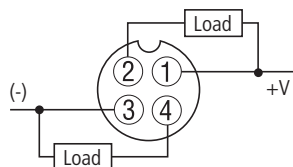
E58...DDP  
E58...DLP



E58...HD  
E58...HL

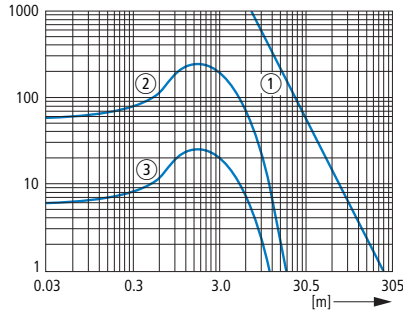


E58...HDP  
E58...HLP

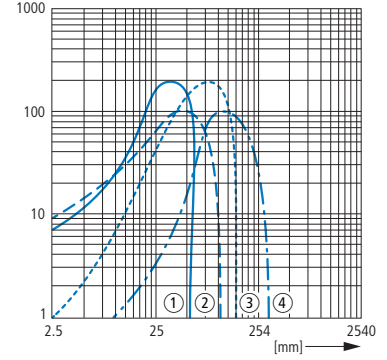


Excess gain chart

- Thru-beam**  
① Thru-beam  
**Reflex**  
② 84 mm-reflector  
**Polarized reflex**  
③ 84 mm-reflector



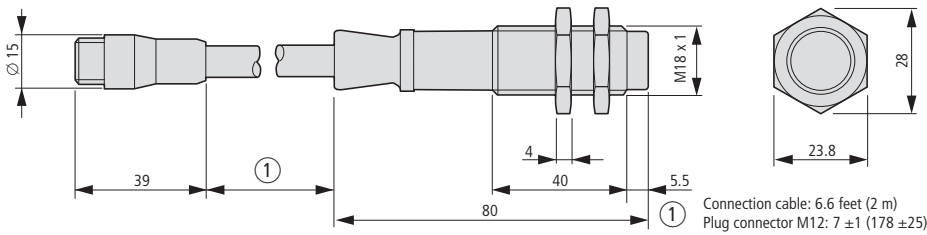
- Perfect Prox®**  
① 18 mm diameter, 50 mm-designs  
② 18 mm diameter, 100 mm-designs  
③ 30 mm diameter, 150 mm-designs  
④ 30 mm diameter, 280 mm-Design



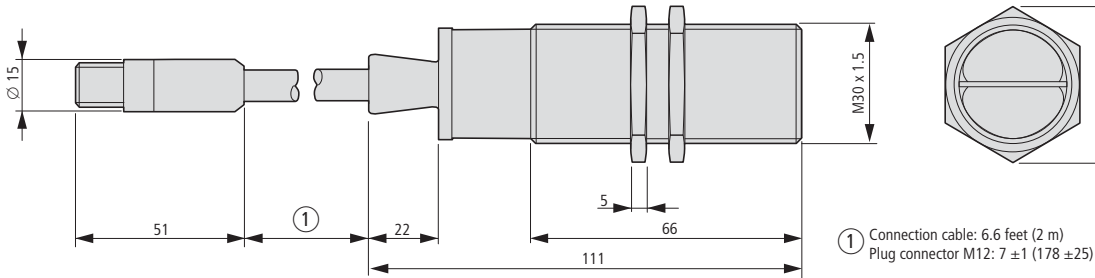
Dimensions

E58 Series

E58-18...



E58-30...



Technical data

	2-wire		4-wire	
	E58-18...	E58-30...	E58-18...	E58-30...
<b>General</b>				
Standards	IEC/EN 60947-5-2			
Ambient temperature	°C			
Protection type	IP67	IP67	IP67	IP67
Mechanical shock resistance	100 Shock duration 3 ms			
<b>Characteristic values</b>				
Rated operating voltage	18 - 50 V DC	18 - 50 V DC	10 - 30 V DC	10 - 30 V DC
Operating current in the switched state at 24 V DC	$I_b$ mA 1.7	1.7	—	—
Rated operational current	$I_e$ mA 100	100	100	100
Switching frequency	Hz 14	14	500	312
Switching state indication	LED Red	Red	Red	Red
Protective functions	Short-circuit protection Protection against polarity reversal Protection against wire breakage			
<b>Function</b>	2-wire	2-wire	4-wire	4-wire
Construction type				
Design (outer dimensions)	M18 x 1	M30 x 1.5	M18 x 1	M30 x 1.5
Material	Stainless steel	Stainless steel	Stainless steel	Stainless steel

Notes

Further technical data can be found in the Online Catalogue at [www.moeller.net](http://www.moeller.net)

## Description



- ① 18 mm thread
- ② Power lamp (green)
- ③ Output lamp (red)
- ④ TargetLock™ lamp (orange)
- ⑤ Gain adjustment

### Short description

Eaton's SM series photoelectric sensors offer a high performance and simple use in a compact, cost-effective design. Regardless how good a sensor's performance just a slight maladjustment or incorrectly positioned target will sooner or later impact reliability.

In addition to simplifying sensor setup, TargetLock™ provides visual confirmation of the correct mounting position for optimum reliability.

In addition TargetLock™ outputs diagnostic information during operation, which provides an early warning about potential problems to help prevent costly downtimes. No other sensor is easier to use.

The SM sensors offer numerous performance features that simplify their use. A visible sensing beam shows you exactly where the sensor is pointing. The durable enclosure features multiple fixing possibilities to easily fit on your equipment in the tightest of spaces. Full protection from overvoltage, reverse polarity and short circuits reduces the chance of damage. Bright 360° LED indicators clearly show sensor status.

### Product features

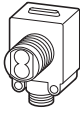

- Bright indicators for power, output, and TargetLock™.
- TargetLock™ simplifies setup and ensures a high operational reliability.
- The Perfect Prox® models detect targets with different colors at the same range while ignoring background objects.
- AC/DC models work with 18 – 264 V AC or 18 – 50 V DC.
- DC-only models feature PNP and NPN outputs.
- Visible sensing beam on all models lets you see where the beam is aimed for quick flush mounting and alignment.
- Compact design for space-saving flush mounting.
- Range of fixing possibilities, including standard 18 mm thread.
- Short-circuit, overload and protection against polarity reversal.
- Full family includes thru-beam, polarized reflex, diffuse reflective and Perfect Prox® background rejection.

### Approvals



Ordering

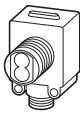



Rated operational voltage	Function	Switching principle	Rated switching distance S <sub>n</sub> mm	Switching type	Connection options	Part no. Article no.	Price See price list	Std. pack	
<b>E65 SM Series</b>									
3-conductors, insulated material									
 18 - 264 V AC 18 - 50 V DC	Reflex sensor With background suppression (Perfect Prox)	Dark switching	50	NPN (DC)	2 m connection cable	<b>E65-SMPP050-GD</b> 135698		1 off 	
		Dark switching	50	NPN (DC)	plug connector M12 x 1	<b>E65-SMPP050-GDD</b> 135699			
		Light switching	50	NPN (DC)	2 m connection cable	<b>E65-SMPP050-GL</b> 135700			
		Light switching	50	NPN (DC)	plug connector M12 x 1	<b>E65-SMPP050-GLD</b> 135701			
		Dark switching	100	NPN (DC)	2 m connection cable	<b>E65-SMPP100-GD</b> 135706			
		Dark switching	100	NPN (DC)	plug connector M12 x 1	<b>E65-SMPP100-GDD</b> 135707			
		Light switching	100	NPN (DC)	2 m connection cable	<b>E65-SMPP100-GL</b> 135708			
		Light switching	100	NPN (DC)	plug connector M12 x 1	<b>E65-SMPP100-GLD</b> 135709			
		Diffuse reflective sensor	Dark switching	200	NPN (DC)	2 m connection cable			<b>E65-SMSD200-GD</b> 135722
			Dark switching	200	NPN (DC)	plug connector M12 x 1			<b>E65-SMSD200-GDD</b> 135723
			Light switching	200	NPN (DC)	2 m connection cable			<b>E65-SMSD200-GL</b> 135724
			Light switching	200	NPN (DC)	plug connector M12 x 1			<b>E65-SMSD200-GLD</b> 135725
	Polarized reflex For combination with reflector	Dark switching	3000	NPN (DC)	2 m connection cable	<b>E65-SMPR3-GD</b> 135714			
		Dark switching	3000	NPN (DC)	plug connector M12 x 1	<b>E65-SMPR3-GDD</b> 135715			
		Light switching	3000	NPN (DC)	2 m connection cable	<b>E65-SMPR3-GL</b> 135716			
		Light switching	3000	NPN (DC)	plug connector M12 x 1	<b>E65-SMPR3-GLD</b> 135717			

Information relevant for export to North America

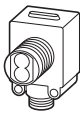





Product Standards  
UL File No. E166051  
UL CCN NRKH, NRKH7  
CSA File No. UL report applies to both Canada and US  
CSA Class No. —  
NA Certification UL Listed, certified by UL for use in Canada  
Max. Voltage Rating 132 V AC, 30 V DC  
Degree of Protection IEC: IP68, IP69K; UL/CSA Type: 1, 3, 4, 4X, 6, 6P, 12, 13

Rated operational voltage	Function	Switching principle	Rated switching distance S <sub>n</sub> mm	Switching type	Connection options	Part no. Article no.	Price See price list	Std. pack
<b>E65 SM Series</b>								
4-conductors, insulated material								
 10 - 30 V DC	Reflex sensor With background suppression (Perfect Prox)	Dark switching	50	NPN PNP	2 m connection cable	<b>E65-SMPP050-HD</b> 135702		1 off 
		Dark switching	50	NPN PNP	plug connector M12 x 1	<b>E65-SMPP050-HDD</b> 135703		
		Light switching	50	NPN PNP	2 m connection cable	<b>E65-SMPP050-HL</b> 135704		
		Light switching	50	NPN PNP	plug connector M12 x 1	<b>E65-SMPP050-HLD</b> 135705		
		Dark switching	100	NPN PNP	2 m connection cable	<b>E65-SMPP100-HD</b> 135710		
		Dark switching	100	NPN PNP	plug connector M12 x 1	<b>E65-SMPP100-HDD</b> 135711		
		Light switching	100	NPN PNP	2 m connection cable	<b>E65-SMPP100-HL</b> 135712		
		Light switching	100	NPN PNP	plug connector M12 x 1	<b>E65-SMPP100-HLD</b> 135713		

HPL03103EN



Rated operational voltage	Function	Switching principle	Rated switching distance S <sub>n</sub> mm	Switching type	Connection options	Part no. Article no.	Price See price list	Std. pack
<b>E65 SM Series</b>								
4-conductors, insulated material								
	10 - 30 V DC	Diffuse reflective sensor	Dark switching	200	NPN PNP	2 m connection cable	<b>E65-SMSD200-HD</b> 135726	1 off 
			Dark switching	200	NPN PNP	plug connector M12 x 1	<b>E65-SMSD200-HDD</b> 135727	
			Light switching	200	NPN PNP	2 m connection cable	<b>E65-SMSD200-HL</b> 135728	
			Light switching	200	NPN PNP	plug connector M12 x 1	<b>E65-SMSD200-HLD</b> 135729	
	Polarized reflex photoelectric sensor For combination with reflector	Dark switching	3000	NPN PNP	2 m connection cable	<b>E65-SMPR3-HD</b> 135718		
		Dark switching	3000	NPN PNP	plug connector M12 x 1	<b>E65-SMPR3-HDD</b> 135719		
		Light switching	3000	NPN PNP	2 m connection cable	<b>E65-SMPR3-HL</b> 135720		
		Light switching	3000	NPN PNP	plug connector M12 x 1	<b>E65-SMPR3-HLD</b> 135721		
	10 - 30 V DC	Thru-beam sensor (detector) For combination with source	Dark switching	15000	NPN PNP	2 m connection cable	<b>E65-SMTD15-HD</b> 135730	1 off 
			Dark switching	15000	NPN PNP	plug connector M12 x 1	<b>E65-SMTD15-HDD</b> 135731	
			Light switching	15000	NPN PNP	2 m connection cable	<b>E65-SMTD15-HL</b> 135732	
			Light switching	15000	NPN PNP	plug connector M12 x 1	<b>E65-SMTD15-HLD</b> 135733	
	Thru-beam sensor (source) For combination with detector	-	15000	NPN PNP	2 m connection cable	<b>E65-SMTS15-HA</b> 135734		
		-	15000	NPN PNP	plug connector M12 x 1	<b>E65-SMTS15-HAD</b> 135735		

**Information relevant for export to North America**



Product Standards  
UL File No.  
UL CCN  
CSA File No.  
CSA Class No.  
NA Certification  
Max. Voltage Rating  
Degree of Protection

UL 508; CSA-C22.2 No. 14; IEC60947-5-2; CE marking  
E166051  
NRKH, NRKH7  
UL report applies to both Canada and US  
-  
UL Listed, certified by UL for use in Canada  
30 V DC  
IEC: IP68, IP69K; UL/CSA Type: -

**Technical data**

	E65...-G...	E65...-H...	E65...15-H...	E65...-HA...
<b>General</b>				
Standards	IEC/EN 60947-5-2			
Ambient temperature	-25 - +55 °C	-25 - +55	-25 - +55	-25 - +55
Protection type	IP67	IP67	IP67	IP67
Mechanical shock resistance	50 g Shock duration 10 ms			
<b>Characteristic values</b>				
Rated operating voltage	18 - 264 V AC 18 - 50 V DC	10 - 30 V DC	10 - 30 V DC	10 - 30 V DC
Operating current in the switched state at 24 V DC	I <sub>b</sub> mA	20	20	40
Rated operational current	I <sub>e</sub> mA	200	100	-
Switching frequency	Hz	31	500	-
Switching state indication	LED	Red	Red	Red
Operating voltage display	LED	Green	Green	Green
Boundary gain		Yellow	Yellow	Yellow
Protective functions	Short-circuit protection Protection against polarity reversal Protection against wire breakage			
Function	3-wire	4-wire	4-wire	4-wire
Construction type				
Design (outer dimensions)	33 x 41 x 43	33 x 41 x 37	33 x 41 x 37	33 x 41 x 37
Material	plastic	plastic	plastic	plastic

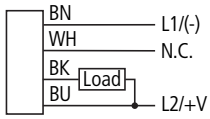
**Notes**

Further technical data can be found in the Online Catalogue at [www.moeller.net](http://www.moeller.net)

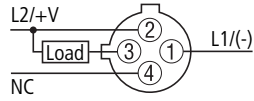
## Engineering

### Circuit diagram

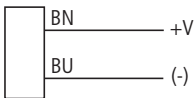
**E65...GD**  
**E65...GL**



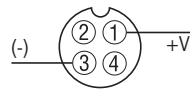
**E65...GDD**  
**E65...GLD**



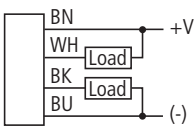
**E65...HA**



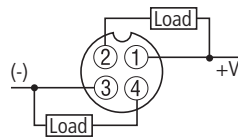
**E65...HAD**



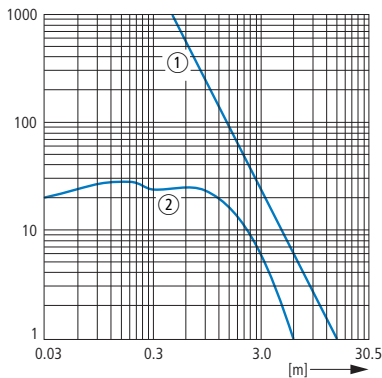
**E65...HD**  
**E65...HL**



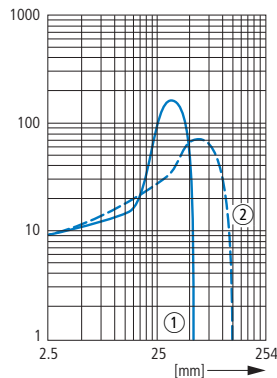
**E65...HDD**  
**E65...HLD**



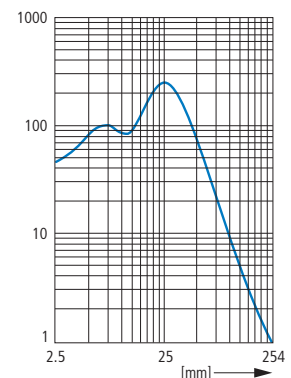
### Excess gain chart



- ① Thru-beam sensor
- ② Reflex sensor with polarizing filter



- ① 50 mm Perfect Prox®
- ② 100 mm Perfect Prox®

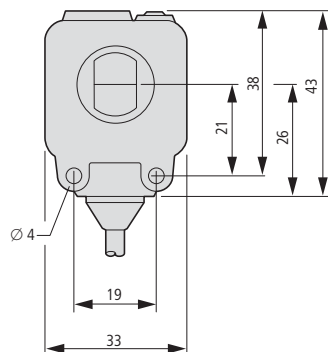


- Photoelectric sensors  
(90 % reflective test card)

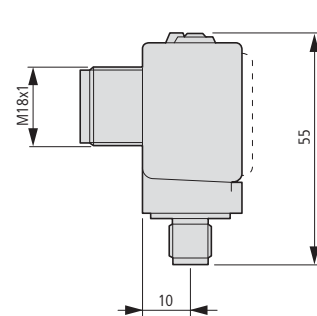
## Dimensions

### E65 SM Series

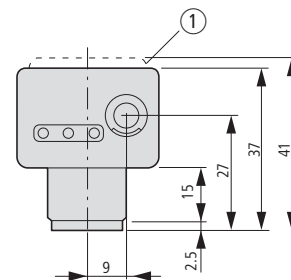
E65...-GD  
E65...-GL  
E65...-HD  
E65...-HL  
E65...-HA



E65...-HDD  
E65...-HLD  
E65...-HAD




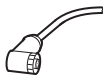


E65...-GDD  
E65...-GLD



HPL03105EN














Design, input end	Design output end	Pole	Length mm	Part no. Article no.	Price See price list	Std. pack	
<b>Connecting cables</b>							
	Coupling, straight	Cable end open	AC	3-pole	2000	<b>CSAS3F3CY2202</b> 136265	1 off
					5000	<b>CSAS3F3CY2205</b> 136266	
					10000	<b>CSAS3F3CY2210</b> 136267	
				4-pole	2000	<b>CSAS4A4CY2202</b> 136268	
					5000	<b>CSAS4A4CY2205</b> 136269	
					10000	<b>CSAS4A4CY2210</b> 136312	
			DC	4-pole, 3-wire	2000	<b>CSDS4A3CY2202</b> 136287	
					5000	<b>CSDS4A3CY2205</b> 136288	
					10000	<b>CSDS4A3CY2210</b> 136289	
				4-pole	2000	<b>CSDS4A4CY2202</b> 136292	
					5000	<b>CSDS4A4CY2205</b> 136294	
					10000	<b>CSDS4A4CY2210</b> 136296	
	Coupling, straight	Plug, straight	DC	4-pole	1000	<b>CSDS4A4CY2201-D</b> 136291	
					3000	<b>CSDS4A4CY2203-D</b> 136293	
					5000	<b>CSDS4A4CY2205-D</b> 136295	
					1500	<b>CSDS4A4CY2201.5-D</b> 136316	
	Coupling, straight	Plug, angled	DC	4-pole	1000	<b>CSDR4A4CY2201-D</b> 136278	
					5000	<b>CSDR4A4CY2205-D</b> 136283	
					1500	<b>CSDR4A4CY2201.5-D</b> 136313	
					2000	<b>CSDR4A4CY2202-D</b> 136314	
					3000	<b>CSDR4A4CY2203-D</b> 136315	
	Coupling, angled	Cable end open	AC	3-pole	2000	<b>CSAR3F3CY2202</b> 136262	
					5000	<b>CSAR3F3CY2205</b> 136263	
					10000	<b>CSAR3F3CY2210</b> 136264	
				DC	2000	<b>CSDR4A3CY2202</b> 136272	
					5000	<b>CSDR4A3CY2205</b> 136273	
					5000	<b>CSDR4A3CY2205-LN<sup>1)</sup></b> 136274	
			DC	5000	<b>CSDR4A3CY2205-LP<sup>2)</sup></b> 136275		
				10000	<b>CSDR4A3CY2210</b> 136276		
				4-pole	2000	<b>CSDR4A4CY2202</b> 136279	
					5000	<b>CSDR4A4CY2205</b> 136282	
			10000		<b>CSDR4A4CY2210</b> 136284		

Notes

<sup>1)</sup> With LED (NPN)









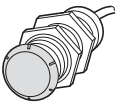
<sup>2)</sup> With LED (PNP)



	Description	Length mm		Switching type	Pole	Part no. Article no.	Price See price list	Std. pack
<b>Coupler</b>								
	Angled	-	-	-	4-pole	<b>CSDR4</b> 136271		1 off
	Straight	-	-	-	4-pole	<b>CSDS4</b> 136286		1 off
<b>Plug</b>								
	Angled	-	-	-	4-pole	<b>CSDRM4</b> 136285		1 off
	Straight	-	-	-	4-pole	<b>CSDSM4</b> 136297		1 off
<b>M12 (micro) multi-connector block</b>								
	Cable	10000	DC	PNP	4-pole	<b>CBDR4P10</b> 136318		1 off
	Cable	5000		PNP		<b>CBDR4P05</b> 136301		
	Spring cage	-		NPN		<b>CBDR4NSC</b> 136300		
	Spring cage	-		PNP		<b>CBDR4PSC</b> 136303		
	Cable	10000		PNP	6-pole	<b>CBDR6P10</b> 136319		
	Cable	5000		PNP		<b>CBDR6P05</b> 136305		
	Spring cage	-		NPN		<b>CBDR6NSC</b> 136304		
	Spring cage	-		PNP		<b>CBDR6PSC</b> 136320		
	Cable	10000		PNP	8-pole	<b>CBDR8P10</b> 136322		
	Cable	5000		PNP		<b>CBDR8P05</b> 136309		
	Spring cage	-		NPN	<b>CBDR8NSC</b> 136321			
	Spring cage	-		PNP	<b>CBDR8PSC</b> 136311			
<b>Protection cap</b>								
	Plug	-	-	-	-	<b>CBMCAP</b> 136298		1 off
	Coupling	-	-	-	-	<b>CBCAP</b> 136317		
	M12 sensors	-	-	-	-	<b>E57KP12</b> 136202		1 off
	M18 sensors	-	-	-	-	<b>E57KP18</b> 136203		
	M30 sensors	-	-	-	-	<b>E57KP30</b> 136204		
<b>Cable adapters</b>								
	M12 sensors, metal	-	-	-	-	<b>E57KC12</b> 136184		1 off
	M18 sensors, metal	-	-	-	-	<b>E57KC18</b> 136185		
	M30 sensors, metal	-	-	-	-	<b>E57KC30</b> 136186		
	M8 sensors, metal	-	-	-	-	<b>E57KC8</b> 136187		
	M30 sensors, stainless steel	-	-	-	-	<b>E58KC30</b> 135754		



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Description	For use with	Material	Part no. Article no.	Price See price list	Std. pack	
<b>Fixing brackets</b>						
	M8 sensors	Stainless steel	<b>E57KM8</b> 136191		1 off	
	M12 sensors		<b>E57KM12</b> 136188			
	M18 sensors		<b>E57KM18</b> 136189			
	M30 sensors		<b>E57KM30</b> 136190			
	M18 sensors	Aluminium	<b>6161A-6501</b> 135736		2 off	
			<b>6161AS5295</b> 135737			
			<b>6161AS7050</b> 135741			
			Metal	<b>6167A-6501</b> 135742		1 off
					Stainless steel	
Adjustable, insulated	M18 sensors	<b>E58KAM18U</b> 135751				
Adjustable, not insulated	M18 sensors	<b>E58KAM30</b> 135752				
Adjustable, insulated	M30 sensors	<b>E58KAM30U</b> 135753				
	Adjustable, not insulated	M30 sensors	<b>E58KAM18B</b> 135750		1 off	
	with ball joint	M18 sensors				
<b>Spare nuts</b>						
	M8 sensors	Metal	<b>E57KNM8</b> 136194		2 off	
	M12 sensors		<b>E57KNM12</b> 136193			
	M12 sensors		<b>E57KNS12</b> 136195			
	M18 sensors	Plastic	<b>E57KNC18</b> 136192		1 off	
	M18 sensors	Metal	<b>E57KNS18</b> 136196			
	M30 sensors	Metal	<b>E57KNS30</b> 136197		1 off	
	M18 sensors	Stainless steel	<b>E58KNS18</b> 135755			
	M30 sensors	Stainless steel	<b>E58KNS30</b> 135756			
<b>Sensor fixing</b>						
	M8 sensors	-	<b>E57KNZ8</b> 136201		1 off	
	M12 sensors	-	<b>E57KNZ12</b> 136198		1 off	
	M18 sensors	-	<b>E57KNZ18</b> 136199		1 off	
	M30 sensors	-	<b>E57KNZ30</b> 136200		1 off	

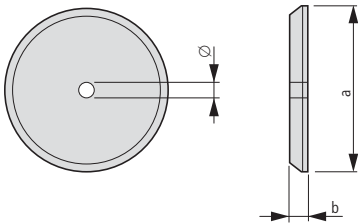




Design (outer dimensions)	Material	Part no. Article no.	Price See price list	Std. pack	Information relevant for export to North America
<b>Retro-reflector</b>					
 84 mm Ø	Plastic	<b>6200A-6501</b> 135743		2 off	 
61 mm Ø	Plastic	<b>6200A-6502</b> 135744		1 off	
33 mm Ø	Plastic	<b>6200A-6504</b> 135745		1 off	
61 mm Ø	Plastic	<b>6200A-6505</b> 135746		1 off	
84 mm Ø	Plastic/metal	<b>6200A-6506</b> 135747		1 off	
38 x 81	Plastic	<b>6200A-6507</b> 135748		1 off	
63 mm Ø	Plastic	<b>E65KR55</b> 135758		1 off	

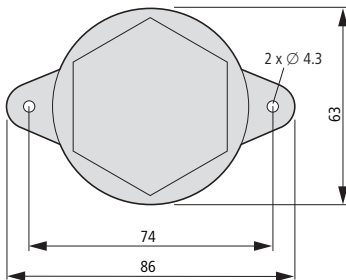
**Dimensions**

**Retro-reflector**



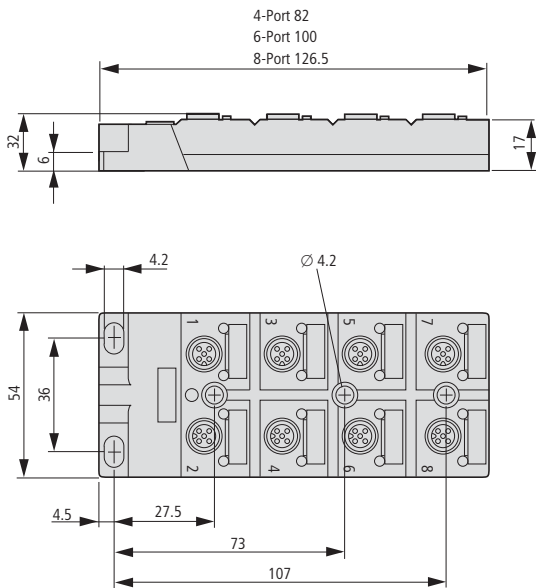
	a	b	Ø
6200A-6501	84	9	5
6200A-6502	61	7.5	-
6200A-6504	33	6	-
6200A-6505	61	7.5	6
6200A-6506	84	7.5	5

**E65KR55**

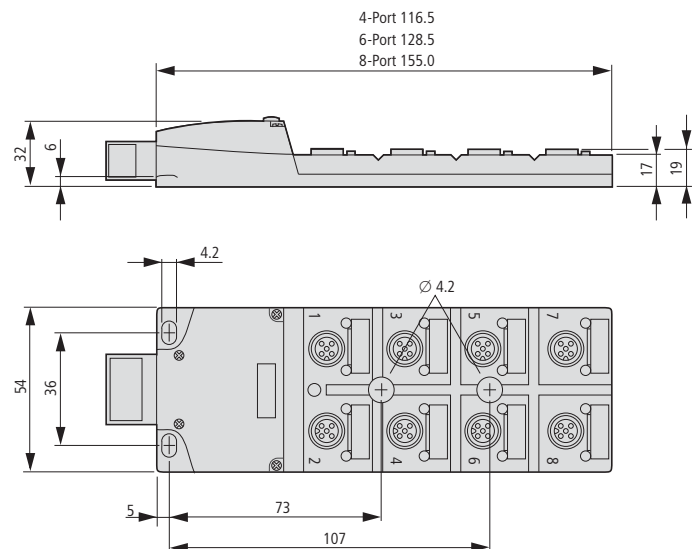


**Multi-connection blocks**

**Cable**



**Spring cage**

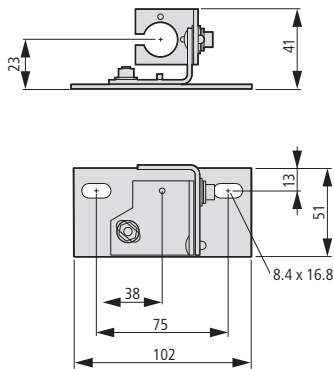


Dimensions

Fixing brackets

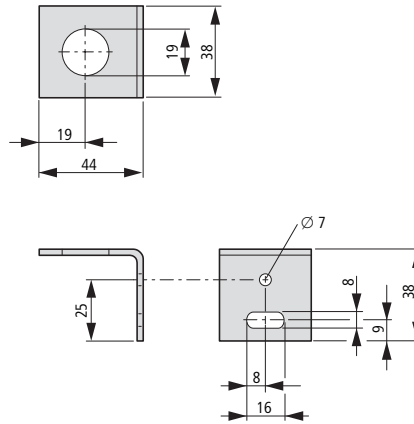
E58KAM18

E58KAM18U



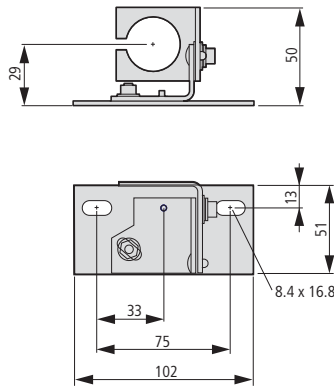
6161A-6501

6161AS-6501

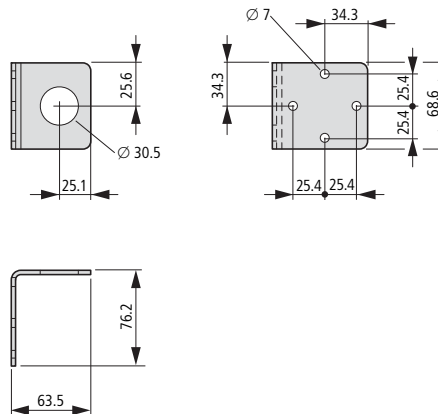


E58KAM30

E58KAM30U



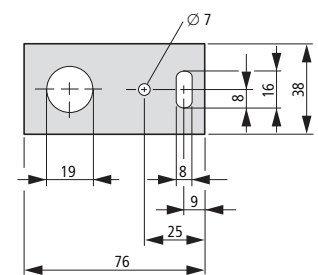
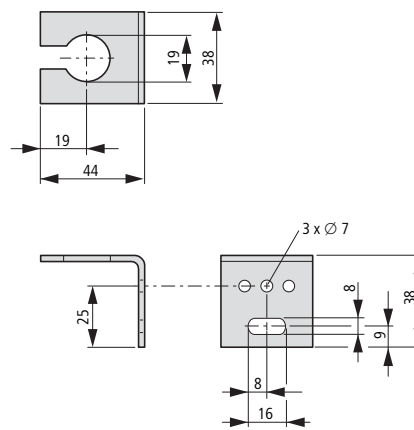
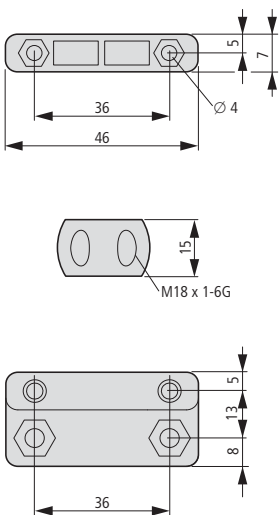
6167A-6501



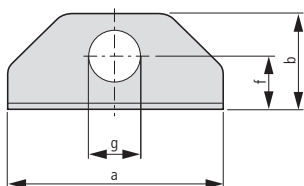
E58KAM18B

6161AS-7050

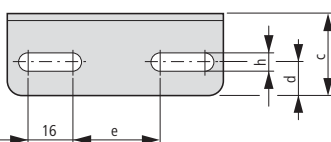
6161AS-5295



E57KM...

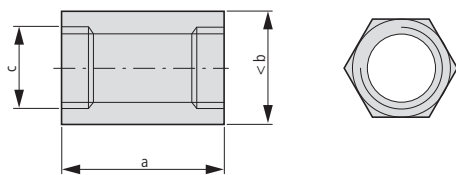


	a	b	c	d	e	f	g	h
8 mm	76	34	29	17	31	19	8	6
12 mm	76	34	29	17	31	19	12	6
18 mm	76	34	29	17	31	19	18	6
30 mm	108	55	45	25	51	29	30	7



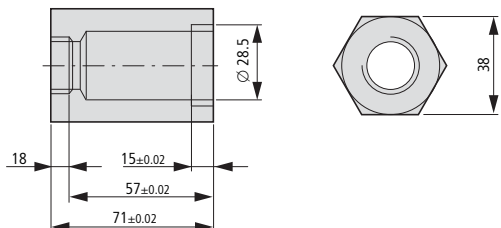
**Cable adapters**

E57KC...



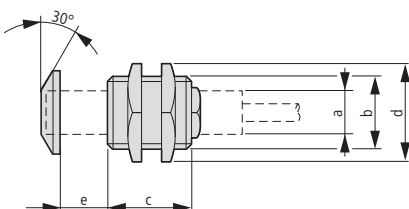
	a	b	c
8 mm	25	25	M8x1
12 mm	38	25	M12x1
18 mm	38	25	M18x1
30 mm	48	38	M30x1.5

E58KC30



**Sensor fixing**

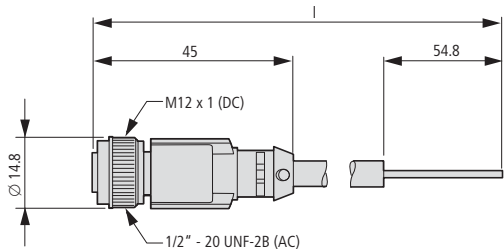
E57KNZ



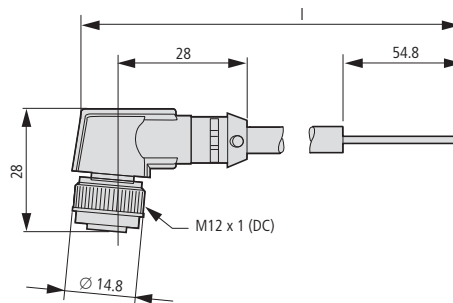
	a	b	c	d	e
8 mm	M8x1	M16x1.5	22	22	9
12 mm	M12x1	M22x1.5	22	29	10
18 mm	M18x1	M30x1.5	30	36	12
30 mm	M30x1.5	M47x1.5	37	51	15

**Connecting cables**

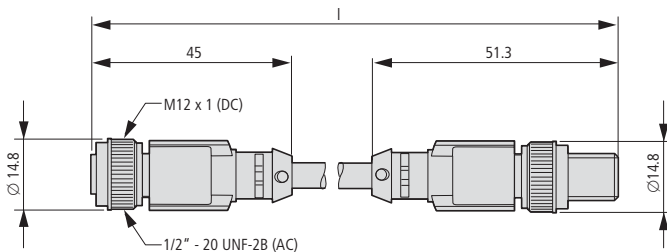
**Coupling straight, cable end open**



**Coupling angled, cable end open**



**Straight coupling, straight plug**



**Coupling angled, angled**

