

Pressure sensors SDE3, with display



# Pressure sensors SDE3

Key features

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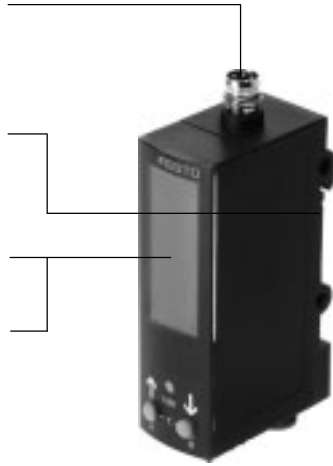
## At a glance

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

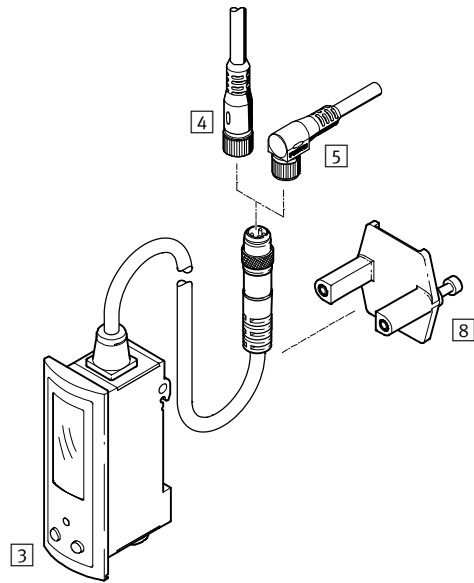
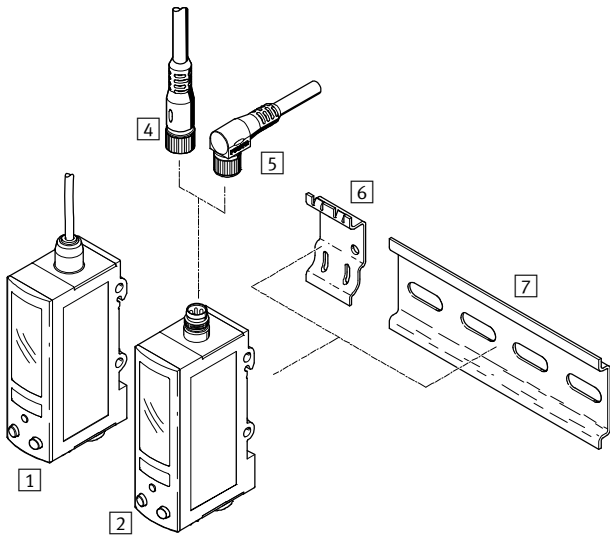
Product range overview

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	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	-

# Pressure sensors SDE3, with display

Peripherals overview

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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 with SDE3-...-W...)	13
7 Mounting rail to EN 60715	nrh
8 Clamping plate (included in the scope of delivery with SDE3-...-F...)	-

# 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

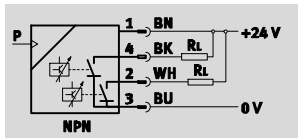
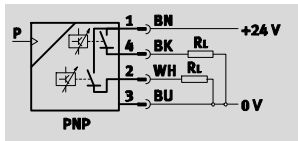
Additional variants can be ordered using the modular system → 12

- Display
- Mounting/pneumatic connection
- Electrical connection
- EU Certification
- 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					
SDE3	-V1	-B2	-D2	-D6	-D10
General					
Certification	cULus recognized (OL) <sup>1)</sup> RCM trademark				
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				
Method of measurement	Piezoresistive pressure sensor with display				
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]				
Note on operating/pilot medium	Operation with lubricated medium 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 with variant F (front panel mounting)

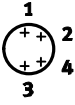
Electrical data		
SDE3	-2P	-2N
Output, general <sup>1)</sup>		
Accuracy FS [%]	2	
Switching output		
Switching output	2x PNP	2x NPN
Switching function	Freely programmable	
Switching element function	Switchable	
Reproducibility of switching value [%]	0.3	
Max. output current [mA]	100	
Output, additional 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 <sup>1)</sup> [%]	0.3	

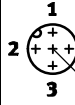
1) % FS = % of the measuring range final value (full scale)

# Pressure sensors SDE3, with display

Technical data

Electrical data		
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 with plug M12x1, 5-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 A
	2	White	Output B

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

Mechanical components			
SDE3	-H...	-W...	-F...
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		
	QS5/32		
Product weight	[g]	37	37
Adapter plate weight	[g]	-	6
Cable length	[m]	-	0.3
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	[%] 0 ... 100
Hysteresis setting range	[%] 0 ... 90

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

1) Corrosion resistance class CRC 2 to Festo standard FN 940070  
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

ATEX	
SDE3-...	-EX2
ATEX category for gas	II 3G
Explosion ignition protection type for gas	Ex ec IIC T6 X Gc
ATEX category for dust	II 3D
Explosion ignition protection type for dust	Ex tc IIIC T80°C X Dc
Explosion-proof temperature rating	0 °C ≤ Ta ≤ +50 °C

# Pressure sensors SDE3, with display

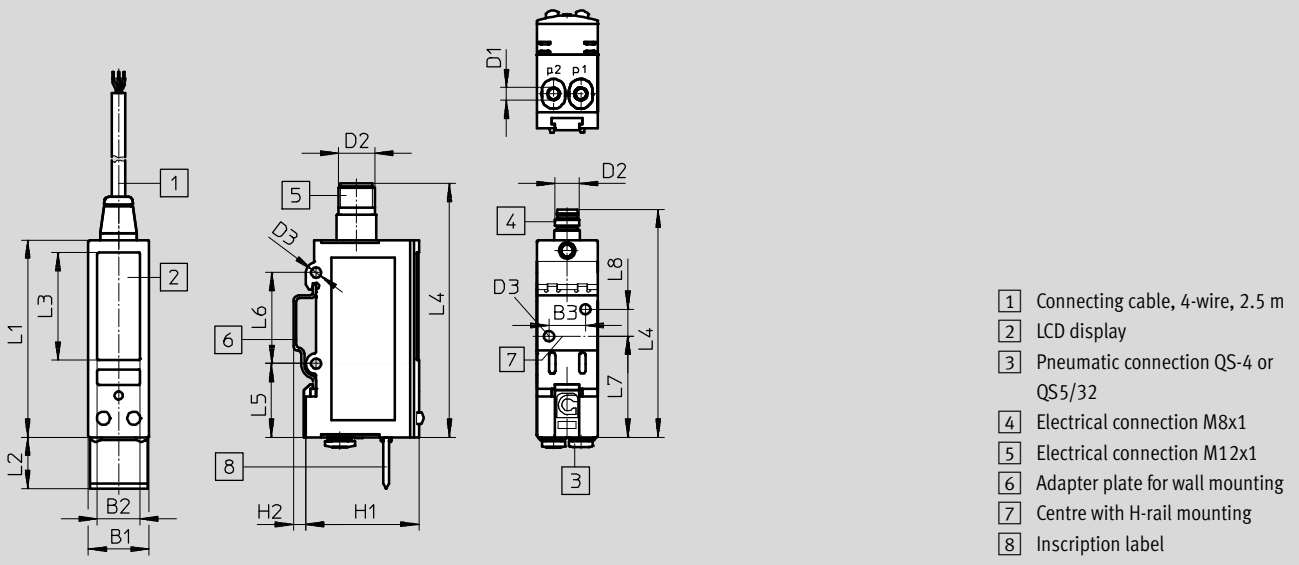
Technical data

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## Dimensions

H-rail, wall or surface mounting

Download CAD data → [www.festo.com](http://www.festo.com)



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				



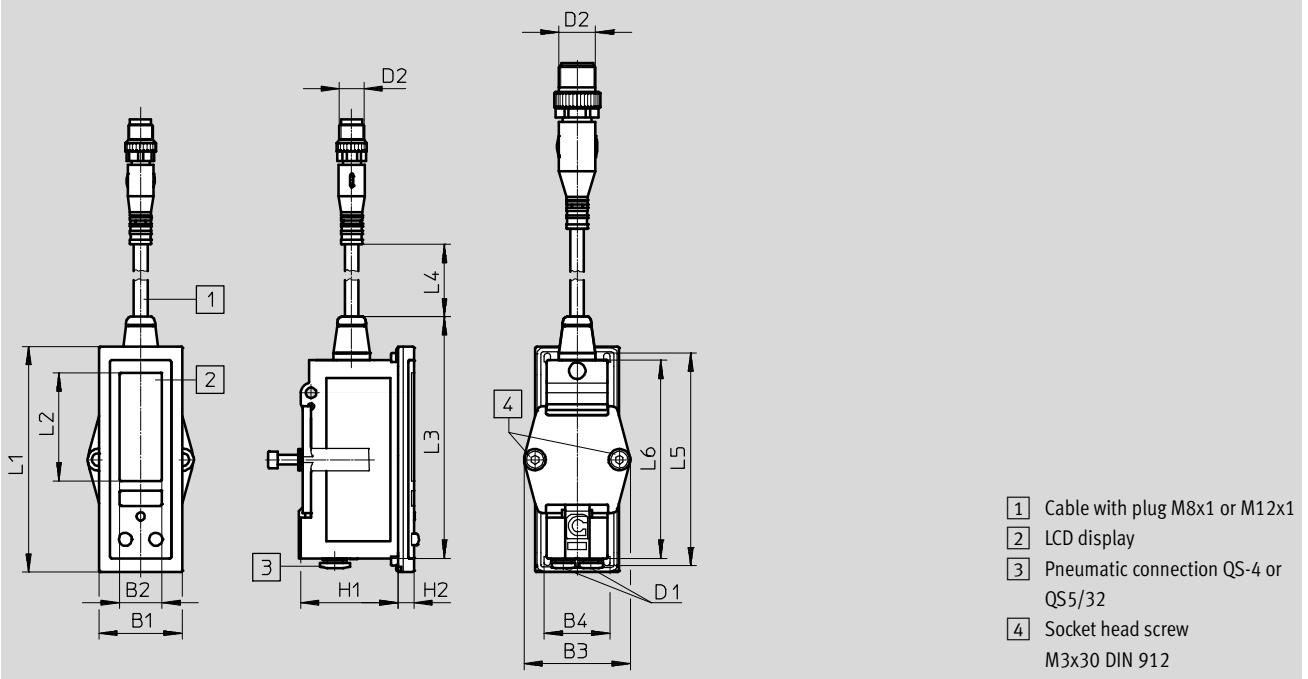
# Pressure sensors SDE3, with display

Technical data

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Front panel mounting

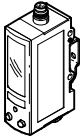


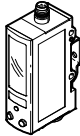
- 1 Cable with plug M8x1 or M12x1
- 2 LCD display
- 3 Pneumatic connection QS-4 or QS5/32
- 4 Socket head screw M3x30 DIN 912

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								


# 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
					Plug M12x1, 5-pin	568663
				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
					Plug M12x1, 5-pin	568662
	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	
				2x NPN	540213	SDE3-D10Z-B-HQ4-2N-M8

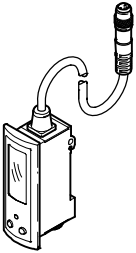
Ordering data – Wall mounting <sup>1)</sup>						
Version	Pressure measuring range [bar]	Switching output	Electrical connection	Display	Part No.	Type
	2x relative pressure					
	0 ... -1	2x PNP	Plug M8x1, 4-pin	bar	568664	SDE3-V1D-B-WQ4-2P-M8
	1x relative pressure, 1x differential pressure					
0 ... 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 product system → 12.

# 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  
 Additional variants and accessories can be configured and ordered through the SDE3 modular product system → 12.

# Pressure sensors SDE3

Ordering data – Modular products



Ordering table		Condi- tions	Code	Enter code
<b>M</b>	Module No.	<b>539679</b>		
	Function	Pressure sensor		<b>SDE3</b>
	Pressure measuring range [bar]	0 ... -1		<b>-V1</b>
		-1 ... 1		<b>-B2</b>
		0 ... 2		<b>-D2</b>
		0 ... 6		<b>-D6</b>
		0 ... 10		<b>-D10</b>
	Pressure input	1x relative pressure		<b>S</b>
		2x relative pressure, independent		<b>D</b>
		1x relative pressure, 1x differential pressure		<b>M</b>
		1x differential pressure		<b>Z</b>
	Display	Values in bar		<b>-B</b>
		Values in psi		<b>-P</b>
		Values in kPa		<b>-K</b>
		Values in inches of mercury		<b>-H</b>
		Values in inches of water		<b>-W</b>
	Mounting/pneumatic connection	H-rail mounting, 4 mm push-in connector		<b>-HQ4</b>
		H-rail mounting, 5/32 push-in connector		<b>-HT532</b>
		Wall mounting, 4 mm push-in connector		<b>-WQ4</b>
		Wall mounting, 5/32 push-in connector		<b>-WT532</b>
		Front panel mounting, 4 mm push-in connector		<b>-FQ4</b>
		Front panel mounting, 5/32 push-in connector		<b>-FT532</b>
	Electrical output	2 switching outputs PNP		<b>-2P</b>
		2 switching outputs NPN		<b>-2N</b>
	Electrical connection	Plug M8		<b>-M8</b>
		Plug M12, A-coded		<b>-M12</b>
		Cable, 2.5 m		<b>-K</b>
<b>0</b>	EU certification	II 3GD to EU Directive 2014/34/EU		<b>-EX2</b>
	Connecting cable (accessory)	Connecting cable, straight socket, 2.5 m		<b>-G</b>
		Connecting cable, angled socket, 2.5 m		<b>-W</b>
		Connecting cable, straight socket, 5 m		<b>-G5</b>
		Connecting cable, angled socket, 5 m		<b>-W5</b>

**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 - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

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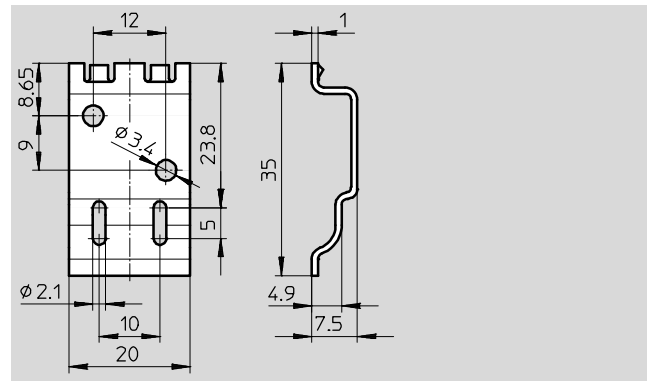
Accessories

## Adapter plate SXE3-W

For wall or surface mounting





Material:


Steel



Ordering data		Part No.	Type
Adapter plate <sup>1)</sup>		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
<b>M8x1</b>					
	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
<b>M12x1</b>					
	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
	Size			
	M8		548067	NEAU-M8-GD
	M12		548068	NEAU-M12-GD