

Pressure sensors SPAN

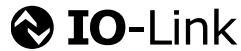
FESTO



Characteristics

At a glance

Communication interface



Practical design

- Compact design 30x30 mm
- Degree of protection IP40
- Weight reduction with QS4

Universal pressure measurement

- Pressure and vacuum
- 13 pressure measuring ranges
- All standard pressure units
- Optional test report



Easy operation

- Clear 2-line display
- Configurable red surround for the entire display
- Intuitive menu navigation

Quick installation

- L1 plug for fast commissioning
- M8 electrical adapters allow maximum flexibility
- Wide range of mounting options
- QS4 quick connector

Switchable electrical outputs

- Various switching functions
- Switching outputs (PNP/NPN, NO/NC)
- Analogue outputs (0 ... 10 V, 1 ... 5 V, 4 ... 20 mA)

Product description

The pressure sensor SPAN is suitable for monitoring compressed air and non-corrosive gases. The sensor can be used in many industries thanks to its compact design. The measuring method is based on a piezoresistive measuring cell for relative pressure measurement. The pressure value is transmitted to the connected controller as a switching signal, as an analogue signal or via IO-Link depending on the sensor variant and selected parameters.

Areas of application

- Network monitoring (pressure present)
- Regulator monitoring (pressure in the setpoint range)
- Vacuum (part picked up)
- Leak test (pressure drop over time)
- Object detection (back pressure present)

Functions

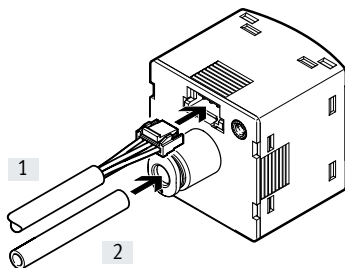
- Monitoring and setting a pressure threshold, a pressure range or differential pressure monitoring with teach-in function or by entering values
- ECO function with option to switch off the display
- Optional security code can be freely chosen (4-digit code)
- Adjustable low-pass filter to smooth the pressure signal
- Scaling the analogue output to increase the signal dynamics
- Offset compensation possible
- Min./max. value memory for monitoring compressed air
- All settings that have been carried out on one sensor (master) can be transferred (replication) to identical sensors (device)

Variants with IO-Link

- Serial communication integrated using IO-Link 1.1
- Cyclical transfer of two operating statuses and the measured pressure value
- The sensor can be parameterised remotely using an IO-Link Master
- Sensor can be changed easily using automatic parameterisation (hot swap)
- Sensor identification, diagnostics and teach-in via IO-Link possible

2-step connection

- [1] Push in L1 plug
- [2] Push in tubing



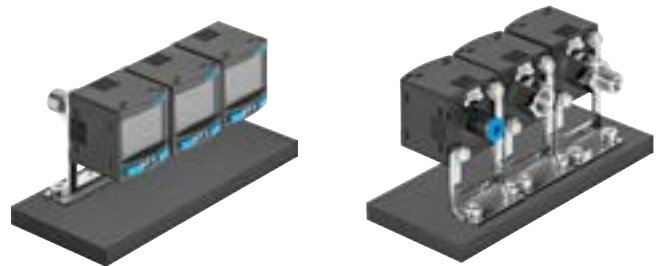
Characteristics

Mounting options

Front panel mounting



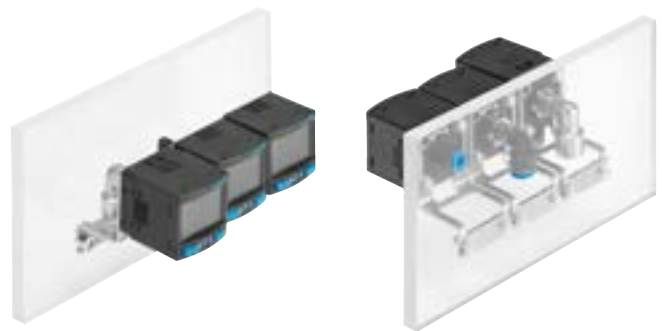
Manifold mounting with mounting bracket



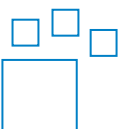
Threaded mounting with M8 adapter



Wall mounting



Ordering data – Product options

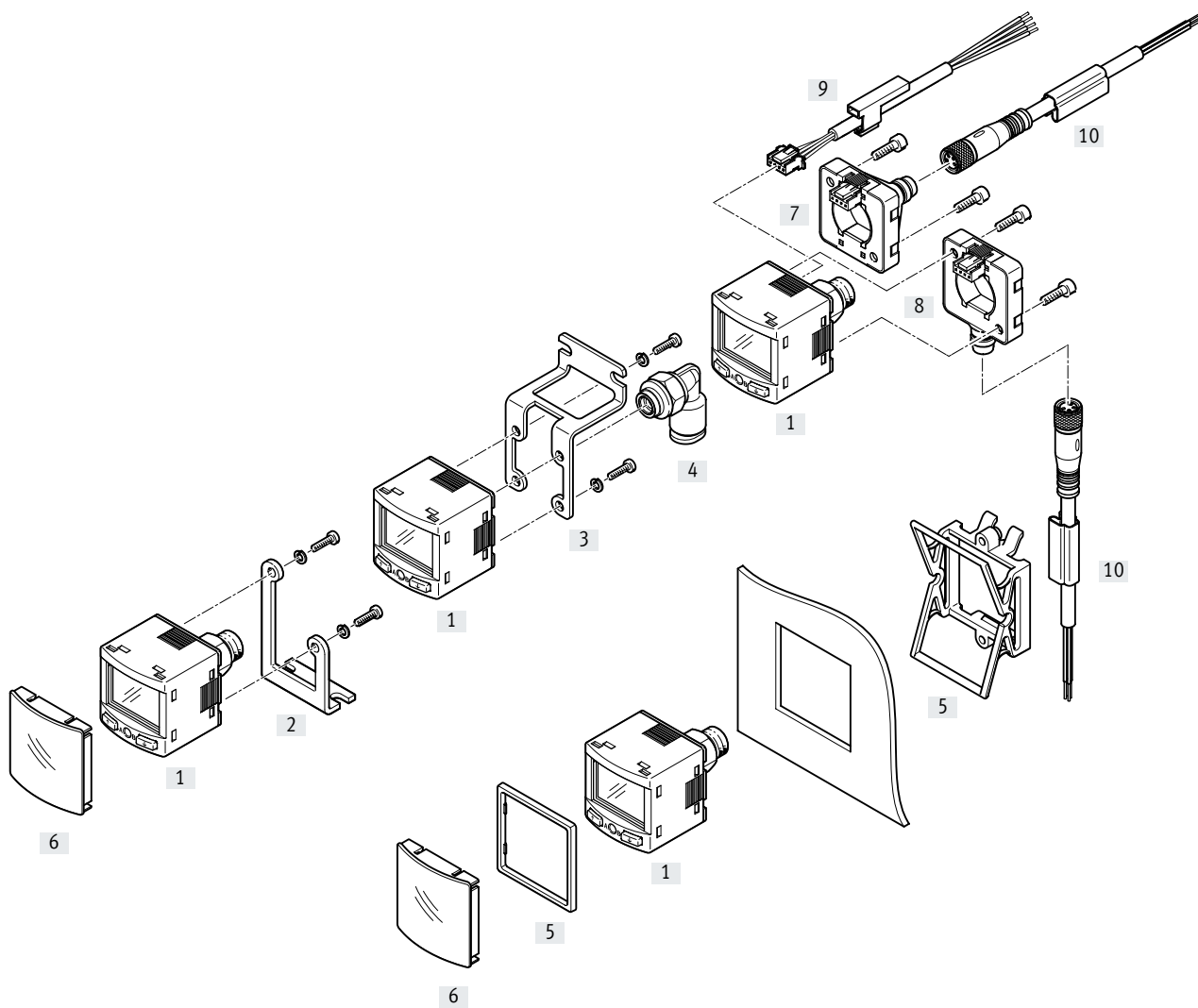


Configurable product
This product and all its product options can be ordered using the configurator.

The configurator can be found under
Products on the DVD or at
→ www.festo.com/catalogue/...

Part no.	Type
8003300	SPAN

Peripherals overview



Accessories		→ Page/Internet	Accessories		→ Page/Internet
[1]	Pressure sensors SPAN	6	[6]	Safety guard SACC-PN-G	13
[2]	Mounting bracket SAMH-PU-A	12	[7]	Electrical adapter (only in combination with NEBU-M8) SASC-P4-A-M8-S	14
[3]	Wall mounting SAMH-PN-W	12	[8]	Electrical adapter (only in combination with NEBU-M8) SASC-P4-A-M8-A	14
[4]	Push-in fitting QSML-M5	15	[9]	Connecting cable NEBS-L1G4	15
[5]	Front panel mounting kit SAMH-PN-F	13	[10]	Connecting cable NEBU-M8	15

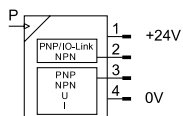
Type codes

001	Series
SPAN	Pressure sensor
002	Pressure measuring range
B2	-1 ... 1 bar
B11	-1 ... 10 bar
P025	0 ... 0.25 bar
P05	0 ... 0.5 bar
P1	0 ... 1 bar
P2	0 ... 2 bar
P6	0 ... 6 bar
P10	0 ... 10 bar
P12	0 ... 12 bar
P16	0 ... 16 bar
V025	0 ... -0.25 bar
V05	0 ... -0.5 bar
V1	0 ... -1 bar
003	Pressure inlet
R	Relative pressure

004	Pneumatic connection
G18	G1/8
R18	R1/8
N18	1/8 NPT
M5	M5
Q4	Push-in connector 4 mm
005	Thread type
	None
F	Female
M	Male
006	Electrical output 1
PN	PNP or NPN
PNLK	PNP or NPN or IO-Link®
007	Electrical output 2
PN	PNP or NPN
PNVBA	PNP or NPN or 0 ... 10 V or 1 ... 5 V or 4 ... 20 mA
008	Electrical connection
L1	Plug type L1
009	Certificate
	None
T	Test report

Data sheet

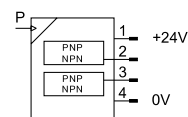
Variant with IO-Link and analogue outputs ... -PNLK-PNVBA



- Compact design 30x30
- 13 pressure measuring ranges
-1 ... +16 bar available
- Voltage 15 ... 30 V DC
- Temperature range 0 ... +50°C
- Degree of protection IP40



Variant with 2 switching outputs ... -PN-PN



General technical data	
Certification	RCM compliance mark c UL us listed (OL)
Certificate issuing authority	UL E322346
CE marking (see declaration of conformity)	To EU EMC Directive To EU RoHS Directive
KC mark	KC EMC
Note on materials	RoHS-compliant

Input signal, measuring element	-B2	-B11	-V025	-V05	-V1	-P025	-P05	-P1	-P2	-P6	-P10	-P12	P16
Measured variable	Relative pressure												
Measurement method	Piezoresistive pressure sensor												
Pressure measuring range start value [bar]	-1		0										
Pressure measuring range end value [bar]	1	10	-0.25	-0.5	-1	0.25	0.5	1	2	6	10	12	16
Max. overload pressure [bar]	5	15	1	2	5	1	2	5	6	15	15	15	20
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4] Inert gases												
Note on the operating/pilot medium	Lubricated operation possible												
Temperature of medium [°C]	0 ... +50												
Ambient temperature [°C]	0 ... +50												

Output, general	-B2	-B11	-V025	-V05	-V1	-P025	-P05	-P1	-P2	-P6	-P10	-P12	P16
Accuracy FS [%]	±1.5												±2
Repetition accuracy [%]	±0.3												
Temperature coefficient [%FS/K]	±0.05												


Switching output	
Switching output	2x PNP or 2x NPN, switchable
Switching function	Window comparator Threshold value comparator Auto difference monitoring
Switching element function	N/C or N/O contact, switchable
Max. output current [mA]	100
Short circuit protection	Yes

Data sheet

Analogue output			
SPAN-...		-PNLK-PNVBA	PN-PN
Analogue output	[V]	0 ... 10	-
	[V]	1 ... 5	-
	[mA]	4 ... 20	-
Max. load resistance of current output	[Ω]	500	-
Min. load resistance of voltage output	[kΩ]	20	-

IO-Link device to IEC 61131-9	
SPAN-...	
Protocol	IO-Link
IO-Link	
Protocol version	Device V 1.1
Profile	Smart sensor profile
Function classes	Binary data channel (BDC)
	Process data variable (PDV)
	Identification
	Diagnostics
	Teach channel
Communication mode	COM2 (38.4 kBd)
SIO mode support	Yes
Port class	A
Process data width OUT	0 bytes
Process data width IN	2 bytes
Process data content IN	14 bit PDV (pressure measurement value)
	2 bit BDC (pressure monitoring)
Minimum cycle time	3 ms
Data memory required	0.5 KB

Electronics		
Operating voltage range DC	[V]	15 ... 30
Reverse polarity protection		For all electrical connections
Electrical connection		Plug, 4-pin, square design

Pin allocation			
	Pin	Wire colour	Allocation
	1	Brown	Operating voltage +24 V DC
	2	Black	Switching output A / IO-Link
	3	White	Switching output B / analogue output
	4	Blue	0 V DC

Data sheet

Mechanical system						
SPAN	-G18	-R18	-N18M	-G18F	-M5F	-Q4
Type of mounting	Via thread					-
	Front panel mounting					
	Via wall/surface bracket					
Pneumatic connection	Female thread M5			Female thread G1/8	Female thread M5	For tubing O.D. 4 mm
	Male thread G1/8	Male thread R1/8	Male thread 1/8NPT	-	-	-
Product weight [g]	45			34		25
Mounting position	Any					
Information on housing material	Reinforced PA					

Display/operation		
SPAN	-PNLK	-PN
Display type	Backlit LCD	
Displayable units	MPa	
	bar	
	inchH ₂ O	
	inchHg	
	kPa	
	kgf/cm ²	
	mmHg	
Setting options	Teach-in	
	IO-Link	-
	Via display and pushbuttons	
Protection against tampering	IO-Link	-
	PIN code	
Threshold value setting range [%]	0 ... 100	
Hysteresis setting range [%]	0 ... 90	

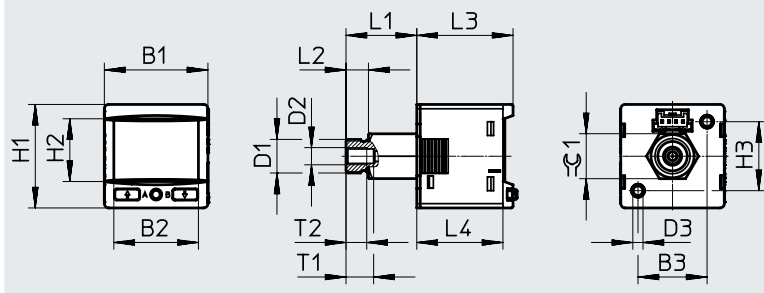
Immission/emission	
Degree of protection	IP40
Corrosion resistance class CRC ¹⁾	2

1) Corrosion resistance class 2 to Festo standard 940 070
 Components subject to moderate corrosion stress. External 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.

Data sheet

Dimensions

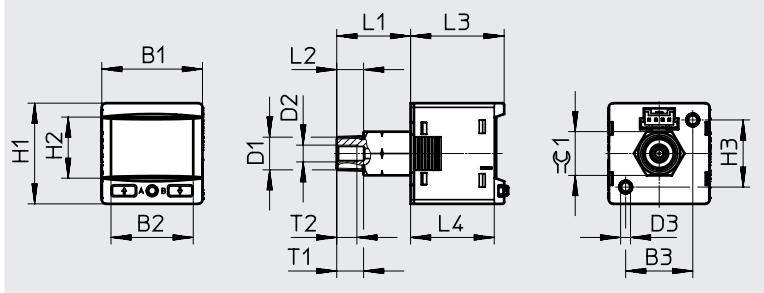
Download CAD data → www.festo.com



Type	B1	B2	B3	D1	D2	D3	H1	H2	H3	L1	L2	L3	L4	T1	T2	≈C1
SPAN-...-G18M-...	30	24.5	20	G1/8	M5	M3	30	18.2	20	20.5	6.5	~27.9	~25.3	8	6	13

Dimensions

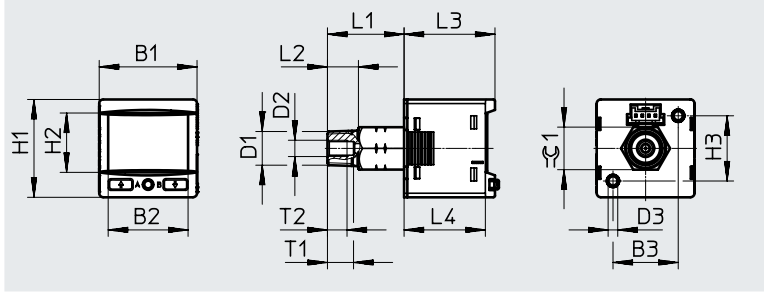
Download CAD data → www.festo.com



Type	B1	B2	B3	D1	D2	D3	H1	H2	H3	L1	L2	L3	L4	T1	T2	≈C1
SPAN-...-R18M-...	30	24.5	20	R1/8	M5	M3	30	18.2	20	22	8	~27.9	~25.3	8	6	13

Dimensions

Download CAD data → www.festo.com

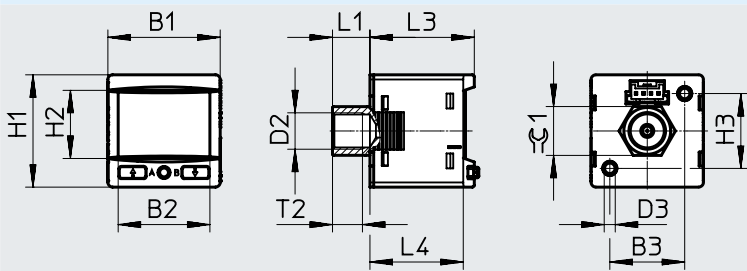


Type	B1	B2	B3	D1	D2	D3	H1	H2	H3	L1	L2	L3	L4	T1	T2	≈C1
SPAN-...-N18M-...	30	24.5	20	1/8NPT	M5	M3	30	18.2	20	23.5	9.5	~27.9	~25.3	8	6	13

Data sheet

Dimensions

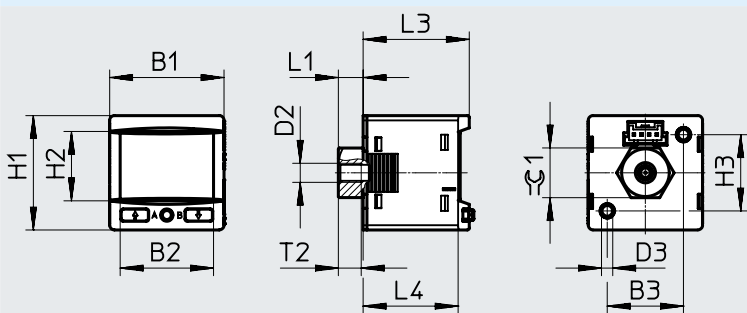
Download CAD data → www.festo.com



Type	B1	B2	B3	D2	D3	H1	H2	H3	L1	L3	L4	T2	⌀G1
SPAN- ... -G18F...	30	24.5	20	G1/8	M3	30	18.2	20	10	~27.9	~25.3	8	13

Dimensions

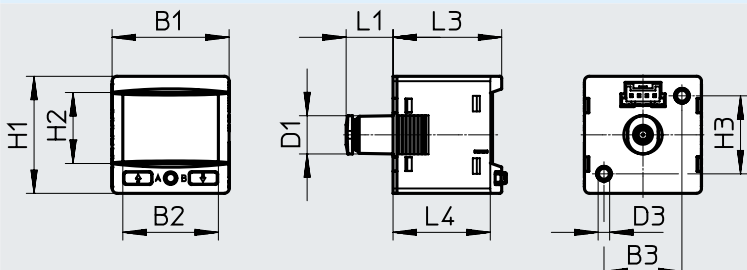
Download CAD data → www.festo.com



Type	B1	B2	B3	D2	D3	H1	H2	H3	L1	L3	L4	T2	⌀G1
SPAN- ... -M5F...	30	24.5	20	M5	M3	30	18.2	20	6.5	~27.9	~25.3	6	13

Dimensions

Download CAD data → www.festo.com



Type	B1	B2	B3	D1	D3	H1	H2	H3	L1	L3	L4
SPAN- ... -Q4...	30	24.5	20	9.8 ∅	M3	30	18.2	20	12	~27.9	~25.3

Data sheet

★ Core product range

Ordering data			Pneumatic connection	Part no.	Type	
Switching output	Electrical output					
	Analogue output	Serial interface				
Pressure measuring range -1 ... +1 bar						
2x PNP/NPN, switchable	-	-	G1/8 male, M5 female	★ 8035545	SPAN-B2R-G18M-PN-PN-L1	
			R1/8 male, M5 female	★ 8035548	SPAN-B2R-R18M-PN-PN-L1	
			M5 female	★ 8035551	SPAN-B2R-M5F-PN-PN-L1	
Pressure measuring range 0 ... +10 bar						
2x PNP/NPN, switchable	-	-	G1/8 male, M5 female	★ 8035544	SPAN-P10R-G18M-PN-PN-L1	
			R1/8 male, M5 female	★ 8035547	SPAN-P10R-R18M-PN-PN-L1	
Ordering data						
Ordering data			Pneumatic connection	Part no.	Type	
Switching output	Electrical output					
	Analogue output	Serial interface				
Pressure measuring range 0 ... -1 bar						
2x PNP/NPN, switchable	-	-	G1/8 male, M5 female	8035546	SPAN-V1R-G18M-PN-PN-L1	
			R1/8 male, M5 female	8035549	SPAN-V1R-R18M-PN-PN-L1	
			Push-in connector 4 mm	8035554	SPAN-V1R-Q4-PN-PN-L1	
	0 ... 10 V, 1 ... 5 V	IO-Link	G1/8 male, M5 female	8035535	SPAN-V1R-G18M-PNLK-PNVBA-L1	
			R1/8 male, M5 female	8035538	SPAN-V1R-R18M-PNLK-PNVBA-L1	
			Push-in connector 4 mm	8035543	SPAN-V1R-Q4-PNLK-PNVBA-L1	
Pressure measuring range -1 ... +1 bar						
2x PNP/NPN, switchable	-	-	Push-in connector 4 mm	8035553	SPAN-B2R-Q4-PN-PN-L1	
			0 ... 10 V, 1 ... 5 V	IO-Link	G1/8 male, M5 female	8035534
	4 ... 20 mA	R1/8 male, M5 female	8035537		SPAN-B2R-R18M-PNLK-PNVBA-L1	
	Switchable	M5 female	8035540		SPAN-B2R-M5F-PNLK-PNVBA-L1	
			Push-in connector 4 mm	8035542	SPAN-B2R-Q4-PNLK-PNVBA-L1	
Pressure measuring range 0 ... +10 bar						
2x PNP/NPN, switchable	-	-	M5 female	8035550	SPAN-P10R-M5F-PN-PN-L1	
			Push-in connector 4 mm	8035552	SPAN-P10R-Q4-PN-PN-L1	
	0 ... 10 V, 1 ... 5 V	IO-Link	G1/8 male, M5 female	8035533	SPAN-P10R-G18M-PNLK-PNVBA-L1	
			4 ... 20 mA	R1/8 male, M5 female	8035536	SPAN-P10R-R18M-PNLK-PNVBA-L1
			Switchable	M5 female	8035539	SPAN-P10R-M5F-PNLK-PNVBA-L1
			Push-in connector 4 mm	8035541	SPAN-P10R-Q4-PNLK-PNVBA-L1	

Festo core product range



Generally ready for dispatch from the factory within 24 hours

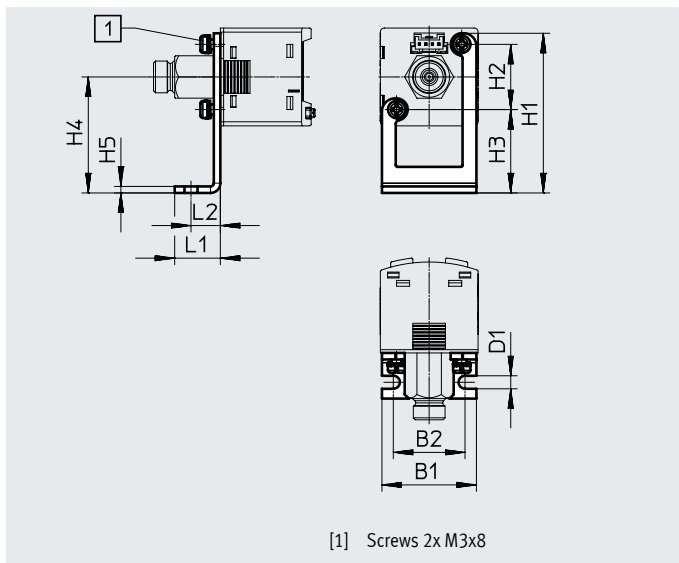
Generally ready for dispatch from the factory within 5 days

Accessories – Ordering data

Mounting bracket SAMH-PU-A

Type of mounting: via through-hole and screw. For mounting devices (standing or suspended) on even surfaces.

Material: high-alloy stainless steel
Note on materials: RoHS-compliant



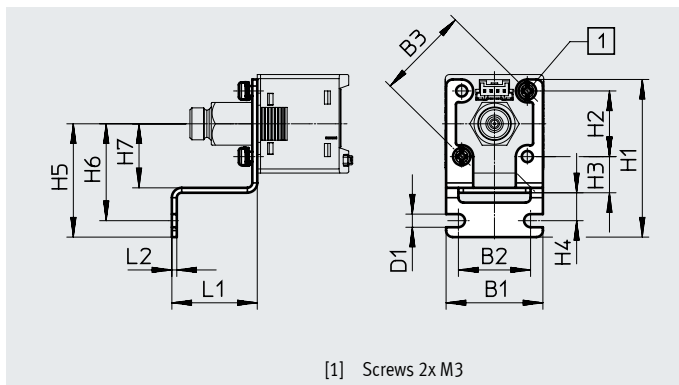
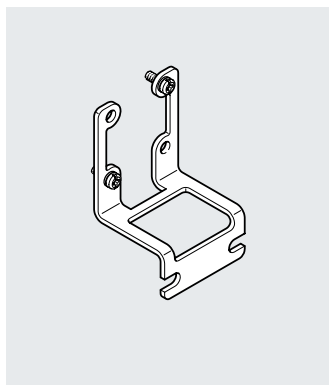
Ordering data													
Type	B1	B2	D1 ∅	H1	H2	H3	H4	H5	L1	L2	CRC ¹⁾	Part no.	Type
SAMH-PU-A	29	22	4	49	20	25.6	35.6	2	14	9	2	8003354	SAMH-PU-A

1) Corrosion resistance class 2 to Festo standard 940 070
Components subject to moderate corrosion stress. External 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.

Wall mounting SAMH-PN-W

Type of mounting: via through-hole and screw. For mounting devices on vertical surfaces.

Material: high-alloy stainless steel
Note on materials: RoHS-compliant



Dimensions and ordering data																
Type	B1	B2	B3	D1 ∅	H1	H2	H3	H4	H5	H6	H7	L1	L2	CRC ¹⁾	Part no.	Type
	±0.15		±0.3			±0.1							±0.05			
SAMH-PN-W	29.5	22	28.3	4	48	20	11	8.5	34.5	29.5	19.5	26	1.5	2	★ 8035563	SAMH-PN-W

1) Corrosion resistance class 2 to Festo standard 940 070
Components subject to moderate corrosion stress. External 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.



Accessories – Ordering data

Safety guard

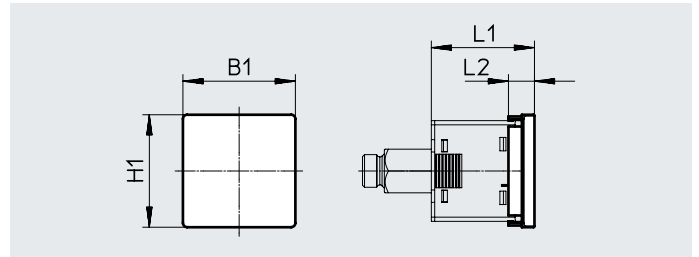
SACC-PN-G

To protect the display and control elements

Material: PA

Note on materials:

RoHS-compliant



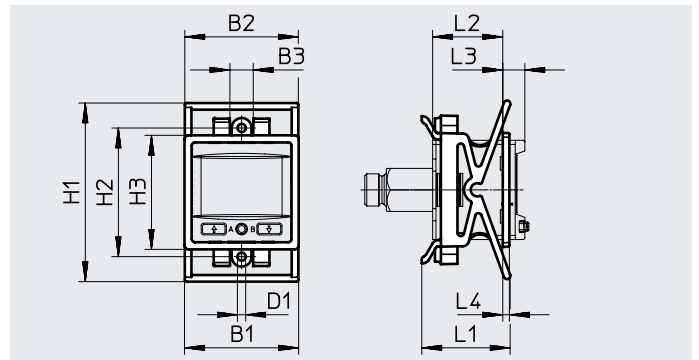
Dimensions and ordering data						
Type	B1	H1	L1	L2	Part no.	Type
SACC-PN-G	33.5	33.5	~31	7.7	★ 8035560	SACC-PN-G

Front panel mounting kit

SAMH-PN-F

Mounting kit for front panel

Material: PA, POM



Dimensions and ordering data														
Type	B1	B2	B3	D1 ∅	H1 min.	H1 max.	H2	H3	L1	L2	L3	L4	Part no.	Type
SAMH-PN-F	34.5	34.3	7	2.5	54	57.5	38.9	34.5	26.8	~21.2	~6.7	2	★ 8035561	SAMH-PN-F

Festo core product range



Generally ready for dispatch from the factory within 24 hours

Generally ready for dispatch from the factory within 5 days

Accessories – Ordering data

Electrical adapter SASC-P4-A-M8-A

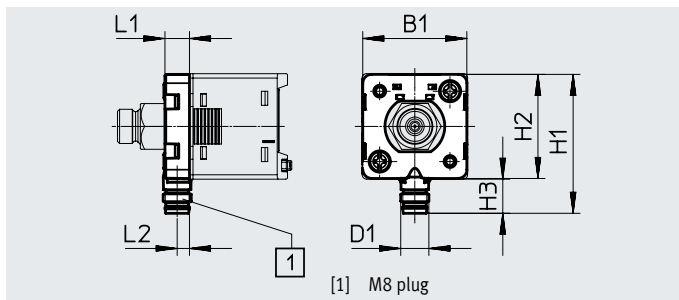
For downward outlet direction¹⁾

Material of housing: reinforced PA

Plug housing: nickel-plated brass

Note on materials:

RoHS-compliant



Dimensions and ordering data										
Type	B1	D1	H1	H2	H3	L1	L2	CRC ²⁾	Part no.	Type
SASC-P4-A-M8-A	29.6	M8x1	39.5	29.6	9.7	7	3.5	2	8000326	SASC-P4-A-M8-A

1) Only with connecting cable NEBU-M8...

2) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

Pin allocation

Plug, 4-pin, M8x1

Round design	Pin	Wire colour	Allocation
	1	Brown	Operating voltage +24 V DC
	2	White	Switching output B / analogue output
	3	Blue	0 V DC
	4	Black	Switching output A / IO-Link

Electrical adapter SASC-P4-A-M8-S

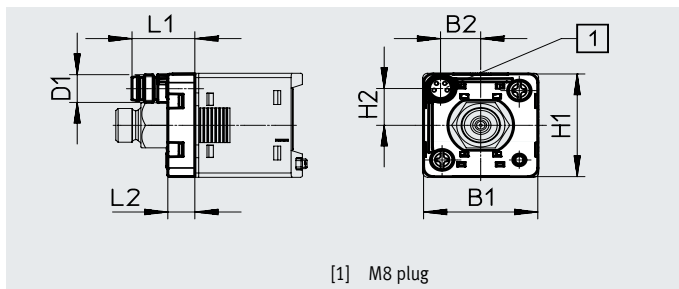
For outlet direction to rear¹⁾

Material of housing: reinforced PA

Plug housing: nickel-plated brass

Note on materials:

RoHS-compliant



Dimensions and ordering data										
Type	B1	B2	D1	H1	H2	L1	L2	CRC ²⁾	Part no.	Type
SASC-P4-A-M8-S	29.6	10.4	M8x1	29.6	10.6	16.3	7	2	8000327	SASC-P4-A-M8-S

1) Only with connecting cable NEBU-M8...

2) Corrosion resistance class CRC 2 to Festo standard FN 940070









Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

Pin allocation

Plug, 4-pin, M8x1

Round design	Pin	Wire colour	Allocation
	1	Brown	Operating voltage +24 V DC
	2	White	Switching output B / analogue output
	3	Blue	0 V DC
	4	Black	Switching output A / IO-Link

Accessories – Ordering data

Ordering data – Connecting cables				
	Number of wires	Cable length [m]	Part no.	Type
Socket, rectangular design L1 Data sheets → Internet: nebs				
	4	2.5	572576	NEBS-L1G4-K-2.5-LE4
		5	572577	NEBS-L1G4-K-5-LE4
M8x1, straight socket Data sheets → Internet: nebu				
	4	2.5	541342	NEBU-M8G4-K-2.5-LE4
		5	541343	NEBU-M8G4-K-5-LE4
M8x1, angled plug socket				
	4	2.5	541344	NEBU-M8W4-K-2.5-LE4
		5	541345	NEBU-M8W4-K-5-LE4
Ordering data – Push-in fittings Data sheets → Internet: qs				
	Pneumatic connection O.D.	For tubing O.D.	Part no.	Type
Straight connection				
	M5	4 mm	★ 153304	QSM-M5-4
		6 mm	★ 153306	QSM-M5-6
	G1/8	4 mm	★ 186264	QSM-G1/8-4
		6 mm	★ 186265	QSM-G1/8-6
90° connection				
	M5	4 mm	★ 153333	QSML-5-4
		6 mm	★ 153335	QSML-5-6
	G1/8	4 mm	★ 186268	QSML-G1/8-4
		6 mm	★ 186269	QSML-G1/8-6
90° connection Data sheets → Internet: npfc				
	G1/8	G1/8 female to G1/8 female	8030209	NPFC-L-2G18-F
	R1/8	R1/8 male to R1/8 male	8030223	NPFC-L-2R18-M
	M5	M5 female to M5 male	8030215	NPFC-L-2M5-MF

Festo core product range



Generally ready for dispatch from the factory within 24 hours

Generally ready for dispatch from the factory within 5 days