CE RoHS

Data Sheet
PS1B
Pressure Switch

Main Features

Pressure Ranges	0 to 6 up to 0 to 600 bar (gage)
Electrical Connection	G 1/4" A DIN 3852-E or -A
Pressure Connection	M12-4 Pin
Output Signal	4 - 20 mA, Programmable Switching Output

*for more options see How to Order

Attributes

- Programmable switching output
- 64x64 matrix OLED display
- Excellent display readability
- Highest degree of freedom of the display, approximately 700°
- Media resistant thin-film technology
- Measurement 0 - 6 up to 0 - 600 bar gage

Typical Applications

- Food and beverage industry
- Pharmaceutical industry
- Dispesing and packaging machines
- Sanitary applications (water and waste-water treatment)
- Combustion air flows
- Oil and gas refineries
- Chemical Processing
- Fertilizer Manufacturing

Description

The PS1B pressure switch features an innovative OLED display, which ensures excellent readability of the pressure indicator.

Based on the pressure sensor of PTE5000 family the PS1B measures not only pressures from 0 to 600 bar, but the setting can be changed individually using the switch. The sensor part of PS1B pressure switch uses Kavlico's thin-film strain gauge technology, is hermetically sealed and thus doesn't need an internal seal.

This easy-to-use pressure switch is media resistant, allowing for a broad range of liquid and gaseous media compatibility. It can be used at high operating temperatures and has integral temperature compensation. Reliable,accurate, and rugged the PS1B is a solution to the most demanding, mission critical applications.

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Technical Specifications

Pressure Ranges

from 0 to …	bar (gage)	6	10	16	25	40	60	10	160	250	400	600
Proof pressure	bar (gage)	12	20	32	50	80	120	200	320	500	800	1200
Burst pressure	bar (gage)	60	100	160	200	320	480	600	960	1000	1600	2400

Accuracy [1]	≤ 1 % of span [3]
Non-linearity [2]	0.2 % of span [3]
Non-repeatability	0.1 % of span [3]
1-year stability	0.2 % of span [3]
Switching Setpoint accuracy	≤ +/- 1% of span
Temp. Coefficients - Zero	0.2 % of span / 10 K within temperature range 0°C to + 80°C
Temp. Coefficients - Span	0.2 % of span / 10 K within temperature range 0°C to + 80°C

[1] Including non-linearity, hysteresis, non-repeatability, zero point and full scale error (corresponds to error of measurement per IEC 61298-2). Adjusted in vertical mounting position with pressure port down.
[2] BFSL according to IEC 61298-2 reference conditions to EN 61298-1
[3] Others on request

Physical

Operating Life Cycle	min. 10 million full pressure cycles over the full range
Vibration Resistance	IEC 60068-2-64 (RANDOM) 20 PSD
Shock Resistance	25 g minimum according to DIN EN 60068-2-27
Drop Test	1 meter drop on concrete as per SAE J1455 / DIN EN 60068-2-3-1
Weight	≤ 160 grams
Ingress Protection	IP6X, IPX5
Medium Temperature	-30°C to + 120°C (others on request)
Environmental Temperature	-30°C to + 85°C (depending on internal and external seal ring capability) [4]
Storage Temperature	-30°C to + 50°C (depending on internal and external seal ring capability) [4]
Media	All class II fluids and gases compatible with stainless steel 304 (1.4301) and the internal and external (optional) seal ring material

[4] For more details see How to Order

Electrical

Output Signal (Iout)	4…20 mA
Switching Output (Sout)	250 mA max. load
Operating Supply Voltage (Vsup)	8-33 VDC [5]
Power Consumption	≤ 32mA + switching load
Overvoltage Protection	38 VDC
Short-circuit Proofness (Iout)	not applicable
Short-circuit Proofness (Sout)	yes
Insulation Voltage	500 VDC
Reverse Polarity Protection	Yes [7]
Load (Iout)	≤ (Vsup-9 VDC)/(0.02 A) [Ω]
Response Time	≤ 5 ms max. to 63% of full scale pressure with step change on input

[5] Unit shall be supplied by a power supply with double/reinforced insulation (SELV) and limited energy in accordance to UL/EN/IEC 61010-1 or LPS in accordance to UL/EN/IEC 60950-1 or class 2 per UL1310/UL1585 (NEC or CEC). The power supply shall be approved for usage above 2000m if the pressure sensor is used in this enviroment. For indoor and outdoor use, not exposed to direct sunlight.
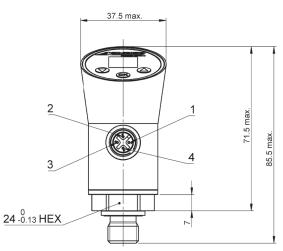
Approvals & Certificates

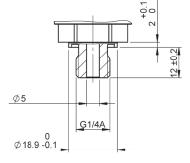|	
CE Compliance	Pressure equipment directive 2014/68/EU EMC directive 2004/30/EU, IEC 61326 Emission (Group 1, Class B) and Immunity (industrial locations)
ROHS	2011/65/EU ROHS Directive

Dimensions

Pressure Sensor with Electrical Connection

M12 Pin Call Outs				
Output	Pin 1	Pin 2	Pin 3	Pin 4
4-20 mA	Vsup	Iout	GND	Sout

Pressure Connections and Recommended Installation Torque

Name	G1/4A DIN 3852-E
Thread	External
Torque	20 Nm

How to Order

PS1B	160	1	A	4	C

Pressure Ranges Bar Gage

006	0 – 6
010	0 – 10
016	0 – 16
025	0 – 25
040	0 – 40
060	0 – 60
100	0 – 100
160	0 – 160
250	0 – 250
400	0 – 400
600	0 – 600

Built-in Electrical Connection

C M12-4 Pin according to IEC 61076-2-101

Sensor delivered without mating connector

Output

1 4-20 mA

Pressure Connection (Port)

1 G 1/4A DIN 3852-E

4 G 1/4A DIN 3852-A

External O-ring

A None

B Fluorocarbon FKM (Viton)

only for pressure port option 1
lower temperature limited to -20°C

C Aluminium Washer G1/4

only for pressure port option
washer will be fixed with plastic cap

D Copper Washer G1/4

only for pressure port option
washer will be fixed with plastic cap

Example:
PS1B - 160 - 1 - B - 4 - C

Description:
PS1B Pressure Switch, 0 - 160 Bar Gage, 4…20mA Output, Flourocarbon FKM (Viton) External O-Ring, G1/4" A DIN 3582-A Pressure Connection and M12-4 Pin Connector

Before installation and operation, ensure that the appropriate pressure sensor has been selected in terms of pressure range, design and specific measuring conditions. Non-compliance can result in serious injury and/or damage to the equipment.

Warning: The product information contained in this catalogue is given purely as information and does not constitute a representation, warranty or any form of contractual commitment. Kavlico reserve the right to modify their products without notice. It is imperative that we should be consulted over any particular use or application of our products and it is the responsibility of the buyer to establish, particularly through all the appropriate tests, that the product is suitable for the use or application. Under no circumstances will our warranty apply, nor shall we be held responsible for any application (such as any modification, addition, deletion, use in conjunction with other electrical or electronic components, circuits or assemblies, or any other unsuitable material or substance) which has not been expressly agreed by us prior to the sale of our products.

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