

Pressure sensors SDE1, with display



Pressure sensors SDE1, with display

Product range overview



Method of measurement	Operating voltage [V DC]	Measured variable	Pressure measuring range [bar]	Pneumatic connection	Type of mounting	Electrical output	
						Digital	Analogue
Piezoresistive pressure sensor with display	15 ... 30	Relative pressure Differential and relative pressure	-1 ... 0, -1 ... +1, 0 ... 2, 0 ... 6, 0 ... 10	Male thread R1/8, R1/4 Female thread G1/8 Push-in fitting for tubing O.D. 4 mm	On service unit, via H-rail, via wall/surface bracket, front panel mounting	PNP	-
						2x PNP	-
						PNP	0 ... 10 V
						PNP	4 ... 20 mA
						2x PNP	4 ... 20 mA
						NPN	-
						2x NPN	-
						NPN	0 ... 10 V
NPN	4 ... 20 mA						

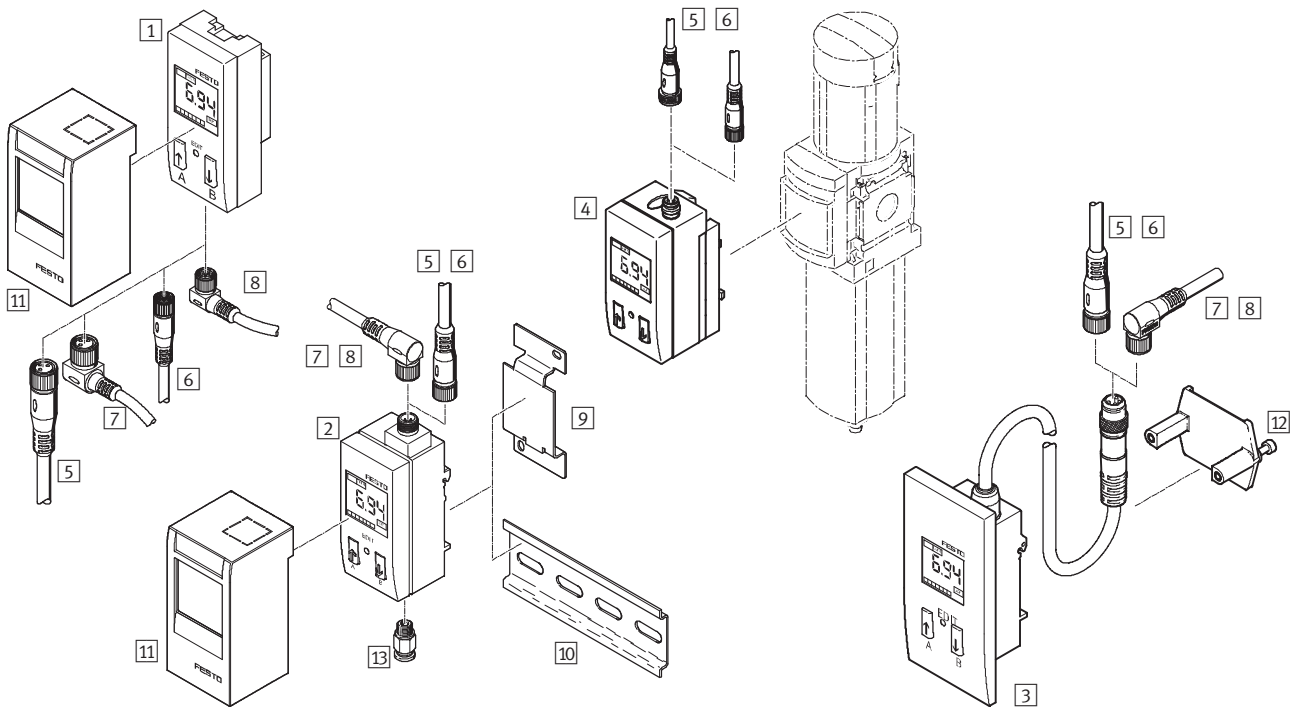
Variants

- LCD display with backlighting (optimised operation)
- Illuminated LCD display (optimised reading)
- Electrical output PNP, 2x PNP, NPN, 2x NPN, 0 ... 10 V analogue, 4 ... 20 mA analogue and combinations thereof
- Electrical connection with plug M8x1 or M12x1
- Connecting cable

Pressure sensors SDE1, with display

Peripherals overview

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Mounting attachments and accessories	→ Page/Internet
1 Pressure sensor SDE1-...-R18, SDE1-...-R14	5
2 Pressure sensor SDE1-...-H18, SDE1-...-W18	5
3 Pressure sensor SDE1-...-FQ4	5
4 Pressure sensor SDE1-...-MS...	5
5 Connecting cable NEBU-M12G...	14
6 Connecting cable, straight socket NEBU-M8G...	14
7 Connecting cable, angled socket NEBU-M12W...	14

Mounting attachments and accessories	→ Page/Internet
8 Connecting cable NEBU-M8W... with angled socket	14
9 Adapter plate SDE1-...-W...	14
10 Mounting rail to DIN EN 60715	nrh
11 Protective cover SDE1-SH	14
12 Clamping plate (included in the scope of delivery with SDE1-...-FQ4)	-
13 Push-in fitting QS-1/8	14

Pressure sensors SDE1, with display

Type codes

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SDE1 - D10 - G2 - W18 - L - P1 - M12 - G5

Function	
SDE1	Pressure sensor with display

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

Absolute accuracy	
G2	Accuracy 2%

Pneumatic connection and mounting	
Measured variable: relative pressure	
R18	Male thread R $\frac{1}{8}$, mounting on service unit
R14	Male thread R $\frac{1}{4}$, mounting on service unit
MS4	Direct connection to MS4 series service units
MS6	Direct connection to MS6 series service units
H18	Female thread G $\frac{1}{8}$, H-rail mounting
W18	Female thread G $\frac{1}{8}$, wall or surface mounting
Measured variable: differential pressure and relative pressure	
FQ4	Push-in connector QS-4, front panel mounting
HQ4	Push-in connector QS-4, DIN H-rail mounting
WQ4	Push-in connector QS-4, wall or surface mounting

Display and setting	
C	LCD display with backlighting (optimised operation)
L	Illuminated LCD display (optimised reading)

Electrical output	
P1	1 switching output PNP
P2	2 switching outputs PNP
PU	1 switching output PNP and 0 ... 10 V analogue
PI	1 switching output PNP and 4 ... 20 mA analogue
2I	2 switching outputs PNP and 4 ... 20 mA analogue
N1	1 switching output NPN
N2	2 switching outputs NPN
NU	1 switching output NPN and 0 ... 10 V analogue
NI	1 switching output NPN and 4 ... 20 mA analogue

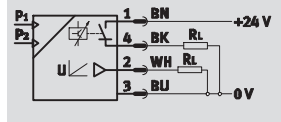
Electrical connection	
M8	Plug M8x1
M12	Plug M12x1

Accessories	
SIM cable with straight plug socket	
G	2.5 m long
G5	5 m long
SIM cable with angled plug socket	
W	2.5 m long
W5	5 m long

Pressure sensors SDE1, with display

Technical data

Function¹⁾

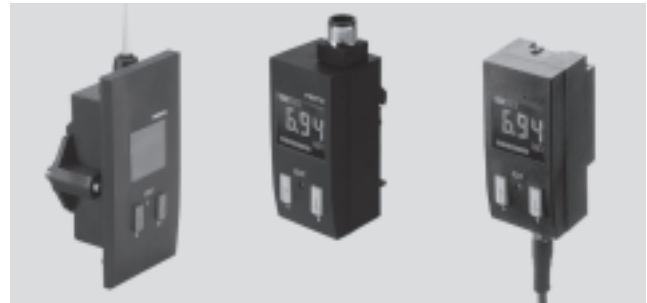


1) e.g. with 1 switching output PNP and 0 ... 10 V analogue

Voltage
15 ... 30 V DC

Pressure
-1 ... +10 bar

Temperature range
0 ... 50 °C



General technical data	
Certification	cULus recognized (OL) C-Tick
CE mark (see declaration of conformity)	To EU EMC Directive
Note on materials	Free of copper and PTFE RoHS-compliant

Input signal/measuring element						
SDE1		-V1	-B2	-D2	-D6	-D10
Measured variable		Relative pressure Differential pressure ¹⁾				
Method of measurement		Piezoresistive pressure sensor with display				
Operating medium		Filtered compressed air, lubricated or unlubricated, grade of filtration 40 µm				
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) Versions with push-in connector QS-4

Output, general	
Accuracy FS ²⁾	±2%

2) % FS = % of the measuring range (full scale)

Switching output	
Switching output	PNP NPN
Switching function	Freely programmable
Switching element function	Switchable
Max. output current	[mA] 150

Analogue output	
Analogue output	[V] 0 ... 10 [mA] 4 ... 20

Output, additional data	
Protection against short circuit	Pulsed

Electronic components	
Operating voltage range DC	[V] 15 ... 30
Reverse polarity protection	For all electrical connections

Pressure sensors SDE1, with display

Technical data

Electromechanical components	
Electrical connection	Plug M8x1, 3-pin, round design to EN 60947-5-2
	Plug M8x1, 4-pin, round design to EN 60947-5-2
	Plug M12x1, 3-pin, round design to EN 60947-5-2
	Plug M12x1, 4-pin, round design to EN 60947-5-2
	Plug M12x1, 5-pin, round design to EN 60947-5-2

Mechanical components	
Type of mounting	Via H-rail
	Via wall/surface bracket
	On service unit
	Front panel mounting
Pneumatic connection	R $\frac{1}{8}$
	R $\frac{1}{4}$
	G $\frac{1}{8}$
	QS-4
Housing materials	PA, POM-reinforced

- | - Note: This product conforms to ISO 1179-1 and to ISO 228-1

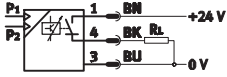

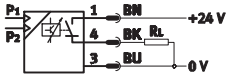

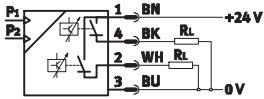

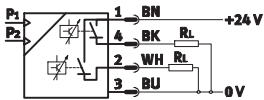

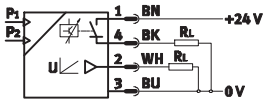

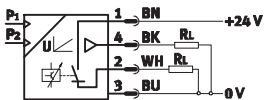

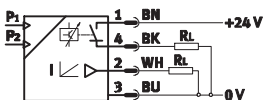

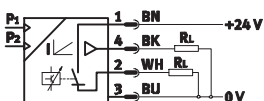

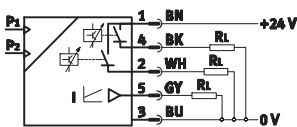
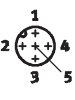
Display/operation	
Display type	Back illuminated LCD
	Illuminated LCD
Setting options	Teach-in
Threshold value setting range	[%] 2 ... 99.8
Hysteresis setting range	[%] 0 ... 90

Immissions/emissions	
Protection class	IP65
Corrosion resistance class CRC ³⁾	2

3) 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.

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Technical data

Electrical outputs ¹⁾		Pin allocations	
1 switching output PNP			
Variant P1 with plug M8		1 = +24 V 3 = 0 V 4 = Output A	
Variant P1 with plug M12		1 = +24 V 3 = 0 V 4 = Output A	
2 switching outputs PNP			
Variant P2 with plug M8		1 = +24 V 2 = Output B 3 = 0 V 4 = Output A	
Variant P2 with plug M12		1 = +24 V 2 = Output A 3 = 0 V 4 = Output B	
1 switching output PNP and 0 ... 10 V analogue			
Variant PU with plug M8		1 = +24 V 2 = Output B (0 ... 10 V analogue) 3 = 0 V 4 = Output A	
Variant PU with plug M12		1 = +24 V 2 = Output A 3 = 0 V 4 = Output B (0 ... 10 V analogue)	
1 switching output PNP and 4 ... 20 mA analogue			
Variant PI with plug M8		1 = +24 V 2 = Output B (4 ... 20 mA analogue) 3 = 0 V 4 = Output A	
Variant PI with plug M12		1 = +24 V 2 = Output A 3 = 0 V 4 = Output B (4 ... 20 mA analogue)	
2 switching outputs PNP and 4 ... 20 mA analogue			
Variant 2I with plug M12		1 = +24 V 2 = Output B 3 = 0 V 4 = Output A 5 = Output C (4 ... 20 mA analogue)	

1) Core colours indicated apply when using plug sockets with cable SIM-...

Pressure sensors SDE1, with display

Technical data



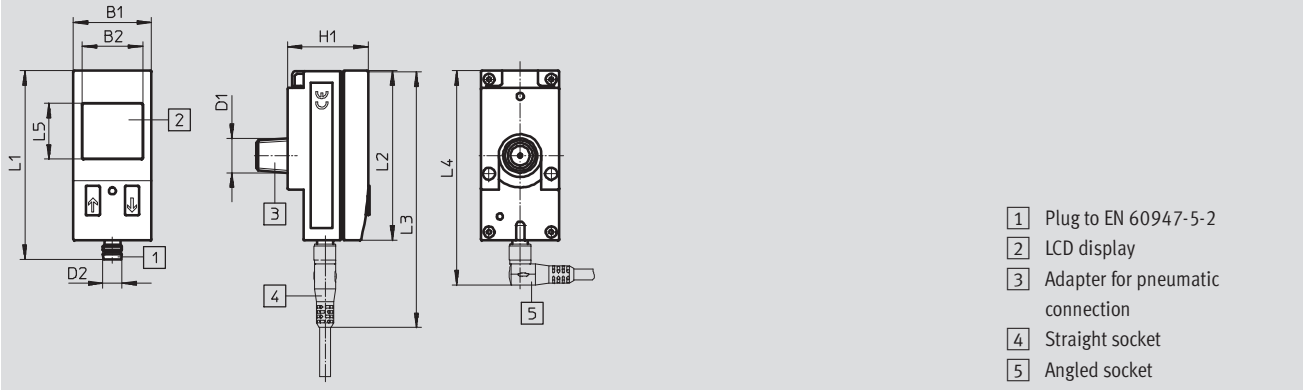
Electrical outputs ¹⁾		Pin allocations	
1 switching output NPN			
Variant N1 with plug M8		1 = +24 V 3 = 0 V 4 = Output A	
Variant N1 with plug M12		1 = +24 V 3 = 0 V 4 = Output A	
2 switching outputs NPN			
Variant N2 with plug M8		1 = +24 V 2 = Output B 3 = 0 V 4 = Output A	
Variant N2 with plug M12		1 = +24 V 2 = Output A 3 = 0 V 4 = Output B	
1 switching output NPN and 0 ... 10 V analogue			
Variant NU with plug M8		1 = +24 V 2 = Output B (0 ... 10 V analogue) 3 = 0 V 4 = Output A	
Variant NU with plug M12		1 = +24 V 2 = Output A 3 = 0 V 4 = Output B (0 ... 10 V analogue)	
1 switching output NPN and 4 ... 20 mA analogue			
Variant NI with plug M8		1 = +24 V 2 = Output B (4 ... 20 mA analogue) 3 = 0 V 4 = Output A	
Variant NI with plug M12		1 = +24 V 2 = Output A 3 = 0 V 4 = Output B (4 ... 20 mA analogue)	

1) Core colours indicated apply when using plug sockets with cable SIM-...

Pressure sensors SDE1, with display

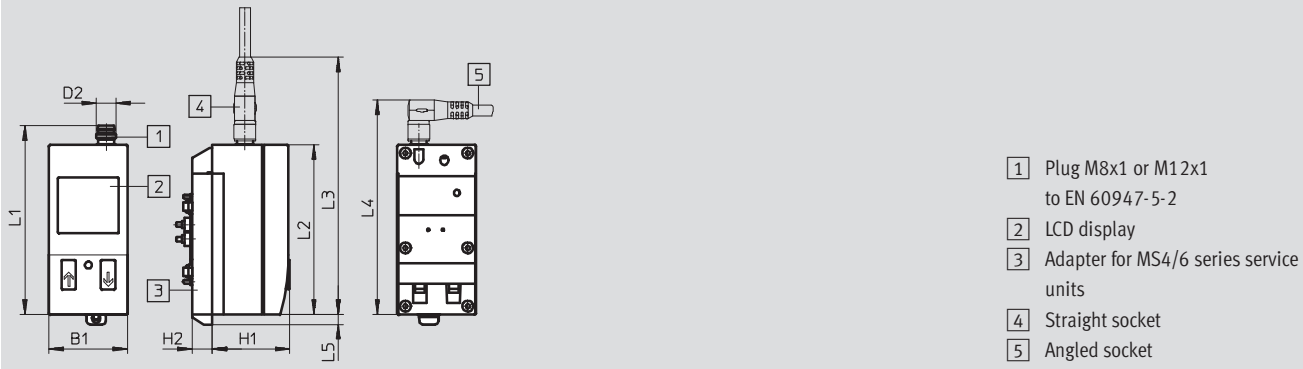
Technical data

Dimensions – Mounting via male thread R $\frac{1}{8}$ or R $\frac{1}{4}$



Type	B1	B2	D1	D2	H1	L1	L2	L3	L4	L5
SDE1-...-R18-M8	32.3	25	R $\frac{1}{8}$	M8	33	78	70	107	89	23
SDE1-...-R14-M8			R $\frac{1}{4}$							
SDE1-...-R18-M12	32.3	25	R $\frac{1}{8}$	M12	33	87	70	125	103	23
SDE1-...-R14-M12			R $\frac{1}{4}$							

Dimensions – Direct connection to MS4/6 series service units



Type	B1	D2	H1	H2	L1	L2	L3	L4	L5
SDE1-...-MS-...-M8	32.3	M8	31.2	8.8	78	70	107	89	4.13
SDE1-...-MS-...-M12		M12			87				

Pressure sensors SDE1, with display

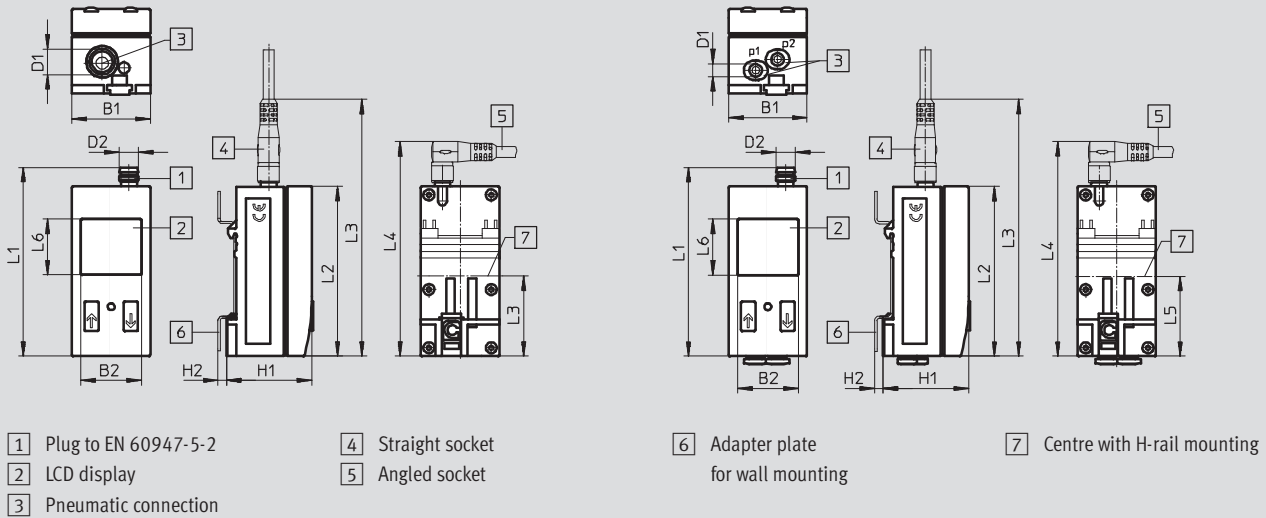
Technical data



Dimensions – H-rail, wall or surface mounting

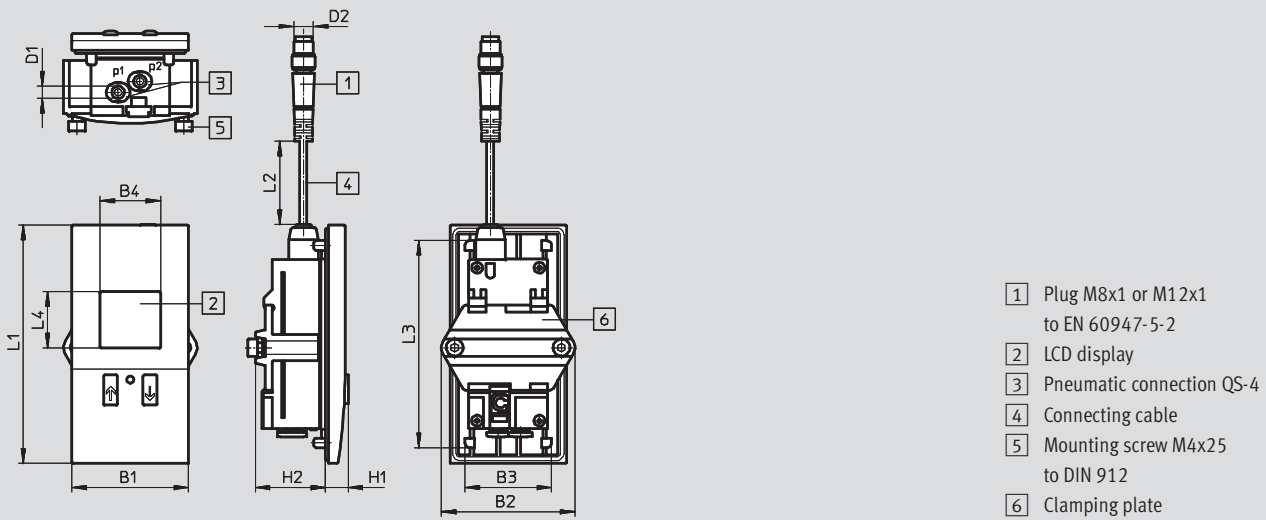
Pneumatic connection G $\frac{1}{8}$

Pneumatic connection QS-4



Type	B1	B2	D1	D2	H1	H2	L1	L2	L3	L4	L5	L6
SDE1-...-H18-...-M8	32.3	25	G $\frac{1}{8}$	M8	35.2	3.6	78	70	107	89	33	23
SDE1-...-W18-...-M8												
SDE1-...-H18-...-M12	32.3	25	G $\frac{1}{8}$	M12	35.2	3.6	87	70	125	103	33	23
SDE1-...-W18-...-M12												
SDE1-...-HQ4-...-M8	32.3	25	QS-4	M8	35.2	3.6	78	70	107	89	33	23
SDE1-...-WQ4-...-M8												

Dimensions – Panel mounting

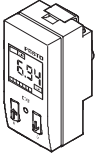
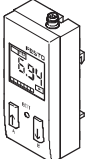
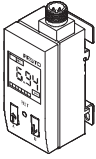


Type	B1	B2	B3	B4	D1	D2	H1	H2	L1	L2	L3	L4
SDE1-...-FQ4-M8	48	55	35.8	25	QS-4	M8x1	8	29	98	320	85.3	23
SDE1-...-FQ4-M12						M12x1						

Pressure sensors SDE1, with display


Technical data

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Ordering data – Measured variable: relative pressure							
Version	Pressure measuring range [bar]	Switching output	Analogue output	Electrical connection	Display type	Part No.	Type
	Male thread R $\frac{1}{8}$, mounting on D series service unit						
	0 ... 10	PNP	–	Plug M8x1, 3-pin	LCD ¹⁾	192026	SDE1-D10-G2-R18-C-P1-M8
					Illuminated LCD	529970	SDE1-D10-G2-R18-L-P1-M8
					Plug M12x1, 3-pin	Illuminated LCD	534064
		2x PNP	–	Plug M8x1, 4-pin	LCD ¹⁾	192027	SDE1-D10-G2-R18-C-P2-M8
		PNP	0 ... 10 V	Plug M8x1, 4-pin	LCD ¹⁾	529958	SDE1-D10-G2-R18-C-PU-M8
					Illuminated LCD	529972	SDE1-D10-G2-R18-L-PU-M8
	Male thread R $\frac{1}{4}$, mounting on D series service unit						
	0 ... 10	PNP	–	Plug M8x1, 3-pin	LCD ¹⁾	192028	SDE1-D10-G2-R14-C-P1-M8
					Illuminated LCD	529967	SDE1-D10-G2-R14-L-P1-M8
					Plug M12x1, 3-pin	Illuminated LCD	534157
		2x PNP	–	Plug M8x1, 4-pin	LCD ¹⁾	192029	SDE1-D10-G2-R14-C-P2-M8
PNP		0 ... 10 V	Plug M8x1, 4-pin	Illuminated LCD	529968	SDE1-D10-G2-R14-L-P2-M8	
				LCD ¹⁾	529957	SDE1-D10-G2-R14-C-PU-M8	
Illuminated LCD	529969	SDE1-D10-G2-R14-L-PU-M8					
	Female thread G $\frac{1}{8}$, H-rail mounting						
	0 ... -1	PNP	–	Plug M8x1, 3-pin	LCD ¹⁾	192034	SDE1-V1-G2-H18-C-P1-M8
					Illuminated LCD	529973	SDE1-V1-G2-H18-L-P1-M8
					2x PNP	–	Plug M8x1, 4-pin
		PNP	0 ... 10 V	Plug M8x1, 4-pin	Illuminated LCD	529974	SDE1-V1-G2-H18-L-P2-M8
					LCD ¹⁾	529959	SDE1-V1-G2-H18-C-PU-M8
		Illuminated LCD	529975	SDE1-V1-G2-H18-L-PU-M8			
	0 ... 10	PNP	–	Plug M8x1, 3-pin	LCD ¹⁾	192030	SDE1-D10-G2-H18-C-P1-M8
					Illuminated LCD	529961	SDE1-D10-G2-H18-L-P1-M8
					2x PNP	–	Plug M8x1, 4-pin
		PNP	0 ... 10 V	Plug M8x1, 4-pin	Illuminated LCD	529962	SDE1-D10-G2-H18-L-P2-M8
					LCD ¹⁾	529955	SDE1-D10-G2-H18-C-PU-M8
Illuminated LCD		529963	SDE1-D10-G2-H18-L-PU-M8				
	Female thread G $\frac{1}{8}$, for wall or surface mounting ²⁾						
	0 ... -1	PNP	–	Plug M12x1, 3-pin	Illuminated LCD	534065	SDE1-V1-G2-W18-L-P1-M12
						PNP	4 ... 20 mA
		Plug M12x1, 4-pin	537023	SDE1-V1-G2-W18-L-PI-M12			
	0 ... 2	PNP	–	Plug M8x1, 3-pin	537024	SDE1-D2-G2-W18-L-P1-M8	
					2x PNP	–	Plug M8x1, 4-pin
	0 ... 6	PNP	–	Plug M8x1, 3-pin	537026	SDE1-D6-G2-W18-L-P1-M8	
					2x PNP	–	Plug M8x1, 4-pin
	0 ... 10	PNP	–	Plug M12x1, 3-pin	534063	SDE1-D10-G2-W18-L-P1-M12	
					0 ... 10 V	Plug M8x1, 4-pin	530900
		2x PNP	4 ... 20 mA	Plug M12x1, 5-pin	534062	SDE1-D10-G2-W18-L-2I-M12	
					PNP	4 ... 20 mA	Plug M8x1, 4-pin
		Plug M12x1, 4-pin	537021	SDE1-D10-G2-W18-L-PI-M12			

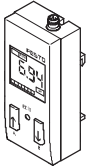
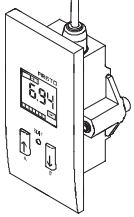
1) Back illuminated

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


 Note
Additional variants and accessories can be configured and ordered through the SDE1 modular system
➔ 13.

Pressure sensors SDE1, with display

Technical data

Ordering data – Measured variable: differential pressure and relative pressure						
Version	Pressure measuring range [bar]	Switching output	Analogue output	Electrical connection	Display type	Part No. Type
	Push-in connector QS-4, for H-rail mounting					
	0 ... -1	PNP	–	Plug M8x1, 3-pin	LCD ¹⁾	192036 SDE1-V1-G2-HQ4-C-P1-M8
					Illuminated LCD	529976 SDE1-V1-G2-HQ4-L-P1-M8
		2x PNP	–	Plug M8x1, 4-pin	LCD ¹⁾	192037 SDE1-V1-G2-HQ4-C-P2-M8
					Illuminated LCD	529977 SDE1-V1-G2-HQ4-L-P2-M8
	0 ... 10	PNP	–	Plug M8x1, 3-pin	LCD ¹⁾	192032 SDE1-D10-G2-HQ4-C-P1-M8
					Illuminated LCD	529964 SDE1-D10-G2-HQ4-L-P1-M8
		2x PNP	–	Plug M8x1, 4-pin	LCD ¹⁾	192033 SDE1-D10-G2-HQ4-C-P2-M8
	Illuminated LCD				529965 SDE1-D10-G2-HQ4-L-P2-M8	
		PNP	0 ... 10 V	Plug M8x1, 4-pin	LCD ¹⁾	529956 SDE1-D10-G2-HQ4-C-PU-M8
	Push-in connector QS-4, for H-rail, wall or surface mounting					
	0 ... 2	2x PNP	–	Plug M8x1, 4-pin	LCD ¹⁾	535581 SDE1-D2-G2-WQ4-C-P2-M8
	Push-in connector QS-4, for front panel mounting					
	0 ... 10	PNP	–	Plug M8x1, 3-pin	Illuminated LCD	537028 SDE1-D10-G2-FQ4-L-P1-M8
				Plug M12x1, 3-pin		537030 SDE1-D10-G2-FQ4-L-P1-M12
		2x PNP	–	Plug M8x1, 4-pin		537029 SDE1-D10-G2-FQ4-L-P2-M8
				Plug M12x1, 4-pin	537031 SDE1-D10-G2-FQ4-L-P2-M12	

1) Back illuminated

 Note
 Additional variants and accessories can be configured and ordered through the SDE1 modular system
 → 13.

Pressure sensors SDE1, with display

Modular product system



M Mandatory data								O Options
Module No.	Function	Pressure range	Absolute accuracy	Pneumatic connection and mounting	Display and setting	Electrical output	Electrical connection	Accessories: plug socket
192766	SDE1	B2, V1, D2, D6, D10	G2	R18, R14, MS4, MS6, H18, W18, HQ4, WQ4, FQ4	C, L	P1, P2, PU, PI, N1, N2, NU, NI	M8, M12	G, W, G5, W5
Ordering example								
192766	SDE1	- D6	- G2	- W18	- L	- P2	- M12	- W5

Ordering table				Condi- tions	Code	Enter code
M	Module No.	192766				192766
	Function	Pressure sensor			SDE1	SDE1
	Pressure range	Pressure range -1 ... 1 bar			-B2	
		Pressure range 0 ... -1 bar			-V1	
		Pressure range 0 ... 2 bar			-D2	
		Pressure range 0 ... 6 bar			-D6	
		Pressure range 0 ... 10 bar			-D10	
	Absolute accuracy	Accuracy 2%			-G2	-G2
	Pneumatic connection and mounting	Mounting R $\frac{1}{8}$ (service units)			-R18	
		Mounting R $\frac{1}{4}$ (service units)			-R14	
		Direct connection on MS4 series service units			-MS4	
		Direct connection on MS6 series service units			-MS6	
		Relative pressure with G $\frac{1}{8}$ connection for H-rail mounting			-H18	
		Relative pressure with G $\frac{1}{8}$ connection for wall/surface mounting			-W18	
		H-rail mounting, 4 mm push-in connector			-HQ4	
		Wall mounting, 4 mm push-in connector			-WQ4	
	Display and setting	LCD display (optimised operation)			-C	
		Illuminated LCD (optimised reading)			-L	
	Electrical output	1 switch (PNP)			-P1	
		2 switches (PNP)			-P2	
		1 switch (PNP) and 0 ... 10 V analogue			-PU	
		1 switch (PNP) and 4 ... 20 mA analogue			-PI	
		1 switch (NPN)			-N1	
		2 switches (NPN)			-N2	
		1 switch (NPN) and 0 ... 10 V analogue			-NU	
		1 switch (NPN) and 4 ... 20 mA analogue			-NI	
	Electrical connection	Plug M8			-M8	
		Plug M12			-M12	
O	Accessories				-	-
	Plug socket	2.5 m SIM cable with straight connection socket			G	
		2.5 m SIM cable with angled connection socket			W	
		5 m SIM cable with straight connection socket			G5	
		5 m SIM cable with angled connection socket			W5	



Transfer order code



192766 SDE1 - [] - G2 - [] - [] - [] - [] - []



Pressure sensors SDE1, with display


Accessories

FESTO

Ordering data – Connecting cables				Technical data → Internet: nebu	
	Number of wires	Cable length [m]	Part No.	Type	
M8x1, straight socket					
	3	2.5	541333	NEBU-M8G3-K-2.5-LE3	
		5	541334	NEBU-M8G3-K-5-LE3	
	4	2.5	541342	NEBU-M8G4-K-2.5-LE4	
		5	541343	NEBU-M8G4-K-5-LE4	
M8x1, angled socket					
	3	2.5	541338	NEBU-M8W3-K-2.5-LE3	
		5	541341	NEBU-M8W3-K-5-LE3	
	4	2.5	541344	NEBU-M8W4-K-2.5-LE4	
		5	541345	NEBU-M8W4-K-5-LE4	

Ordering data – Connecting cables				Technical data → Internet: nebu	
	Number of wires	Cable length [m]	Part No.	Type	
M12x1, straight socket					
	3	2.5	541363	NEBU-M12G5-K-2.5-LE3	
		5	541364	NEBU-M12G5-K-5-LE3	
	4	5	541328	NEBU-M12G5-K-5-LE4	
		5	2.5	541330	NEBU-M12G5-K-2.5-LE5
	5		541331	NEBU-M12G5-K-5-LE5	
M12x1, angled socket					
	3	2.5	541367	NEBU-M12W5-K-2.5-LE3	
		5	541370	NEBU-M12W5-K-5-LE3	
	4	5	541329	NEBU-M12W5-K-5-LE4	

Ordering data – Accessories		
	Part No.	Type
Adapter plate		
	194297	SDE1-...-W-...
Protective cover		
	537074	SDE1-SH

Ordering data – Push-in fittings				Technical data → Internet: quick star	
	For tubing O.D. [mm]	Part No.	Type		
	4	186095	QS-G $\frac{1}{8}$ -4		
	6	186096	QS-G $\frac{1}{8}$ -6		
	8	186098	QS-G $\frac{1}{8}$ -8		