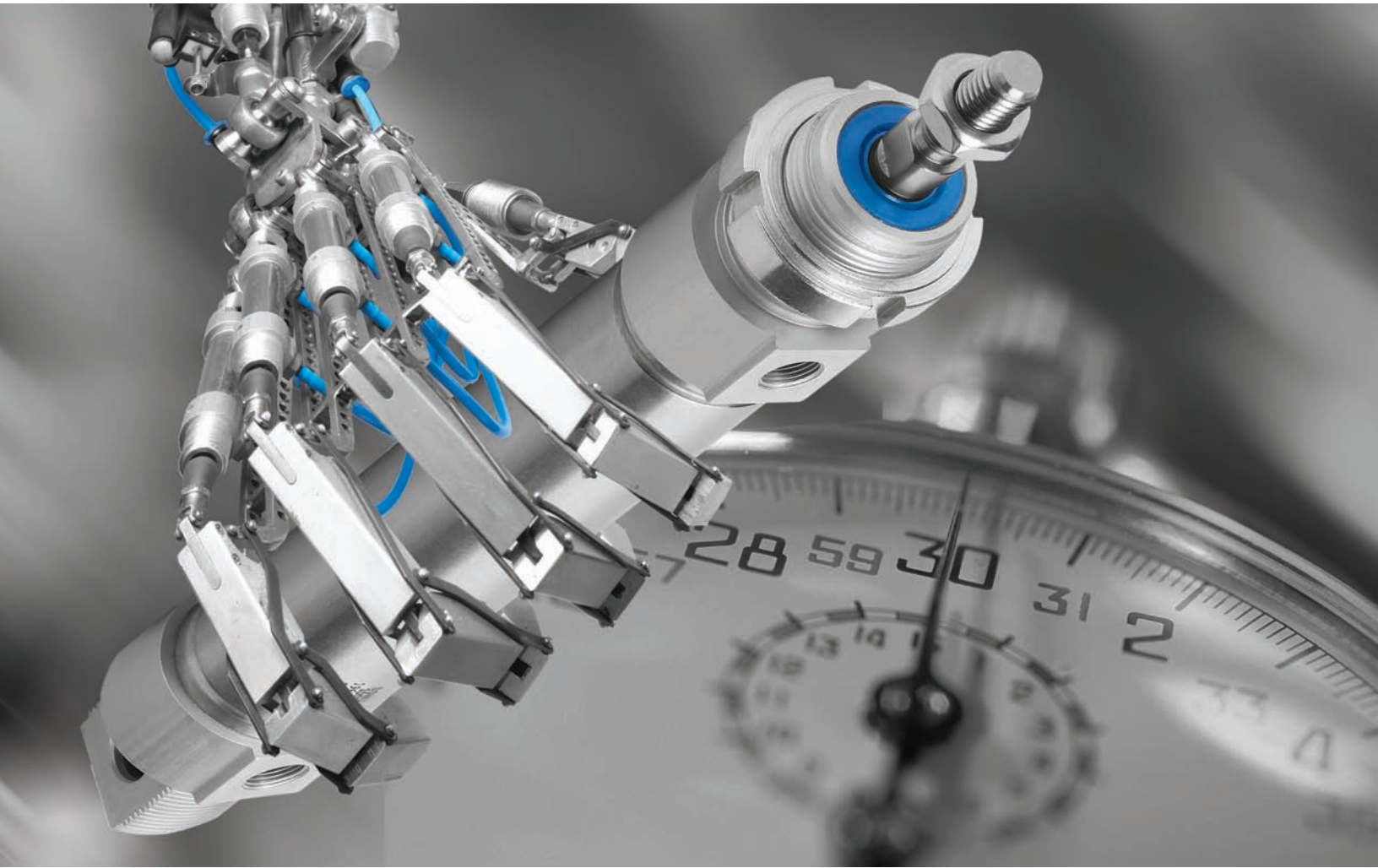


FAST™ Program 2010
Festo Assured Shipping Time

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FAST™ Program 2010

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Pneumatic Cylinders and Actuators

- Piston Rod Cylinders
- Guided Piston Rod Actuators
- Rodless Actuators
- Rotary Actuators



Pneumatic Valves and Valve Manifolds

- Manual/Mechanical Valves
- Stand Alone Valves
- Valve Manifolds



Sensors

- Pressure Sensors
- Vacuum Sensors
- Actuator Feedback



Air Preparation Units

- Filter/Regulator-Lubricators
- Filter Regulators
- Pressure Regulators and Accessories
- Filters
- Lubricators
- On/Off Valves and Soft-start Valves
- Distribution Blocks



Fittings / Flow Controls / Tubing / Silencers

- Fittings
- Flow Controls
- Tubing
- Silencers



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Sensors – Overview

Pressure and Vacuum Sensors

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Pressure and Vacuum Sensors							
Type	Operating Pressure [bar]	Switching Element Function	Switching Function	Electrical Output	Pneumatic Connection	Lead Time	→ Page
						Same Day/Next Day	
Pressure Switches PEV							
	1 ... 12	N/O Contact	–	–	G1/4		167
Pressure and Vacuum Switches SDE5							
	0 ... -1	N/O Switchable	Threshold value with fixed hysteresis Window comparator with fixed hysteresis Freely programmable	PNP	Push-in fitting for tubing O.D. 4 or 6 mm		171
	0 ... 10						
Pressure Sensors SDE1							
	0 ... 10	Switchable	Freely programmable	PNP 0 ... 10 V analog	Male thread R1/8, R1/4 Female thread G1/8 Push-in fitting for tubing O.D. 4 mm		175
Pressure Sensors SPAB							
	-1 ... +1	Switchable	Freely programmable	PNP NPN 1 ... 5 V analog	Male thread NPT1/8-27 and Female Thread M5		179
	0 ... 10						

Note: All metric products can be used within inch tubing systems via hybrid fittings (→ Overview on page 271)

Sensors – Overview

Actuator Feedback

FESTO

Actuator Feedback						
Type	Type of Mounting	Measuring Principle	Electrical Output	Operating Voltage Range	Lead Time	→ Page
					Same Day/Next Day	
Proximity Switches for T-slot SMT/SME-8M					Overview	→ 183
	Insertable from above, flush with cylinder profile	Magneto-resistive	PNP/NPN	10 ... 30 V DC	■	184
		Magnetic Reed	Contacting	5 ... 30 V AC/DC	■	185
	Insertable lengthwise, flush with cylinder profile	Magnetic Reed	Contacting	12 ... 30 V AC/DC	■	186
Proximity Switches for C-slot SMT/SME-10					Overview	→ 183
	Insertable from above, flush with cylinder profile	Magneto-resistive	PNP/NPN	10 ... 30 V DC	■	189
		Magnetic Reed	Contacting	5 ... 30 V AC/DC	■	190
Position Transmitter SMAT-8E						
	Insertable lengthwise	Magnetic	0 ... 10 V and 0 ... 20 mA	15 ... 30 V DC	■	193
Position Transmitter SMAT-8M						
	Insertable lengthwise	Magnetic	0 ... 10 V	15 ... 30 V DC	■	199

Pressure Switch PEV

Product Overview



- Mechanical pressure and vacuum switch with adjustable switching point
- Designs with adjustable hysteresis
- Designs with switching status display
- Variant with scale for pressure adjustment
- Wide range of mounting options

Detailed product information → www.festo.com/catalog/pev

Product Overview						
Method of measurement	Operating pressure [bar]	Type	Pneumatic connection	Type of mounting	Operating voltage range	
					[V DC]	[V AC]
Pneumatic/electrical pressure transducer	1 ... 12	PEV-1/4	G1/4	With through-holes	0 ... 250	0 ... 250

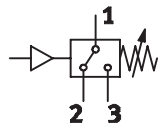
Contents	
– Technical Data	→ 168
– Ordering Data	→ 168
– Accessories	→ 169

Note: All metric products can be used within inch tubing systems via hybrid fittings (→ Overview on page 271)

Pressure Switch PEV

Technical Data

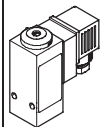
Technical Data – Mounting via Through-holes



Materials
Housing: Wrought aluminum alloy
Variants free of copper and PTFE



Technical Data		
Type	PEV-1/4	
Design		
Pneumatic connection	G1/4	
Electrical data		
Operating voltage range	[V DC]	0 ... 250
	[V AC]	0 ... 125
Switching element function	Changeover switch	
Max. output current	[mA]	5,000
Protection against short circuit	No	
Protection against polarity reversal	Yes	
Protection class	IP65	
Operating and environmental conditions		
Operating medium	Filtered compressed air, lubricated or unlubricated	
	Water	
	Mineral oil	
Operating pressure	[bar]	1 ... 12
Ambient temperature	[°C]	−20 ... +80
CE mark (see declaration of conformity)	In accordance with EU Low Voltage Directive	
Certification	CCC	
Materials		
Housing	Wrought aluminum alloy	

Ordering Data						
Description	Electrical connection	Adjustable hysteresis	Visual scale for pressure adjustment	Plug socket in scope of delivery	Type	LT
	Plug, square design to DIN 43650, type A	■	–	■	PEV-1/4-B	1D

1) Free of copper and PTFE

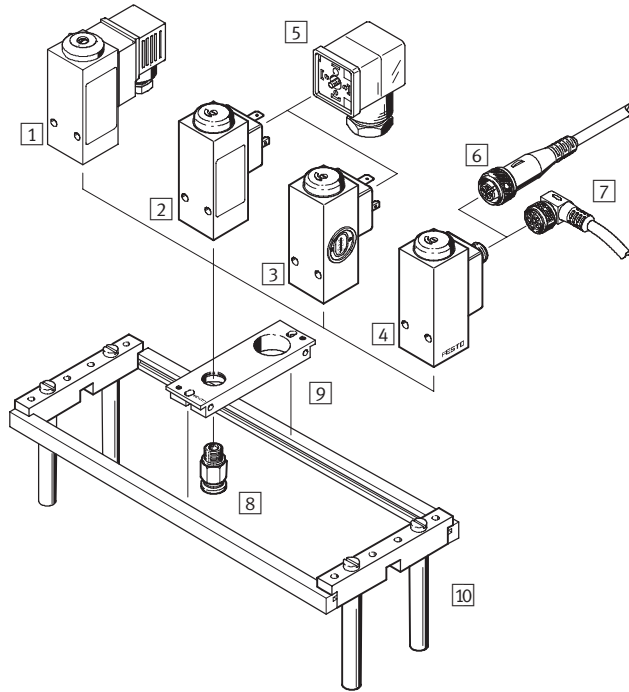
LT = Lead time 1D typically ships same day/next day 3D typically ships within 3 days

Pressure Switch PEV

Accessories


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Peripherals Overview



Ordering Data – Push-in Fittings

Technical Data → 289

	Type
	QS-G $\frac{1}{4}$ -6
	QS-G $\frac{1}{4}$ -8

Accessories

1	Pressure switch PEV- $\frac{1}{4}$ -B-..., vacuum switch VPEV- $\frac{1}{8}$
2	Pressure switch PEV- $\frac{1}{4}$ -B-OD-...
3	Pressure switch PEV- $\frac{1}{4}$ -SC-OD-... with scale for pressure adjustment
4	Pressure switch PEV- $\frac{1}{4}$ -B-M12, vacuum switch VPEV- $\frac{1}{8}$ -M12
5	Plug socket PEV- $\frac{1}{4}$ -WD-LED-... with switching status display Plug socket MSSD-C-4P without switching status display
6	Connecting cable NEBU-M12G5-... with straight socket
7	Connecting cable NEBU-M12W5-... with angled socket
8	Push-in fitting QS-...
9	Mounting plate APL-2N-PEV
10	Mounting frame NRRQ-2N

Sensors

3

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Pressure Switches SDE5

Product Overview



- Programmable and configurable pressure switch for simple pressure sensing tasks
- Teach-in function for programming
- Integrated microprocessor
- Operating status indicated by an LED visible from all sides

Detailed product information → www.festo.com/catalog/sde5

Product Overview						
Method of measurement	Pressure measuring range [bar]	Type	Switching function	Switching element function	Pneumatic connection	Electrical connection
Piezoresistive pressure switch	0 ... -1	SDE5-V1	Threshold value with fixed hysteresis Window comparator	N/O contact N/C contact Switchable	QS-4 QS-6	Plug M8x1, 3-pin; cable, 3-wire
	0 ... 10	SDE5-D10	Freely programmable			

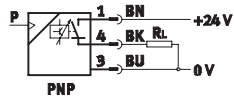
Contents	
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– Ordering Data	→ 172
– Accessories	→ 173

Note: All metric products can be used within inch tubing systems via hybrid fittings (→ Overview on page 271)

Pressure Switches SDE5

Technical Data

Technical Data




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

Materials
Housing: Polyamide, polyacetate,
reinforced polyphenylene sulphide



General Technical Data		
Operating voltage range	[V DC]	15 ... 30
Max. output current	[mA]	100
Switch output		PNP
Protection against short circuit		Pulsed
Protection against polarity reversal		For all electrical connections
Protection class		IP40
Operating medium		Filtered compressed air, lubricated or unlubricated, grade of filtration 40µm
Ambient temperature	[°C]	0 ... 50
CE mark		In accordance with EU EMC directive
Certification		c UL us - Recognized (OL) C-Tick
Information on housing materials		Polyacetate, reinforced; polyamide; polyphenylene sulphide, reinforced

Ordering Data							
Variant	Pressure measuring range [bar]	Switching element function	Electrical connection	Pneumatic connection		Type	LT
				At one end	At both ends		
	Threshold value with fixed hysteresis, 1 teach-in pressure						
	0 ... -1	N/O contact	Plug, M8x1, 3-pin	–	QS-4	SDE5-V1-O-Q4-P-M8	1D
				–	QS-6	SDE5-V1-O-Q6-P-M8	1D
	0 ... 10	N/O contact	Plug, M8x1, 3-pin	QS-6	–	SDE5-D10-O-Q6E-P-M8	1D
				–	QS-6	SDE5-D10-O-Q6-P-M8	1D
	Freely programmable						
	0 ... -1	Selectable	Plug, M8x1, 3-pin	–	QS-6	SDE5-V1-FP-Q6-P-M8	1D
	0 ... 10	Selectable	Plug, M8x1, 3-pin	–	QS-6	SDE5-D10-FP-Q6-P-M8	1D

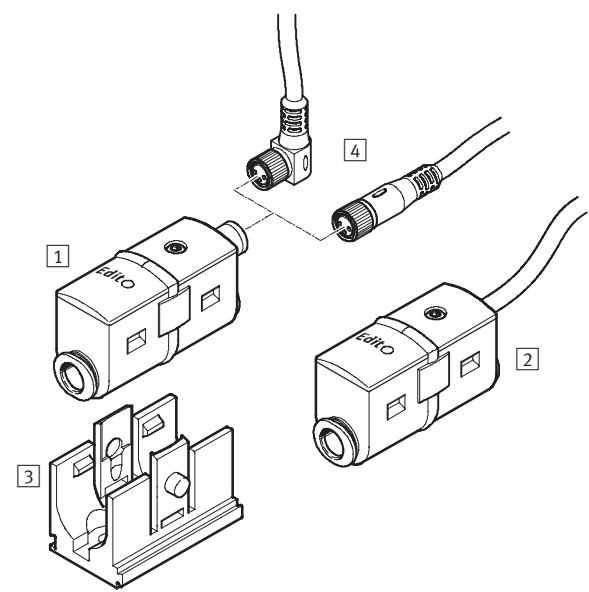
LT = Lead time

1D typically ships same day/next day

3D typically ships within 3 days

Pressure Switches SDE5

Accessories



Accessories	
1	Pressure switch SDE-5-...-M8 with plug M8x1
2	Pressure switch SDE-5-...-K with cable
3	Linkable wall bracket with clip-in facility for switches (included in the scope of delivery)
4	Connecting cable NEBU-M8

Ordering Data – Connecting Cables			
Technical Data → Internet: nebu			
	Number of wires	Cable length [m]	Type
M8x1, straight socket			
	3	2.5	NEBU-M8G3-K-2.5-LE3
	4	2.5	NEBU-M8G4-K-2.5-LE4

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Pressure Sensors SDE1, with Display

Product Overview



- Five pressure measuring ranges
- Measurement of relative or differential pressure
- Switch outputs PNP, NPN and with analog current or voltage output
- LCD or illuminated LCD display
- Wide range of connection and mounting options

Detailed product information → www.festo.com/catalog/sde1

Product Overview							
Method of measurement	Measured variable	Pressure measuring range [bar]	Switching function	Pneumatic connection	Type of mounting	Electrical output	
						Digital	Analog
Piezoresistive pressure sensor with display	Relative pressure Differential and relative pressure	0 ... -1	Freely programmable	Male thread R $\frac{1}{8}$, R $\frac{1}{4}$ Female thread G $\frac{1}{8}$ Push-in fitting for tubing OD 4 mm	On DIN H-rail	PNP	–
		-1 ... +1			Via wall/surface bracket	2x PNP	–
		0 ... 2			On service unit	PNP	0 ... 10 V
		0 ... 6			Front panel mounting	PNP	4 ... 20 mA
		0 ... 10				2x PNP	4 ... 20 mA
						NPN	–
						2x NPN	–
						NPN	0 ... 10 V
						NPN	4 ... 20 mA

Contents	
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– Ordering Data	→ 177
– Accessories	→ 178

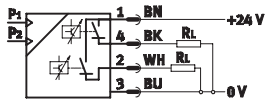
Note: All metric products can be used within inch tubing systems via hybrid fittings (→ Overview on page 271)

Pressure Sensors SDE1, with Display

Technical Data

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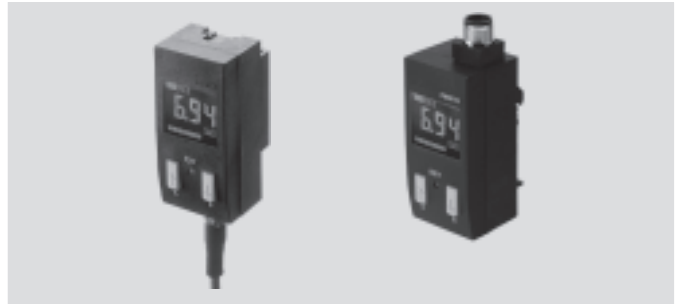
Technical Data



e.g. with 2 switch outputs PNP

Materials

Housing: Polyamide, reinforced
polyacetate



General Technical Data

Design		
Pressure measuring range	[bar]	0 ... 10
Measured variable		Relative pressure
		Differential pressure
Pneumatic connection		R $\frac{1}{8}$
		R $\frac{1}{4}$
		G $\frac{1}{8}$
		QS-4
Type of display		Back illuminated LCD
		Illuminated LCD
Accuracy FS ¹⁾		±2%
Setting options		Teach-in
Type of mounting		Via DIN H-rail
		Via wall/surface bracket
		Front panel mounting
Electrical data		
Switch output		PNP
		NPN
Analog output	[V]	0 ... 10
Switching element function		Switchable
Switching function		Freely programmable
Operating voltage range DC	[V]	15 ... 30
Max. output current	[mA]	150
Electrical connection		Plug M8x1, round design to EN 60 947-5-2
Protection against short circuit		Pulsed
Protection against polarity reversal		For all electrical connections
Operating and environmental conditions		
Operating medium		Filtered compressed air, lubricated or unlubricated, grade of filtration 40µm
Ambient temperature	[°C]	0 ... 50
CE mark (see declaration of conformity)		In accordance with EU EMC directive
Protection class		IP65
Certification		c UL us - Recognized (OL)
		C-Tick
Materials		
Housing		Polyacetate, reinforced, polyamide

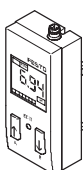


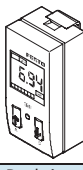
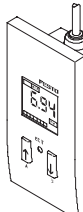
1) % FS = % of measuring range's final value (full scale)

Note: This product conforms with the ISO 1179-1 standard and the ISO 228-1 standard.

Pressure Sensors SDE1, with Display

Technical Data

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Ordering Data							
Variant	Pressure measuring range [bar]	Switch output	Analog output	Electrical connection	Type of display	Type	LT
Push-in connector QS-4, for DIN H-rail mounting, differential pressure and relative pressure measurement							
	0 ... 10	2x PNP	–	Plug, M8x1, 4-pin	LCD ¹⁾	SDE1-D10-G2-HQ4-C-P2-M8	1D
Female thread G1/8, for wall or surface mounting, relative pressure measurement ²⁾							
	0 ... 10	PNP	0 ... 10 V	Plug, M8x1, 4-pin	Illuminated LCD	SDE1-D10-G2-W18-L-PU-M8	1D
Male thread R1/8, mounting on service unit (D series), relative pressure measurement							
	0 ... 10	PNP	–	Plug, M8x1, 3-pin	LCD ¹⁾	SDE1-D10-G2-R18-C-P1-M8	1D
Male thread R1/4, mounting on service unit (D series), relative pressure measurement							
	0 ... 10	PNP	–	Plug, M8x1, 3-pin	LCD ¹⁾	SDE1-D10-G2-R14-C-P1-M8	1D
Push-in connector QS-4, for front panel mounting, differential pressure and relative pressure measurement							
	0 ... 10	2x PNP	–	Plug, M8x1, 4-pin	Illuminated LCD	SDE1-D10-G2-FQ4-L-P2-M8	1D

1) Back illuminated

2) Adapter plate SDE1-...-W... included in the scope of delivery.

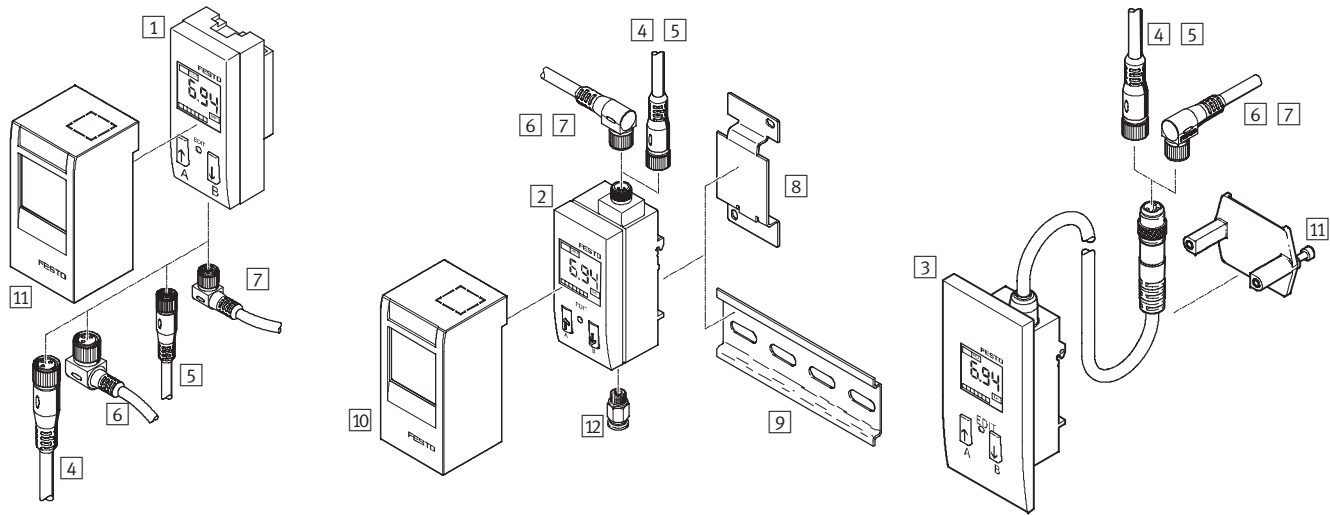
LT = Lead time

1D typically ships same day/next day

3D typically ships within 3 days


Pressure Sensors SDE1, with Display


Peripherals Overview



Accessories	
1	Pressure sensor SDE1-...-R14
2	Pressure sensor SDE1-...-H18, SDE1-...-W18
3	Pressure sensor SDE1-...-FQ4
5	Connecting cable NEBU-M12G... with straight socket
6	Connecting cable NEBU-M8G... with straight socket
7	Connecting cable NEBU-M12W... with angled socket

Accessories	
8	Connecting cable NEBU-M8W... with angled socket
9	Adapter plate SDE1-...-W-...
10	Mounting rail to DIN EN 60715
11	Safety guard SDE1-SH
12	Clamping plate (included in scope of delivery with SDE1-...-FQ4)
13	Push-in fitting QS-1/8

Ordering Data – Connecting Cables			
Technical Data → Internet: nebu			
	Number of wires	Cable length [m]	Type
M8x1, straight socket			
	3	2.5	NEBU-M8G3-K-2.5-LE3
	4	2.5	NEBU-M8G4-K-2.5-LE4

Ordering Data – Push-in Fittings		
Technical Data → Internet: quick star		
	For tubing O.D. [mm]	Type
	4	QS-G1/8-4
	6	QS-G1/8-6
	8	QS-G1/8-8

Pressure Sensors SPAB, with Display

Product Range Overview



- Pressure measuring range –1 ... +1 or 0 ... 10 bar
- Relative pressure measurement
- Pressure supply port NPT1/8-27
- Switch output PNP, NPN and analog output
- Two-part, multi-colored display
- Copy function (settings can be transferred from device to device)
- Simple commissioning thanks to intuitive operation
- Compact design 30x30 mm

Detailed product information → www.festo.com/catalog/spab

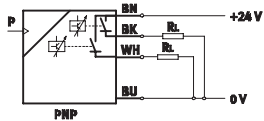
Product Range Overview							
Method of measurement	Measured variable	Pressure measuring range [bar]	Switching function	Pneumatic connection		Electrical output	
				Male thread	Female thread	Digital	Analog
Piezoresistive pressure sensor with display	1x relative pressure	–1 ... +1 or 0 ... 10	Freely programmable	G1/8, R1/8 or NPT1/8-27	M5	1x PNP	1 ... 5 V
						2x PNP	–
						1x NPN	1 ... 5 V
						2x NPN	–

Contents	
– Technical Data	→ 180
– Ordering Data	→ 180
– Accessories	→ 181

Note: All metric products can be used within inch tubing systems via hybrid fittings (→ Overview on page 271)

Pressure Sensors SPAB, with Display

Technical Data



e.g. with 1 or 2 switching outputs PNP, switchable, with cable

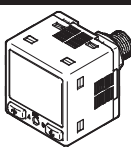
Materials

Housing: Reinforced acrylic butadiene styrene, reinforced polybutylene terephthalate



General Technical Data					
Design					
Pressure measuring range	[bar]	-1 ... +1		0 ... 10	
Measured variable		Relative pressure			
Pneumatic connection		Male thread NPT1/8-27, Female thread M5			
Type of display		Multi-colored illuminated LCD			
Accuracy FS ¹⁾		±1%		±2%	
Setting options		Via display and buttons; Teach-in			
Type of mounting		Screw-in; Via accessories			
Electrical data					
Switch output		2x PNP or 2x NPN	1x PNP or 1x NPN	2x PNP or 2x NPN	1x PNP or 1x NPN
Analog output	[V]	–	1 ... 5	–	1 ... 5
Switching element function		Switchable			
Switching function		Freely programmable			
Operating voltage range		[V DC]	12 ... 24		
Max. output current		[mA]	100		
Electrical connection		Plug M8x1, 4-pin, round design to EN 60 947-5-2			
		Cable, 4-wire			
Protection class		IP40			
Operating and environmental conditions					
Operating medium		Filtered compressed air, unlubricated, grade of filtration 40 µm			
Ambient temperature		[°C]	-10 ... +50		
CE mark (see declaration of conformity)		In accordance with EU EMC directive			
Certification		UL - Recognized (OL)			
		C tick			
Materials					
Housing		Reinforced acrylic butadiene styrene, reinforced polybutylene terephthalate			
Note on materials		Conforms to RoHS			
		Contains paint wetting impairment substances			

1) % FS = % of measuring range (full scale)

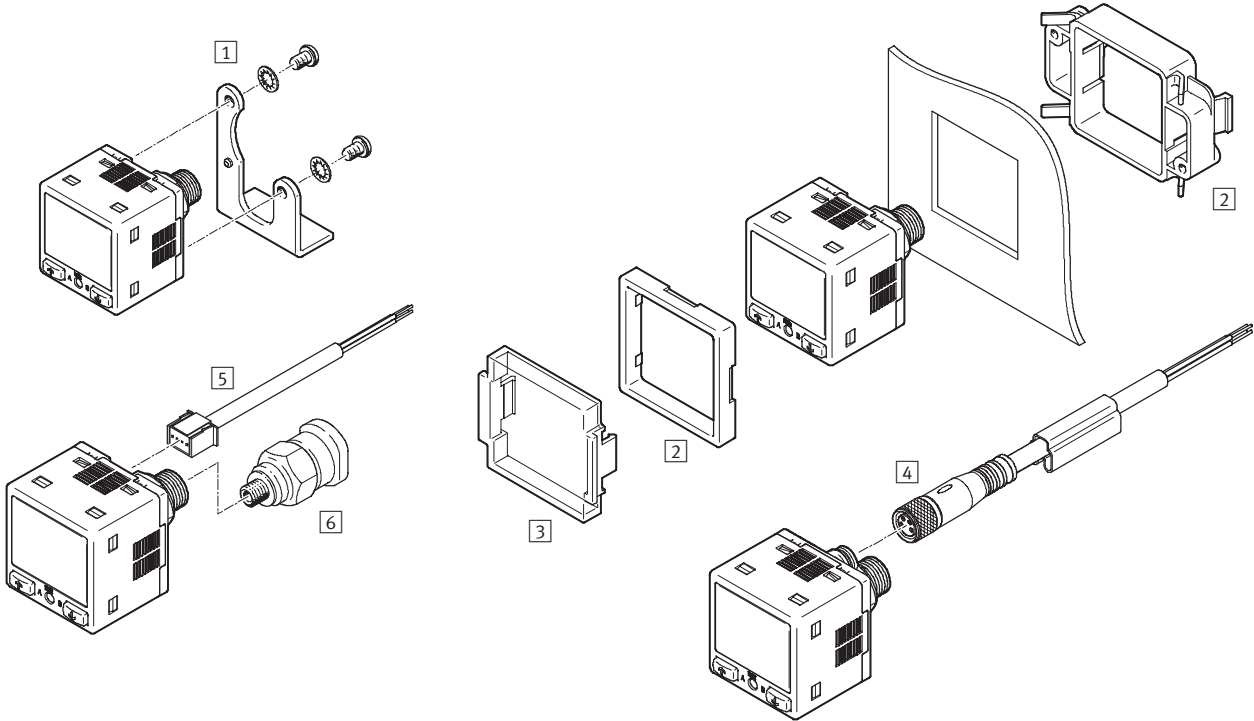
Ordering Data						
Version	Electrical connection	Electrical output		Pressure measuring range [bar]		LT
				-1 ... +1	0 ... 10	
		Digital	Analog	Type	Type	
	Cable ¹⁾	1x PNP	1 ... 5 V	SPAB-B2R-N18-PB-K1	SPAB-P10R-N18-PB-K1	1D
		2x PNP	–	SPAB-B2R-N18-2P-K1	SPAB-P10R-N18-2P-K1	1D
		1x NPN	1 ... 5 V	SPAB-B2R-N18-NB-K1	SPAB-P10R-N18-NB-K1	1D
		2x NPN	–	SPAB-B2R-N18-2N-K1	SPAB-P10R-N18-2N-K1	1D
	Plug	1x NPN	1 ... 5 V	SPAB-B2R-N18-NB-M8	SPAB-P10R-N18-NB-M8	1D

1) Connecting cable NEBU-L1... (2.5 m long) included in scope of delivery.

LT = Lead time 1D typically ships same day/next day 3D typically ships within 3 days

Pressure Sensors SPAB, with Display

Peripherals Overview



Accessories			
1	Mounting bracket		
2	Front panel installation kit		
3	Safety guard		

Ordering Data – Connecting Cables			
Technical Data → Internet: nebu			
	Number of cores	Cable length [m]	Type
M8x1, straight socket			
	4	2.5	NEBU-M8G4-K-2.5-LE4

1) Included in the scope of delivery with SPAB-...-K1

Accessories			
4	Connecting cable NEBU-M8...4		
5	Connecting cable NEBU-L1G4 with square, straight socket		
6	Push-in fitting QSM-M5		

Ordering Data – Accessories		
	Description	Type
	Mounting bracket	SAMH-P4-A
	Front panel installation kit	SAMH-P4-F
	Safety guard	SACC-P4-G

Ordering Data – Push-in Fittings			
Technical Data → 289			
	Pneumatic connection	For tubing O.D. [mm]	Type
	M5	4	QSM-M5-4
		6	QSM-M5-6

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Proximity Sensors SMT/SME

Product Overview



- Versions for T-slot and -slot
- Switch output contactless or via reed contacts
- Wide range of mounting and connection options
- Heat and corrosion-resistant designs
- Free of copper and PTFE

Detailed product information → www.festo.com/catalog/sm

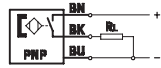
Product Overview							
Design	Type of mounting	Measuring principle	Type	Operating voltage range	Switch output	Switching element function	→ Page
For T slot	Insertable in the slot from above, flush with the cylinder profile	Magneto-resistive	SMT-8M	10 ... 30 V DC	PNP/NPN	N/O contact N/C contact	184
		Magnetic reed	SME-8M	5 ... 30 V AC/DC	Contacting	N/O contact	185
	Insertable in the slot lengthwise, flush with the cylinder profile	Magnetic reed	SME-8	12 ... 30 V AC/DC	Contacting	N/O contact N/C contact	186
For C-slot	Insertable in the slot lengthwise	Magneto-resistive	SMT-10	10 ... 30 V DC	PNP/NPN	N/O contact	189
		Magnetic reed	SME-10	12 ... 27 V AC/DC	Contacting	N/O contact	190

Contents			
Sensors for T-slot		Sensors for C-slot	
– SMT-8M	→ 184	– SMT-10	→ 189
– SME-8M	→ 185	– SME-10	→ 190
– SME-8	→ 186	– Accessories	→ 191
– Accessories	→ 187		

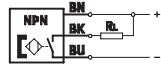
Proximity Sensors SMT-8M, for T-slot

Technical Data – Magneto-resistive

Technical Data – SMT-8M



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



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


Materials
Housing: Polyamide
Cable sheath: Polyurethane



Technical Data		
Type of mounting	Screwed in slot, insertable from above, flush with cylinder profile	
Electrical connection	Cable, 3-wire	Cable with plug, turnable, M8x1, 3-pin
Cable length [m]	0.2 ... 30	
Cable attribute	Standard + Drag chain	
Test conditions Standard + Drag Chain	Drag chain: 5 million cycles, bending radius 75 mm	
	Resistance to bending: To Festo standard; test conditions on request	
Operating voltage range DC [V]	10 ... 30	
Max. output current [mA]	100	
Max. switching capacity DC [W]	3.0	
Protection against short circuit	Pulsed	
Protection against overloading	Yes	
Protection against polarity reversal	For all electrical connections	
Protection class	IP65, IP68	

Operating and Environmental Conditions		
Ambient temperature [°C]	-20 ... +70	
Ambient temperature with flexible cable installation [°C]	-5 ... +70	
CE mark (see declaration of conformity)	In accordance with EU EMC directive	
Certification	c UL us - Listed (OL) C-Tick	

Materials	
Housing	Polyamide; polyurethane; high-alloy stainless steel
Cable sheath	Polyurethane

Ordering Data						
	Switch output	Electrical connection		Cable length	Type	LT
		Cable	Cable with plug, turnable			
			M8x1			
				[m]		
	N/O contact					
	PNP	3-wire	–	2.5	SMT-8M-PS-24V-K-2,5-OE	1D
		–	3-pin	0.3	SMT-8M-PS-24V-K-0,3-M8D	1D
	NPN	3-wire	–	2.5	SMT-8M-NS-24V-K-2,5-OE	1D
		–	3-pin	0.3	SMT-8M-NS-24V-K-0,3-M8D	1D

LT = Lead time 1D typically ships same day/next day 1W typically ships within 1 week

Proximity Sensors SME-8M, for T-slot

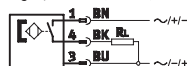
Technical Data – Magnetic reed

FESTO

Technical Data – SME-8M



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



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

Materials

Housing: Polyamide


Cable sheath: Polyurethane



Technical Data		
Type of mounting	Screwed in slot, insertable from above, flush with cylinder profile	
Electrical connection	Cable, 3-wire	Cable with plug, turnable, M8x1, 3-pin
Cable length [m]	0.2 ... 10	
Cable attribute	Standard + Drag chain	
Test conditions Standard + Drag Chain	Drag chain: 5 million cycles, bending radius 75 mm	
	Resistance to bending: To Festo standard; test conditions on request	
Operating voltage range DC [V]	5 ... 30	
Operating voltage range AC [V]	5 ... 30	
Max. output current [mA]	500	
Max. output current in mounting kits [mA]	80	
Max. switching capacity DC [W]	10.0	
Max. switching capacity AC [VA]	10.0	
Max. switching capacity DC in mounting kits [W]	2.4	
Max. switching capacity AC in mounting kits [VA]	2.4	
Protection against short circuit	No	
Protection against overloading	Not available	
Protection against polarity reversal	No	
Protection class	IP65, IP68	

Operating and Environmental Conditions		
Ambient temperature [°C]	-20 ... +70	
Ambient temperature with flexible cable installation [°C]	-5 ... +70	
CE mark (see declaration of conformity)	In accordance with EU EMC directive	
Certification	c UL us - Listed (OL) C-Tick	

Materials	
Housing	Polyamide; polyurethane; high-alloy stainless steel
Cable sheath	Polyurethane

Ordering Data						
	Switch output	Electrical connection		Cable length [m]	Type	LT
		Cable	Cable with plug, turnable			
			M8x1			
	N/O contact					
	Contacting, bipolar	3-wire	–	2.5	SME-8M-DS-24V-K-2,5-OE	1D
		–	3-pin	0.3	SME-8M-DS-24V-K-0,3-M8D	1D

LT = Lead time

1D typically ships same day/next day

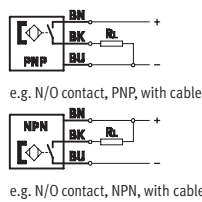
1W typically ships within 1 week

Proximity Sensors SME-8, for T-slot

Technical Data – Magnetic Reed

FESTO

Technical Data – SMT-8




Materials
Housing: Polyamide
Cable sheath: Polyurethane
Free of copper and PTFE



Technical Data		SME-8-O
Type of mounting		Clamped in T-slot, insertable in slot lengthwise Flush with cylinder profile
Switch output		Contacting, bipolar
Switching element function		N/C contact
Electrical connection		Cable, 3-wire
Operating voltage range DC	[V]	12 ... 30
Operating voltage range AC	[V]	12 ... 30
Max. output current	[mA]	50
Max. switching capacity DC	[W]	1.5
Protection against short circuit		No
Protection against overloading		Not available
Protection against polarity reversal		No
Protection class		IP67

Operating and Environmental Conditions		SME-8-O
Ambient temperature	[°C]	–20 ... +60
Ambient temperature with flexible cable installation	[°C]	–5 ... +60
CE mark (see declaration of conformity)		In accordance with EU EMC directive

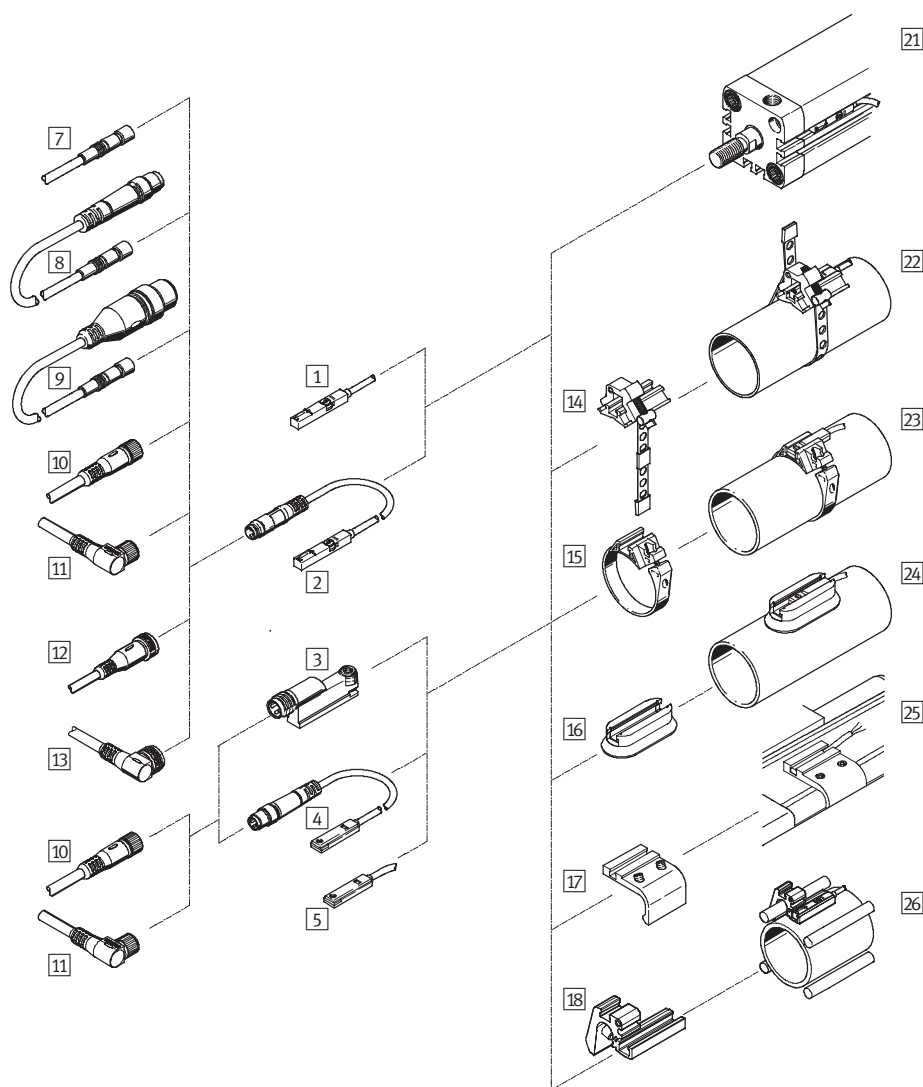
Materials		SME-8-O
Housing		Polyethylene terephthalate
Cable sheath		Polyurethane

Ordering Data							
	Switch output	Electrical connection			Cable length [m]	Type	LT
		Cable	Cable with plug M8x1	Plug M8x1			
N/C contact							
	Contacting, bipolar	3-wire	–	–	7.5	SME-8-O-K-LED-24	1D

LT = Lead time 1D typically ships same day/next day 1W typically ships within 1 week

Proximity Sensors SMT/SME-8, for T-slot

Peripherals Overview






Mounting Attachments and Accessories	
Proximity sensors	
1	SMT/SME-8M-...-OE, with cable
2	SMT/SME-8M-...-M..., with cable and plug
3	SMT/SME-8-SL-..., with plug
4	SMT/SME-8-S-..., with cable and plug
5	SMT/SME-8-K-..., with cable
	CRSMT-8-K-..., with cable, corrosion-resistant
Connecting cables	
7	NEBU-M5...-5-Q3-LE3
8	NEBU-M5...-1-Q3-M8G3
9	NEBU-M5...-1-Q3-M12G4
10	NEBU-M8G3, SIM-M8-3GD
11	NEBU-M8W3, SIM-M8-3WD
12	NEBU-M12G5, SIM-M12-3GD
13	NEBU-M12W5, SIM-M12-3WD

Mounting Attachments and Accessories	
Mounting kits and accessories	
14	Mounting kit SMBR-8-8/100-S6, heat-resistant
15	Mounting kit SMBR
16	Mounting kit CRSMB, corrosion-resistant
17	Mounting kit SMB-8-FENG
18	Mounting SMBZ-8-...
	- Clip SMBK-8
Drive units	
21	Drives with T-slot
22	Round cylinders
23	Round cylinders
24	Round cylinders
25	Standard cylinders DNC, DNCB, DNCKE
26	Drives with tie or mounting rod

Proximity Sensors SMT/SME-8, for T-slot

Accessories

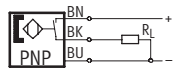
Ordering Data – Connecting Cables			
Technical Data → Internet: nebu			
	Number of wires	Cable length [m]	Type
M8x1, straight socket			
	3	2.5	NEBU-M8G3-K-2.5-LE3
	4	2.5	NEBU-M8G4-K-2.5-LE4

Ordering Data – Mounting Attachments		
Technical Data → Internet: smbr		
	For Ø	Type
	8	SMBR-8-8
	10	SMBR-8-10
	12	SMBR-8-12
	16	SMBR-8-16
	20	SMBR-8-20
	25	SMBR-8-25
	32	SMBR-8-32
	40	SMBR-8-40
	50	SMBR-8-50
	63	SMBR-8-63
	–	SMBK-8

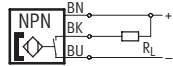
Proximity Sensors SMT-10, for C-slot

Technical Data – Magneto-resistive

Technical Data – SMT/SME-10



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



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

Materials
 Housing: Polyamide
 Cable sheath: Polyurethane
 Free of copper and PTFE



Technical Data		
Type of mounting	Clamped in C-slot, insertable in slot lengthwise	
Electrical connection	Cable, 3-wire	Cable with plug, turnable M8x1, 3-pin
Operating voltage range DC	[V]	10 ... 30
Max. output current	[mA]	200
Max. switching capacity DC	[W]	6.0
Protection against short circuit	Yes	
Protection against overloading	Yes	
Protection against polarity reversal	For all electrical connections	
Protection class	IP65, IP67	

Operating and Environmental Conditions		
Ambient temperature	[°C]	–20 ... +60
Ambient temperature with flexible cable installation	[°C]	–5 ... +60
CE mark (see declaration of conformity)	In accordance with EU EMC directive	

Materials	
Housing	Polyamide
Cable sheath	Polyurethane

Ordering Data						
	Switch output	Electrical connection		Cable length [m]	Type	LT
		Cable	Cable with plug, turnable M8x1			
	N/O contact					
	PNP	–	3-pin	0.3	SMT-10-PS-SL-LED-24	1D
	NPN	–	3-pin	0.3	SMT-10-NS-SL-LED-24	1D

LT = Lead time 1D typically ships same day/next day 1W typically ships within 1 week

Proximity Sensors SME-10, for C-slot

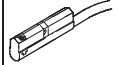
Technical Data – Magnetic reed

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Technical Data		
Type of mounting	Clamped in C-slot, insertable in slot lengthwise	
Electrical connection	Cable, 3-wire	Cable with plug, turnable M8x1, 3-pin
Operating voltage range DC	[V]	12 ... 27
Operating voltage range AC	[V]	12 ... 27
Max. output current	[mA]	100
Max. switching capacity DC	[W]	1.0
Max. switching capacity AC	[VA]	1.0
Protection against short circuit	No	
Protection against overloading	Not available	
Protection against polarity reversal	No	
Protection class	IP65, IP67	

Operating and Environmental Conditions		
Ambient temperature	[°C]	–20 ... +70
Ambient temperature with flexible cable installation	[°C]	–5 ... +70
CE mark (see declaration of conformity)	In accordance with EU EMC directive	

Materials	
Housing	Polyphenylene sulphide
Cable sheath	Polyurethane

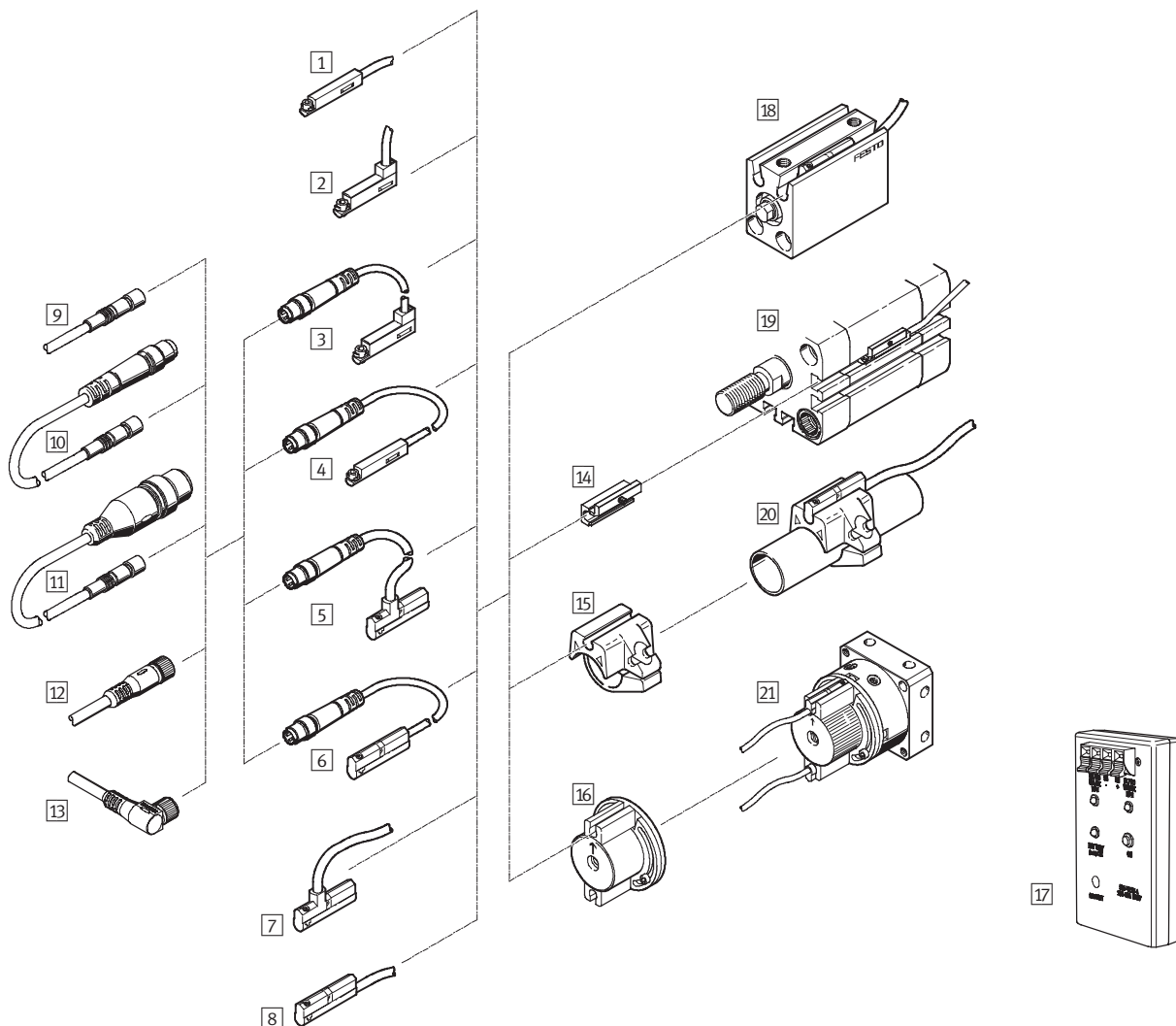
Ordering Data						
	Switch output	Electrical connection		Cable length [m]	Type	LT
		Cable	Cable with plug, turnable M8x1			
	N/O contact					
	Contacting, bipolar	3-wire	–	2.5	SME-10-KL-LED-24	1D
		–	3-pin	0.3	SME-10-SL-LED-24	1D

LT = Lead time 1D typically ships same day/next day 1W typically ships within 1 week

Proximity Sensors SMT/SME-10, for C-slot

Peripherals Overview

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Mounting Attachments and Accessories

Proximity sensors

- 1 SM...-10F...-K2,5L-OE, with cable
- 2 SM...-10F...-K2,5Q-OE, with cable
- 3 SM...-10F...-K0,3Q-M..., with cable and plug
- 4 SM...-10F...-K0,3L-M..., with cable and plug
- 5 SM...-10-KQ..., with cable and plug
- 6 SM...-10-KL..., with cable and plug
- 7 SM...-10-SQ..., with cable
- 8 SM...-10-SL..., with cable

Connecting cables

- 9 Connecting cable NEBU-M5...-5-Q3-LE3
- 10 Connecting cable NEBU-M5...-1-Q3-M8G3
- 11 Connecting cable NEBU-M5...-1-Q3-M12G4
- 12 Connecting cable NEBU-M8G3
- 13 Connecting cable NEBU-M8W3

Mounting Attachments and Accessories

Mounting kits and accessories

- 14 Mounting kit SMBN-10
- 15 Mounting kit SMBR-10...
- 16 Mounting kit WSM...-SME-10
- 17 Sensor tester SM-TEST-1
- Clip SMBK-10


Drive units





- 18 Drive units with C-slot
- 19 Drive units with T-slot
- 20 Round cylinders
- 21 Swivel module DSM

Proximity Sensors SMT/SME-10, for C-slot

Accessories



Ordering Data – Connecting Cables			
Technical Data → Internet: nebu			
	Number of wires	Cable length [m]	Type
M8x1, straight socket			
	3	2.5	NEBU-M8G3-K-2.5-LE3
		2.5	NEBU-M8G4-K-2.5-LE4

Ordering Data – Mounting Attachments		
	For Ø	Type
	6	WSM-6-SME-10
	8	WSM-8-SME-10
	10	WSM-10-SME-10
	6	SMBR-10-6
	8	SMBR-10-8
	10	SMBR-10-10
	12	SMBR-10-12
	16	SMBR-10-16
	20	SMBR-10-20
	25	SMBR-10-25
	32	SMBR-10-32
	40	SMBR-10-40
	50	SMBR-10-50
	63	SMBR-10-63
	125 ... 320	SMBN-10
	–	SMBK-10

Position Transmitters SMAT-8E, for T-slot

Product Overview



- Position measuring range 50 mm
- Analog output 0 ... 10 V and 0 ... 20 mA
- Integrated out-of-range detection
- Repeat accuracy $\pm 0,064$ mm
- Direct mounting in T-slot

Detailed product information → www.festo.com/catalog/smat

Product Overview						
Design	Type of mounting	Measuring principle	Operating voltage range	Analog output	Switch output	Switching element function
For T-slot	Insertable in slot lengthwise	Magnetic	15 ... 30 V DC	0 ... 10 V 0 ... 20 mA	–	–

Contents	
– Features	→ 194
– Selection Aid	→ 195
– Technical Data	→ 196
– Ordering Data	→ 196
– Accessories Overview	→ 197

Position Transmitters SMAT-8E, for T-slot

Key features

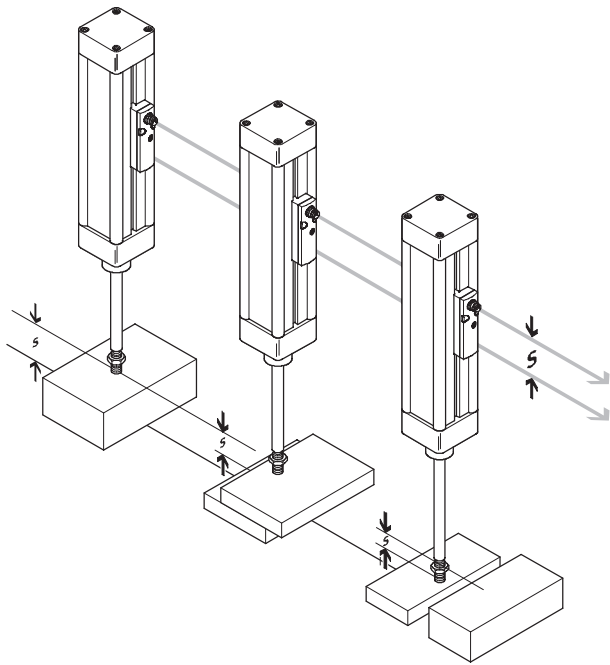
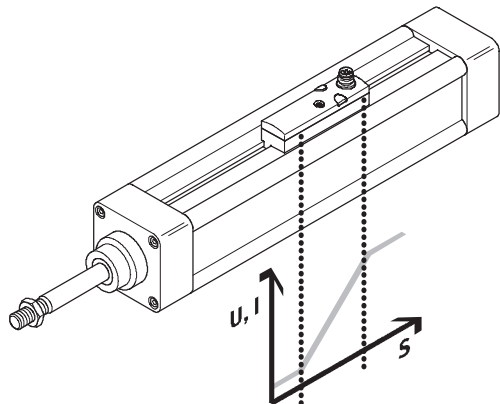
Design

The SMAT-8E is a sturdy magnetic measuring system with a 50 mm working range, regardless of the drive unit used. It provides a standardized

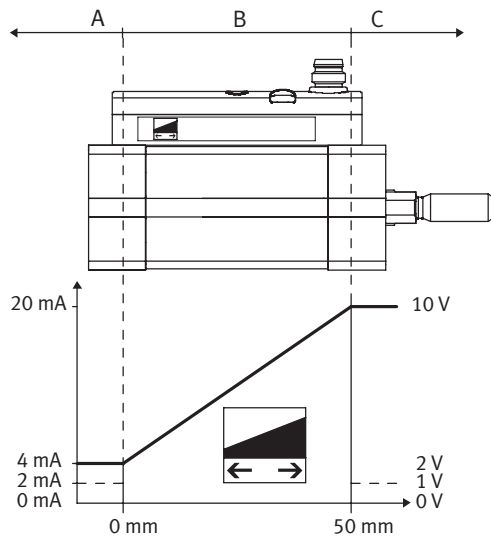
analog current and voltage signal via an M8x1 plug connection. The transmitter can thus be connected directly to the analog input of a

programmable logic controller. The piston position of the pneumatic cylinder is detected by contactless sensing and the travel distance can be

measured between any set switching points with typical repeatability of 0.1 mm.



Analog Output as a Function of the Piston Position



Analog output		Description	Area
[V]	[mA]		
0	0	No valid signal, e.g. no operating voltage	–
1	2	Piston outside of measuring range after operating voltage is switched on	A, C
2	4	Piston has left the measuring range in the negative direction	A
10	20	Piston has left the measuring range in the positive direction	C
2 ... 10	4 ... 20	Piston within the measuring range at the relevant position	B

Note:

Sensors that detect magnetic fields, such as the position transmitter SMAT, must not be secured onto the drive

using mountings made from ferritic materials, as this can lead to malfunction.

Position Transmitters SMAT-8E, for T-slot

Selection Aid

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Drive	Piston Ø	Suitability	Drive	Piston Ø	Suitability
Standards-based cylinders			Drives with linear guide		
Standard cylinders DSNU, ESNU		o	Mini slides SLS, SLF, SLT		–
Standard cylinders DSN, ESN		o	Twin cylinders SPZ	Ø 10, 25	o
Standard cylinders DNCB		++		Ø 16	++
Standard cylinders DNC		++		Ø 32	–
Standard cylinders DNG		–	Slide units SLZ		–
Standard cylinders CDN-...-R with sensor strip		–	Guided cylinders DFP	Ø 10 ... 16	–
Standard cylinders DNU		–		Ø 25 ... 80	o
Standard cylinders ADN		++	Mini guided drives DFC		–
Cylinders with piston rod			Guided drives DFM	Ø 12, 25, 50	++
Compact cylinders ADVU, AEVU		++		Ø 16, 20, 32, 40, 63, 80	+
Short-stroke cylinders ADVC, AEVC	Ø 6 ... 25	–		Ø 100	–
	Ø 32 ... 100	++	Guided drives DFM-B	Ø 12, 16, 25, 32	–
Flat cylinders EZH-10/40-40-A-B		+		Ø 20	+
Flat cylinders DZF	Ø 12, 25, 32, 40, 63	+		Ø 40, 50	++
	Ø 18, 50	++		Ø 63	–
Flat cylinders DZH	Ø 16 ... 25	+	Linear units SLE		–
	Ø 32 ... 63	–	Twin cylinders DPZC		–
Round cylinders DSNU, ESNU		o	Twin cylinders DPZ		–
Round cylinders DSW, ESW		o	Handling units		
Round cylinders DSEU, ESEU		o	Linear modules HMP		–
Multimount cylinders DMM, EMM		+	Linear modules HMPL		–
Round cylinders CRDG		o	Handling modules HSP		–
Round cylinders CRDSW		o	Feed separators HPV		–
Standard cylinders CRHD		o	Three-point grippers HGD		–
Standard cylinders CRDSNU		o	Parallel grippers HGP		–
Standard cylinders CRDNG		–	Parallel grippers HGPP		–
Standard cylinders CRDNGS		–	Parallel grippers HGPT		–
Rodless cylinders			Angle grippers HGW		–
Linear drives DGC		–	Radial grippers HGR		–
Linear drives DGP, DGPL		–	Cushioning components		
Linear drives SLG		–	Hydraulic stop elements YSRWJ		–
Linear drives DGO		–	Electrical positioning systems		
Linear drives SLM	Ø 12, 40	++	Toothed belt axes DGE-ZR		–
	Ø 16 ... 32	o	Spindle axes DGE-SP		–
Semi-rotary drives			System components		
Swivel modules DSM	Ø 6 ... 10	–	Heavy-duty guides HD		–
Semi-rotary drives DRQ		–	Valve actuators		
Semi-rotary drives DRQD	Ø 6, 8, 12, 40, 50	–	Copac linear actuators DLP-A		–
	Ø 16 ... 32	++			
Function-oriented drives					
Stopper cylinders STA, STAF		–			
Linear/swivel clamps CLR		o			
Swivel/linear units DSL		–			

- ++ Unrestricted use
- + Sensor function guaranteed without restriction; installation direction and clamping are drive-specific
- o Upon request
- Not suitable

Position Transmitters SMAT-8E, for T-slot

Technical Data

Materials

Housing: Reinforced polyamide,
polycarbonate

Technical Data		
Design		
Design		For T-slot
Type of mounting		Clamped, insertable in slot lengthwise
Status display		Red LED = outside measuring range
Electrical data		
Analog output	[V]	0 ... 10
	[mA]	0 ... 20
Typical scanning interval	[ms]	2.85
Displacement resolution	[mm]	0.064
Electrical connection		Plug, M8x1, 4-pin
Operating voltage range	[V DC]	15 ... 30
Protection against short circuit		Yes
Protection against overloading		Yes
Protection against polarity reversal		For all electrical connections
Measuring principle		Magnetic
Position measuring range	[mm]	48 ... 52
Repetition accuracy, analog value	[mm]	±0.064
Typical linearity error	[mm]	0.25
Max. speed of travel	[m/s]	3
Protection class		IP65, IP67
Operating and environmental conditions		
Ambient temperature	[°C]	–20 ... +50 ¹⁾
CE mark (see declaration of conformity)		In accordance with EU EMC directive
Certification		c UL us - Listed (OL)
		C-Tick
Materials		
Housing		Reinforced polyamide
		Polycarbonate

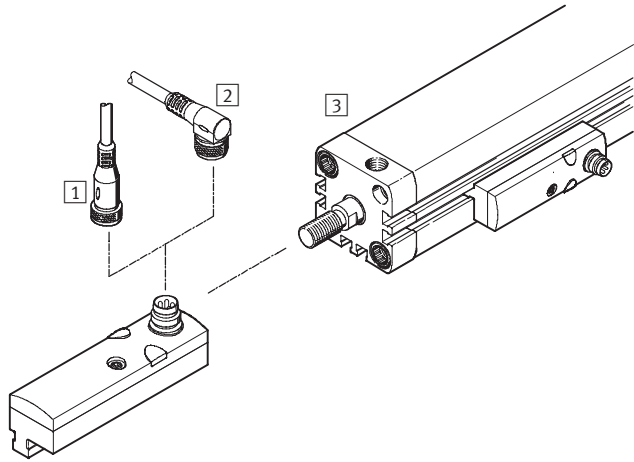
1) Extended ambient temperature range on request

Ordering Data				
	Analog output	Electrical connection	Type	LT
	0 ... 10 V 0 ... 20 mA	Plug, M8x1, 4-pin	SMAT-8E-S50-IU-M8	1D


LT = Lead time 1D typically ships same day/next day 3D typically ships within 3 days

Position Transmitters SMAT-8E, for T-slot

Peripherals Overview



Accessories		→ Page/Internet
1	Connecting cable NEBU-M8G4	197
2	Connecting cable NEBU-M8W4	197
3	Fitted to drive with T-slot	195

Ordering Data – Connecting Cables				Technical Data → Internet: nebu
	Number of wires	Cable length [m]	Type	
Straight plug socket, open end				
	4	2.5	NEBU-M8G4-K-2.5-LE4	

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Position Transmitter SMAT-8M, for T-slot



- Position measuring range up to 40 mm
- Analog output 0 ... 10 V
- Integrated out-of-range sensor
- Repetition accuracy
on grippers ± 0.025 mm
on drives ± 0.1 mm
- Direct mounting in T-slot

Detailed product information → www.festo.com/catalog/smat

Product Range Overview				
Measuring principle	Analog output [V]	Operating voltage range [V DC]	Position measuring range [mm]	Electrical connection
Magnetic	0 ... 10	15 ... 30	≤ 40	Cable with plug M8x1, 4-pin

Contents	
– Features	→ 200
– Technical Data	→ 201
– Ordering Data	→ 201
– Accessories Overview	→ 202

Position Transmitter SMAT-8M, for T-slot

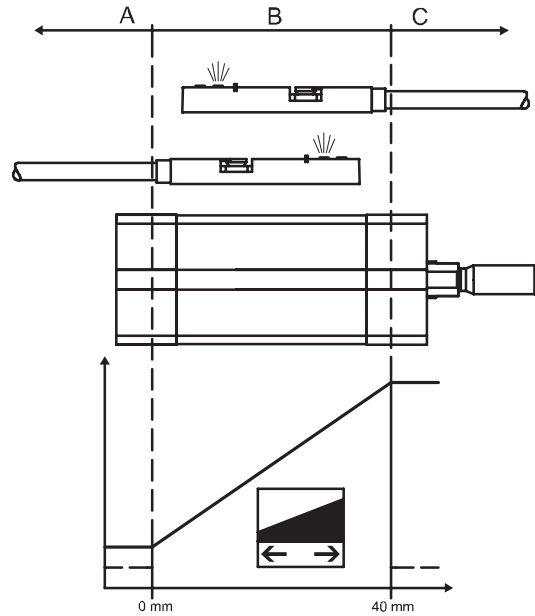
Key features

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Position Measuring Range

The SMAT-8M supplies a displacement-proportional analog output signal of 0 ... 10 V in the position measuring range of up to 40 mm (depending on the drive used). In other words, the output voltage increases when the piston moves in the direction of the piston rod. When the piston retracts, the output voltage drops. The installation direction of the SMAT-8M is irrelevant in this case. To achieve the best possible function on the drive in question, the position measuring range must be initialised on the drive during installation.

As a visual aid, the green LED lights up within the position measuring range (B) and the red LED lights up outside of the measuring range (A)/(C) in normal operation.

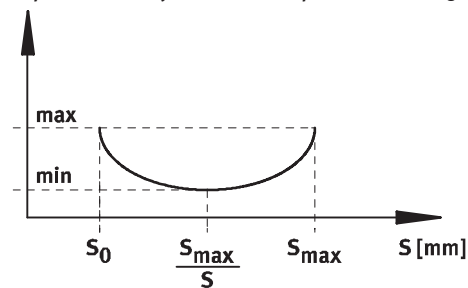


Repetition Accuracy

The repetition accuracy is ± 0.025 mm on grippers and ± 0.1 mm on standard drives.

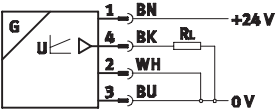
With standard drives, the repetition accuracy in the centre of measuring range is lower than at the edge. It is ± 0.06 mm at a distance of ± 5 mm from the centre, for example. For critical applications, it is recommended that the SMAT-8M be mounted so as to have the relevant measuring points close to 5.5 V.

Repetition accuracy as a function of position measuring range S



Position Transmitter SMAT-8M, for T-slot

Technical Data



Materials
Housing: Reinforced polyamide
Cable sheath:
Thermoplastic polyurethane elastomer,
halogen-free, oil-resistant



Download CAD data → www.festo.com/us/engineering

Technical Data		
Input signal/measuring element		
Measuring principle		Magnetic
Position measuring range	[mm]	≤ 40 ¹⁾
Max. travel speed	[m/s]	3
Output, general		
Distance resolution	[mm]	≤ 0.05 ¹⁾
Repetition accuracy	[mm]	±0.1 ¹⁾ on cylinders
		±0.025 ¹⁾ on grippers
Analog output		
Typical linearity error	[mm]	±1 ¹⁾ on cylinders
		±0.2 ¹⁾ on grippers
Electrical outputs		
Analog output	[V]	0 ... 10
Protection against short circuit		Yes
Protection against overloading		Yes
Output signal		Analog
Electronic components		
Operating voltage range	[V DC]	15 ... 30
Typical sampling interval	[ms]	3.4
Electromechanical components		
Electrical connection		Cable with plug, M8x1, rotatable thread, 4-pin
Cable length	[m]	0.3
Cable properties		Energy chain + robot applications
Mechanical components		
Type of mounting		Screw-clamped in slot, insertable from above
Immissions/emissions		
Protection class		IP65, IP68

1) Depending on drive/gripper used.

Operating Conditions

Ambient temperature	[°C]	−25 ... +75
Ambient temperature with flexible cable installation	[°C]	−5 ... +70

Ordering Data

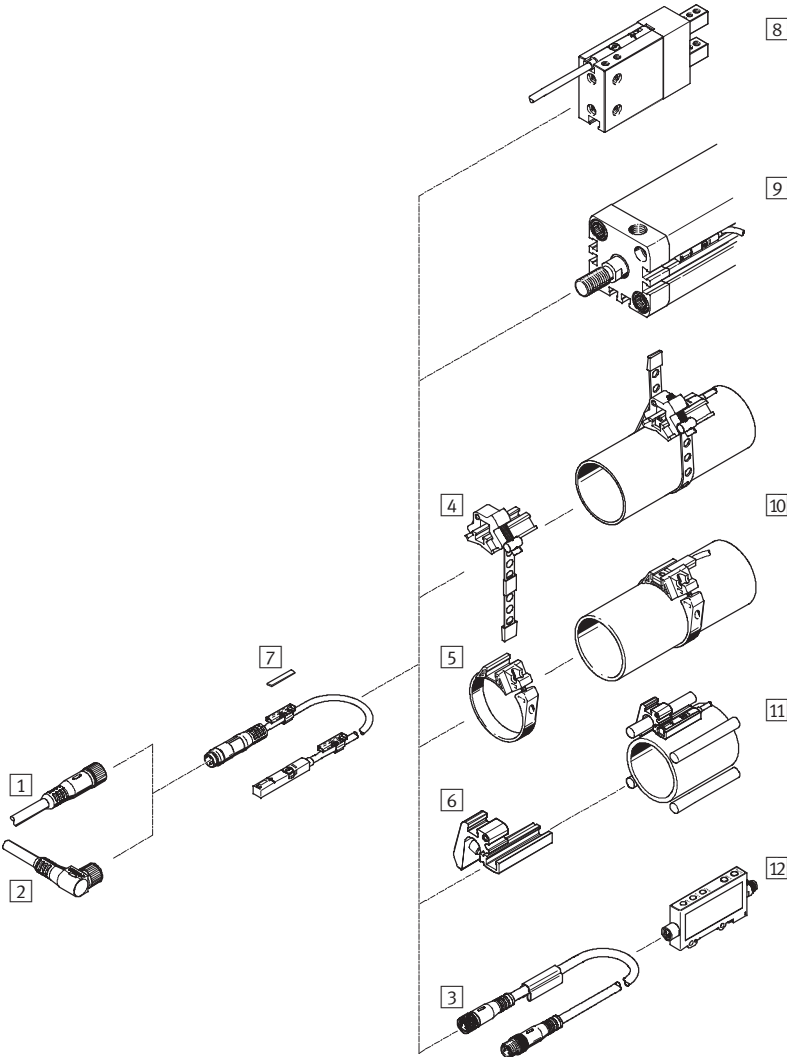
	Analog output	Electrical connection	Type	LT
	0 ... 10 V	Cable with plug, M8x1, rotatable thread, 4-pin	SMAT-8M-U-E-0,3-M8D	1D

LT = Lead time 1D typically ships same day/next day 3D typically ships within 3 days

Position Transmitter SMAT-8M, for T-slot

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Accessories Overview

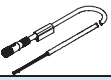

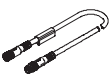





Mounting Attachments and Accessories	
	→ Page/Internet
1 Connecting cable NEBU-M8G4	203
2 Connecting cable NEBU-M8W4	203
3 Connecting cable NEBU-M8G4	203
4 Mounting kit SMBR-8-8/100-S6, heat-resistant	203
5 Mounting kit SMBR	203
6 Mounting SMBZ-8	203
7 Inscription label ASLR	203


Mounting Attachments and Accessories	
	→ Page/Internet
Grippers	
8 Parallel grippers HGP	grippers
Three-point grippers HGD	
Angle grippers HGW	
Radial grippers HGR	
Drives	
9 Drives with T-slot	–
10 Round cylinders	
11 Drives with tie or mounting rod	
12 Signal converters SVE4	sve4

Position Transmitter SMAT-8M, for T-slot

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Ordering Data		
		Order code
1/2/3 Connecting cables M8x1, straight socket, open end		
	2.5 m	NEBU-M8G4-K-2.5-LE4
	5	NEBU-M8G4-K-5-LE4
Angled socket, open end		
	2.5 m	NEBU-M8W4-K-2.5-LE4
	5 m	NEBU-M8W4-K-2.5-LE4
Straight socket, straight plug		
	2.5 m	NEBU-M8G4-K-2.5-M8G4

Ordering Data		
	For piston diameter	Order code
4 Mounting kit SMBR-8-8/100-S6, heat-resistant		
	8 ... 100	SMBR-8-8/100-S6
5 Mounting kit SMBR		
	8	SMBR-8-8
	10	SMBR-8-10
	12	SMBR-8-12
	16	SMBR-8-16
	20	SMBR-8-20
	25	SMBR-8-25
	32	SMBR-8-32
	40	SMBR-8-40
	50	SMBR-8-50
	63	SMBR-8-63
6 Mounting SMBZ		
	32 ... 100	SMBZ-8-32/100
	125 ... 320	SMBZ-8-125/320

Ordering Data			
	Size	Order code	PU ¹⁾
7 Inscription label			
	23x4 mm	ASLR-L-423	34

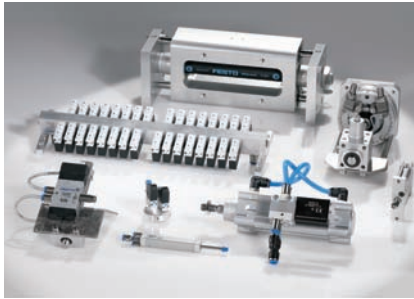
1) Packaging unit per frame.

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A Complete Suite of Automation Services

Our experienced engineers provide complete support at every stage of your development process, including: conceptualization, analysis, engineering, design, assembly, documentation, validation, and production.



Custom Automation Components
Complete custom engineered solutions



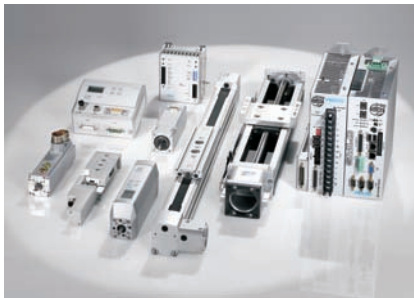
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and on-site services



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With a comprehensive line of more than 30,000 automation components, Festo is capable of solving the most complex automation requirements.



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

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