Proximity sensors, block design

FESTO



Proximity sensors, block designProduct range overview



Measuring principle	Version	Туре	Installation	Switching elen	nent function	Switching output	Electrical connection	
				N/O contact	N/C contact		Cable	Plug connector
Magneto-	Operating vo	tage range 10 30 V I	OC .					
inductive	S	SMTO-1	Via accessories	-	-	PNP	3-wire	M8x1, 3-pin
				-	-	NPN	3-wire	M8x1, 3-pin
		SMTSO-1 Welding field resistant		•	-	PNP	-	M12x1, 3-pin
Magnetic	Operating vo	tage range 0 30 V D						
reed		SMEO-1	Via accessories	-	-	Contacting	-	M8x1, 3-pin ¹⁾
				•	-		3-wire	M8x1, 3-pin
	Operating vo	tage range 0 250 V /	AC, 0 200 V DC			<u>'</u>	1	
		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 nr	oximity sensor, operat	ing pressure 2 6 har	,				
		SMPO-1	Via accessories	■ 2)	_	-	-	-
Magneto-	Operating vo	tage range 10 30 V I	OC .					
inductive		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 connector is unused.
 3/2-way valve, normally closed

Proximity sensors, block design Product range overview

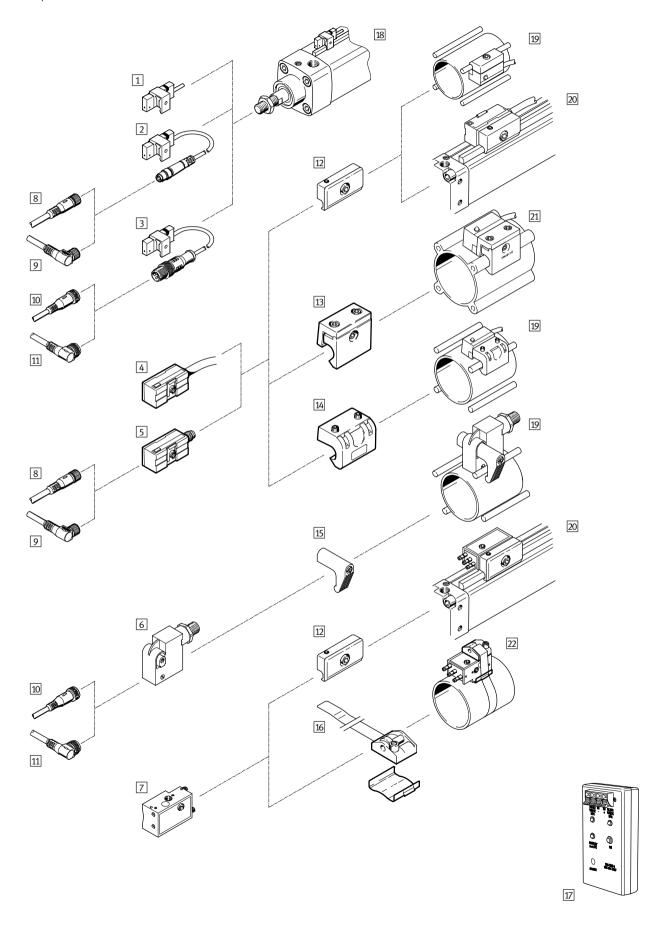
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Туре	Outlet direction of	of connection	Replacement without	Switching status display via LED	Free of copper and PTFE	→ Page/Internet
	In-line	Lateral	re-adjustment			
Operating voltage ra	ange 10 30 V DC					
SMTO-1	-	-	1)			7
	-	-	1)		-	
SMTSO-1 Welding field resistant	•	-	-	•	-	10
Operating voltage ra	ange 0 30 V DC					
SMEO-1			1)		_	12
		_	■ 1)	_	•	
	•	-	1)		•	
Operating voltage ra	ange 0 250 V DC,	0 200 V DC				
SMEO-1-B	•	-	1)	-	-	12
SMEO-1	•	-	■ 1)	•	-	
	-	-	1)	-	-	
SMEO-1-S6-C						
Heat resistant up to 120°C	•	-	1)		-	
Pneumatic proximity	y sensor, operating	pressure 2 6 bar				
SMPO-1	•	-	1)	_ 2)	-	17
Operating voltage ra	ange 10 30 V DC					
Operating voltage ra SMT-C1	ilige 10 30 V DC					19
CI	-	-	-	•	•	

Not in combination with mounting kit SMB-1 or SMBS-...
 Switching status is indicated by means of a plunger

Proximity sensors, block design Peripherals overview





Proximity sensors, block design Peripherals overview

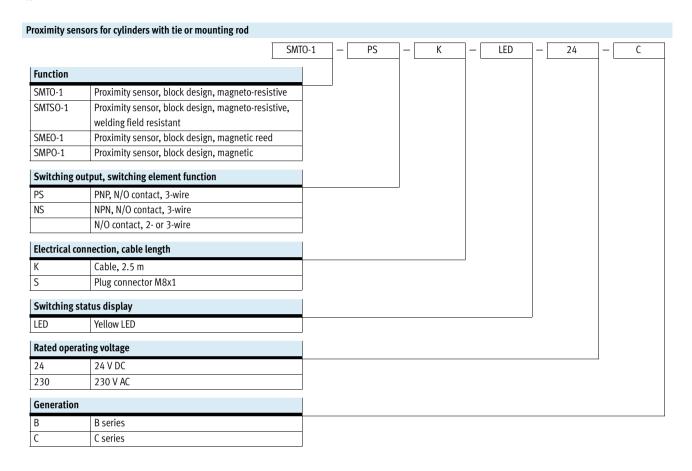


	inting components and accessories	Brief description	→ Page/Internet
_		bilei description	- rage/internet
_	imity sensor		T
1	SMT-C1	Magneto-inductive, with cable and clamping component	19
2	SMT-C1	Magneto-inductive, with cable and plug connector M8x1 and clamping component	19
3	SMT-C1	Magneto-inductive, with cable and plug connector M12x1 and clamping component	19
4	SMTO-1	Magneto-resistive, with cable	7
	SMEO-1	Magnetic reed, with cable	12
5	SMTO-1	Magneto-resistive, with plug connector M8x1	7
	SMEO-1	Magnetic reed, with plug connector M8x1	12
6	SMTSO-1	Magneto-resistive, welding field resistant, with plug connector M12x1	10
7	SMPO-1	Pneumatic	17
Acce	essories		
8	Connecting cable NEBU-M8G3	Straight socket, M8x1, 3-pin	24
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	22
		For ISO cylinders DSBG	
13	Mounting kit SMBU-1-B	For ISO cylinders DNU	22
14	Mounting kits SMB-2-B, SMB-3-B	For ISO cylinders DSBG	22
15	Mounting kit SMBT-1	For ISO cylinders DSBG	23
16	Mounting kit SMBS	For round cylinders	23
17	Sensor tester SM-TEST-1	-	sm-test-1
		1	I
Driv	es		
18	ISO cylinder DSBF-C or CDNR with sensor	Ø 32 100 mm	_
	rail		
19	ISO cylinder DSBG	Ø 32 125 mm	_
20	Flat cylinder DZH	Ø 32 63 mm	_
	Semi-rotary drive DRQ	Ø 40 100 mm	
21	ISO cylinder DNU	Ø 32 125 mm	
22	Round cylinder	Ø 8 100 mm	

Proximity sensors, block design



Type code



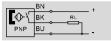
Proximity sensors for ISO cylinders DSBF-C or CDN-...-R with sensor strip SMT-C1 0E PS 24 V 5,0 Function SMT-C1 Proximity sensor, block design, magneto-inductive Switching element function, switching output N/O contact, 3-wire, PNP Rated operating voltage 24V 24 V DC Version Cable Cable length 0,3 $0.3 \; \text{m}$ 5,0 5.0 m 10,0 10.0 m **Electrical connection** OE Open end M8D Cable with plug connector M8x1, rotatable thread M12 Cable with plug connector M12x1

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

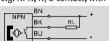


Function

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



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







Design		
Design		Block design
Type of mounting		Via accessories
Max. tightening torque	[Nm]	0.3
Outlet direction of connection		In-line
Switching status display		Yellow LED
Reproducibility of switching point ¹⁾	[mm]	±0.1

1) Only applicable to drives secured against rotation.

Technical data			
		SMTOK	SMTOS
Switching output		PNP	
		NPN	
Switching element function		N/O contact	
Measuring principle		Magneto-inductive	
Operating voltage range	[V DC]	10 30	
Max. output 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	
Short circuit protection		Yes	Pulsed
Overload protection		Yes	
Reverse polarity protection		For all electrical connections	
Cable property		Standard	-
Degree of protection		IP67	

Operating and environmental conditions			
Variant		SMTOK	SMTOS
Ambient temperature	[°C]	-25 +70	
Ambient temperature with flexible cable	[°C]	−5 +70	-
installation			
Certification		RCM	
CE marking (see declaration of conformity)		In accordance with EU EMC Directive ¹⁾	

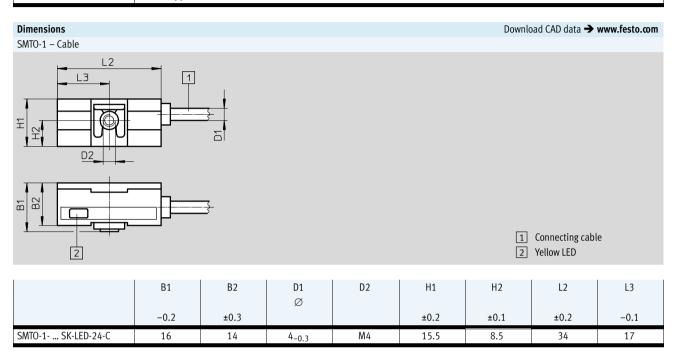
¹⁾ For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp > Certificates.

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.

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

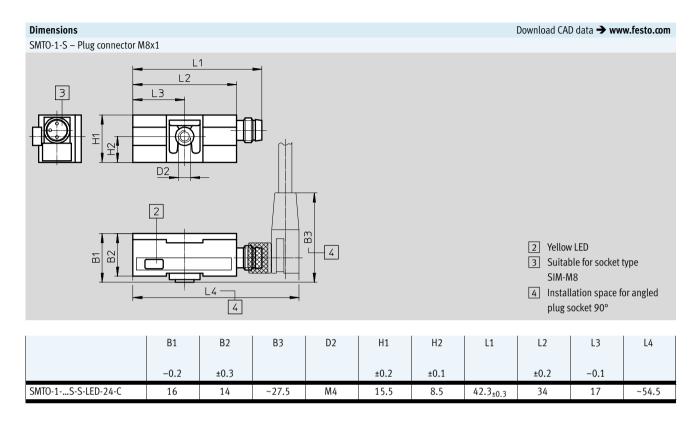


Materials		
Variant	SMTOK	SMTOS
Housing	PET, die-cast zinc	PET, PC, POM, PUR, steel, die-cast zinc
Cable sheath	PVC	-
Note on materials	Free of copper and PTFE	



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





Ordering data							
	Switching output	Electrical connection		Cable length	Product weight	Part No.	Туре
		Cable	Plug connector				
			M8x1	[m]	[g]		
N/O contact							
	PNP	3-wire	-	2.5	85	151683	SMTO-1-PS-K-LED-24-C
		_	3-pin	-	20	151685	SMTO-1-PS-S-LED-24-C
	NPN	3-wire	-	2.5	85	151684	SMTO-1-NS-K-LED-24-C
		_	3-pin	_	20	151686	SMTO-1-NS-S-LED-24-C

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



Function PNP, N/O contact, with plug connector



- Welding field resistant
- Magneto-inductive measuring principle



Design		
Design		Block design
Type of mounting		Via accessories
Tightening torque	[Nm]	<0.3
Outlet direction of connection		In-line
Switching status display		Yellow LED
Ready status display		Green LED
Reproducibility of switching point ¹⁾	[mm]	±0.1

1) Only applicable to drives secured against rotation.

Technical data - PNP, N/O contact		
Switching output		PNP
Switching element function		N/O contact
Measuring principle		Magneto-inductive
Electrical connection		Plug connector M12x1, 3-pin
Operating voltage range	[V DC]	10 30
Max. output current	[mA]	200
Max. switching capacity DC	[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 magnetic fields		Alternating magnetic field 50 60 Hz
Short circuit protection		Pulsed
Overload protection		Yes
Reverse polarity protection		For all electrical connections
Degree of protection		IP67

Operating and environmental conditions		
Ambient temperature	[°C]	-25 +70
CE marking (see declaration of conformity)		To EU EMC Directive ¹⁾
Certification		RCM

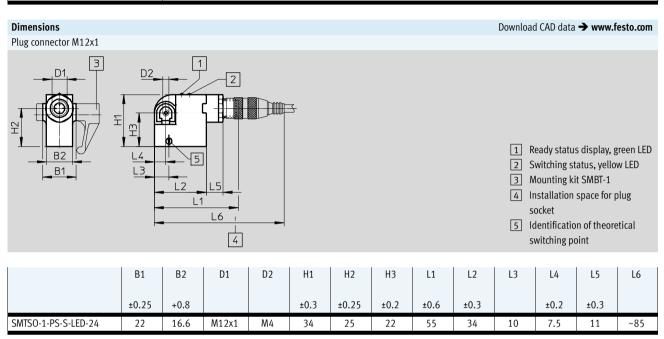
¹⁾ For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp → Certificates. If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the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

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



Technical data

Materials	
Housing	PA, PUR, die-cast zinc
Note on materials	Free of copper and PTFE

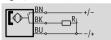


Ordering data					
	Switching output	Electrical connection	Product weight [g]	Part No.	Туре
	N/O contact				
	Welding field resistant				
	PNP	Plug connector M12x1, 3-pin	70	30441	SMTSO-1-PS-S-LED-24

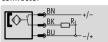
Ordering data – Connecting cables								
	Switching output	Cable length	Weight	Part No.	Туре			
		[m]	[g]					
Resistant to weldi	Resistant to welding spatter							
1	3-wire, M12x1 socket, straight	3	-	30450	SIM-M12-RS-3GD-3			
S	3-wire, M12x1 socket, angled	3		30451	SIM-M12-RS-3WD-3			



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



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



• Magnetic reed measuring principle





General technical data						
Electrical connection	3-wire		2-wire			
Туре	SMEO-124	SMEO-1-S-24-B	SMEO-1-LED-230	SMEO-1-B	SMEO-1-S6, heat	
					resistant	
Design	Block design	Block design				
Conforms to standard	-	-	EN 60947-5-2	DIN EN 60947-5-2	DIN EN 60947-5-2	
Certification	RCM	-	RCM	-	-	
CE marking	To EU EMC Directive	-	To EU EMC Directive	-	-	
(see declaration of conformity)	-	-	To EU Low Voltage Dire	ective	•	
Note on materials	Free of copper and PT	FE				

¹⁾ For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp > Certificates.

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						
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			
Туре		SMEO-124	SMEO-1-S-24-B	SMEO-1-LED-230	SMEO-1-B	SMEO-1-S6, heat resistant	
Switching output		Contacting, bipolar					
Switching element function		N/O contact					
Reproducibility of switching point ¹⁾	[mm]	±0.1					
Switch-on time	[ms]	≤0.5		0.5			
Switch-off time	[ms]	-		0.03			
Max. switching frequency	[Hz]	-		500			
Max. output current	[mA]	1000		-	1000	1000	
Max. output current DC	[mA]	-		120	-	-	
Max. output current AC	[mA]	-		250	-	-	
Max. switching capacity DC	[W]	27		40			
Max. switching capacity AC	[VA]	27		40			
Voltage drop	[V]	-		≤4.5 0			
Residual current	[mA]	-		0			

¹⁾ Only applicable to drives secured against rotation.

Output, additional data	
Short circuit protection No	
Overload protection Not present	



Electronics						
Electrical connection		3-wire		2-wire		
Туре		SMEO-124	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]	12 27	<u> </u>	5 250	0 250	
Reverse polarity protection		No				

Electromechanical components					
Electrical connection	3-wire		2-wire		
Туре	SMEO-124	SMEO-1-S-24-B	SMEO-1-LED-230	SMEO-1-B	SMEO-1-S6, heat resistant
Electrical connection	Cable and plug	Plug M8x1, 3-pins	Cable		
Outlet direction of connection	In-line	-	In-line		
Materials for cable sheath	TPE-U (PUR)	-	PVC	PVC	TPE-S

Mechanical components							
Electrical connection		3-wire		2-wire	2-wire		
Туре		SMEO-124	SMEO-1-S-24-B	SMEO-1-LED-230	SMEO-1-B	SMEO-1-S6, heat resistant	
Type of mounting		Via accessories					
Mounting position		Any					
Tightening torque	[Nm]	-		2.9			

Materials					
Housing	-	Epoxy resin			
	_	PC			
	PET	PET			
	-	Steel			
	_	TPE-0			
	-	Die-cast zinc			
	-	Steel			



Display/operation					
Electrical connection	3-wire		2-wire		
Туре	SMEO-124	SMEO-1-S-24-B	SMEO-1-LED-230	SMEO-1-B	SMEO-1-S6, heat resistant
Switching status display	Yellow LED	-	Yellow LED	-	-

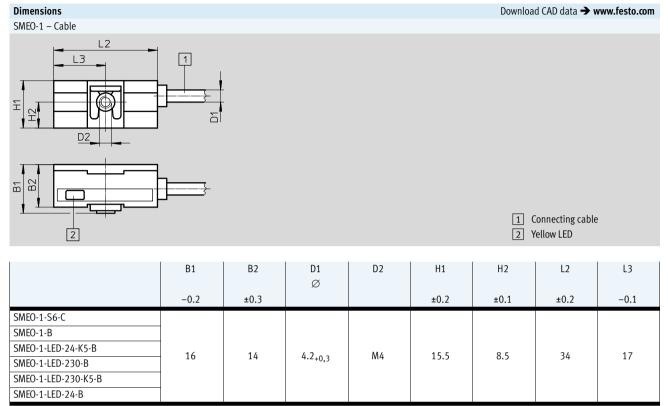
Immissions/emissions							
Electrical connection		3-wire		2-wire	2-wire		
Туре		SMEO-124	SMEO-1-S-24-B	SMEO-1-LED-230	SMEO-1-B	SMEO-1-S6, heat resistant	
Ambient temperature with flexible cable installation	[°C]	-5 +70	-	-5 +70	-5 +70	-40 +120	
Degree of protection		IP67	-	IP67	-		
Surge resistance	[kV]	-		4			
Degree of contamination		-		3			

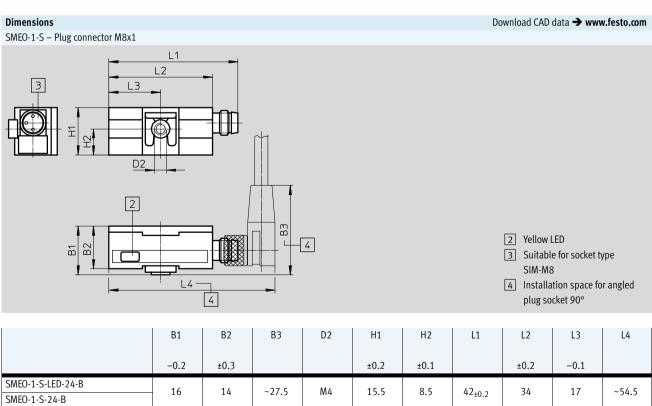
Pin allocation to EN 60947-5-2					
M8x1, 3-pin	M8x1, 3-pin				
N/O contact					
	Pin	Wire colour	Allocation		
1	1	Brown	+		
1	3	Brown Blue	+		
1 +++++++++++++++++++++++++++++++++++++	1 3 4		•		

Proximity sensors SMEO-1, block design, magnetic reed



Technical data







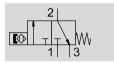
Ordering data							
	Electrical connection		Cable length	Switching status display	Product weight	Part No.	Туре
	Cable	Plug connector M8x1	[m]		[g]		
	N/O contact				103		
	Operating vol	tage range 12 27 V DC					
	3-wire	-	2.5	-	85	30459	SMEO-1-LED-24-B
			5.0		130	151672	SMEO-1-LED-24-K5-B
	-	3-pin	-	•	20	150848	SMEO-1-S-LED-24-B
	Operating vol	tage range 0 30 V DC		·			
	-	3-pin ¹⁾	_	-	20	150847	SMEO-1-S-24-B
	0 1: 1	0. 250.VAC	0 2001/DC				
	, ,	tage range 0 250 V AC			1	T	
	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-resistan	t 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 connector is unused.

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

FESTO

Function 3/2-way valve, normally closed



- Pneumatic proximity sensor
- Magnetic measuring principle



Design				
Design	Block design			
Type of mounting	With through-hole			
	Via accessories			
Reproducibility of switching point ¹⁾ [mm]	±0.2			
Switching status display	Opto-electrical			

1) Only applicable to drives secured against rotation.

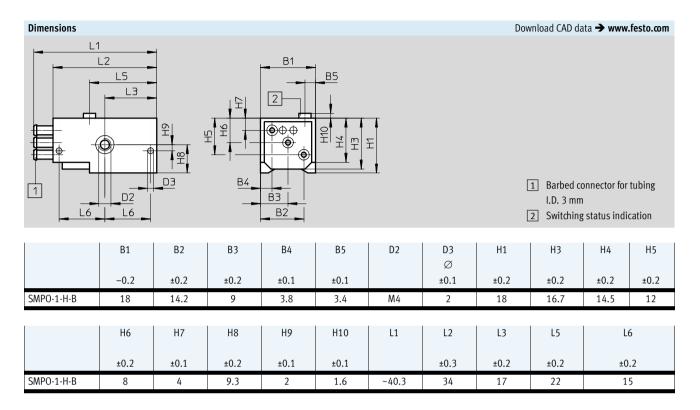
Technical data		
Switching element function		3/2-way valve, normally closed
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [6:4:4]
Note on operating/pilot medium		Lubricated operation not possible
Operating pressure	[bar]	26
Switch-on time	[ms]	<30
Switch-off time	[ms]	<25
Pneumatic connection		Barbed connector for tubing I.D. 3 mm
Degree of protection		IP65

Operating and environmental conditions		
Ambient temperature	[°C]	-15 +60

Materials	
Housing	PA, POM
Barbed connector	Brass

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



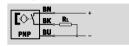


Ordering data				
	Pneumatic connection	Product weight [g]	Part No.	Туре
\(\frac{1}{2}\)	3/2-way valve, normally closed			
	Barbed connector for tubing I.D. 3 mm	14	31008	SMPO-1-H-B

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



Function PNP, N/O contact, with cable



 Magneto-inductive measuring principle

• For ISO cylinders DSBF-C or CDN-...-R with sensor rail





Function PNP, N/O contact, with plug connector

	1 <u>BN</u> +
PNP	3BU

General technical data	
Design	Block design
Based on standard	EN 60947-5-2
Certification	RCM
CE marking	To EU EMC Directive ¹⁾
(see declaration of conformity)	
Note on materials	Free of copper and PTFE
	Free of halogen

1) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp → Certificates. 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	
Short circuit protection	Pulsed
Overload protection	Yes

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



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

Electromechanical components				
Туре	SMT-C1OE	SMT-C1M8D	SMT-C1M12	
Electrical connection	Cable, 3-wire	Cable with plug connector M8x1,	Cable with plug connector M12x1,	
		3-pin, rotatable thread	3-pin	
Outlet direction of connection	In-line			
Cable length [m]	_	0.3	0.3	
	5	-	-	
	10			
Information on materials: cable sheath	TPE-O			
Wire ends	Wire end sleeve			

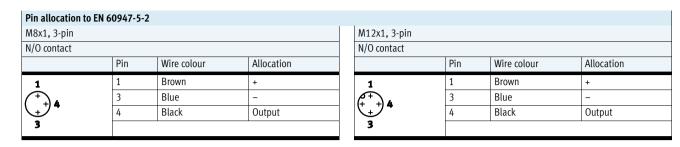
Mechanical components	Mechanical components					
Type of mounting		Clamped				
Tightening torque	[Nm]	1.2				
Mounting position		Any				
Information on materials - housing		High-alloy stainless steel				
		Wrought aluminium alloy				
		Nickel-plated brass				
		PP				
		TPE-O				
		TPE-U(PU)				

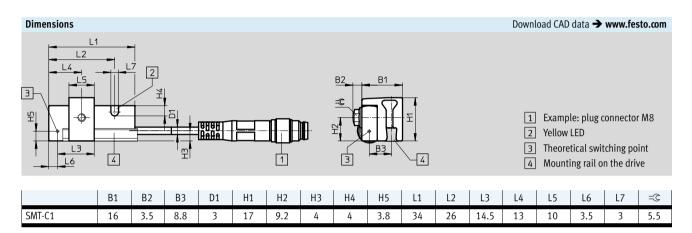
Display/operation	
Switching status indication	Yellow LED

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

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







Ordering data								
	Switching output	Electrical connec	ction		Cable length	Weight	Part No.	Туре
		Cable	Cable with plu	g connector				
			M8x1,	M12x1	-			
			rotatable	connection				
			thread		[m]	[g]		
	N/O contact							
5	PNP	3-wire	-	-	5	65.9	571339	SMT-C1-PS-24V-K-5,0-OE
1991					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

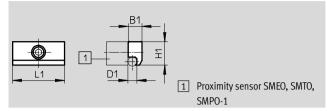
Proximity sensors, block designAccessories

mity sensors, block design

Mounting kit SMB-1

Materials: Die-cast zinc





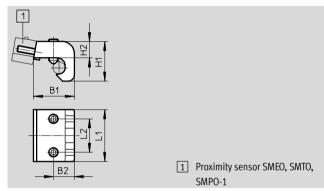
Dimensions and ordering data								
For piston \varnothing	B1	D1 ∅	H1	L1	Part No. Type			
32 100	9	6	15.5	34	11886 SMB-1			

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

Materials:

Die-cast aluminium





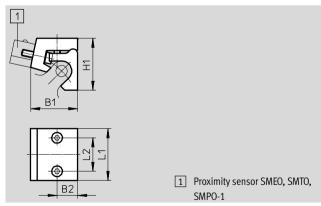
Dimensions and ordering data									
For piston \varnothing	B1	B2	H1	H2	L1	L2	Part No.	Туре	
32 50	18	11	23	11.6	34	22	36162	SMB-2-B	
63 100	26.8	13.7	26	10.8	34	22	36163	SMB-3-B	

Mounting kit SMBU

Materials:

Die-cast aluminium





Dimensions and ordering data									
For piston \varnothing	B1	B2	H1	L1	L2	Part No.	Туре		
32 50	19	8.5	30	34	22	36173	SMBU-1-B ¹⁾		
63 100	31	13.5	34	34	22	36174	SMBU-2-B ¹⁾		
125	31	13.5	37	34	22	152828	SMBU-3-B		

¹⁾ Free of copper and PTFE

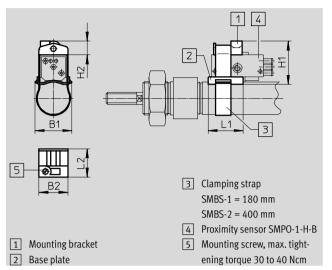
Proximity sensors, block designAccessories



Mounting kit SMBS

Materials: Brass, polymer



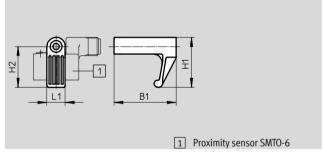


Dimensions and ordering data									
For piston \varnothing	B1	B2	H1	H2	L1	L2	Part No.	Туре	
8 25	24.2	19	~29	0	22	10.5	151225	SMBS-1	
32 100	24.2	19	~29	9	23	18.5	151226	SMBS-2	

Mounting kit SMBT-1

Materials: Die-cast zinc





Dimensions and ordering data								
For piston \varnothing	B1	H1	H2	L1	Part No.	Туре		
	±0.3		±0.2	±0.2				
32 200	41	33	27	12	150002	SMBT-1		

Proximity sensors, block design Accessories



Ordering dat	a – Connecting cables				Technical data → Internet: nebu
		Number of wires	Cable length [m]	Part No.	Туре
Socket M8x1	, 3-pin				1
	For SMT-C1 and	3	2.5	541333	NEBU-M8G3-K-2.5-LE3
1	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		5 541		NEBU-M8W3-K-5-LE3
		·			
Socket M12x	1, 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

Ordering data – Connecting cables					
	Switching output	Cable length	Weight	Part No.	Туре
		[m]	[g]		
Resistant to welding spatter					
✓	3-wire, M12x1 socket, straight	3	-	30450	SIM-M12-RS-3GD-3
	3-wire, M12x1 socket, angled	3	-	30451	SIM-M12-RS-3WD-3