

Pressure sensors SDE3, with display



Pressure sensors SDE3

Key features

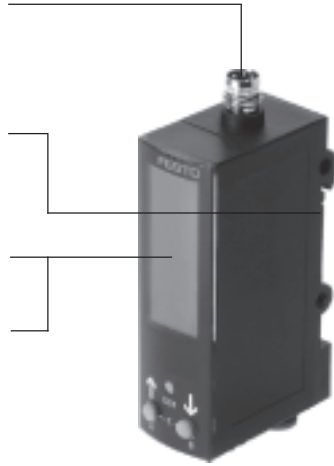
At a glance

SDE3-...-M...
plug version,
plug M8x1 and M12x1

Fast H-rail, wall or surface
mounting

High-contrast, two-colour
LCD display

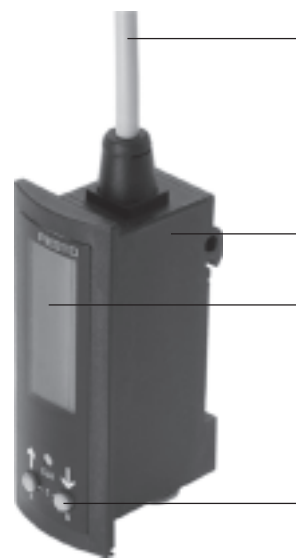
Pressure display:
– Alphanumeric
– Bar chart



SDE3-...-FQ...,
cable with plug

Fast front panel mounting

Greater ease of use
– Easy teach-in
– Intuitive user guidance via
LCD display



Product description

The pressure sensor SDE3 is a slim, space-optimised pressure sensor. It can be used wherever information about the current pressure is required and the focus is on space-saving mounting combined with ease of use.

Main applications

- Compressed air monitoring
- Regulator monitoring
- Suction confirmation in vacuum technology
- Leak tests
- Object detection via back pressure
- Differential pressure measurement

Key features

- Fastest possible H-rail and front panel mounting in a small space
- Minimal assembly times thanks to QS connections
- Intuitive user guidance via LCD display
- Alphanumeric and bar chart pressure display for dynamic processes
- Individual alphanumeric code lock for protection from manipulation
- Easy teach-in
- Relative pressure, differential pressure or two independent pressure inputs
- Five pressure measuring ranges: 0 ... -1, -1 ... 1, 0 ... 2, 0 ... 6, 0 ... 10 bar
- High-contrast, two-colour LCD display
- Electrical outputs: 2 switching outputs PNP or NPN

Pressure sensors SDE3, with display

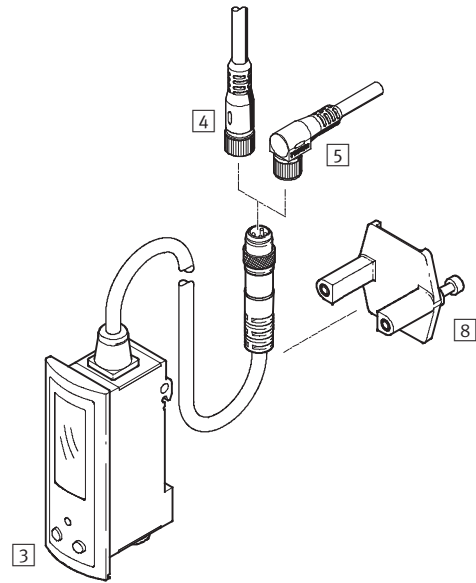
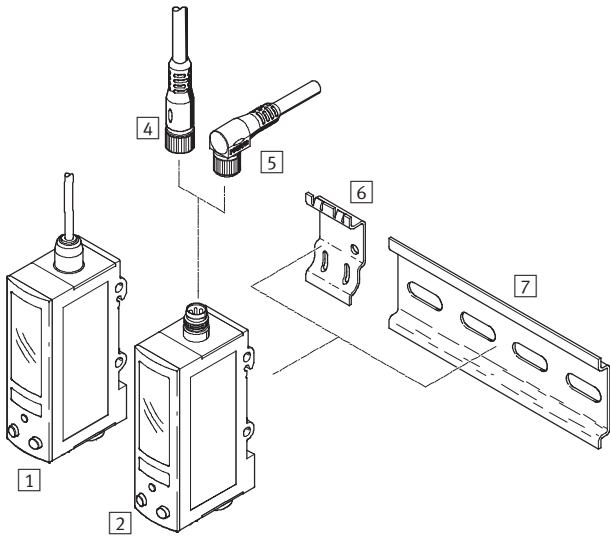
Product range overview

Measured variable	Pressure measuring range [bar]	Switching function	Pneumatic connection	Electrical connection	Type of mounting	Electrical output	
						Digital	Analogue
1x relative pressure, 2x relative pressure, 1x differential pressure	0 ... -1, -1 ... +1,	Freely programmable	Push-in connector For tubing O.D. Ø 4 mm For tubing O.D. Ø 5/32"	Plug M8x1 Plug M12x1 Cable	Via H-rail, wall bracket, surface bracket, front panel mounting or through-hole	2x PNP	-
1x relative pressure and 1x differential pressure	0 ... 2, 0 ... 6, 0 ... 10					2x NPN	-

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Peripherals overview

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Accessories	→ Page/ Internet
1 Pressure sensor SDE3-...-K	6
2 Pressure sensor SDE3-...-M...	6
3 Pressure sensor SDE3-...-F...-M...	6
4 Connecting cable NEBU, straight socket	12
5 Connecting cable NEBU, angled socket	12

Accessories	→ Page/ Internet
6 Adapter plate SXE3-W (included in the scope of delivery with SDE3-...-W...)	12
7 Mounting rail to DIN EN 60715	nrh
8 Clamping plate (included in the scope of delivery with SDE3-...-F...-M8)	-

Pressure sensors SDE3, with display

Type codes

SDE3 - D10 S - B - HQ4 - 2P - M8

Type	
SDE3	Piezoresistive pressure sensor with display

Pressure measuring range [bar]	
V1	0 ... -1
B2	-1 ... +1
D2	0 ... 2
D6	0 ... 6
D10	0 ... 10

Pressure input	
S	1x relative pressure
D	2x relative pressure
M	1x relative pressure, 1x differential pressure
Z	1x differential pressure

Display	
B	Values in bar
H	Values in inches of mercury

Mounting/pneumatic connection	
HQ4	Via H-rail, 4 mm push-in connector
WQ4	Wall mounting, 4 mm push-in connector
FQ4	Front panel mounting, 4 mm push-in connector

Electrical output	
2P	2 switching outputs PNP
2N	2 switching outputs NPN

Electrical connection	
M8	Plug M8x1
M12	Plug M12x1

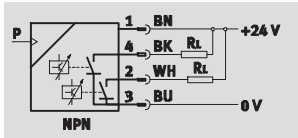
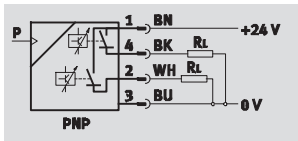
Additional variants can be ordered using the modular system → 11

- Display
- Mounting/pneumatic connection
- Electrical connection
- Electrical accessories

Pressure sensors SDE3, with display

Technical data

Function



Voltage
15 ... 30 V DC

Pressure
-1 ... +10 bar

Temperature range
0 ... 50 °C



General technical data					
Type SDE3	-V1	-B2	-D2	-D6	-D10
General information					
Certification	cULus recognized (OL) C-Tick				
CE mark (see declaration of conformity)	To EU EMC Directive To EU Explosion Protection Directive (ATEX)				
Note on materials	Free of copper and PTFE RoHS-compliant				
Input signal/measuring element					
Measured variable	Relative pressure 2x relative pressure 1x relative pressure, 1x differential pressure Differential pressure				
Method of measurement	Piezoresistive pressure sensor with display				
Operating medium	Filtered compressed air, lubricated or unlubricated, grade of filtration 40µm				
Pressure measuring range [bar]	0 ... -1	-1 ... +1	0 ... 2	0 ... 6	0 ... 10
Temperature of medium [°C]	0 ... 50				
Ambient temperature [°C]	0 ... 50				

Electrical data		
Type SDE3	-2P	-2N
Output, general ¹⁾		
Accuracy FS [%]	2	
Switching output		
Switching output	2x PNP	2x NPN
Switching function	Freely programmable	
Switching element function	Switchable	
Reproducibility of switching value [%]	0.3	
Max. output current [mA]	100	
Output, additional data		
Protection against short circuit	Pulsed	
Electronic components		
Operating voltage range DC [V]	15 ... 30	
Reverse polarity protection	For all electrical connections	
Linearity error ±FS ¹⁾ [%]	0.3	

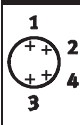
1) % FS = % of the measuring range final value (full-scale)

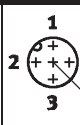
Pressure sensors SDE3, with display

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Technical data

Electrical data		
Type SDE3	-2P	-2N
Electromechanical components		
Electrical connection	Plug M8x1, 4-pin, round design to EN 60 947-5-2	
	Plug M12x1, 5-pin, round design to EN 60 947-5-2	
	Cable with plug M8x1, 4-pin, round design to EN 60 947-5-2	
	Cable 2.5 m, 4-wire, to EN 60 947-5-2	

Pin allocation to EN 60947-5-2			
Plug, 4-pin			
M8x1	Pin	Wire colour	Allocation
	1	Brown	+
	3	Blue	-
	4	Black	Output
	2	White	Output

Pin allocation to EN 60947-5-2			
Plug, 5-pin			
M12x1	Pin	Wire colour	Allocation
	1	Brown	+
	3	Blue	-
	4	Black	Output
	2	White	Output
	5	Unused	

Mechanical components			
Type SDE3	-HQ...	-WQ...	-FQ...
Type of mounting	Via H-rail Via through-hole	Via H-rail Via through-hole Via wall/surface bracket	Front panel mounting
Mounting position	Any		
Pneumatic connection	QS-4		
	QS-5/32"		
Product weight	[g]	37	37
Adapter plate weight	[g]	-	6
Cable length	[m]	-	0.3
Information on housing materials	PA reinforced		
	PC		

Display/operation	
Display type	Illuminated LCD
Switching status display	LCD yellow
Setting options	Teach-in
Tamper protection	PIN code
Threshold value setting range	[%]
Hysteresis setting range	[%]

Immissions/emissions	
Protection class	IP65
Corrosion resistance class CRC ¹⁾	2

1) Corrosion resistance class 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. 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.

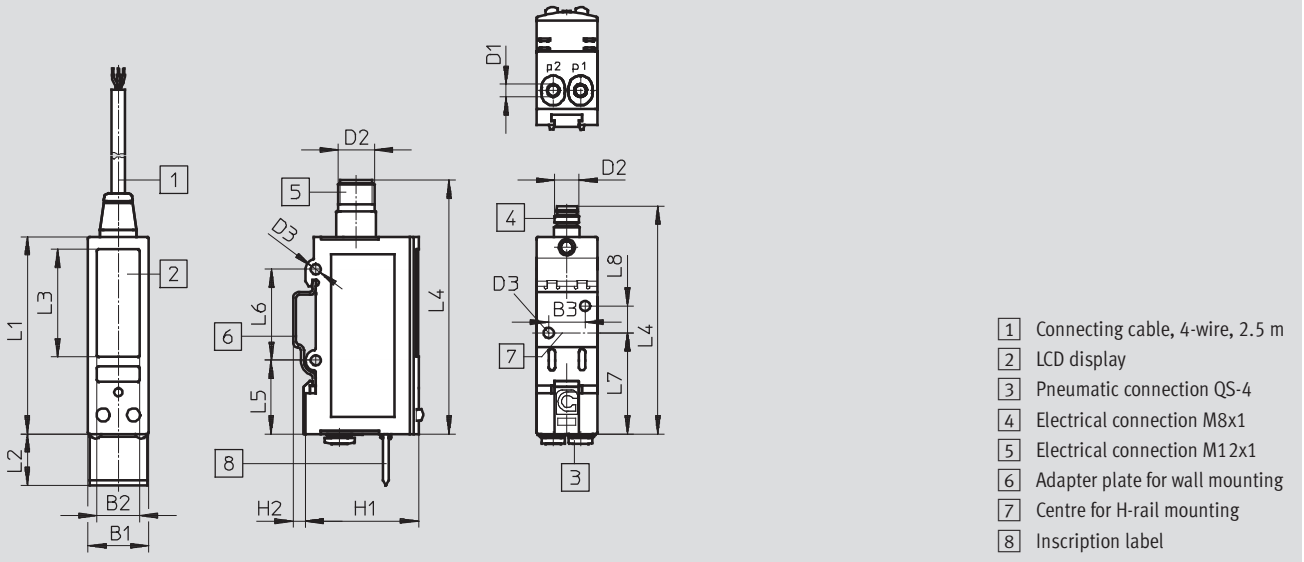
Pressure sensors SDE3, with display

Technical data

Dimensions

Download CAD data → www.festo.com

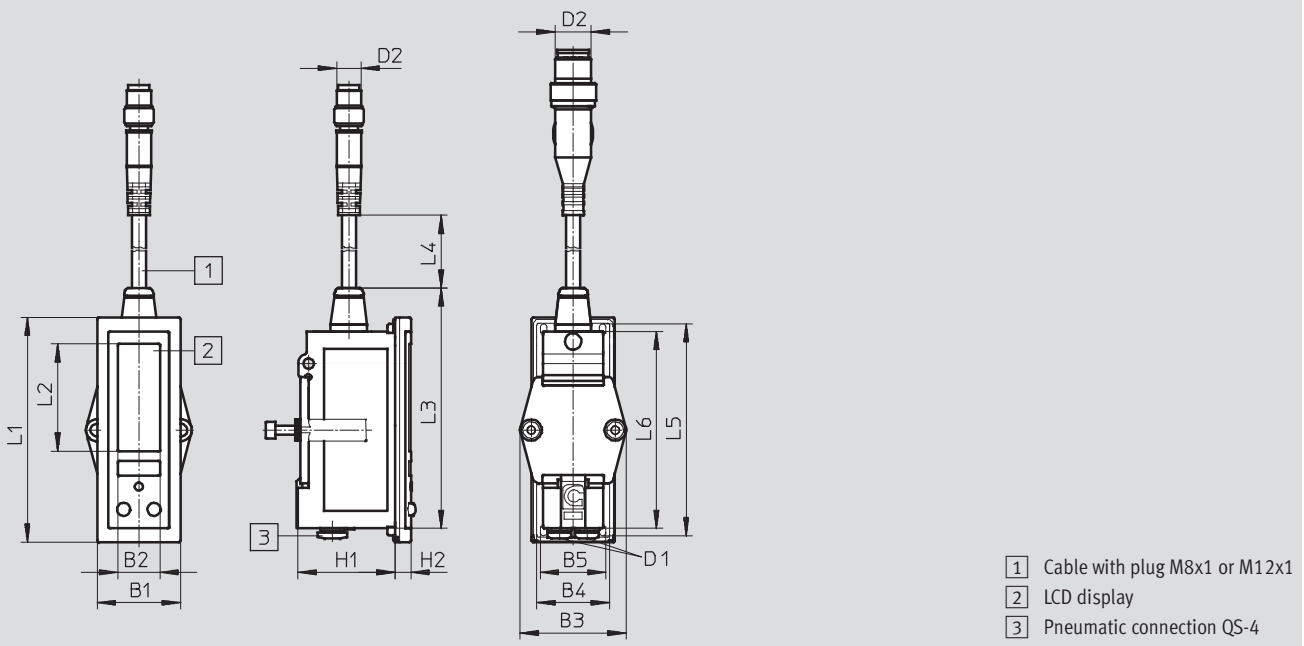
H-rail, wall or surface mounting



- 1 Connecting cable, 4-wire, 2.5 m
- 2 LCD display
- 3 Pneumatic connection QS-4
- 4 Electrical connection M8x1
- 5 Electrical connection M12x1
- 6 Adapter plate for wall mounting
- 7 Centre for H-rail mounting
- 8 Inscription label

Type	B1	B2	B3	D1	D2	D3	H1	H2	L1	L2	L3	L4	L5	L6	L7	L8
SDE3-...-HQ4-M8	20	14	-	QS4	M8x1	3.4	37	4	65	14	35.4	75	24.3	30	33.2	-
SDE3-...-HQ4-M12					M12x1							84				
SDE3-...-WQ4-M8	20	14	12	QS4	M8x1	3.4	37	4	65	14	35.4	75	24.3	30	33.2	9
SDE3-...-WQ4-M12					M12x1							84				

Front panel mounting

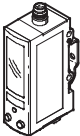








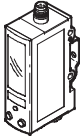


- 1 Cable with plug M8x1 or M12x1
- 2 LCD display
- 3 Pneumatic connection QS-4

Type	B1	B2	B3	B4	B5	D1	D2	H1	H2	L1	L2	L3	L4	L5	L6
SDE3-...-FQ4-M8	27.4	14	35	24	21.6	QS-4	M8x1	32	5	79	35.4	74	300	69.8	65
SDE3-...-FQ4-M12							M12x1								


Pressure sensors SDE3, with display

Technical data

Ordering data – H-rail mounting						
Version	Pressure measuring range [bar]	Switching output	Electrical connection	Display	Part No.	Type
	Relative pressure					
	0 ... -1	2x PNP	Plug M8x1, 4-pin	Bar	540193	SDE3-V1S-B-HQ4-2P-M8
				Inches of mercury	540194	SDE3-V1S-H-HQ4-2P-M8
	0 ... 10	2x PNP	Plug M8x1, 4-pin	Bar	540207	SDE3-D10S-B-HQ4-2P-M8
	2x relative pressure					
	0 ... -1	2x PNP	Plug M8x1, 4-pin	Bar	540196	SDE3-V1D-B-HQ4-2P-M8
					568663	SDE3-V1D-B-HQ4-2P-M12 
				Inches of mercury	540197	SDE3-V1D-H-HQ4-2P-M8
	0 ... 2	2x PNP	Plug M8x1, 4-pin	Bar	540203	SDE3-D2D-B-HQ4-2P-M8
	0 ... 10	2x PNP	Plug M8x1, 4-pin	Bar	540209	SDE3-D10D-B-HQ4-2P-M8
					568662	SDE3-D10D-B-HQ4-2P-M12 
	1x relative pressure, 1x differential pressure					
	0 ... -1	2x PNP	Plug M8x1, 4-pin	Bar	568667	SDE3-V1M-B-HQ4-2P-M8 
	0 ... 6	2x PNP	Plug M12x1, 5-pin	Bar	568668	SDE3-D6M-B-HQ4-2P-M12 
			Plug M8x1, 4-pin		568669	SDE3-D6M-B-HQ4-2P-M8 
	0 ... 10	2x PNP	Plug M8x1, 4-pin	Bar	568665	SDE3-D10M-B-HQ4-2P-M8 
	Differential pressure					
	0 ... -1	2x PNP	Plug M8x1, 4-pin	Bar	540199	SDE3-V1Z-B-HQ4-2P-M8
				Inches of mercury	540200	SDE3-V1Z-H-HQ4-2P-M8
		2x NPN		Bar	540202	SDE3-V1Z-B-HQ4-2N-M8
0 ... 2	2x PNP	Plug M8x1, 4-pin	Bar	540205	SDE3-D2Z-B-HQ4-2P-M8	
0 ... 10	2x PNP	Plug M8x1, 4-pin	Bar	540211	SDE3-D10Z-B-HQ4-2P-M8	
				540213	SDE3-D10Z-B-HQ4-2N-M8	

Ordering data – Wall mounting ¹⁾						
Version	Pressure measuring range [bar]	Switching output	Electrical connection	Display	Part No.	Type
	2x relative pressure					
	0 ... -1	2x PNP	Plug M8x1, 4-pin	Bar	568664	SDE3-V1D-B-WQ4-2P-M8 
	1x relative pressure, 1x differential pressure					
0 ... 10	2x PNP	Plug M12x1, 5-pin	Bar	568666	SDE3-D10M-B-WQ4-2P-M12 	

1) Adapter plate SXE3-W included in the scope of delivery

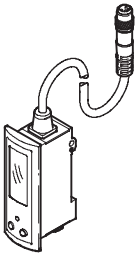
 **Note**


Additional variants and accessories can be configured and ordered through the SDE3 modular system → 11.

Configurator for types to ATEX directive for explosive atmospheres → Internet: sde3

Pressure sensors SDE3, with display

Technical data

Ordering data – Front panel mounting						
Version	Pressure measuring range [bar]	Switching output	Electrical connection	Display	Part No.	Type
	Relative pressure					
	0 ... -1	2x PNP	Cable with plug M8x1, 4-pin	Bar	540195	SDE3-V1S-B-FQ4-2P-M8
	0 ... 10				540208	SDE3-D10S-B-FQ4-2P-M8
	2x relative pressure					
	0 ... -1	2x PNP	Cable with plug M8x1, 4-pin	Bar	540198	SDE3-V1D-B-FQ4-2P-M8
	0 ... 2				540204	SDE3-D2D-B-FQ4-2P-M8
	0 ... 10				540210	SDE3-D10D-B-FQ4-2P-M8
	Differential pressure					
	0 ... -1	2x PNP	Cable with plug M8x1, 4-pin	Bar	540201	SDE3-V1Z-B-FQ4-2P-M8
	0 ... 2				540206	SDE3-D2Z-B-FQ4-2P-M8
	0 ... 10				540212	SDE3-D10Z-B-FQ4-2P-M8

 **Note**

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→ 11.

Configurator for types to ATEX directive for explosive atmospheres
→ Internet: sde3

Pressure sensors SDE3

Ordering data – Modular products

Ordering table		Condi- tions	Code	Enter code
M	Module No.	539679		
	Function	Pressure sensor		SDE3
	Pressure measuring range [bar]	0 ... -1	-V1	
		-1 ... 1	-B2	
		0 ... 2	-D2	
		0 ... 6	-D6	
		0 ... 10	-D10	
	Pressure input	1x relative pressure	S	
		2x relative pressure, independent	D	
		1x relative pressure, 1x differential pressure	M	
		1x differential pressure	Z	
	Display	Values in bar	-B	
		Values in psi	-P	
		Values in kPa	-K	
		Values in inches of mercury	-H	
		Values in inches of water	¹ -W	
	Mounting/pneumatic connection	H-rail mounting, 4 mm push-in connector	-HQ4	
		H-rail mounting, 5/32" push-in connector	-HT532	
		Wall mounting, 4 mm push-in connector	-WQ4	
		Wall mounting, 5/32" push-in connector	-WT532	
		Front panel mounting, 4 mm push-in connector	-FQ4	
		Front panel mounting, 5/32" push-in connector	-FT532	
	Electrical output	2 switching outputs PNP	-2P	
		2 switching outputs NPN	-2N	
	Electrical connection	Plug M8	-M8	
		Plug M12, A-coded	-M12	
		Cable, 2.5 m	-K	
O	Connecting cable (accessory)	Connecting cable, straight socket, 2.5 m	² -G	
		Connecting cable, angled socket, 2.5 m	² -W	
		Connecting cable, straight socket, 5 m	² -G5	
		Connecting cable, angled socket, 5 m	² -W5	

¹ **W** Not with pressure measuring range D6 and pressure input M or pressure measuring range D10 and pressure input M.

² **G, W, G5; W5**
Not with electrical connection K

Transfer order code

539679 SDE3 - [] - [] - [] - [] - [] - [] - []

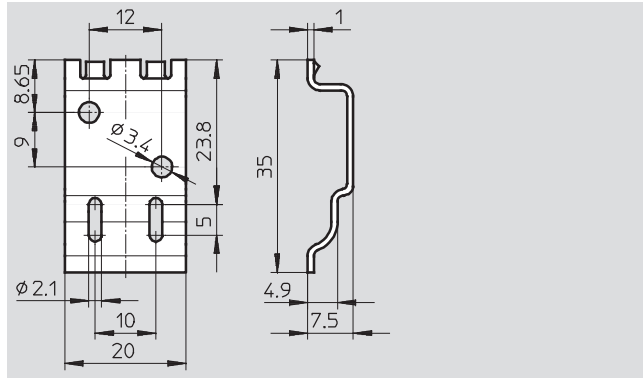
Pressure sensors SDE3, with display

Accessories

Adapter plate SXE3-W





For wall or surface mounting


Material:
Steel



Ordering data		Part No.	Type
Adapter plate ¹⁾		540214	SXE3-W

1) Included in the scope of delivery with SDE3-...-W...

Ordering data – Connecting cables				Technical data → Internet: nebu	
	Designation	Number of wires	Cable length [m]	Part No.	Type
M8x1					
	Straight socket	4	2.5	541342	NEBU-M8G4-K-2.5-LE4
			5	541343	NEBU-M8G4-K-5-LE4
	Angled socket	4	2.5	541344	NEBU-M8W4-K-2.5-LE4
			5	541345	NEBU-M8W4-K-5-LE4
M12x1					
	Straight socket	4	2.5	550326	NEBU-M12G5-K-2.5-LE4
			5	541328	NEBU-M12G5-K-5-LE4
	Angled socket	4	2.5	550325	NEBU-M12W5-K-2.5-LE4
			5	541329	NEBU-M12W5-K-5-LE4

Ordering data – Safety clip		Part No.	Type
	M8	548067	NEAU-M8-GD
	M12	548068	NEAU-M12-GD