

# Pressure and vacuum switches PEV/VPEV, PE converters PE/PEN/VPE

FESTO

Product overview



- Mechanical pressure and vacuum switches with adjustable switching point
- PE converter
- Designs with adjustable hysteresis
- Designs with switching status display
- Variant with scale for pressure adjustment
- Wide range of mounting options

Detailed product information

→ [www.festo.com/catalogue/pev](http://www.festo.com/catalogue/pev)

Product overview							
Method of measurement	Operating pressure [bar]	Type	Pneumatic connection	Type of mounting	Operating voltage range		➔ Page
					[V DC]	[V AC]	
Pressure switches							
Pneumatic/electrical pressure transducer	1 ... 12	PEV-1/4	G1/4	With through-holes	0 ... 250	0 ... 250	6 / 5.1-32
	0 ... 8	PEV-W	M5	Via DIN H-rail	10 ... 30	–	6 / 5.1-35
	1 ... 10	PEV-1/4-A	G1/4	Screw-in	10 ... 30	–	6 / 5.1-38
Vacuum switches							
Pneumatic/electrical pressure transducer	–1 ... 1.6	VPEV-1/8	G1/8	Via through-hole	0 ... 125	0 ... 250	6 / 5.1-32
	–1 ... 0	VPEV-W	M5	Via DIN H-rail	10 ... 30	–	6 / 5.1-35
PE converter							
Pneumatic/electrical differential pressure switch	–1 ... +8	PEN-M5	M5	On mounting frame 2N	10 ... 30	–	6 / 5.1-39
Pneumatic/electrical pressure transducer	0 ... 8	PE-1/8-2N	G1/8	On mounting frame 2N	12 ... 250	12 ... 250	
	–0.95 ... 0	VPE-1/8-2N	G1/8	On mounting frame 2N	12 ... 250	12 ... 250	

**FESTO**

## Type codes

Diagram illustrating a sequence of boxes connected by lines:

- Box 1: PEV
- Box 2:  $\frac{1}{4}$
- Box 3: B
- Box 4: (Empty)
- Box 5: (Empty)
- Box 6: (Empty)
- Box 7: (Empty)
- Box 8: (Empty)

Connections (from left to right):

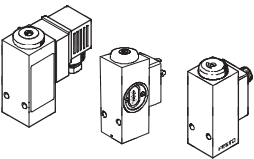

- PEV connects to  $\frac{1}{4}$
- $\frac{1}{4}$  connects to B
- B connects to Box 4
- Box 4 connects to Box 5
- Box 5 connects to Box 6
- Box 6 connects to Box 7
- Box 7 connects to Box 8

Technical data			
Type		PEV-1/4	VPEV-1/8
Design			
Pneumatic connection		G1/4	G1/8
Electrical data			
Operating voltage range	[V DC]	0 ... 250	0 ... 250
	[V AC]	0 ... 125	0 ... 250
Switching element function		Changeover switch	
Max. output current	[mA]	5,000	2,500
Protection against short circuit		No	
Protection against polarity reversal		Yes	
Protection class		IP65	
Operating and environmental conditions			
Operating medium		Filtered compressed air, lubricated or unlubricated Water Mineral oil	Filtered compressed air, lubricated or unlubricated Vacuum, lubricated or unlubricated
Operating pressure	[bar]	1 ... 12	-1 ... +1.6
Ambient temperature	[°C]	-20 ... +80	
CE mark (see declaration of conformity)		In accordance with EU Low Voltage Directive	
Certification		CCC	
Materials			
Housing		Wrought aluminium alloy	

# Pressure and vacuum switches PEV/VPEV, with through-holes

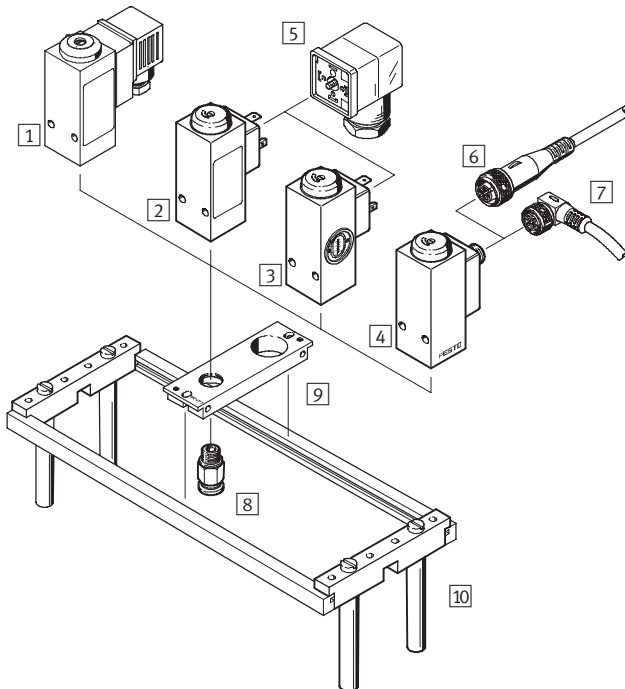
FESTO

Technical data, peripherals overview

Ordering data						
Description	Electrical connection	Adjustable hysteresis	Visual scale for pressure adjustment	Plug socket in scope of delivery	Part No.	Type
Pressure switches						
	Plug, square design to DIN 43650, type A	■	—	■	10 773	PEV-1/4-B
		■	—	■	165 869	PEV-1/4-B-CT <sup>1)</sup>
		■	—	—	175 250	PEV-1/4-B-OD
		■	—	—	175 251	PEV-1/4-B-OD-CT <sup>1)</sup>
		—	■	—	161 760	PEV-1/4-SC-OD
	Plug M12x1, 4-pin	■	—	—	192 488	PEV-1/4-B-M12
Vacuum switches						
	Plug, square design to DIN 43650, type A	■	—	■	150 261	VPEV-1/8
	Plug M12x1, 4-pin	■	—	—	192 489	VPEV-1/8-M12

1) Free of copper and PTFE

## Peripherals overview



Accessories	
1	Pressure switch PEV-1/4-B-..., vacuum switch VPEV-1/8
2	Pressure switch PEV-1/4-B-OD...
3	Pressure switch PEV-1/4-SC-OD... with scale for pressure adjustment
4	Pressure switch PEV-1/4-B-M12, vacuum switch VPEV-1/8-M12
5	Plug socket PEV-1/4-WD-LED... with switching status display Plug socket MSSD-C-4P without switching status display
6	Connecting cable NEBU-M12G5... with straight socket
7	Connecting cable NEBU-M12W5... with angled socket
8	Push-in fitting QS-...
9	Mounting plate APL-2N-PEV
10	Mounting frame NRRQ-2N

Ordering data – Plug sockets			
Description	Part No.	Type	
	164 274	PEV-1/4-WD-LED-24	
	164 275	PEV-1/4-WD-LED-230	
Without switching status display	171 157	MSSD-C-4P	

Ordering data – Connecting cables			Technical data → 6 / 5.1-65
Number of wires	Cable length [m]	Part No.	Type
M12x1, straight socket			
	4	5	541 328 NEBU-M12G5-K-5-LE4
M12x1, angled socket			
	4	5	541 329 NEBU-M12W5-K-5-LE4

Ordering data – Push-in fittings			Technical data → www.festo.com
Part No.	Type		
	186 097	QS-G1/4-6	
	186 099	QS-G1/4-8	

Ordering data – Mounting attachments		
Part No.	Type	
	9 349	APL-2N-PEV
	9 365	NRRQ-2N
	11 571	NRW-9/1,5-B

# Pressure and vacuum switches PEV-W/VPEV-W, DIN H-rail mounting

FESTO

Type codes, technical data

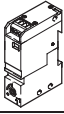
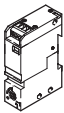
## Type codes

		PEV-W	–	KL	–	LED	–	GH
<b>Type</b>								
PEV-W	Pressure switch							
VPEV-W	Vacuum switch							
<b>Electrical connection</b>								
KL	Screw terminal, 4-pin							
S	Plug, M8x1, 4-pin							
<b>Switching status display</b>								
LED	Yellow LED							
<b>Type of mounting</b>								
GH	Via DIN H-rail or via through-holes							

## Technical data

Type	PEV-W		VPEV-W
Design			
Pneumatic connection	M5		M5
Electrical data			
Operating voltage range	[V DC]	10 ... 30	10 ... 30
	[V AC]	–	–
Switching element function	Changeover switch		
Max. output current	[mA]	5,000	2,500
Protection against short circuit	No		
Protection against polarity reversal	Yes		
Protection class	IP65		
Operating and environmental conditions			
Operating medium	Filtered compressed air, lubricated or unlubricated		Filtered compressed air, lubricated or unlubricated Vacuum, lubricated or unlubricated
Operating pressure	[bar]	0 ... 8	0 ... –1
Ambient temperature	[°C]	–20 ... +80	
CE mark (see declaration of conformity)	In accordance with EU EMC directive		
Certification	CCC		
Materials			
Housing	Wrought aluminium alloy		

## Ordering data

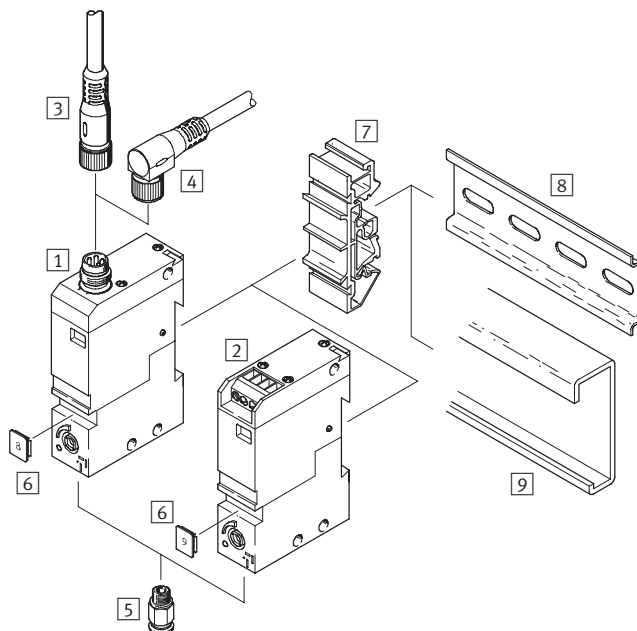
Description	Electrical connection	Plug socket in scope of delivery	Part No.	Type
<b>Pressure switches</b>				
	Screw terminal, 4-pin	–	152 618	PEV-W-KL-LED-GH
	Plug, M8x1, 4-pin	–	152 616	PEV-W-S-LED-GH
<b>Vacuum switches</b>				
	Screw terminal, 4-pin	–	152 619	VPEV-W-KL-LED-GH
	Plug, M8x1, 4-pin	–	152 617	VPEV-W-S-LED-GH

# Pressure and vacuum switches PEV-W/VPEV-W, DIN H-rail mounting



FESTO

Peripherals overview

## Peripherals overview



Accessories	
1	Pressure switch PEV-W-S-... with plug M8x1 Vacuum switch VPEV-W-S-... with plug M8x1
2	Pressure switch PEV-W-KL-... with screw terminals Vacuum switch VPEV-W-KL-... with screw terminals
3	Connecting cable NEBU-M8G4-... with straight socket
4	Connecting cable NEBU-M8W4-... with angled socket
5	Push-in fitting QSM-M5
6	Identification plate BZ-N...
7	Mounting latch PENV-BGH
8	Mounting rail to DIN EN 50022
9	Mounting rail to DIN EN 50035

Ordering data – Connecting cables			Technical data ➔ 6 / 5.1-65	
	Number of wires	Cable length [m]	Part No.	Type
M8x1, straight socket				
	4	2.5	541 342	NEBU-M8G4-K-2.5-LE4
		5	541 343	NEBU-M8G4-K-5-LE4
M8x1, angled socket				
	4	2.5	541 344	NEBU-M8W4-K-2.5-LE4
		5	541 345	NEBU-M8W4-K-5-LE4

Ordering data – Push-in fittings			Technical data → www.festo.com	
	For tubing O.D. [mm]	Part No.	Type	
	3	153 302	QSM-M5-3	
	4	153 304	QSM-M5-4	
	6	153 306	QSM-M5-6	

Ordering data – Accessories		
	Part No.	Type
	6 888	BZ-N1-50
	6 889	BZ-N51-100
	164 597	PEMV-BGH

Vacuum switches

5.1

# Pressure switches PEV, screw-in

Type codes, technical data

FESTO



## Type codes

		PEV	-	1/4	-	A	-	SW27	-	
<b>Type</b>										
PEV	Pressure switch									
<b>Pneumatic connection</b>										
1/4	G1/4									
<b>Generation</b>										
A	A series									
<b>Width across flats</b>										
SW27	27 mm									
<b>Electrical connection</b>										
-	For plug socket PEV-1/4-A-WD									
B-OD	For plug socket PEV-1/4-WD-LED-...									



## Technical data

Type	PEV-1/4-A-SW27		PEV-1/4-A-SW27-B-OD	
Design				
Pneumatic connection		G1/4		
Electrical data				
Operating voltage range		[V DC]	12 ... 250	
Switching element function		Changeover switch		
Max. output current		[mA]	4,000	
Protection against short circuit		No		
Protection against polarity reversal		No		
Protection class		IP65		
Operating and environmental conditions				
Operating medium		Filtered compressed air, lubricated or unlubricated		
Operating pressure		[bar]	1 ... 10	
Ambient temperature		[°C]	-30 ... +100	-20 ... +100
CE mark (see declaration of conformity)		In accordance with EU Low Voltage Directive		
Materials				
Housing		Galvanised steel		

## Ordering data

		Electrical connection	Plug socket in scope of delivery	Part No.	Type
		Plug, 4-pin	-	159 259	PEV-1/4-A-SW27
		Plug, 4-pin	-	175 252	PEV-1/4-A-SW27-B-OD

## Ordering data – Plug sockets

		Description	Operating voltage range		Part No.	Type
			[V DC]	[V AC]		
		For pressure switch PEV-1/4-A-SW27	≤180	≤230	161 209	PEV-1/4-A-WD
		For pressure switch PEV-1/4-A-SW27-B-OD	15 ... 30	-	164 274	PEV-1/4-WD-LED-24
			≤180	≤230	164 275	PEV-1/4-WD-LED-230

# PE converter PE/PEN/VPE

Type codes, technical data

FESTO

## Type codes

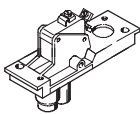
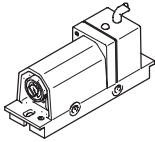
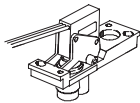
		PE	–	1/8	–	2N	–	SW
<b>Type</b>								
PE	PE converter							
PEN	PE converter							
VPE	PE converter for vacuum							
<b>Pneumatic connection</b>								
1/8	G1/8							
M5	Female thread M5							
<b>Type of mounting</b>								
2N	On mounting frame 2N							
<b>Width across flats</b>								
SW	Splash proof design							

Technical data						
Type		PE-1/8-2N	PE-1/8-2N-SW	PEN-M5	VPE-1/8-2N	VPE-1/8-2N-SW
Design						
Pneumatic connection		G1/8		M5	G1/8	
Electrical data						
Operating voltage range	[V DC]	12 ... 250		12 ... 30	12 ... 250	
	[V AC]	12 ... 250		–	12 ... 250	
Switch output		–		PNP	–	
Switching element function		Changeover switch		N/O contact	Changeover switch	
Max. output current	[mA]	4,000				
Minimum load current	[mA]	100		–	100	
Protection against short circuit		No		Yes	No	
Protection against polarity reversal		No				
Protection class		IP00, IP20 with protective cap	IP67	IP67	IP00, IP20 with protective cap	IP67
Operating and environmental conditions						
Operating medium		Filtered compressed air, lubricated or unlubricated, grade of filtration 40 µm				
		–				Vacuum
Operating pressure	[bar]	0 ... 8		–1 ... +8	–0.95 ... 0	
Ambient temperature	[°C]	0 ... 60		–20 ... +60	0 ... 60	
CE mark (see declaration of conformity)		In accordance with EU Low Voltage Directive		In accordance with EU EMC directive	In accordance with EU Low Voltage Directive	
Certification		CCC		–	CCC	
Materials						
Housing		Die-cast aluminium, polyamide		Die-cast zinc	Die-cast aluminium, polyamide	

# PE converters PE/PEN/VPE

Technical data

**FESTO**

Ordering data				
	Operating pressure [bar]	Electrical connection	Part No.	Type
	0 ... 8	Screw terminal	7 860	PE-1/8-2N
		3 wires	7 862	PE-1/8-2N-SW
	-1 ... +8	Cable, 3-wire	8 625	PEN-M5
	-0.95 ... 0	Screw terminal	12 594	VPE-1/8-2N
		3 wires	12 595	VPE-1/8-2N-SW

## Pressure switches SDE5

Product overview

**FESTO**



- Programmable and configurable pressure switch for simple pressure sensing tasks
- Teach-in function for programming
- Integrated microprocessor
- Operating status indicated by an LED visible from all sides

Detailed product information

➔ [www.festo.com/catalogue/sde5](http://www.festo.com/catalogue/sde5)

Product overview							
Method of measurement	Pressure measuring range [bar]	Type	Switching function	Switching element function	Pneumatic connection	Electrical connection	➔ Page
Piezoresistive pressure switch	0 ... -1	SDE5-V1	Threshold value with fixed hysteresis	N/O contact	QS-3	Plug M8x1, 3-pin; cable, 3-wire	6 / 5.1-41
	0 ... 2	SDE5-D2	Threshold value with variable hysteresis	N/C contact	QS-4		
	0 ... 10	SDE5-D10	Window comparator Freely programmable Switching points set at the factory	Switchable	QS-6		

# Pressure switches SDE5

Type codes

FESTO

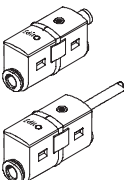
		SDE5	-	D2	-	0	-	Q6	-	P	-	M8	-	G5	-		-	
<b>Type</b>																		
SDE5	Pressure switch																	
<b>Pressure measuring range</b>																		
V1	0 ... -1 bar																	
D2	0 ... 2 bar																	
D10	0 ... 10 bar																	
<b>Switching function</b>																		
FP	Freely programmable																	
<b>Threshold value with fixed hysteresis, 1 teach-in pressure</b>																		
O	N/O contact																	
C	N/C contact																	
<b>Threshold value with fixed hysteresis, 2 teach-in pressures</b>																		
O1	N/O contact																	
C1	N/C contact																	
<b>Threshold value with variable hysteresis, 2 teach-in pressures</b>																		
O2	N/O contact																	
C2	N/C contact																	
<b>Window comparator with fixed hysteresis, 2 teach-in pressures</b>																		
O3	N/O contact																	
C3	N/C contact																	
<b>Pneumatic connection</b>																		
<b>Push-in connector at both ends</b>																		
Q3	For 3 mm tubing O.D.																	
Q4	For 4 mm tubing O.D.																	
Q6	For 6 mm tubing O.D.																	
<b>Push-in connector at one end</b>																		
Q3E	For 3 mm tubing O.D.																	
Q4E	For 4 mm tubing O.D.																	
Q6E	For 6 mm tubing O.D.																	
<b>Electrical output</b>																		
P	1 switch output PNP																	
<b>Electrical connection</b>																		
K	2.5 m cable																	
M8	3-pin M8 plug																	
<b>Connecting cable</b>																		
<b>SIM cable with straight connection socket</b>																		
G	2.5 m long																	
G5	5 m long																	
<b>SIM cable with angled connection socket</b>																		
W	2.5 m long																	
W5	5 m long																	
<b>Teach-in point 1 permanently set</b>																		
...X	Permanent switching point setting as per customer's requirement, required switching pressure [bar]																	
<b>Teach-in point 2 permanently set</b>																		
...Y	Permanent switching point setting as per customer's requirement, required switching pressure [bar]																	

# Pressure switches SDE5

Technical data

FESTO

General technical data		
Operating voltage range	[V DC]	15 ... 30
Max. output current	[mA]	100
Switch output		PNP
Protection against short circuit		Pulsed
Protection against polarity reversal		For all electrical connections
Protection class		IP40
Operating medium		Filtered compressed air, lubricated or unlubricated, grade of filtration 40µm
Ambient temperature	[°C]	0 ... 50
CE mark		In accordance with EU EMC directive
Certification		c UL us - Recognised (OL)
Information on housing materials		Polyacetate, reinforced; polyamide; polyphenylene sulphide, reinforced

Ordering data							
Variant	Pressure measuring range [bar]	Switching element function	Electrical connection	Pneumatic connection		Part No.	Type
				At one end	At both ends		
	Threshold value with fixed hysteresis, 1 teach-in pressure						
	0 ... -1	N/O contact	Plug, M8x1, 3-pin	QS-3	–	527 459	SDE5-V1-O-Q3E-P-M8
				QS-4	–	527 460	SDE5-V1-O-Q4E-P-M8
				QS-6	–	527 461	SDE5-V1-O-Q6E-P-M8
				–	QS-3	527 456	SDE5-V1-O-Q3-P-M8
				–	QS-4	527 457	SDE5-V1-O-Q4-P-M8
				–	QS-6	527 458	SDE5-V1-O-Q6-P-M8
	0 ... 2	N/O contact	Cable, 3-wire	QS-6	–	542 888	SDE5-D2-O-Q6E-P-K
	0 ... 10	N/O contact	Plug, M8x1, 3-pin	QS-3	–	527 465	SDE5-D10-O-Q3E-P-M8
				QS-4	–	527 466	SDE5-D10-O-Q4E-P-M8
				QS-6	–	527 467	SDE5-D10-O-Q6E-P-M8
				–	QS-3	527 462	SDE5-D10-O-Q3-P-M8
				–	QS-4	527 463	SDE5-D10-O-Q4-P-M8
				–	QS-6	527 464	SDE5-D10-O-Q6-P-M8
			Cable, 3-wire	QS-6	–	542 890	SDE5-D10-O-Q6E-P-K
		N/C contact	Plug, M8x1, 3-pin	QS-4	–	542 889	SDE5-D10-C-Q4E-P-M8
				QS-6	–	542 894	SDE5-D10-C-Q6E-P-M8
			Cable, 3-wire	QS-6	–	542 895	SDE5-D10-C-Q6E-P-K
	Threshold value with fixed hysteresis, 2 teach-in pressures with mean value calculation						
	0 ... -1	N/O contact	Plug, M8x1, 3-pin	QS-6	–	542 886	SDE5-V1-O1-Q6-P-M8
	Threshold value with variable hysteresis, 2 teach-in pressures						
	0 ... 10	N/O contact	Plug, M8x1, 3-pin	QS-6	–	542 891	SDE5-D10-O2-Q6E-P-M8
				–	QS-6	542 892	SDE5-D10-O2-Q6-P-M8
Window comparator with fixed hysteresis, 2 teach-in pressures							
0 ... 10	N/O contact	Plug, M8x1, 3-pin	QS-6	–	542 893	SDE5-D10-O3-Q6E-P-K	
	N/C contact	Plug, M8x1, 3-pin	QS-6	–	542 896	SDE5-D10-C3-Q6E-P-K	
Freely programmable							
0 ... -1	Selectable	Plug, M8x1, 3-pin	–	QS-6	542 887	SDE5-V1-FP-Q6-P-M8	
0 ... 10	Selectable	Plug, M8x1, 3-pin	QS-4	–	542 900	SDE5-D10-FP-Q4E-P-M8	
			QS-6	–	542 897	SDE5-D10-FP-Q6E-P-M8	
			–	QS-6	542 898	SDE5-D10-FP-Q6-P-M8	
		Cable, 3-wire	QS-4	–	542 901	SDE5-D10-FP-Q4E-P-K	
			–	QS-6	542 899	SDE5-D10-FP-Q6-P-K	

# Pressure switches SDE5

Modular product system

FESTO

M Mandatory data							O Options		
Module No.	Sensor function	Pressure range	Switching function	Pneumatic connection	Electrical output	Electrical connection	Connecting cable	Teach-in point 1 permanently set	Teach-in point 2 permanently set
529 027	SDE5	V1 D2 D10	FP O C O1 C1 O2 C2 O3 C3	Q3 Q4 Q6 Q3E Q4E Q6E	P	K M8	G W G5 W5	...X	...Y
<b>Order example</b>									
529 027	SDE5	- D10	- O2	- Q6	- P	- M8	- G5	- 5,5X	- 5,5Y

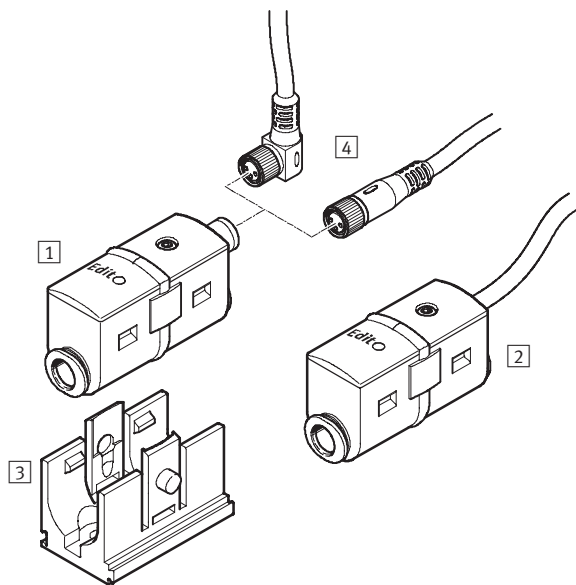
Ordering table				
Size	5	Condi- tions	Code	Enter code
M Module No.	529 027			529 027
Sensor function	Pressure switch		SDE5	SDE5
Pressure range	Pressure range 0 ... -1 bar (relative)		-V1	
	Pressure range 0 ... 2 bar (relative)		-D2	
	Pressure range 0 ... 10 bar (relative)		-D10	
Switching function	Freely programmable, N/O contact, N/C contact		-FP	
	Threshold value with fixed hysteresis, 1 teach-in point, N/O contact		-O	
	Threshold value with fixed hysteresis, 1 teach-in point, N/C contact		-C	
	Threshold value with fixed hysteresis, 2 teach-in points, N/O contact		-O1	
	Threshold value with fixed hysteresis, 2 teach-in points, N/C contact		-C1	
	Threshold value with variable hysteresis, N/O contact		-O2	
	Threshold value with variable hysteresis, N/C contact		-C2	
	Window comparator with fixed hysteresis, N/O contact		-O3	
	Window comparator with fixed hysteresis, N/C contact		-C3	
Pneumatic connection	QS3 connection at both ends		-Q3	
	QS4 connection at both ends		-Q4	
	QS6 connection at both ends		-Q6	
	QS3 connection at one end		-Q3E	
	QS4 connection at one end		-Q4E	
	QS6 connection at one end		-Q6E	
Electrical output	1 switch output PNP		-P	-P
Electrical connection	Cable, 2.5 m		-K	
	3-pin M8 plug		-M8	
O Connecting cable (accessory)	2.5 m SIM cable with straight connection socket	1	-G	
	2.5 m SIM cable with angled connection socket	1	-W	
	5.0 m SIM cable with straight connection socket	1	-G5	
	5.0 m SIM cable with angled connection socket	1	-W5	
Teach-in point 1 permanently set [bar]	0 ... 10 (required switching pressure)	2	...X	
Teach-in point 2 permanently set [bar]	0 ... 10 (required switching pressure)	2 3	...Y	

- 1 G, W, G5, W5 Only in combination with M8   
 2 X, Y Not in combination with FP, O1, C1  
 Must have a value if O2, C2, O3, C3,  
 and X or Y was selected  
 Only one decimal place permissible in  
 combination with D10   
 3 Y Not in combination with O, C



## Pressure switches SDE5

Peripherals overview

**FESTO**



Accessories	
1	Pressure switch SDE-5-...-M8 with plug M8x1
2	Pressure switch SDE-5-...-K with cable
3	Linkable wall bracket with clip-in facility for switches (included in the scope of delivery)
4	Connecting cable NEBU-M8

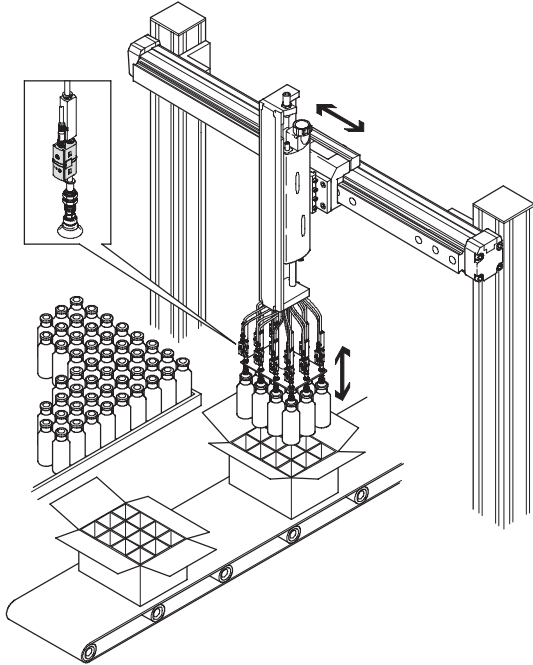
Ordering data – Connecting cables			Technical data → 6 / 5.1-65	
	Number of wires	Cable length [m]	Part No.	Type
M8x1, straight socket				
	3	2.5	541 333	NEBU-M8G3-K-2.5-LE3
		5	541 334	NEBU-M8G3-K-5-LE3
M8x1, angled socket				
	3	2.5	541 338	NEBU-M8W3-K-2.5-LE3
		5	541 341	NEBU-M8W3-K-5-LE3

# Pressure switches SDE5

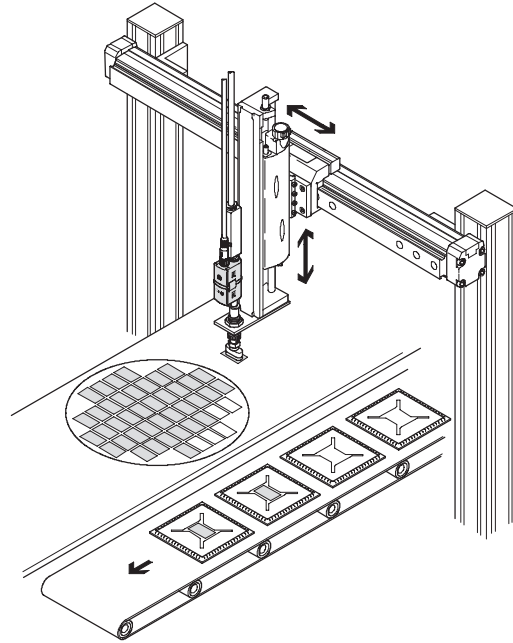
Application examples

FESTO

## Vacuum monitoring

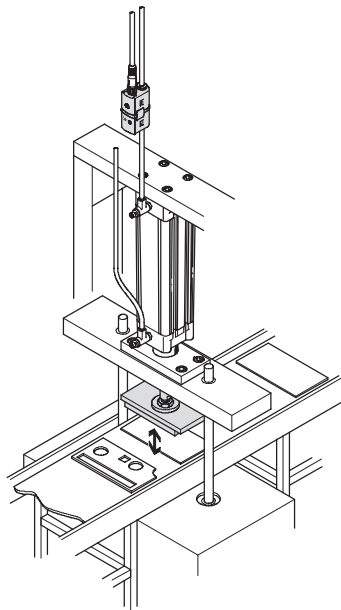


- Vacuum switch SDE5 in combination with a vacuum generator VN for vacuum monitoring in the handling of bottles

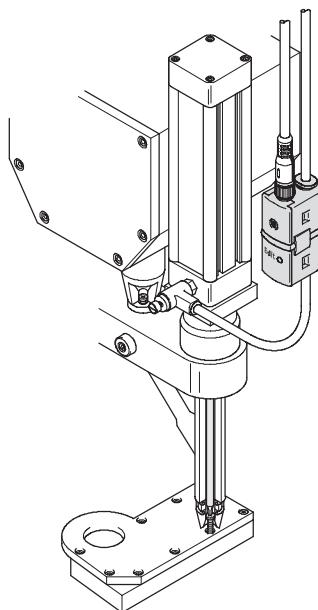


- Vacuum switch SDE5 as suction monitoring in the handling of small parts, such as computer chips

## Pressure monitoring



- Pressure switch SDE5 as pressure monitor for the pressing in of punched parts



- Pressure switch SDE5 as "inline variant" for pressure range monitoring on a pneumatic screw driver.

## Pressure sensors SDE3, with display

Product overview

**FESTO**



- Five pressure measuring ranges
- Measurement of relative or differential pressure or 2 independent pressure inputs
- Switch output 2x PNP or 2x NPN
- Numerical and graphical pressure indicator
- Display in bar, psi, kPa, inches of mercury, inches of water
- Wide range of connection and mounting options
- Specified types in accordance with ATEX directive for potentially explosive atmospheres  
➔ [www.festo.com/en/ex](http://www.festo.com/en/ex)

Detailed product information

➔ [www.festo.com/catalogue/sde3](http://www.festo.com/catalogue/sde3)

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	1x relative pressure	0 ... -1	Freely programmable	Push-in fitting for tubing OD 4 mm	Via DIN H-rail On wall/surface bracket Front panel mounting Via through-hole	2x PNP	–
	2x relative pressure	-1 ... +1					
	1x differential pressure	0 ... 2				2x NPN	–
		0 ... 6					
		0 ... 10					

# Pressure sensors SDE3, with display

Type codes

FESTO

		SDE3	-	D10	S	-	B	-	HQ4	-	2P	-	M8	-															
Sensor function																													
SDE3	Piezoresistive pressure sensor with display																												
Pressure measuring range																													
V1	0 ... -1 bar																												
B2	-1 ... +1 bar																												
D2	0 ... 2 bar																												
D6	0 ... 6 bar																												
D10	0 ... 10 bar																												
Measured variable																													
S	1x relative pressure																												
D	2x relative pressure																												
Z	1x differential pressure																												
Display																													
B	Display in bar																												
P	Display in psi																												
K	Display in kPa																												
H	Display in inches of mercury																												
W	Display in inches of water																												
Mounting/pneumatic connection																													
HQ4	Via DIN H-rail, 4 mm push-in connector																												
WQ4	Wall mounting, 4 mm push-in connector																												
FQ4	Panel mounting, 4 mm push-in connector																												
Electrical output																													
2P	2 switch outputs PNP																												
2N	2 switch outputs NPN																												
Electrical connection																													
M8	Plug M8x1																												
K	2.5 m cable																												
Connecting cable																													
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 SDE3, with display

Technical data

**FESTO**


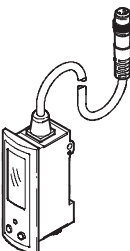
General technical data						
Design						
Pressure measuring range	[bar]	0 ... -1	-1 ... +1	0 ... 2	0 ... 6	0 ... 10
Measured variable	Relative pressure					
	2x relative pressure					
	Differential pressure					
Pneumatic connection	QS-4					
Type of display	Illuminated LCD					
Accuracy FS <sup>2)</sup>	±2%					
Setting options	Teach-in					
Type of mounting	Via DIN H-rail					
	Via through-hole					
	Front panel mounting					
	With a wall/surface bracket					
Electrical data						
Switch output	2x PNP					
	2x NPN					
Switching element function	Switchable					
Switching function	Freely programmable					
Operating voltage range DC	[V]	15 ... 30				
Max. output current	[mA]	100				
Electrical connection	Plug M8x1, 4-pin, round design to EN 60 947-5-2					
	Cable					
	Cable with plug M8x1, 4-pin, round design to EN 60 947-5-2					
Protection against short circuit	Pulsed					
Protection against polarity reversal	For all electrical connections					
Protection class	IP65					
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-Tick					
Materials						
Housing	Polyamide, reinforced; polycarbonate					


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

# Pressure sensors SDE3, with display

Technical data

FESTO

Ordering data						
Variant	Pressure measuring range [bar]	Measured variable	Switch output	Display	Part No.	Type
DIN H-rail mounting						
	0 ... -1	Relative pressure	2x PNP	bar	540 193	SDE3-V1S-B-HQ4-2P-M8
				inches of mercury	540 194	SDE3-V1S-H-HQ4-2P-M8
		2x relative pressure	2x PNP	bar	540 196	SDE3-V1D-B-HQ4-2P-M8
				inches of mercury	540 197	SDE3-V1D-H-HQ4-2P-M8
		Differential pressure	2x PNP	bar	540 199	SDE3-V1Z-B-HQ4-2P-M8
				inches of mercury	540 200	SDE3-V1Z-H-HQ4-2P-M8
	0 ... 2	Differential pressure	2x NPN	bar	540 202	SDE3-V1Z-B-HQ4-2N-M8
	0 ... 10	2x relative pressure	2x PNP	bar	540 203	SDE3-D2D-B-HQ4-2P-M8
		Differential pressure			540 205	SDE3-D2Z-B-HQ4-2P-M8
		Relative pressure	2x PNP	bar	540 207	SDE3-D10S-B-HQ4-2P-M8
		2x relative pressure			540 209	SDE3-D10D-B-HQ4-2P-M8
Differential pressure				540 211	SDE3-D10Z-B-HQ4-2P-M8	
	Differential pressure	2x NPN	bar	540 213	SDE3-D10Z-B-HQ4-2N-M8	
Front panel mounting						
	0 ... -1	Relative pressure	2x PNP	bar	540 198	SDE3-V1D-B-FQ4-2P-M8
		2x relative pressure			540 195	SDE3-V1S-B-FQ4-2P-M8
		Differential pressure			540 201	SDE3-V1Z-B-FQ4-2P-M8
	0 ... 2	2x relative pressure	2x PNP	bar	540 204	SDE3-D2S-B-FQ4-2P-M8
		Differential pressure			540 206	SDE3-D2Z-B-FQ4-2P-M8
	0 ... 10	Relative pressure	2x PNP	bar	540 208	SDE3-D10S-B-FQ4-2P-M8
		2x relative pressure			540 210	SDE3-D10D-B-FQ4-2P-M8
		Differential pressure			540 212	SDE3-D10Z-B-FQ4-2P-M8

-  - Note

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

➔ 6 / 5.1-49.

Configurator for types acc. to ATEX directive for explosive atmospheres

➔ [www.festo.com/sde3](http://www.festo.com/sde3).

# Pressure sensors SDE3, with display

Modular product system

**FESTO**

M Mandatory data								O Options
Module No.	Function	Pressure measuring range	Pressure input	Display	Mounting/pneumatic connection	Electrical output	Electrical connection	Connecting cable (accessory)
539 679	SDE3	V1 B2 D2 D6 D10	S D Z	B P K H W	HQ4 WQ4 FQ4	2P 2N	M8 K	G W G5 W5
<b>Order example</b>								
539 679	SDE3	- D6	D	- B	- WQ4	- 2N	- K	- W5

Ordering table						
			Condi- tions	Code	Enter code	
[M]	Module No.	539 679				
	Sensor function	Pressure sensor			SDE3	
	Pressure measuring range	[bar]	0 ... -1		-V1	
		[bar]	-1 ... +1		-B2	
		[bar]	0 ... 2		-D2	
		[bar]	0 ... 6		-D6	
		[bar]	0 ... 10		-D10	
	Pressure input	1x relative pressure			S	
		2x relative pressure, independent			D	
		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			-W	
	Mounting/pneumatic connection	Via DIN H-rail, 4 mm push-in connector			-HQ4	
		Wall mounting, 4 mm push-in connector			-WQ4	
		Panel mounting, 4 mm push-in connector			-FQ4	
	Electrical output	2 switch outputs PNP			-2P	
		2 switch outputs NPN			-2N	
Electrical connection	Plug M8x1			-M8		
	Cable, 2.5 m			-K		
[O]	Connecting cable (accessory)	Straight socket, 2.5 m			-G	
		Angled socket, 2.5 m			-W	
		Straight socket, 5 m			-G5	
		Angled socket, 5 m			-W5	

Vacuum switches

5.1

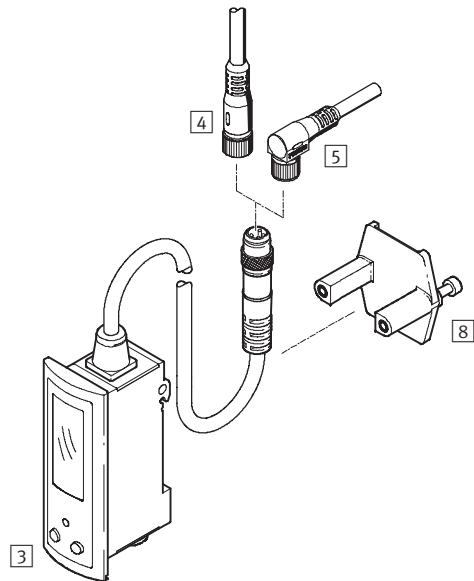
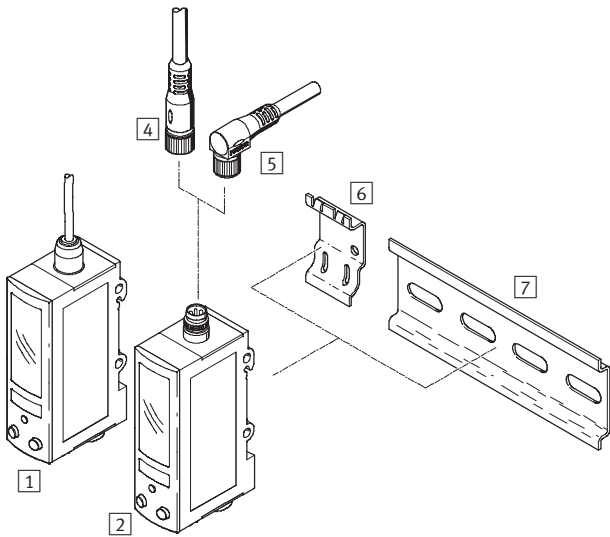
Transfer order code

539 679 SDE3 - - - - -

# Pressure sensors SDE3, with display



Peripherals overview


FESTO




Accessories				
1	Pressure sensor SDE3-...-K			
2	Pressure sensor SDE3-...-M8			
3	Pressure sensor SDE3-...-F...-M8			
4	Connecting cable NEBU-M8G4 with straight socket			

Accessories				
5	Connecting cable NEBU-M8W4 with angled socket			
6	Adapter plate SXE3-W (included in the scope of delivery for SDE3-...-W...)			
7	Mounting rail to DIN EN 50022			
8	Clamping plate (included in the scope of delivery for SDE3-...-F...-M8)			

Ordering data – Connecting cables		Technical data → 6 / 5.1-65		
	Number of wires	Cable length [m]	Part No.	Type
M8x1, straight socket				
	4	2.5	541 342	NEBU-M8G4-K-2.5-LE4
		5	541 343	NEBU-M8G4-K-5-LE4
M8x1, angled socket				
	4	2.5	541 344	NEBU-M8W4-K-2.5-LE4
		5	541 345	NEBU-M8W4-K-5-LE4

Ordering data – Adapter plate		
	Part No.	Type
	540 214	SXE3-W

Ordering data – Safety clip			
	Size	Part No.	Type
	M8	548 067	NEAU-M8-GD
	M12	548 068	NEAU-M12-GD

## Pressure sensors SDE1, with display

Product overview

**FESTO**



- 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](http://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 -1 ... +1 0 ... 2 0 ... 6 0 ... 10	Freely programmable	Male thread R $\frac{1}{8}$ , R $\frac{1}{4}$ Female thread G $\frac{1}{8}$ Push-in fitting for tubing OD 4 mm	On DIN H-rail Via wall/surface bracket On service unit 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

# Pressure sensors SDE1, with display

Type codes

FESTO

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

Function	
SDE1	Pressure sensor with display

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%

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

FESTO

Technical data

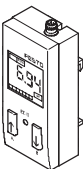
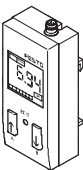
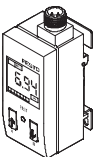
General technical data						
Design						
Pressure measuring range	[bar]	0 ... -1	-1 ... +1	0 ... 2	0 ... 6	0 ... 10
Measured variable		Relative pressure				
		Differential pressure				
Pneumatic connection		R1/8				
		R1/4				
		G1/8				
		QS-4				
Type of display		Back illuminated LCD				
		Illuminated LCD				
Accuracy FS <sup>1)</sup>		±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)

# Pressure sensors SDE1, with display


Technical data

FESTO

Ordering data								
Variant	Pressure measuring range [bar]	Switch output	Analogue output	Electrical connection	Type of display	Part No.	Type	
Female thread G1/8, DIN H-rail mounting, relative pressure measurement								
	0 ... -1	PNP	–	Plug, M8x1, 3-pin	LCD <sup>1)</sup>	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 <sup>1)</sup>	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 <sup>1)</sup>	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 <sup>1)</sup>	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 <sup>1)</sup>	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 <sup>1)</sup>	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 <sup>1)</sup>	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 <sup>1)</sup>	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 <sup>1)</sup>	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 <sup>1)</sup>	535 581	SDE1-D2-G2-HQ4-C-P2-M8	
	0 ... 10	PNP	–	Plug, M8x1, 3-pin	LCD <sup>1)</sup>	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 <sup>1)</sup>	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 <sup>1)</sup>	529 956	SDE1-D10-G2-HQ4-C-PU-M8	
Illuminated LCD					529 966	SDE1-D10-G2-HQ4-L-PU-M8		
Female thread G1/8, for wall or surface mounting, relative pressure measurement <sup>2)</sup>								
	0 ... -1	PNP	–	Plug M12x1, 3-pin	Illuminated LCD	534 065	SDE1-V1-G2-W18-L-P1-M12	
		PNP	4 ... 20 mA	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	
				0 ... 10 V		Plug, M8x1, 4-pin	530 900	SDE1-D10-G2-W18-L-PU-M8
				2x PNP		4 ... 20 mA	Plug M12x1, 5-pin	534 062
		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

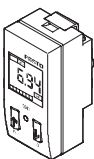
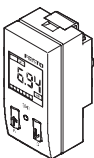
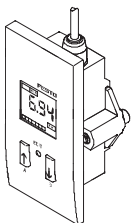
2) Adapter plate SDE1-...-W... included in the scope of delivery.

-  - Note  
Additional variants and accessories can be configured and ordered through the SDE1 modular system  
➔ 6 / 5.1-56.


# Pressure sensors SDE1, with display

Technical data

**FESTO**

Ordering data							
Variant	Pressure measuring range [bar]	Switch output	Analogue output	Electrical connection	Type of display	Part No.	Type
Male thread R <sup>1</sup> / <sub>8</sub> , mounting on service unit (D series), relative pressure measurement							
	0 ... 10	PNP	–	Plug, M8x1, 3-pin	LCD <sup>1)</sup>	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 <sup>1)</sup>
			Illuminated LCD			529 971	SDE1-D10-G2-R18-L-P2-M8
		PNP	0 ... 10 V	Plug, M8x1, 4-pin	LCD <sup>1)</sup>	529 958	SDE1-D10-G2-R18-C-PU-M8
Illuminated LCD	529 972				SDE1-D10-G2-R18-L-PU-M8		
Male thread R <sup>1</sup> / <sub>4</sub> , mounting on service unit (D series), relative pressure measurement							
	0 ... 10	PNP	–	Plug, M8x1, 3-pin	LCD <sup>1)</sup>	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 <sup>1)</sup>
			Illuminated LCD			529 968	SDE1-D10-G2-R14-L-P2-M8
		PNP	0 ... 10 V	Plug, M8x1, 4-pin	LCD <sup>1)</sup>	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
		2x PNP	–	Plug, M8x1, 4-pin		537 029	SDE1-D10-G2-FQ4-L-P2-M8
						Plug M12x1, 4-pin	537 031

1) Back illuminated

 Note  
Additional variants and accessories can be configured and ordered through the SDE1 modular system  
➔ 6 / 5.1-56.

# Pressure sensors SDE1, with display

Modular product system

FESTO

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	
		Front panel mounting, 4 mm push-in connector				-FQ4	
	Display and adjustment	LCD display (optimised operation)				-C	
		Illuminated LCD (reading optimised)				-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	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	

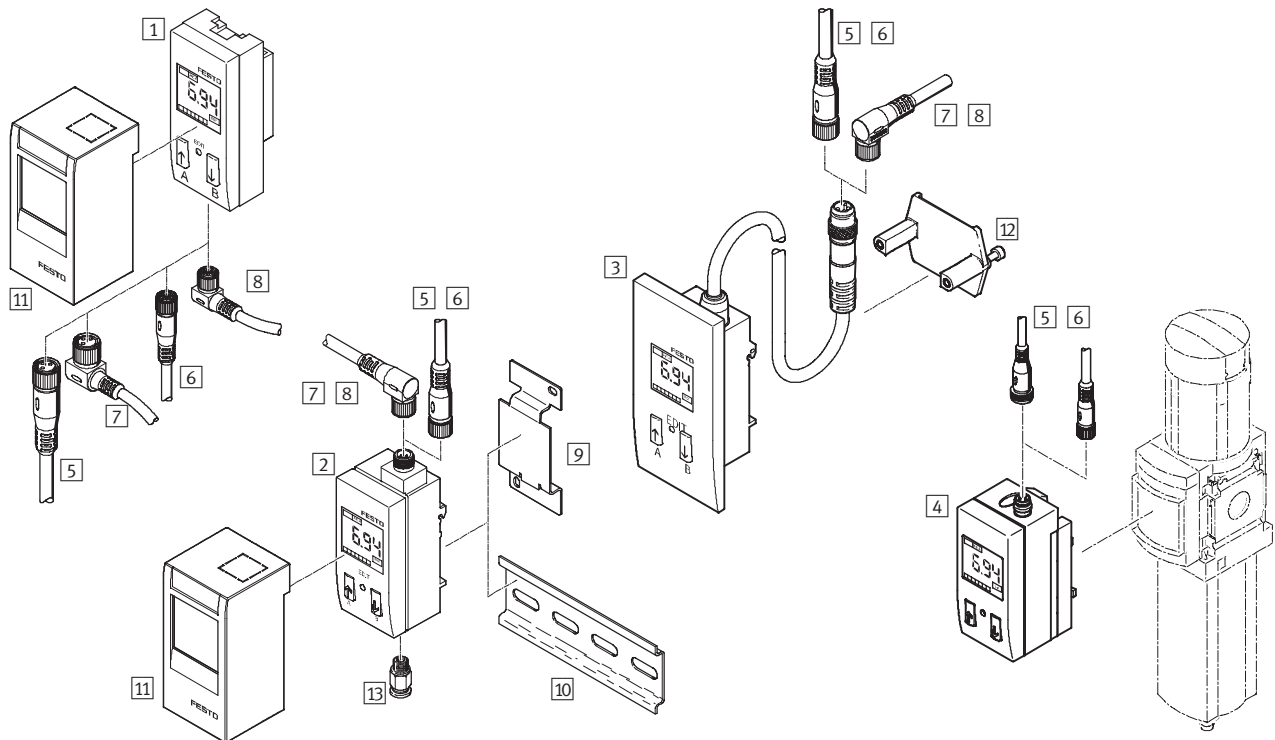
## Transfer order code

192 766 SDE1 - - G2 - - - - -

# Pressure sensors SDE1, with display

Peripherals overview

FESTO



## 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 / 5.1-63

	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 / 5.1-63

	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	2.5	541 331	NEBU-M12G5-K-5-LE5
	5	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

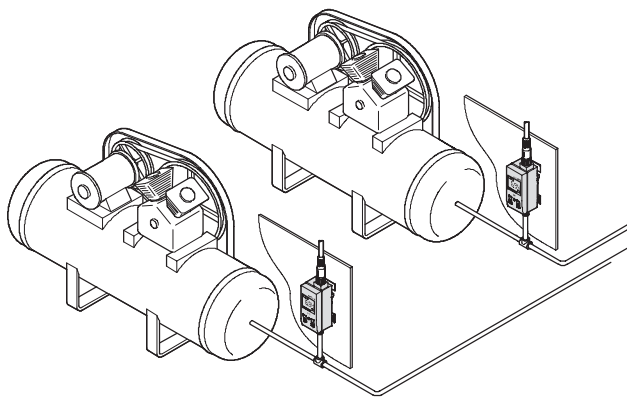
	Part No.	Type
	194 297	SDE1-...-W-...
	537 074	SDE1-SH

# Pressure sensors SDE1, with display

Application examples

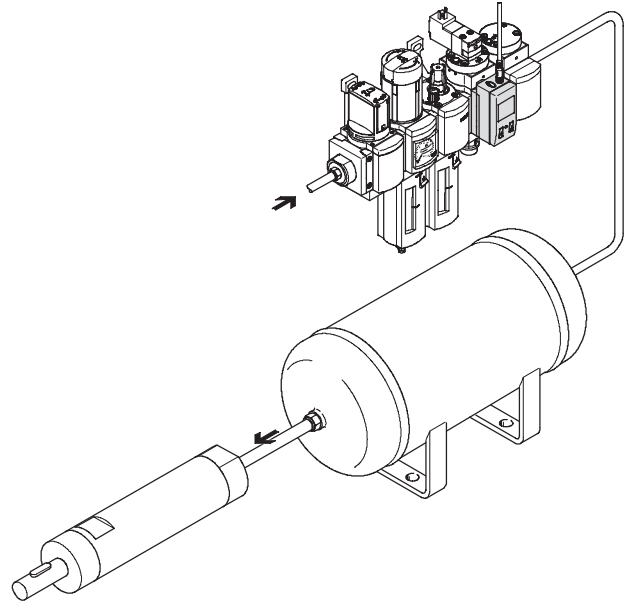
FESTO

## 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

# Pressure transmitters SDET

Product overview

FESTO



- Eight pressure measuring ranges
- Relative pressure measurement
- Analogue output 0.1 ... 10 V or 4 ... 20 mA
- Resistant to water and oils

Detailed product information

➔ [www.festo.com/catalogue/sdet](http://www.festo.com/catalogue/sdet)

## Type codes


		SDET	-	22T	-	D2	-	G14	-	U	-	M12
<b>Sensor function</b>												
SDET	Pressure transmitter											
<b>Size</b>												
22T	Housing, width across flats 22											
<b>Pressure measuring range</b>												
B2	-1 ... +1 bar											
D2	0 ... 2 bar											
D6	0 ... 6 bar											
D10	0 ... 10 bar											
D16	0 ... 16 bar											
D25	0 ... 25 bar											
D50	0 ... 50 bar											
D100	0 ... 100 bar											
<b>Pneumatic connection</b>												
G14	Female thread G $\frac{1}{4}$											
<b>Analogue output</b>												
U	0.1 ... 10 V											
I	4 ... 20 mA											
<b>Electrical connection</b>												
M12	Plug M12x1, 4-pin											

# Pressure transmitters SDET

Technical data

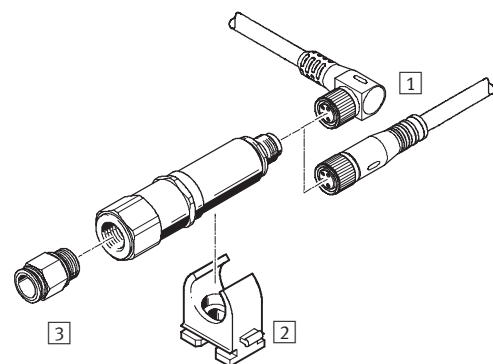
FESTO

General technical data			
Analogue output		0.1 ... 10 V	4 ... 20 mA
Design			
Pneumatic connection		G1/4	
Electrical data			
Operating voltage range DC		[V]	14 ... 30
			8 ... 30
Electrical connection		Plug M12x1, 4-pin	
Protection against short circuit		Yes	
Protection class		IP65	
Operating and environmental conditions			
Operating medium		Compressed air; liquid media; gaseous media	
Ambient temperature		[°C]	0 ... 80
Temperature of medium		[°C]	−10 ... 100
CE mark (see declaration of conformity)		In accordance with EU EMC directive	
Certification		C-Tick	
Materials			
Housing		High-alloy stainless steel	
Pressure supply port		CrNi steel 1.4305	
Sealing ring		Fluorocarbon rubber	
Sensor element		Al2O3 96%	



Ordering data						
Variant	Pressure measuring range [bar]	Accuracy FS <sup>1)</sup>	Analogue output 0.1 ... 10 V		Analogue output 4 ... 20 mA	
			Part No.	Type	Part No.	Type
	-1 ... +1	±1.5%	547 476	SDET-22T-B2-G14-U-M12	547 475	SDET-22T-B2-G14-I-M12
	0 ... 2		547 478	SDET-22T-D2-G14-U-M12	547 477	SDET-22T-D2-G14-I-M12
	0 ... 6	±1 %	547 480	SDET-22T-D6-G14-U-M12	547 479	SDET-22T-D6-G14-I-M12
	0 ... 10		547 482	SDET-22T-D10-G14-U-M12	547 481	SDET-22T-D10-G14-I-M12
	0 ... 16		547 484	SDET-22T-D16-G14-U-M12	547 483	SDET-22T-D16-G14-I-M12
	0 ... 25		547 486	SDET-22T-D25-G14-U-M12	547 485	SDET-22T-D25-G14-I-M12
	0 ... 50		547 488	SDET-22T-D50-G14-U-M12	547 487	SDET-22T-D50-G14-I-M12
	0 ... 100		547 490	SDET-22T-D100-G14-U-M12	547 489	SDET-22T-D100-G14-I-M12


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

## Peripherals overview



Accessories	
1	Connecting cable NEBU-M12 (signal output)
2	Pipe clamp PQ-RK-22 (included in scope of delivery)
3	Push-in fitting QS- $\frac{1}{4}$

Ordering data – Connecting cables			Technical data → 6 / 5.1-61	
	Number of wires	Cable length [m]	Part No.	Type
M12x1, straight socket				
	4	5	541 328	NEBU-M12G5-K-5-LE4
M12x1, angled socket				
	4	5	541 329	NEBU-M12W5-K-5-LE4

Ordering data – Push-in fittings <sup>1)</sup>		Technical data → www.festo.com	
	For tubing O.D.	Part No.	Type
	4 mm	190 644	QS-G $\frac{1}{4}$ -4 <sup>1)</sup>
	6 mm	153 003	QS-G $\frac{1}{4}$ -6 <sup>1)</sup>
	8 mm	153 005	QS-G $\frac{1}{4}$ -8 <sup>1)</sup>

1) Temperature-dependent operating pressure -0.95 ... 14 bar

# Connecting cables NEBU, plug sockets with cable SIM

Product overview

**FESTO**



- Connecting cables for standard, drag chain and robot applications
- Versions with switching status display
- Welding field immune designs
- Easy-to-clean designs approved for use in the food and packaging sector
- Cable length 0.1 ... 25 m freely selectable

Detailed product information

➔ [www.festo.com/catalogue/nebu](http://www.festo.com/catalogue/nebu)

Product overview						
Design	Type	Electrical connection		Number of wires	Cable length [m]	➔ Page
		Left	Right			
Basic version	NEBU-M5	Socket M5x0.5	Open end	3	5	6 / 5.1-64
			Plug M8x1	3	1	
			Plug M12x1	4	1	
	NEBU-M8	Socket M8x1	Open end	3, 4, 5	0.1 ... 25	6 / 5.1-64
			Plug M8x1			
			Plug M12x1			
	NEBU-M12	Socket M12x1	Open end	3, 4, 5	0.1 ... 25	6 / 5.1-64
			Plug M8x1			
			Plug M12x1			
With switching status display	SIM-M12-8	Socket M12x1	Open end	8	2; 5	6 / 5.1-71
			Plug M8x1	4	2	
			Plug M12x1	8	2	
	KSMH-1-M8-2-M8	Socket M8x1	Open end	3, 4, 5	0.1 ... 25	6 / 5.1-64
			Plug M8x1	3, 4, 5	0.1 ... 25	
			Plug M12x1	3, 4, 5	0.1 ... 25	
Welding field immune	SIM-M12-RS	Socket M12x1	Open end	3	3	6 / 5.1-71
			Open end	3	2.5; 5; 10	6 / 5.1-71
With clip-on socket	SIM-K	Socket, clip-on	Open end	4	2.5; 5	6 / 5.1-71
			Open end	3	2.5; 5	6 / 5.1-71
For food industry, easy to clean	SIM-K-CDN	Socket, clip-on	Open end	3	2.5; 5	6 / 5.1-71

# Connecting cables NEBU, plug sockets with cable SIM

Key features

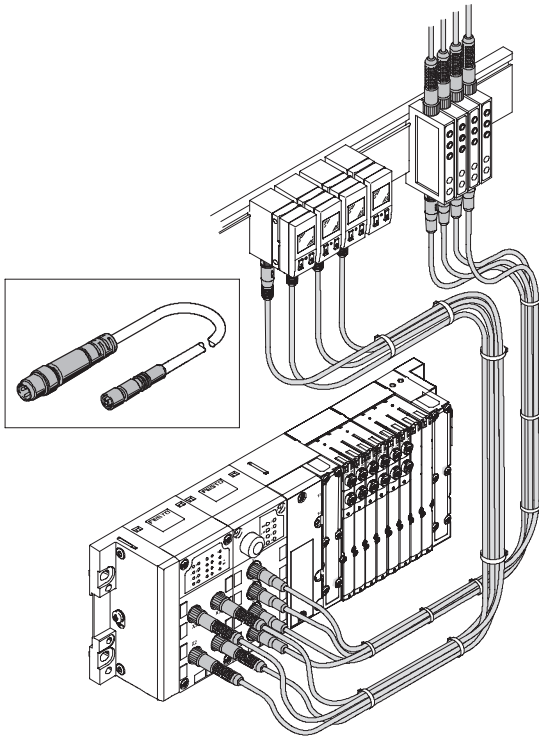
FESTO

## Cable quality

The sensor cables can be configured using the modular system. You can choose from qualities that are suited to

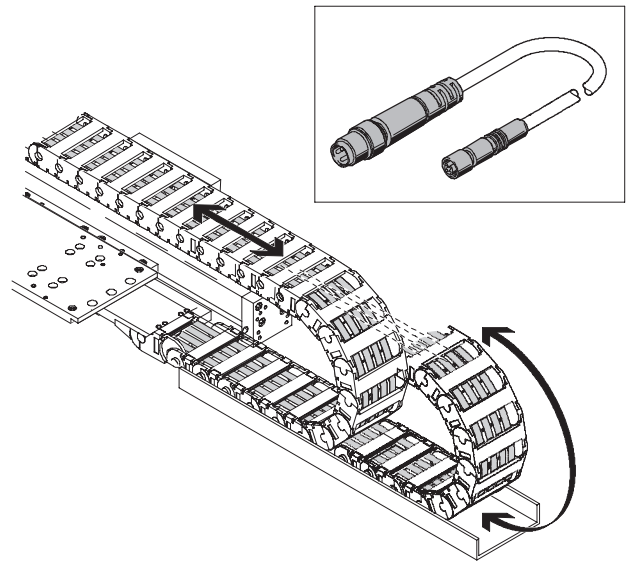
standard, drag chain or robot applications.

### Standard application



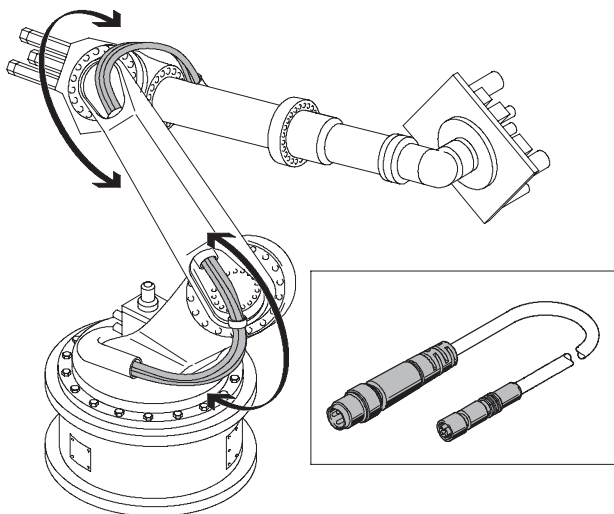
- Standard applications are characterised by fixed cable installation or low to average mechanical loads.

### Drag chain application



- High mechanical loads occur in drag chain applications, particularly when very small radii are required.

### Robot application



- High mechanical loads, which are primarily caused by torsion, occur in robot applications.

# Connecting cables NEBU

Type codes

FESTO

Vacuum switches

5.1

NEBU		–	M12	W	5	P	–	K	–	2.5	–		–	LE		3
<b>Function</b>																
NEBU	Connecting cable															
<b>Connection, left</b>																
M5	Socket with connecting thread															
M8	Socket with connecting thread															
M12	Socket with connecting thread, A-coded															
<b>Socket design</b>																
G	Straight															
W	Angled															
<b>Number of pins/wires (left)</b>																
3	3-pin (fitting for M8 plug)															
4	4-pin (fitting for M8 plug)															
5	5-pin (fitting for 3-, 4- and 5-pin M12 plug)															
<b>Display</b>																
–	Without LED, DC (standard)															
P	LED, PNP															
N	LED, NPN															
<b>Cable quality</b>																
K	Standard															
E	Suitable for drag chain															
R	Suitable for robots															
<b>Cable length</b>																
0.1 ... 25	0.1 ... 25 m															
<b>Alternative wire cross section</b>																
–	0.25 mm <sup>2</sup> (standard)															
Q3	0.14 mm <sup>2</sup>															
<b>Cable designation</b>																
–	With inscription label holder (standard)															
N	Without inscription label holder															
<b>Connection, right</b>																
LE	Open end															
M8	Socket with connecting thread															
M12	Socket with connecting thread, A-coded															
<b>Plug design</b>																
G	Straight															
W	Angled															
<b>Number of pins/wires (right)</b>																
3	3-pin (fitting for M8/M12 socket)															
4	4-pin (fitting for M8/M12 socket)															
5	5-pin (fitting for M12 socket)															

# Connecting cables NEBU

Technical data

FESTO

General technical data				
Electrical connection, left		Socket M5x0.5	Socket M8x1	Socket M12x1
Design				
Cable length	[m]	➔ Ordering data	0.1 ... 25	
Ready status display <sup>1)</sup>		–	Green LED	
Switching status display <sup>1)</sup>		–	Yellow LED	
Cable quality <sup>1)</sup>		Standard	Standard	
		–	Suitable for drag chain	
		–	Suitable for robots	
Test conditions for standard cables		Chain link trunking: 5 million cycles, bending radius 75 mm		
		Resistance to bending: To Festo standard; test conditions on request		
Test conditions for suitability for chain link trunking		Chain link trunking: 5 million cycles, bending radius 28 mm		
		Resistance to bending: To Festo standard; test conditions on request		
Test conditions for suitability for robots		Chain link trunking: 5 million cycles, bending radius 28 mm		
		Torsional strength: > 300,000 cycles, ±270°/0.1 m		
		Resistance to bending: To Festo standard; test conditions on request		
Operating and environmental conditions				
Ambient temperature	[°C]	–25 ... +70	–25 ... +80	
Ambient temperature with flexible cable installation	[°C]	–5 ... +70	–5 ... +80	
Protection class		IP65, IP67		
Materials				
Housing		Polyurethane		
Cable sheath		Polyurethane		

1) If the relevant option is selected ➔ Ordering table 6 / 5.1-65 and modular products6 / 5.1-66

Electrical data – Socket M5x0.5				
Electrical connection, left	Straight socket, M5x0.5, 3-pin			
Electrical connection, right	Cable, open end, 3-wire		Straight plug, M8x1, 3-pin	Straight plug, M12x1, 4-pin
Operating voltage range	AC [V]	125	60	125
	DC [V]	125	75	125

Electrical data – Socket M8x1				
Electrical connection, left <sup>1)</sup>	Socket M8x1, 3-pin, straight or angled		Socket M8x1, 4-pin, straight or angled	
Electrical connection, right <sup>1)</sup>	Plug M8x1 or M12x1		Plug M8x1 or M12x1	
	3-pin, straight or angled		4-pin, straight or angled	
	Open end, 3-wire		Open end, 4-wire	
Operating voltage range	AC [V]	0 ... 60	0 ... 30	
	DC [V]	0 ... 60	0 ... 30	

1) Possible combinations ➔ Ordering table 6 / 5.1-65 and modular products6 / 5.1-66

Electrical data – Socket M12x1				
Electrical connection, left <sup>1)</sup>	Socket M12x1, 5-pin, straight or angled			
Electrical connection, right <sup>1)</sup>	Plug M8x1 or M12x1		Plug M8x1 or M12x1	
	3-pin, straight or angled		4-pin, straight or angled	
	Open end, 3-wire		Open end, 4-wire	
Operating voltage range	AC [V]	0 ... 300	0 ... 300	0 ... 60
	DC [V]	0 ... 300	0 ... 300	0 ... 60

1) Possible combinations ➔ Ordering table 6 / 5.1-65 and modular products6 / 5.1-66


# Connecting cables NEBU


Technical data



FESTO

Ordering data – Basic version					
Electrical connection, left	Electrical connection, right	Cable length [m]	Part No.	Type	
Straight socket, M5x0.5, 3-pin	Cable, open end, 3-wire	5	539 508	NEBU-M5G4-K-5-Q3-LE3	
	Straight plug, M8x1, 3-pin	1	539 510	NEBU-M5G4-K-1-Q3-M8G3	
	Straight plug, M12x1, 4-pin	1	539 512	NEBU-M5G4-K-1-Q3-M12G4	
Straight socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	541 333	NEBU-M8G3-K-2.5-LE3	
		5	541 334	NEBU-M8G3-K-5-LE3	
		10	541 332	NEBU-M8G3-K-10-LE3	
	Straight plug, M8x1, 3-pin	0.5	541 346	NEBU-M8G3-K-0.5-M8G3	
		1	541 347	NEBU-M8G3-K-1-M8G3	
		2.5	541 348	NEBU-M8G3-K-2.5-M8G3	
		5	541 349	NEBU-M8G3-K-5-M8G3	
Angled socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	541 338	NEBU-M8W3-K-2.5-LE3	
		5	541 341	NEBU-M8W3-K-5-LE3	
		10	541 335	NEBU-M8W3-K-10-LE3	
Straight socket, M8x1, 4-pin	Cable, open end, 4-wire	2.5	541 342	NEBU-M8G4-K-2.5-LE4	
		5	541 343	NEBU-M8G4-K-5-LE4	
Angled socket, M8x1, 4-pin	Cable, open end, 4-wire	2.5	541 344	NEBU-M8W4-K-2.5-LE4	
		5	541 345	NEBU-M8W4-K-5-LE4	
Straight socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	541 363	NEBU-M12G5-K-2.5-LE3	
		5	541 364	NEBU-M12G5-K-5-LE3	
	Cable, open end, 4-wire	5	541 328	NEBU-M12G5-K-5-LE4	
	Cable, open end, 5-wire	2.5	541 330	NEBU-M12G5-K-2.5-LE5	
		5	541 331	NEBU-M12G5-K-5-LE5	
Angled socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	541 367	NEBU-M12W5-K-2.5-LE3	
		5	541 370	NEBU-M12W5-K-5-LE3	
	Cable, open end, 4-wire	5	541 329	NEBU-M12W5-K-5-LE4	

Ordering data – With switching status display					
Electrical connection, left	Electrical connection, right	Switch output	Cable length [m]	Part No.	Type
Angled socket, M8x1, 3-pin	Cable, open end, 3-wire	PNP	2.5	541 337	NEBU-M8W5P-K-2.5-LE3
			5	541 340	NEBU-M8W5P-K-5-LE3
		NPN	2.5	541 336	NEBU-M8W5N-K-2.5-LE3
			5	541 339	NEBU-M8W5N-K-5-LE3
Angled socket, M12x1, 5-pin	Cable, open end, 3-wire	PNP	2.5	541 366	NEBU-M12W5P-K-2.5-LE3
			5	541 369	NEBU-M12W5P-K-5-LE3
		NPN	2.5	541 365	NEBU-M12W5N-K-2.5-LE3
			5	541 368	NEBU-M12W5N-K-5-LE3

 Note  
Additional variants can be configured and ordered via the NEBU modular product system → 6 / 5.1-66.

 Note  
Pin allocations and circuit diagrams → [www.festo.com](http://www.festo.com)

Ordering data – Inscription labels, safety clips						
	Material	Use	Size	Part No.	Type	PU <sup>1)</sup>
	Polycarbonate	For insertion in the inscription label holder	23x4 mm	541 598	ASLR-L-423	51
	Polyamide	For protecting push-in connectors from inadvertent disconnection (no tool needed)	M8	548 067	NEAU-M8-GD	1
			M12	548 068	NEAU-M12-GD	1

1) Packaging unit in quantity per frame

# Connecting cables NEBU, M8/M12

Ordering data – Modular products

FESTO

M Mandatory data					O Options →
Module No.	Function	Connection, left	Socket design	Number of pins/wires (left)	Display
539 052	NEBU	M8 M12	G W	3 4 5	– P N
<b>Order example</b>					
539 052	NEBU	– M12	W	5	P

Ordering table					
			Condi- tions	Code	Enter code
M	Module No.	539 052			
	Function	Connecting cable		NEBU	NEBU
				–	–
	Connection, left	Socket with connecting thread		M8	
		Socket with connecting thread, A-coded		M12	
	Socket design	Straight		G	
		Angled		W	
	Number of pins/wires (left)	3-pin (fitting for M8 plug)		3	
		4-pin (fitting for M8 plug)		4	
		5-pin (fitting for 3-, 4- and 5-pin M12 plug)		5	
O	Display	Without LED, DC (standard)			
		LED, PNP	1	P	
		LED, NPN	1	N	

- 1 P, N Only in combination with M8 connection technology at left-hand end with socket design W and number of pins/wires (left-hand end) 3  
or  
only in combination with M12 connection technology at left-hand end with socket design W and number of pins/wires (left-hand end) 5 and number of pins/wires (right-hand end) 3.

Transfer order code

539 052	NEBU	–				
---------	------	---	--	--	--	--

# Connecting cables NEBU, M8/M12

FESTO

Ordering data – Modular products

→ [M] Mandatory data		[O] Options	[M]	[O]	[M]
Cable quality	Cable length	Cable designation	Connection, right	Plug design	Number of pins/wires (right)
K E R	0.1 ... 25	– N	LE M8 M12	G W	3 4 5
– E	– 3.5	– N	– M8	G	3

Ordering table					
Module No.	539 052	Condi- tions	Code		Enter code
↓			–		–
[M]	Cable quality	Standard		K	
		Suitable for drag chain		E	
		Suitable for robots		R	
				–	–
	Cable length	0.1 ... 25 m (0.1 ... 2.5 m in 0.1 m increments, 2.5 ... 25 m in 0.5 m increments)		...	
[O]				–	–
	Cable designation	With inscription label holder (standard)			
		Without inscription label holder		N	
[M]				–	–
	Connection, right	Open end		LE	
		Plug with connecting thread		M8	
		Plug with connecting thread, A-coded		M12	
[O]	Plug design	Straight	[2]	G	
		Angled	[2]	W	
[M]	Number of pins/wires (right)	3-pin (fitting for M8/M12 socket)	[3]	3	
		4-pin (fitting for M8/M12 socket)	[4]	4	
		5-pin (fitting for M12 socket)	[5]	5	

- [2] **G, W** Must be selected with M8, M12 connection technology at right-hand end.  
Not in combination with LE connection technology at right-hand end.
- [3] **3** Not in combination with M8 connection technology at left-hand end, number of pins/wires (left-hand end) 4 and LE, M12 connection technology at right-hand end.

- [4] **4** Not in combination with M8 connection technology at left-hand end, number of pins/wires (left-hand end) 3 and LE, M12 connection technology at right-hand end.  
Only in combination with LE, M12 connection technology at right-hand end.
- [5] **5** Not in combination with M8 connection technology at left-hand end and LE, M12 connection technology at right-hand end.

Transfer order code

–  –  –  –

Vacuum switches

5.1

# Plug sockets with cable SIM

Type codes

FESTO

SIM		M12		RS		3		GD		3					
<b>Type</b>															
SIM		Plug socket with cable for sensors													
<b>Electrical connection</b>															
M12		M12x1 locknut													
K		Clip-on plug													
<b>Welding field immunity</b>															
		Basic type, no welding field immunity													
RS		Welding field immune													
<b>Number of wires</b>															
		3-wire													
4		4-wire													
8		8-wire													
<b>Connection direction</b>															
GD		In-line													
WD		Angled													
<b>Cable length</b>															
2		2 m													
2.5		2.5 m													
3		3 m													
5		5 m													
10		10 m													
<b>Material, cable sheath</b>															
PU		Polyurethane													
<b>Easy cleaning</b>															
		Basic version													
CDN		Clean Design, suitable for foodstuffs													

# Plug sockets with cable SIM, KSMH, KM12

FESTO

Technical data

Technical data – Connecting cables M8x1, M12x1			
Type		KSMH	KM12
Cable attribute		Standard	
Electrical connection, left		Straight socket, M8x1, 4-pin	Straight socket, M12x1, 8-pin
Electrical connection, right		Straight plug, M8x1, 4-pin	Straight plug, M12x1, 8-pin
Operating voltage range	DC [V]	≤ 75	≤ 70
	AC [V]	≤ 60	≤ 45
Ambient temperature	[°C]	–5 ... +70	–25 ... +80
Protection class		IP68	

Technical data – Plug sockets with cable M12x1, 8-pin			
Cable attribute		Standard	
Electrical connection, left		Straight socket, M12x1, 8-pin	
Electrical connection, right		Cable, open end, 8-wire	
Operating voltage range	DC [V]	≤ 70	
	AC [V]	≤ 45	
Ambient temperature	[°C]	–25 ... +80	
Protection class		IP68	

Technical data – Plug sockets with cable M12x1, welding field immune			
Cable attribute		Standard	
Electrical connection, left		Straight or angled socket, M12x1, 3-pin	
Electrical connection, right		Cable, open end, 3-wire	
Operating voltage range	DC [V]	≤ 70	
	AC [V]	≤ 45	
Ambient temperature	[°C]	–25 ... +80	
Ambient temperature with flexible cable installation	[°C]	0 ... +80	
Protection class		IP65, IP67	

Technical data – Plug sockets with cable, clip-on			
Type		SIM-K	SIM-K-4
Cable attribute		Standard	
Electrical connection, left		Straight or angled socket, clip-on, 3-pin	Straight or angled socket, clip-on, 4-pin
Electrical connection, right		Cable, open end, 3-wire	Cable, open end, 4-wire
Operating voltage range	DC [V]	≤ 70	
	AC [V]	≤ 45	
Ambient temperature	[°C]	–40 ... +70	
Ambient temperature with flexible cable installation	[°C]	–5 ... +70	
Protection class		IP65, IP67	


Technical data – Plug sockets with cable, clip-on, Clean Design			
Cable attribute		Standard	
Electrical connection, left		Straight or angled socket, clip-on, 3-pin	
Electrical connection, right		Cable, open end, 3-wire	
Operating voltage range	DC [V]	≤ 70	
	AC [V]	≤ 45	
Ambient temperature	[°C]	–30 ... +70	
Ambient temperature with flexible cable installation	[°C]	–5 ... +70	
Protection class		IP65, IP67, IP69	

# Plug sockets with cable SIM, KSMH, KM12

Technical data

FESTO

Ordering data				
Electrical connection, left	Electrical connection, right	Cable length [m]	Part No.	Type
Connecting cable				
Straight socket, M8x1, 4-pin	Straight plug, M8x1, 4-pin	2	175 714	KSMH-1-M8-2-M8
Straight socket, M12x1, 8-pin	Straight plug, M12x1, 8-pin	2	525 617	KM12-8GD8GS-2-PU
Plug socket with cable M12x1, basic version				
Straight socket, M12x1, 8-pin	Cable, open end, 8-wire	2	525 616	SIM-M12-8GD-2-PU
		5	525 618	SIM-M12-8GD-5-PU
Plug socket with cable M12x1, welding field immune				
Straight socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	30 450	SIM-M12-RS-3GD-3
Angled socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	30 451	SIM-M12-RS-3WD-3
Plug socket with cable, clip-on, basic version				
Straight socket, clip-on, 3-pin	Cable, open end, 3-wire	2.5	164 257	SIM-K-GD-2,5-PU
		5	164 256	SIM-K-GD-5-PU
		10	192 962	SIM-K-GD-10-PU
Angled socket, clip-on, 3-pin	Cable, open end, 3-wire	2.5	164 255	SIM-K-WD-2,5-PU
		5	164 254	SIM-K-WD-5-PU
		10	192 963	SIM-K-WD-10-PU
Straight socket, clip-on, 4-pin	Cable, open end, 4-wire	2.5	164 250	SIM-K-4-GD-2,5-PU
		5	164 251	SIM-K-4-GD-5-PU
Angled socket, clip-on, 4-pin	Cable, open end, 4-wire	2.5	164 252	SIM-K-4-WD-2,5-PU
		5	164 253	SIM-K-4-WD-5-PU
Plug socket with cable, clip-on, Clean Design				
Straight socket, clip-on, 3-pin	Cable, open end, 3-wire	2.5	525 259	SIM-K-GD-2,5-CDN
		5	525 260	SIM-K-GD-5-CDN
Angled socket, clip-on, 3-pin	Cable, open end, 3-wire	2.5	525 261	SIM-K-WD-2,5-CDN
		5	525 262	SIM-K-WD-5-CDN

Ordering data – Safety clip				
	Material	Use	Size	Part No. Type
	Polyamide	For protecting push-in connectors from inadvertent disconnection (no tool needed)	M8	548 067 NEAU-M8-GD
			M12	548 068 NEAU-M12-GD