Pressure sensor with display

PN2094

URL:https://www.sxplc.com/pressure-sensor-with-display-pn2094

Product data sheet

Product characteristics

Number of inputs and outputs

Number of digital outputs: 2; Number of analog outputs: 1

Measuring range

-1...10 bar

-14.6...145 psi

-0.1...1 MPa

Process connection

threaded connection G 1/4 Internal thread (DIN EN ISO 1179-2)

Application

System

gold-plated contacts

Measuring element

ceramic-capacitive pressure measuring cell

Application

for industrial applications

Media

liquids and gases

Medium temperature [°C]

-25...80

Min. bursting pressure

150 bar

2175 psi

15 MPa

Pressure rating

75 bar

1087 psi

7.5 MPa

Vacuum resistance [mbar]

-1000

Type of pressure

relative pressure; vacuum

Electrical data

Operating voltage [V]

18...30 DC; (to SELV/PELV)

Current consumption [mA]

< 35

Min. insulation resistance [MΩ]

100; (500 V DC)

Protection class

III

Reverse polarity protection

yes

Power-on delay time [s]

0.3

Integrated watchdog

yes

Inputs / outputs

Number of inputs and outputs

Number of digital outputs: 2; Number of analog outputs: 1

Outputs

Total number of outputs

2

Output signal

switching signal; analog signal; IO-Link; (configurable)

Electrical design

PNP/NPN

Number of digital outputs

2

Output function

normally open / closed; (configurable)

Max. voltage drop switching output DC [V]

2

Permanent current rating of switching output DC [mA]

250

Switching frequency DC [Hz]

< 500

Number of analog outputs

1

Analog current output [mA]

4...20; (scalable 1:5)

Max. load [Ω]

500

Analog voltage output [V]

0...10; (scalable 1:5)

Min. load resistance [Ω]

2000

Short-circuit protection

yes

Type of short-circuit protection

yes (non-latching)

Overload protection

yes

Measuring/setting range

Measuring range

-1...10 bar

-14.6...145 psi

-0.1...1 MPa

Analog start point

-1...8 bar

-14.6...116 psi

-0.1...0.8 MPa

Analog end point

1...10 bar

14.6...145 psi

0.1...1 MPa

Factory setting / CMPT = 2

Set point SP

-0.94...10 bar

-13.6...145 psi

-0.094...1 MPa

Reset point rP

-0.98...9.96 bar

-14.2...144.4 psi

-0.098...0.996 MPa

Min. difference between SP and rP

0.06 bar

0.6 psi

0.006 MPa

In steps of

0.02 bar

0.2 psi

0.002 MPa

Status_B High Resolution / CMPT = 3

Set point SP

-0.94...10 bar

-13.6...145 psi

-0.094...1 MPa

Reset point rP

-0.98...9.96 bar

-14.2...144.4 psi

-0.098...0.996 MPa

Min. difference between SP and rP

0.05 bar

0.6 psi

0.005 MPa

In steps of

0.01 bar

0.1 psi

0.001 MPa

Accuracy / deviations

Switch point accuracy [% of the span]

< ± 0,4; (Turn down 1:1)

Repeatability [% of the span]

< ± 0,1; (with temperature fluctuations < 10 K; Turn down 1:1)

Characteristics deviation [% of the span]

< ± 0,25 (BFSL) / < ± 0,5 (LS); (Turn down 1:1; BFSL = Best Fit Straight Line; LS = limit value setting)

Hysteresis deviation [% of the span]

< ± 0,1; (Turn down 1:1)

Long-term stability [% of the span]

< ± 0,05; (Turn down 1:1; per 6 months)

Temperature coefficient zero point [% of the span / 10 K]

< ± 0,2; (-0...80 °C)

Temperature coefficient span [% of the span / 10 K]

< ± 0,2; (-0...80 °C)

Notes on the accuracy / deviation

switch point accuracy, linearity error under DNV GL: < ± 1%: < ± 1%

Reaction times

Response time [ms]

< 1.5

Delay time programmable dS, dr [s]

0...50

Damping process value dAP [s]

0...4

Damping for the analog output dAA [s]

0...4

Max. response time analog output [ms]

3

Software / programming

Parameter setting options

hysteresis / window; normally open / closed; switch-on/switch-off delay; Damping; Display unit; current/voltage output

Interfaces

Communication interface

IO-Link

Transmission type

COM2 (38,4 kBaud)

IO-Link revision

1.1

SDCI standard

IEC 61131-9

SIO mode

yes

Required master port class

A; (when pin 2 not connected: B)

Supported DeviceIDs

Type of operation

DeviceID

Factory setting / CMPT = 2

463

Status_B High Resolution / CMPT = 3

974

Note

For further information please see the IODD PDF file at "Downloads"

Factory setting / CMPT = 2

Profiles

Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis

Min. process cycle time [ms]

2.3

IO-Link resolution pressure [bar]

0.01

IO-Link process data (cyclical)

Function

bit length

pressure

14

binary switching information

2

IO-Link functions (acyclical)

application specific tag

Status_B High Resolution / CMPT = 3

Profiles

Smart Sensor ED2: Digital Measuring Sensor (0x000A), Identification and Diagnosis (0x4000)

Min. process cycle time [ms]

3

IO-Link resolution pressure [bar]

0.005

IO-Link process data (cyclical)

Function

bit length

pressure

16

device status

4

binary switching information

2

IO-Link functions (acyclical)

application specific tag

Operating conditions

Ambient temperature [°C]

-25...80

Storage temperature [°C]

-40...100

Protection

IP 65; IP 67

Tests / approvals

EMC

DIN EN 61000-6-2

DIN EN 61000-6-3

Shock resistance

DIN EN 60068-2-27

50 g (11 ms)

Vibration resistance

DIN EN 60068-2-6

20 g (10...2000 Hz)

MTTF [years]

138

UL approval

UL approval number

J012

Pressure equipment directive

sound engineering practice; can be used for group 2 fluids; group 1 fluids on request

Mechanical data

Weight [g]

239

Material

stainless steel (1.4404 / 316L); PBT+PC-GF30; PBT-GF20; PC

Materials (wetted parts)

stainless steel (1.4404 / 316L); Al2O3 (ceramics); FKM

Min. pressure cycles

100 million

Tightening torque [Nm]

25...35; (recommended tightening torque; Depends on lubrication, seal and pressure rating)

Process connection

threaded connection G 1/4 Internal thread (DIN EN ISO 1179-2)

Restrictor element integrated

no (can be retrofitted)

Displays / operating elements

Display

Display unit

3 x LED, green (bar, psi, MPa)

Switching status

2 x LED, yellow

Measured values

alphanumeric display, red/green 4-digit

Remarks

Pack quantity

1 pcs.

Electrical connection

Connection

Connector: 1 x M12; coding: A; Contacts: gold-plated