Proximity sensors, block-shaped Product range overview



Measuring	Version	Туре	Assembly	Switching elem	ent function			Electrical connection		
principle				N/O contact	N/C contact		Cable	Plug		
Magneto-	Operating vo	ltage range 10 30 V	DC							
resistive		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		
Magnata	Operations	ltere repres 10 - 20 V	DC .	<u>'</u>		<u>'</u>				
Magneto- inductive	Operating vo	oltage range 10 30 V			1	PNP	1	M4 2v4 2 nin		
illauctive		SMTO-6	Via accessories	•	-	PNP		M12x1, 3-pin		
Magnetic	Operating vo	oltage range 0 30 V D	OC							
reed		SMEO-1	Via accessories			Contacting	Ī-	M8x1,		
				•	-			3-pin ¹⁾		
				•	-		3-wire	M8x1, 3-pin		
	Operating voltage range 0 250 V AC, 0 200 V DC									
	Operating vo	SMEO-1-B	Via accessories	<u> </u>	T T	Contacting	2-wire	I		
			via accessories	•	-	Contacting		_		
		SMEO-1		-	-		2-wire	_		
				-	-	1	2-wire	-		
		SMEO-1-S6-C Heat resistant up to 120°C		•	-		2-wire	-		
Magnetic	Pnoumatic n	roximity sensor, opera	ting proceure 2 6 ha	ır	•			<u> </u>		
magnetic		SMPO-1	Via accessories			T_	Ī-	Ī-		
		3M1 0 1	via accessories	2)	-					
Inductive	Operating vo	oltage range 10 30 V	DC							
	^	SMT-C1	Clamped			PNP	3-wire	Ī-		
			2.6	-	-					
		1			1		1			

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

Proximity sensors, block-shaped Product range overview

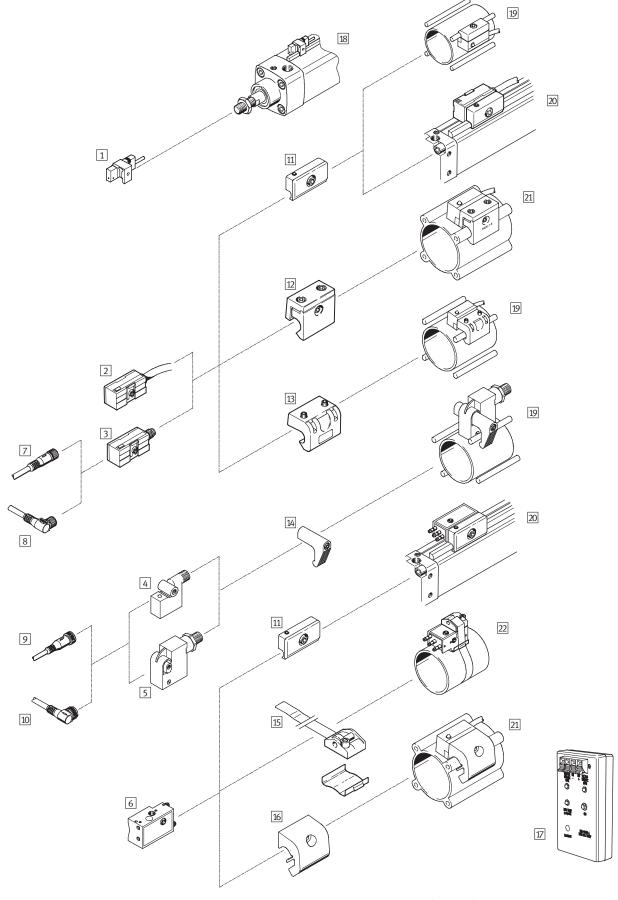


In-line inge 10 30 V DC	Lateral	re-adjustment	display via LED	PTFE	
nge 10 30 V DC		,	display via EED	PIFE	
•	-	1)	-	•	6
•	-	1)	•	-	
					8
•	-	-	•	_	
Ingo 10 30 V DC					
10 30 V DC	1		<u> </u>		10
•	-	-	•	-	
20 V DC		<u> </u>			
inge 0 30 V DC					14.2
•	-	1)	-	•	12
	-	1)	•		
inge 0 250 V DC, 0	200 V DC				
•	-	1)	-	-	12
•	-	1)	•	-	
•	-	1)	-	-	
•	-	1)	•	-	
sensor, operating pres	ssure 2 6 bar				
•	-	1)	_ 2)	-	15
nge 10 30 V DC	'	1			<u> </u>
	1		1	1	17
-	-	-	•	-	
	ange 10 30 V DC ange 0 30 V DC ange 0 250 V DC, 0 ange over a series of the serie	Inge 10 30 V DC Inge 0 30 V DC Inge 0 250 V DC, 0 200 V DC Inge 0 250 V DC, 0 200 V DC Inge 0 250 V DC, 0 200 V DC Inge 10 30 V DC	Inge 10 30 V DC Inge 0 30 V DC Inge 0 250 V DC, 0 200 V DC Inge 0 250 V DC, 0 200 V DC Inge 10 30 V DC		

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

Proximity sensors, block-shaped Peripherals overview





Proximity sensors, block-shaped Peripherals overview

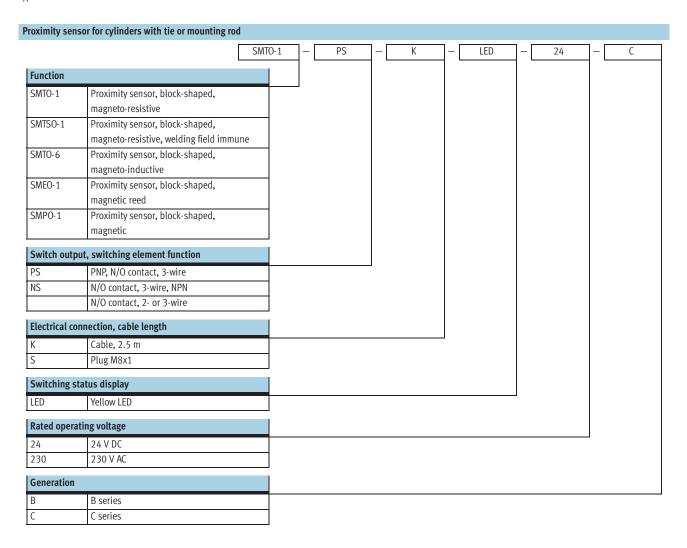


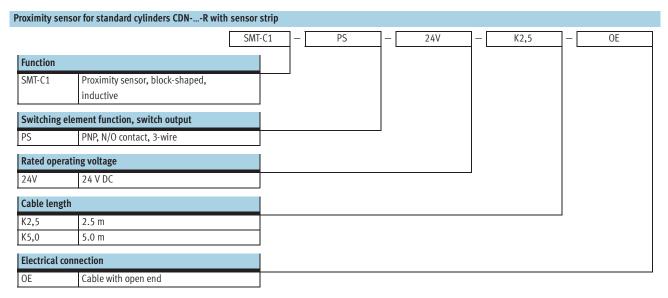
Mo	unting attachments and accessories		
		Brief description	→ Page/Internet
Pro	ximity sensors		
1	SMT-C1	Inductive, with cable and clamping component	17
2	SMTO-1	Magneto-resistive, with cable	6
	SMEO-1	Magnetic reed, with cable	12
3	SMTO-1	Magneto-resistive, with plug M8x1	6
i	SMEO-1	Magnetic reed, with plug M8x1	12
4	SMTO-6	Magneto-inductive, with plug M12x1	10
5	SMTSO-1	Magneto-resistive, welding field immune, with plug M12x1	8
6	SMPO-1	Pneumatically actuated	15
			<u>.</u>
Acc	essories		
7	Plug socket with cable NEBU-M83GD	Straight socket, M8x1, 3-pin	nebu
8	Plug socket with cable NEBU-M83WD	Angled socket, M8x1, 3-pin	
9	Plug socket with cable NEBU-M123GD	Straight socket, M12x1, 3-pin	
10	Plug socket with cable NEBU-M123WD	Angled socket, M12x1, 3-pin	
11	Mounting kit SMB-1	For drives with tie rod ∅ 6 mm or mounting rail	19
		For standard cylinders DNG	
12	Mounting kit SMBU-1-B	For standard cylinders DNU	19
13	Mounting kits SMB-2-B, SMB-3-B	For standard cylinders DNG	19
14	Mounting kit SMBT-1	For standard cylinders DNG	20
15	Mounting kit SMBS	For round cylinders	20
16	Mounting kit SMBU-1-H-32	For standard cylinders DNU	20
17	Sensor tester SM-TEST-1		sm-test-1
Driv			
18	Standard cylinders CDNR with sensor strip	Ø 32 100 mm	-
19	Standard cylinders DNG	Ø 32 320 mm	-
20	Flat cylinders DZH	Ø 32 63 mm	-
	Semi-rotary drives DRQ	Ø 40 100 mm	
21	Standard cylinders DNU	Ø 32 125 mm	
22	Round cylinders	Ø 8 100 mm	

Proximity sensors, block-shaped



Type codes



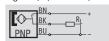


Proximity sensors SMTO-1, block-shaped, magneto-resistive



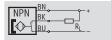
Technical data

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-shaped			
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		
Product weight	[g]	85	20	

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			

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 or lubricating agents.

Corrosion resistance class 4 according to Festo standard 940 070

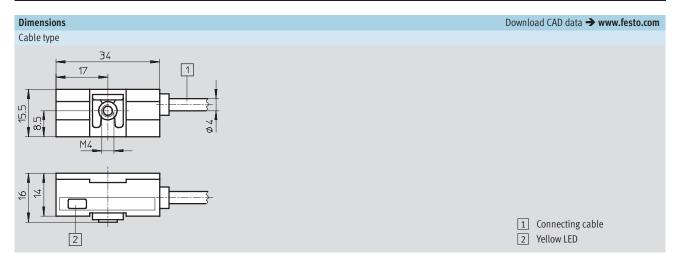
Components requiring higher corrosion resistance. Parts used with aggressive media, e.g. food or chemical industry. These applications should be supported with special tests with the media if required.

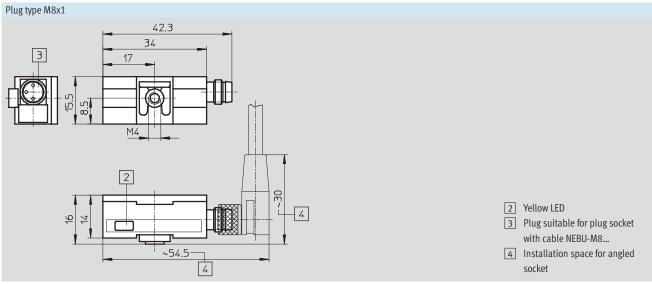
Materials				
Housing	Die-cast zinc, polyester			
Cable sheath	Polyvinyl chloride			
Note on materials	Free of copper and PTFE			

Proximity sensors SMTO-1, block-shaped, 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	151 683	SMTO-1-PS-K-LED-24-C
		-	3-pin	-	151 685	SMTO-1-PS-S-LED-24-C
	NPN	3-wire	-	2.5	151 684	SMTO-1-NS-K-LED-24-C
		-	3-pin	-	151 686	SMTO-1-NS-S-LED-24-C

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



Technical data

Function PNP, N/O contact, with plug



- Welding field immune
- Magneto-resistive measuring principle



Design					
Constructional design	Block-shaped				
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 magnetic 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				
Electrical connection	Plug			
Ambient temperature [°C]	-25 +70			
Corrosion resistance class CRC ¹⁾	1			
CE symbol (declaration of conformity)	In accordance with EU EMC directive			

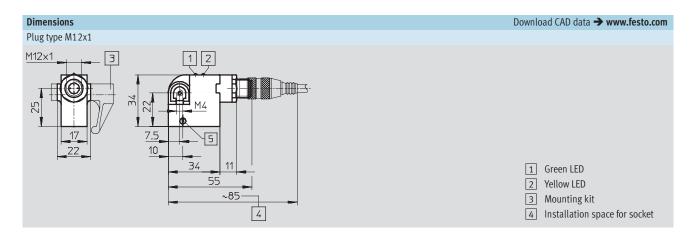
1) Corrosion resistance class 1 according to Festo standard 940 070 Components requiring low corrosion resistance. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

Materials	
Housing	Die-cast zinc

Product weights [g]		
N/O contact		
PNP	70	

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



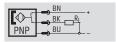


Orderin	ng data							
		Switch output	Electrical connection	Part No.	Туре			
~	~	N/O contact						
	}	Welding field immune						
		PNP	Plug M12x1, 3-pin	30 441	SMTSO-1-PS-S-LED-24			
9								

Proximity sensors SMTO-6, block-shaped, magneto-resistive Technical data



Function PNP, N/O contact, with plug



 Magneto-inductive measuring principle



Design			
Constructional design	Block-shaped		
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 – 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]	≤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	Plug		
Ambient temperature [°C]	-25 +70		
Corrosion resistance class CRC ¹⁾	1		
CE symbol (declaration of conformity)	In accordance with EU EMC directive		

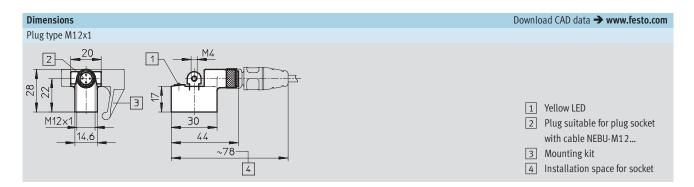
¹⁾ Corrosion resistance class 1 according to Festo standard 940 070 Components requiring low corrosion resistance. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

Materials	
Housing	Die-cast zinc

Product weights [g]		
N/O contact		
PNP 36		

Proximity sensors SMTO-6, block-shaped, magneto-resistive Technical data





Ordering data				
	Switch output	Electrical connection	Part No.	Туре
	N/O contact			
	PNP	Plug M12x1, 3-pin	35 573	SMTO-6-PS-S-LED-24
\bigvee				

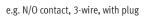
Proximity sensors SMEO-1, block-shaped, magnetic reed Technical data

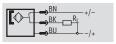


Function e.g. N/O contact, 3-wire, with cable



Magnetic reed measuring principle









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

1) Only applicable to drives secured against rotation.

Technical data – N/O contac	t, 3-wire				
Switching element function			N/O contact		
Switch output			Conventional contac	t, bipolar	
Electrical connection			Cable, 3-wire		Plug M8x1, 3-pin
Cable length		[m]	2.5	5.0	-
Operating voltage range	DC	[V DC]	12 27	<u>.</u>	·
Max. output current	DC	[mA]	1,000		
Max. switching capacity	DC	[W]	27		
Switch-on time		[ms]	≤0.5		
Switch-off time		[ms]	≤0.03		
Protection against short circu	uit		No		
Protection against polarity reversal		No			
Protection class			IP67		
Switching status display			Yellow LED		

Technical data – N/O contact, heat resistant				
Switching element function			N/O contact	
Switch output			Conventional contact, bipolar	
Electrical connection			Cable, 2-wire	
Cable length		[m]	2.5	
Operating voltage range	DC	[V DC]	0 200	
	AC	[V AC]	0 250	
Max. output current	DC	[mA]	1,000	
	AC	[mA]	1,000	
Max. switching capacity	DC	[W]	40	
	AC	[VA]	40	
Switch-on time		[ms]	≤0.5	
Switch-off time		[ms]	≤0.03	
Protection against short circuit			No	
Protection against polarity reversal			No	
Protection class			IP67	
Switching status display			-	

Proximity sensors SMEO-1, block-shaped, magnetic reed



Technical data - N/O contac	t, 2-wire					
Switching element function			N/O contact			
Switch output			Conventional cor	ntact, bipolar ¹⁾	Conventional conta	ct, bipolar
Electrical connection			Cable, 2-wire		Cable, 2-wire	Plug M8x1, 2-pin
Cable length		[m]	2.5	5.0	2.5	-
Operating voltage range	DC	[V DC]	5 200		0 200	0 30
İ	AC	[V AC]	5 250		0 250	-
Max. output current	DC	[mA]	500		1,000	1,000
	AC	[mA]	500		1,000	-
Max. switching capacity	DC	[W]	40		40	40
	AC	[VA]	40		40	-
Voltage drop		[V]	4.1		-	-
Switch-on time		[ms]	≤0.5		•	•
Switch-off time [ms]		≤0.03				
Protection against short circuit			No			
Protection against polarity reversal			No			
Protection class			IP67			
Switching status display			Yellow LED	Yellow LED	-	

¹⁾ Without LED function.

Operating and environmental conditions						
Electrical connection		Cable		Cable, heat resist	ant	Plug
Cable installation		Fixed	Flexible	Fixed	Flexible	Fixed
Ambient temperature	[°C]	-20 +70	−5 +70	-10 +120	-5 +120	-20 +70
Corrosion resistance class CRC ¹⁾		4	•	4		2
CE symbol (declaration of conformity)		In accordance with EU EMC directive ²⁾		In accordance with EU low voltage		In accordance with
		In accordance with EU low voltage directive ³⁾		directive		EU EMC directive

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 or lubricating agents.

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) Only valid for N/O contact, 3-wire, operating voltage range 12 ... 27 V DC and for N/O contact, 2-wire, operating voltage range 5 ... 250 V AC / 5 ... 200 V DC.

³⁾ Only valid for N/O contact, 2-wire, with cable.

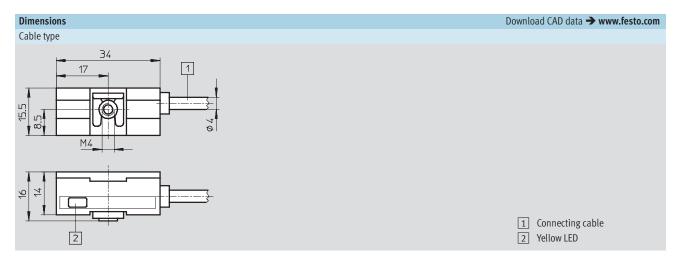
Materials	
Housing	Die-cast zinc, polyester
Cable sheath	Polyurethane
Note on materials	Free of copper and PTFE

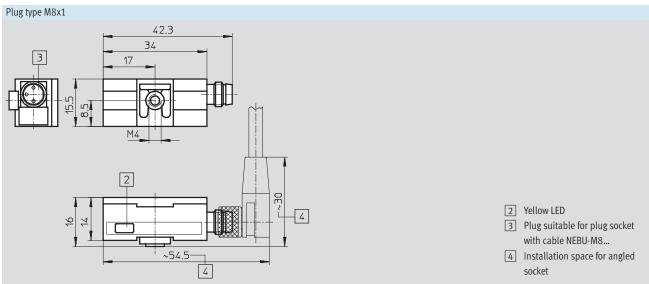
Product weights [g]				
Electrical connection	Cable			Plug
Cable length [r	m] 2,5		5,0	-
N/O contact				
3-wire	85		130	20
2-wire	100(8	(5) ¹⁾	130	20
2-wire, heat resistant	130		_	_

²⁾ Value in brackets only valid for operating voltage range 0 ... 250 V AC / 0 ... 200 V DC.

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







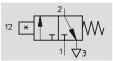
Electrical conne	oction	Cable length	Switching status	Part No.	Tuno
	<u> </u>		"	Pail No.	Туре
Cable	Plug M8x1	[m]	display via LED		
N/O contact					
Operating volta	ge range 12 27 V DC				
3-wire	-	2.5	•	30 459	SMEO-1-LED-24-B
3-wire	-	5.0		151 672	SMEO-1-LED-24-K5-B
_	3-pin	-	•	150 848	SMEO-1-S-LED-24-B
Operating volta	ge range 0 250 V AC,	0 200 V DC			
2-wire		2.5	_	30 457	SMEO-1-B
2-wire	_	2.5	•	151 671	SMEO-1-LED-230-B
2-wire	-	5.0	•	160 998	SMEO-1-LED-230-K5-B
Heat resistant up to 120°C					
2-wire	-	2.5	-	151 673	SMEO-1-S6-C
	•	•	•	•	
Operating volta	ge range 0 30 V DC				
	3-pin ¹⁾	_	_	150 847	SMEO-1-S-24-B

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

Proximity sensor SMPO-1, block-shaped, pneumatic Technical data



Function 3/2-way valve, normally closed



- Pneumatic proximity sensor
- Magnetic measuring principle



Design Control of the				
Constructional design	Block-shaped			
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 PK-3
Protection class		IP65

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

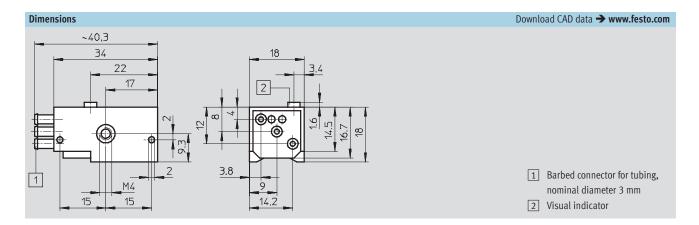
1) Corrosion resistance class 1 according to Festo standard 940 070 $\,$ Components requiring low corrosion resistance. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

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

Product weights [g]	
PNP	14

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

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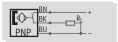
Ordering data			
	Pneumatic connection	Part No.	Туре
	3/2-way valve, normally closed Barbed connector for 3 mm I.D. tubing	31 008	SMPO-1-H-B

Proximity sensors SMT-C1, block-shaped, inductive



Technical data

Function PNP, N/O contact, with cable



- Inductive measuring principle
- For standard cylinders CDN-...-R with sensor strip



Design Control of the		
Constructional design	Block-shaped	
Type of mounting	Clamped	
Connection direction	In-line	
Switching status display	Yellow LED	

Technical data - PNP, N/O contact		
Method of measurement		Absolute
Electrical connection		Cable, 3-wire
Cable length	[m]	5.0
Operating voltage range	[V DC]	10 30
Max. output current	[mA]	200
Max. switching capacity DC	[W]	6.0
Voltage drop	[V]	<1.8
Residual current	[mA]	< 0.1
Switch-on time	[ms]	≤ 0.5
Switch-off time	[ms]	≤ 0.5
Hysteresis	[mm]	≤ 2.0
Protection against short circuit		Yes
Protection against polarity reversal		For all electrical connections
Inductive protective circuit		Adapted to MZ, MY, ME coils
Protection against overloading		Yes
Protection class		IP65/IP67
Tightening torque	[Nm]	1.2
Conforms to		DIN EN 60 947-5-2

Operating and environmental conditions					
Cable installation	Fixed	Flexible			
Ambient temperature [°C]	-20 +70	-20 +70			
Corrosion resistance class CRC ¹⁾	3				
CE symbol (declaration of conformity)	In accordance with EU EMC directive				

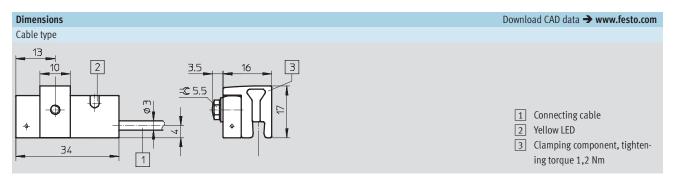
³⁾ Corrosion resistance class 3 according to Festo standard 940 070 Components requiring higher corrosion resistance. External visible parts in direct contact with industrial atmospheres or media such as solvents and cleaning agents, with a predominantly functional requirement for the surface.

Materials				
Housing	Aluminium			
	High-alloy stainless steel			
	Polypropylene			
	Polyurethane			
Cable sheath	Polyurethane			
Note on materials	Free of copper and PTFE			
	Halogen-free			

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







Ordering data					
	Switch output	Electrical connection	Cable length [m]	Part No.	Туре
<u> </u>	11/0	•	<u>'</u>		
	N/O contact				
	PNP	Cable, 3-wire	2.5	540 431	SMT-C1-PS-24V-2,5-0E

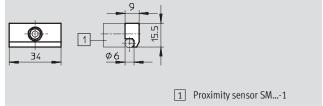
Proximity sensors, block-shaped Accessories

FESTO

Mounting kit SMB-1

Material: Die-cast zinc



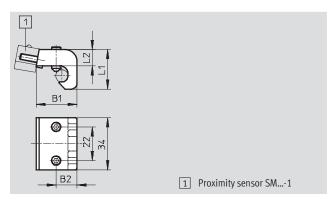


Dimensions and ordering data		
For piston \varnothing	Part No.	Туре
32 100	11 886	SMB-1

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

Material: Die-cast aluminium





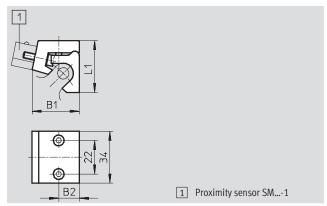
Dimensions and ordering data						
For piston \varnothing	B1	B2	L1	L2	Part No.	Туре
32 50	18	11	23	11.6	36 162	SMB-2-B
63 100	26.8	13.7	26	10.8	36 163	SMB-3-B

Mounting kit SMBU

Material:

Die-cast aluminium





Dimensions and ordering data						
For piston \varnothing	B1	B2	L1	Part No. Type		
32 50	19	8.5	30	36 173 SMBU-1-B ¹⁾		
63 100	31	13.5	34	36 174 SMBU-2-B ¹⁾		
125	31	13.5	37	125 828 SMBU-3-B		

¹⁾ Free of copper and PTFE

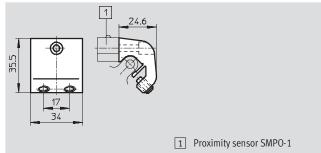
Proximity sensors, block-shaped Accessories

FESTO

Mounting kit SMBU-1-H-32

Material: Aluminium



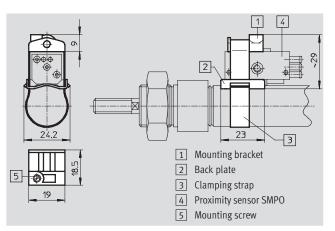


Dimensions and ordering data		
For piston \varnothing	Part No.	Туре
32	150 216	SMBU-1-H-32

Mounting kit SMBS

Material: Brass, plastic



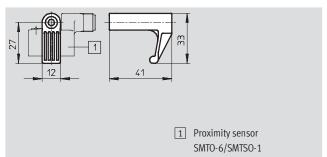


Dimensions and ordering data		
For piston \varnothing	Part No. Type	
8 25	151 225 SMBS-1	
32 100	151 226 SMBS-2	

Mounting kit SMBT-1

Material: Die-cast zinc





Dimensions and ordering data		
For piston \varnothing	Part No.	Туре
32 200	150 002	SMBT-1