

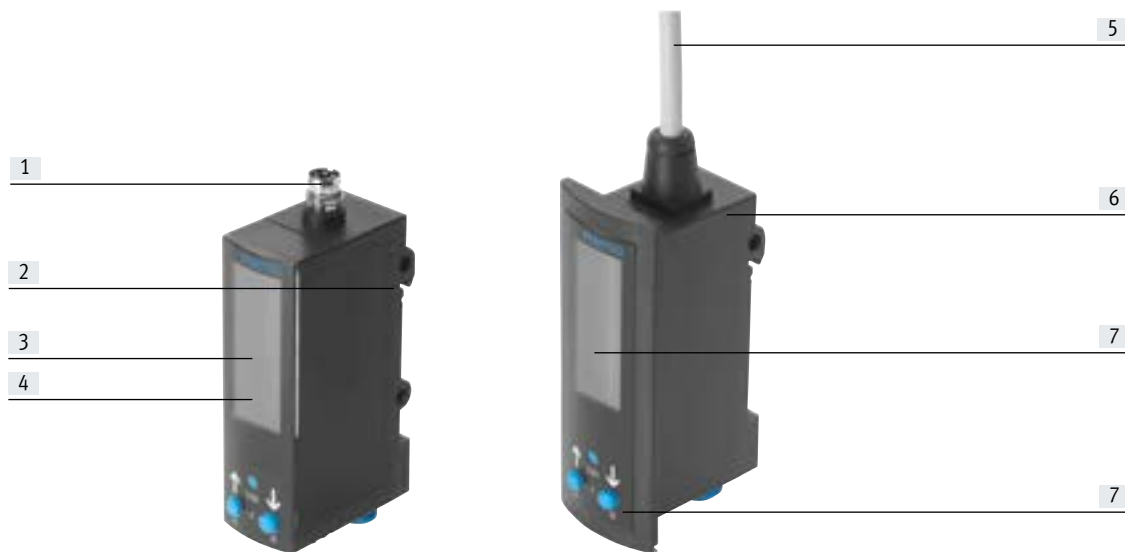
Pressure sensors SDE3, with display

FESTO



Key features

At a glance



- [1] SDE3-...-M... plug version, plug M8x1 and M12x1
- [2] Fast mounting on H-rail, wall or surface

- [3] High-contrast, 2-colour LCD display
- [4] Pressure indicator:
 - alphanumeric and
 - bar graph

- [5] SDE3-...-FQ..., cable with plug
- [6] Fast mounting on front panel

- [7] Easy to operate
 - Simple teach-in process
 - intuitive user guidance via LCD display

Product description

The pressure sensor SDE3 is a slim, space-optimised pressure sensor. It can be used anywhere where information about the pressure currently applied is required, and where space-saving installation together with ease of operation is the priority.

Main applications

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

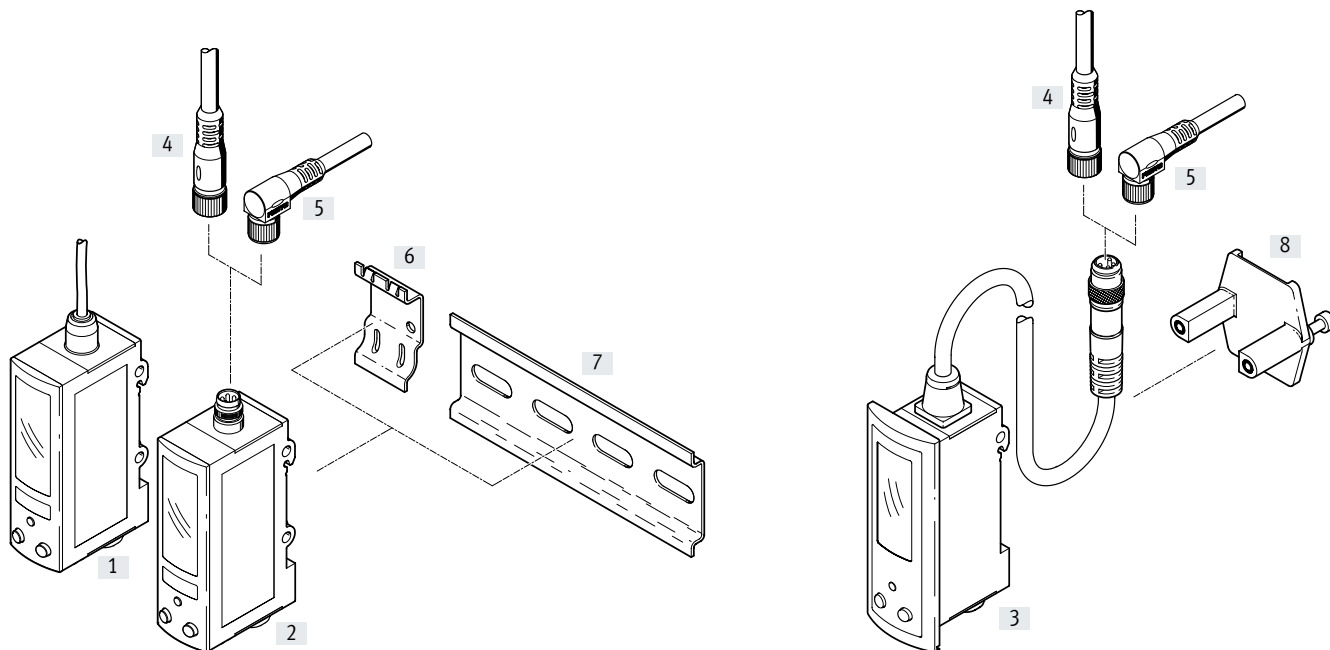
Key features

- Extremely fast mounting on H-rail or front panel in a small space
- Minimal assembly times thanks to QS connections
- Intuitive user guidance via LCD display
- Pressure indicator with alphanumeric and bar graph display for dynamic processes
- Individual alphanumeric code lock for protection against tampering
- Easy teach-in
- Relative or differential pressure, or 2 different pressure inputs
- 5 pressure measuring ranges: 0 ... -1, -1 ... 1, 0 ... 2, 0 ... 6, 0 ... 10 bar
- High-contrast, 2-colour LCD display
- Electrical outputs: 2 switching outputs PNP or NPN

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 0 ... 2	Freely programmable	Push-in connector For tubing O.D. 4 mm For tubing O.D. 5/32	Plug M8x1 Plug M12x1 Cable	Via H-rail, via wall bracket, via surface bracket, front panel mounting, with through-hole	2x PNP	-
1x relative pressure and 1x differential pressure	0 ... 6 0 ... 10					2x NPN	-

Peripherals overview



Accessories		→ Page/Internet
[1]	Pressure sensor SDE3-...-K	6
[2]	Pressure sensor SDE3-...-M8/-M12	6
[3]	Pressure sensor SDE3-...-F...	6
[4]	Connecting cable NEBU, straight socket	13
[5]	Connecting cable NEBU, angled socket	13

Accessories		→ Page/Internet
[6]	Adapter plate SXE3-W (included in the scope of delivery for SDE3-...-W...)	13
[7]	Mounting rail to EN 60715	nrh
[8]	Clamping plate (included in the scope of delivery for SDE3-...-F-...)	-

Type codes

001	Series	
SDE3	Piezoresistive pressure sensor with display	
002	Pressure measuring range	
V1	-1 ... 0 bar	
B2	-1 ... 1 bar	
D2	0 ... 2 bar	
D6	0 ... 6 bar	
D10	0 ... 10 bar	
003	Pressure inlet	
S	1 x relative pressure	
D	2 x relative pressure, independent	
M	1x relative pressure, 1x differential pressure	
Z	1 x differential pressure	
004	Display	
B	Values in bar	
H	Values in inches of mercury	
K	Values in kPa	
P	Values in psi	
W	Values in inches of water	

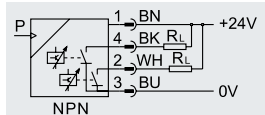
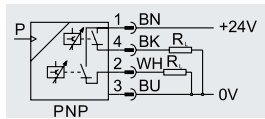
005	Mounting/pneumatic connection	
HQ4	H-rail mounting, push-in connector 4 mm	
HT532	H-rail mounting, push-in connector 5/32"	
WQ4	Wall mounting, push-in connector 4 mm	
WT532	Wall mounting, push-in connector 5/32"	
FQ4	Front panel mounting, push-in connector 4 mm	
FT532	Front panel mounting, push-in connector 5/32"	
006	Electrical output	
2P	2 switching outputs PNP	
2N	2 switching outputs NPN	
007	Electrical connection	
M8	Plug M8x1	
M12	Plug M12, A-coded	
K	Cable	
008	EU certification	
	None	
EX2	II 3GD to EU Explosion Protection Directive (ATEX)	
009	Electrical accessories	
	None	
G	Connecting cable, straight socket, 2.5 m	
W	Connecting cable, angled plug socket, 2.5 m	
G5	Connecting cable, straight socket, 5 m	
W5	Connecting cable, angled plug socket, 5 m	

Additional variants can be ordered using the modular product system → 12

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

Data sheet

Function



- Voltage
15 ... 30 V DC
- Pressure
-1 ... +10 bar
- Temperature range
0 ... 50°C





General technical data		-V1	-B2	-D2	-D6	-D10
General						
Certification	c UL us - Recognized (OL) ¹⁾ RCM					
CE marking (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					
Measurement method	Piezoresistive pressure sensor with display					
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]					
Note on the operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)					
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					

1) Not for variant F (front panel mounting)

Electrical data		-2P	-2N
Output, general¹⁾			
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			
Short circuit current rating		Pulsed	
Electronics			
Operating voltage range DC [V]		15 ... 30	
Reverse polarity protection		For all electrical connections	
Linearity error ±FS ¹⁾ [%]		0.3	

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

Data sheet

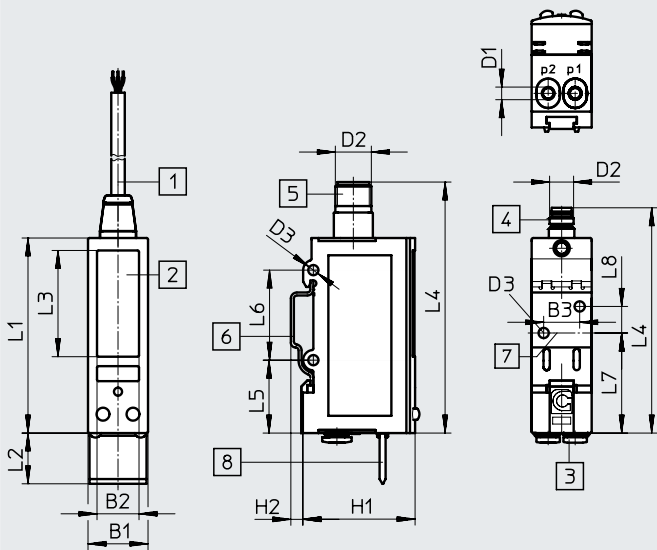
Electrical data		-2P		-2N	
SDE3					
Electromechanical systems					
Electrical connection		Plug M8x1, 4-pin, round design to EN 60947-5-2			
		Plug M12x1, 5-pin, round design to EN 60947-5-2			
		Cable with plug M8x1, 4-pin, round design to EN 60947-5-2			
		Cable with plug M12x1, 5-pin, round design to EN 60947-5-2			
		Cable 2.5 m, 4-wire, to EN 60947-5-2			
Pin allocation to EN 60947-5-2			Pin allocation to EN 60947-5-2		
Plug, 4-pin M8x1		Pin	Wire colour	Allocation	
		1	Brown	+	
		3	Blue	-	
		4	Black	Output A	
		2	White	Output B	
Plug, 5-pin M12x1		Pin	Wire colour	Allocation	
		1	Brown	+	
		3	Blue	-	
		4	Black	Output A	
		2	White	Output B	
		5	Not assigned		
Mechanics					
SDE3		-H...	-W...	-F...	
Type of mounting		With H-rail With through-hole	With H-rail With through-hole Via wall/surface bracket	Front panel mounting	
Mounting position		Any			
Pneumatic connection		QS4 QS5/32			
Product weight		[g]	37	37	61
Adapter plate weight		[g]	-	6	-
Cable length		[m]	-	-	0.3
Information on materials: Housing		Reinforced PA PC			
Display/operation					
Display type		Illuminated LCD			
Switching status indication		LCD yellow			
Setting options		Teach-in			
Protection against tampering		PIN code			
Threshold value setting range		[%]	0 ... 100		
Hysteresis setting range		[%]	0 ... 90		
Immission/emission					
Degree of protection		IP65			
Corrosion resistance class CRC ¹⁾		2			
1) Corrosion resistance class CRC 2 to Festo standard FN 940070 Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.					
ATEX					
SDE3-...		-EX2			
ATEX category gas		II 3G			
Type of ignition protection for gas		Ex ec IICT6 X Gc			
ATEX category for dust		II 3D			
Type of ignition protection for dust		Ex tc IIIC T80°C X Dc			
Explosion-proof ambient temperature		0 °C ≤ Ta ≤ +50 °C			

Data sheet

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 or QS-5/32
- [4] Electrical connection M8x1
- [5] Electrical connection M12x1
- [6] Adapter plate for wall mounting
- [7] Centre with H-rail mounting
- [8] Inscription label

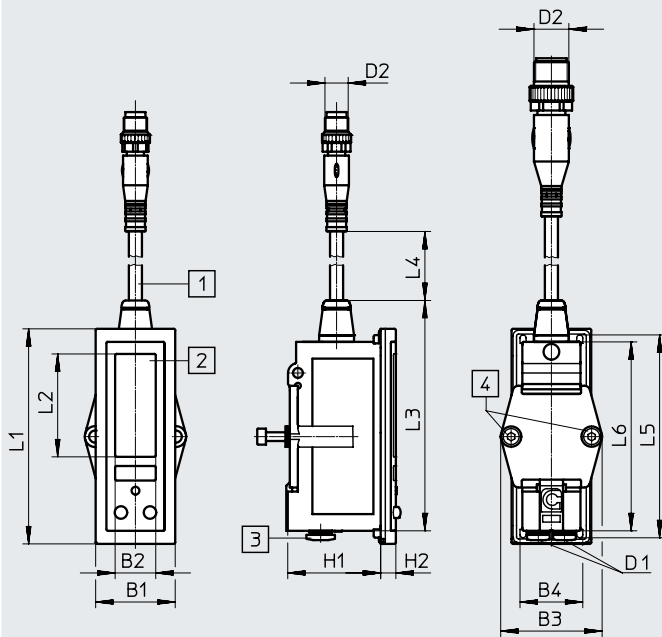
Type	B1	B2	B3	D1	D2	D3	H1	H2	L1	L2	L3	L4	L5	L6	L7	L8
SDE3-...-HQ4-M8	20	14	-	QS4	M8x1	3.4	37	4	65	17	35.4	75.1	24.3	30	33.2	-
SDE3-...-HQ4-M12					M12x1							82.8				
SDE3-...-HT532-M8	20	14	-	QS5/32	M8x1	3.4	37	4	65	17	35.4	75.1	24.3	30	33.2	-
SDE3-...-HT532-M12					M12x1							82.8				
SDE3-...-WQ4-M8	20	14	12	QS4	M8x1	3.4	37	4	65	17	35.4	75.1	24.3	30	33.2	9
SDE3-...-WQ4-M12					M12x1							82.8				
SDE3-...-WT532-M8	20	14	12	QS5/32	M8x1	3.4	37	4	65	17	35.4	75.1	24.3	30	33.2	9
SDE3-...-WT532-M12					M12x1							82.8				

Data sheet

Dimensions

Download CAD data → www.festo.com

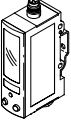
Front panel mounting

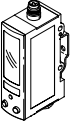


- [1] Cable with plug M8x1 or M12x1
- [2] LCD display
- [3] Pneumatic connection: QS-4 or QS5/32
- [4] Socket head screw M3x30 DIN 912

Type	B1	B2	B3	B4	D1	D2	H1	H2	L1	L2	L3	L4	L5	L6
SDE3-...-FQ4-M8	27.4	14	35	21.8	QS-4	M8x1	32	5	74	35.4	79.2	300	69.8	65
SDE3-...-FQ4-M12						M12x1								
SDE3-...-FT532-M8	27.4	14	35	21.8	QS5/32	M8x1	32	5	74	35.4	79.2	300	69.8	65
SDE3-...-FT532-M12						M12x1								

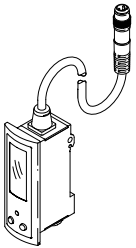
Data sheet

Ordering data – H-rail mounting						
Design	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⁾						
Design	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

Data sheet

Ordering data – Front panel mounting						
Design	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

Ordering data – Modular product system

Ordering table		Condi- tions	Code	Enter code
Module no.	539679			
Function	Pressure sensor		SDE3	SDE3
Pressure measuring range [bar]	0 ... -1		-V1	
	-1 ... 1		-B2	
	0 ... 2		-D2	
	0 ... 6		-D6	
	0 ... 10		-D10	
Pressure inlet	1 x relative pressure		S	
	2 x relative pressure, independent		D	
	1x relative pressure, 1x differential pressure		M	
	1 x 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, push-in connector 4 mm		-HQ4	
	H-rail mounting, push-in connector 5/32		-HT532	
	Wall mounting, push-in connector 4 mm		-WQ4	
	Wall mounting, push-in connector 5/32		-WT532	
	Front panel mounting, push-in connector 4 mm		-FQ4	
	Front panel mounting, push-in connector 5/32		-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	
EU certification	II 3GD to EU Directive 2014/34/EU		-EX2	
Electrical accessories	Connecting cable, straight socket, 2.5 m	[2]	-G	
	Connecting cable, angled plug socket, 2.5 m	[2]	-W	
	Connecting cable, straight socket, 5 m	[2]	-G5	
	Connecting cable, angled plug 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

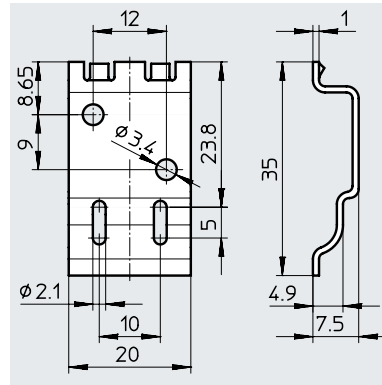
Accessories

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				Data sheets → 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