Proximity sensors, block design



Proximity sensors, block design Product range overview

Measuring	Version	Туре	Mounting	Switching elen		Switching	Electrical co		
principle				N/O contact	N/C contact	output	Cable	Plug	
Magneto-res	Operating vol	tage range 10 30 V I	DC						
istive		SMTO-1	Via accessories	-	-	PNP	3-wire	M8x1, 3-pin	
				-	_	NPN	3-wire	M8x1, 3-pin	
		SMTSO-1 Welding field immune		•	-	PNP	-	M12x1, 3-pin	
Magnetic	Operating vol	tage range 0 30 V D	C						
reed		SMEO-1	Via accessories	•	-	Contacting	-	M8x1, 3-pin ¹⁾	
				•	-		3-wire	M8x1, 3-pin	
	Operating voltage range 0 250 V AC, 0 200 V DC								
		SMEO-1-B	Via accessories	•	-	Contacting	2-wire	-	
		SMEO-1		•	-		2-wire	-	
				•	-		2-wire	-	
		SMEO-1-S6-C Heat-resistant up to 120 °C		•	-		2-wire	-	
Magnetic	Pneumatic pro	oximity sensor, operat	ing pressure 2 6 bar			•			
		SMPO-1	Via accessories	2)	-	-	-	-	
Magneto-ind	Operating vol	tage range 10 30 V I	DC	•		·	•	·	
uctive		SMT-C1	Clamped		_	PNP	3-wire	M8x1, 3-pin	
								M12x1, 3-pin	

The proximity sensor has 2 wires internally. One pin of the M8 plug is unused.
 3/2-way valve, normally closed

Proximity sensors, block design Product range overview

FESTO

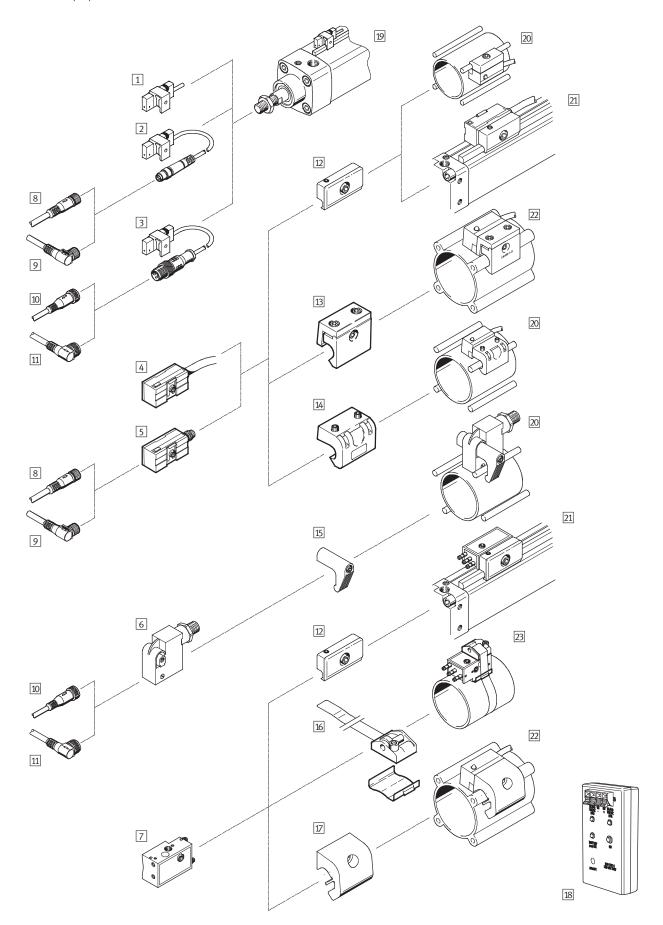
3

Туре	Connection direc	tion	Replacement without	Switching status display via LED	Free of copper and PTFE	→ Page/Internet
	In-line	Lateral	re-adjustment	display via LED	PIFE	
	e range 10 30 V DC					
SMTO-1	•	-	1)	•	-	7
	•	-	1)	•	-	
SMTSO-1						9
Welding field immune	•	-	-	•	-	
Onerating voltage	e range 0 30 V DC					
SMEO-1			-			11
	•	-	1)	-	•	_
	•	_	1)	•	•	
	e range 0 250 V DC,	0 200 V DC				
SMEO-1-B	•	-	1)	-	-	11
SMEO-1	•	-	1)	•	-	
	•	-	1)	-	-	
SMEO-1-S6-C						
Heat-resistant up to 120 °C	•	-	1)	•	-	
Pneumatic proxi	mity sensor, operating	pressure 2 6 bar				
SMPO-1		_	1)	_ 2)	_	14
	e range 10 30 V DC					
SMT-C1						16
	•	_	_	•	•	

Not in combination with mounting kit SMB-1 or SMBS-...
 Switching status is indicated via a pneumatic pin

Proximity sensors, block design Overview of peripherals





Proximity sensors, block design Overview of peripherals

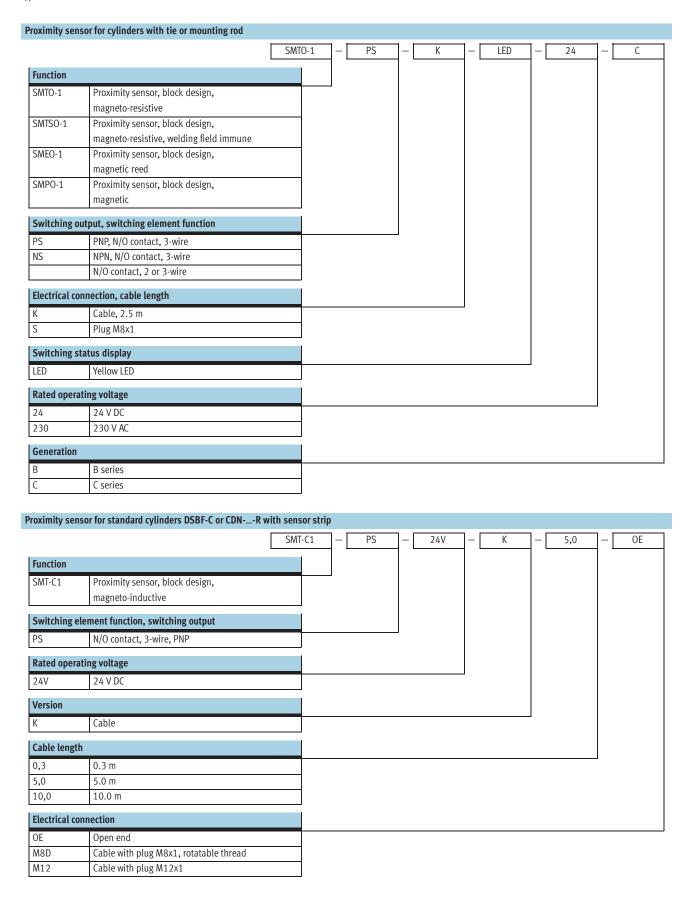


Μοι	inting attachments and accessories		
		Brief description	→ Page/Internet
Prox	cimity sensors		
1	SMT-C1	Magneto-inductive, with cable and clamping component	16
2	SMT-C1	Magneto-inductive, with cable and plug M8x1 and clamping component	16
3	SMT-C1	Magneto-inductive, with cable and plug M12x1 and clamping component	16
4	SMTO-1	Magneto-resistive, with cable	7
	SMEO-1	Magnetic reed, with cable	11
5	SMTO-1	Magneto-resistive, with plug M8x1	7
	SMEO-1	Magnetic reed, with plug M8x1	11
6	SMTSO-1	Magneto-resistive, welding field immune, with plug M12x1	9
7	SMPO-1	Pneumatic	14
			•
Acce	essories		
8	Connecting cable NEBU-M8G3	Straight socket, M8x1, 3-pin	21
9	Connecting cable NEBU-M8W3	Angled socket, M8x1, 3-pin	
10	Connecting cable NEBU-M12G5	Straight socket, M12x1, 3-pin	
11	Connecting cable NEBU-M12W5	Angled socket, M12x1, 3-pin	
12	Mounting kit SMB-1	For drives with tie rod \varnothing 6 mm or mounting rail	19
		For standard cylinders DSBG	
13	Mounting kit SMBU-1-B	For standard cylinders DNU	19
14	Mounting kits SMB-2-B, SMB-3-B	For standard cylinders DSBG	19
15	Mounting kit SMBT-1	For standard cylinders DSBG	20
16	Mounting kit SMBS	For round cylinders	20
17	Mounting kit SMBU-1-H-32	For standard cylinders DNU	20
18	Sensor tester SM-TEST-1		sm-test-1
Driv	es		
19	Standard cylinder DSBF-C or CDNR with	Ø 32 100 mm	-
	sensor rail		
20	Standard cylinder DSBG	Ø 32 125 mm	-
21	Flat cylinder DZH	Ø 32 63 mm	-
	Semi-rotary drive DRQ	Ø 40 100 mm	
22	Standard cylinder DNU	Ø 32 125 mm	
23	Round cylinder	Ø 8 100 mm	

Proximity sensors, block design



Type code



Proximity sensors SMTO-1, block design, magneto-resistive



Technical data

Function e.g. PNP, N/O contact, with cable



• Magneto-resistive measuring principle









Design				
Constructional design	Block design			
Type of mounting	Via accessories			
Connection direction	In-line In-line			
Reproducibility of switching point ¹⁾ [mm]	±0.1			
Switching status display	Yellow LED			

1) Only applicable to drives secured against rotation.

Technical data - N/O contact				
Switch output		PNP		
		NPN		
Electrical connection		Cable, 3-wire		Plug M8x1, 3-pin
Cable length	[m]	2.5		-
Operating voltage range	[V DC]	10 30		
Max. switching current	[mA]	200		
Max. switching capacity	[W]	6		
Voltage drop	[V]	3		
Residual current	[mA]	≤0.01		
Switch-on time	[ms]	≤1		
Switch-off time	[ms]	≤1		
Protection against short circuit		Yes		
Protection against polarity reversal		For all electrical connections		
Protection class		IP67		

Operating and environmental conditions						
Electrical connection	Cable		Plug			
Cable installation	Fixed	Flexible				
Ambient temperature [°C]	-25 +70	-5 +70	-25 +70			
Corrosion resistance class CRC ¹⁾	4		2			
			=			
CE symbol (declaration of conformity)	In accordance with EU EMC directiv	re ²⁾	<u> - </u>			

- 1) Corrosion resistance class 2 according to Festo standard 940 070
 - Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants
 - Corrosion resistance class 4 according to Festo standard 940 070
- Components requiring higher corrosion resistance. Parts used with aggressive media, e.g. food or chemical industry. These applications should be supported with special tests with the media if required.

 2) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com

 Support

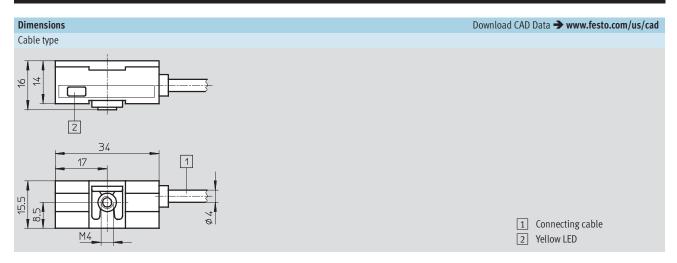
 User documentation.

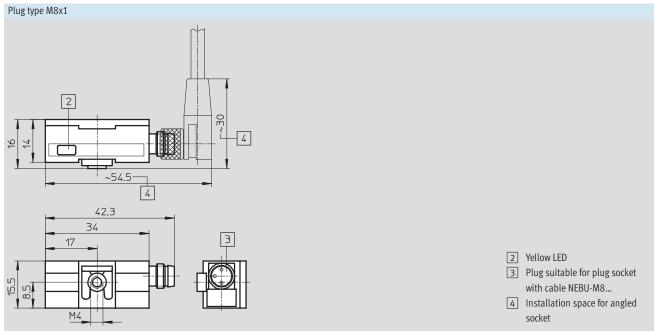
 If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.

Materials				
Housing	Die-cast zinc, polyester			
Cable sheath	Polyvinyl chloride			
Note on materials	Free of copper and PTFE			

Proximity sensors SMTO-1, block design, magneto-resistive Technical data

Product weights [g]					
Electrical connection	Cable	Plug			
N/O contact	N/O contact				
PNP	85	20			



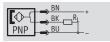


Ordering data								
	Switch output	Electrical conne	Electrical connection		Part No.	Туре		
		Cable	Plug M8x1	[m]				
	N/O contact	N/O contact						
	PNP	3-wire	-	2.5	151683	SMTO-1-PS-K-LED-24-C		
		-	3-pin	-	151685	SMTO-1-PS-S-LED-24-C		
	NPN	3-wire	-	2.5	151684	SMTO-1-NS-K-LED-24-C		
		_	3-pin	-	151686	SMTO-1-NS-S-LED-24-C		

Proximity sensors SMTSO-1, block design, magneto-resistive Technical data

FESTO

Function PNP, N/O contact, with plug



- Welding field immune
- Magneto-resistive measuring principle



Design				
Constructional design	Block design			
Type of mounting	Via accessories			
Connection direction	In-line			
Reproducibility of switching point ¹⁾ [mm]	±0.1			
Switching status display	Yellow LED			
Ready status display	Green LED			

1) Only applicable to drives secured against rotation

Technical data - PNP, N/O contact		
Electrical connection		Plug M12x1, 3-pin
Operating voltage range	[V DC]	10 30
Max. switching current	[mA]	200
Max. switching capacity	[W]	6
Voltage drop	[V]	3
Residual current	[mA]	0.01
Switch-on time	[ms]	≤35
Switch-off time	[ms]	≤20
Resistance to interference from magn	etic fields	Alternating magnetic field 50 60 Hz
Protection against short circuit		Yes
Protection against polarity reversal		For all electrical connections
Protection class		IP65/IP67

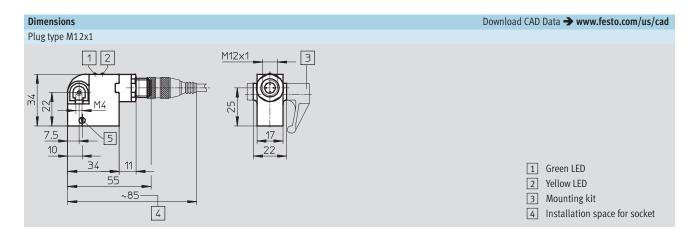
Operating and environmental conditions					
Ambient temperature [°C]	-25 +70				
Corrosion resistance class CRC ¹⁾	1				
CE symbol (declaration of conformity)	In accordance with EU EMC directive ²⁾				
Certification	C-Tick				

- 1) Corrosion resistance class 1 according to Festo standard 940 070
- Components requiring low corrosion resistance. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

Materials	
Housing	Die-cast zinc

Product weights [g]	
N/O contact	
PNP	70

Proximity sensors SMTSO-1, block design, magneto-resistive Technical data



Ordering data				
	Switch output	Electrical connection	Part No.	Туре
	N/O contact Welding field immune			
	PNP	Plug M12x1, 3-pin	30441	SMTSO-1-PS-S-LED-24

Proximity sensors SMEO-1, block design, magnetic reed Technical data

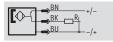


Function e.g. N/O contact, 3-wire, with cable





e.g. N/O contact, 3-wire, with plug



• Magnetic reed measuring principle





Technical data		
Electrical connection	3-wire	2-wire
Туре	SMEO-124	SMEO-1-LED-230 SMEO-1-B SMEO-1-S6, heat-resistant
Design	Block design	Block design
Conforms to	-	EN 60947-5-2
Certification	C-Tick	C-Tick
CE mark	To EU EMC Directive ¹⁾	To EU EMC Directive ¹⁾
(see declaration of conformity)	-	To EU Low Voltage Directive
Note on materials	Free of copper and PTFE	Free of copper and PTFE

Input signal/measuring element					
Type SMEO-1 SMEO-1-S6, heat-resistant					
Measuring principle		Magnetic reed	Magnetic reed		
Ambient temperature [°C		-20 +70	−50 +120		

Switching output						
Electrical connection		3-wire	2-wire	2-wire		
Туре		SMEO-124	SMEO-1-LED-230	SMEO-1-B	SMEO-1-S6, heat-resistant	
Switching output		Contacting, bipolar	Contacting, bipola	ır		
		-	Without LED	-		
			function			
Switching element function		N/O contact	N/O contact	N/O contact		
Reproducibility of switching point ¹⁾	[mm]	±0.1	±0.1			
Switch-on time	[ms]	≤0.5	≤0.5			
Switch-off time	[ms]	≤0.03	≤0.03			
Max. switching frequency	[Hz]	-	500	500		
Max. output current	[mA]	1,000	-	1,000		
Max. output current DC	[mA]	-	120	1,000	-	
Max. output current AC	[mA]	-	250	1,000	-	
Max. switching capacity DC	[W]	27	40			
Max. switching capacity AC	[VA]	-	40			
Voltage drop	[V]	-	0 4.5	0		
Residual current	[mA]	-	0			

¹⁾ Only applicable to drives secured against rotation.

Output, additional data	
Protection against short circuit	No
Protection against overloading	No

Proximity sensors SMEO-1, block design, magnetic reed Technical data



Electronic components							
Electrical connection		3-wire	3-wire 2		2-wire		
Туре		SMEO-1LED-24	SMEO-1-S-24-B	SMEO-1-LED-230	SMEO-1-B	SMEO-1-S6,	
						heat-resistant	
Operating voltage range DC	[V]	12 27	0 30	5 200	0 200		
Operating voltage range AC	[V]	-	-	5 250	0 250		
Reverse polarity protection		No		No			

Electromechanical compone	nts					
Electrical connection		3-wire		2-wire		
Туре		SMEO-1-LED-24	SMEO-1-SB	SMEO-1-LED-230	SMEO-1-B	SMEO-1-S6, heat-resistant
Electrical connection		Cable, 3-wire	Plug M8x1, 3-pin	Cable, 2-wire		
Connection direction		In-line	•	•		
Cable length	[m]	2.5	-	2.5	2.5	2.5
		5		5	-	-
Cable sheath materials		TPE-U (PUR)	-	PVC	PVC	TPE-S

Mechanical components			
Electrical connection		3-wire	2-wire
Type of mounting		Via accessories	
Tightening torque	[Nm]	-	2.9
Product weight	[g]		
Housing materials		Die-cast zinc	Die-cast zinc
		-	Epoxy resin
			TPE-O
			Steel
			PET
			PC

Display/operation					
Electrical connection	3-wire		2-wire		
Туре	SMEO-1LED-24	SMEO-1-S-24-B	SMEO-1-LED-230		SMEO-1-S6, heat-resistant
Switching status display	Yellow LED	-	Yellow LED	-	-

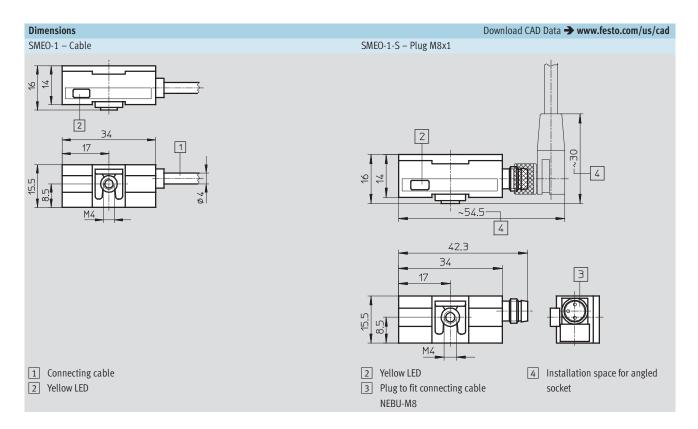
Immissions/emissions							
Electrical connection		3-wire	3-wire		2-wire		
Type		SMEO-1LED-24	SMEO-1-S-24-B	SMEO-1-LED-230	SMEO-1-B	SMEO-1-S6,	
						heat-resistant	
Ambient temperature with flexible	[°C]	-5 +70	-	-5 +70	-5 +70	-40 +120	
cable installation							
Protection class		IP67		IP67			
Surge capacity	[kV]	-		4			
Degree of contamination		-	_	3		_	

Pin allocation to EN 60947-5-2					
M8x1, 3-pin	M8x1, 3-pin				
N/O contact					
	Pin	Wire colour	Allocation		
1	1	Brown	+		
+ 4	3	Blue	-		
<u>_</u>	4	Black	Output		
3					

Proximity sensors SMEO-1, block design, magnetic reed



Technical data



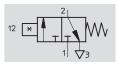
Ordering data								
	Electrical con	nection	Cable length	Switching status	Product weight	Part No.	Туре	
	Cable	Plug M8x1	[m]	display	[g]			
	N/O contact							
	Operating vol	tage range 12 27 V	DC					
	3-wire	-	2.5		85	30459	SMEO-1-LED-24-B	
			5.0	•	130	151672	SMEO-1-LED-24-K5-B	
	-	3-pin	-	•	20	150848	SMEO-1-S-LED-24-B	
	Operating voltage range 0 30 V DC							
	-	3-pin ¹⁾	-	-	20	150847	SMEO-1-S-24-B	
	Operating voltage range 0 250 V AC, 0 200 V DC							
	2-wire –	-	2.5	•	100	151671	SMEO-1-LED-230-B	
			5.0	•	130	160998	SMEO-1-LED-230-K5-B	
			2.5	-	100	30457	SMEO-1-B	
	Heat-resistant up to 120 °C							
	2-wire	-	2.5	-	100	151673	SMEO-1-S6-C	

¹⁾ The proximity sensor has 2 wires internally. One pin of the M8 plug is unused.

Proximity sensors SMPO-1, block design, pneumatic Technical data

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Function 3/2-way valve, normally closed



- Pneumatic proximity sensor
- Magnetic measuring principle



Design			
Constructional design	Block design		
Type of mounting	Via accessories		
Connection direction	In-line		
Reproducibility of switching point ¹⁾ [mm]	±0.1		
Switching status display	Optical		

1) Only applicable to drives secured against rotation.

Technical data		
Switching element function		3/2-way valve, normally closed
Operating medium		Filtered, unlubricated compressed air
Operating pressure	[bar]	2 6
Switch-on time	[ms]	12
Switch-off time	[ms]	30
Pneumatic connection		Barbed connector for tubing, nominal diameter 3 mm
Protection class		IP65

Operating and environmental conditions		
Ambient temperature [°C]	-15 +60	
Corrosion resistance class CRC ¹⁾	1	

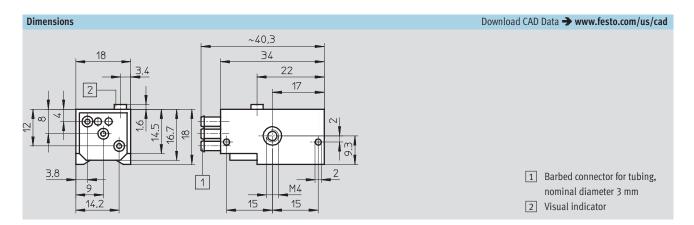
1) Corrosion resistance class 1 according to Festo standard 940 070 Components requiring low corrosion resistance. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

Materials		
Housing	Polyamide	
Barbed connector	Brass	
Note on materials	Free of copper and PTFE	

Product weights [g]	
PNP	14

Proximity sensors SMPO-1, block design, pneumatic Technical data



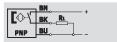


Ordering data			
	Pneumatic connection	Part No.	Туре
0 0	3/2-way valve, normally closed Barbed connector for 3 mm I.D. tubing	31008	SMPO-1-H-B

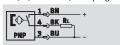
Proximity sensors SMT-C1, block design, magneto-inductive Technical data



Function PNP, N/O contact, with cable



Function PNP, N/O contact, with plug



- Magneto-inductive measuring principle
- For standard cylinders DSBF-C or CDN-...-R with sensor strip





Technical data	
Design	Block design
Based on standard	EN 60947-5-2
Certification	C-Tick
Suitability for use in the food industry	As per manufacturer's declaration
CE mark	To EU EMC Directive ¹⁾
(see declaration of conformity)	
Note on materials	Cable free of halogen
	Free of copper and PTFE

1) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com \Rightarrow Support \Rightarrow User documentation. If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.

Input signal/measuring elemen	nt	
Measuring principle		Magneto-inductive
Ambient temperature	[°C]	-20 +70

Switching output		
Switching output		PNP
Switching element function		N/O contact
Switch-on time	[ms]	0 0.5
Switch-off time	[ms]	0 0.5
Max. output current	[mA]	200
Max. switching capacity DC	[W]	6
Voltage drop	[V]	0 1.8

Output, additional data	
Protection against short circuit	Pulsed
Protection against overloading	Yes

Proximity sensors SMT-C1, block design, magneto-inductive Technical data



Electronic components					
Operating voltage range DC	[V]	10 30			
Residual ripple	[%]	10			
Reverse polarity protection		For all electrical connections			

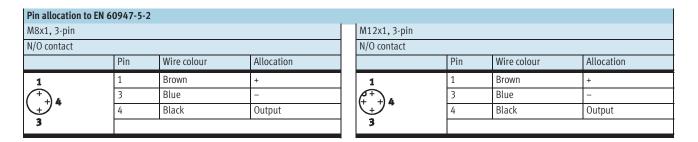
Electromechanical componen	its						
Туре		SMT-C1OE	SMT-C1M8D	SMT-C1M12			
Electrical connection		Cable, 3-wire	Cable with plug M8x1, 3-pin, rotatable thread	Cable with plug M12x1, 3-pin			
Connection direction		In-line	In-line				
Cable length	[m]	-	0.3	0.3			
		5	-	-			
		10					
Cable sheath materials		TPE-O	·				
Wire ends		Wire end sleeve					

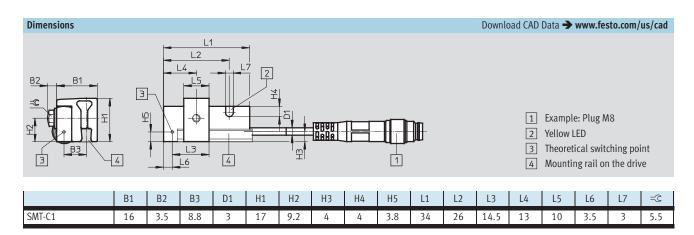
Mechanical components	Aechanical components					
Type of mounting		Clamped				
Tightening torque	[Nm]	1.2				
Mounting position		Any				
Housing materials		High-alloy stainless steel				
		Wrought aluminium alloy				
		Nickel-plated brass				
		PP				
		TPE-O				
		TPE-U(PU)				

Display/operation	
Switching status display	Yellow LED

Immissions/emissions	
Ambient temperature with flexible [°C]	-20 +70
cable installation	
Protection class	To IEC 60529
	IP65
	IP68

Proximity sensors SMT-C1, block design, magneto-inductive Technical data





Ordering data								
	Switching	Electrical conn	ection		Cable length	Weight	Part No.	Type
	output	Cable	Cable with plus	Cable with plug				
			M8x1, rotatable	M12x1				
			thread		[m]	[g]		
(C)	N/O contact							
5	PNP	3-wire	-	-	5	65.9	571339	SMT-C1-PS-24V-K-5,0-OE
					10	114.5	571340	SMT-C1-PS-24V-K-10,0-0E
		-	3-pin	_	0.3	24.4	571342	SMT-C1-PS-24V-K-0,3-M8D
		-	-	3-pin	0.3	32.6	571341	SMT-C1-PS-24V-K-0,3-M12

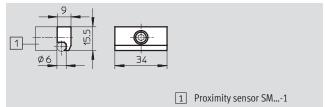
Proximity sensors, block design Accessories

FESTO

Mounting kit SMB-1

Material: Die-cast zinc





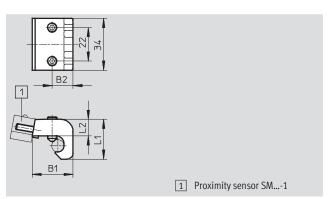
Dimensions and ordering data		
For piston \varnothing	Part No.	Туре
32 100	11886	SMB-1

Mounting kit SMB-2-B/SMB-3-B

Material:

Die-cast aluminium





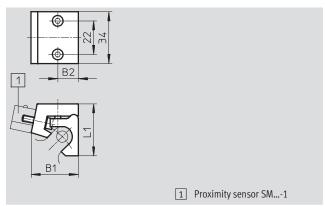
Dimensions and ordering data							
For piston \varnothing	B1	B2	L1	L2	Part No.	Туре	
32 50	18	11	23	11.6	36162	SMB-2-B	
63 100	26.8	13.7	26	10.8	36163	SMB-3-B	

Mounting kit SMBU

Material:

Die-cast aluminium





Dimensions and ordering data							
For piston \varnothing	B1	B2	L1	Part No.	Туре		
32 50	19	8.5	30	36173	SMBU-1-B ¹⁾		
63 100	31	13.5	34	36174	SMBU-2-B ¹⁾		
125	31	13.5	37	125828	SMBU-3-B		

¹⁾ Free of copper and PTFE

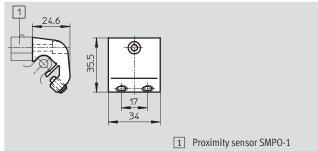
Proximity sensors, block design Accessories

FESTO

Mounting kit SMBU-1-H-32

Material: Aluminium



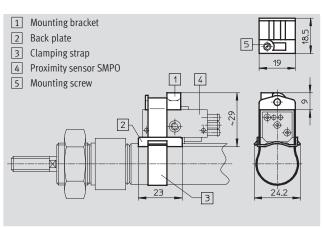


Dimensions and ordering data		
For piston \varnothing	Part No.	Туре
32	150216	SMBU-1-H-32

Mounting kit SMBS

Material: Brass, plastic



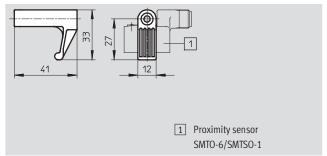


Dimensions and ordering data		
For piston \varnothing	Part No.	Туре
8 25	151225	SMBS-1
32 100	151226	SMBS-2

Mounting kit SMBT-1

Material: Die-cast zinc





Dimensions and ordering data		
For piston \varnothing	Part No.	Туре
32 200	150002	SMBT-1

Proximity sensors, block design Accessories



Ordering data - Connecting cables Technical data → Internet: nebu					
		Number of wires	Cable length [m]	Part No.	Туре
Socket M8x1, 3-pin					
	For SMT-C1 and	3	2.5	541333	NEBU-M8G3-K-2.5-LE3
	SMTO/SMEO-1		5	541334	NEBU-M8G3-K-5-LE3
	For SMT-C1 and	3	2.5	541338	NEBU-M8W3-K-2.5-LE3
	SMTO/SMEO-1		5	541341	NEBU-M8W3-K-5-LE3
Socket M12x1, 5-pin					
	For SMT-C1 and	3	2.5	541363	NEBU-M12G5-K-2.5-LE3
(S)	SMTO-6, SMTSO-1		5	541364	NEBU-M12G5-K-5-LE3
1	For SMT-C1 and	3	2.5	541367	NEBU-M12W5-K-2.5-LE3
8	SMTO-6, SMTSO-1		5	541370	NEBU-M12W5-K-5-LE3

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Custom Automation Components Complete custom engineered solutions



Custom Control Cabinets Comprehensive engineering support and on-site services



Complete Systems Shipment, stocking and storage services

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Festo is a leading global manufacturer of pneumatic and electromechanical systems, components and controls for industrial automation, with more than 12,000 employees in 56 national headquarters serving more than 180 countries. For more than 80 years, Festo has continuously elevated the state of manufacturing with innovations and optimized motion control solutions that deliver higher performing, more profitable automated manufacturing and processing equipment. Our dedication to the advancement of automation extends beyond technology to the education and development of current and future automation and robotics designers with simulation tools, teaching programs, and on-site services.

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