KANAGAWA INSTRUMENTS

Smart Pressure Switch

Model: KSPS



Product Overview

KSPS Series Intelligent Pressure Switch is an intelligent pressure measurement & control product that integrates pressure measurement, display, output, and control. This product features a full-electronic structure. A piezoresistive silicon pressure sensor is adopted at the front end. The output signal is processed by a high-precision, low-temperature-drift amplifier and sent to a high-precision A/D converter. Through arithmetic processing by a microprocessor, the signal is displayed on-site alongside a 2-way switch output and a 4–20mA analog output, accomplishing pressure measurement and control for the system.

This intelligent digital pressure controller offers flexible use, simple operation, easy commissioning, high safety, and reliability. It is widely used in hydropower, tap water, petroleum, chemical, mechanical, hydraulic, and other industries for the measurement, display, and control of fluid media pressure.

Features

High precision
Adjustable response time
NPN, PNP compatible, free switching
Button operation, shortcut button
for one-click zero calibration, fast unit switching
OLED shows the current pressure
LED for node action, easy to observe

Applications

-Hydropower
-Chemical industry
-City water supply
-Scientific research
-Accurate measurement and control of pressure of fluids

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Notes:

1 Do not misuse documentation.

2 The information presented in this product sheet is for reference only. Do not use this document as a product installation guide.

3 Complete installation, operation, and maintenance information is provided in the instructions of the product.

4 Misuse of the product may cause danger or personal injury.

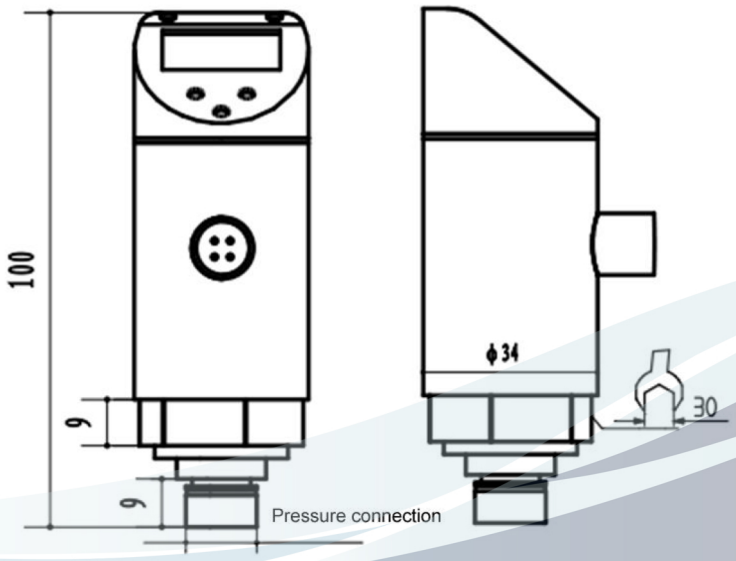
Performance parameters

Pressure range	0～10kPa…40MPa
Overload capability	150～300%FS
Accuracy	±0.5%FS
Power supply	12～30V, 24V recommended
Display mode	OLED display of 4 digits
Output mode	2-way switch quantity, NPN and PNP compatible + 4～20mA
Load capacity	≤24V 1.2A
Power consumption	≤15mA
Operating temp.	-25℃～80℃
Storage temp.	-40℃～100℃
Response time	≤20ms
Insulation	100MΩ/250VDC
Structural performance parameters	
Housing material	304
Medium compatibility	Liquid contacting diaphragm 316L, pressure port 304

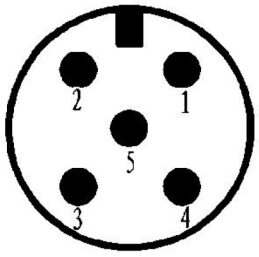
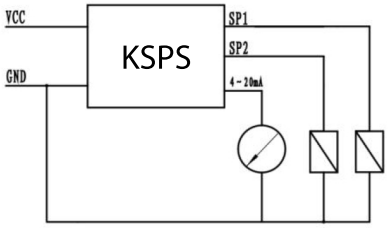
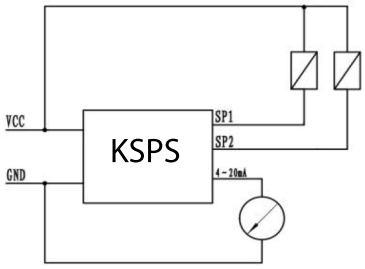
Outline dimension

In mm

Dimension



Wring method

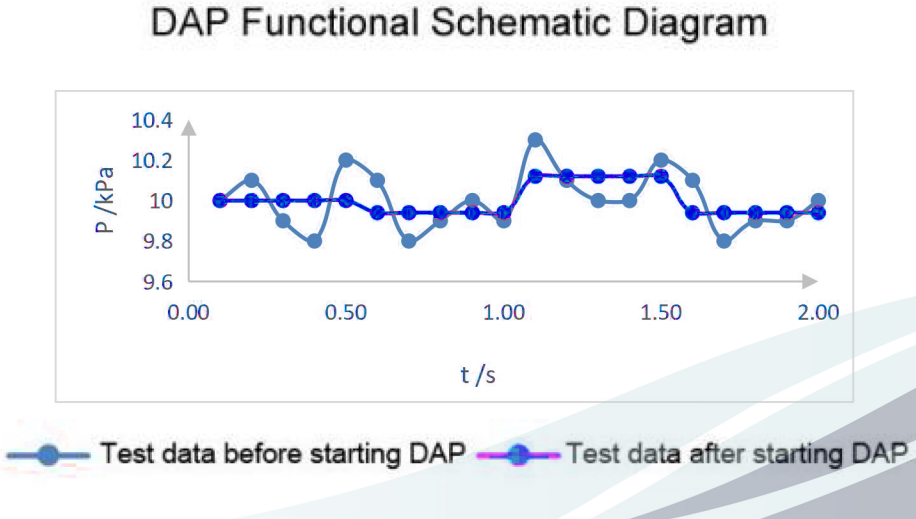
M12×1	Wiring definition	Wiring diagram
	1: VCC (Supply +) 2: SP2 (Switch 2) 3: GND (Supply -) 4: SP1 (Switch 1) 5: 4～20mA	 PNP output wiring diagram  NPN output wiring diagram

Signal interference suppression

DAP damping mechanism:

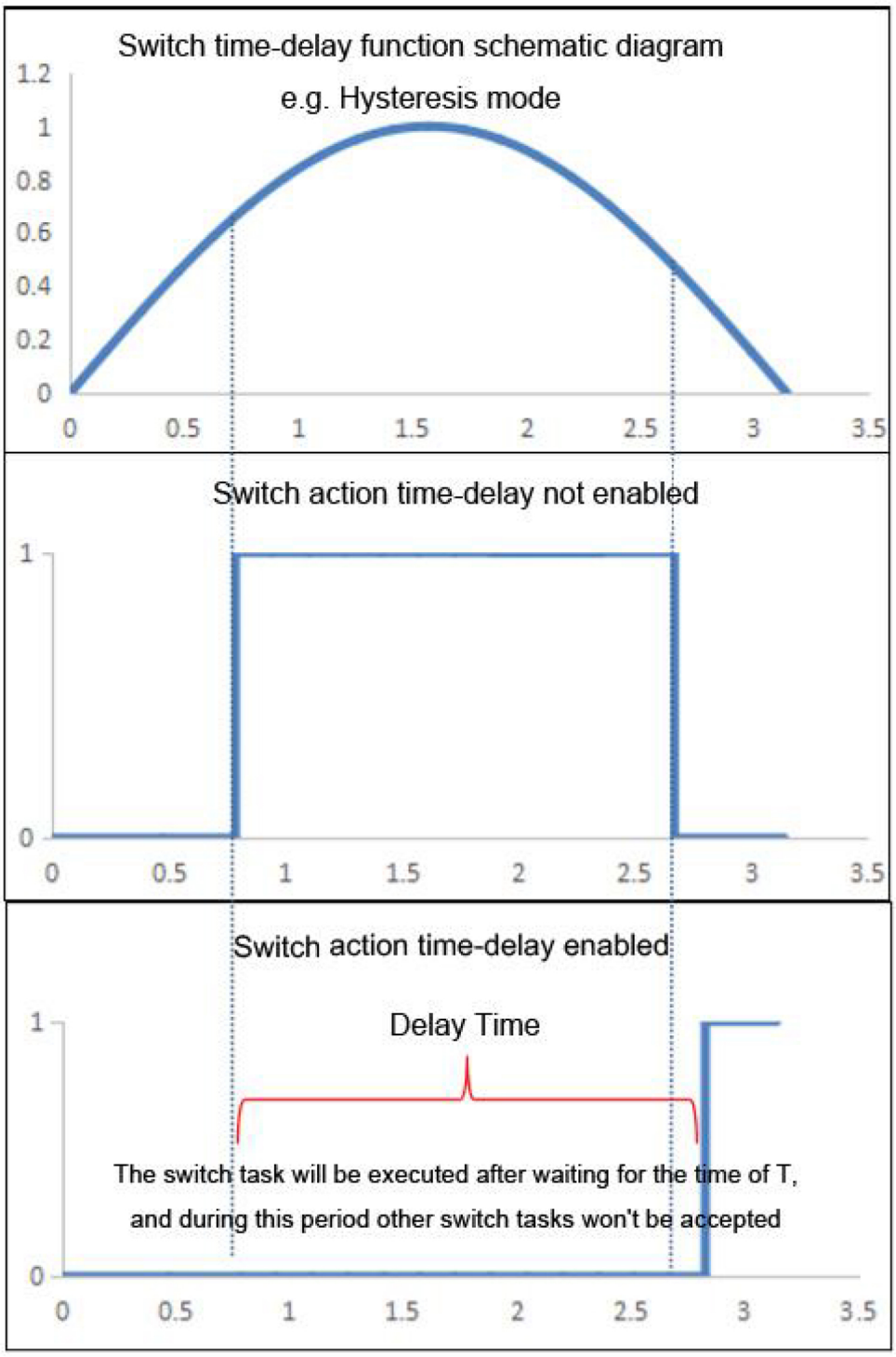
As the switch action determination basis, the current pressure measurement value sampling frequency is programmable. When DAP starts, the pressure sampling data will be the average pressure value over a period of time.

The low sampling frequency can effectively restrain the high frequency pressure signal noise.



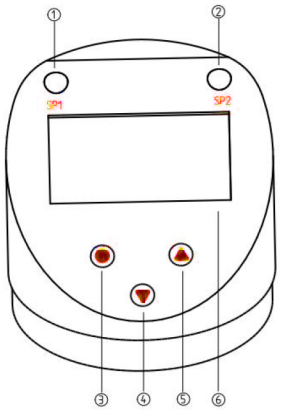
Switch action time-delay mechanism:

When the pressure switch captures a switch action task, the user can select to adopt the instantaneous switch action or the subsequent action after the delayed t/s. During the delayed time, the pressure switch doesn't respond to any switch operation, so as to avoid repeated switch actions.



Fast operating mode

When thesystem is under the normally displayed pressure, the functions of fast zero point correction and fast unit switchover can be realized by pressing [▲]/[▼].



Operating instructions for the keys

· When the pressure is displayed normally

③ [●] Short-press to call out the menu interface

④ [▼] Long-press the fast zero point correction

⑤ [▲] Short-press the fast unit switchover

· When entering the menu interface

[●] OK/Exit

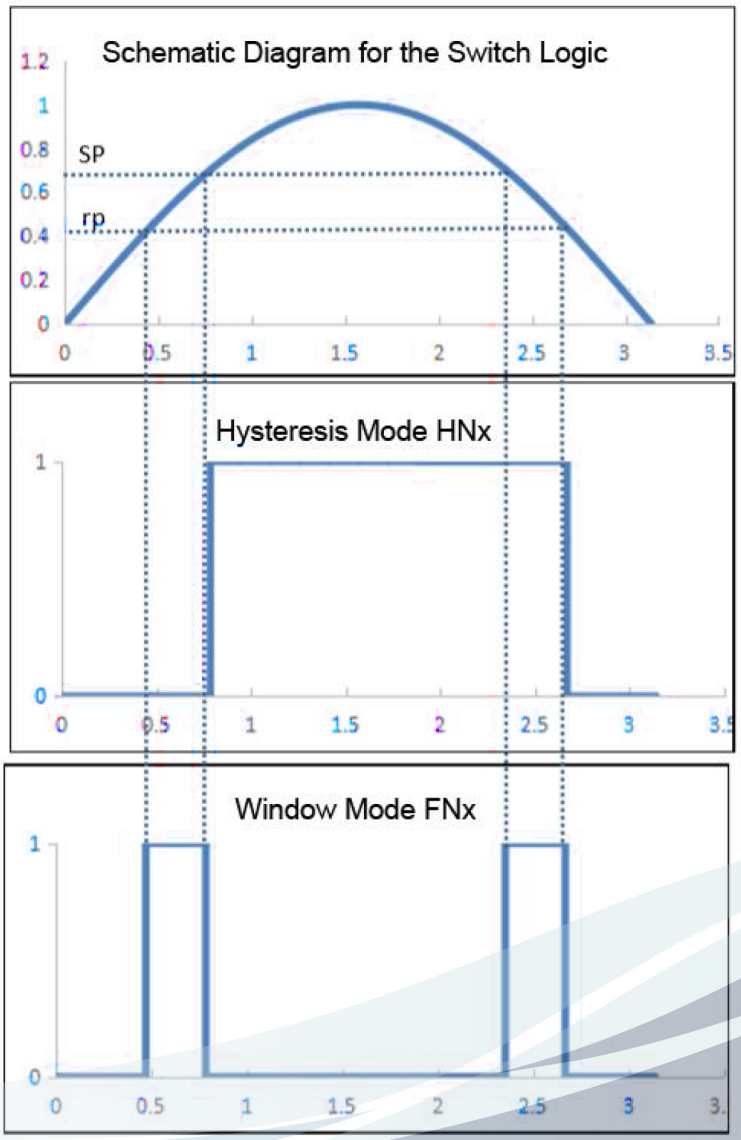
Long-press [▲] [▼] to edit the data

Switch Action Characteristics

Supporting two kinds of switching modes:

1. Hysteresis mode
2. Window mode

Normally open/Normally closed options



Pressure range selection

Pressure range code	Pressure reference	Pressure range	Overpressure % FS	Burst pressure %FS
10k	G	0~10kPa	300	600
35k	G	0~35kPa	300	600
100k	G, A	0~100kPa	200	500
250k	G, A	0~250kPa	200	500
600k	G, A	0~600kPa	200	500
1.0M	G, A	0~1.0MPa	200	500
2.5M	G, S, A	0~2.5MPa	200	500
6M	S	0~6MPa	200	400
10M	S	0~10MPa	200	400
25M	S	0~25MPa	150	300
40M	S	0~40MPa	150	300

How to order

KSPS - 1M - G - P1 - C1

- KSPS: Product model
- 1M: Pressure range selection
- G: G = Gauge pressure; A = Absolute pressure; S = Sealed gauge
- P1: P1 = ±0.5%FS
- C1: C1 = M20×1.5; C2 = G1/2; C3 = G1/4; C5 = NPT1/4

Example: KSPS710-1MGP1C1

Refer to KSPS710 Pressure Switch, with pressure range 1MPa, gauge pressure, accuracy ±0.5%FS, and pressure connection M20×1.5.

Accessory	
Name	**Specifications**
M12×1 female with wire	M12×1 female 5-pin with wire 2m

Ordering tips

1. Please ensure the compatibility between the measured medium and the contacting part of the product when placing an order.
2. If there are special requirements for the product appearance or performance parameter, our company can provide customization.

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