KP1 Series | Tunable Hystersis Sensor

KITA

PR-0020G 2023/02 Online Version

CE UK CA

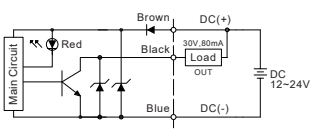
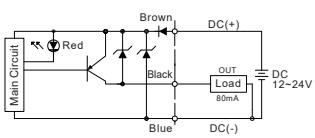
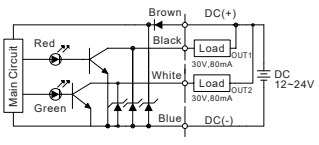
For your safety, please read the following before using.

① Do not use corrosive or flammable gas or liquid with this product.
② Please use within the operating pressure range. Do not apply pressure beyond recommended maximum pressure, permanent damage to the pressure sensor may occur.
③ Do not drop, hit or allow excessive shock. Even if switch body appears undamaged, internal components may be broken and can cause malfunction.
④ Turn power off before connecting wiring. Wrong wiring or short circuit will damage and/or cause malfunction.
⑤ Do not use in environment containing steam or oil vapor.
⑥ This product is not explosion-proof rated. Do not use in atmosphere containing flammable or explosive gases.
⑦ Wiring for pressure switch should avoid power source line and high voltage line. If use in the same circuit, noise may cause malfunction.
⑧ Sensors at end-of-life must be disposed of in accordance with E-Waste regulations of the country/region, NOT disposed of with regular garbage.

A SPECIFICATIONS

MODEL		KP1-1 (Vacuum Pressure)	KP1-2 (Low Pressure)	KP1-3 (Positive Pressure)
Set pressure range		-101 ~ 0 kPa	0 ~ 100 kPa	0 ~ 1 MPa
Withstand pressure		300 kPa		1.5 MPa
Fluid		1200 kPa		
Power supply voltage		12 ~ 24 V DC ± 10 %, Ripple (P-P) ≤ 10 %		
Current consumption		1NPN or 1PNP output : ≤ 21mA ; 2 NPN output : ≤ 35mA		
Repeatability		±1% F.S.		
Response time		≤ 5ms		
Environment	Enclosure	IP40		
	Ambient temp. range	Operation : 0 ~ 50 °C, Storage : -20 ~ 60 °C (No condensation or freezing)		
	Ambient humidity range	Operation / Storage : 35 ~ 85 % RH (No condensation)		
	Withstand voltage	1000V AC in 1-min (between case and lead wire)		
	Insulation resistance	≥ 50 MΩ (at 500V DC, between case and lead wire)		
	Vibration	Total amplitude 1.5 mm or 10 G, 10 Hz ~ 55 Hz ~ 10 Hz scan for 1 minute, 2 hours each direction of X, Y and Z		
	Shock	980 m/s² (100 G), 3 times each in direction of X, Y and Z		
Temperature characteristic		±3% F.S. of detected pressure (25°c) at temp. (Range of 0~50°c)		
Port size		PT : 1/8"PT(R1/8"), M5 ; NPT : NPT1/8", M5 ; G : G1/8"(BSPP), M5		
Lead wire		Ø4 Oil-resistance cable (PVC) - 24 AWG (0.22 mm²) - 3 cores		
Weight (with 1 meter lead wire)		Approx. 50 g		

B CIRCUIT WIRING DIAGRAMS

MODEL	KP1-□-01	KP1-□-02	KP1-□-03
Connect Diagram / Characteristics			
Output method	NPN open collector 30V 80mA	PNP open collector 80mA	NPN open collector 30V 80mA
Hysteresis	1 ~ 10% of setting pressure (Adjustable)		≤ 3% F.S. (Fixed)
Switch output	1 Output		2 Outputs
Operation indicating Lamp	Red LED turns on		Out 1 = Red ; Out 2 = Green

C ORDERING INFORMATION

K P 1 - 1 - 0 1 - 0 1 - P T

Pressure Range

1 : Vacuum pressure (-101 ~ 0 kPa)
2 : Low pressure (0 ~ 100 kPa)
3 : Positive pressure (0 ~ 1 MPa)

Output Specifications

01 : NPN Output
02 : PNP Output
03 : 2 NPN Output

Cable Length / Connector

01 : With 1 meter cable
03 : With 3 meter cable
C : With M8 4Pin male connector

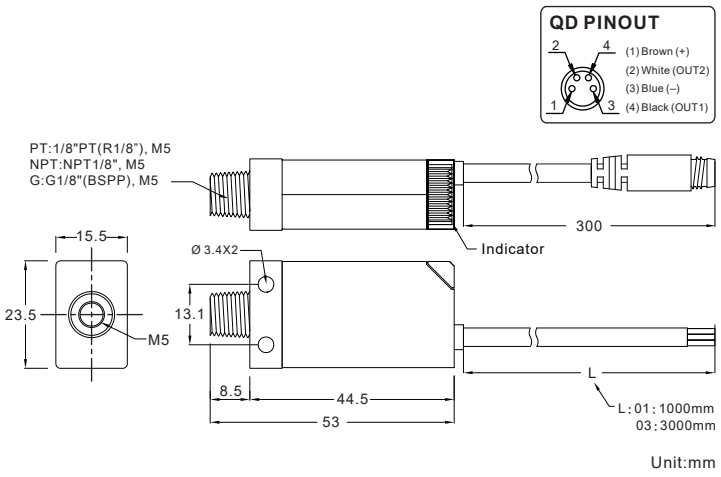
Pressure Port

PT : 1/8"PT(R1/8"), M5
NPT : NPT1/8", M5
G : G1/8"(BSPP), M5

Optional Parts

M84R-W0072-2M : With M8 4Pin female connector

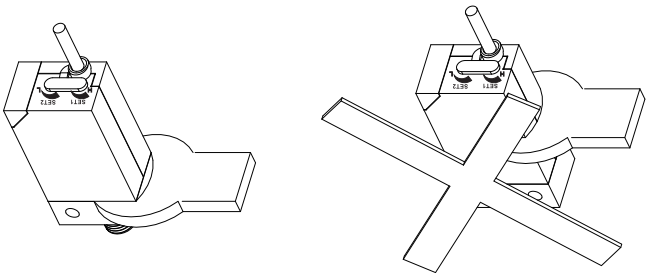
D DIMENSIONS



Unit:mm

E INSTALLATION PRECAUTIONS

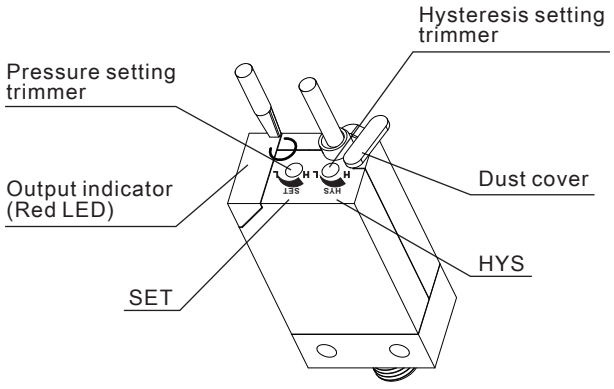
- When mounting, always use the wrench on the metallic area near the pressure port. Never apply a wrench to the plastic body, it will damage the sensor.
- Over tightening may cause damages to the port thread, mounting bracket and pressure sensor. Under tightening may result leakage.
- Apply pressure and power after installation and make necessary adjustments and inspect any possible signs of leakage to ensure proper installation.



F HOW TO SET PRESSURE

KP1-□-01, 02

- Remove dust cover to make any adjustments. Replace dust cover when finished to prevent foreign object from entering.
- Pressure setting trimmer (SET) is for setting the output (ON) pressure. Rotate SET trimmer counter-clockwise to increase (Pressure or vacuum) the ON point. Rotate clockwise will decrease the setting pressure.
- Hysteresis setting trimmer (HYS) is for changing the hysteresis. Rotate trimmer counter-clockwise to increase the range 1~10%.
- Use appropriate size screwdriver for the setting trimmers. Gently turn the screwdriver to make adjustments. Do not force the trimmer when it comes to a stop to prevent damage to the setting trimmer.



KP1-□-03

- Remove dust cover to make any adjustments. Replace dust cover when finished to prevent foreign object from entering.
- Pressure setting trimmer (SET 1, SET 2) is for setting the output (ON) pressure. Rotate SET trimmer counter-clockwise to increase (Pressure or vacuum) the ON point. Rotate clockwise will decrease the setting pressure.
- Hysteresis for models with two outputs is 3% fixed.