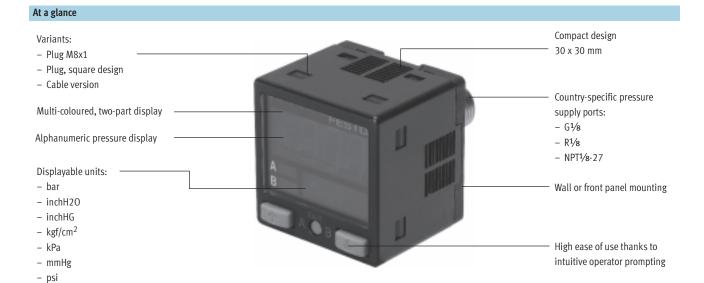


Pressure sensors SPAB

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Key features



Product description

The pressure sensor SPAB can be used in all industries thanks to its wide range of connection and configuration options and its compact size.

Switching point settings are emphasised via switching status indication and switching of the display value colour.

Once programmed, the settings can be transferred to other pressure sensors SPAB.

Main applications

- Pressure/vacuum sensing
- Light assembly
- Wherever there is a need for space-saving pressure measurement with visualisation and limited robustness
- Easy identification of the system status by means of clear, colour-based switching status detection

Key features

- Pressure measuring range -1 ... +1 or 0 ... 10 bar
- Relative pressure measurement
- Pressure supply port G½, R½ or NPT½-27
- Electrical connection cable, plug M8x1 or plug, square design
- Switching output PNP, NPN and analogue output
- Two-part, multi-coloured display
- Copy function (settings can be transferred from one device to another)
- Simple commissioning thanks to intuitive operation
- Compact design 30x30 mm



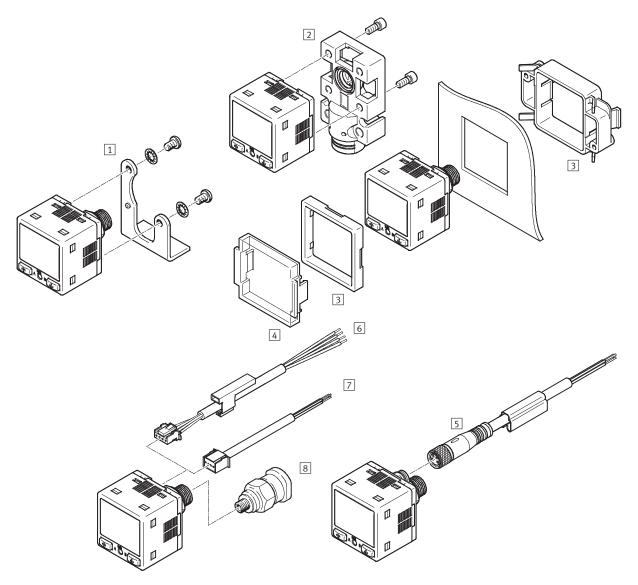
Pressure sensors SPAB, with display Product range overview

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3

Product range overview											
Measurement method	Measured variable	Pressure measuring range	Switching function	Pneumatic connection		Electrical output					
		[bar]		Male thread	Female thread	Digital	Analogue				
Piezoresistive	1x relative pressure	-1 +1 or	Freely programmable	G1/8,	M5	1x PNP	1 5 V				
pressure sensor with		0 10		R1/8 or NPT1/8-27		2x PNP	-				
display						1x NPN	1 5 V				
						2x NPN	-				

Pressure sensors SPAB, with display Peripherals overview

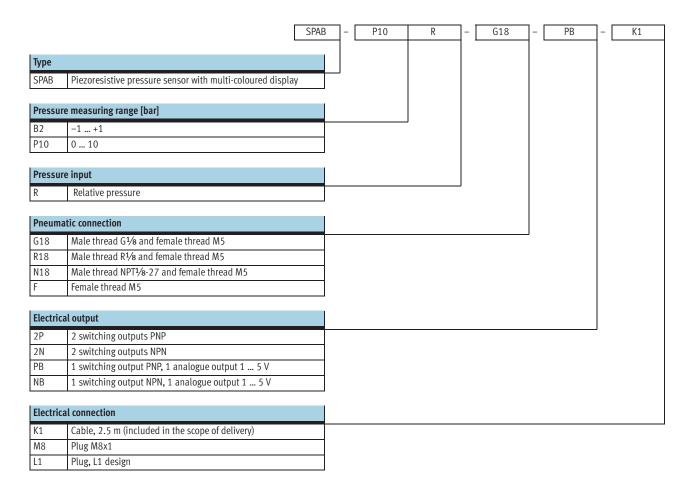


Accessories	→ Page/ Internet
Mounting bracket SAMHA	11
2 Adapter plate SASF for pressure sensor SPABF	12
3 Front panel installation kit SAMHF	11
4 Protective cover SACC	11

Accessories	→ Page/
	Internet
5 Connecting cable NEBU-M8	13
6 Connecting cable NEBS-L1G4	13
7 Connecting cable NEBU-L1G4	13
8 Push-in fitting QSM-M5	13



Type codes

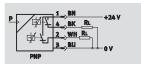




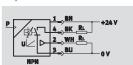
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Technical data

Function E.g. switching output 2x PNP



E.g. switching output NPN, analogue output











General technical data						
SPAB	-B2	-P10				
General information						
Certification	cULus listed (OL)					
	C-Tick					
CE mark (see declaration of conformity)	To EU EMC Directive ¹⁾					
Note on materials	Contains PWIS (paint wetting impairment substances)					
	RoHS-compliant					
Input signal/measuring element						
Measured variable	Relative pressure					
Measurement method	Piezoresistive pressure sensor with display					
Pressure measuring range [bar]	-1 +1	0 10				
Overload capacity [bar]	5 15					
Operating medium	Filtered, unlubricated compressed air, grade of filtration 40 µm					
Ambient temperature [°C]	-10 +50					

¹⁾ For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com Support Support User documentation.

If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.

Electrical data										
SPAB	I-B2				I-P10					
Electrical output		2P	2N	PB	NB	2P	2N	PB	NB	
Switching output ¹⁾				1.5	1.15			1.5		
Switching output		2x PNP	2x NPN	PNP	NPN	2x PNP	2x NPN	PNP	NPN	
Switching function		Freely program		LIM	INFIN	ZATINI	ZATNITIN	LIM	INFIN	
Switching element function	Switchable	IIIIIable								
Accuracy of FS display	[%]	1				2				
Reproducibility of switching value	[%]					0.2				
· · · · · · · · · · · · · · · · · · ·		0.1				0.2				
Max. output current	[mA]	100								
Analogue output ¹⁾										
Analogue output	[V]	-		1 5		-		1 5		
Accuracy of analogue output zero	[%]	-		5		_		5		
point ±FS										
Accuracy of analogue output margin	[%]	-		5		_		5		
±FS										
Reproducibility of analogue value	[%]	_		0.2		-		0.2		
		•		•		•		•		
Output, additional data										
Protection against short circuit		Yes								

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



Pressure sensors SPAB, with display Technical data

Electrical data									
SPAB	-B2				-P10				
Electrical output	2P	2N	PB	NB	2P	2N	PB	NB	
Electronic components									
Operating voltage range DC [V]	12 24								
Reverse polarity protection	For operating	voltage							
Electromechanical components									
Electrical connection	Plug M8x1, 4-pin, round design to EN 60 947-5-2								
	Plug, 4-pin, s	quare design							
Cable, 4-wire, 2.5 m									

Pin allocation to EN 60947-5-2			
Plug, 4-pin			
M8x1	Pin	Wire colour	Allocation
1	1	Brown	Operating voltage +24 V DC
(++) ²	3	Blue	0 V
4	4	Black	Switching output (Out A)
3	2	White	Switching output (Out B)/analogue output

Mechanical components									
SPAB			-R18	-N18	-F				
Type of mounting		Screw-in			On sub-base				
		Via accessories	Via accessories						
Pneumatic connection	Pneumatic connection		Female thread M5						
		Male thread G1/8	Male thread R1/8	Male thread NPT1/8-27	-				
Product weight	[g]	45			30				
Housing materials		ABS, reinforced							
		PBT, reinforced							

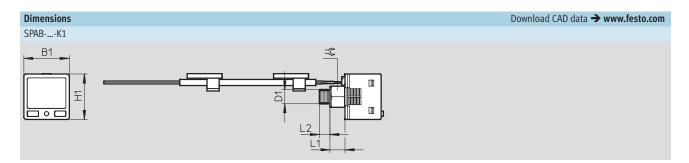
Display/operation	
Display type	Illuminated LCD, multi-coloured
Displayable units	bar
	kgf/cm ²
	inchHg
	mmHg
	kPa
	inchH ₂ O
	psi
Switching status display	Yellow LCD
Setting options	Teach-in
	Via display and keys
Tamper protection	PIN code
Threshold value setting range [%]	0 100
Hysteresis setting range [%]	0 90

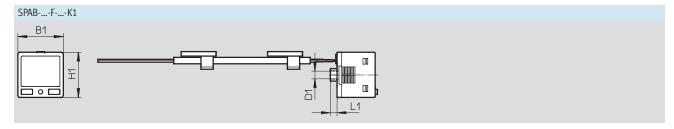
Immissions/emissions	
Protection class	IP40
Corrosion resistance class CRC ¹⁾	2

¹⁾ 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.



Pressure sensors SPAB, with display Technical data

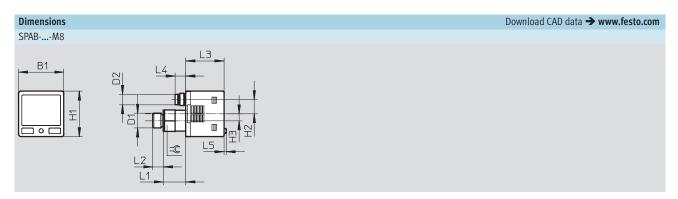


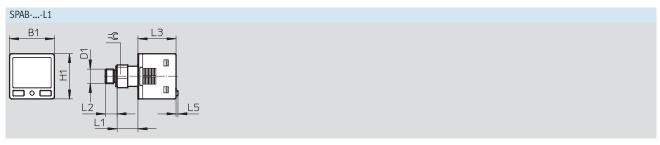


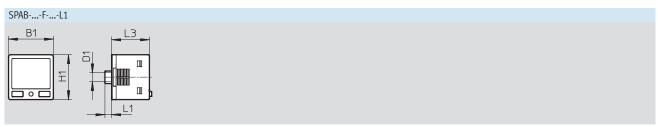
Туре	B1	D1	H1	L1	L2	=©
SPABG18K1	30	G1/8	30	10	7	14
SPABR18K1	30	R1/8	30	9.5	7.5	12
SPABN18K1	30	NPT¹/8	30	9.5	7.5	12
SPABFK1	30	M5	30	4.4	_	-



Pressure sensors SPAB, with display Technical data







Туре	B1	D1	D2	H1	H2	Н3	L1	L2	L3	L4	L5	=©
SPABG18M8	30	G1/8	M8x1	30	9.2	4.5	15	7	~25	7	1	14
SPABR18M8	30	R ¹ /8	M8x1	30	9.2	4.5	14	9.5	~25	7	1	12
SPABN18M8	30	NPT1/8	M8x1	30	9.2	4.5	14	9.5	~25	7	1	12
SPABG18L1	30	G1/8	-	30	-	-	15	7	~25	-	1	14
SPABR18L1	30	R ¹ /8	-	30	-	-	14	9.5	~25	-	1	12
SPABN18L1	30	NPT1/8	ı	30	-	ı	14	9.5	~25	-	1	12
SPABFL1	30	M5	-	30	-	-	4.4	-	~25	-	-	-

-O- New variants

Pressure sensors SPAB, with display Technical data

Ordering of	data								
Pressure	Electrical	output	Electrical	connection					
measur-		·							
ing range			Cable ¹⁾		Plug M8x1		Plug, squa	re design	
[bar]	Digital	Analogue	Part No.	Туре	Part No.	Туре	Part No.	Туре	
Male threa	ad G1/8				<u>'</u>		•		
-1 +1	1x PNP	1 5 V	552356	SPAB-B2R-G18-PB-K1	553152	SPAB-B2R-G18-PB-M8	8000051	SPAB-B2R-G18-PB-L1	-0-
	2x PNP	-	552350	SPAB-B2R-G18-2P-K1	553146	SPAB-B2R-G18-2P-M8	8000045	SPAB-B2R-G18-2P-L1	.0.
	1x NPN	1 5 V	552359	SPAB-B2R-G18-NB-K1	553155	SPAB-B2R-G18-NB-M8	8000054	SPAB-B2R-G18-NB-L1	.0.
	2x NPN	-	552353	SPAB-B2R-G18-2N-K1	553149	SPAB-B2R-G18-2N-M8	8000048	SPAB-B2R-G18-2N-L1	-0-
0 10	1x PNP	1 5 V	552368	SPAB-P10R-G18-PB-K1	553164	SPAB-P10R-G18-PB-M8	8000063	SPAB-P10R-G18-PB-L1	-0-
	2x PNP	-	552362	SPAB-P10R-G18-2P-K1	553158	SPAB-P10R-G18-2P-M8	8000057	SPAB-P10R-G18-2P-L1	-0-
	1x NPN	1 5 V	552371	SPAB-P10R-G18-NB-K1	553167	SPAB-P10R-G18-NB-M8	8000066	SPAB-P10R-G18-NB-L1	-0-
	2x NPN	-	552365	SPAB-P10R-G18-2N-K1	553161	SPAB-P10R-G18-2N-M8	8000060	SPAB-P10R-G18-2N-L1	.0.
	•	•	•		•		•		
Male threa	ad R¹⁄8								
-1 +1	1x PNP	1 5 V	552357	SPAB-B2R-R18-PB-K1	553153	SPAB-B2R-R18-PB-M8	8000052	SPAB-B2R-R18-PB-L1	0
	2x PNP	-	552351	SPAB-B2R-R18-2P-K1	553147	SPAB-B2R-R18-2P-M8	8000046	SPAB-B2R-R18-2P-L1	.0.
	1x NPN	1 5 V	552360	SPAB-B2R-R18-NB-K1	553156	SPAB-B2R-R18-NB-M8	8000055	SPAB-B2R-R18-NB-L1	.0.
	2x NPN	-	552354	SPAB-B2R-R18-2N-K1	553150	SPAB-B2R-R18-2N-M8	8000049	SPAB-B2R-R18-2N-L1	.0.
0 10	1x PNP	1 5 V	552369	SPAB-P10R-R18-PB-K1	553165	SPAB-P10R-R18-PB-M8	8000064	SPAB-P10R-R18-PB-L1	0
	2x PNP	-	552363	SPAB-P10R-R18-2P-K1	553159	SPAB-P10R-R18-2P-M8	8000058	SPAB-P10R-R18-2P-L1	.0.
	1x NPN	1 5 V	552372	SPAB-P10R-R18-NB-K1	553168	SPAB-P10R-R18-NB-M8	8000067	SPAB-P10R-R18-NB-L1	0
	2x NPN	-	552366	SPAB-P10R-R18-2N-K1	553162	SPAB-P10R-R18-2N-M8	8000061	SPAB-P10R-R18-2N-L1	0
	ad NPT1/8-27								
-1 +1	1x PNP	1 5 V	552358	SPAB-B2R-N18-PB-K1	553154	SPAB-B2R-N18-PB-M8	8000053	SPAB-B2R-N18-PB-L1	.0.
	2x PNP	-	552352	SPAB-B2R-N18-2P-K1	553148	SPAB-B2R-N18-2P-M8	8000047	SPAB-B2R-N18-2P-L1	.0.
	1x NPN	1 5 V	552361	SPAB-B2R-N18-NB-K1	553157	SPAB-B2R-N18-NB-M8	8000056	SPAB-B2R-N18-NB-L1	.0.
	2x NPN	-	552355	SPAB-B2R-N18-2N-K1	553151	SPAB-B2R-N18-2N-M8	8000050	SPAB-B2R-N18-2N-L1	.0.
0 10	1x PNP	1 5 V	552370	SPAB-P10R-N18-PB-K1	553166	SPAB-P10R-N18-PB-M8	8000065	SPAB-P10R-N18-PB-L1	.0
	2x PNP	-	552364	SPAB-P10R-N18-2P-K1	553160	SPAB-P10R-N18-2P-M8	8000059	SPAB-P10R-N18-2P-L1	0
	1x NPN	1 5 V	552373	SPAB-P10R-N18-NB-K1	553169	SPAB-P10R-N18-NB-M8	8000068	SPAB-P10R-N18-NB-L1	.0.
	2x NPN	-	552367	SPAB-P10R-N18-2N-K1	553163	SPAB-P10R-N18-2N-M8	8000062	SPAB-P10R-N18-2N-L1	0-
Female thr			T		T		_		
-1 +1	1x PNP	1 5 V	570795	SPAB-B2R-F-PB-K1			8000071	SPAB-B2R-F-PB-L1	-0-
	2x PNP	-	570793	SPAB-B2R-F-2P-K1			8000069	SPAB-B2R-F-2P-L1	.0.
	1x NPN	1 5 V	570796	SPAB-B2R-F-NB-K1			8000072	SPAB-B2R-F-NB-L1	.0.
	2x NPN	-	570794	SPAB-B2R-F-2N-K1			8000070	SPAB-B2R-F-2N-L1	.0.
0 10	1x PNP	1 5 V	570799	SPAB-P10R-F-PB-K1			8000075	SPAB-P10R-F-PB-L1	.0.
	2x PNP	-	570797	SPAB-P10R-F-2P-K1			8000073	SPAB-P10R-F-2P-L1	.0.
	1x NPN	1 5 V	570800	SPAB-P10R-F-NB-K1			8000076	SPAB-P10R-F-NB-L1	-0-
	2x NPN	-	570798	SPAB-P10R-F-2N-K1			8000074	SPAB-P10R-F-2N-L1	·O·

¹⁾ Connecting cable NEBU-L1... (2.5 m long) included in the scope of delivery.



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Accessories

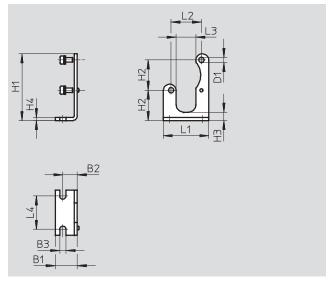
Mounting bracket SAMH

Material:

Galvanised chromated steel

Note on materials: RoHS-compliant





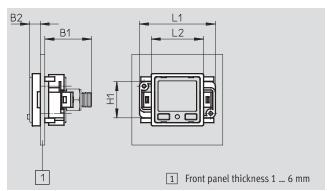
Dimensio	Dimensions and ordering data												
B1	B2	В3	D1 Ø	H1	H2	Н3	H4	L1	L2	L3	L4	Part No.	Туре
14.5	9.5	4.2	3.5	~44	20	5.5	2	30	20	13	22	552376	SAMH-P4-A

Front panel installation kit SAMH

Materials: PC, POM

Note on materials: RoHS-compliant





Ordering data						
B1	B2	H1	L1	L2	Part No.	Туре
~31	7	24	50	34.5	552377	SAMH-P4-F

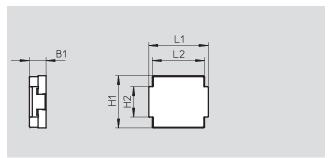
Protective cover SACC

Material: PC

Note on materials:

RoHS-compliant





Dimensions and ordering data												
B1	H1	H2	L1	L2	Part No.	Туре						
~28	34.5	20	39.3	34.5	552378	SACC-P4-G						

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Accessories

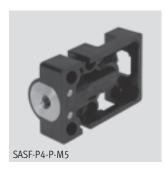
Adapter plate SASF

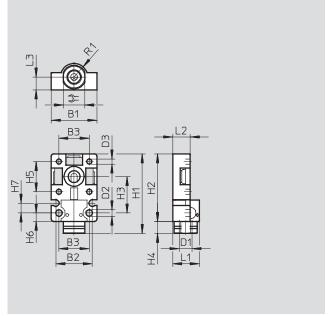
for pressure sensor SPAB-...-F

Materials: PBT-reinforced High-alloy stainless steel HNBR

Note on materials: Contains PWIS (paint wetting impairment substances) RoHS-compliant







- 🖣 - Note

To differentiate the adapter plates - R1/8 No line R1/8, G1/8 and NPT1/8, they are identified as follows at the - G1/8 Two lines pneumatic connection:

Dimer	Dimensions and ordering data																			
B1	B2	В3	D1	D2	D3	H1	H2	Н3	H4	H5	Н6	H7	L1	L2	L3	R1	=©	Part No.	Туре	
				Ø	Ø															
			R1/8															570801	SASF-P4-P-R18	.0.
30	24	20	G1/8	4.3	3.4	52.5	44.5	24	8	20	5.5	6.5	17.5	11.5	8.5	9	14	570802	SASF-P4-P-G18	.0.
			NPT1/8															570803	SASF-P4-P-N18	0
30	24	20	M5	4.3	3.4	-	44.5	24	-	20	5.5	6.5	17.5	11.5	8.5	9	-	570804	SASF-P4-P-M5	.0.

¹⁾ 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.



Pressure sensors SPAB, with display Accessories

Ordering d	ata – Connecting cables			
				Technical data → Internet: nebu
	Designation	Number of wires	Cable length [m]	Part No. Type
M8x1				
	Straight socket	4	2.5	541342 NEBU-M8G4-K-2.5-LE4
			5	541343 NEBU-M8G4-K-5-LE4
	Angled socket	4	2.5	541344 NEBU-M8W4-K-2.5-LE4
			5	541345 NEBU-M8W4-K-5-LE4
Circuit boa	rd plug connector			
	Straight socket,	4	2.5	552374 NEBU-L1G4-K-2.5-LE4 ¹⁾
8	square design		5	552375 NEBU-L1G4-K-5-LE4
	Socket,	4	2.5	572576 NEBS-L1G4-K-2.5-LE4
Service of the servic	rectangular design L1		5	572577 NEBS-L1G4-K-5-LE4
1			-	

¹⁾ Included in the scope of delivery with SPAB-...-K1.

0	Ordering data – Push-in fittings Technical data → Internet: quick star											
			For tubing O.D. [mm]	Part No.	Туре							
	AN	M5	4	153304	QSM-M5-4							
6			6	153306	QSM-M5-6							