Proximity sensors, block design

FESTO



Proximity sensors, block designProduct range overview



Measuring principle	Version	Туре	Mounting	Switching eler	nent function	Switching	Electrical connection				
				N/O contact	N/C contact	output	Cable	Plug			
Magneto-	Operating voltage range 10 30 V DC										
resistive		SMTO-1	Via accessories	_		PNP	3-wire	M8x1, 3-pin			
				-	-						
				_		NPN	3-wire	M8x1, 3-pin			
				-	_						
	~~	SMTSO-1	_			PNP	-	M12x1, 3-pin			
		Welding field		_							
		immune		•	_						
	0										
		1		1				T.			
Nagnetic	Operating vo	ltage range 0 30 V D									
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		_			2-wire	_			
		Heat-resistant up		-	_						
		to 120 °C									
Magnetic	Dnoumatic ne	oximity sensor, opera	ting proceure 2 6 ha								
wagnenc	riieuiliatic pi	SMPO-1	Via accessories	31		_					
	. 20	SWPU-1	via accessories	2)		_	_	_			
				= 2)	_						
Magneto-	Operating vo	tage range 10 30 V	DC								
nductive	^	SMT-C1	Clamped			PNP	3-wire	M8x1,			
			3.0				36	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



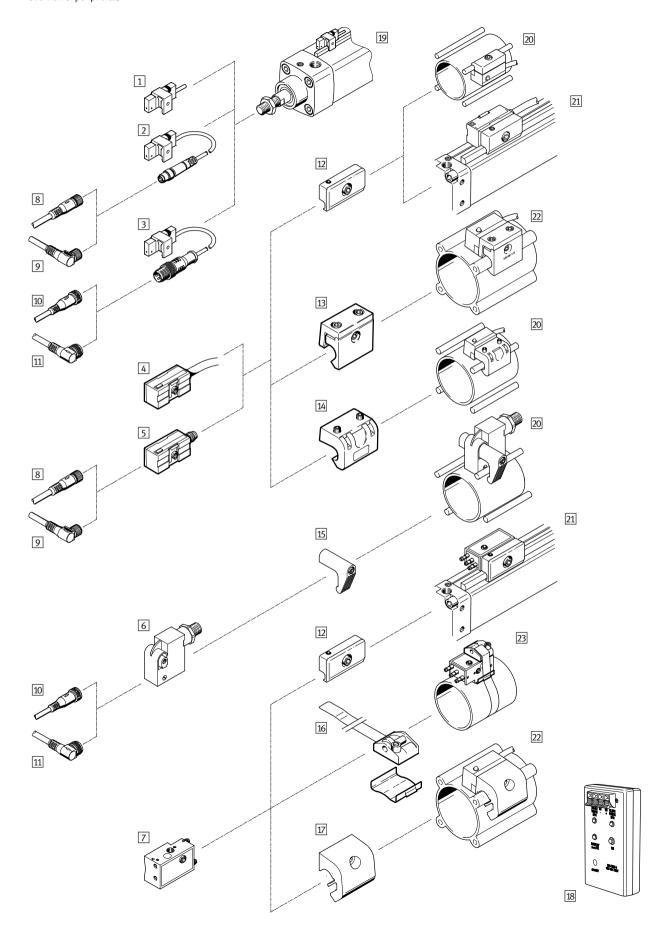
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Туре	Connection direction			Switching status	Free of copper and	→ Page/Internet
	In-line	Lateral	out re-adjustment	display via LED	PTFE	
Operating voltage	e range 10 30 V DC					
SMTO-1	•	-	1)	•	•	7
	•	-	1)	•	-	
SMTSO-1						9
Welding field immune	•	-	-	•	-	
Operating voltage	e range 0 30 V DC					
SMEO-1	•	-	■ 1)	-	-	11
		-	1)		•	
Onerating voltage	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 proxir	nity sensor, operating p	ressure 2 6 har				
SMPO-1	•	-	1)	_ 2)	_	14
Operating voltage	e range 10 30 V DC					
SMT-C1	- Tunge 10 50 V DC					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



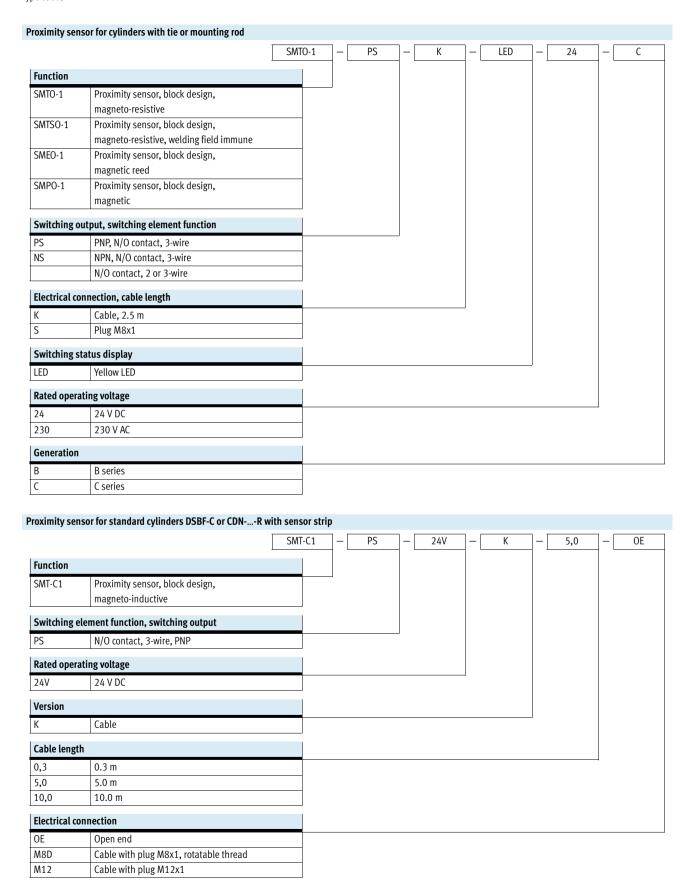
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Μοι	unting attachments and accessories		
		Brief description	→ Page/Internet
rox	kimity sensors		·
1	SMT-C1	Magneto-inductive, with cable and clamping component	16
2	SMT-C1	Magneto-inductive, with cable and plug M8x1 and clamping component	16
3	SMT-C1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

Proximity sensors, block design



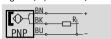
Type code



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

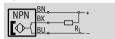


Function e.g. PNP, N/O contact, with cable



• Magneto-resistive measuring principle

e.g. NPN, N/O contact, with cable







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

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 directive ²⁾				
, ,		RCM trademark			

¹⁾ Corrosion resistance class CRC 2 to Festo standard FN 940070

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			

Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Corrosion resistance class CRC 4 to Festo standard FN 940070

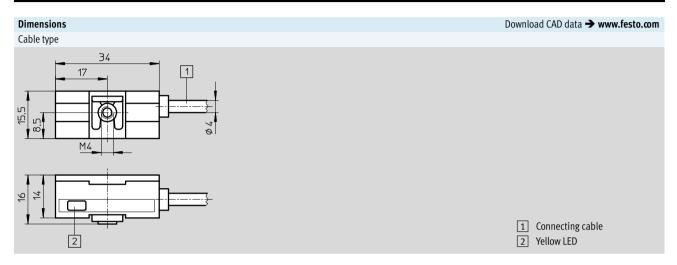
Particularly high corrosion stress. Outdoor exposure under extreme corrosive conditions. Parts exposed to aggressive media, for instance in the chemical or food industries. These applications may need to be supported by special tests (> also FN 940082) using appropriate media.

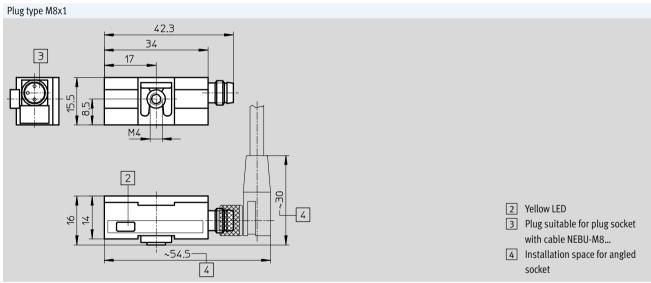
2) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp > User documentation.

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



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





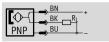
Ordering data						
	Switch output	Electrical connection		Cable length	Part No.	Туре
		Cable	Plug M8x1	[m]		
N/O contact						
	PNP	3-wire	-	2.5	151683	SMTO-1-PS-K-LED-24-C
		-	3-pin	-	151685	SMTO-1-PS-S-LED-24-C
	NPN	3-wire	-	2.5	151684	SMTO-1-NS-K-LED-24-C
		-	3-pin	-	151686	SMTO-1-NS-S-LED-24-C

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

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Technical data

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		RCM trademark				

¹⁾ Corrosion resistance class CRC 1 to Festo standard FN 940070

Low corrosion stress. For dry indoor applications or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trupplops)

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

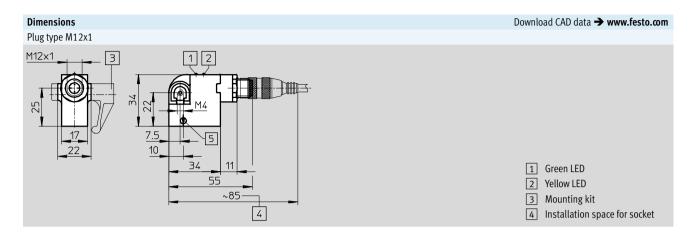
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Materials	
Housing	Die-cast zinc
Product weights [g]	
N/O contact	

PNP

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

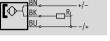
Proximity sensors SMEO-1, block design, magnetic reedTechnical data

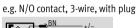


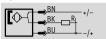
Function e.g. N/O contact, 3-wire, with cable



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	EN 60947-5-2		
Certification	RCM trademark	RCM trademark	RCM trademark		
CE mark	To EU EMC Directive ¹⁾	To EU EMC Directive	To EU EMC Directive ¹⁾		
(see declaration of conformity)	-	To EU Low Voltage D	To EU Low Voltage Directive		
Note on materials	Free of copper and PTFE	Free of copper and	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/sp > 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 element		
Туре	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			
Туре		SMEO-124	SMEO-1-LED-230	SMEO-1-B	SMEO-1-S6,	
					heat-resistant	
Switching output		Contacting, bipolar	Contacting, bipolar			
Switching element function		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	≤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



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Electronic components						
Electrical connection		3-wire		2-wire	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 components						
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-0
			Steel
			PET
			PC

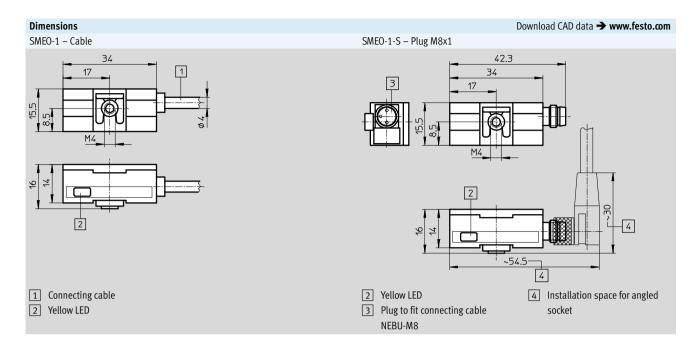
Display/operation					
Electrical connection	3-wire		2-wire		
Туре	SMEO-1LED-24	SMEO-1-S-24-B	SMEO-1-LED-230	SMEO-1-B	SMEO-1-S6, heat-resistant
Switching status display	Yellow LED	-	Yellow LED	_	_

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

Pin allocation to EN 60947-5-2			
M8x1, 3-pin			
N/O contact			
	Pin	Wire colour	Allocation
1	1	Brown	+
(+) A	3	Blue	-
(+) 4	3	Blue Black	- Output

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





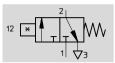
Ordering data								
	Electrical conf	nection	Cable length	Switching status	Product weight	Part No.	Туре	
	Cable	Plug M8x1	[m]	display	[g]			
	N/O contact							
	Operating voltage range 12 27 V DC							
	3-wire	-	2.5	•	85	30459	SMEO-1-LED-24-B	
			5.0		130	151672	SMEO-1-LED-24-K5-B	
	-	3-pin	-	•	20	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



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.

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Technical data		
Switching element function		3/2-way valve, normally closed
Operating medium		Filtered, unlubricated compressed air
Operating pressure	[bar]	26
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	C]	-15 +60		
Corrosion resistance class CRC ¹⁾		1		

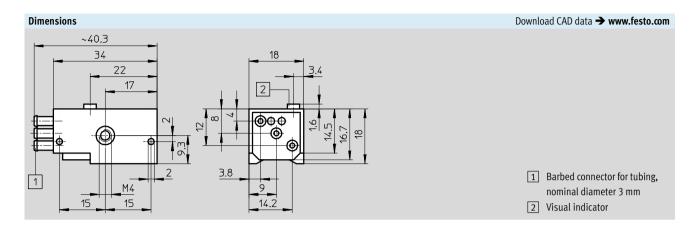
1) Corrosion resistance class 1 according to Festo standard 940 070 Components requiring low corrosion resistance. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

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



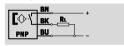


Ordering data			
	Pneumatic connection	Part No.	Туре
10.	3/2-way valve, normally closed	24.000	CMDO 4 III D
	Barbed connector for 3 mm I.D. tubing	31008	SMPO-1-H-B

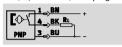
Proximity sensors SMT-C1, block design, magneto-inductive Technical data



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	RCM trademark
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/sp \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 element				
Measuring principle		Magneto-inductive		
Measured variable		Position		
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 component	S			
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	·	
Cable length	[m]	-	0.3	0.3
		5	-	-
		10		
Cable sheath materials		TPE-O		
Wire ends		Wire end sleeve		

Mechanical 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-0
		TPE-U(PU)

Display/operation	
Switching status display	Yellow LED

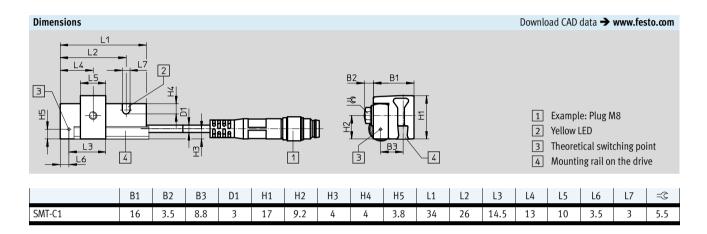
Immissions/emissions		
Ambient temperature with flexible [°	°C]	-20 +70
cable installation		
Protection class		To IEC 60529
		IP65
		IP68

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





,			
M12x1, 3-pi	n		
N/O contact			
	Pin	Wire colour	Allocation
1	1	Brown	+
(+) A	3	Blue	_
· • • • • • • • • • • • • • • • • • • •	4	Black	Output
3			



Ordering data								
	Switching	Electrical conn	ection	ection (Cable with plug		Weight	Part No.	Туре
	output	Cable	Cable with plug					
			M8x1,	M12x1				
			rotatable					
			thread		[m]	[g]		
6	N/O contact							
700	PNP	3-wire	-	-	5	65.9	571339	SMT-C1-PS-24V-K-5,0-OE
19 V					10	114.5	571340	SMT-C1-PS-24V-K-10,0-OE
		-	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

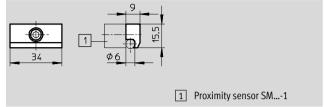
Proximity sensors, block designAccessories

FESTO

Mounting kit SMB-1

Material: Die-cast zinc



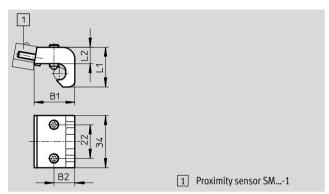


Dimensions and ordering data		
For piston Ø	Part No.	Туре
32 100	11886	SMB-1

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

Material: Die-cast aluminium





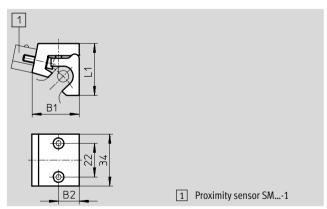
Dimensions and ordering data							
For piston \varnothing	B1	B2	L1	L2	Part No.	Туре	
32 50	18	11	23	11.6	36162	SMB-2-B	
63 100	26.8	13.7	26	10.8	36163	SMB-3-B	

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	152828	SMBU-3-B			

1) Free of copper and PTFE

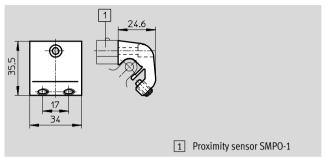
Proximity sensors, block designAccessories

FESTO

Mounting kit SMBU-1-H-32

Material: Aluminium



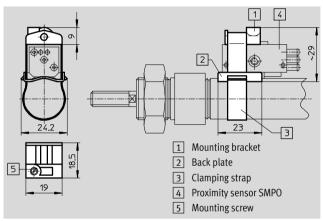


Dimensions and ordering data		
For piston \varnothing	Part No.	Туре
32	150216	SMBU-1-H-32

Mounting kit SMBS

Material: Brass, plastic



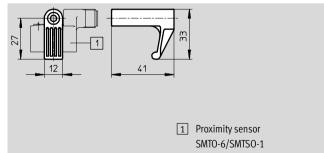


Dimensions and ordering data		
For piston \varnothing	Part No.	Туре
8 25	151225	SMBS-1
32 100	151226	SMBS-2

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
6	SMTO-6, SMTSO-1		5	541364	NEBU-M12G5-K-5-LE3
	For SMT-C1 and	3	2.5	541367	NEBU-M12W5-K-2.5-LE3
%	SMTO-6, SMTSO-1		5	541370	NEBU-M12W5-K-5-LE3