

Pressure sensors SDE1, with display

Product overview



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

Detailed product information

→ www.festo.com/catalogue/sde1

Product overview							
Method of measurement	Measured variable	Pressure measuring range [bar]	Switching function	Pneumatic connection	Type of mounting	Electrical output	
						Digital	Analogue
Piezoresistive pressure sensor with display	Relative pressure Differential and relative pressure	0 ... -1	Freely programmable	Male thread R1/8, R1/4 Female thread G1/8 Push-in fitting for tubing OD 4 mm	On DIN H-rail Via wall/surface bracket On service unit Front panel mounting	PNP	-
		-1 ... +1				2x PNP	-
		0 ... 2				PNP	0 ... 10 V
		0 ... 6				PNP	4 ... 20 mA
		0 ... 10				2x PNP	4 ... 20 mA
						NPN	-
						2x NPN	-
						NPN	0 ... 10 V
	NPN	4 ... 20 mA					

Pressure sensors SDE1, with display

Type codes

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

Function

SDE1	Pressure sensor with display
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Pressure measuring range

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

Absolute accuracy

G2	Accuracy 2%
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Pneumatic connection and assembly

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 $\frac{1}{8}$, DIN H-rail mounting
W18	Female thread G $\frac{1}{8}$, wall or surface mounting
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 adjustment

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

Electrical output

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

Electrical connection

M8	Plug M8x1
M12	Plug M12x1

Accessories

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

Pressure sensors SDE1, with display

Technical data

General technical data						
Design						
Pressure measuring range	[bar]	0 ... -1	-1 ... +1	0 ... 2	0 ... 6	0 ... 10
Measured variable		Relative pressure				
		Differential pressure				
Pneumatic connection		R1/8				
		R1/4				
		G1/8				
		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				
		On service unit				
		Front panel mounting				
Electrical data						
Switch output		PNP				
		NPN				
Analogue output	[V]	0 ... 10				
	[mA]	4 ... 20				
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				
		Plug M12x1, 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 - Recognised (OL)				
Materials						
Housing		Polyacetate, reinforced, polyamide				

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

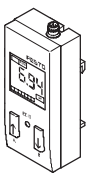
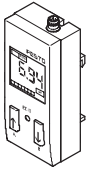

- † - Note: This product conforms with the ISO 1179-1 standard and the ISO 228-1 standard.

Pressure sensors SDE1, with display

Technical data


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Sensors
Sensors for pressure and vacuum
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Ordering data								
Variant	Pressure measuring range [bar]	Switch output	Analogue output	Electrical connection	Type of display	Part No.	Type	
Female thread G $\frac{1}{8}$, DIN H-rail mounting, relative pressure measurement								
	0 ... -1	PNP	-	Plug, M8x1, 3-pin	LCD ¹⁾	192 034	SDE1-V1-G2-H18-C-P1-M8	
					Illuminated LCD	529 973	SDE1-V1-G2-H18-L-P1-M8	
		2x PNP	-	Plug, M8x1, 4-pin	LCD ¹⁾	192 035	SDE1-V1-G2-H18-C-P2-M8	
					Illuminated LCD	529 974	SDE1-V1-G2-H18-L-P2-M8	
		PNP	0 ... 10 V	Plug, M8x1, 4-pin	LCD ¹⁾	529 959	SDE1-V1-G2-H18-C-PU-M8	
					Illuminated LCD	529 975	SDE1-V1-G2-H18-L-PU-M8	
	0 ... 10	PNP	-	Plug, M8x1, 3-pin	LCD ¹⁾	192 030	SDE1-D10-G2-H18-C-P1-M8	
					Illuminated LCD	529 961	SDE1-D10-G2-H18-L-P1-M8	
		2x PNP	-	Plug, M8x1, 4-pin	LCD ¹⁾	192 031	SDE1-D10-G2-H18-C-P2-M8	
					Illuminated LCD	529 962	SDE1-D10-G2-H18-L-P2-M8	
		PNP	0 ... 10 V	Plug, M8x1, 4-pin	LCD ¹⁾	529 955	SDE1-D10-G2-H18-C-PU-M8	
					Illuminated LCD	529 963	SDE1-D10-G2-H18-L-PU-M8	
Push-in connector QS-4, for DIN H-rail mounting, differential pressure and relative pressure measurement								
	0 ... -1	PNP	-	Plug, M8x1, 3-pin	LCD ¹⁾	192 036	SDE1-V1-G2-HQ4-C-P1-M8	
					Illuminated LCD	529 976	SDE1-V1-G2-HQ4-L-P1-M8	
		2x PNP	-	Plug, M8x1, 4-pin	LCD ¹⁾	192 037	SDE1-V1-G2-HQ4-C-P2-M8	
					Illuminated LCD	529 977	SDE1-V1-G2-HQ4-L-P2-M8	
		PNP	0 ... 10 V	Plug, M8x1, 4-pin	LCD ¹⁾	529 960	SDE1-V1-G2-HQ4-C-PU-M8	
					Illuminated LCD	529 978	SDE1-V1-G2-HQ4-L-PU-M8	
	0 ... 2	2x PNP	-	Plug, M8x1, 4-pin	LCD ¹⁾	535 581	SDE1-D2-G2-HQ4-C-P2-M8	
	0 ... 10	PNP	-	Plug, M8x1, 3-pin	LCD ¹⁾	192 032	SDE1-D10-G2-HQ4-C-P1-M8	
					Illuminated LCD	529 964	SDE1-D10-G2-HQ4-L-P1-M8	
		2x PNP	-	Plug, M8x1, 4-pin	LCD ¹⁾	192 033	SDE1-D10-G2-HQ4-C-P2-M8	
					Illuminated LCD	529 965	SDE1-D10-G2-HQ4-L-P2-M8	
		PNP	0 ... 10 V	Plug, M8x1, 4-pin	LCD ¹⁾	529 956	SDE1-D10-G2-HQ4-C-PU-M8	
					Illuminated LCD	529 966	SDE1-D10-G2-HQ4-L-PU-M8	
	Female thread G $\frac{1}{8}$, for wall or surface mounting, relative pressure measurement ²⁾							
		0 ... -1	PNP	-	Plug M12x1, 3-pin	Illuminated LCD	534 065	SDE1-V1-G2-W18-L-P1-M12
					Plug, M8x1, 4-pin		537 022	SDE1-V1-G2-W18-L-PI-M8
			Plug M12x1, 4-pin	537 023	SDE1-V1-G2-W18-L-PI-M12			
		0 ... 2	PNP	-	Plug, M8x1, 3-pin	537 024	SDE1-D2-G2-W18-L-P1-M8	
2x PNP			-	Plug, M8x1, 4-pin	537 025	SDE1-D2-G2-W18-L-P2-M8		
0 ... 6		PNP	-	Plug, M8x1, 3-pin	537 026	SDE1-D6-G2-W18-L-P1-M8		
		2x PNP	-	Plug, M8x1, 4-pin	537 027	SDE1-D6-G2-W18-L-P2-M8		
0 ... 10		PNP	-	Plug M12x1, 3-pin	534 063	SDE1-D10-G2-W18-L-P1-M12		
				Plug, M8x1, 4-pin	530 900	SDE1-D10-G2-W18-L-PU-M8		
		2x PNP	4 ... 20 mA	Plug M12x1, 5-pin	534 062	SDE1-D10-G2-W18-L-2I-M12		
		PNP	4 ... 20 mA	Plug, M8x1, 4-pin	537 020	SDE1-D10-G2-W18-L-PI-M8		
				Plug M12x1, 4-pin	537 021	SDE1-D10-G2-W18-L-PI-M12		

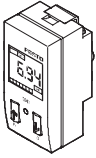
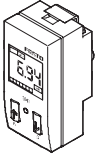
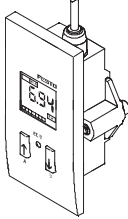
1) Back illuminated

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
➔ 6 / 5.1-82.

Pressure sensors SDE1, with display

Technical data

Ordering data								
Variant	Pressure measuring range [bar]	Switch output	Analogue output	Electrical connection	Type of display	Part No.	Type	
Male thread R1/8, mounting on service unit (D series), relative pressure measurement								
	0 ... 10	PNP	-	Plug, M8x1, 3-pin	LCD ¹⁾	192 026	SDE1-D10-G2-R18-C-P1-M8	
					Illuminated LCD	529 970	SDE1-D10-G2-R18-L-P1-M8	
				Plug, M12x1, 3-pin	Illuminated LCD	534 064	SDE1-D10-G2-R18-L-P1-M12	
		2x PNP	-	Plug, M8x1, 4-pin	LCD ¹⁾	192 027	SDE1-D10-G2-R18-C-P2-M8	
					Illuminated LCD	529 971	SDE1-D10-G2-R18-L-P2-M8	
		PNP	0 ... 10 V	Plug, M8x1, 4-pin	LCD ¹⁾	529 958	SDE1-D10-G2-R18-C-PU-M8	
Illuminated LCD	529 972				SDE1-D10-G2-R18-L-PU-M8			
Male thread R1/4, mounting on service unit (D series), relative pressure measurement								
	0 ... 10	PNP	-	Plug, M8x1, 3-pin	LCD ¹⁾	192 028	SDE1-D10-G2-R14-C-P1-M8	
					Illuminated LCD	529 967	SDE1-D10-G2-R14-L-P1-M8	
				Plug, M12x1, 3-pin	Illuminated LCD	534 157	SDE1-D10-G2-R14-L-P1-M12	
		2x PNP	-	Plug, M8x1, 4-pin	LCD ¹⁾	192 029	SDE1-D10-G2-R14-C-P2-M8	
					Illuminated LCD	529 968	SDE1-D10-G2-R14-L-P2-M8	
		PNP	0 ... 10 V	Plug, M8x1, 4-pin	LCD ¹⁾	529 957	SDE1-D10-G2-R14-C-PU-M8	
Illuminated LCD	529 969				SDE1-D10-G2-R14-L-PU-M8			
Push-in connector QS-4, for front panel mounting, differential pressure and relative pressure measurement								
	0 ... 10	PNP	-	Plug, M8x1, 3-pin	Illuminated LCD	537 028	SDE1-D10-G2-FQ4-L-P1-M8	
						Plug, M12x1, 3-pin	537 030	SDE1-D10-G2-FQ4-L-P1-M12
		2x PNP	-	Plug, M8x1, 4-pin		537 029	SDE1-D10-G2-FQ4-L-P2-M8	
				Plug, M12x1, 4-pin		537 031	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
 → 6 / 5.1-82.

Pressure sensors SDE1, with display

Modular product system



Sensors
Sensors for pressure and vacuum
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M Mandatory data								O Options
Module No.	Function	Pressure range	Absolute accuracy	Pneumatic connection and assembly	Display and adjustment	Electrical output	Electrical connection	Accessories: Plug socket
192 766	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
Order example								
192 766	SDE1	- D6	- G2	- W18	- L	- P2	- M12	- W5

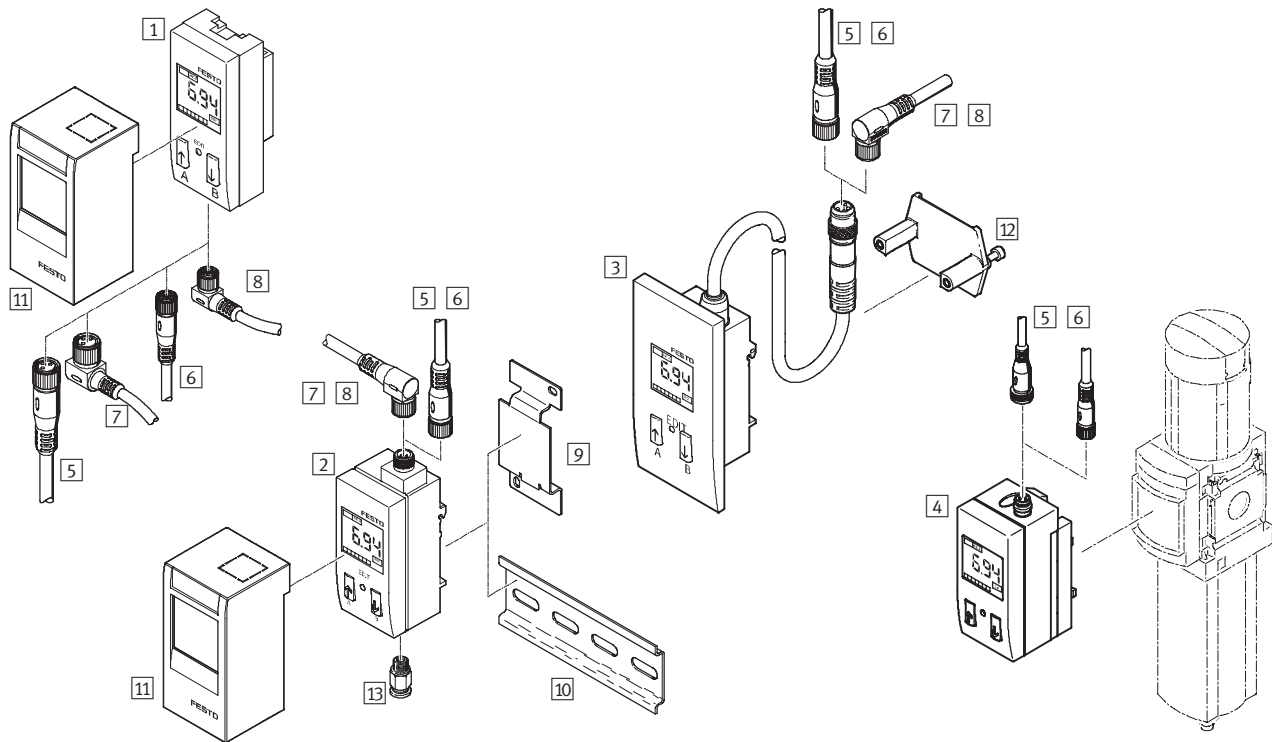
Ordering table		Condi-tions	Code	Enter code
M	Module No.	192 766		
	Function	Pressure sensor	SDE1	SDE1
	Pressure range	Pressure range -1 ... 1 bar	-B2	
		Pressure range 0 ... -1 bar	-V1	
		Pressure range 0 ... 2 bar	-D2	
		Pressure range 0 ... 6 bar	-D6	
		Pressure range 0 ... 10 bar	-D10	
	Absolute accuracy	Accuracy 2%	-G2	-G2
	Pneumatic connection and assembly	Mounting R $\frac{1}{8}$ (service units)	-R18	
		Mounting R $\frac{1}{4}$ (service units)	-R14	
		Direct connection, service units, MS4 series	-MS4	
		Direct connection, service units, MS6 series	-MS6	
		Relative pressure with G $\frac{1}{8}$ connection for DIN H-rail mounting	-H18	
		Relative pressure with G $\frac{1}{8}$ connection for wall or surface mounting	-W18	
		DIN H-rail mounting, 4 mm push-in connector	-HQ4	
		Wall mounting, 4 mm push-in connector	-WQ4	
	Display and adjustment	Front panel mounting, 4 mm push-in connector	-FQ4	
		LCD display (optimised operation)	-C	
	Electrical output	Illuminated LCD (reading optimised)	-L	
		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	
	Electrical connection	1 switch (NPN) and 4 ... 20 mA analogue	-NI	
		M8 plug	-M8	
		M12 plug	-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

192 766	SDE1	-		-	G2	-		-		-		-		-	
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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
4	Pressure sensor SDE1-...-MS...
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 50022
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 → 6 / 5.1-169	
	Number of wires	Cable length [m]	Part No. Type
M8x1, straight socket			
	3	2.5	541 333 NEBU-M8G3-K-2.5-LE3
		5	541 334 NEBU-M8G3-K-5-LE3
	4	2.5	541 342 NEBU-M8G4-K-2.5-LE4
		5	541 343 NEBU-M8G4-K-5-LE4
M8x1, angled socket			
	3	2.5	541 338 NEBU-M8W3-K-2.5-LE3
		5	541 341 NEBU-M8W3-K-5-LE3
	4	2.5	541 344 NEBU-M8W4-K-2.5-LE4
		5	541 345 NEBU-M8W4-K-5-LE4

Ordering data – Connecting cables		Technical data → 6 / 5.1-169	
	Number of wires	Cable length [m]	Part No. Type
M12x1, straight socket			
	3	2.5	541 363 NEBU-M12G5-K-2.5-LE3
		5	541 364 NEBU-M12G5-K-5-LE3
	4	5	541 328 NEBU-M12G5-K-5-LE4
		2.5	541 330 NEBU-M12G5-K-2.5-LE5
	5	541 331 NEBU-M12G5-K-5-LE5	
M12x1, angled socket			
	3	2.5	541 367 NEBU-M12W5-K-2.5-LE3
		5	541 370 NEBU-M12W5-K-5-LE3
	4	5	541 329 NEBU-M12W5-K-5-LE4

Ordering data – Push-in fittings		Technical data → www.festo.com	
	For tubing O.D. [mm]	Part No.	Type
	4	186 095	QS-G1/8-4
	6	186 096	QS-G1/8-6
	8	186 098	QS-G1/8-8

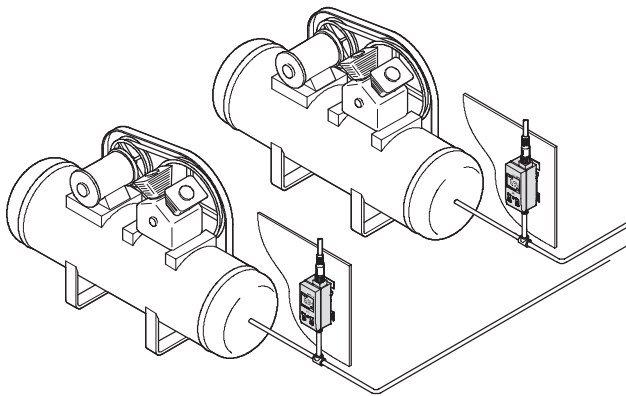
Ordering data – Accessories	
	Part No. Type
	194 297 SDE1-...-W-...
	537 074 SDE1-SH

Pressure sensors SDE1, with display

Application examples

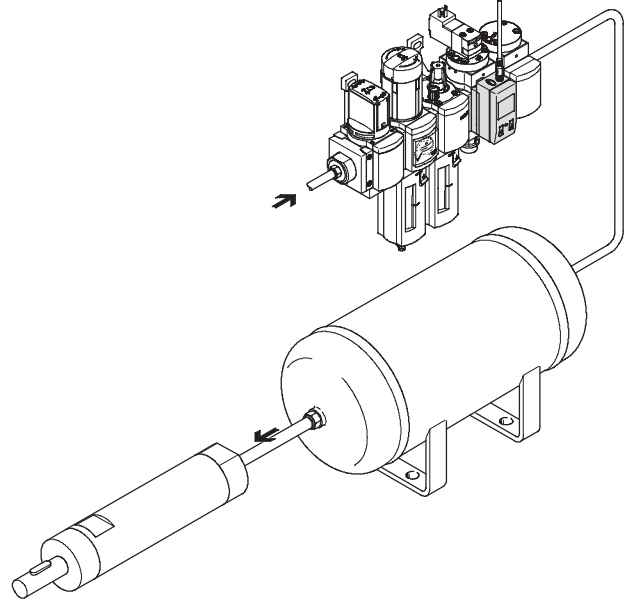


Basic pressure monitoring



- Pressure sensor SDE1 with display as basic pressure monitoring on the compressors

Pressure range monitoring



- Pressure range monitoring via a pressure sensor SDE1 with display in combination with an MS series service unit for operation of a pulsed air motor