SCPSi pressure switch

Device features

- Pressure sensor / -switch
- Temperature measurement
- Industry 4.0-ready
- IO-Link 1.1
- Smart Sensor Profile 2nd edition
- Plug & Play
- Compact
- Optimized design
- Adjustable via IO-Link
- Readable via IO-Link
- Useable as IO-Link sensor or switch
- Monolithic pressure cell

The fully electronic pressure switch SCPSi is adjustable and free from susceptible mechanical and moving components.

With its digital interface and smart functions, the SCPSi iis future-proof for the increasing demands of automation solutions.

The 2 switching outputs are individually and safely parameterized from the machine control system via the standardized digital IO-Link interface (IEC 61131-9). This replaces manual programming and the commissioning phase is considerably shortened. Devices can be replaced during operation without the need for reparameterization. In order to react promptly to machine status changes or process adjustments, the re-parameterization is carried out during operation.

As an alternative to the switching functions, diagnostic values, process data and status messages are recorded directly via IO-Link and enable subsequent more complex analyses. Via the integrated temperature measurement of the pressure measuring cell, the media or ambient temperature is recorded.

IO-Link replaces time-consuming manual programming and eliminates the need for a sensitive key display with the manufacturer-dependent setting menu. This more compact, more resistant design without key display, in combi-

nation with the smart functions & setting options, opens up new possibilities in machine design for the machine designer, with considerable savings potential.

The compact stainless steel housing allows space-saving use, even in harsh environments.

The proven stainless steel measuring cell with the wide pressure range (from -1 up to 600 bar) allows a wide range of applications for liquid and gaseous media. The media-contacting pressure connection with the pressure measuring cell is monolithically manufactured from a stainless steel without welds and sets new standards in media compatibility and pressure resistance.

The packaging variant optimized for OEM's is environmentally friendly, cost-optimized and facilitates handling.

Application examples

- Injection-mould machines
- Tool-making machines
- Power packs
- Special machine construction
- Replacement for mechanical pressure switches
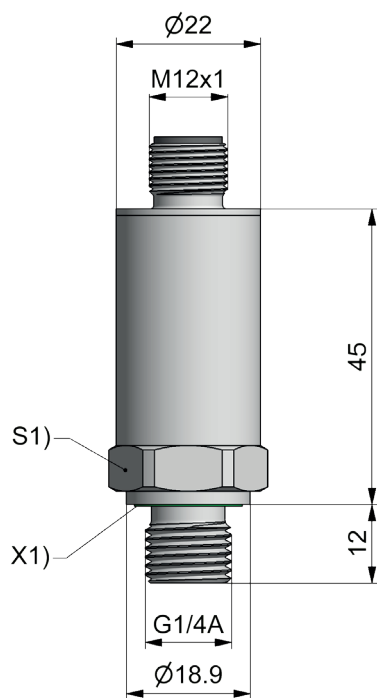
SCPSi pressure switch

Technical data

SCPSi		001	004	010	025	060	100	250	400	600
Pressure range Pn vacuum tight / relative P_n	bar (psi)	-1...1 (-14...14)	-1...4 (-14...58)	-1...10 (14...145)	-1...25 (-14...362)	0...60 (0...870)	0...100 (0...1450)	0...250 (0...3625)	0...400 (0...5801)	0...600 (0...8702)
Overload pressure relative P_{max}	bar (psi)	6 (87)	10 (145)	030 (435)	80 (1160)	200 (2900)	300 (4351)	750 (10877)	1200 (17404)	1400 (20305)
Burst pressure relative P_{burst}	bar (psi)	9 (130)	15 (217)	100 (1450)	150 (2175)	500 (7251)	800 (11603)	1000 (14504)	2000 (29007)	2200 (31908)
Wetted parts		1.4542 (17-4PH); 1.4548; FKM		Monolitisch 316L; FKM						
Set point SP Range		1 - 100 %								
Reset point rP Range		0 - 99 %								
Steps / Incremental	mbar	0,1	1	1	1	10	10	10	100	100
Smallest hysteresis (SP-rP) & (FH-FL)	bar	0,001	0,01	0,01	0,01	0,1	0,1	0,1	1	1

Genral

Overall Accuracy @ RT [*1]	≤ 0,5 %FS
Min. pressure cycles	> 100 million
Material housing	Stainless steel 1.4404
Weight	approx. 80 g

Conformity

RoHS	2011/65/EU, 2015/863
CE	Yes
UKCA	Yes

Process connection

Thread	G1/4, DIN 3852 T11 (E)
Seal	ED type: FKM
Installation torque	Max. 35 Nm

Ambient conditions

Media temperature	-25 to 85 °C (-13 to 185°F)
Operation / Ambient temperature	-25 to 85 ° C (-13 to 185°F)
Storage temperature	-40 to 85 °C (-40 to 185°F)
Vibration	DIN EN 60068-2-6, 20 g
Shock	DIN EN 60068-2-27, 500 g
MTTFd	>100 year

Accuracy

@ -40°C...-25°C	≤ 2,5 %FS
@ -25...0°C	≤ 1,5 %FS
@ 0...85°C	≤ 1 %FS

Temperature signal

Output	Via IO-Link
Short circuit	-40 to 125 °C
Resolution	1 K
Accuracy	± 10°K
$t_{0,9}$	80 sek.

Protection

Overvoltage	70 V
Short circuit	yes
Reverse polarity	yes
Signal on GND/V$_+$	yes

Factory setting

SP1 / rP1	40 / 60% FS; Hno
SP2 / rP2	30 / 70% FS; Hno

Electronic Connectivity

Power supply voltage V$_{(+)}$	18...30VDC
Connector	M12
Consumption	< 15 mA @ 24V
Output	2 switching outputs, NPN / PNP, 1 IO-Link output
Switch current	Max. 200mA
Max. switch frequency	200 Hz
Response time	≥ 3 ms

IO-Link Interface

Revision	IO-Link V1.1 Process Data Variable; Device Identification; Device Diagnosis
Min. process cycle time	4 ms
Transmission type	COM2, 38.4kBaud
Profile	Smart Sensor Profile 2nd Edition v1.1.2
SIO-Mode	yes
Master port type	A
Process data analogue (in Pa)	2 Byte Process data 1 Byte scaling factor
Process data binary	1 byte
SDCI Standard	IEC 61131-9
Vendor ID	271 / 10f (hex)
Device IODD	https://ioddfinder.io-link.com/#/

M12x1

Protection class (mounted connector)		IP67
	Pin 1	V$_{(+)}$
	Pin 2	S2 out
	Pin 3	0V / GND
	Pin 4	S1 out / IO-Link

SCPSi pressure switch

Ø22

M12x1

45

S1)

12

X1)

G1/4A

Ø18.9

Order code

SCPSi Pressure switch	SCPSi-xxx-04-07

Druckbereich	
0…001 bar	001
0…004 bar	004
0…010 bar	010
0…025 bar	025
0…060 bar	060
0…100 bar	100
0…250 bar	250
0…400 bar	400
0…600 bar	600