Proximity sensors, block-shaped Product range overview



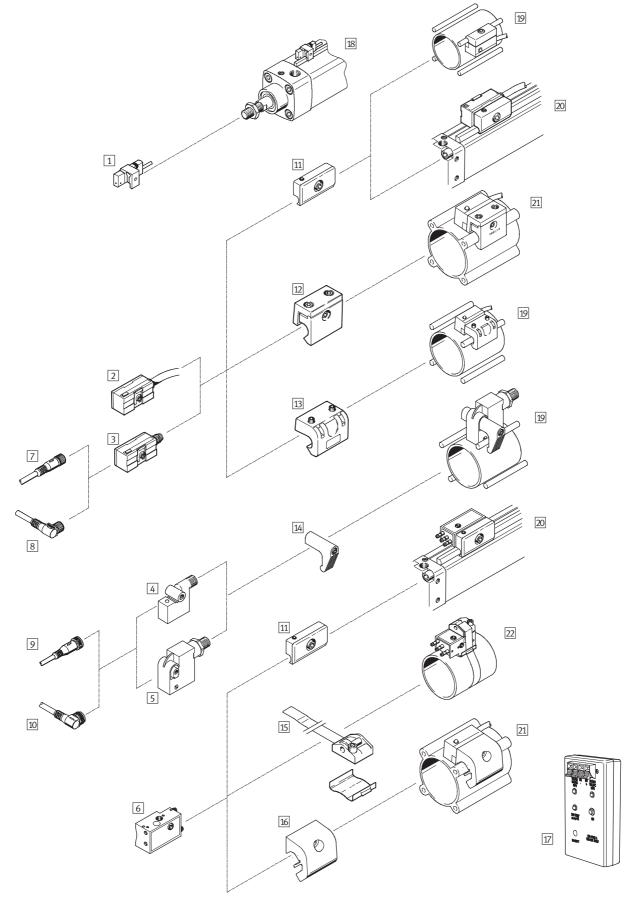
Measuring	Version	Туре	Assembly	Switching element function		Switch output	Electrical connection	
principle				N/O contact	N/C contact		Cable	Plug
Magneto-	Operating vol	tage range 10 30 V [OC .					
resistive		SMTO-1	Via accessories	-	-	PNP	3-wire	M8x1, 3-pin
				-	-	NPN	3-wire	M8x1, 3-pin
		SMTSO-1 Welding field immune			-	PNP	-	M12x1, 3-pin
Magneto-	Operating vol	tage range 10 30 V [DC .					
inductive		SMTO-6	Via accessories	•	-	PNP	_	M12x1, 3-pin
		1	1	1	1	1	1	
Magnetic	Operating vol	tage range 0 30 V DO	2					
reed		SMEO-1	Via accessories	•	-	Contacting	_	M8x1, 3-pin ¹⁾
				•	-		3-wire	M8x1, 3-pin
	Operating vol	tage range 0 250 V A		+		1	1	
		SMEO-1-B	Via accessories	•	-	Contacting	2-wire	_
	P	SMEO-1		•	-		2-wire	_
				•	-		2-wire	_
		SMEO-1-S6-C Heat resistant up to 120°C		•	-		2-wire	_
Manual **	D							
Magnetic	20	oximity sensor, operati	Via accessories	1		T_		I_
	0	SMPU-1	via accessories	2)	-		_	-
		•	•	•	•	•	•	
Inductive	Operating vol	tage range 10 30 V [
	400	SMT-C1	Clamped	-	-	PNP	3-wire	-

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		Lakamal				→ Page
		Lateral	re-adjustment	display via LED	PTFE	
perating voltage range 10 3	O V DC					
MTO-1			1)		•	1 / 10.2-89
	•	-	= 2)	•	•	
		_	1)		_	7
	-	_	_ ′	_	_	
SMTSO-1						1 / 10.2-91
Velding field						
mmune		-	-	-	-	
morating voltage range 10	O V DC					
perating voltage range 10 3 MTO-6	O V DC		1	I		1 / 10.2-93
mio-0						1 / 10.2-93
		-	_	•	_	
			1	1		
perating voltage range 0 30	V DC					
MEO-1			4)	1		1 / 10.2-95
	•	-	1)	_	•	,
	_		_ 1)	_	_	7
	•	-	1)	•	•	
I					l	
perating voltage range 0 25	0 V DC, 0 2	00 V DC				
MEO-1-B	_		1)			1 / 10.2-95
	•	-	1	_	_	
MEO-1			1)			7
	-	-	= 1/	•	_	
		_	1)	_		7
		_	-/	_		
MEO-1-S6-C						
leat resistant up	•	-	1)	-	-	
o 120°C						
neumatic proximity sensor, op	erating press	ure 2 6 bar				
MPO-1						1 / 10.2-98
		-	1)	_ 2)	_	
perating voltage range 10 3	O V DC		1	1		
MT-C1						1 / 10.2-100
		_	_			
	-			_		

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



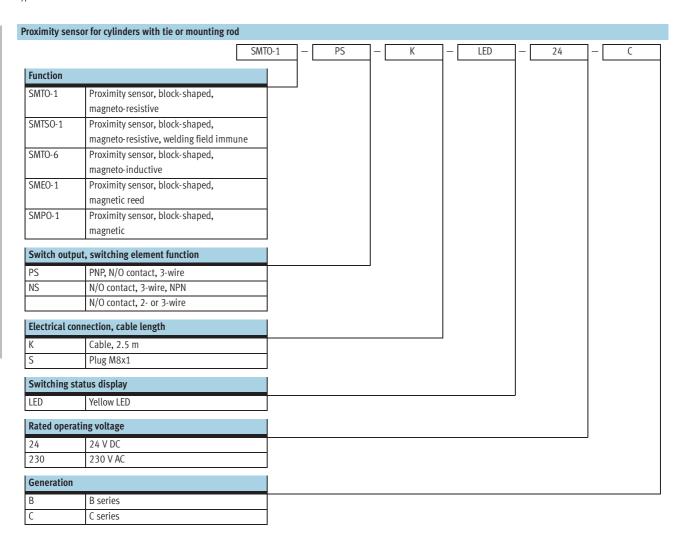
Proximity sensors, block-shaped Peripherals overview

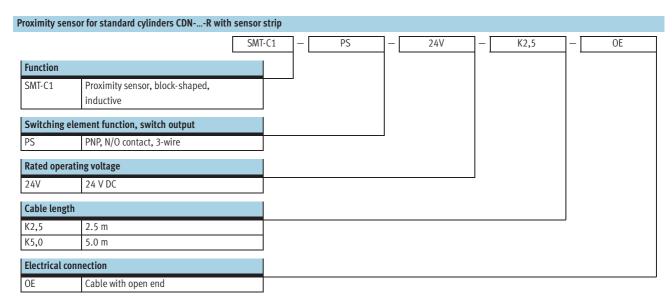
Μοι	Mounting attachments and accessories					
		Brief description	→ Page			
Prox	kimity sensors					
1	SMT-C1	Inductive, with cable and clamping component	1 / 10.2-100			
2	SMTO-1	Magneto-resistive, with cable	1 / 10.2-89			
	SMEO-1	Magnetic reed, with cable	1 / 10.2-95			
3	SMTO-1	Magneto-resistive, with plug M8x1	1 / 10.2-89			
	SMEO-1	Magnetic reed, with plug M8x1	1 / 10.2-95			
4	SMTO-6	Magneto-inductive, with plug M12x1	1 / 10.2-93			
5	SMTSO-1	Magneto-resistive, welding field immune, with plug M12x1	1 / 10.2-91			
6	SMPO-1	Pneumatically actuated	1 / 10.2-98			
			·			
Acce	essories					
7	Plug socket with cable NEBU-M83GD	Straight socket, M8x1, 3-pin	1 / 10.2-114			
8	Plug socket with cable NEBU-M83WD	Angled socket, M8x1, 3-pin	1 / 10.2-114			
9	Plug socket with cable NEBU-M123GD	Straight socket, M12x1, 3-pin	1 / 10.2-115			
10	Plug socket with cable NEBU-M123WD	Angled socket, M12x1, 3-pin	1 / 10.2-115			
11	Mounting kit SMB-1	For standard cylinders DNG	1 / 10.2-102			
12	Mounting kit SMBU-1-B	For standard cylinders DNU	1 / 10.2-102			
13	Mounting kits SMB-2-B, SMB-3-B	For standard cylinders DNG	1 / 10.2-102			
14	Mounting kit SMBT-1	For standard cylinders DNG	1 / 10.2-103			
15	Mounting kit SMBS	For round cylinders	1 / 10.2-103			
16	Mounting kit SMBU-1-H-32	For standard cylinders DNU	1 / 10.2-103			
17	Sensor tester SM-TEST-1		1 / 10.2-113			
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

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Type codes



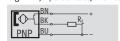


Proximity sensors SMTO-1, block-shaped, magneto-resistive



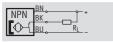
Technical data

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

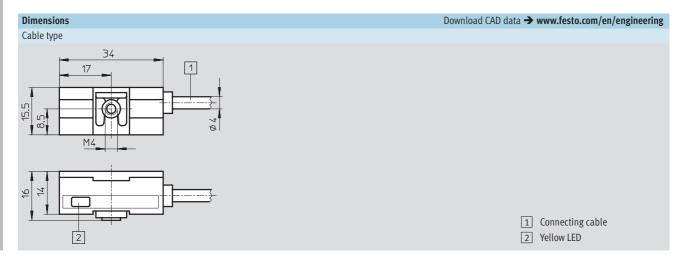
Components requiring higher corrosion resistance. Parts used with aggressive media, e.g. food or chemical industry. These applications should be supported with special tests with the media if required.

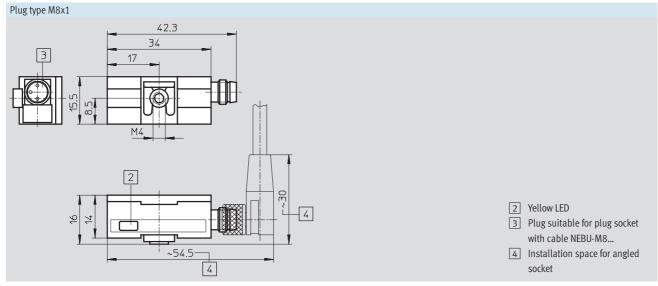
Materials				
Housing	Die-cast zinc, polyester			
Cable sheath	Polyvinyl chloride			
Note on materials	Free of copper and PTFE			

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

FESTO

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	

10.2

Proximity sensors SMTSO-1, block-shaped, magneto-resistive $_{\text{Technical data}}$

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 fie	lds	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				

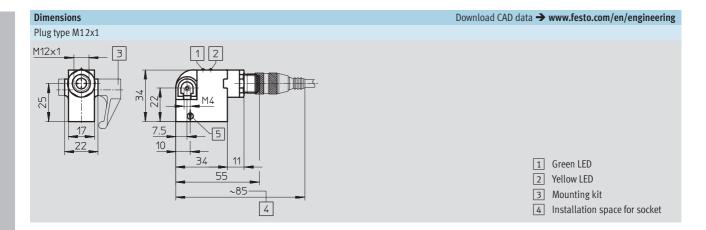
1) Corrosion resistance class 1 according to Festo standard 940 070 Components requiring low corrosion resistance. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

Materials	
Housing	Die-cast zinc

Product weights [g]	
N/O contact	
PNP	70

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



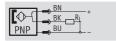


Ordering data				
	Switch output	Electrical connection	Part No.	Туре
~~~	N/O contact			
1//~! 1	Welding field immune			
"@	PNP	Plug M12x1, 3-pin	30 441	SMTSO-1-PS-S-LED-24
9				

#### 10.2

### **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		

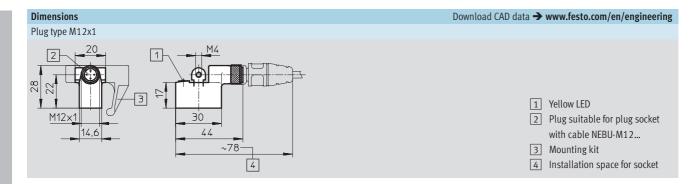
1) Corrosion resistance class 1 according to Festo standard 940 070 Components requiring low corrosion resistance. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

Materials	
Housing	Die-cast zinc

Product weights [g]	
N/O contact	
PNP	36

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

**FESTO** 



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

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

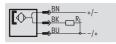
**FESTO** 

Function

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



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



• 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 contact	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	·	·
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	ıit		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]		[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			-	

Technical data

Technical data – N/O contac	t, 2-wire						
Switching element function			N/O contact	N/O contact			
Switch output			Conventional conta	Conventional contact, bipolar ¹⁾		Conventional contact, 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	
	AC	[V AC]	5 250		0 250	-	
Max. output current	DC	[mA]	500	500		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.

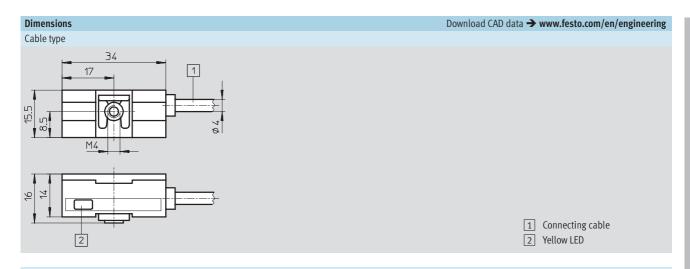
Materials		
Housing	Die-cast zinc, polyester	
Cable sheath	Polyurethane	
Note on materials	Free of copper and PTFE	

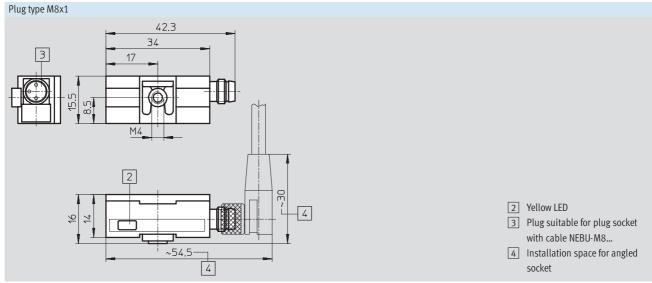
Product weights [g]			
Electrical connection	Cable		Plug
Cable length [m]	2,5	5,0	-
N/O contact			
3-wire	85	130	20
2-wire	100(85) ¹⁾	130	20
2-wire, heat resistant	130	_	_

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

**FESTO** 





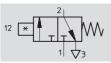
Ordering data						
	Electrical conne	ection	Cable length	Switching status	Part No.	Туре
	Cable	Plug M8x1	[m]	display via LED		
	N/O contact					
	Operating volta	ige range 12 27 V DC				
	3-wire	_	2.5	•	30 459	SMEO-1-LED-24-B
	3-wire	-	5.0	•	151 672	SMEO-1-LED-24-K5-B
	-	3-pin	-	•	150 848	SMEO-1-S-LED-24-B
	Operating volta	ige 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	ige 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

**FESTO** 

Function 3/2-way valve, normally closed



- Pneumatic proximity sensor
- Magnetic 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	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

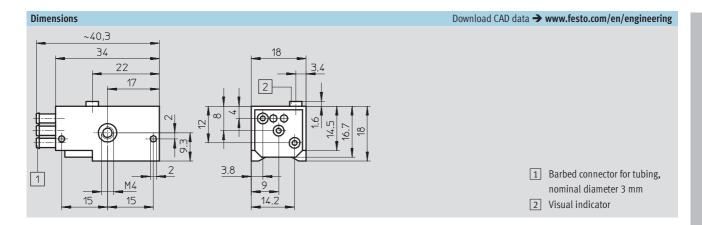
Operating and environmental conditions			
Ambient temperature	[°C]	-15 +60	
Corrosion resistance class CRC ¹⁾		1	

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

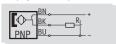
# Proximity sensors SMPO-1, block-shaped, pneumatic Technical data



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



**FESTO** 

Design		
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

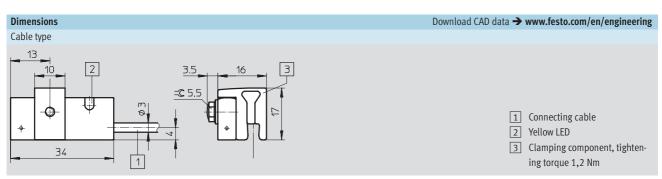
Operating and environmental conditions					
Cable installation		Fixed	Flexible		
Ambient temperature [°C]		-20 +70	-20 +70		
Corrosion resistance class CRC ¹⁾		3			
CE symbol (declaration of conformity)		In accordance with EU EMC directive			

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





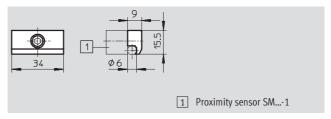
Ordering data					
	Switch output	Electrical connection	Cable length [m]	Part No.	Туре
	N/O contact				
700	PNP	Cable, 3-wire	2.5	540 431	SMT-C1-PS-24V-2,5-0E
1 421/			5.0	540 432	SMT-C1-PS-24V-5,0-0E

### **Proximity sensors, block-shaped**Accessories

#### Mounting kit SMB-1

Material: Die-cast zinc





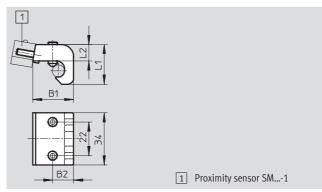
**FESTO** 

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



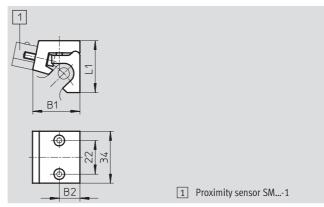


Dimensions and ordering data							
For piston $\varnothing$	B1	B2	L1	L2	Part No.	Туре	
32 50	18	11	23	11.6	36 162	SMB-2-B	
63 100	26.8	13.7	26	10.8	36 163	SMB-3-B	

#### Mounting kit SMBU

Material: Die-cast aluminium





Dimensions and ordering data						
For piston $\varnothing$	B1	B2	L1	Part No.	Туре	
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

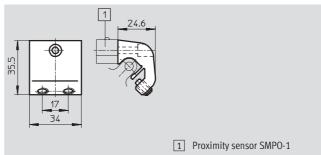
10.2

#### **Proximity sensors, block-shaped** Accessories

#### Mounting kit SMBU-1-H-32

Material: Aluminium



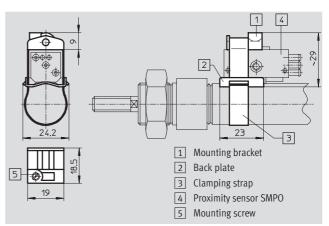


Dimensions and ordering data		
For piston $\varnothing$	Part No.	Туре
32	150 216	SMBU-1-H-32

#### Mounting kit SMBS

Material: Brass, plastic



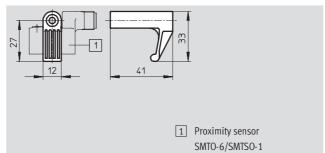


Dimensions and ordering data		
For piston $\varnothing$	Part No.	Туре
8 25	151 225	SMBS-1
32 100	151 226	SMBS-2

#### Mounting kit SMBT-1

Material: Die-cast zinc





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