KITA®

www.kita.com.tw

Professional in development and manufacture

S I N C E 1 9 8 8

Pressure Sensor

Magnetic Sensor

Flow Sensor

Company History

SINCE 1988

KITA SENSOR TECH. CO., LTD. established in Oct. 1988, located in New Taipei Industrial Park, Wugu Dist., New Taipei City, Taiwan. Producing Hydraulic / Pneumatic magnetic-sensor and pressure-sensor are our major business.

With the efforts in R&D for more than decades in the field of automation, our above-mentioned products have been not only widely accepted by the Taiwan users but also exported to the overseas markets since 1996. Moreover, KITA SENSOR earned ISO 9001 and ISO 14001 international quality assessment certificate in April 1998 for the quality assurance. QUALITY GUARANTEED.

As of Dec. 2000, our products have been distributed accompanied with CE inspection approval to the developed countries : U.S., Europe, Japan, etc. KITA SENSOR persist in satisfying the customer's needs and pursuing the superiority in product's quality through innovation.

■ TAIWAN / Headquarter

■ TAIWAN / Yilan Factory

■ CHINA / Chang Shu Factory

As a part of life on earth, we have a responsibility to strive to maintain the environment and ecology, making it a balanced and harmless sustainable development. To enable future generations to have a suitable planet just like us. 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.

Introduction to Branch Companies

Overseas Offices

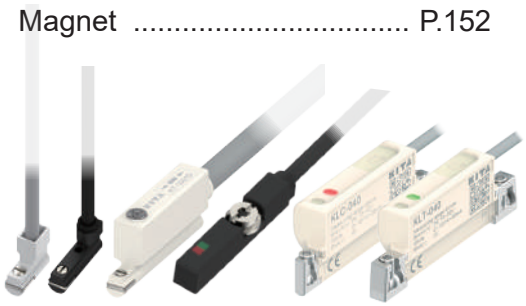
Overseas Markets


SWEDEN
HEMOMATIK AB
FRANCE
DESBOIS BOTALAM INDUSTRIE
JAPAN
MING-SHIHG INC.
Our Japanese branch is strategically involved with our marketing development of all of our fluid power accessories and magnetic sensors. We proudly service many factories that currently utilize our magnetic sensors for all of their pneumatic cylinder appliction.
CHINA
CHINA FACTORY
KITA ELECTRONIC (CHANGSHU) CO.,LTD
TAIWAN
KITA SENSOR TECH.CO.,LTD
ITALY
PARSEC SAS DI FIORE L. & C.
INDIA
PARMA & PARMA (INDIA) PVT. LTD.
Finland
Russia
Denmark
United Kingdom
Netherlands
Poland
Germany
Ireland
Belgium
Czech
Austria
Switzerland
Hungary
Spain
Slovenia
San Marino
Rumania
Portugal
Greece
Bulgaria
Turkey
Israel
Jordan
United Arab Emirates
Saudi Arabia
Korea
Hong Kong
Philippines
Thailand
Vietnam
Sri Lanka
Malaysia
Singapore
Indonesia
Africa
Australia

I N D E X

P.06
Pressure Sensor

P.100
Magnetic Sensor



P.153
Circular Connector

Pressure Sensor

KP10 Series

P.12

KP1 Series

P.18

KP30 Series

P.22

KP43 Series

P.26

KP45 Series
cULus

P.30

KP47 Series

P.34

KP50E Series

P.38

KP60 Series
Battery Meter

P.42

KP61 Series

P.44

KP62 Series

P.46

KP70 Series
Patented
RS485

P.48

KP72 Series
IO-Link

P.52

KP75 Series
cULus
RS485

P.56

KP90 Series

P.60

KP400 Series

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KP611 Series
Differential Pressure Sensor

P.66

KP800 Series
Differential Pressure Sensor

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KP7800 Series
Differential Pressure Sensor
RS485

P.72

KDS Series
Differential Pressure Sensor
RS485

P.76

KGS Series
Gap Sensor

P.80

KF01A Series
Flow Sensor
Patented
cULus
RS485

P.84

KF02A Series
Flow Sensor
Patented
cULus
RS485

P.88

KFP01A Series
Flow & Pressure Sensor
Patented
cULus
RS485

P.92

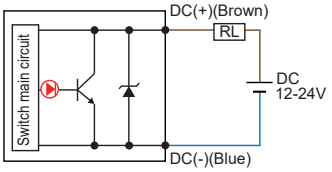
KFP02A Series
Flow & Pressure Sensor
Patented
cULus
RS485

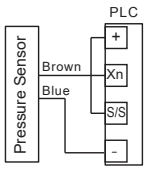
P.96

※ Product surfaces with slight luminance non-uniformity, color cast, tiny scratching, little stains etc. are regarded as qualified products.

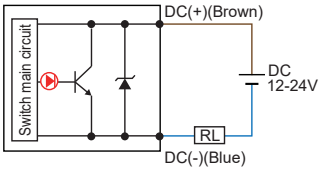
Caution ⚠

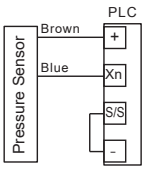
1. When using a 2-wire type pressure sensor (KP10A / 10B), please make sure it is connected to a DC power source and a proper resistance load. Otherwise excessive current will damage the sensor permanently.
   Always connect the brown wire to the positive (+), blue wire to the negative (-).
   Permanent damages to the pressure sensor will occur if the connections are reversed.





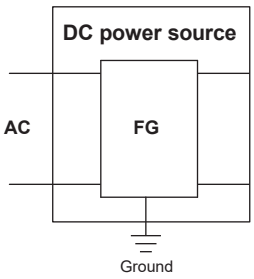
Connection to NPN input module





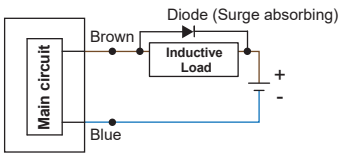
Connection to PNP input module

2. To improve stability of the pressure sensor and the whole circuit in general, it is recommended to properly ground the DC power source.

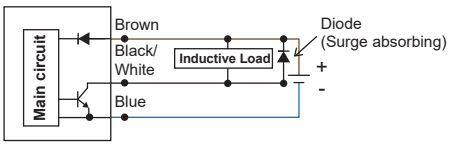


3. When using with inductive load (such as relay or solenoid), please install a flyback diode across the load to remove surge and polarity must be observed or damages to pressure sensor may occur.

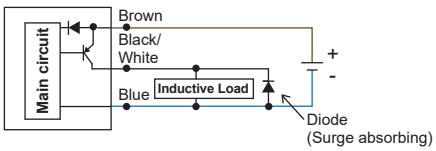
2 wire switch type



NPN type



PNP type



4. Before sensor installation or removal, please make sure the power is OFF and pressure in pipe has been released, released to avoid personal injuries, sensor damage or other losses.

5. Please separate the power supply of a variable frequency driver or a motor driver from the pressure power supply to avoid noise affect the pressure sensor normal operation.

6. The products described in this document are NOT designed for explosion-qualified applications. Do not use the products in flammable gases, liquids or explosive atmospheres. Please use them right by following all the guidelines stated in the user manual to avoid damage and injury.

7. Wiring for RS485 MODBUS : Please connect RS485 (B+) or (A-) before connecting power supply to avoid short circuit to damage to product.

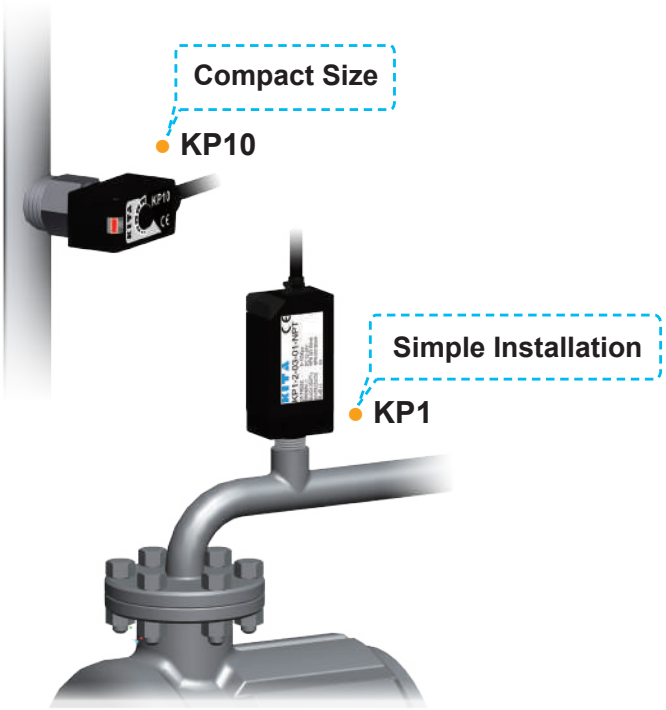
8. We shall not be responsible for any incidental or consequential damages. In additions, any abuse, vandalism, misuse, misapplication or improper installation of the product will cause the warranty invalidated.

9. Please check the product appearance is not damaged, and read the technical documents (e.g., labels, specifications and instructions) of product before installing and using.

10. Before using product, please confirm the ESD protection of the devices are implemented to prevent product damages and failure.

Application

Detection of Line Pressure



Pressure Display of Line Pressure

- Digital display, easy readout
- Replace traditional pressure gauge

Pressure Display and Control of Pneumatic Equipment

- LCD display
- 2 outputs and 1 analog output
  (1 ~ 5 V or 4 ~ 20 mA)

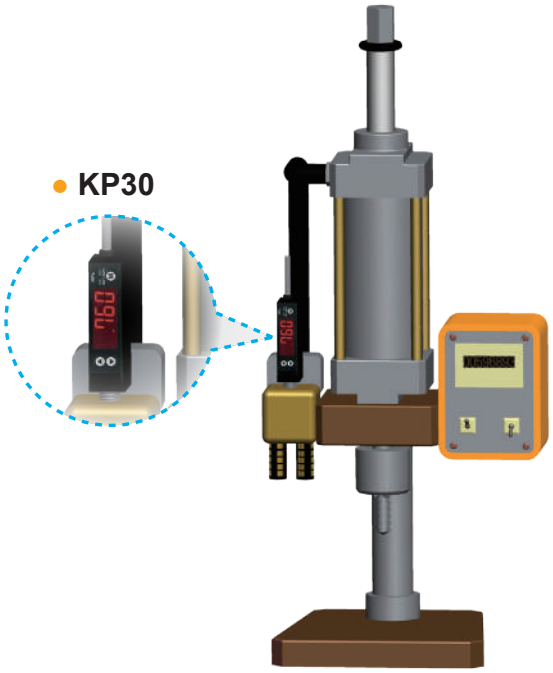
Pressure Display and Control of Pressure in Reservoir Tank

- Programmable pressure unit : 6 types
- IP65 enclosure

IP65
(Dust-proof and Splash-proof)

Pressure Display and Control of Press Machine

- Upright pressure sensor save installation space
- 2 outputs and 1 analog output (1 ~ 5 V)



- KP30

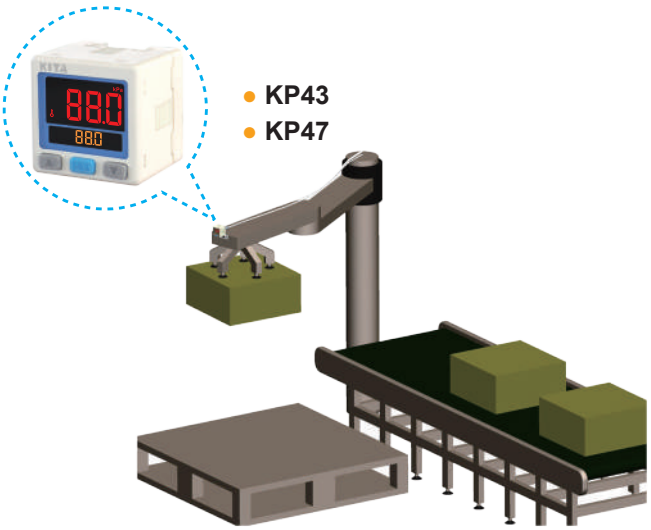
Leakage Test

- 3-color digital display, easy readout

- KP43
- KP70
- KDS
- KF
- KFP

Operation of Suction Pads

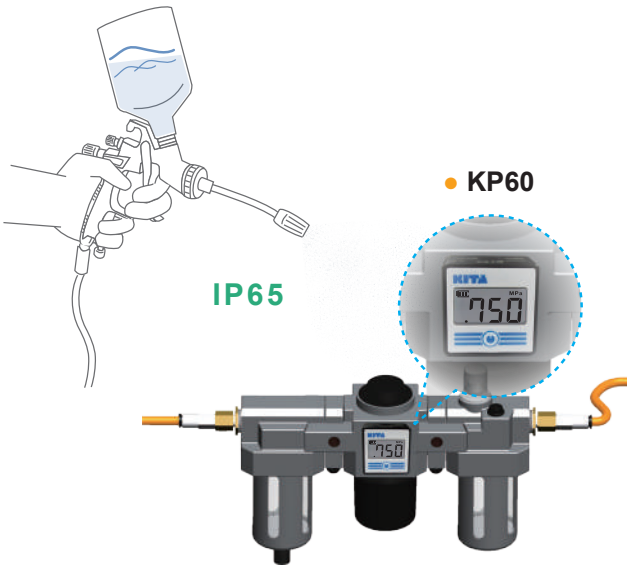
- 3-color digital LCD display
- 7 response time for selection
- 2 outputs and 1 analog output
  (1 ~ 5 V or 4 ~ 20 mA)



- KP43
- KP47

Pressure Display of F.R.L Unit

- Battery type without extra power supply
- 6 pressure units for selection
- IP65 enclosure



- KP60

Industrial Internet of Things Applications

Remote Control

A large amount of sensor needs to be set on machine at production line; However, sensor's parameter must be set individually. Is it efficient enough?

► Smart sensors brings these benefits and makes IIoT in practice.

- **RS485 MODBUS**

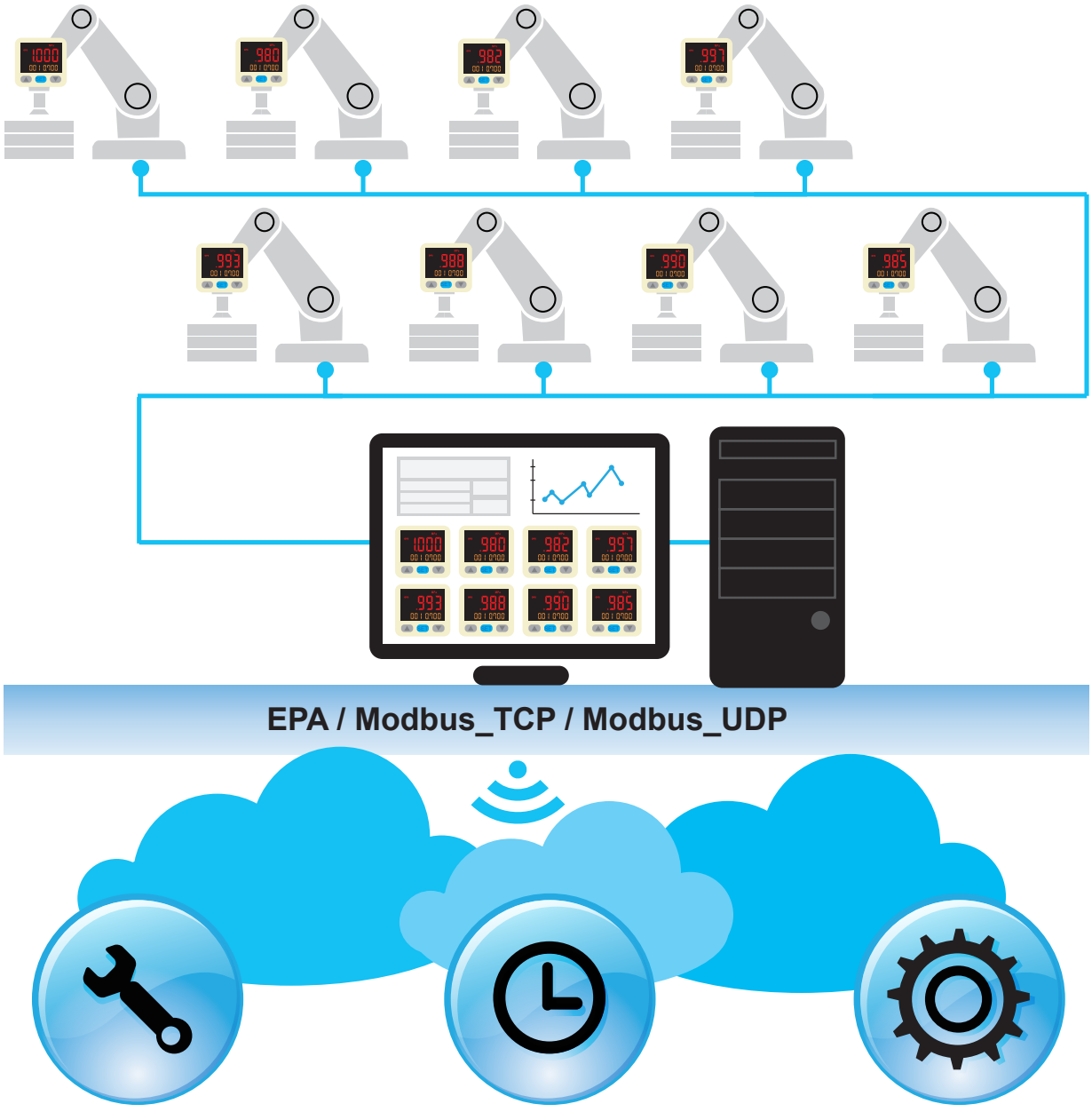
KP70 refer to P.48
KP75 refer to P.56
KP7800 refer to P.72
KDS refer to P.76
KF01A refer to P.84
KF02A refer to P.88
KFP01A refer to P.92
KFP02A refer to P.96

- **IO-Link**

KP72 refer to P.52

Application

In warehouse moving system, utilizing data-analysis and remote-control to elongate the life span of suction pad that prevent carton fall from robot and damage-cause. Furthermore, all setting can be done on the remote site with one click.



Prevent Damage

Early warning to prevent goods fall from robot or machine halt before suction cup break.

Remote Control

Pressure sensor does not need to be set individually, reduce fabricator setting time dramatically.

Maintain in Time

Monitoring in time and data analysis, leakage, energy waste will be nowhere to hide.

KP10 SERIES

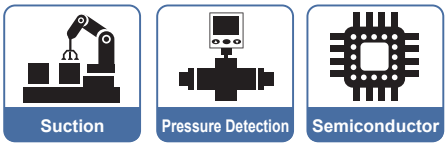
Compact Pressure Sensor - Switch Output

Features

- Simple installation, plug-in port or thread-in fitting
- Set pressure range :

  3-wire type : Vacuum pressure (0 ~ -101.3 kPa)
  Positive pressure (0 ~ 0.6 MPa)

  2-wire type : Normally Open /
  Normally Close (- 0.1 ~ 0.6 MPa)



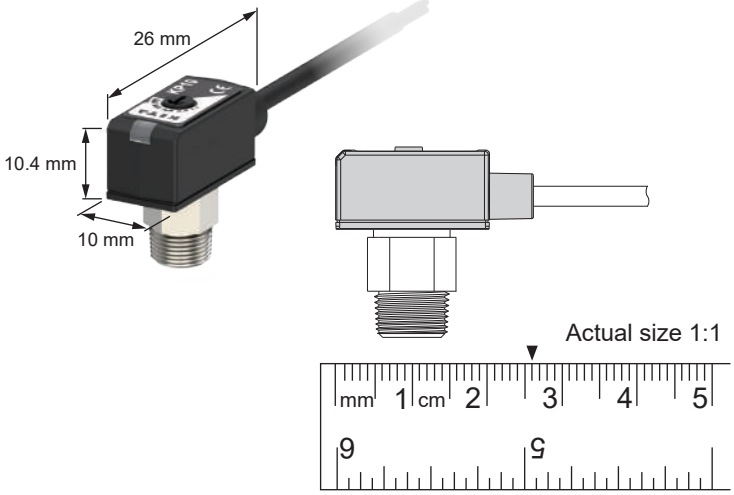
Features Highlight

1 Simple Installation

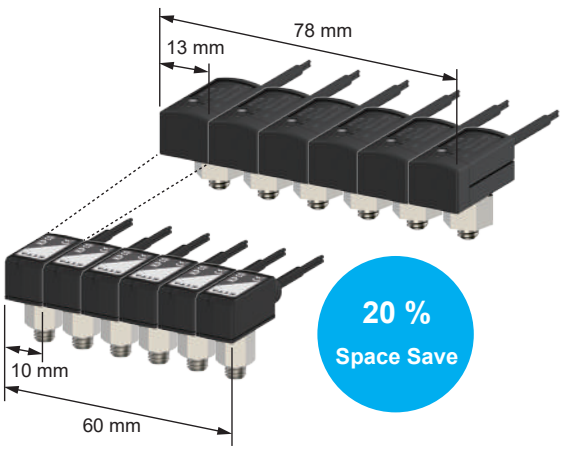
- Plug-in port for push-to-connect fittings

2 Compact Size

- Extremely compact size 26 (L) × 10 (W) × 10.4 (H) mm to fit the most confined areas

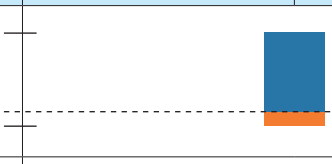
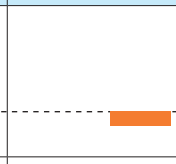
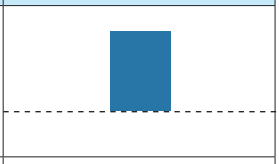


3 Space-Saving



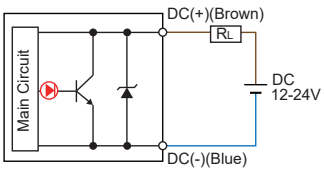
4 Sensor Installed Close to Pad

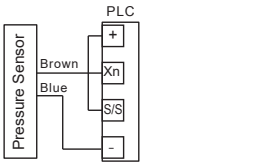
Specifications

MODEL		KP10A	KP10B	KP10V-02/04	KP10P-02/04
0.6 MPa 0 -101.3 kPa					
Set Pressure Range		- 0.1 ~ 0.6 MPa		0 ~ - 101.3 kPa	0 ~ 0.6 MPa
Withstand Pressure		1.5 MPa		0.6 MPa	1.5 MPa
Fluid		Air, Non-corrosive / Non-flammable gas			
Power Supply Voltage		12 ~ 24 V DC ± 10 %, Ripple (P-P) ≤ 10 %		10.8 ~ 30 V DC (include ripple voltage)	
Load Current		5 ~ 40 mA		≤ 80 mA	
Current Consumption		-		≤ 10 mA	
Internal Voltage Drop		≤ 5 V		≤ 0.8 V	
Leak Current		≤ 1 mA		-	
Switch Output		Present Press. ≥ Set Press. : ON	Present Press. ≥ Set Press. : OFF	NPN or PNP	
Output Short Circuit Protection		No		Yes	
Setting Method		Adjusting by VR			
Repeatability		± 1 % F.S.			
Hysteresis		≤ 4 % F.S.		≤ 3 % F.S.	
Response Time		Approx. 1 ms			
Switch on Indicator		Red Indicator : ON			
Environment	Enclosure	IP40			
	Ambient Temp. Range	Operation : 0 ~ 60 °C ; Storage : -20 ~ 70 °C (No condensation or freezing)			
	Ambient Humidity Range	Operation / Storage : 35 ~ 85 % RH (No condensation)			
	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)			
Piping Size		R4 : Ø4 mm ; R6 : Ø6 mm ; F1 : R1/8", M5 ; F2 : NPT1/8", M5 ; F3 : G1/8" (BSPP), M5 ; M5 : M5 × 0.8			
Lead Wire		Ø2.6 Oil-resistance cable (PVC) - 24 AWG (0.22 mm²) - 2 cores		Ø2.6 Oil-resistance cable (PVC) - 26 AWG (0.15 mm²) - 3 cores	
Weight (with 3 meter lead wire)		Approx. 50 g			

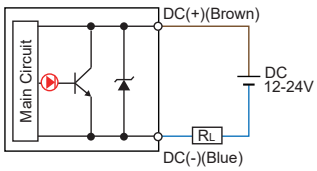
Circuit Wiring Diagram

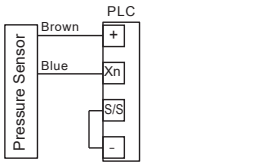
KP10A & KP10B





Connection to NPN input module

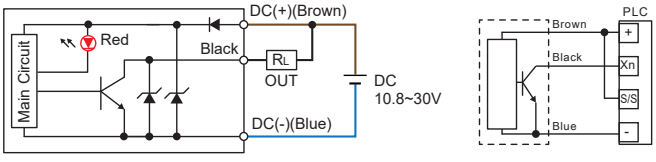




Connection to PNP input module

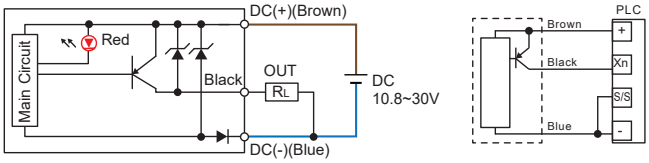
KP10□ - 02 - □ - □

NPN Output



KP10□ - 04 - □ - □

PNP Output

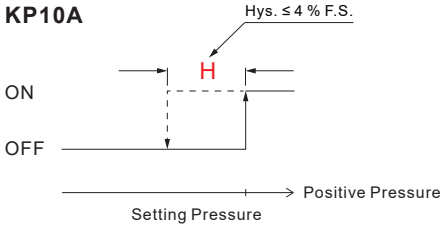


KP10 SERIES

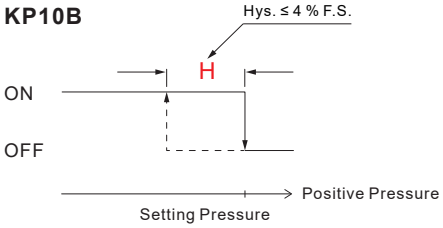
Compact Pressure Sensor - Switch Output

Output Type

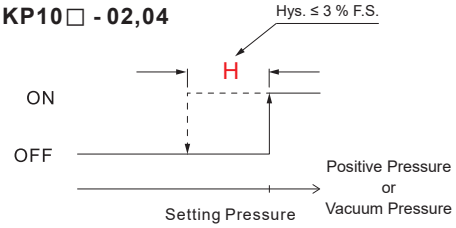
KP10A



KP10B



KP10□ - 02,04



Ordering Information

K P 1 0 A - R 4 - □

Switch Specifications

A : Switch turns ON when the pressure is larger than setting pressure. (Normally Open)
B : Switch turns OFF when the pressure is larger than setting pressure. (Normally Close)

K P 1 0 V - 0 2 - R 4 - □

Pressure Range

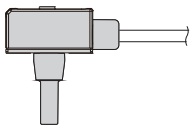
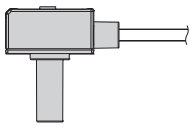
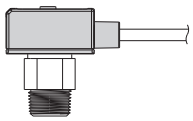
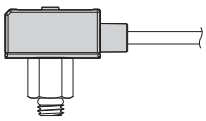
V : Vacuum pressure (0 ~ -101.3 kPa)
P : Positive pressure (0 ~ 0.6 MPa)

Output Specification

02 : NPN output
04 : PNP output

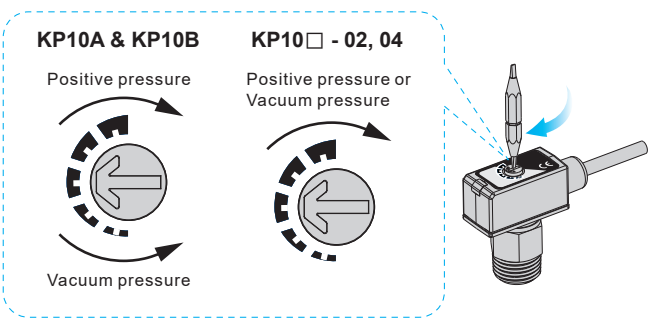
Cable Length / Connector

Blank : With 3 meter cable
C : With M8, 3Pin male connector

Pressure Port	R4	R6	F1 / F2 / F3	M5
Appearance				
Port size	R4 : Ø4 mm	R6 : Ø6 mm	F1 : R1/8", M5 F2 : NPT1/8", M5 F3 : G1/8" (BSPP), M5	M5 : M5 × 0.8

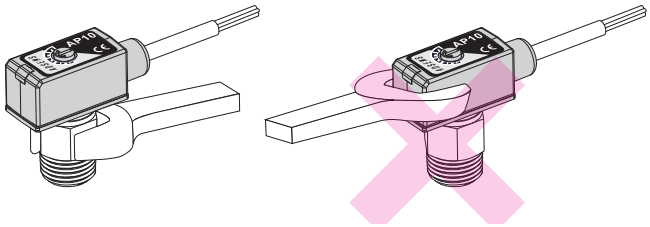
How to Set Pressure

- Use the pressure setting trimmer to set "ON" pressure. Rotate clockwise to increase pressure setpoint. Rotate counter-clockwise to decrease pressure setpoint.
- Use appropriate size screwdriver for the setting trimmers. Gently turn the screwdriver to make adjustments. To prevent damage to the pressure setting trimmer, DO NOT force the trimmer when it comes to a stop.



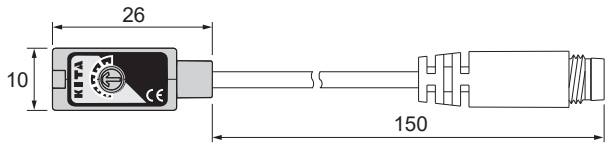
Installation Precautions

- 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 damage to the port thread, mounting bracket and pressure sensor. Under tightening may result loosen or leakage.
- Apply air pressure and power after installation, make necessary adjustments and inspect any possible signs of leakage to ensure proper installation.

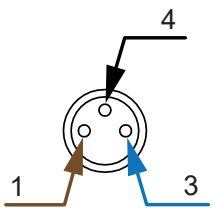


Dimensions

KP10□ - 02, 04 - □ - C

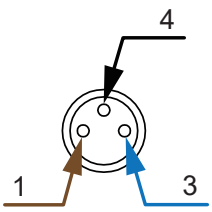


QD PINOUT
KP10A - □ - C、KP10B - □ - C



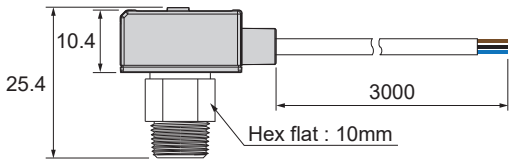
(1) Brown (+)
(3) Blue (-)
(4) Not used

QD PINOUT
KP10□ - 02, 04 - □ - C

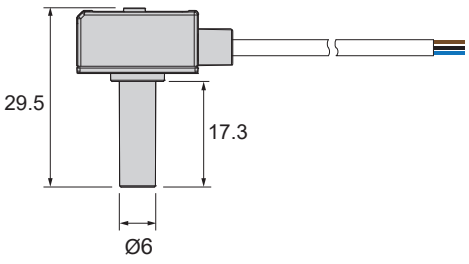


(1) Brown (+)
(3) Blue (-)
(4) Black (OUT)

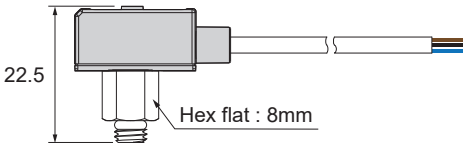
KP10□ - 02, 04 - F1, F2, F3



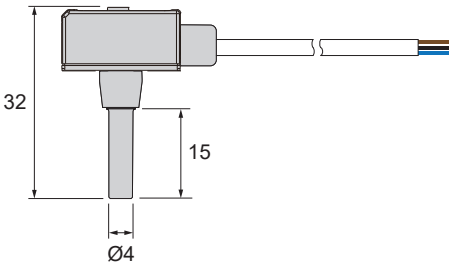
KP10□ - 02, 04 - R6



KP10□ - 02, 04 - M5



KP10□ - 02, 04 - R4



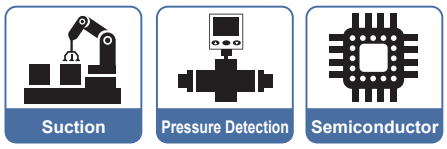
Unit：mm

KP10 SERIES

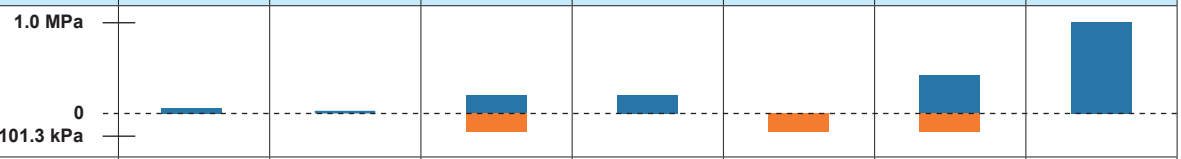
Compact Pressure Sensor - Analog Output

Features

- Simple installation, plug-in port or thread-in fitting
- Compact size : 26 × 10 × 10.4 mm
- Rated pressure range :
  Compound pressure (-100 ~ 100 kPa)
  Compound pressure (-101 ~ 500 kPa)
  Low pressure (0 ~ 100 kPa)
  Vacuum pressure (0 ~ -101.3 kPa)
  Positive pressure (0 ~ 1.0 MPa)
  Micro pressure S1 (0 ~ 10 kPa)
  Micro pressure S2 (0 ~ 5 kPa)

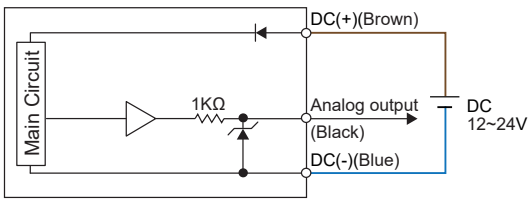


Specifications

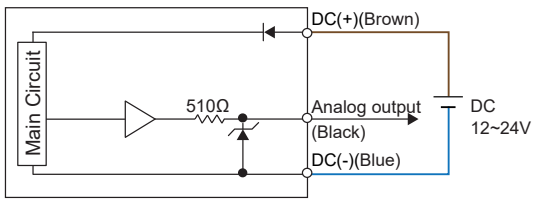
MODEL		KP10S1	KP10S2	KP10C-01	KP10L-01	KP10V-01	KP10R-01	KP10P-01
1.0 MPa / 0 / -101.3 kPa								
Rated Pressure Range		0 ~ 10 kPa	0 ~ 5 kPa	-100 ~ 100 kPa	0 ~ 100 kPa	0 ~ -101.3 kPa	-101 ~ 500 kPa	0 ~ 1.0 MPa
Withstand Pressure		20 kPa		0.2 MPa			1.5 MPa	
Fluid		Filtered air, Non-corrosive / Non-flammable gas						
Power Supply Voltage		12 ~ 24 V DC (5 % ripple voltage)						
Current Consumption		≤ 15 mA		≤ 10 mA				
Analog Output		1 ~ 5 V ± 1 % F. S. / Linearity ± 0.5 % F. S.	1 ~ 5 V ± 1.5 % F. S. / Linearity ± 1 % F. S.	1 ~ 5 V ± 1 % F. S. / Linearity ± 0.5 % F. S.				
Environment	Enclosure	IP40						
	Ambient Temp. Range	Operation : 0 ~ 50 °C ; Storage : -20 ~ 70 °C (No condensation or freezing)						
	Ambient Humidity Range	Operation / Storage : 35 ~ 85 % RH (No condensation)						
	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)		± 2 % F.S. of detected pressure (25 °C) at temp. (Range of 0 ~ 50 °C)				
Piping Size		R4 : Ø4 mm ; R6 : Ø6 mm ; F1 : R1/8", M5 ; F2 : NPT1/8", M5 ; F3 : G1/8" (BSPP) , M5 ; M5 : M5 × 0.8						
Lead Wire		Ø2.6 Oil-resistance cable (PVC) - 26 AWG (0.15 mm²) - 3 cores						
Weight (with 3 meter lead wire)		Approx. 50 g						

Circuit Wiring Diagrams

KP10S□ - 01 - □ - □
Analog Output (1 ~ 5 V)

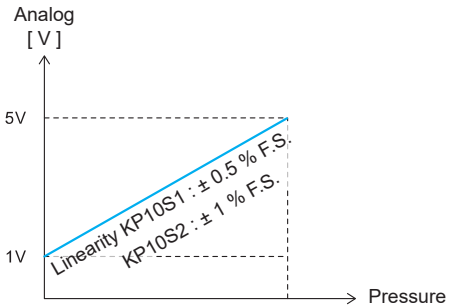


KP10□ - 01 - □ - □
Analog Output (1 ~ 5 V)



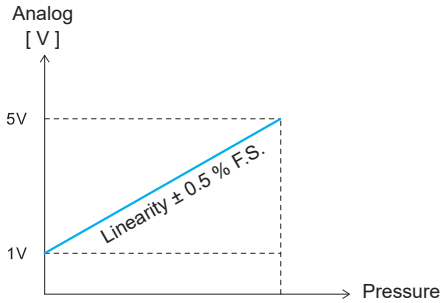
Output Type

KP10S□ - 01 - □ - □



Micro pressure	0 kPa	10 kPa
Micro pressure	0 kPa	5 kPa

KP10□ - 01 - □ - □



Compound pressure	-100 kPa	100 kPa
Compound pressure	-101 kPa	500 kPa
Low pressure	0 kPa	100 kPa
Vacuum pressure	0 kPa	-101.3 kPa
Positive pressure	0 kPa	1.0 MPa

Ordering Information

K P 1 0 V - 0 1 - R 4 - □

Pressure Range

C : Compound pressure (-100 ~ 100 kPa)
R : Compound pressure (-101 ~ 500 kPa)
L : Low pressure (0 ~ 100 kPa)
V : Vacuum pressure (0 ~ -101.3 kPa)
P : Positive pressure (0 ~ 1.0 MPa)
S1 : Micro pressure (0 ~ 10 kPa)
S2 : Micro pressure (0 ~ 5 kPa)

Output Specification

01 : Analog output (1 ~ 5 V)

Pressure Port

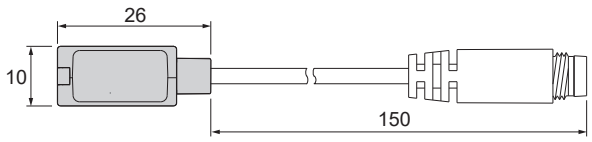
R4 : Ø4 mm
R6 : Ø6 mm
F1 : R1/8", M5
F2 : NPT1/8", M5
F3 : G1/8" (BSPP), M5
M5 : M5 × 0.8

Cable Length / Connector

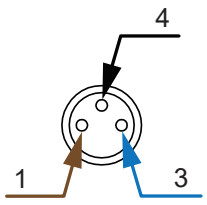
Blank : With 3 meter cable
C : With M8 3Pin male connector

Dimensions

KP10□ - 01 - □ - C

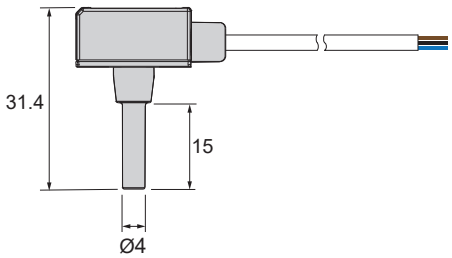


QD PINOUT

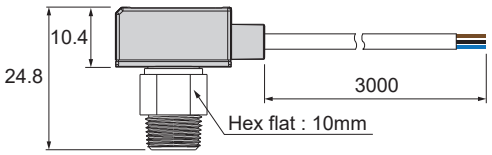


(1) Brown (+)
(3) Blue (-)
(4) Black (Analog out)

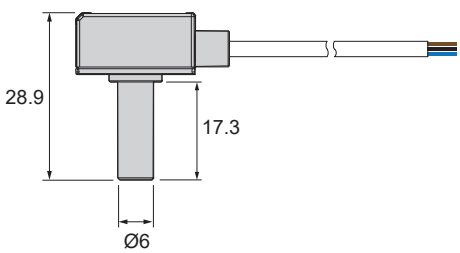
KP10□ - 01 - R4



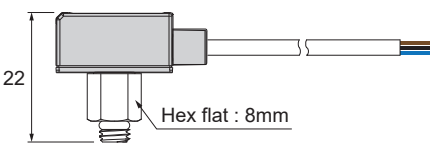
KP10□ - 01 - F1, F2, F3



KP10□ - 01 - R6



KP10□ - 01 - M5

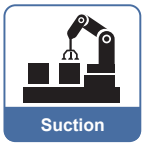


Unit：mm

KP1 SERIES Tunable Hystersis Sensor

Features

- **1 output (hysteresis adjustable)**
  2 outputs
- **Easy installation**
- **Response time : less than 5 ms**

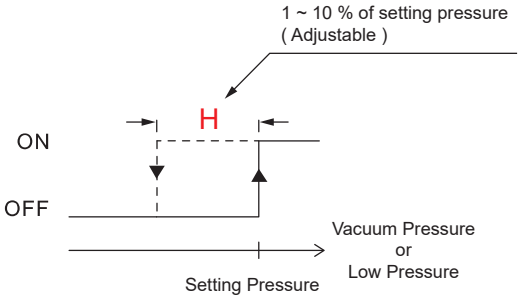


Features Highlight

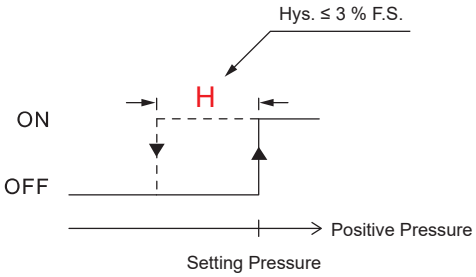
1 Hysteresis Adjustable

- Output hysteresis (H) is adjustable

KP1 - □ - 01, 02

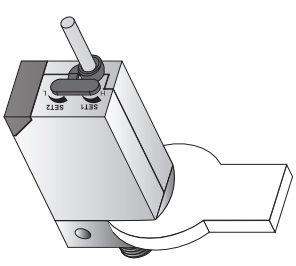


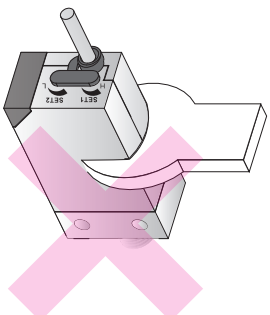
KP1 - □ - 03



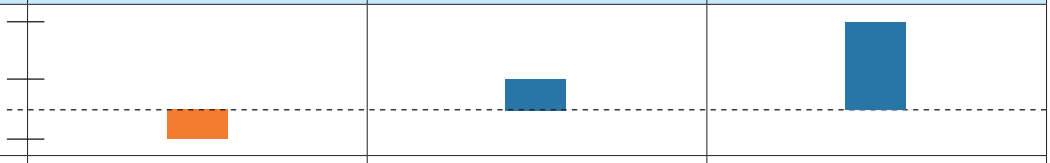
Installation Precautions

- 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 damage to the port thread, mounting bracket and pressure sensor. Under tightening may result loosen or leakage.
- Apply air pressure and power after installation, make necessary adjustments and inspect any possible signs of leakage to ensure proper installation.

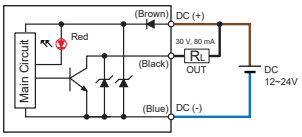
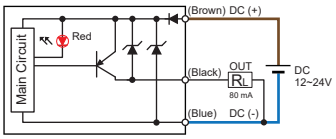
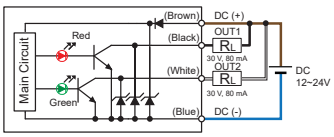




Specifications

MODEL		KP1-1	KP1-2	KP1-3
		Vacuum Pressure	Low Pressure	Positive Pressure
1 MPa 100 kPa 0 -101 kPa				
Set Pressure Range		-101 ~ 0 kPa	0 ~ 100 kPa	0 ~ 1 MPa
Withstand Pressure		300 kPa		1.5 MPa
Fluid		Filtered air, Non-corrosive / Non-flammable gas		
Power Supply Voltage		12 ~ 24 V DC ± 10 %, Ripple (P-P) ≤ 10 %		
Current Consumption		1 NPN or 1 PNP output : ≤ 21 mA ; 2 NPN output : ≤ 35 mA		
Repeatability		± 1 % F.S.		
Response Time		≤ 5 ms		
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	1000 V AC in 1-min (between case and lead wire)		
	Insulation Resistance	≥ 50 MΩ (at 500 V 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		

Circuit Wiring Diagrams

MODEL	KP1 - □ - 01	KP1 - □ - 02	KP1 - □ - 03
Connect Diagram / Characteristics			
Output Method	NPN open collector 30 V 80 mA	PNP open collector 80 mA	NPN open collector 30 V 80 mA
Hysteresis	1 ~ 10 % of setting pressure (Adjustable)		≤ 3 % F.S. (Fixed)
Switch Output	1 Output		2 Outputs
Switch on indicator	Red Indicator : ON		Red Indicator : OUT1 ; Green Indicator : OUT2

Ordering Information

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

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

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

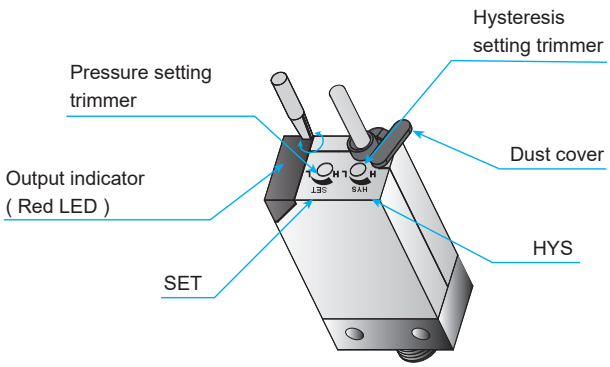
Cable Length / Connector
01 : With 1 meter cable
03 : With 3 meter cable
C : With M8 4Pin male connector

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

How To Set Pressure

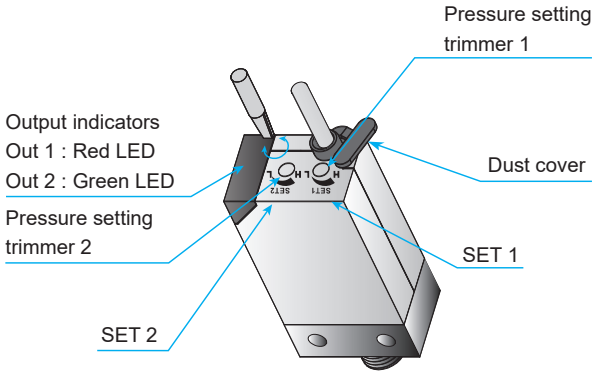
1 KP1 - ☐ - 01, 02

- Remove dust cover to make adjustments to pressure value. 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 setting pressure (ON) point. Rotate clockwise to 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.



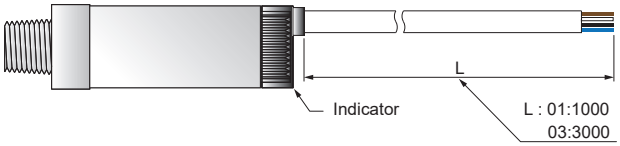
2 KP1 - ☐ - 03

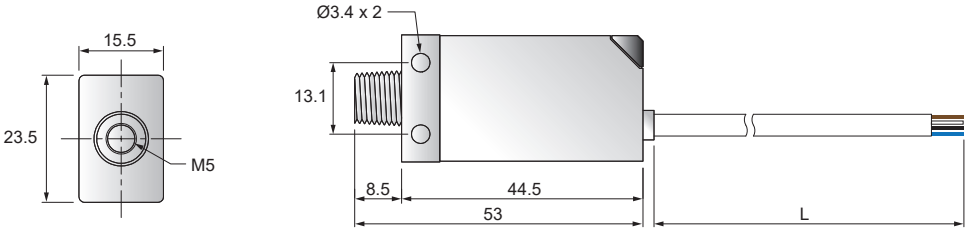
- Remove dust cover to make any adjustments. Replace dust cover when finished to prevent foreign object from entering.
- Pressure setting trimmer (SET 1, SET 2) is for setting the output (ON) pressure. Rotate SET trimmer counter-clockwise to increase (Pressure or Vacuum) the ON point. Rotate clockwise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



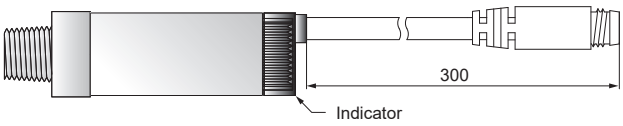
Dimensions

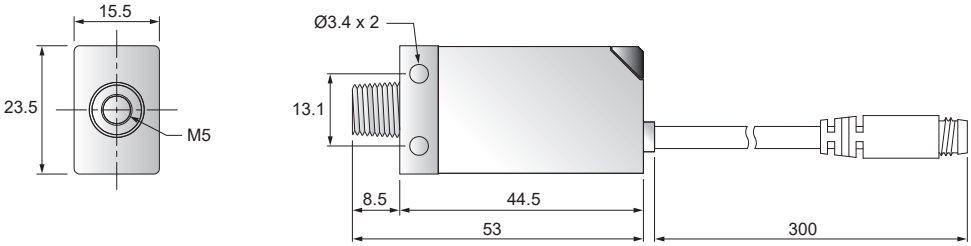
KP1 - □ - □ - □



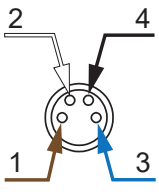


KP1 - □ - C - □





QD PINOUT



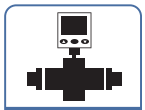
(1) Brown (+)
(2) White (OUT2)
(3) Blue (-)
(4) Black (OUT1)

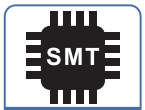
Unit : mm

KP30 SERIES

Features

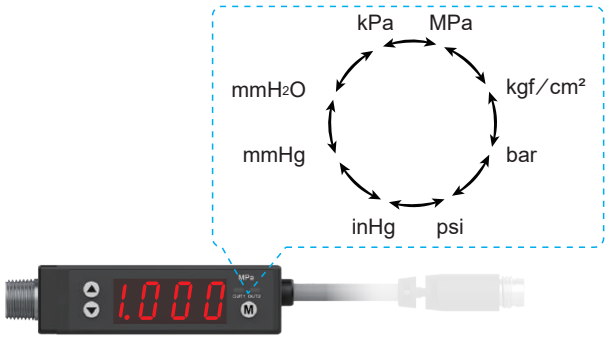
- **Set pressure range :**
  Compound pressure (-100.0 ~ 100.0 kPa)
  Vacuum pressure (10.0 ~ -101.3 kPa)
  Positive pressure (-0.100 ~ 1.000 MPa)
- **2 outputs & analog output (1 ~ 5 V)**
- **Hysteresis adjustable**
- **Programmable pressure unit :**
  kPa, MPa, kgf / cm², bar, psi, inHg, mmHg, mmH_2O





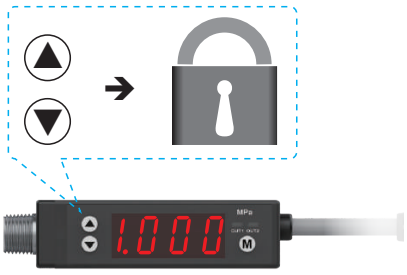
Features Highlight

1 Programmable Pressure Unit



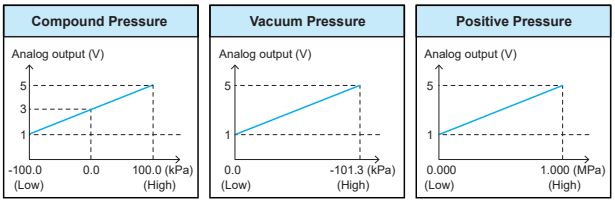
2 Key Lock Function

- Key lock mode to prevent unauthorized adjustments
  Press (M) more than 5 seconds to enter key lock mode
  Use (▲) or (▼) to select key lock status



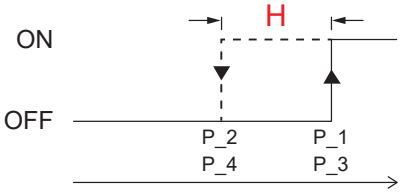
3 Analog Output

- 2 outputs & analog output (1 ~ 5 V)
  Output range 1 to 5 V, proportional to the pressure range

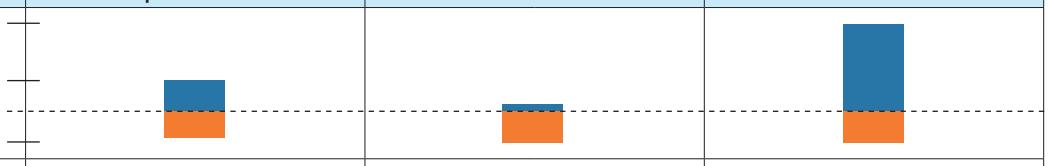


4 Hysteresis adjustable

- Output hysteresis (H) is adjustable

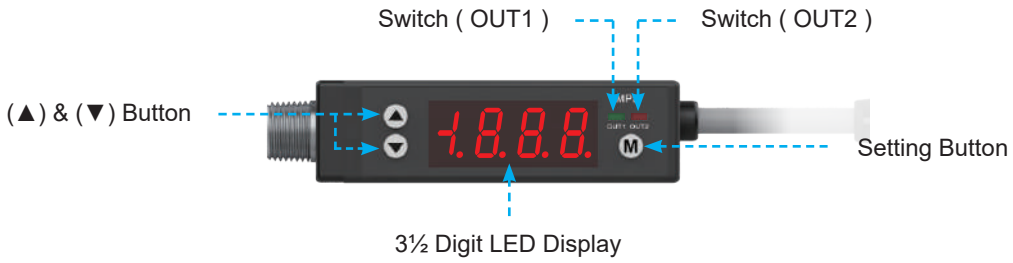


Specifications

MODEL		KP30C	KP30V	KP30P
		Compound Pressure	Vacuum Pressure	Positive Pressure
1.000 MPa 100.0 kPa 0 -101.3 kPa				
Rated Pressure Range		-100.0 ~ 100.0 kPa	0.0 ~ -101.3 kPa	0.000 ~ 1.000 MPa
Set Pressure Range		-100.0 ~ 100.0 kPa	10.0 ~ -101.3 kPa	-0.100 ~ 1.000 MPa
Withstand Pressure		300 kPa		1.5 MPa
Fluid		Filtered air, Non-corrosive / Non-flammable gas		
Set Pressure Resolution	kPa	0.1		-
	MPa	-		0.001
	kgf / cm²	0.001		0.01
	bar	0.001		0.01
	psi	0.01		0.1
	inHg	0.1		-
	mmHg	1		-
	mmH_2O	0.1		-
Power Supply Voltage		12 ~ 24 V DC ± 10 %, Ripple (P-P) ≤ 10 %		
Current Consumption		≤ 60 mA		
Switch Output		2 NPN : open collector 2 outputs Max. Load Current : 100 mA Max. Supply Voltage : 30 V DC Residual Voltage : ≤ 1 V		2 PNP : open collector 2 outputs Max. Load Current : 100 mA Max. Supply Voltage : 24 V DC Residual Voltage : ≤ 1 V
Repeatability		± 0.2 % F.S. ± 1 digit		
Hysteresis	Hysteresis Mode	Adjustable		
	Window Comparator Mode	Fixed (3 digits)		
Response Time		≤ 2.5 ms (Chattering-proof function : 24 ms, 192 ms and 768 ms selectable)		
Output Short Circuit Protection		Yes		
Display		3 ½ digit, 7 segment LED display (Red) (Sampling rate : 5 times / sec.)		
Indicator Accuracy		± 2 % F.S. ± 1 digit (Ambient temperature : 25 ± 3 °C)		
Switch on Indicator		Green Indicator : OUT1 & Red Indicator : OUT2		
Analog Output (Only Type KP30 ☐ - 01 - ☐ , KP30 ☐ - 03 - ☐)		Output Voltage : 1 ~ 5 V ± 5 % F.S. (within rated pressure range) Linearity : ± 1 % F.S.		Output Voltage : 1 ~ 5 V ± 2.5 % F.S. (within rated pressure range) Linearity : ± 1 % F.S.
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	1000 V AC in 1-min (between case and lead wire)		
	Insulation Resistance	≥ 50 MΩ (at 500 V 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		± 2 % F.S. of detected pressure (25 °C) at temp. (Range of 0 ~ 50 °C)		
Port Size		F1 : R1/8", M5 ; F2 : NPT1/8", M5 ; F3 : G1/8" (BSPP), M5		
Lead Wire		Ø4 Oil-resistance cable (PVC) - 26 AWG (0.15 mm²) - 5 cores (KP30 ☐ - 01 / 03) ; Ø4 Oil-resistance cable (PVC) - 26 AWG (0.15 mm²) - 4 cores (KP30 ☐ - 02 / 04)		
Weight		Approx. 67 g (with 2 meter lead wire) ; Approx. 35 g (with M8 4Pin male connector)		

KP30 SERIES

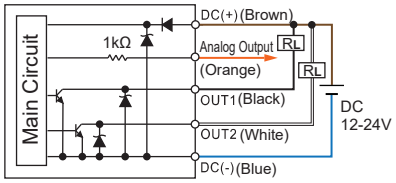
Panel Description



Circuit Wiring Diagrams

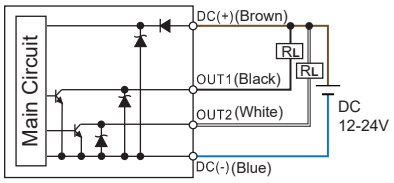
KP30☐ - 01 - ☐ - ☐

NPN Output & Analog Output (1 ~ 5 V)



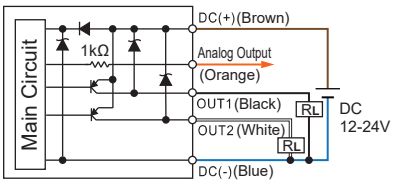
KP30☐ - 02 - ☐ - ☐

NPN Output



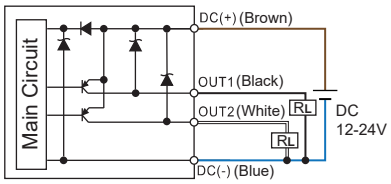
KP30☐ - 03 - ☐ - ☐

PNP Output & Analog Output (1 ~ 5 V)



KP30☐ - 04 - ☐ - ☐

PNP Output



Ordering Information

K P 3 0 C - 0 1 - F 1 - ☐

Pressure Range

C : Compound pressure (-100.0 ~ 100.0 kPa)
V : Vacuum pressure (10.0 ~ -101.3 kPa)
P : Positive pressure (-0.100 ~ 1.000 MPa)

Pressure Port

F1 : R1/8", M5
F2 : NPT1/8", M5
F3 : G1/8" (BSPP), M5

Output Specification

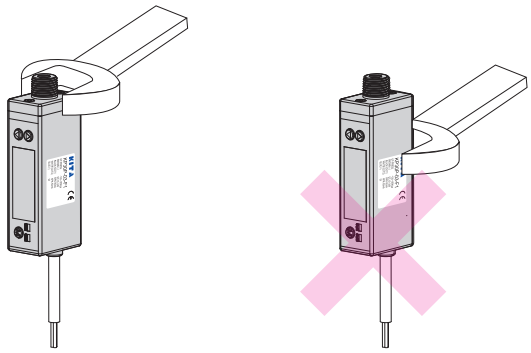
01 : 2 NPN output & Analog output (1 ~ 5 V)
02 : 2 NPN output
03 : 2 PNP output & Analog output (1 ~ 5 V)
04 : 2 PNP output

Cable Length / Connector

Blank : With 2 meter cable
QD : With M8 4Pin male connector
* (Only type KP30 ☐ - 02 - ☐ , KP30 ☐ - 04 - ☐)

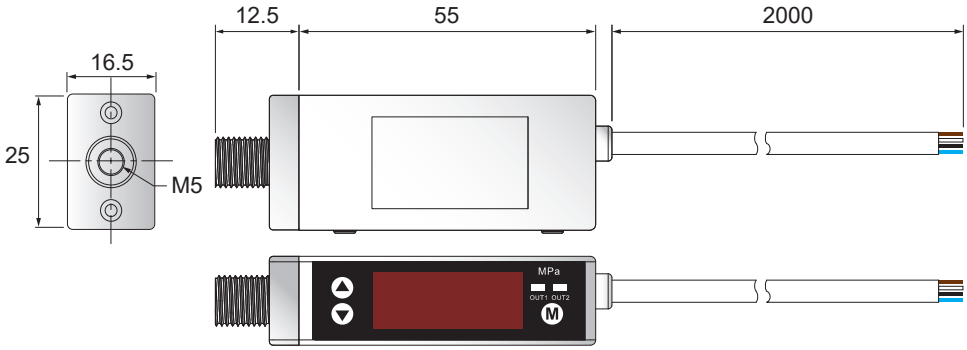
Installation Precautions

- 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 damage to the port thread, mounting bracket and pressure sensor. Under tightening may result loosen or leakage.
- Apply air pressure and power after installation, make necessary adjustments and inspect any possible signs of leakage to ensure proper installation.

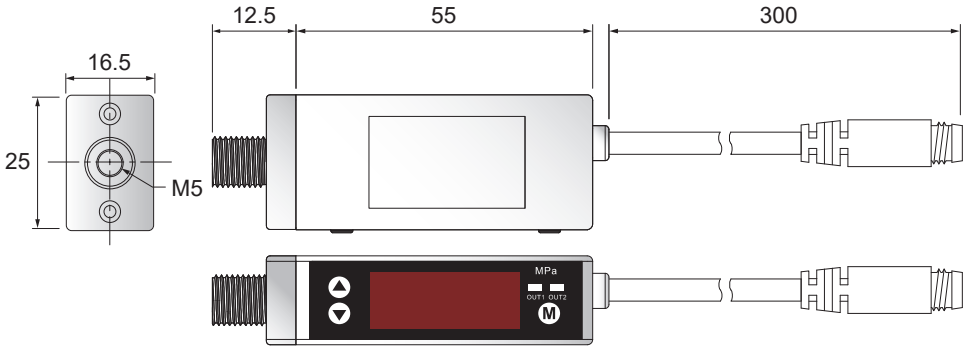


Dimensions

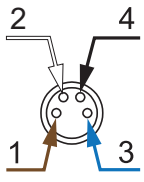
KP30□ - □ - □



KP30□ - □ - □ - QD



QD PINOUT



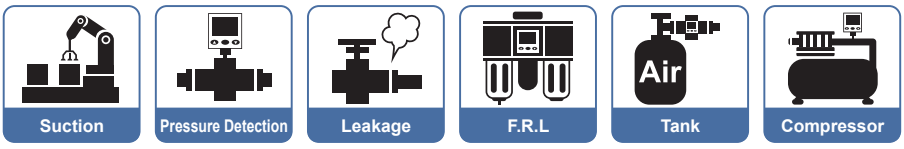
(1) Brown (+)
(2) White (OUT2)
(3) Blue (-)
(4) Black (OUT1)

Unit : mm

KP43 SERIES General Pressure Sensor

Features

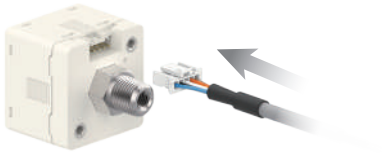
- 3-color digital LCD display
- Copy function
- Selectable pressure unit :
  kPa, MPa, kgf / cm², bar, psi, inHg, mmHg
- Dual LCD display allows setting value to be displayed
- Key-lock indicator
- Power-save mode



Features Highlight

1 Quick Installation

- Save Installation Time
- Easy Removal



(Removable Data Cable)

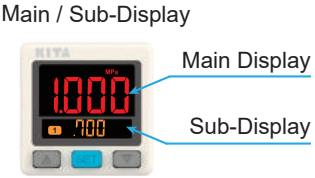
2 Copy Setting

- Avoid setting errors
- Reduce setting time

(Original Parameter) (Copied)

3 Setting Value Easy Indication

- User can easily observe the setting value from sub-display



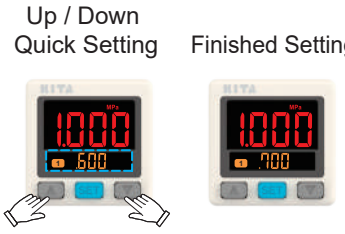
4 2-Color Main Display

- User selectable color mode, for different conditions use

	SoG	Sor	Grn	rEd
ON	Green	Red	Green	Red
OFF	Red	Green	Green	Red

5 OPS Quick Setting

- Sub-display allows changing parameter directly, reduce setting step by 3/4



6 Easy Unit Identification

- Unit conversion easy to read

Specifications

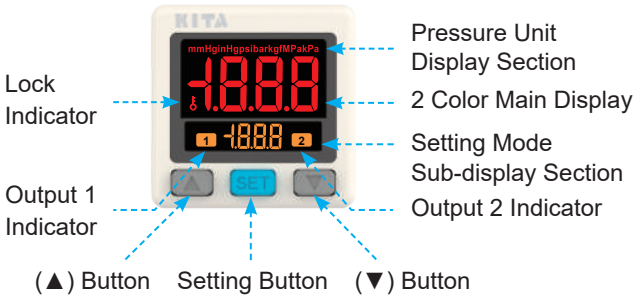
MODEL		KP43C	KP43V	KP43P
		Compound Pressure	Vacuum Pressure	Positive Pressure
1.000 MPa 100.0 kPa 0 -101.3 kPa				
Rated Pressure Range		-100.0 ~ 100.0 kPa	0.0 ~ -101.3 kPa	0.000 ~ 1.000 MPa
Set Pressure Range		-101.0 ~ 101.0 kPa	10.0 ~ -101.3 kPa	-0.100 ~ 1.000 MPa
Withstand Pressure		300 kPa		1.5 MPa
Fluid		Filtered air, Non-corrosive / Non-flammable gas		
Set Pressure Resolution	kPa	0.1		-
	MPa	-		0.001
	kgf / cm²	0.001		0.01
	bar	0.001		0.01
	psi	0.01		0.1
	inHg	0.1		-
	mmHg	1		-
Power Supply Voltage		12 ~ 24 V DC ± 10 %, Ripple (P-P) ≤ 10 %		
Current Consumption		≤ 40 mA (with no load)		
Switch Output		2 NPN : open collector 2 outputs Max. Load Current : 125 mA Max. Supply Voltage : 30 V DC Residual Voltage : ≤ 1.5 V		2 PNP : open collector 2 outputs Max. Load Current : 125 mA Max. Supply Voltage : 24 V DC Residual Voltage : ≤ 1.5 V
Repeatability		± 0.2 % F.S. ± 1 digit		
Hysteresis	One Point Set Mode	Adjustable ※1		
	Hysteresis Mode			
	Window Comparator Mode			
Response Time		≤ 2.5 ms (Chattering-proof function : 25 ms, 100 ms, 250 ms, 500 ms, 1000 ms and 1500 ms selectable)		
Output Short Circuit Protection		Yes		
Display		3 ½ digital, 7 segment LCD display (Red / Green / Orange) (Sampling rate : 5 times / sec.)		
Indicator Accuracy		± 2 % F.S. ± 1 digit (Ambient temperature : 25 ± 3 °C)		
Switch on Indicator		Orange Indicator 1 : OUT1 & Orange Indicator 2 : OUT2		
Analog Output (Voltage Output)		Output Voltage : 1 ~ 5 V ± 2.5 % F.S. (within rated pressure range) Linearity : ± 1 % F.S. Output Impedance : about 1 kΩ		
Analog Output (Current Output)		Output Current : 4 ~ 20 mA ± 2.5 % F.S. (within rated pressure range) Linearity : ± 1 % F.S. Max. Load Impedance : 300 Ω at power supply of 12 V 600 Ω at power supply of 24 V Min. Load Impedance : 50 Ω		
Environment	Enclosure	IP40		
	Ambient Temp. Range	Operation : 0 ~ 50 °C ; Storage : -10 ~ 60 °C (No condensation or freezing)		
	Ambient Humidity Range	Operation / Storage : 35 ~ 85 % RH (No condensation)		
	Withstand Voltage	1000 V AC in 1-min (between case and lead wire)		
	Insulation Resistance	≥ 50 MΩ (at 500 V 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	100 m/s² (10 G), 3 times each in direction of X, Y and Z		
Temperature characteristic		± 2.5 % F.S. of detected pressure (25 °C) at temp. (Range of 0 ~ 50 °C)		
Port size		F1 : R1/8", M5 ; F2 : NPT1/8", #10-32 UNF ; F3 : G1/8" (BSPP), M5		
Lead wire		Ø4 Oil-resistance cable (PVC) - 26 AWG (0.15 mm²) - 5 cores		
Weight (with 2 meter lead wire)		Approx. 80 g		

NOTE

※1 : Hysteresis value is adjustable within 1 ~ 8 digits for one point set mode and window comparator mode.

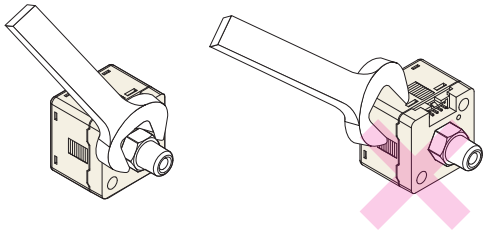
KP43 SERIES General Pressure Sensor

Panel Description



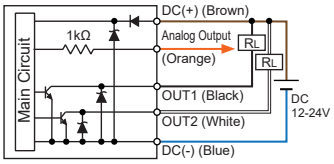
Installation Precautions

- 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 damage to the port thread, mounting bracket and pressure sensor. Under tightening may result loosen or leakage.
- Apply air pressure and power after installation, make necessary adjustments and inspect any possible signs of leakage to ensure proper installation.

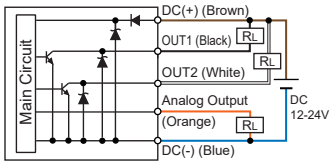


Circuit Wiring Diagrams

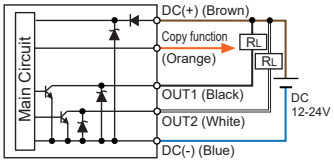
KP43□ - 010 - □
2NPN + Analog Output（1 ~ 5 V）



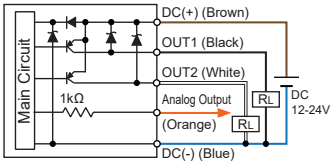
KP43□ - 011 - □
2NPN + Analog Output（4 ~ 20 mA）



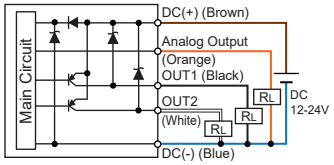
KP43□ - 02 - □
2NPN + Copy Function



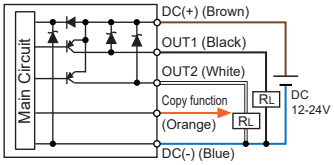
KP43□ - 030 - □
2PNP + Analog Output（1 ~ 5 V）



KP43□ - 031 - □
2PNP + Analog Output（4 ~ 20 mA）



KP43□ - 04 - □
2PNP + Copy Function



Ordering Information

K P 4 3 C - 0 1 0 - F 1

Pressure Range

C : Compound pressure
(-101.0 ~ 101.0 kPa)
V : Vacuum pressure
(10.0 ~ -101.3 kPa)
P : Positive pressure
(-0.100 ~ 1.000 MPa)

Output Specifications

010 : 2 NPN Output & Analog Output (1 ~ 5 V)
011 : 2 NPN Output & Analog Output (4 ~ 20 mA)
02 : 2 NPN Output & Copy Function
030 : 2 PNP Output & Analog Output (1 ~ 5 V)
031 : 2 PNP Output & Analog Output (4 ~ 20 mA)
04 : 2 PNP Output & Copy Function

Pressure Port

F1 : R1/8", M5
F2 : NPT1/8", #10-32UNF
F3 : G1/8" (BSPP), M5

Optional Parts

BT-12 : Mounting bracket
BT-13 : Mounting bracket
PA-C : Panel adapter
PA-D : Panel adapter + Front protective lid

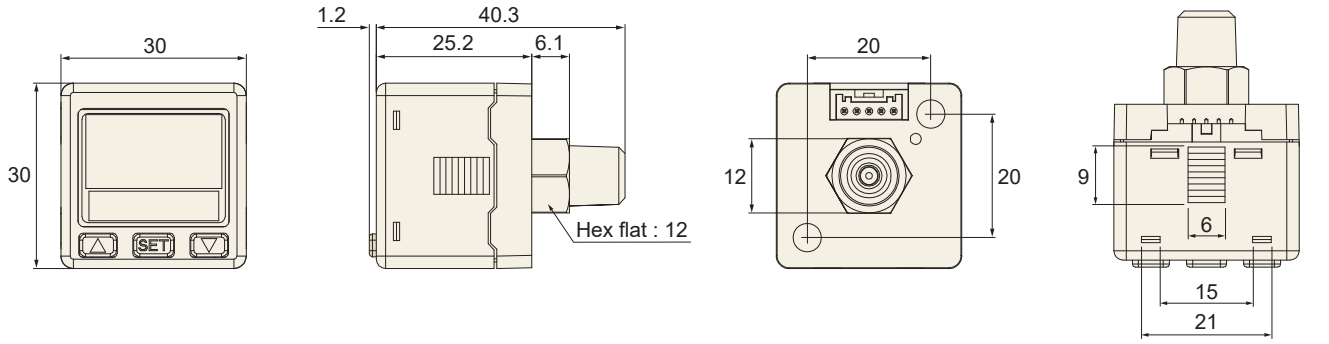
Optional Parts

- Mounting bracket : BT-12 / BT-13

- Panel adapter : PA-C

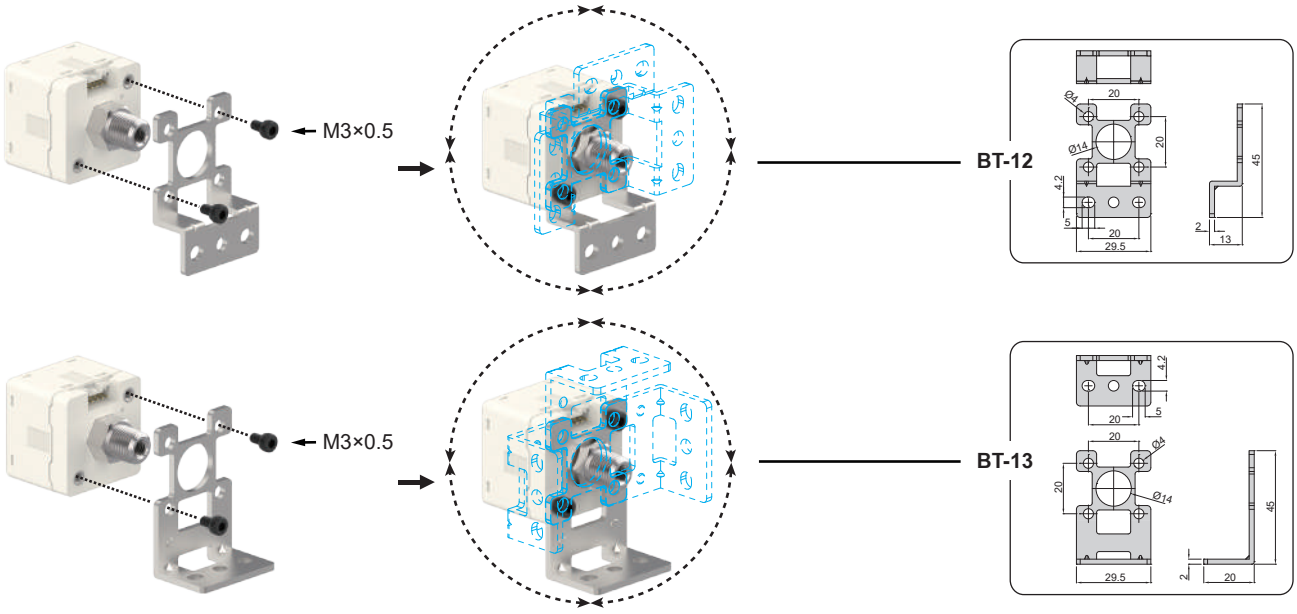
- Panel adapter + Front protective lid : PA-D

Dimensions



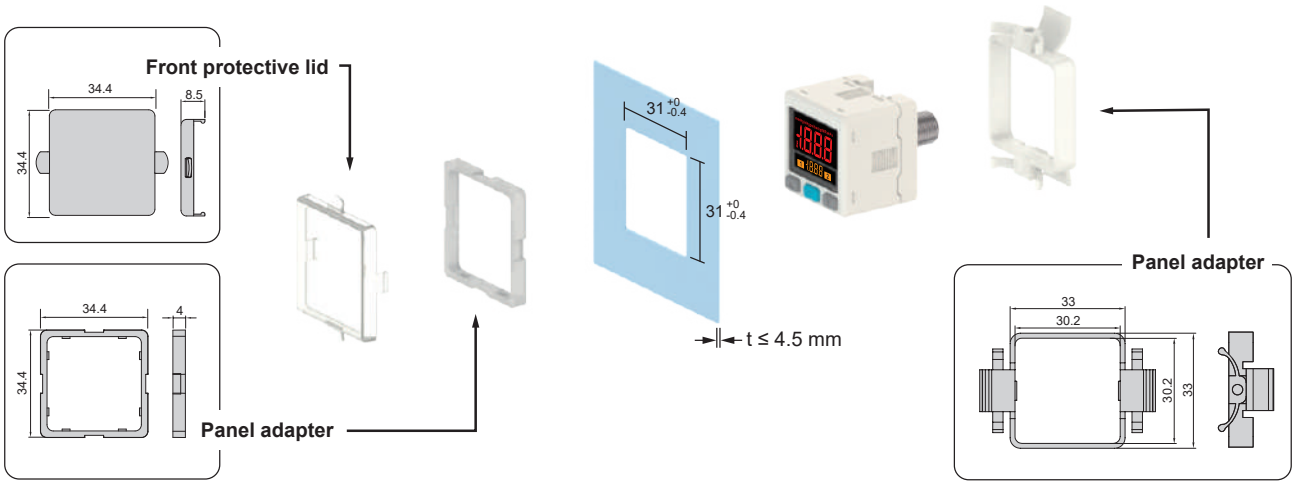
Optional Parts Dimensions

1 Mounting Bracket



4 mounting directions available

2 Panel Mount Adapter + Front Protective Lid

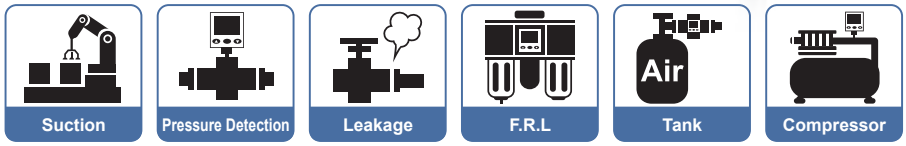


Unit : mm

KP45 SERIES IP65 Pressure Sensor

Features

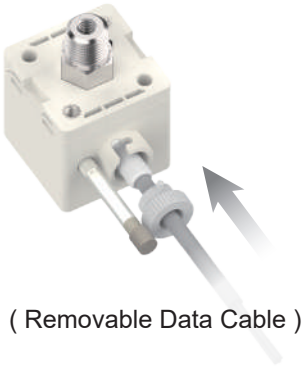
- 2-color digital LCD display
- Copy function
- Selectable pressure unit :
  kPa, MPa, kgf / cm², bar, psi, inHg
- IP65 enclosure



Features Highlight

1 Quick Installation

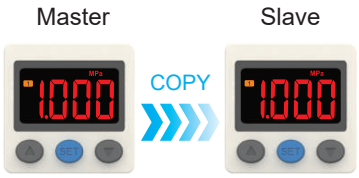
- Save installation time
- Easy removal



(Removable Data Cable)

2 Copy Setting

- Avoid setting errors
- Reduce setting time



(Original Parameter) (Copied)

3 Easy Unit Identification

- Unit conversion easy to read

4 2-Color Display

- User selectable color mode, for different conditions use

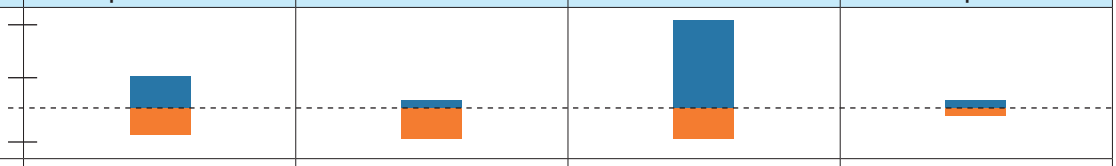
	SoG	Sor	Grn	rEd
ON	Green	Red	Green	Red
OFF	Red	Green	Green	Red

5 IP65 Compliance

6 Environmental Protection Design

- RoHS Compliance / Without Harmful Substance

Specifications

MODEL		KP45C	KP45V	KP45P	KP45S ※1
		Compound Pressure	Vacuum Pressure	Positive Pressure	Micro-pressure
1.000 MPa 100.0 kPa 0 -101.3 kPa					
Rated Pressure Range		-100.0 ~ 100.0 kPa	0.0 ~ -101.3 kPa	0.000 ~ 1.000 MPa	-10.00 ~ 10.00 kPa
Set Pressure Range		-101.0 ~ 101.0 kPa	10.0 ~ -101.3 kPa	-0.100 ~ 1.000 MPa	-10.10 ~ 10.10 kPa
Withstand Pressure		300 kPa		1.5 MPa	20 kPa
Fluid		Filtered air, Non-corrosive / Non-flammable gas			
Set Pressure Resolution	kPa	0.1		-	0.01
	MPa	-		0.001	-
	kgf / cm²	0.001		0.01	0.001
	bar	0.001		0.01	0.001
	psi	0.01		0.1	0.01
	inHg	0.1		-	0.1
Power Supply Voltage		12 ~ 24 V DC ± 10 %, Ripple (P-P) ≤ 10 % (UL class 2)			
Current Consumption		≤ 40 mA (with no load)			
Switch Output		2 NPN : open collector 2 outputs Max. Load Current : 125 mA Max. Supply Voltage : 24 V DC Residual Voltage : ≤ 1.5 V		2 PNP : open collector 2 outputs Max. Load Current : 125 mA Max. Supply Voltage : 24 V DC Residual Voltage : ≤ 1.5 V	
Repeatability		± 0.2 % F.S. ± 1 digit			
Hysteresis	One Point Set Mode	Adjustable ※2			
	Hysteresis Mode				
	Window Comparator Mode				
Response Time		≤ 2.5 ms (Chattering-proof function : 25 ms, 100 ms, 250 ms, 500 ms, 1000 ms and 1500 ms selectable)			
Output Short Circuit Protection		Yes			
Display		3 ½ digital, 7 segment LCD display (Red / Green / Orange) (Sampling rate : 5 times / sec.)			
Indicator Accuracy		± 2 % F.S. ± 1 digit (Ambient temperature : 25 ± 3 °C)			
Switch on Indicator		Orange Indicator 1 : OUT1 & Orange Indicator 2 : OUT2			
Analog Output (Voltage Output)		Output Voltage : 1 ~ 5 V ± 2.5 % F.S. (within rated pressure range) Linearity : ± 1 % F.S. Output Impedance : about 1 kΩ			
Analog Output (Current Output)		Output Current : 4 ~ 20 mA ± 2.5 % F.S. (within rated pressure range) Linearity : ± 1 % F.S. Max. Load Impedance : 250 Ω at power supply of 12 V 600 Ω at power supply of 24 V Min. Load Impedance : 50 Ω			
Environment	Enclosure	IP65 ※3			
	Ambient Temp. Range	Operation : 0 ~ 50 °C ; Storage : -10 ~ 60 °C (No condensation or freezing)			
	Ambient Humidity Range	Operation / Storage : 35 ~ 85 % RH (No condensation)			
	Withstand Voltage	1000 V AC in 1-min (between case and lead wire)			
	Insulation Resistance	≥ 50 MΩ (at 500 V 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	100 m/s² (10 G), 3 times each in direction of X, Y and Z			
Temperature Characteristic		± 2 % F.S. of detected pressure (25 °C) at temp. (Range of 0 ~ 50 °C)			
Port Size		F1 : R1/8", M5 ; F2 : NPT1/8", #10-32 UNF ; F3 : G1/8" (BSPP), M5 F1C : Rc1/8" ; F2C : NPT1/8" ; F3C : G1/8" (BSPP)			
Lead Wire		Ø4 Oil-resistance cable (PVC) - 26 AWG (0.15 mm²) - 5 cores			
Weight (with 2 meter lead wire)		Approx. 90 g (Port F1 ~ F3) ; Approx. 112 g (Port F1C ~ F3C)			

NOTE

※1 : KP45S is no UL approval.

※2 : Hysteresis value is adjustable within 1 ~ 8 digits for one point set mode and window comparator mode.

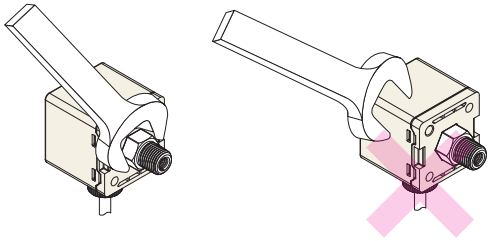
※3 : Dustproof protector must be installed to maintain IP65.

KP45 SERIES IP65 Pressure Sensor

Panel Description

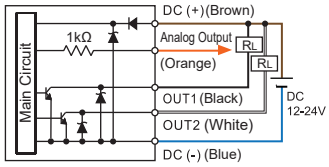
Installation Precautions

- 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 damage to the port thread, mounting bracket and pressure sensor. Under tightening may result loosen or leakage.
- Apply air pressure and power after installation, make necessary adjustments and inspect any possible signs of leakage to ensure proper installation.

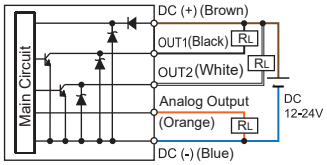


Circuit Wiring Diagrams

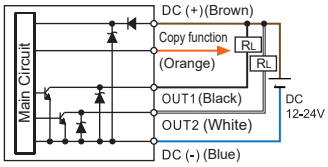
KP45 □ - 010 - □
2 NPN + Analog Output (1 ~ 5 V)



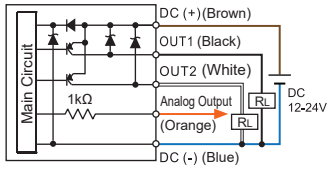
KP45 □ - 011 - □
2 NPN + Analog Output (4 ~ 20 mA)



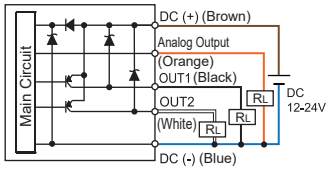
KP45 □ - 02 - □
2 NPN + Copy Function



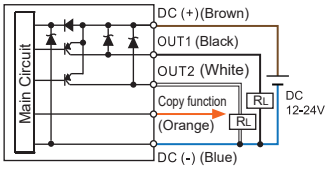
KP45 □ - 030 - □
2 PNP + Analog Output (1 ~ 5 V)



KP45 □ - 031 - □
2 PNP + Analog Output (4 ~ 20 mA)



KP45 □ - 04 - □
2 PNP + Copy Function



Ordering Information

K P 4 5 C - 0 1 0 - F 1

Pressure Range

C : Compound pressure
(-101.0 ~ 101.0 kPa)
V : Vacuum pressure
(10.0 ~ -101.3 kPa)
P : Positive pressure
(-0.100 ~ 1.000 MPa)
S : Micro-pressure
(-10.10 ~ 10.10 kPa)
※ KP45S is no UL approval.

Output Specifications

010 : 2 NPN Output & Analog Output (1 ~ 5 V)
011 : 2 NPN Output & Analog Output (4 ~ 20 mA)
02 : 2 NPN Output & Copy Function
030 : 2 PNP Output & Analog Output (1 ~ 5 V)
031 : 2 PNP Output & Analog Output (4 ~ 20 mA)
04 : 2 PNP Output & Copy Function

Pressure Port

F1 : R1/8", M5, with external threads
F2 : NPT1/8", #10-32UNF,
with external threads
F3 : G1/8" (BSPP), M5,
with external threads
F1C : Rc1/8", with internal threads
F2C : NPT1/8", with internal threads
F3C : G1/8" (BSPP),
with internal threads

Optional Parts

BT-10 : Mounting bracket
(for Pressure Port F1 ~ F3)
BT-11 : Mounting bracket
(for Pressure Port F1 ~ F3)
BT- 1 : Mounting bracket
(for Pressure Port F1C ~ F3C)
BT-17 : Mounting bracket
(for Pressure Port F1C ~ F3C)
PA-E : Panel adapter
PA-F : Panel adapter + Front protective lid

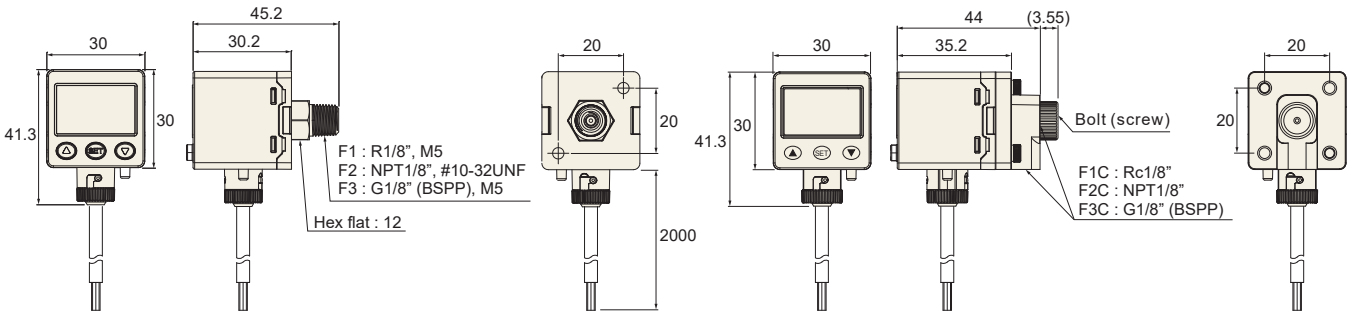
Optional Parts

- Mounting Bracket :
BT-10 / BT-11 (For Pressure Port F1 ~ F3)
BT- 1 / BT-17 (For Pressure Port F1C ~ F3C)

- Panel Adapter : PA-E

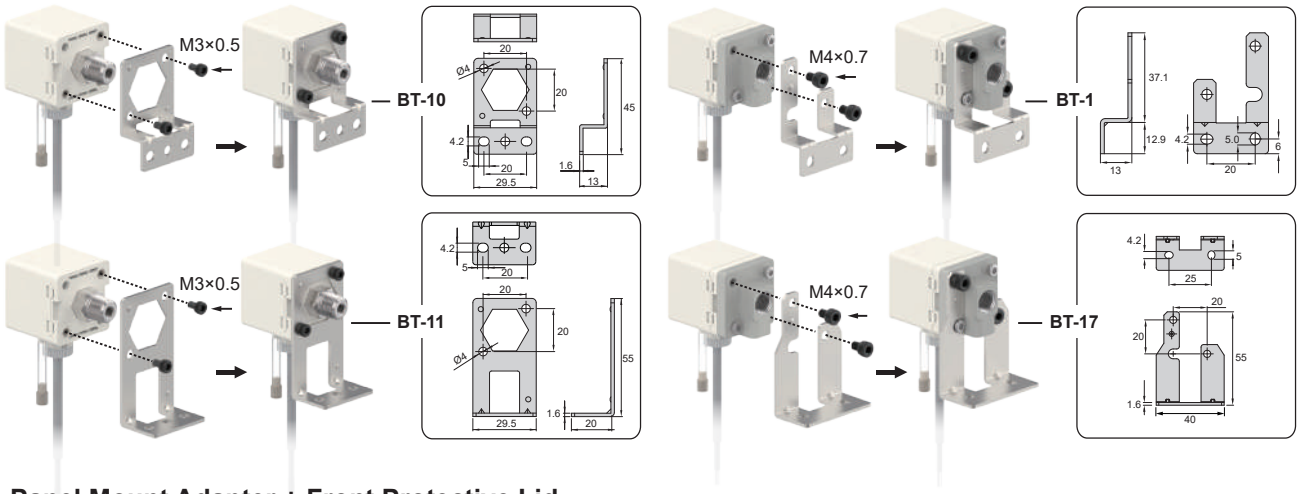
- Panel Adapter + Front Protective Lid : PA-F

Dimensions

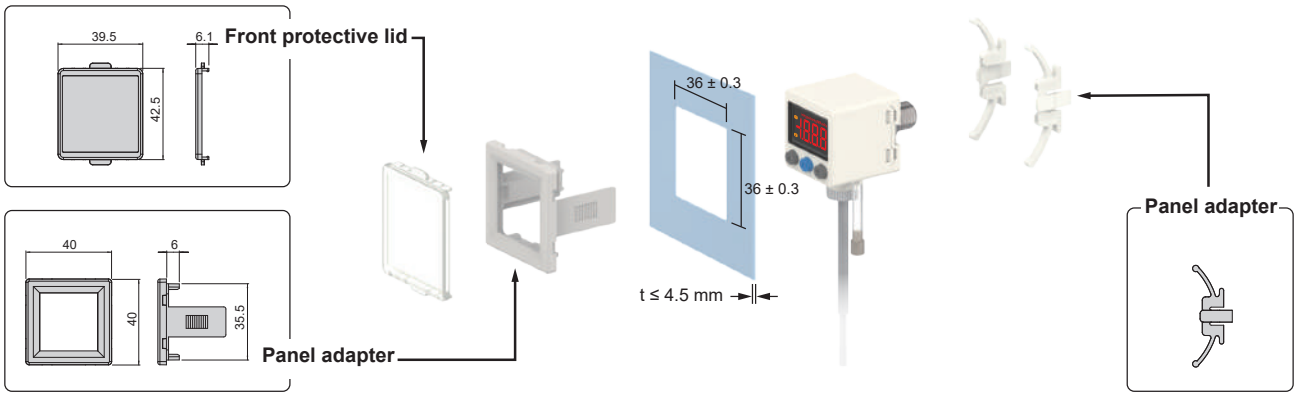


Optional Parts Dimensions

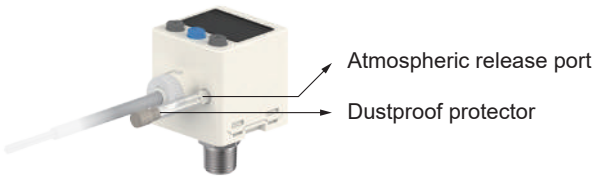
1 Mounting Bracket



2 Panel Mount Adapter + Front Protective Lid



3 IP65 Protector



Caution :
This device must be installed to maintain IP65 (Dust and splash proof) enclosure rating.

4 KP45 Accessory for Pressure Port F1C ~ F3C

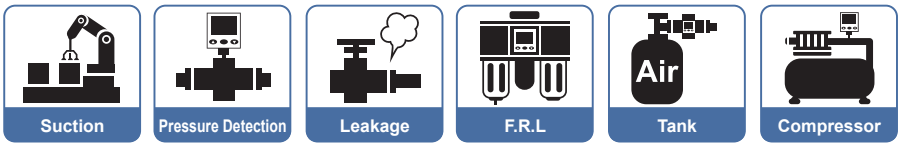
- This product has two inlet pressure ports, select the one most convenient for installation.
- Please plug the bolt in unused port to prevent pressure leakage.

Unit : mm

KP47 SERIES Economical Pressure Sensor

Features

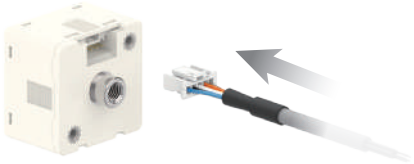
- 3-color digital LCD display
- Main / Sub-Display,
  4 digits 7 segment LCD display
- Selectable pressure unit :
  kPa, MPa, kgf / cm², bar, psi, inHg, mmHg
- Dual LCD display allows setting value to be displayed
- Key-lock indicator
- Power-save mode
- Fine adjustment mode



Features Highlight

1 Quick Installation

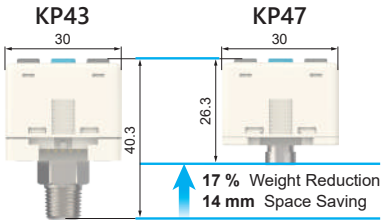
- Save installation time
- Easy removal



(Removable Data Cable)

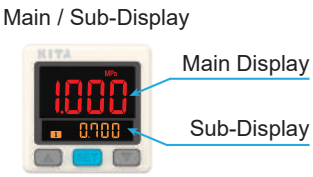
2 Compact design

- Compared with similar products, approx. 35 % shorter



3 Setting Value Easy Indication

- User can easily observe the setting value from sub-display



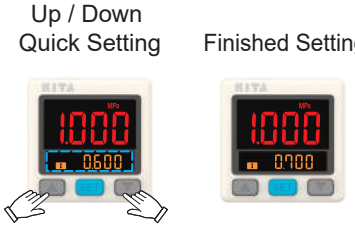
4 2-Color Main Display

- User selectable color mode, for different conditions use

	SoG	Sor	Grn	rEd
ON	Green	Red	Green	Red
OFF	Red	Green	Green	Red

5 OPS Quick Setting

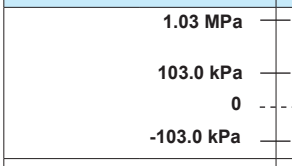
- Sub-display allows changing the parameter directly, reduce setting step by 3/4



6 Easy Unit Identification

- Unit conversion easy to read

Specifications

MODEL		KP47C	KP47V	KP47P	KP47S
		Compound Pressure	Vacuum Pressure	Positive Pressure	Micro-pressure
					
Rated Pressure Range		-100.0 ~ 100.0 kPa	0.0 ~ -101.3 kPa	-0.100 ~ 1.000 MPa	-10.00 ~ 10.00 kPa ※1
Set Pressure Range		-103.0 ~ 103.0 kPa	10.0 ~ -103.0 kPa	-0.103 ~ 1.030 MPa	-10.10 ~ 10.10 kPa ※1
Withstand Pressure		500 kPa		1.5 MPa	20 kPa
Fluid		Filtered air, Non-corrosive / Non-flammable gas			
Set Pressure Resolution	kPa	0.1		-	0.01
	MPa	-		0.001	-
	kgf / cm²	0.001		0.01	-
	bar	0.001		0.01	-
	psi	0.01		0.1	-
	inHg	0.1		-	-
	mmHg	1		-	-
Power Supply Voltage		12 ~ 24 V DC ± 10 %, Ripple (P-P) ≤ 10 %			
Current Consumption		≤ 30 mA (with no load)			
Switch Output		NPN : open collector outputs Max. Load Current : 80 mA Max. Supply Voltage : 30 V DC Residual Voltage : ≤ 1 V		PNP : open collector outputs Max. Load Current : 80 mA Max. Supply Voltage : 24 V DC Residual Voltage : ≤ 1 V	
Repeatability		± 0.3 % F.S. ± 1 digit			≤ ± 0.4 kPa
Hysteresis	One Point Set Mode	Adjustable ※2			
	Hysteresis Mode				
	Window Comparator Mode				
Response Time		≤ 2.5 ms (Chattering-proof function : 25 ms, 100 ms, 250 ms, 500 ms, 1000 ms and 1500 ms selections)			
Output Short Circuit Protection		Yes			
Display		4 digital, 7 segment LCD display (Red / Green / Orange) (Sampling rate : 0.2, 0.5, 1 sec. / time)			
Indicator Accuracy		± 1 % F.S. ± 1 digit (Ambient temperature : 25 ± 3 °C)			≤ ± 0.4 kPa
Switch on Indicator		Orange Indicator 1 : OUT1 & Orange Indicator 2 : OUT2			
Analog Output (Voltage Output)		Output Voltage : 1 ~ 5 V ± 2.5 % F.S. (within rated pressure range) ; Linearity : ± 1 % F.S. ; Output Impedance : about 1 kΩ		Output Voltage : 0.6 ~ 5 V ± 2.5 % F.S. (within rated pressure range) ; Linearity : ± 1 % F.S. ; Output Impedance : about 1 kΩ	Output Voltage : 1 ~ 5 V ± 2.5 % F.S. (within rated pressure range) ; Linearity : ± 1 % F.S. ; Output Impedance : about 1 kΩ
Environment	Enclosure	IP40			
	Ambient Temp. Range	Operation : 0 ~ 50 °C ; Storage : -10 ~ 60 °C (No condensation or freezing)			
	Ambient Humidity Range	Operation / Storage : 35 ~ 85 % RH (No condensation)			
	Withstand Voltage	1000 V AC in 1-min (between case and lead wire)			
	Insulation Resistance	≥ 50 MΩ (at 500 V DC, between case and lead wire)			
	Vibration	Total amplitude 1.5 mm or 10 G,10 Hz ~ 150 Hz ~ 10 Hz scan for 1 minute, 2 hours each direction of X, Y and Z			
	Shock	100 m/s² (10 G), 3 times each in direction of X, Y and Z			
Temperature characteristic		± 2 % F.S. of detected pressure (25 °C) at temp. (Range of 0 ~ 50 °C)			± 0.4 kPa of detected pressure (25 °C) at temp. (Range of 0 ~ 50 °C)
Port size		F1 : R1/8", M5 ; F2 : NPT1/8", #10~32 UNF ; F3 : G1/8" (BSPP), M5 ; M5 : M5 female thread			
Lead wire		Ø4 Oil-resistance cable (PVC) - 26 AWG (0.15 mm²) - 4 cores			
Weight (with 2 meter lead wire)		Approx. 67 g			

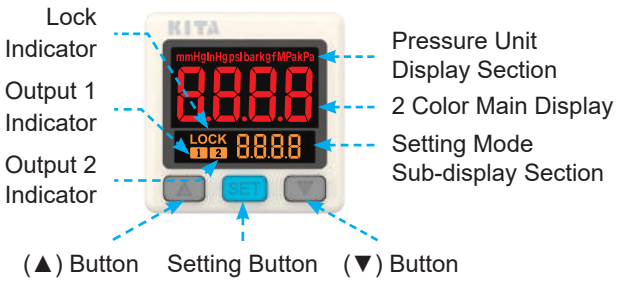
NOTE

※1 : Selectable pressure ranges (S-01 ~ S-09).

※2 : Hysteresis value is adjustable within 1 ~ 8 digits for one point set mode and window comparator mode.

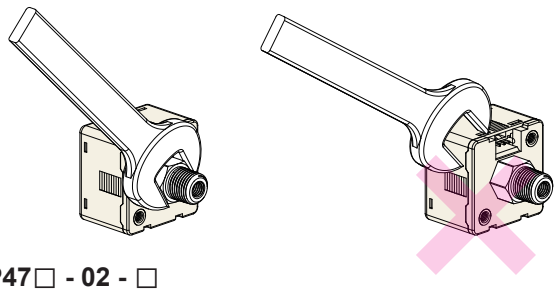
KP47 SERIES Economical Pressure Sensor

Panel Description



Installation Precautions

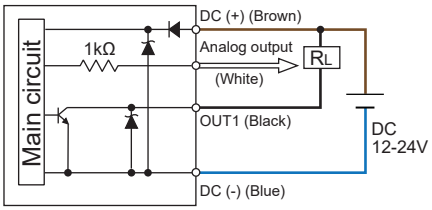
- When mounting, always use the wrench on the metallic area near the pressure port. Never apply a wrench to the plastic body, it will damage the sensor.
- Over tightening may cause damage to the port thread, mounting bracket and pressure sensor. Under tightening may result loosen or leakage.
- Apply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



Circuit Wiring Diagrams

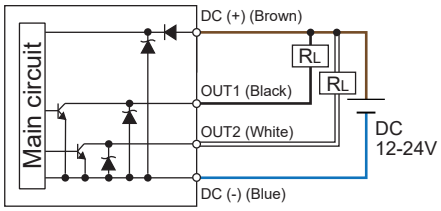
KP47□ - 01 - □

1NPN + Analog output (1 ~ 5 V) (0.6 ~ 5 V only positive)



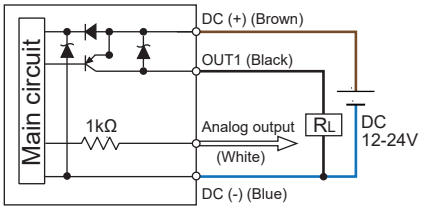
KP47□ - 02 - □

2NPN + output



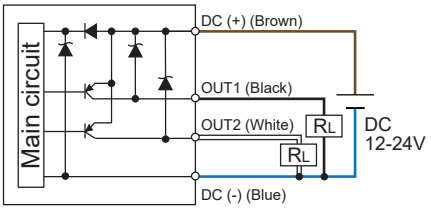
KP47□ - 03 - □

1PNP + Analog output (1 ~ 5 V) (0.6 ~ 5 V only positive)



KP47□ - 04 - □

2PNP + output



Ordering Information

K P 4 7 C - 0 1 - F 1

Pressure Range

C : Compound pressure (-103.0 ~ 103.0 kPa)
V : Vacuum pressure (10.0 ~ -103.0 kPa)
P : Positive pressure (-0.103 ~ 1.030 MPa)
S : Micro-pressure (-10.00 ~ 10.00 kPa)

Output Specifications

01 : 1 NPN output + Analog output (1 ~ 5 V)
02 : 2 NPN output
03 : 1 PNP output + Analog output (1 ~ 5 V)
04 : 2 PNP output

Pressure Port

F1 : R1/8", M5
F2 : NPT1/8", #10-32UNF
F3 : G1/8" (BSPP), M5
M5 : M5 female thread

Optional Parts

BT-22 : Mounting bracket
BT-23 : Mounting bracket
PA-C : Panel adapter
PA-D : Panel adapter + Front protective lid

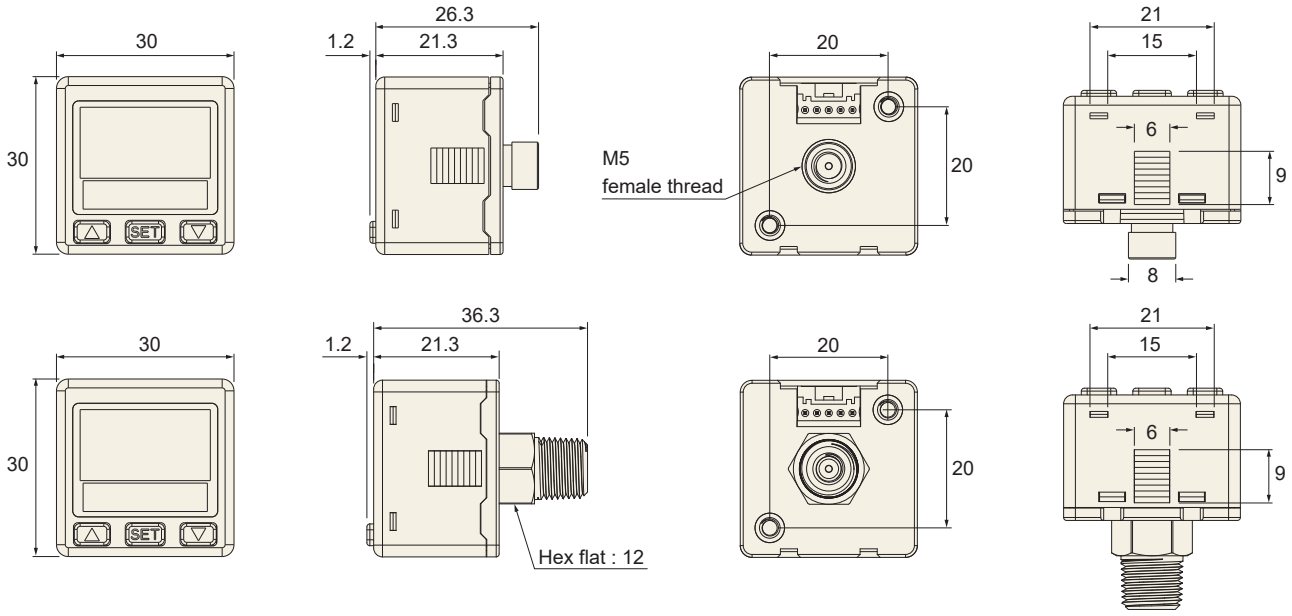
Optional Parts

- Mounting Bracket : BT-22 / BT-23

- Panel Adapter : PA-C

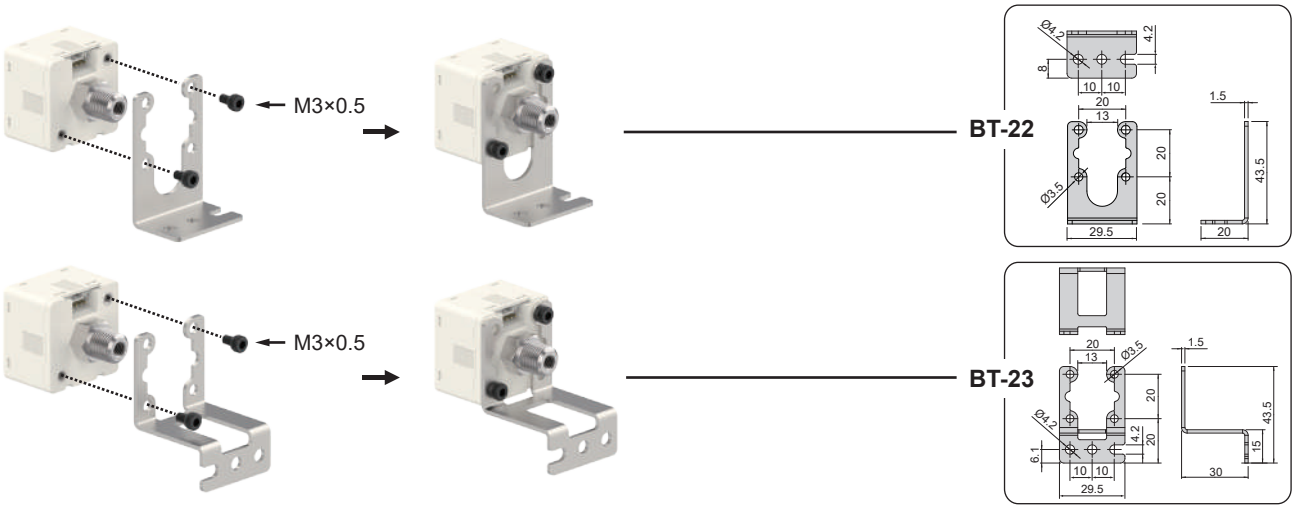
- Panel Adapter + Front Protective Lid : PA-D

Dimensions

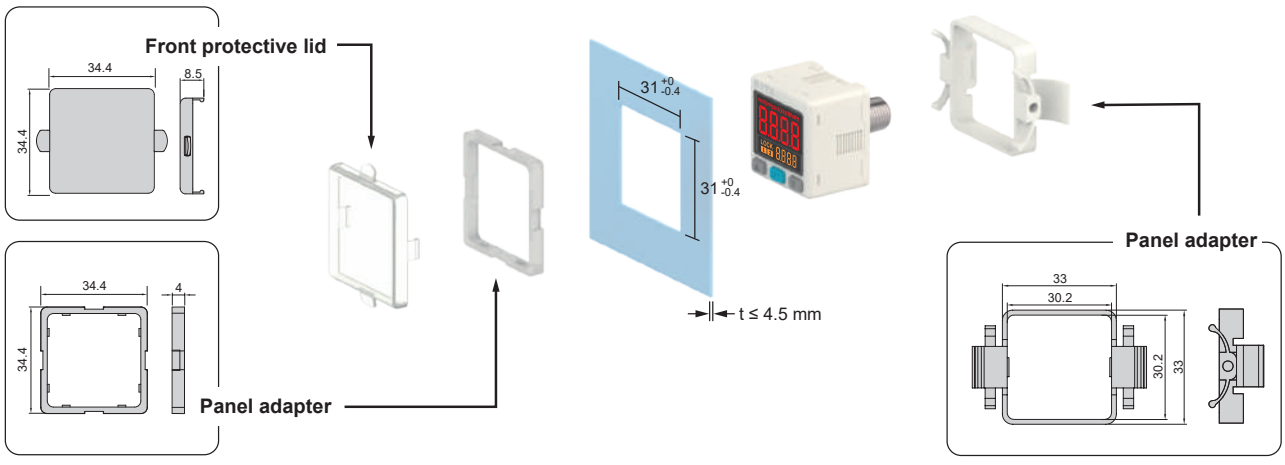


Optional Parts Dimensions

1 Mounting Bracket



2 Panel Mount Adapter + Front Protective Lid



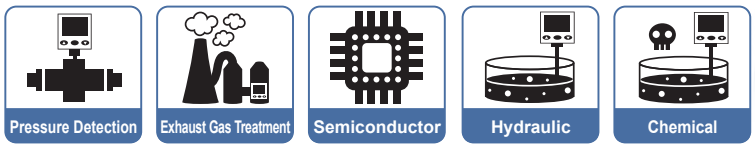
Unit : mm

KP50E SERIES

Pneumatic, Hydraulic Pressure Sensor (Multi-Medium)

Features

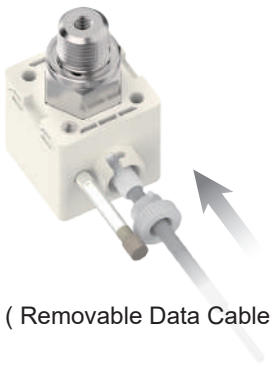
- **Corrosive fluid or gas available (in the pipeline)**
- **Sensor parts & Fitting parts : SUS316L**
- **2-color digital LCD display**
- **Copy function**
- **Selectable pressure unit :**
  kPa, MPa, kgf / cm², bar, psi, inHg
- **IP65 enclosure**



Features Highlight

1 Quick Installation

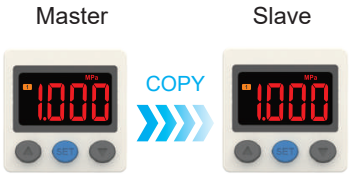
- Save installation time
- Easy removal



(Removable Data Cable)

2 Copy Setting

- Avoid setting errors
- Reduce setting time



(Original Parameter) (Copied)

3 Easy Unit Identification

- Unit conversion easy to read

4 Applicable for Corrosive Fluid or Gas

- Sensor parts & Fitting parts are SUS316L, applicable for corrosive fluid or gas equipment

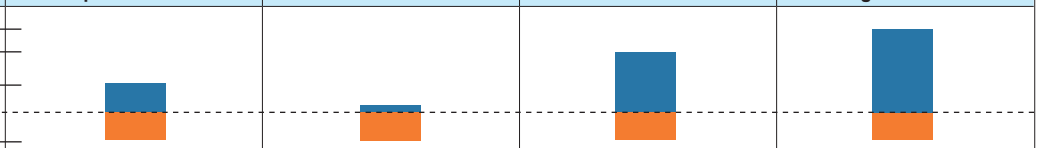
5 2-Color Display

- User selectable color mode, for different conditions use

	SoG	Sor	Grn	rEd
ON	Green	Red	Green	Red
OFF	Red	Green	Green	Red

6 IP65 Compliance

Specifications

MODEL		KP50EC	KP50EV	KP50EP	KP50EH
		Compound Pressure	Vacuum Pressure	Positive Pressure	High Pressure
2.00 MPa 1.000 MPa 100.0 kPa 0 -101.3 kPa					
Rated Pressure Range		-100.0 ~ 100.0 kPa	0.0 ~ -101.3 kPa	0.000 ~ 1.000 MPa	0.000 ~ 2.00 MPa
Set Pressure Range		-101.0 ~ 101.0 kPa	10.0 ~ -101.3 kPa	-0.100 ~ 1.000 MPa	-0.100 ~ 2.00 MPa
Withstand Pressure		300 kPa		3 MPa	
Fluid		Fluid or air that will not corrode SUS316L			
Sealed Liquid		Silicone oil			
Set Pressure Resolution	kPa	0.1		-	-
	MPa	-		0.001	0.001 (~1.999) 0.01 (2.00~)
	kgf / cm²	0.001		0.01	0.01 (~19.99) 0.1 (20.0~)
	bar	0.001		0.01	0.01 (~19.99) 0.1 (20.0~)
	psi	0.01		0.1	0.1 (~199.9) 1 (200~)
	inHg	0.1		-	-
Power Supply Voltage		12 ~ 24 V DC ± 10 %, Ripple (P-P) ≤ 10 %			
Current Consumption		≤ 40 mA (with no load)			
Switch Output		2 NPN open collector outputs Max. Load Current : 125 mA Max. Supply Voltage : 30 V DC Residual Voltage : ≤ 1.5 V		2 PNP open collector outputs Max. Load Current : 125 mA Max. Supply Voltage : 24 V DC Residual Voltage : ≤ 1.5 V	
Repeatability		± 0.3 % F.S. ± 1 digit			
Hysteresis	One point set mode	Adjustable ※1			
	Hysteresis mode				
	Window comparator mode				
Response Time		≤ 2.5 ms (Chattering-proof function : 25 ms, 100 ms, 250 ms, 500 ms, 1000 ms and 1500 ms selectable)			
Output Short Circuit Protection		Yes			
Display		3 ½ digital, 7 segment LCD display (Red / Green / Orange) (Sampling rate : 5 times / sec.)			
Indicator Accuracy		± 2 % F.S. ± 1 digit (Ambient temperature : 25 ± 3 °C)			
Switch on Indicator		Orange Indicator 1 : OUT1 & Orange Indicator 2 : OUT2			
Analog Output (Voltage Output)		Output Voltage : 1 ~ 5 V ± 2.5 % F.S. (within rated pressure range) Linearity : ± 1 % F.S. Output Impedance : about 1 kΩ			
Analog Output (Current Output)		Output Current : 4 ~ 20 mA ± 2.5 % F.S. (within rated pressure range) Linearity : ± 1 % F.S. Max. Load Impedance : 250 Ω at power supply of 12 V, 600 Ω at power supply of 24 V Min. Load Impedance : 50 Ω			
Environment	Enclosure	IP65 ※2			
	Ambient Temp. Range	Operation : 0 ~ 50 °C ; Storage : -10 ~ 60 °C (No condensation or freezing)			
	Ambient Humidity Range	Operation / Storage : 35 ~ 85 % RH (No condensation)			
	Withstand Voltage	250 V AC in 1-min (between case and lead wire)			
	Insulation Resistance	≥ 50 MΩ (at 500 V 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	100 m/s² (10 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 ※3		F1 : R1/4", M5 ; F2 : NPT1/4", #10-32 UNF ; F3 : G1/4" (BSPP), M5 ; F1C : Rc1/8"			
Lead Wire		Ø4 Oil-resistance cable (PVC) - 26 AWG (0.15 mm²) - 5 cores			
Weight (with 2 meter lead wire)		Approx. 110 g (Rear ported) ; Approx. 150 g (Bottom ported)			

NOTE

※1 : Hysteresis value is adjustable within 1 ~ 8 digits for one point set mode and window comparator mode.

※2 : Dustproof protector must be installed to maintain IP65.

※3 : G port O-Ring material is NBR. if any special request, please contact KITA.

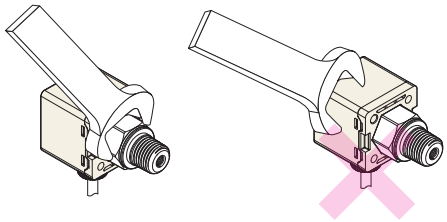
KP50E SERIES

Pneumatic, Hydraulic Pressure Sensor (Multi-Medium)

Panel Description

Installation Precautions

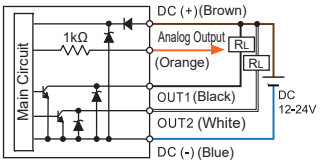
- When mounting, always use the wrench on the metallic area near the pressure port. Never apply a wrench to the plastic body, it will damage the sensor.
- Over tightening may cause damage to the port thread, mounting bracket and pressure sensor. Under tightening may result loosen or leakage.
- Apply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



Circuit Wiring Diagrams

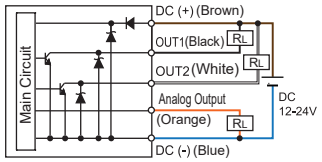
KP50E□ - 010 - □

2NPN + Analog Output (1 ~ 5 V)



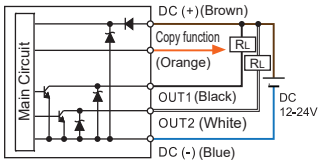
KP50E□ - 011 - □

2NPN + Analog Output (4 ~ 20 mA)



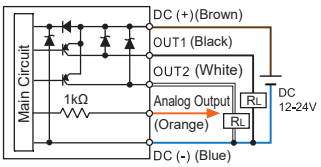
KP50E□ - 02 - □

2NPN + Copy Function



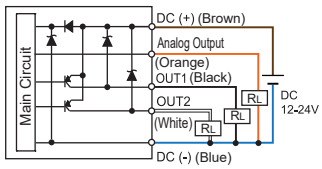
KP50E□ - 030 - □

2PNP + Analog Output (1 ~ 5 V)



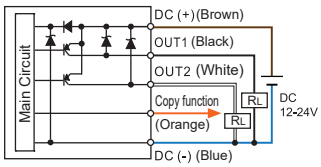
KP50E□ - 031 - □

2PNP + Analog Output (4 ~ 20 mA)



KP50E□ - 04 - □

2PNP + Copy Function



Ordering Information

K P 5 0 E H - 0 1 0 - F 1 □

Pressure Range

H : High pressure
(-0.100 ~ 2.00 MPa)
C : Compound pressure
(-101.0 ~ 101.0 kPa)
V : Vacuum pressure
(10.0 ~ -101.3 kPa)
P : Positive pressure
(-0.100 ~ 1.000 MPa)

Output Specifications

010 : 2 NPN Output & Analog Output (1 ~ 5 V)
011 : 2 NPN Output & Analog Output (4 ~ 20 mA)
02 : 2 NPN Output & Copy Function
030 : 2 PNP Output & Analog Output (1 ~ 5 V)
031 : 2 PNP Output & Analog Output (4 ~ 20 mA)
04 : 2 PNP Output & Copy Function

Pressure Port

F1 : R1/4", M5
F2 : NPT1/4", #10-32UNF
F3 : G1/4" (BSPP), M5
F1C : Rc1/8" (only with rear ported)

Piping Direction

Blank : Rear ported
L : Bottom ported

Optional Parts

BT-10 : Mounting bracket
BT-11 : Mounting bracket
PA-E : Panel adapter
PA-F : Panel adapter + Front protective lid
I-0360 : Snubber (for Pressure Port F1 & F3)
I-0379 : Snubber (for Pressure Port F2)
※ KP50EP & KP50EH suggested to select a snubber

Optional Parts

- Mounting Bracket : BT-10 / BT-11
- Panel Adapter : PA-E
- Panel Adapter + Front Protective Lid : PA-F
- Snubber

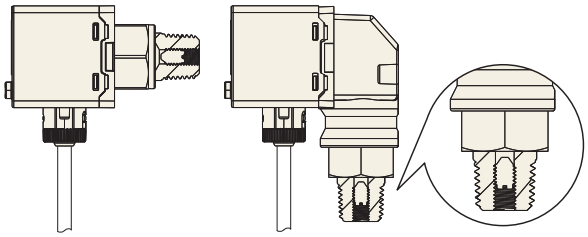
I-0360 : for Pressure Port F1 & F3
I-0379 : for Pressure Port F2

Removable Snubber Installed

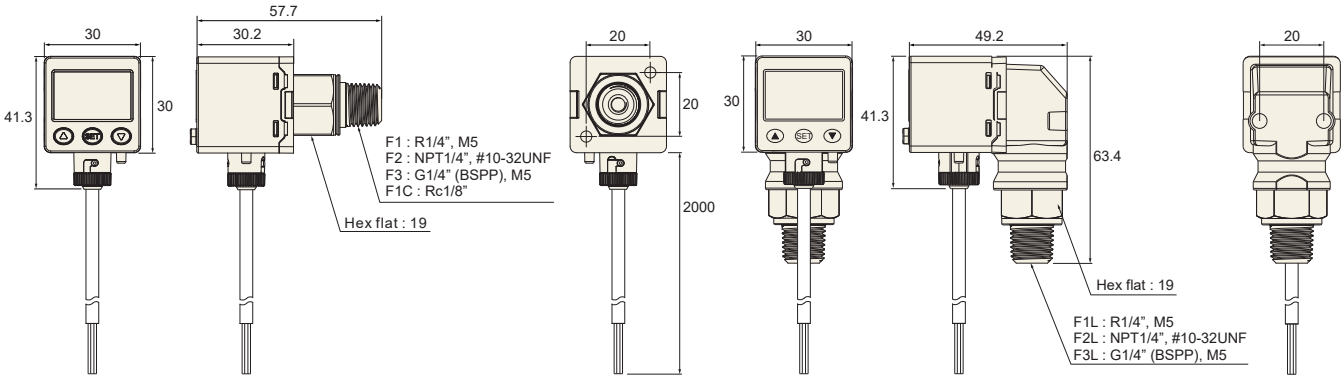
- Pressure port equipped with snubber can avoid damage caused by sudden pressure surge of water or oil, improve product durability.

※ When snubber is clogged with contaminants, please use a flat head screwdriver to remove the snubber, clean and reinstall.

※ A snubber is not applied to F1C port.

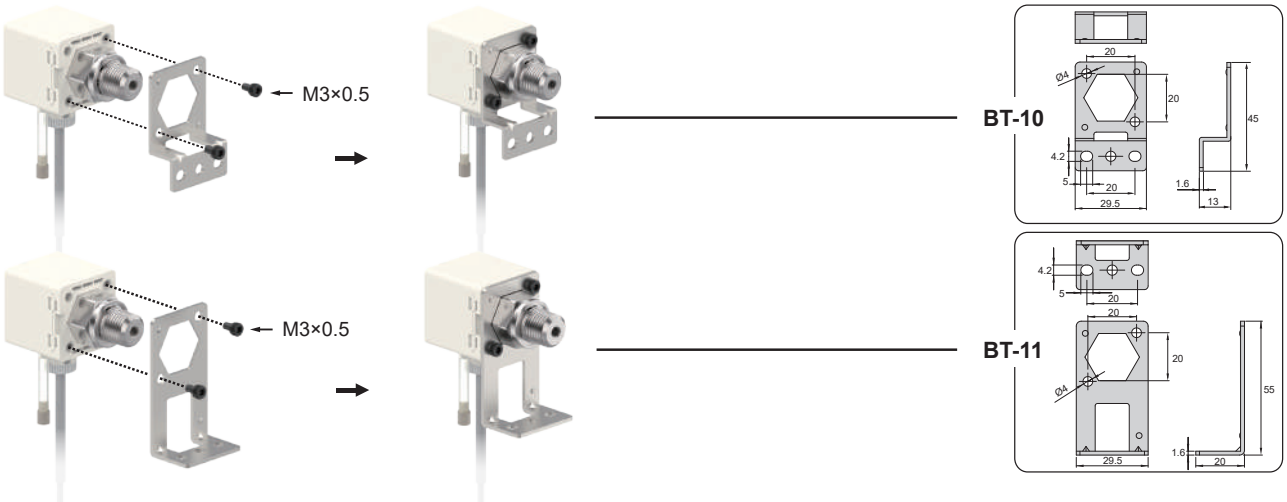


Dimensions

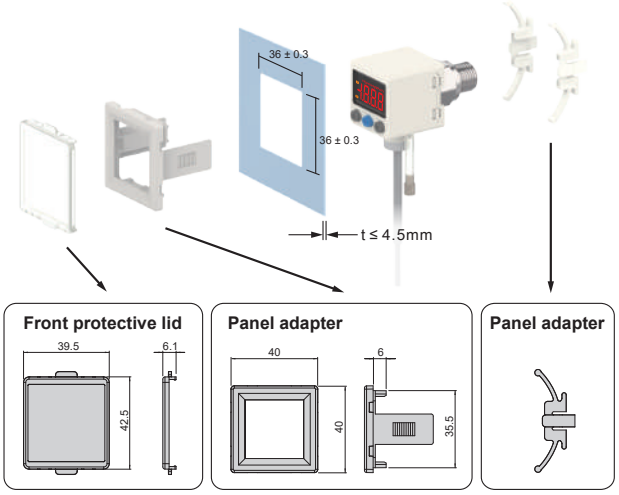


Optional Parts Dimensions

1 Mounting Bracket



2 Panel Mount Adapter + Front Protective Lid



3 IP65 Protector

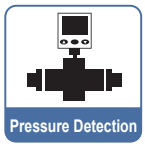
Caution :
This device must be installed to maintain IP65 (Dust and splash proof) enclosure rating.

Unit : mm

KP60 SERIES Battery Pressure Gauge

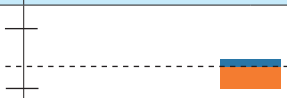
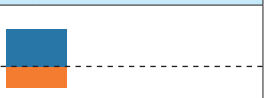
Features

- Digital pressure gauge with battery power
- Selectable pressure unit :
  kPa, MPa, kgf / cm², bar, psi, mmHg
- Power save function
- Battery meter displayed on LCD
- Backlight type available
- IP65 enclosure



Battery Meter

Specifications

MODEL		KP60V	KP60VL	KP60P	KP60PL
		Vacuum Pressure		Positive Pressure	
1.000 MPa 0 -101 kPa					
Rated Pressure Range		0 ~ -101 kPa		0.000 ~ 1.000 MPa	
Display Pressure Range		10 ~ -101 kPa		-0.100 ~ 1.000 MPa	
Withstand Pressure		300 kPa		1.5 MPa	
Applicable Fluid		Filtered air, Non-corrosive / Non-flammable gas			
Pressure Resolution	kPa	1		-	
	MPa	-		0.001	
	kgf / cm²	-		0.01	
	bar	0.01		0.01	
	psi	0.1		0.1	
	mmHg	1		-	
Battery		CR 2032 lithium			
Back Light		No	Yes	No	Yes
Battery Life		3 years (5 times / day)	1 year (5 times / day)	3 years (5 times / day)	1 year (5 times / day)
Low-Power Indicator		Yes			
Battery Replaceable		Yes			
Turn-On Interval		Display turn off after 60 sec.			
Sampling Rate		2 Hz (2 times / sec.)			
Programmable Pressure Unit		psi, bar, mmHg, kPa		psi, bar, kgf / cm², MPa	
Repeatability		± 1 % F.S. ± 1 digit		± 0.2 % F.S. ± 1 digit	
Display		3 ½ digital, 7 segment LCD display (Black)			
Indicator Accuracy		± 2 % F.S. ± 1 digit (Ambient temperature : 25 ± 3 °C)			
Environment	Enclosure	IP65 ※1			
	Ambient Temp. Range	Operation : 0 ~ 50 °C ; storage : -10 ~ 60 °C (No condensation or freezing)			
	Ambient Humidity Range	Operation / Storage : 35 ~ 85 % RH (No condensation)			
	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	100 m/s² (10 G), 3 times each in direction of X, Y and Z			
Temperature Characteristic		± 2 % F.S. of detected pressure (25 °C) at temp. (Range of 0 ~ 50 °C)			
Port Size		F1 : R1/8", M5 ; F2 : NPT1/8", #10-32 UNF ; F3 : G1/8" (BSPP), M5 F4 : R1/4", M5 ; F5 : NPT1/4", #10-32 UNF ; F6 : G1/4" (BSPP), M5			
Weight		Approx. 40 g			

NOTE
※1 : Air tube must be installed to maintain IP65.

Ordering Information

K P 6 0 P □ - F 1

Pressure Range

V : Vacuum pressure
(10 ~ -101 kPa)
P : Positive pressure
(-0.100 ~ 1.000 MPa)

Back Light

Blank : Back light unavailable
L : Back light available

Pressure Port

F1 : R1/8", M5
F2 : NPT1/8", #10-32 UNF
F3 : G1/8" (BSPP), M5
F4 : R1/4", M5
F5 : NPT1/4", #10-32 UNF
F6 : G1/4" (BSPP), M5

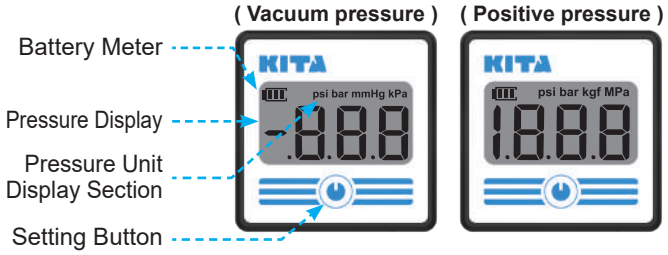
Optional Parts

BT-5 : Mounting bracket
BT-6 : Mounting bracket
PA-C : Panel adapter
PA-D : Panel adapter + Front protective lid

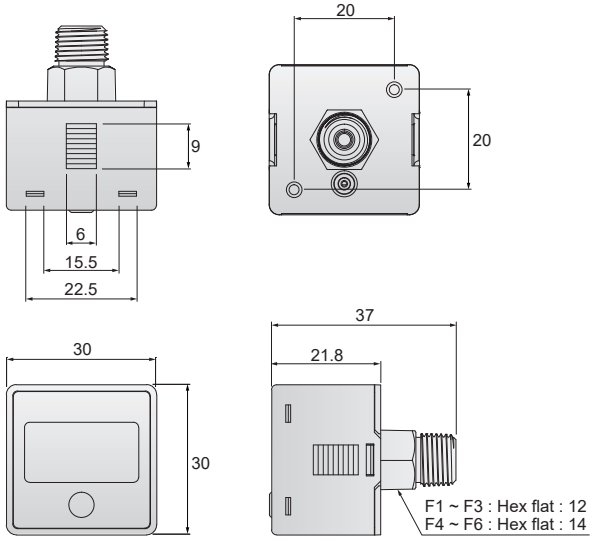
Optional Parts

- Mounting Bracket : BT-5 / BT-6
- Panel Adapter : PA-C
- Panel adapter + Front protective lid : PA-D

Panel Description

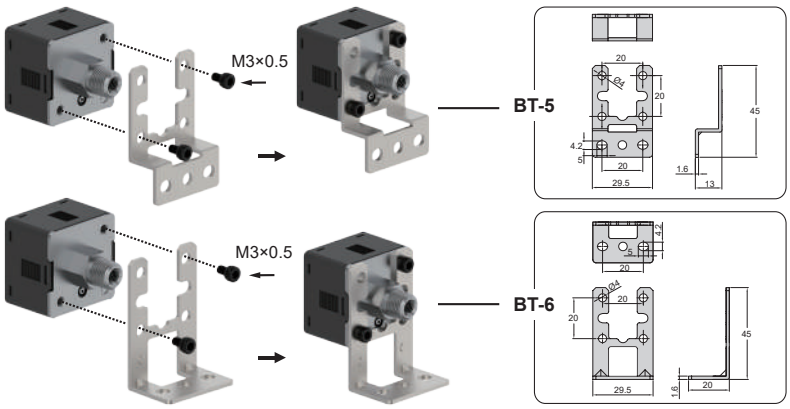


Dimensions

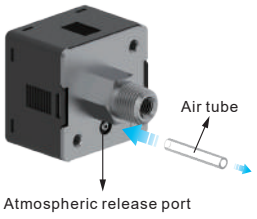


Optional Parts Dimensions

1 Mounting Bracket



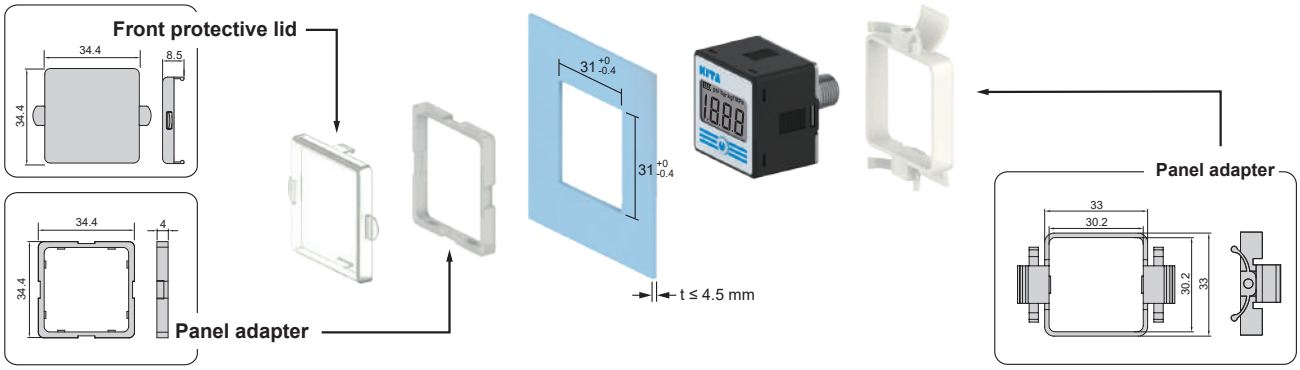
3 IP65 Protector



Caution :

1. To maintain IP65, please insert an air tube (O.D. : 4 mm) into atmospheric release port and pipe the other end away from dust / spattering liquid environment.
2. Use proper air tube dimension of O.D. : 4 mm, I.D. : 2.5 mm, and the length is depending on the user's environment.

2 Panel Mount Adapter + Front Protective Lid

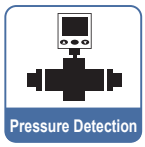


Unit : mm

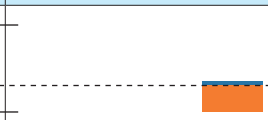
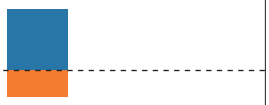
KP61 SERIES Pressure Gauge

Features

- Digital pressure gauge
- Setting pressure range :
  Vacuum pressure (10 ~ -101 kPa)
  Positive pressure (-0.100 ~ 1.000 MPa)
- Selectable pressure unit :
  kPa, MPa, kgf / cm², bar, psi
- IP65 enclosure



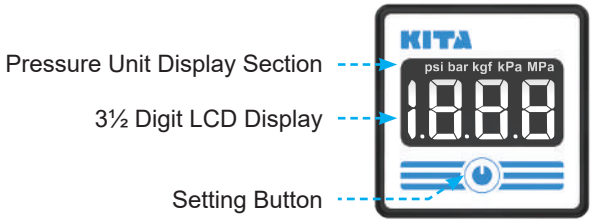
Specifications

MODEL		KP61V	KP61P
		Vacuum Pressure	Positive Pressure
1.000 MPa 0 -101 kPa			
Rated Pressure Range		0 ~ -101 kPa	0.000 ~ 1.000 MPa
Display Pressure Range		10 ~ -101 kPa	-0.100 ~ 1.000 MPa
Withstand Pressure		300 kPa	1.5 MPa
Applicable Fluid		Filtered air, Non-corrosive / Non-flammable gas	
Pressure Resolution	kPa	1	-
	MPa	-	0.001
	kgf / cm²	0.01	0.01
	bar	0.01	0.01
	psi	0.1	0.1
Power Supply Voltage		12 ~ 28 V DC ± 10 %, Ripple (P-P) ≤ 10 %	
Current Consumption		10 mA	
Sampling Rate		2 Hz (2 times / sec.)	
Repeatability		± 1 % F.S. ± 1 digit	± 0.2 % F.S. ± 1 digit
Display		3 ½ digital, 7 segment LCD display (White)	
Indicator Accuracy		± 2 % F.S. ± 1 digit (Ambient temperature : 25 ± 3 °C)	
Environment	Enclosure	IP65 ※1	
	Ambient Temp. Range	Operation : 0 ~ 50 °C ; storage : -10 ~ 60 °C (No condensation or freezing)	
	Mbient Humidity Range	Operation / Storage : 35 ~ 85 % RH (No condensation)	
	Withstand Voltage	1000 V AC in 1-min (between case and lead wire)	
	Insulation Resistance	≥ 50 MΩ (at 500 V 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	100 m/s² (10 G), 3 times each in direction of X, Y and Z	
Temperature Characteristic		± 2 % F.S. of detected pressure (25 °C) at temp. (Range of 0 ~ 50 °C)	
Port Size		F1 : R1/8", M5 ; F2 : NPT1/8", #10-32 UNF ; F3 : G1/8" (BSPP), M5	
Lead Wire		Ø2.8 Oil-resistance cable (PVC) - 26 AWG (0.15 mm²) - 2 cores	
Weight		Approx. 60 g (with 2 meter lead wire) ; Approx. 40 g (with M8 4Pin male connector)	

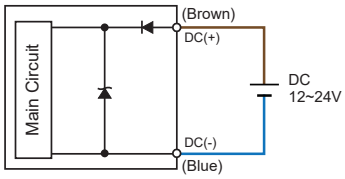
NOTE
※1 : Air tube must be installed to maintain IP65.

RoHS

Panel Description



Circuit Wiring Diagram



※ Pressure display only, no switch output function.

Ordering Information

K P 6 1 P - F 1 - ☐

Pressure Range

V : Vacuum pressure (10 ~ -101 kPa)
P : Positive pressure (-0.100 ~ 1.000 MPa)

Cable Length / Connector

Blank : With 2 meter cable
QD : With M8 4Pin male connector

Optional Parts

BT-5 : Mounting bracket
BT-6 : Mounting bracket
PA-C : Panel adapter
PA-D : Panel adapter + Front protective lid

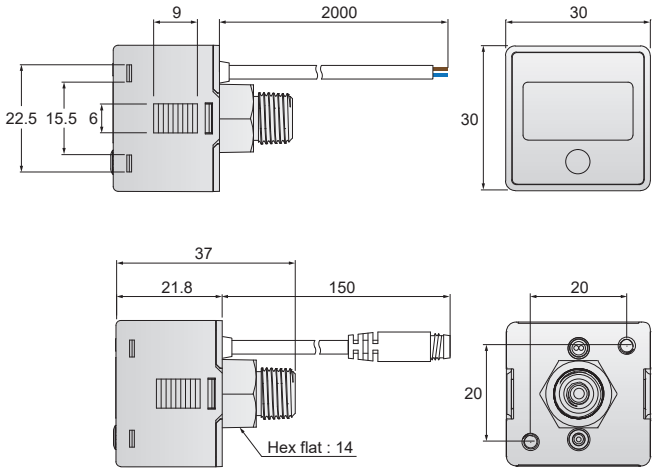
Pressure Port

F1 : R1/8", M5
F2 : NPT1/8", #10-32 UNF
F3 : G1/8" (BSPP), M5

Optional Parts

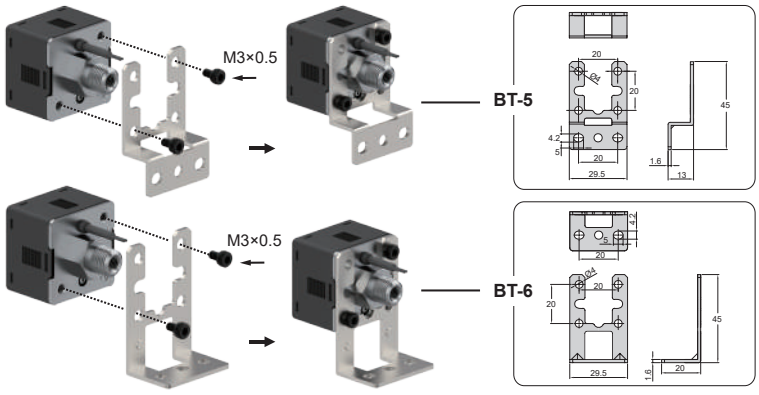
- Mounting Bracket : BT-5 / BT-6
- Panel Adapter : PA-C
- Panel adapter + Front protective lid : PA-D

Dimensions

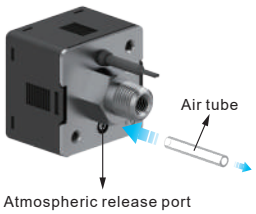


Optional Parts Dimensions

1 Mounting Bracket



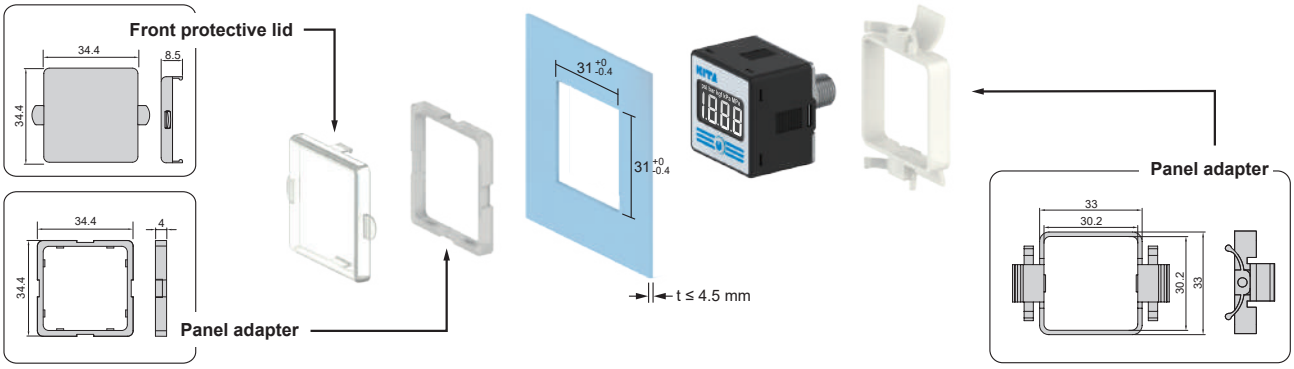
3 IP65 Protector



Caution :

1. To maintain IP65, please insert an air tube (O.D. : 4 mm) into atmospheric release port and pipe the other end away from dust / spattering liquid environment.
2. Use proper air tube dimension of O.D. : 4 mm, I.D. : 2.5 mm, and the length is depending on the user's environment.

2 Panel Mount Adapter + Front Protective Lid

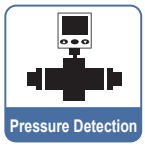


Unit : mm

KP62 SERIES Digital Pressure Gauge

Features

- Digital pressure gauge with battery power
- Gauge case & fitting parts: SUS304
- Corrosive fluid or gas available (in the pipeline)
- Selectable pressure unit :
  kPa, MPa, PSI, kgf / cm², Bar, mBar,
  mH_2O, inH_2O, inHg, Torr, mmHg
- High Precision : 0.5 % F.S.



Battery Meter

Specifications

MODEL		KP62C	KP62H02	KP62H06	KP62H10	KP62H25	KP62H40
		Compound Pressure	High Pressure				
Rated Pressure Range		-100 ~ 100 kPa	-0.1 ~ 2.5 MPa	0 ~ 6 MPa	0 ~ 10 MPa	0 ~ 25 MPa	0 ~ 40 MPa
Withstand Pressure		500 kPa	3 MPa	7.2 MPa	12 MPa	30 MPa	48 MPa
Fluid		Fluid or air that will not corrode SUS304 and fluororubber (FKM)					
Set Pressure Resolution	kPa	0.1	1	1	-	-	-
	MPa	-	0.001	0.001	0.01	0.01	0.01
	PSI	0.01	0.1	0.1	1	1	1
	kgf / cm²	0.001	0.01	0.01	0.1	0.1	0.1
	Bar	0.001	0.01	0.01	0.1	0.1	0.1
	mBar	1	-	-	-	-	-
	mH_2O	0.01	0.1	0.1	1	1	1
	inH_2O	0.1	-	-	-	-	-
	inHg	0.01	0.1	1	1	1	-
	Torr	0.1	-	-	-	-	-
	mmHg	0.1	-	-	-	-	-
Battery		2 × 1.5 V AAA (no batteries included)					
Back Light		Yes					
Low-Power Indicator		Yes					
Peak Record		Yes					
Sampling Rate		3 times / sec.					
Display		4 digital, 7 segment LCD display (Black)					
Indicator Accuracy		± 0.5 % F.S.					
Environment	Enclosure	IP54 ※1					
	Working Fluid Temp.	-10 ~ 70 °C					
	Ambient Temp. Range	Operation : 0 ~ 50 °C ; storage : -10 ~ 60 °C (No condensation or freezing)					
	Ambient Humidity Range	Operation / Storage : 35 ~ 85 % RH (No condensation)					
	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	100 m/s² (10 G), 3 times each in direction of X, Y and Z					
Port Size		F1 : R1/4" ; F3 : G1/4"					
Weight		Approx. 350 g					

NOTE

※1 : Removing protective lid is IP50 enclosure.

Panel Description

Ordering Information

K P 6 2 C - F 1 - Y

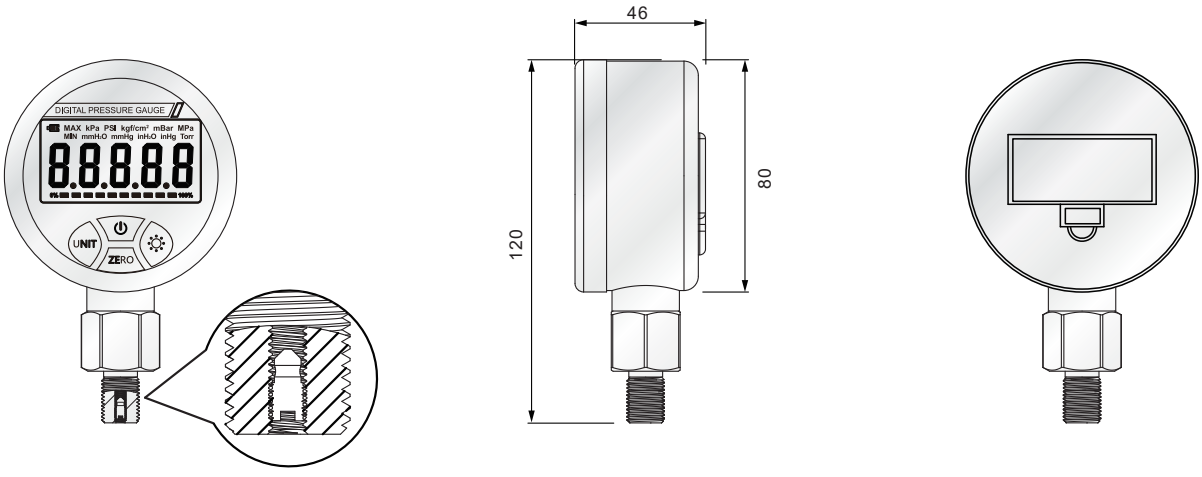
Pressure Range

C : Compound pressure (-100 ~ 100 kPa)
H02 : High pressure (-0.1 ~ 2.5 MPa)
H06 : High pressure (0 ~ 6 MPa)
H10 : High pressure (0 ~ 10 MPa)
H25 : High pressure (0 ~ 25 MPa)
H40 : High pressure (0 ~ 40 MPa)

Port Size

F1 : R1/4”
F3 : G1/4” (BSPP)

Dimensions



Pressure port equipped with snubber can avoid damage caused by sudden pressure surge of water or oil, improve product durability.

※1 : When snubber is clogged with contaminants, please use a flat head screwdriver to remove the snubber, clean and reinstall.

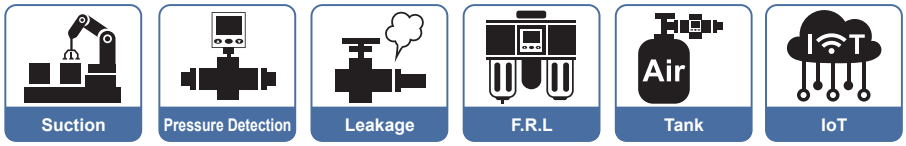
Unit : mm

KP70 SERIES IIoT Pressure Sensor

Features

- Smart pressure sensor
- Remote control
- Real-time monitoring
- RS485 Modbus RTU / ASCII
- 4 digits, 7 segment LCD display

Patented RS485 MODBUS CONTROL



Features Highlight

1 Station Setting Display

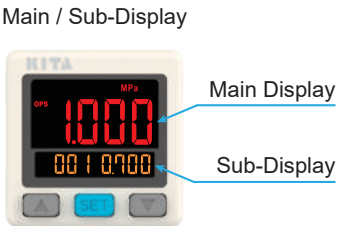
- Provide 0 ~ 255 station to set the sensor

2 Modes Display

- Three modes show on the screen

3 Setting Value Easy Indication

- User can easily observe the setting value from sub-display



4 Easy Unit Identification

- Unit conversion easy to read

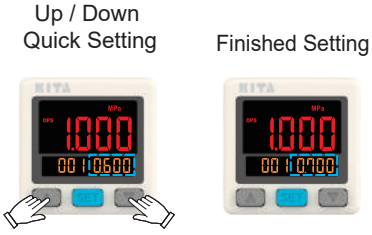
5 2-Color Main Display

- User selectable color mode, for different conditions use

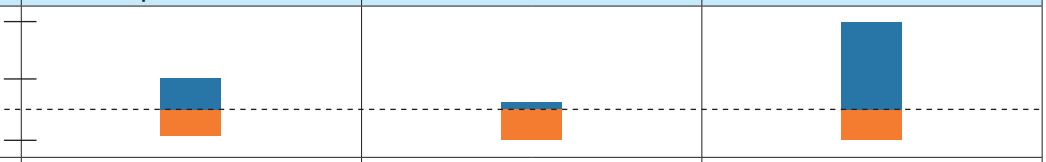
	SoG	Sor	Grn	rEd
ON	Green	Red	Green	Red
OFF	Red	Green	Green	Red

6 OPS Quick Setting

- Sub-display allows changing the parameter directly, reduce setting step by 3/4



Specifications

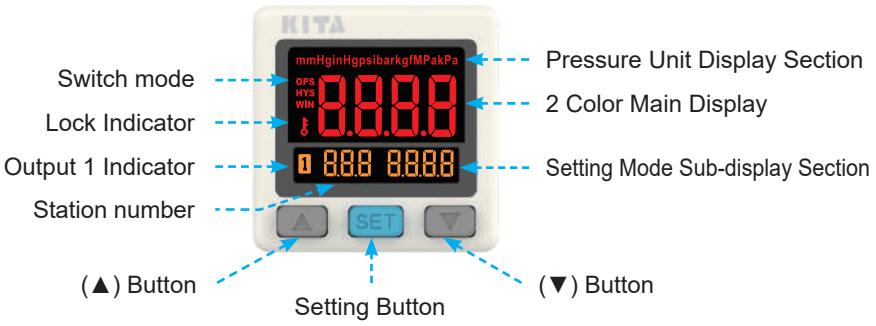
MODEL		KP70C	KP70V	KP70P
		Compound Pressure	Vacuum Pressure	Positive Pressure
1.000 MPa 100.0 kPa 0 -101.3 kPa				
Rated Pressure Range		-100.0 ~ 100.0 kPa	0.0 ~ -101.3 kPa	0.000 ~ 1.000 MPa
Set Pressure Range		-101.0 ~ 101.0 kPa	10.0 ~ -101.3 kPa	-0.100 ~ 1.000 MPa
Withstand Pressure		500 kPa		1.5 MPa
Fluid		Filtered air, Non-corrosive / Non-flammable gas		
Set Pressure Resolution	kPa	0.1		-
	MPa	-		0.001
	kgf / cm²	0.001		0.01
	bar	0.001		0.01
	psi	0.01		0.1
	inHg	0.1		-
	mmHg	1		-
Power Supply Voltage		12 ~ 24 V DC ± 10 %, Ripple (P-P) ≤ 10 %		
Current Consumption		≤ 40 mA (with no load)		
Switch Output		1 NPN open collector output Max. Load Current : 125 mA Max. Supply Voltage : 30 V DC Residual Voltage : ≤ 1.5 V		1 PNP open collector output Max. Load Current : 125 mA Max. Supply Voltage : 24 V DC Residual Voltage : ≤ 1.5 V
Repeatability		± 0.2 % F.S. ± 1 digit		
Hysteresis	One Point Set Mode	Adjustable ※1		
	Hysteresis Mode			
	Window Comparator Mode			
Response Time		≤ 2.5 ms (Chattering-proof function : 25 ms, 100 ms, 250 ms, 500 ms, 1000 ms, 1500 ms, 2000 ms and 5000 ms selectable)		
Output Short Circuit Protection		Yes		
Display		4 digital, 7 segment LCD display (Red / Green / Orange) (Sampling rate : 0.2, 0.5, 1 seconds / time selectable)		
Indicator Accuracy		± 2 % F.S. ± 1 digit (Ambient temperature : 25 ± 3 °C)		
Switch on Indicator		Orange Indicator 1 : OUT1		
Environment	Enclosure	IP40		
	Ambient Temp. Range	Operation : 0 ~ 50 °C ; Storage : -10 ~ 60 °C (No condensation or freezing)		
	Ambient Humidity Range	Operation / Storage : 35 ~ 85 % RH (No condensation)		
	Withstand Voltage	1000 V AC in 1-min (between case and lead wire)		
	Insulation Resistance	≥ 50 MΩ (at 500 V 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	100 m/s² (10 G), 3 times each in direction of X, Y and Z		
Temperature Characteristic		± 2.5 % F.S. of detected pressure (25 °C) at temp. (Range of 0 ~ 50 °C)		
Communication Interface		RS485		
Port Size		F1 : R1/8", M5 ; F2 : NPT1/8", #10-32 UNF ; F3 : G1/8" (BSPP), M5		
Lead Wire		Ø4 Oil-resistance cable (PVC) - 26 AWG (0.15 mm²) - 5 cores		
Weight (with 2 meter lead wire)		Approx. 80 g		

NOTE

※1 : Hysteresis value is adjustable within 1 ~ 8 digits for one point set mode and window comparator mode.

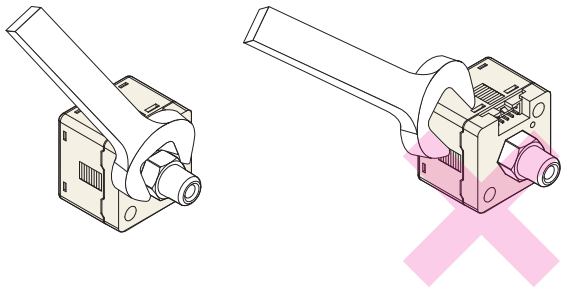
KP70 SERIES IIoT Pressure Sensor

Panel Description



Installation Precautions

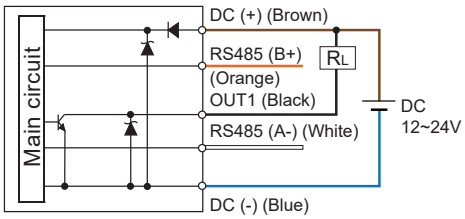
- When mounting, always use the wrench on the metallic area near the pressure port. Never apply a wrench to the plastic body, it will damage the sensor.
- Over tightening may cause damage to the port thread, mounting bracket and pressure sensor. Under tightening may result loosen or leakage.
- Apply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



Output Circuit Wiring Diagrams

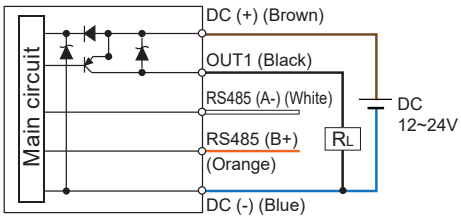
KP70□ - 02 - □

NPN Output + RS485



KP70□ - 04 - □

PNP Output + RS485



※ Wiring for RS485 MODBUS :
Please connect RS485 (B+) or (A-) before connecting power supply to avoid short circuit to damage to product.

Ordering Information

K P 7 0 C - 0 2 - F 1

Pressure Range

C : Compound pressure (-101.0 ~ 101.0 kPa)
V : Vacuum pressure (10.0 ~ -101.3 kPa)
P : Positive pressure (-0.100 ~ 1.000 MPa)

Output Specifications

02 : 1 NPN output + RS485
04 : 1 PNP output + RS485

Pressure Port

F1 : R1/8", M5
F2 : NPT1/8", #10-32UNF
F3 : G1/8" (BSPP), M5

Optional Parts

BT-12 : Mounting bracket
BT-13 : Mounting bracket
PA-C : Panel adapter
PA-D : Panel adapter + Front protective lid

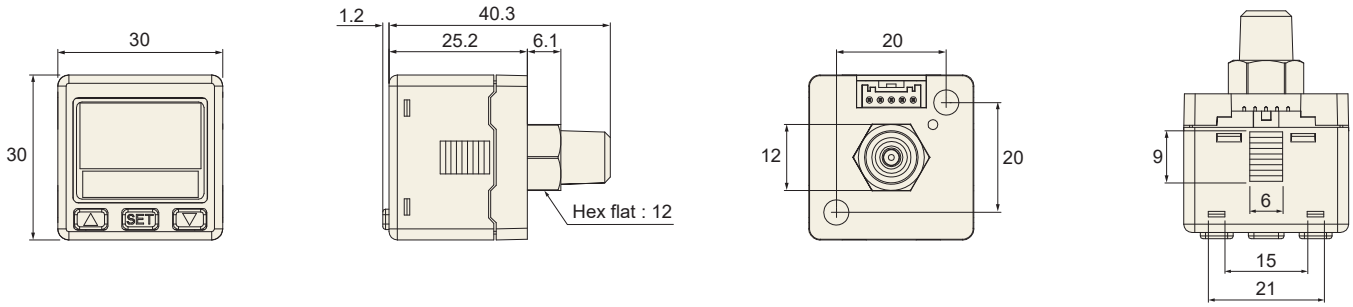
Optional Parts

- Mounting Bracket : BT-12 / BT-13

- Panel Adapter : PA-C

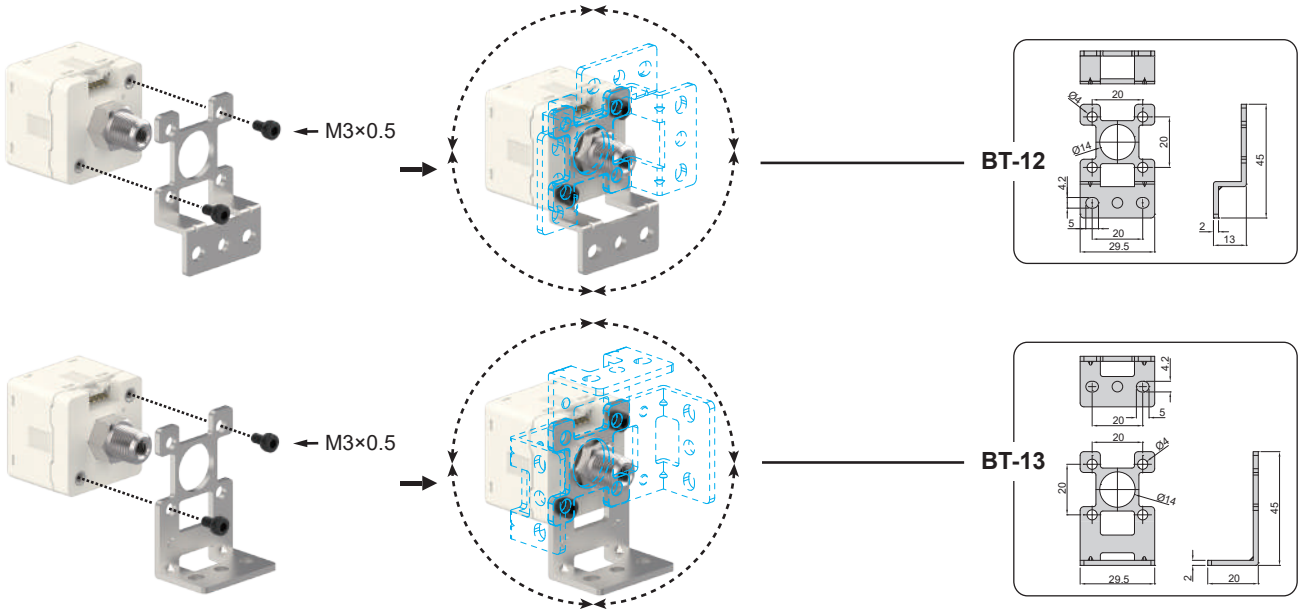
- Panel Adapter + Front Protective Lid : PA-D

Dimensions



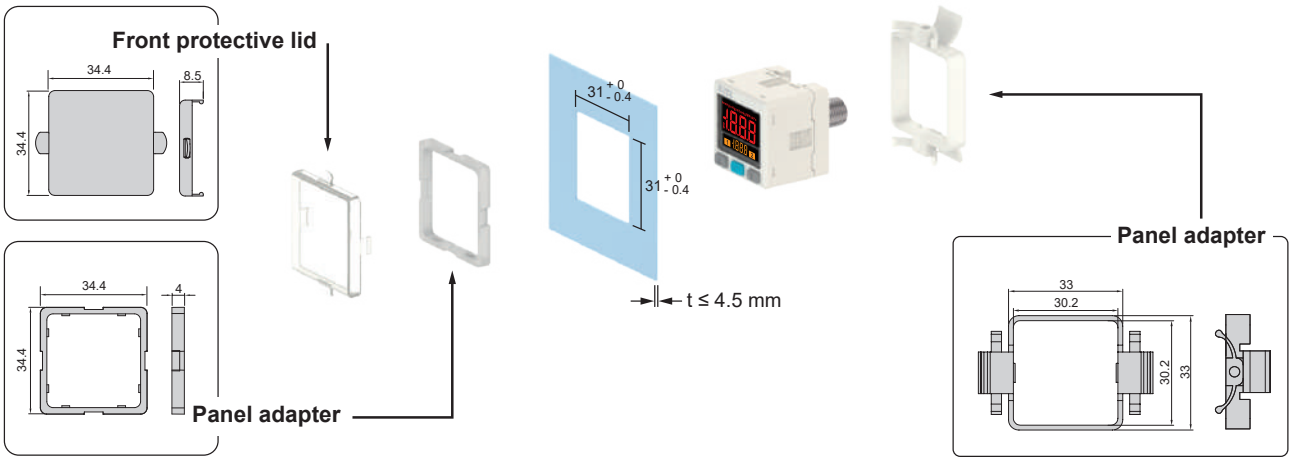
Optional Parts Dimensions

1 Mounting Bracket



4 mounting directions available

2 Panel Mount Adapter + Front Protective Lid



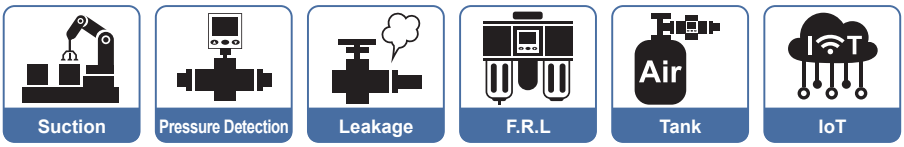
Unit : mm

KP72 SERIES IIoT Pressure Sensor

Features

- Smart pressure sensor
- Remote control
- Real-time monitoring
- Multiple output function
- Cost reduction
- IO-Link compatible

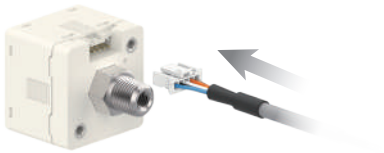
IO-Link



Features Highlight

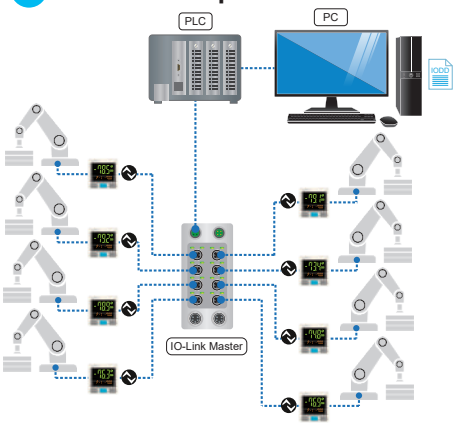
1 Quick Installation

- Save Installation Time
- Easy Removal



(Removable Data Cable)

2 IO-Link compatible



3 2-Color Main Display

- User selectable color mode, for different conditions use

	SoU	Sor	Grn	rEd
ON	Green	Red	Green	Red
OFF	Red	Green	Green	Red

IO-Link Specifications

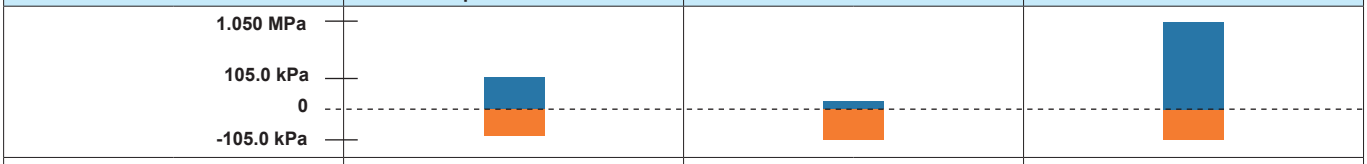
Type	Device
Version	V1.1 ※1
Communication Speed	COM2 (38.4 kbps)
Configuration File	IODD file ※2
Min. Cycle Time	3 ms
Process Data Length	Input Data : 2 byte (2 bit BDC ; 14 bit PDV) , Output Data : 0 byte
On Request Data Communication	Available
Data Storage Function	Available
Event Function	Available
Vendor ID	1254 (0x04E6)
Device ID	KP72V - ☐ : 170 (0x0000AA) KP72C - ☐ : 171 (0x0000AB) KP72P - ☐ : 172 (0x0000AC)

NOTE

※1 : IO-Link Interface and System Specification, V1.1.3, June 2019

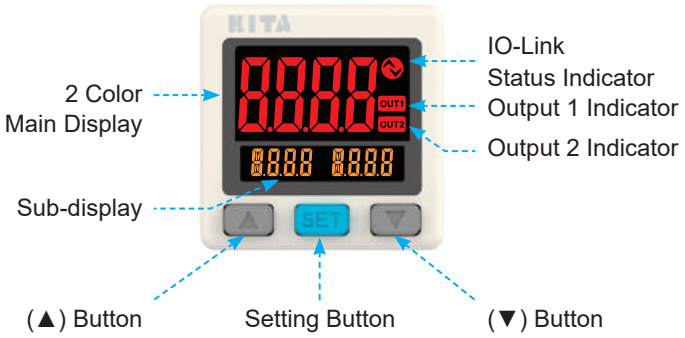
※2 : IO-Link device description (IODD) is available on KITA web site : www.kita.com.tw

Specifications

MODEL		KP72C	KP72V	KP72P
		Compound Pressure	Vacuum Pressure	Positive Pressure
				
Rated Pressure Range		-100.0 ~ 100.0 kPa	0.0 ~ -100.0 kPa	0.000 ~ 1.000 MPa
Set Pressure Range		-105.0 ~ 105.0 kPa	10.5 ~ -105.0 kPa	-0.105 ~ 1.050 MPa
Withstand Pressure		500 kPa		1.5 MPa
Fluid		Filtered air, Non-corrosive / Non-flammable gas		
Set Pressure Resolution	kPa	0.1		1
	MPa	-		0.001
	kgf / cm^2	0.001		0.01
	bar	0.001		0.01
	psi	0.01		0.1
	inHg	0.1		-
	mmHg	1		-
Power Supply Voltage		24 V DC, Ripple (P-P) ≤ 10 %		
Current Comsumption		≤ 35 mA (with no load)		
Switch Output		1 NPN open collector output Max. Load Current : 150 mA Max. Supply Voltage : 30 V DC Residual Voltage : ≤ 1 V (Load current 150 mA)		1 PNP open collector output Max. Load Current : 150 mA Max. Supply Voltage : 24 V DC Residual Voltage : ≤ 1 V (Load current 150 mA)
Repeatability		± 0.2 % F.S ± 1 digit		
Hysteresis	Hysteresis Mode	Adjustable		
	Window Comparator Mode			
Output Short Circuit Protection		Yes		
Display		Main Display : 4 digital, 7 segment LCD display (Red / Green) Sub Display : 4 digital, 1st digit 11 segment, 7 segment for other (Orange)		
Indicator Accuracy		± 2 % F.S ± 1 digit (Ambient temperature : 25 ± 3 °C)		
Switch on Indicator		Red Indicator 1, 2 : OUT1 or OUT2 ; Green Indicator 1, 2 : OUT1 or OUT2		
Analog Output (Voltage Output)		Output Voltage : 1 ~ 5 V or 0 ~ 10 V ± 2.5 % F.S (within rated pressure range) Linearity : ± 1.5 % F.S. Output Impedance : about 1 kΩ		
Analog Output (Current Output)		Output Current : 4 ~ 20 mA ± 2.5 % F.S (within rated pressure range) Linearity : ± 1.5 % F.S. Max. Load Impedance : 500 Ω		
Environment	Enclosure	IP40		
	Ambient Temp. Range	Operation : 0 ~ 50 °C ; Storage : -10 ~ 60 °C (No condensation or freezing)		
	Ambient Humidity Range	Operation / Storage : 35 ~ 85 % RH (No condensation)		
	Withstand Voltage	1000 V AC in 1-min (between case and lead wire)		
	Insulation Resistance	≥ 50 MΩ (at 500 V 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	100 m/s² (10 G), 3 times each in direction of X, Y and Z		
Temperature Characteristic		± 2 % F.S of detected pressure (25 °C) at temp. (Range of 0 ~ 50 °C)		
Port Size		F1 : R1/8", M5 ; F2 : NPT1/8", #10-32 UNF ; F3 : G1/8" (BSPP), M5		
Lead Wire		Ø4 PVC - 26 AWG (0.15 mm²) - 5 cores		
Weight		Approx. 80 g (with 2 meter lead wire) ; Approx. 52 g (with M12 4Pin male connector)		

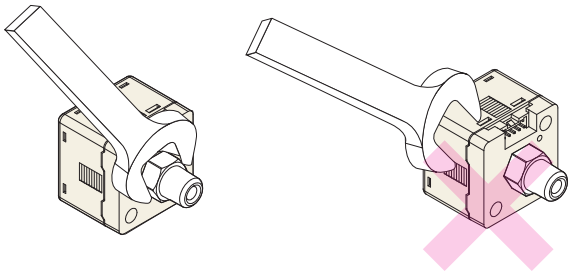
KP72 SERIES IIoT Pressure Sensor

Panel Description

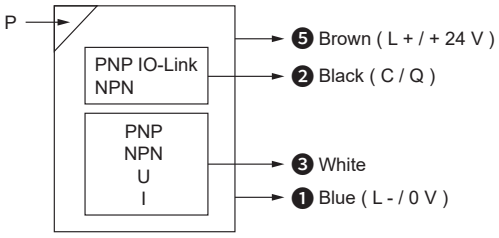


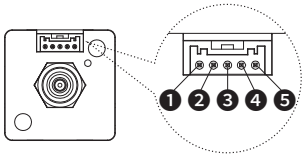
Installation Precautions

- 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 damage to the port thread, mounting bracket and pressure sensor. Under tightening may result loosen or leakage.
- Apply air pressure and power after installation, make necessary adjustments and inspect any possible signs of leakage to ensure proper installation.



Circuit Wiring Diagrams

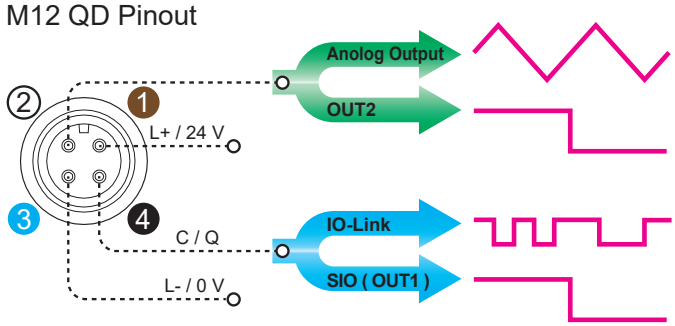




Pin No.	Line Color	Content
1	Blue	0 V
2	Black	Switch output OUT1 or IO-Link (C / Q Line)
3	White	Switch output OUT2 or analog output (1 ~ 5 V, 0 ~ 10 V, 4 ~ 20 mA)
4	Orange	Not Used
5	Brown	Operating voltage + 24 V DC

※ NPN/PNP of switch output can be switched.

• M12 QD Pinout



PIN No.	Line Color	Content
1	Brown	Operating voltage + 24 V DC
2	White	Switch output OUT2 or analog output (1 ~ 5 V, 0 ~ 10 V, 4 ~ 20 mA)
3	Blue	0 V
4	Black	Switch output OUT1 or IO-Link (C / Q Line)

※ NPN/PNP of switch output can be switched.

Ordering Information

K P 7 2 C - F 1 - □

Pressure Range

C : Compound pressure (-105.0 ~ 105.0 kPa)
V : Vacuum pressure (10.5 ~ -105.0 kPa)
P : Positive pressure (-0.105 ~ 1.050 MPa)

Pressure Port

F1 : R1/8", M5
F2 : NPT1/8", #10-32UNF
F3 : G1/8" (BSPP), M5

Cable Length / Connector

Blank : With 2 meter cable
QD : With M12, 4Pin male connector

Optional Parts

BT-12 : Mounting bracket
BT-13 : Mounting bracket
PA-C : Panel adapter
PA-D : Panel adapter + Front protective lid

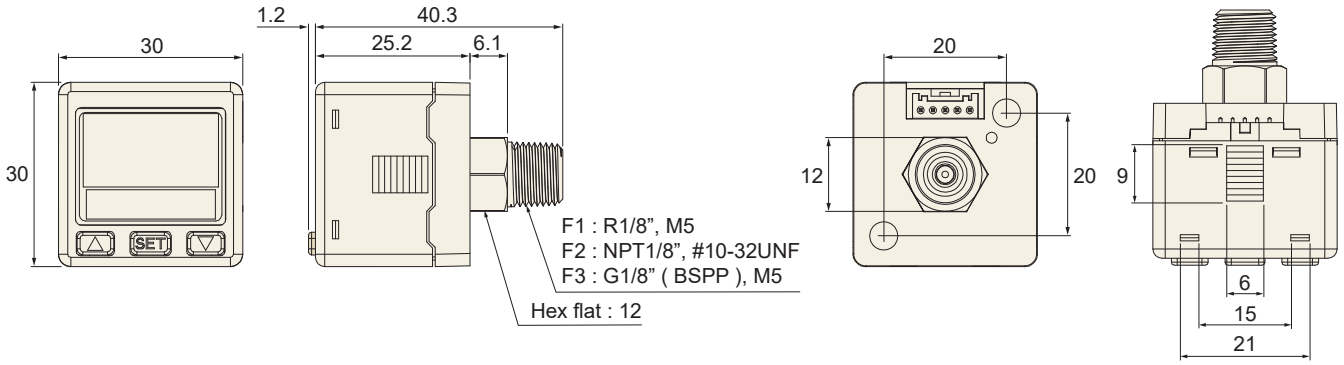
Optional Parts

- Mounting bracket : BT-12 / BT-13

- Panel adapter : PA-C

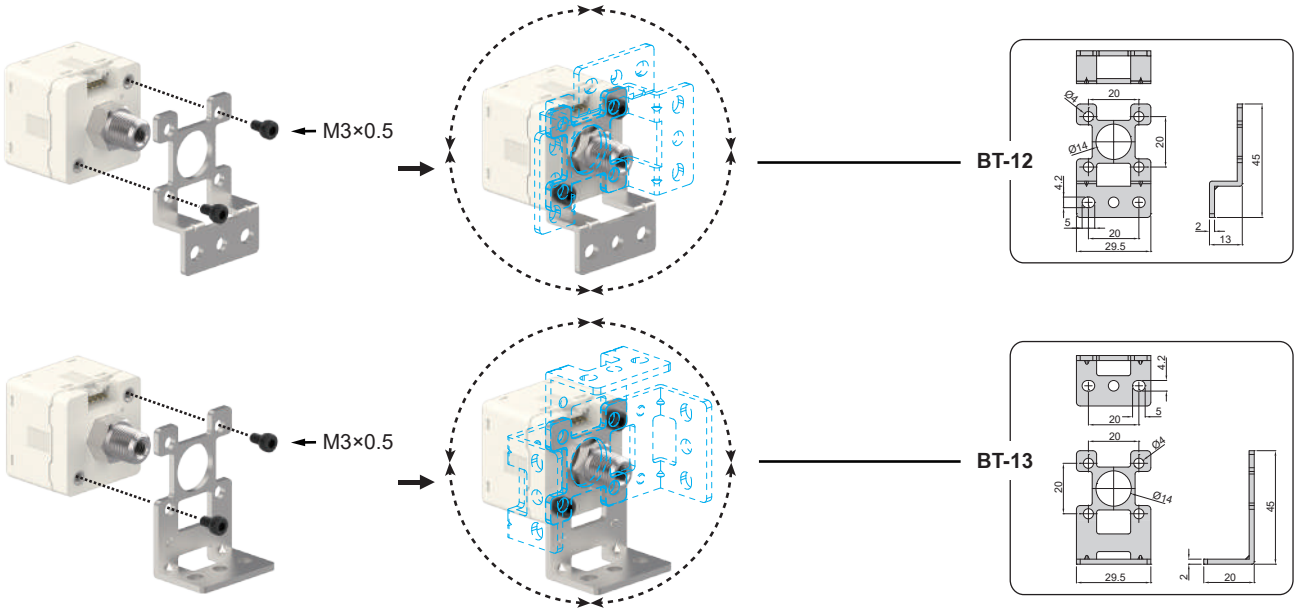
- Panel adapter + Front protective lid : PA-D

Dimensions



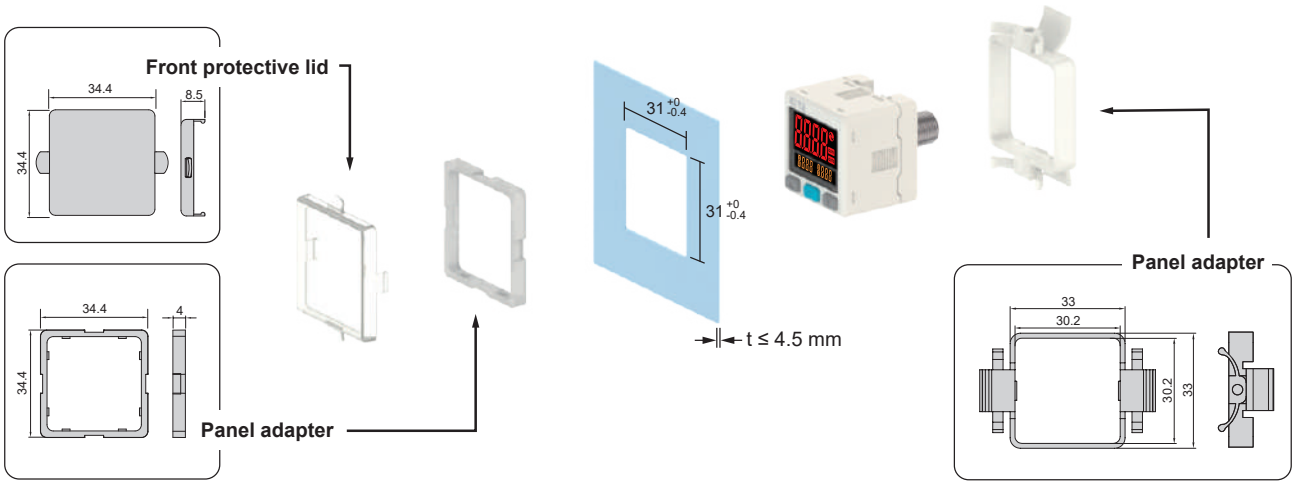
Optional Parts Dimensions

1 Mounting Bracket



4 mounting directions available

2 Panel Mount Adapter + Front Protective Lid



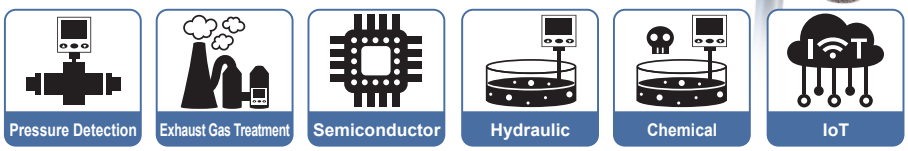
Unit : mm

KP75 SERIES

IIoT Pneumatic, Hydraulic Pressure Sensor (Multi-Medium)

Features

- Corrosive fluid or gas available (in the pipeline)
- Sensor parts & Fitting parts : SUS316L
- 2-color digital LCD display
- Remote control / Real-time monitoring
- RS485 Modbus RTU / ASCII
- 3½ digit, 7 segment LCD display
- IP65 enclosure

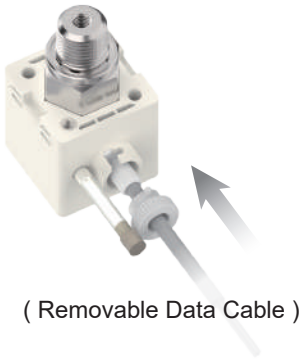


RS485 MODBUS CONTROL

Features Highlight

1 Quick Installation

- Save installation time
- Easy removal



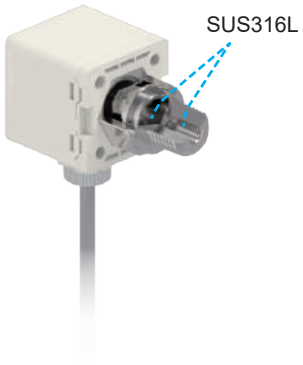
(Removable Data Cable)

2 Easy Unit Identification

- Unit conversion easy to read

3 Applicable for Corrosive Fluid or Gas

- Sensor parts & Fitting parts are SUS316L, applicable for corrosive fluid or gas equipment



4 2-Color Display

- User selectable color mode, for different conditions use

	SoG	Sor	Grn	rEd
ON	Green	Red	Green	Red
OFF	Red	Green	Green	Red

5 IP65 Compliance

Specifications

MODEL		KP75C Compound Pressure	KP75P Positive Pressure	KP75H02 High Pressure
2.000 MPa 100.0 kPa 0 -101.0 kPa				
Rated Pressure Range		-100.0 ~ 100.0 kPa	0.000 ~ 1.000 MPa	0.000 ~ 2.00 MPa
Set Pressure Range		-101.0 ~ 101.0 kPa	-0.100 ~ 1.000 MPa	-0.100 ~ 2.00 MPa
Withstand Pressure		300 kPa	3 MPa	
Fluid		Fluid or air that will not corrode SUS316L		
Sealed Liquid		Silicone oil		
Set Pressure Resolution	kPa	0.1	-	-
	MPa	-	0.001	0.001 (~ 1.999) 0.01 (2.00 ~)
	kgf / cm²	0.001	0.01	0.01 (~ 19.99) 0.1 (20.0 ~)
	bar	0.001	0.01	0.01 (~ 19.99) 0.1 (20.0 ~)
	psi	0.01	0.1	0.1 (~ 199.9) 1 (200 ~)
	inHg	0.1	-	-
Power Supply Voltage		12 ~ 24 V DC ± 10 %, Ripple (P-P) ≤ 10 % (UL class2)		
Current Consumption		≤ 40 mA (with no load)		
Switch Output		1 NPN open collector output Max. Load Current : 125 mA Max. Supply Voltage : 24 V DC Residual Voltage : ≤ 1.5 V	1 PNP open collector output Max. Load Current : 125 mA Max. Supply Voltage : 24 V DC Residual Voltage : ≤ 1.5 V	
Repeatability		± 0.3 % F.S. ± 1 digit		
Response Time		≤ 2.5 ms (Chattering-proof function : 25 ms, 100 ms, 250 ms, 500 ms, 1000 ms and 1500 ms selections)		
Output Short Circuit Protection		Yes		
Display		3 ½ digital, 7 segment LCD display (Red / Green / Orange) (Sampling rate : 5 times / sec.)		
Indicator Accuracy		± 2 % F.S. ± 1 digit (Ambient temperature : 25 ± 3 °C)		
Switch on Indicator		Orange Indicator 1 : OUT1		
Environment	Enclosure	IP65 ※1		
	Ambient Temp. Range	Operation : 0 ~ 50 °C ; Storage : -10 ~ 60 °C (No condensation or freezing)		
	Ambient Humidity Range	35 ~ 85 % RH (No condensation)		
	Withstand Voltage	250 V AC in 1-min (between case and lead wire)		
	Insulation Resistance	≥ 50 MΩ (at 500 V 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	100 m/s² (10 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)		
Communication Interface		RS485		
Port Size ※2		F1 : R1/4", M5 ; F2 : NPT1/4", #10-32UNF ; F3 : G1/4" (BSPP), M5		
Lead Wire		Ø4 Oil-resistance cable (PVC) - 26 AWG (0.15 mm²) - 5 cores		
Weight (with 2 meter lead wire)		Approx. 110 g (Rear ported) ; Approx. 150 g (Bottom ported)		

NOTE

※1 : Dustproof protector must be installed to maintain IP65.

※2 : G port O-Ring material is NBR. If any special request, please contact KITA.

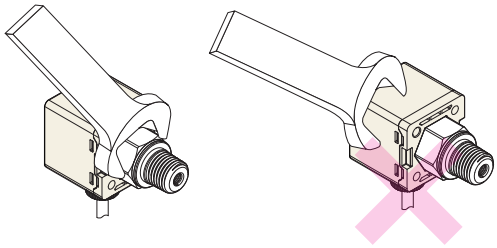
KP75 SERIES

IIoT Pneumatic, Hydraulic Pressure Sensor (Multi-Medium)

Panel Description

Installation Precautions

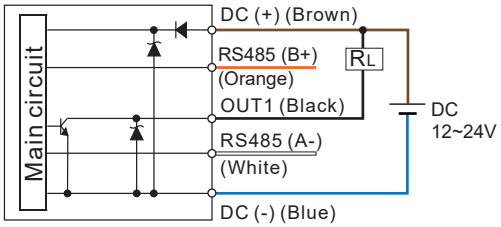
- When mounting, always use the wrench on the metallic area near the pressure port. Never apply a wrench to the plastic body, it will damage the sensor.
- Over tightening may cause damage to the port thread, mounting bracket and pressure sensor. Under tightening may result loosen or leakage.
- Apply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



Circuit Wiring Diagrams

KP75□ - 02 - □

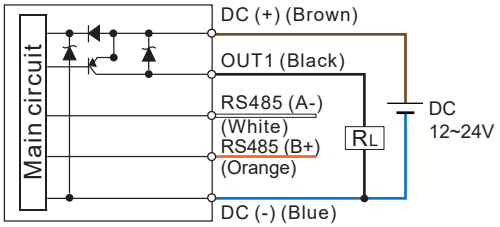
NPN output + RS485



※ Wiring for RS485 MODBUS :
Please connect RS485 (B+) or (A-) before connecting power supply to avoid short circuit to damage to product.

KP75□ - 04 - □

PNP output + RS485



Ordering Information

K P 7 5 C - 0 2 - F 1 □

Pressure Range

C : Compound pressure
(-101.0 ~ 101.0 kPa)
P : Positive pressure
(-0.100 ~ 1.000 MPa)
H02 : High pressure
(-0.100 ~ 2.00 MPa)

Output Specifications

02 : NPN output + RS485
04 : PNP output + RS485

Pressure Port

F1 : R1/4", M5
F2 : NPT1/4", #10-32UNF
F3 : G1/4" (BSPP), M5

Piping Direction

Blank : Rear ported
L : Bottom ported

Optional Parts

BT-10 : Mounting bracket
BT-11 : Mounting bracket
PA-E : Panel adapter
PA-F : Panel adapter + Front protective lid

I-0360 : Snubber (for Pressure Port F1 & F3)
I-0379 : Snubber (for Pressure Port F2)
※ KP75P & KP75H02 suggest to select a snubber

Optional Parts

- Mounting Bracket : BT-10 / BT-11

- Panel Adapter : PA-E

- Panel adapter + Front protective lid : PA-F

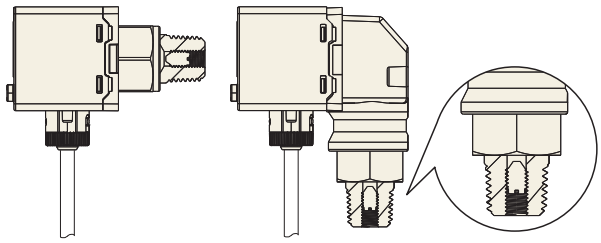
- Snubber

I-0360 : for Pressure Port F1 & F3
I-0379 : for Pressure Port F2

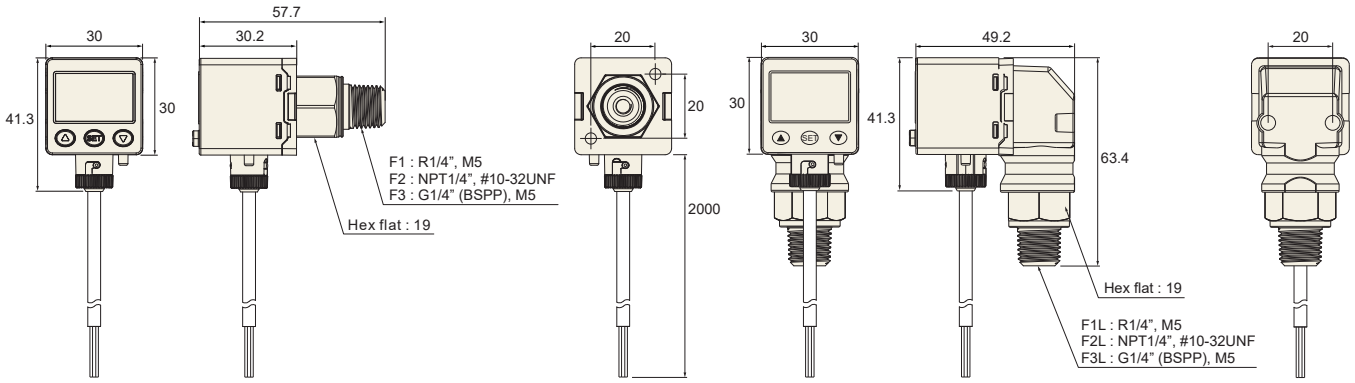
Removable Snubber Installed

- Pressure port equipped with snubber can avoid damage caused by sudden pressure surge of water or oil, improve product durability.

※ When snubber is clogged with contaminants, please use a flat head screwdriver to remove the snubber, clean and reinstall.

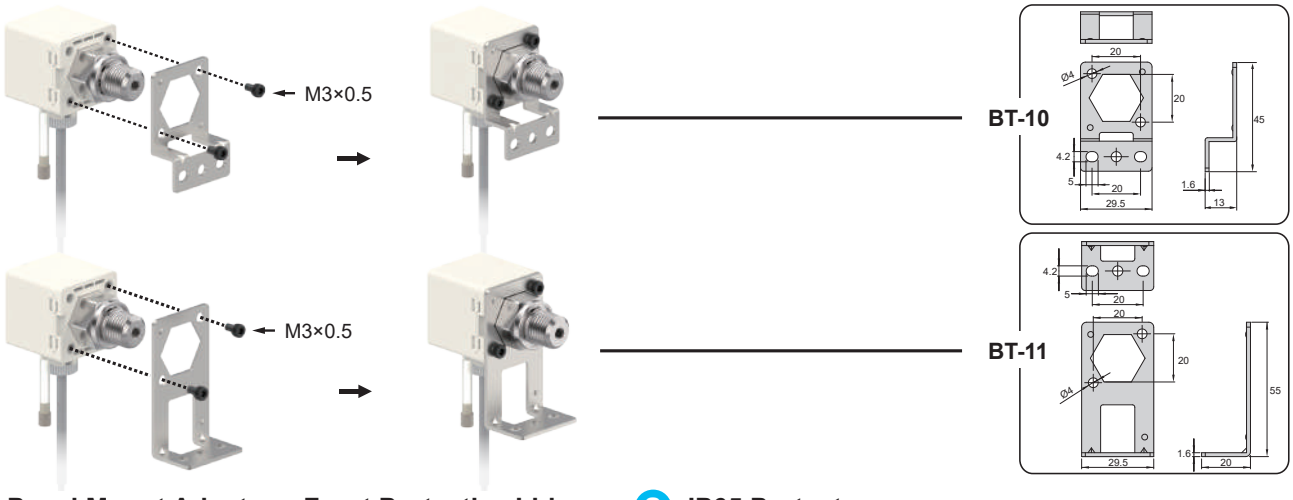


Dimensions

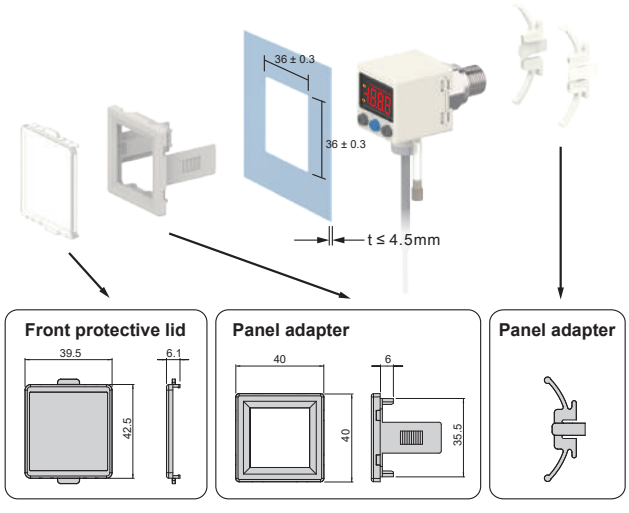


Optional Parts Dimensions

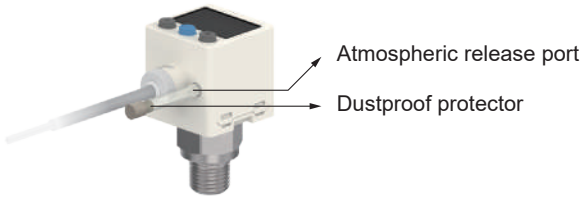
1 Mounting Bracket



2 Panel Mount Adapter + Front Protective Lid



3 IP65 Protector



Caution :
This device must be installed to maintain IP65 (Dust and splash proof) enclosure rating.

Unit : mm

KP90 SERIES Slim Pressure Sensor

Features

- 2 output & analog output (1 ~ 5 V)
- 10 mm width with compact size
- Key-lock function
- Selectable pressure unit :
  kPa, MPa, kgf / cm², bar, psi, inHg, mmHg

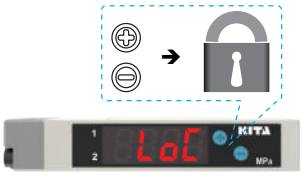
Features Highlight

1 Quick Installation

- Save installation time
- Easy removal

(Removable Data Cable)

2 Key-lock Function



3 Compact Size

KP90

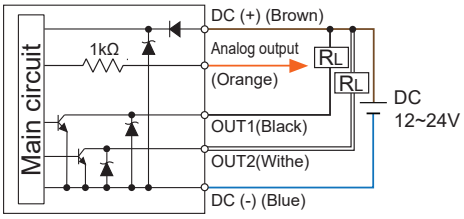
VS.

KP30

Output Circuit Wiring Diagrams

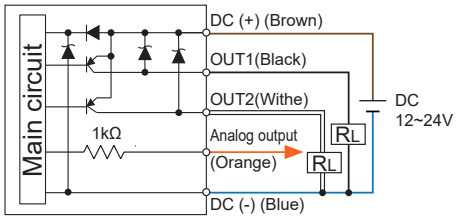
KP90 ☐ - 010 - M5

2 NPN Output + Analog Output (1 ~ 5 V)

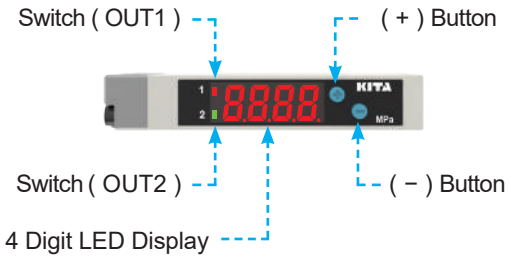


KP90 ☐ - 030 - M5

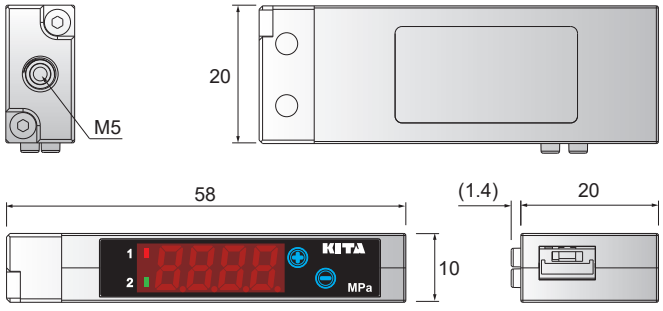
2 PNP Output + Analog Output (1 ~ 5 V)



Panel Description

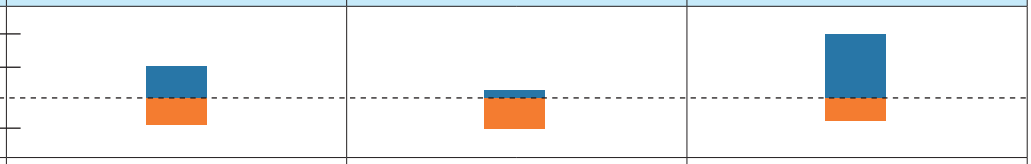


Dimensions



Unit : mm

Specifications

MODEL		KP90C	KP90V	KP90P
		Compound Pressure	Vacuum Pressure	Positive Pressure
1.000 MPa 100.0 kPa 0 -101.3 kPa				
Rated Pressure Range		-100.0 ~ 100.0 kPa	0.0 ~ -101.3 kPa	0.000 ~ 1.000 MPa
Set Pressure Range		-101.0 ~ 101.0 kPa	10.0 ~ -101.3 kPa	-0.100 ~ 1.000 MPa
Withstand Pressure		500 kPa		1.5 MPa
Fluid		Filtered Air, Non-corrosive / Non-flammable gas		
Set Pressure Resolution	kPa	0.1		-
	MPa	-		0.001
	kgf / cm²	0.001		0.01
	bar	0.001		0.01
	psi	0.01		0.1
	inHg	0.1		-
	mmHg	1		-
Power Supply Voltage		12 ~ 24 V DC ± 10 %, Ripple (P-P) ≤ 10 %		
Current Consumption		≤ 40 mA (with no load)		
Switch Output		2 NPN : open collector 2 outputs Max. Load Current : 125 mA Max. Supply Voltage : 30 V DC Residual Voltage : ≤ 1.5 V		2 PNP : open collector 2 outputs Max. Load Current : 125 mA Max. Supply Voltage : 24 V DC Residual Voltage : ≤ 1.5 V
Repeatability		± 0.2 % F.S. ± 1 digit		
Hysteresis	Hysteresis Mode	Adjustable		
	Window Comparator Mode	Fixed (3 digits)		
Response Time		≤ 2.5 ms (Chattering-proof function : 25 ms, 100 ms, 250 ms, 500 ms, 1000 ms and 1500 ms selectable)		
Output Short Circuit Protection		Yes		
Display		4 digit, 7 segment LED display (Red) (Sampling rate : 5 times / sec.)		
Indicator Accuracy		± 2 % F.S. ± 1 digit (Ambient temperature : 25 ± 3 °C)		
Switch on Indicator		Red Indicator : OUT1 & Green Indicator : OUT2		
Analog Output (Voltage Output)		Output Voltage : 1 ~ 5 V ± 2.5 % F.S. (within rated pressure range) Linearity : ± 1 % F.S. Output Impedance : about 1 kΩ		
Environment	Enclosure	IP40		
	Ambient Temp. Range	Operation : 0 ~ 50 °C ; Storage : -10 ~ 60 °C (No condensation or freezing)		
	Ambient Humidity Range	Operation / Storage : 35 ~ 85 % RH (No condensation)		
	Withstand Voltage	1000 V AC in 1-min (between case and lead wire)		
	Insulation Resistance	≥ 50 MΩ (at 500 V DC, between case and lead wire)		
	Vibration	Total amplitude 1.5 mm or 10 G, 10 Hz ~ 150 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		± 2 % F.S. of detected pressure (25 °C) at temp. (Range of 0 ~ 50 °C)		
Port Size		M5 : M5 female thread		
Lead Wire		Ø3.8 Oil-resistance cable (PVC) - 26 AWG (0.15 mm²) - 5 cores		
Weight (with 2 meter lead wire)		Approx. 53 g		

Ordering Information

K P 9 0 P - 0 1 0 - M 5

Pressure Range

C : Compound pressure (-101.0 ~ 101.0 kPa)
V : Vacuum pressure (10.0 ~ -101.3 kPa)
P : Positive pressure (-0.100 ~ 1.000 MPa)

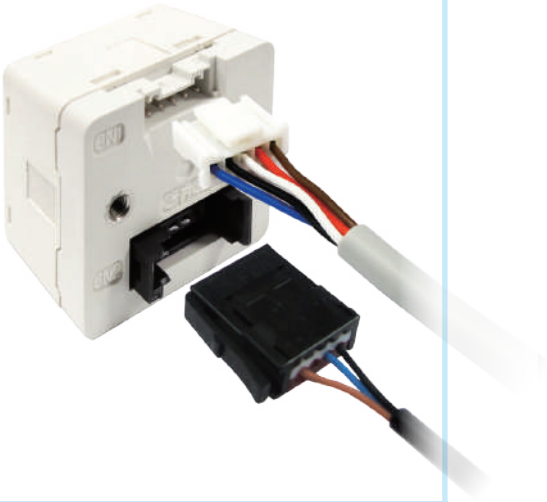
Output Specification

010 : 2 NPN output & Analog output (1 ~ 5 V)
030 : 2 PNP output & Analog output (1 ~ 5 V)

KP400 SERIES Multi-Controller

Features

- 3-color digital LCD display
- Selectable pressure unit :
  kPa, MPa, kgf / cm², bar, psi, inHg, mmHg
- Dual LCD display allows setting value to be displayed
- Key-lock indicator
- Analog output : 1 ~ 5 V or 4 ~ 20 mA
- Sensor input : 1 ~ 5 V or 4 ~ 20 mA
- 12 pressure ranges for transducer

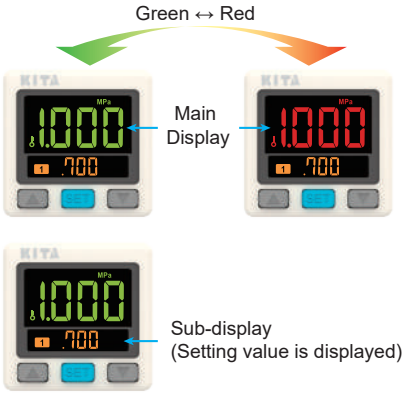


Multi-controller

Features Highlight

1 3-Color Digital LCD Display

- Main display color change with output status

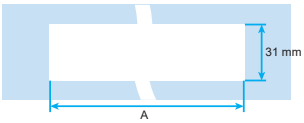


2 Selectable Pressure Unit

- Unit conversion easy to read

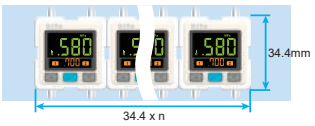
3 Save Installation Space

Panel opening for multiple pressure controller



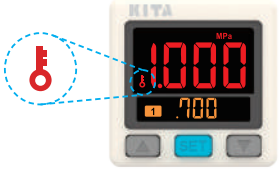
Calculation factor (A) = (34.4 x n) - 3.4
n = number of controller

Actual dimension after installation

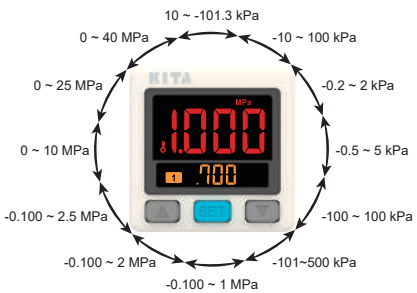


4 Key-lock Function

- Key-lock icon is shown on the display when the function is enabled

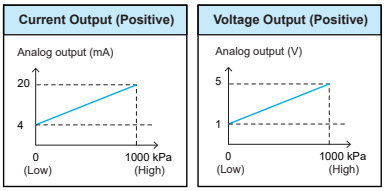


5 12 Pressure Ranges for Transducer



6 Analog Output / Sensor Input

- Current output or voltage output is available



Specifications

MODEL		KP400												
Sensor Type		S - 0	S - 1	S - 2	S - 3	S - 4	S - 5	S - 6	S - 7	S - 8	S - 9	S - 10	S - 11	S - 12
		40.0 MPa 1.0 MPa 100 kPa 0 -101.3 kPa												
Rated Pressure Range		Self-Setting ※1	0 ~ -101.3 kPa	0 ~ 100 kPa	0 ~ 2 kPa	0 ~ 5 kPa	-100 ~ 100 kPa	-101 ~ 500 kPa	0 ~ 1 MPa	0 ~ 2 MPa	0 ~ 2.5 MPa	0 ~ 10 MPa	0 ~ 25 MPa	0 ~ 40 MPa
Set Pressure Range			10 ~ -101.3 kPa	-10 ~ 100 kPa	-0.2 ~ 2 kPa	-0.5 ~ 5 kPa	-100 ~ 100 kPa	-101 ~ 500 kPa	-0.100 ~ 1 MPa	-0.100 ~ 2 MPa	-0.100 ~ 2.5 MPa	0 ~ 10 MPa	0 ~ 25 MPa	0 ~ 40 MPa
Set Pressure Range (Auto-Shift Input)		-	101.3 ~ -101.3 kPa	-100 ~ 100 kPa	-2 ~ 2 kPa	-5 ~ 5 kPa	-100 ~ 100 kPa	-500 ~ 500 kPa	-1 ~ 1 MPa	-2 ~ 2 MPa	-2.5 ~ 2.5 MPa	-10 ~ 10 MPa	-25 ~ 25 MPa	-40 ~ 40 MPa
Set Pressure Resolution	kPa	Self-Setting	0.1	0.1	0.01	0.01	0.1	1	-	-	-	-	-	-
	MPa		-	-	-	-	-	-	0.001	0.01	0.01	0.01	0.1	0.1
	kgf / cm²		0.001	0.001	-	-	0.001	0.01	0.01	0.1	0.1	0.1	1	1
	bar		0.001	0.001	-	-	0.001	0.01	0.01	0.1	0.1	0.1	1	1
	psi		0.01	0.01	-	-	0.01	0.1	0.1	1	1	1	1 ※2	1 ※2
	inHg		0.1	-	-	-	0.1	-	-	-	-	-	-	-
	mmHg		1	-	0.1	0.1	1	-	-	-	-	-	-	-
	- - -		-	-	-	-	-	-	-	-	-	-	-	-
Power Supply Voltage		12 ~ 24 V DC ± 10 %, Ripple (P-P) ≤ 10 %												
Current Consumption		≤ 40 mA (with no load)												
Sensor Input		1 ~ 5 V or 4 ~ 20 mA												
Switch Output		2 NPN : open collector 2 outputs Max. Load Current : 125 mA Max. Supply Voltage : 30 V DC Residual Voltage : ≤ 1.5 V							2 PNP : open collector 2 outputs Max. Load Current : 125 mA Max. Supply Voltage : 24 V DC Residual Voltage : ≤ 1.5 V					
Repeatability		± 0.1 % F.S. ± 1 digit												
Hysteresis	One Point Set Mode	Adjustable ※3												
	Hysteresis Mode													
	Window Comparator Mode													
Response Time		≤ 2.5 ms (Chattering-proof function : 25 ms, 100 ms, 250 ms, 500 ms, 1000 ms and 1500 ms selectable)												
Output Short Circuit Protection		Yes												
Display		3 ½ digital, 7 segment LCD display (Red / Green / Orange) (Sampling rate : 5 times / sec.)												
Indicator Accuracy		± 1 % F.S. ± 1 digit (Ambient temperature : 25 ± 3 °C)												
Switch on Indicator		Orange Indicator 1 : OUT1 & Orange Indicator 2 : OUT2												
Analog Output (Voltage Output)		Output Voltage : 1 ~ 5 V ± 2 % F.S. (within rated pressure range) Linearity : ± 1 % F.S. Output Impedance : about 1 kΩ												
Analog Output (Current Output)		Output Current : 4 ~ 20 mA ± 2 % F.S. (within rated pressure range) Linearity : ± 1 % F.S. Max. Load Impedance : 300 Ω at power supply of 12 V, 600 Ω at power supply of 24 V Min. Load Impedance : 50 Ω												
Environment	Enclosure	IP40												
	Ambient Temp. Range	Operation : 0 ~ 50 °C ; storage : -10 ~ 60 °C (No condensation or freezing)												
	Ambient Humidity Range	Operation / Storage : 35 ~ 85 % RH (No condensation)												
	Withstand Voltage	1000 V AC in 1-min (between case and lead wire)												
	Insulation Resistance	≥ 50 MΩ (at 500 V 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	100 m/s² (10 G), 3 times each in direction of X, Y and Z												
Temperature Characteristic		± 0.5 % F.S. of detected pressure (25 °C) at temp. (Range of 0 ~ 50 °C)												
Lead Wire		Ø4 Oil-resistance cable (PVC) - 26 AWG (0.15 mm²) - 5 cores												
Weight (with 2 meter lead wire)		Approx. 67 g												

NOTE

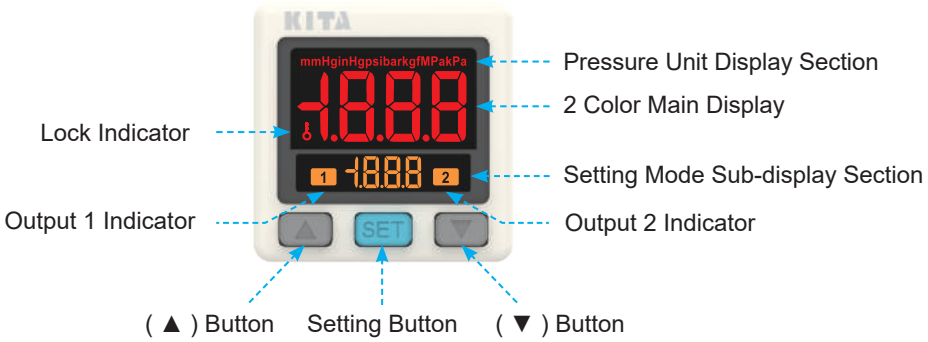
※1 : S-0 : Set the sensor range (1999 ~ -1999) by self. The decimal place can be adjusted.

※2 : If set pressure unit is psi, the value requires to ten multiply by display value.

※3 : Hysteresis value is adjustable within 1 ~ 8 digits for one point set mode and window comparator mode.

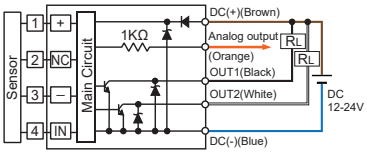
KP400 SERIES Multi-Controller

Panel Description

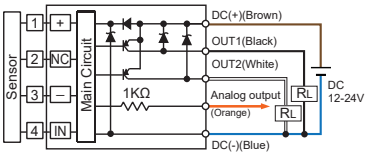


Output Circuit Wiring Diagrams

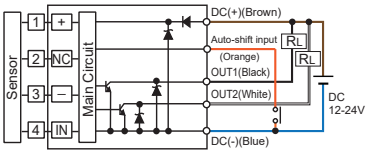
KP4☐0 - 010
2 NPN + Analog Output (1 ~ 5 V)



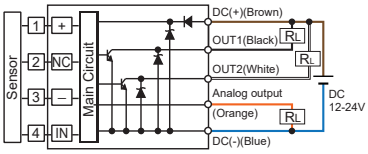
KP4☐0 - 030
2 PNP + Analog Output (1 ~ 5 V)



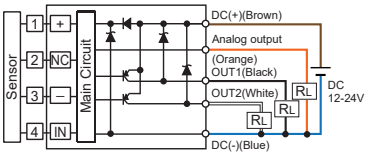
KP4☐0 - 05
2 NPN Output + Auto-shift input



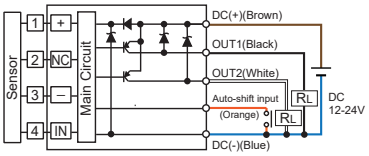
KP4☐0 - 011
2 NPN + Analog Output (4 ~ 20 mA)



KP4☐0 - 031
2 PNP + Analog Output (4 ~ 20 mA)



KP4☐0 - 07
2 PNP Output + Auto-shift input



Ordering Information

K P 4 1 0 - 0 1 0

Input Specifications
1 : Voltage input
2 : Current input

Output Channel
0 : 1 Channel

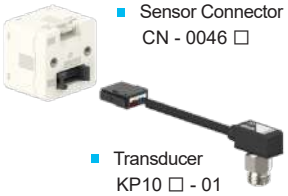
Input / Output Specifications
010 : 2 NPN outputs & Analog output (1 ~ 5 V)
011 : 2 NPN outputs & Analog output (4 ~ 20 mA)
030 : 2 PNP outputs & Analog output (1 ~ 5 V)
031 : 2 PNP outputs & Analog output (4 ~ 20 mA)
05 : 2 NPN outputs & Auto-shift input
07 : 2 PNP outputs & Auto-shift input

Optional Parts
BT-8 : Mounting bracket
BT-9 : Mounting bracket
PA-C : Panel adapter
PA-D : Panel adapter + Front protective lid
CN-0046A : Sensor connector Ø0.8 ~ Ø1.0 mm, 26 ~ 24 AWG
CN-0046B : Sensor connector Ø1.0 ~ Ø1.2 mm, 26 ~ 24 AWG
CN-0046C : Sensor connector Ø1.2 ~ Ø1.6 mm, 26 ~ 24 AWG
KP10 ☐ -01 : Transducer

Optional Parts

- Mounting Bracket : BT-8 / BT-9

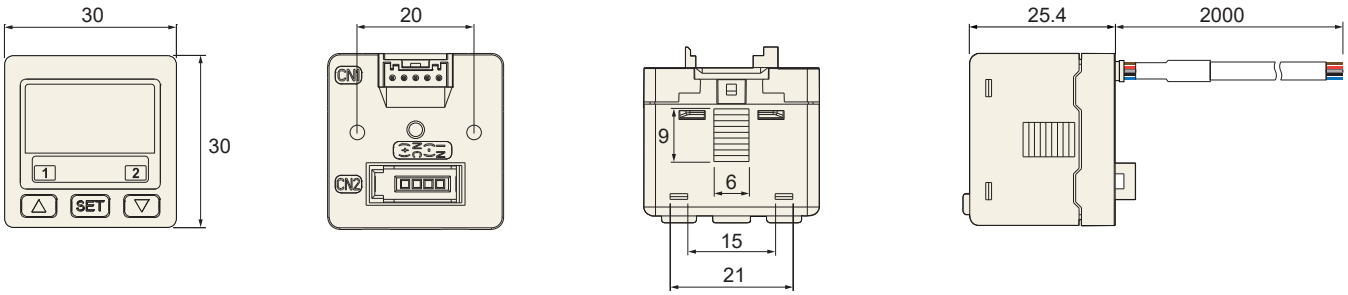
- Sensor Connector CN - 0046 ☐
- Transducer KP10 ☐ - 01



- Panel Adapter : PA-C

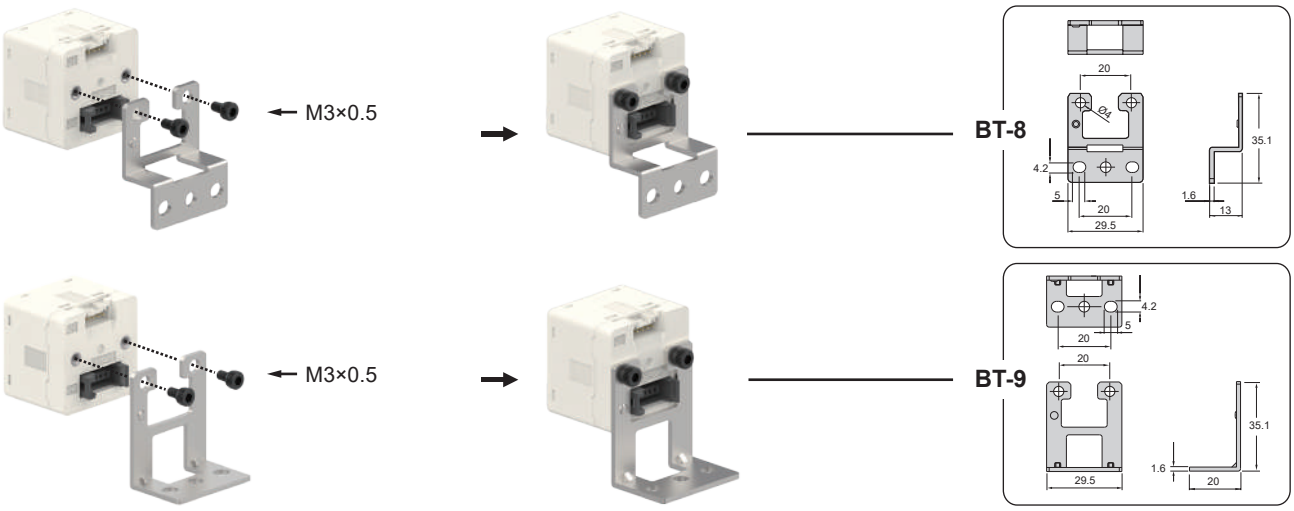
- Panel Adapter + Front Protective Lid : PA-D

Dimensions

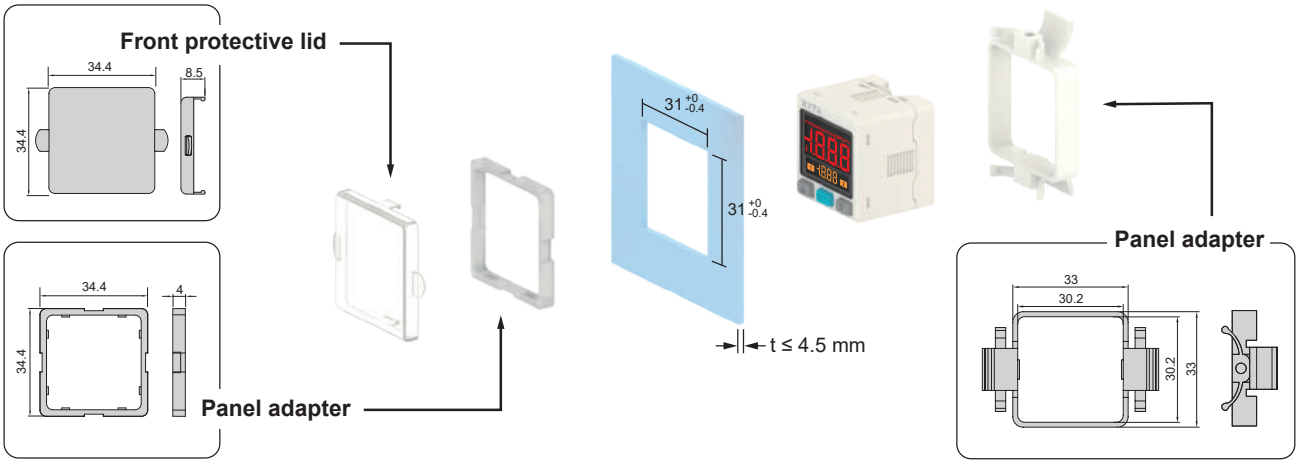


Optional Parts Dimensions

1 Mounting Bracket



2 Panel Mount Adapter + Front Protective Lid



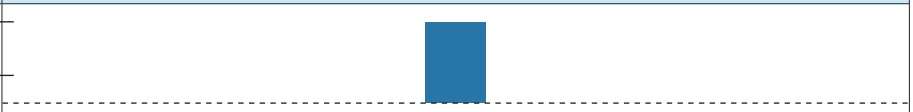
Unit : mm

KP611 SERIES Differential Pressure Sensor

Features

- Differential pressure sensor
- Analog output : 1 ~ 5 V or 4 ~ 20 mA
- Pressure range : 0 ~ 5 kPa
- Simple installation, applicable to Ø6 air tubing
- IP40 enclosure

Specifications

MODEL		KP611
5 kPa 2 kPa 0		
Rated Differential Pressure Range		0 ~ 5 kPa
Operating Pressure Range		-50 ~ 50 kPa ※1
Withstand Pressure		65 kPa
Fluid		Filtered air, Non-corrosive / Non-flammable gas
Power Supply Voltage		12 ~ 24 V DC ± 10 %, Ripple (P-P) ≤ 10 %
Current Consumption		≤ 15 mA (with no load)
Analog Output (Voltage Output)		Output Voltage : 1 ~ 5 V ± 1 % F.S. (within rated pressure range) Linearity : ± 0.5 % F.S. Output Impedance : about 1 kΩ
Analog Output (Current Output)		Output Current : 4 ~ 20 mA ± 1 % F.S. (within rated pressure range) Linearity : ± 0.5 % F.S. Max. Load Impedance : 250 Ω at power supply of 12 V, 600 Ω at power supply of 24 V
Environment	Enclosure	IP40
	Ambient Temp. Range	Operation : 0 ~ 50 °C ; Storage : -20 ~ 70 °C (No condensation or freezing)
	Ambient Humidity Range	Operation / Storage : 35 ~ 85 % RH (No condensation)
	Withstand Voltage	1000 V AC in 1-min (between case and lead wire)
	Insulation Resistance	≥ 50 MΩ (at 500 V DC, between case and lead wire)
	Vibration	Total amplitude 1.5 mm or 10 G, 10 Hz ~ 150 Hz ~ 10 Hz scan for 1 minute, 2 hours each direction of X, Y and Z
	Shock	300 m/s² (30 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		Ø4.8 (Ø4.4 in the end) resin pipe (Applicable to Ø6 air tube)
Lead Wire		Ø4 Oil-resistance cable (PVC) - 26 AWG (0.15 mm²) - 3 cores
Weight (with 2 meter lead wire)		Approx. 75 g

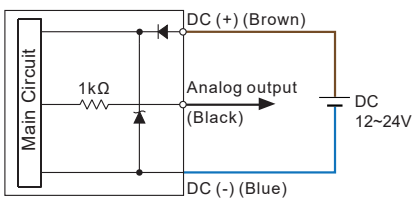
NOTE

※1 : To detect differential pressure from 0 ~ 5 kPa within the range of -50 ~ 50 kPa.

Circuit Wiring Diagrams

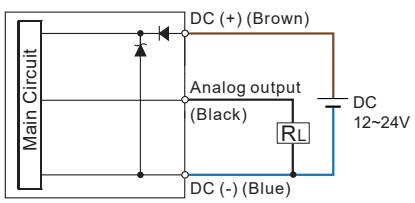
KP611 - 10 - R6

Analog Output (1 ~ 5 V)



KP611 - 11 - R6

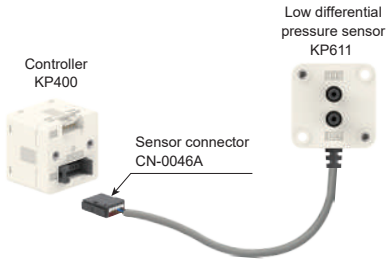
Analog Output (4 ~ 20 mA)



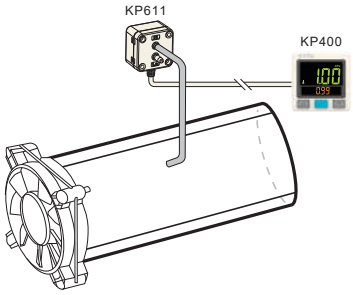
Application

1 Simple Installation

- Plug connect with controller

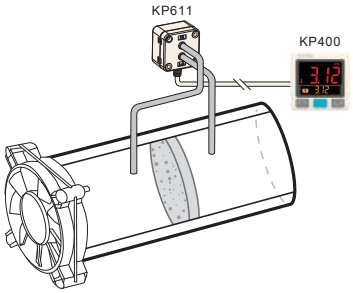


2 Air Flow Detection



3 Filter Air Monitoring

- To monitor the clogging of filter by detecting the differential pressure.



Ordering Information

K P 6 1 1 - 1 0 - R 6

Pressure Range

1 : 0 ~ 5 kPa

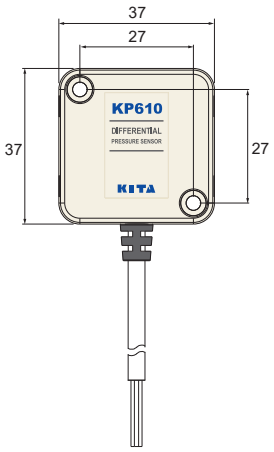
Output Specifications

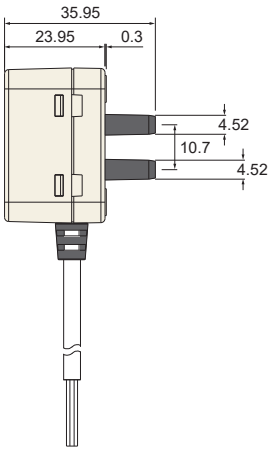
10 : Analog output (1 ~ 5 V)
11 : Analog output (4 ~ 20 mA)

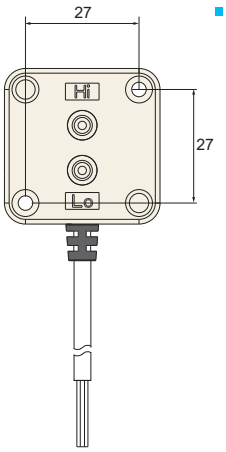
Optional Parts

BT-16 : Mounting bracket

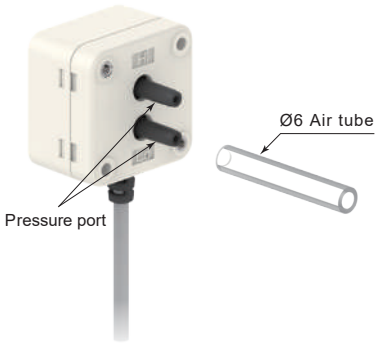
Dimensions





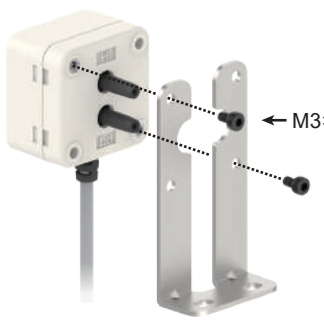


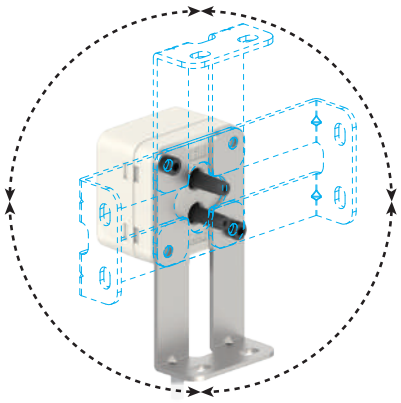
- Plug-in port for air tube



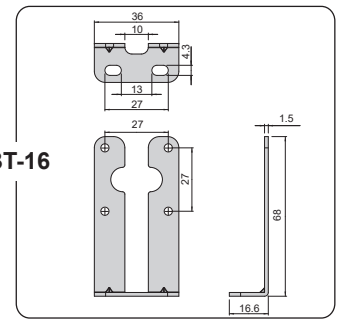
Optional Parts Dimensions

- **Mounting Bracket**





4 mounting directions available



Unit : mm

KP800 SERIES Differential Pressure Sensor

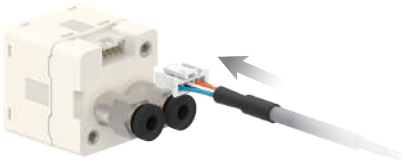
Features

- Digital LCD display, easy readout
- Analog output : 1 ~ 5 V or 4 ~ 20 mA
- IP40 enclosure
- Pressure range :
  0 ~ 1 kPa, 0 ~ 2 kPa, 0 ~ 5 kPa
  -1 ~ 1 kPa, -2 ~ 2 kPa, -5 ~ 5 kPa

Features Highlight

1 Quick Installation

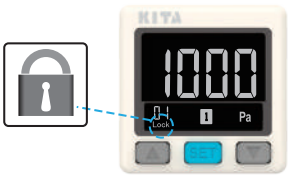
- Save Installation Time
- Easy Removal



(Removable Data Cable)

2 Key-lock Function

- Key-lock icon is shown on the display when the function is enabled.

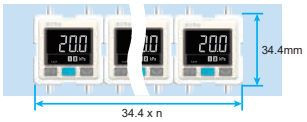


3 Save Installation Space

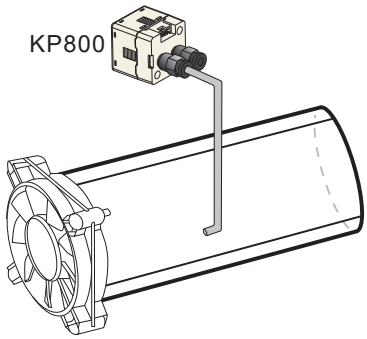
Panel opening for multiple pressure controller

Calculation factor (A) = (34.4 x n) - 3.4
n = number of controller

Actual dimension after installation

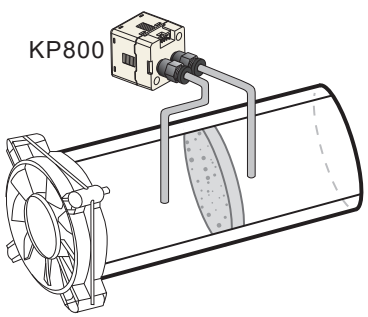


4 Air Flow Detection

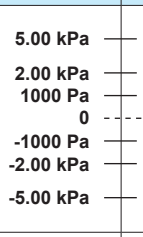


5 Filter Air Monitoring

- To monitor the clogging of filter by detecting the differential pressure.

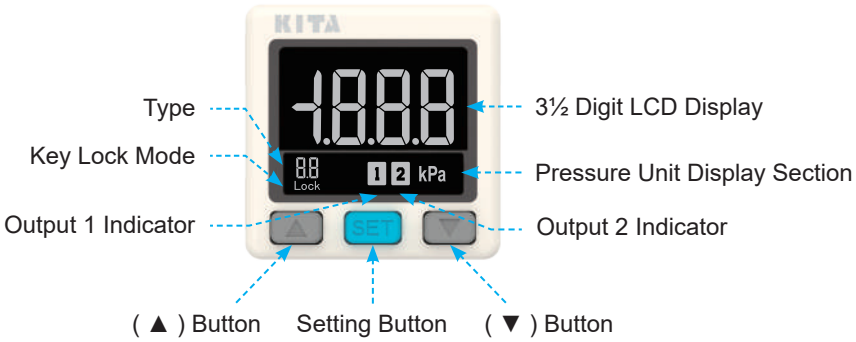


Specifications

MODEL		KP801	KP811	KP802	KP812	KP805	KP815
							
Rated Pressure Range		0 ~ 1000 Pa	-1000 ~ 1000 Pa	0.00 ~ 2.00 kPa	-2.00 ~ 2.00 kPa	0.0 ~ 5.00 kPa	-5.00 ~ 5.00 kPa
Set Pressure Range		-100 ~ 1000 Pa	-1000 ~ 1000 Pa	-0.20 ~ 2.00 kPa	-2.00 ~ 2.00 kPa	-0.50 ~ 5.00 kPa	-5.00 ~ 5.00 kPa
Withstand Pressure		3 kPa		6 kPa		15 kPa	
Fluid		Filtered air, Non-corrosive / Non-flammable gas					
Set Pressure Resolution	**Pa**	1		-			
	kPa	-		0.01			
Power Supply Voltage		12 ~ 24 V DC ± 10 %, Ripple (P-P) ≤ 10 %					
Current Consumption		≤ 40 mA (with no load)					
Switch Output		2 NPN open collector outputs Max. Load Current : 125 mA Max. Supply Voltage : 30 V DC Residual Voltage : ≤ 1.5 V		2 PNP open collector outputs Max. Load Current : 125 mA Max. Supply Voltage : 24 V DC Residual Voltage : ≤ 1.5 V			
Repeatability		± 0.5 % F.S. ± 1 digit					
Hysteresis	**Hysteresis Mode**	Adjustable					
	Window Comparator Mode						
Response Time		≤ 2.0 ms (Chattering-proof function : 32 ms, 128 ms, 1024 ms selectable)					
Output Short Circuit Protection		Yes					
Display		3 ½ digital, 7 segment LCD display (White) (Sampling rate : 0.1 ~ 3 sec select)					
Indicator Accuracy		± 2 % F.S. ± 1 digit (Ambient temperature : 25 ± 3 °C)					
Switch on Indicator		White Indicator 1 : OUT1 & White Indicator 2 : OUT2					
Analog Output (Voltage Output)		Output Voltage : 1 ~ 5 V ± 2.5 % F.S. (within rated pressure range) Linearity : ± 1 % F.S. Output Impedance : about 1 kΩ					
Analog Output (Current Output)		Output Current : 4 ~ 20 mA ± 2.5 % F.S. (within rated pressure range) Linearity : ± 1 % F.S. Max. Load Impedance : 250 Ω at power supply of 12 V 600 Ω at power supply of 24 V Min. Load Impedance : 50 Ω					
Environment	**Enclosure**	IP40					
	Ambient Temp. Range	Operation : 0 ~ 50 °C ; Storage : -10 ~ 60 °C (No condensation or freezing)					
	Ambient Humidity Range	Operation / Storage : 35 ~ 85 % RH (No condensation)					
	Withstand Voltage	1000 V AC in 1-min (between case and lead wire)					
	Insulation Resistance	≥ 50 MΩ (at 500 V DC, between case and lead wire)					
	Vibration	Total amplitude 1.5 mm or 10 G, 10 Hz ~ 150 Hz ~ 10 Hz scan for 1 minute, 2 hours each direction of X, Y and Z					
	Shock	100 m/s² (10 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		M5 : M5 female thread					
Lead Wire		Ø4 Oil-resistance cable (PVC) - 26 AWG (0.15 mm²) - 5 cores					
Weight (with 2 meter lead wire)		Approx. 75 g					

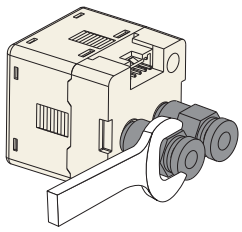
KP800 SERIES Differential Pressure Sensor

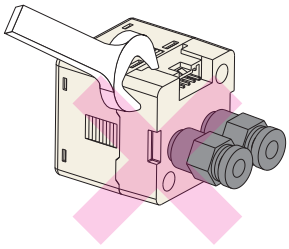
Panel Description



Installation Precautions

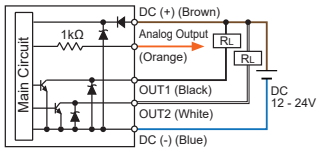
- Do not use the wrench on the plastic body while connecting the sensor connector or pressure port.
- Over tightening may cause damage to the port thread, mounting bracket and pressure sensor. Under tightening may result loosen or leakage.
- Apply air pressure and power after installation, make necessary adjustments and inspect any possible signs of leakage to ensure proper installation.
- Do not insert metal or sharp objects into the pressure port.



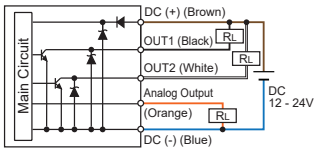


Output Circuit Wiring Diagrams

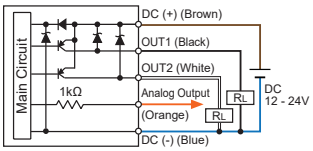
KP8□- 010 - M5
2 NPN + Analog Output (1 ~ 5 V)



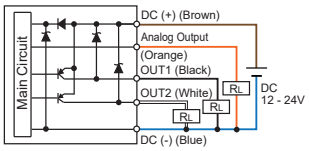
KP8□- 011 - M5
2 NPN + Analog Output (4 ~ 20 mA)



KP8□- 030 - M5
2 PNP + Analog Output (1 ~ 5 V)



KP8□- 031 - M5
2 PNP + Analog Output (4 ~ 20 mA)



Ordering Information

K P 8 0 1 - 0 1 0 - M 5

Pressure Range

01 : (-100 ~ 1000 Pa)	11 : (-1000 ~ 1000 Pa)
02 : (-0.20 ~ 2.00 kPa)	12 : (-2.00 ~ 2.00 kPa)
05 : (-0.50 ~ 5.00 kPa)	15 : (-5.00 ~ 5.00 kPa)

Output Specifications

010 : 2 NPN output + Analog output (1 ~ 5 V)
011 : 2 NPN output + Analog output (4 ~ 20 mA)
030 : 2 PNP output + Analog output (1 ~ 5 V)
031 : 2 PNP output + Analog output (4 ~ 20 mA)

Optional Parts

BT-20 : Mounting bracket
BT-21 : Mounting bracket
PA-C : Panel adapter
PA-D : Panel adapter + Front protective lid

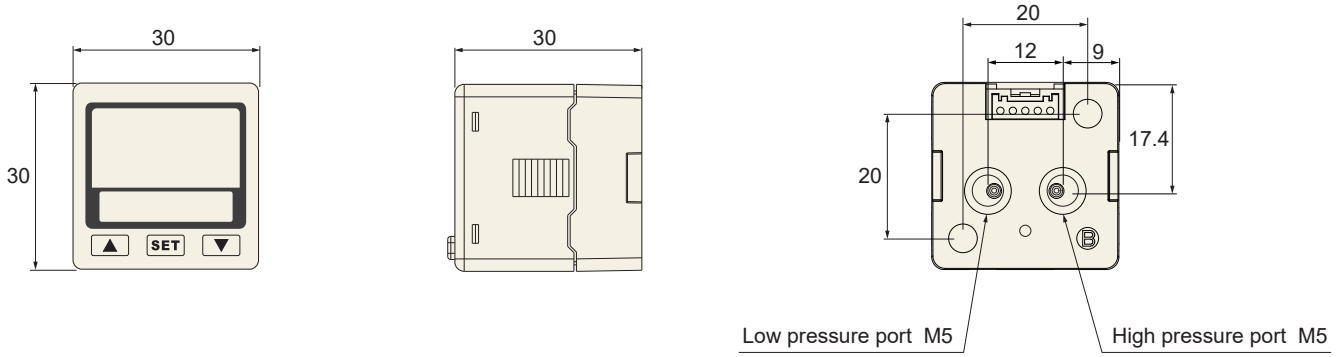
Optional Parts

- Mounting Bracket : BT-20 / BT-21

- Panel Adapter : PA-C

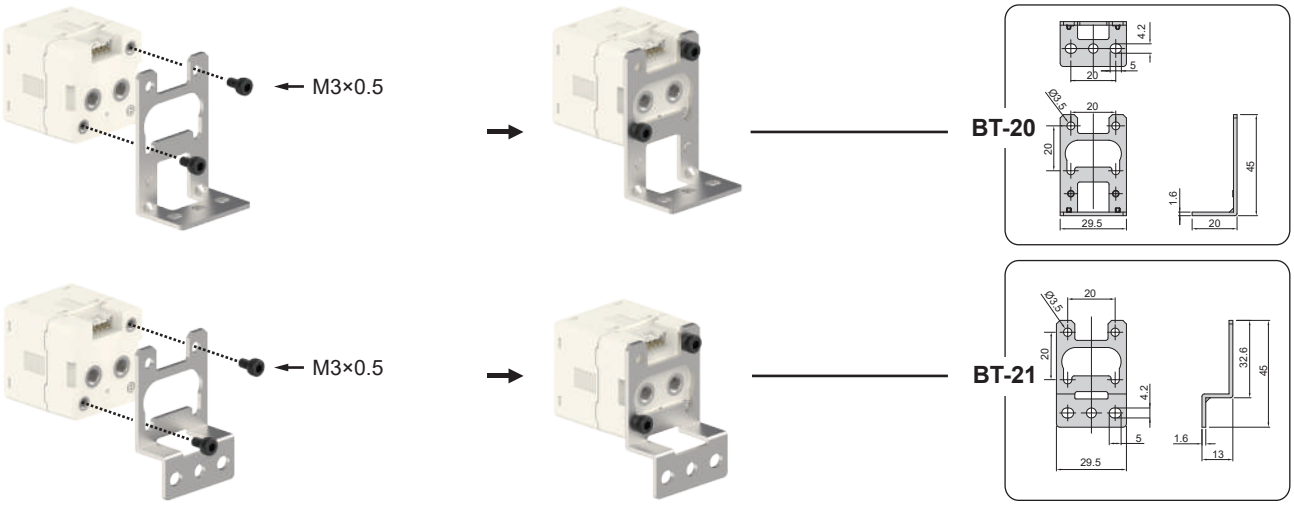
- Panel Adapter + Front Protective Lid : PA-D

Dimensions

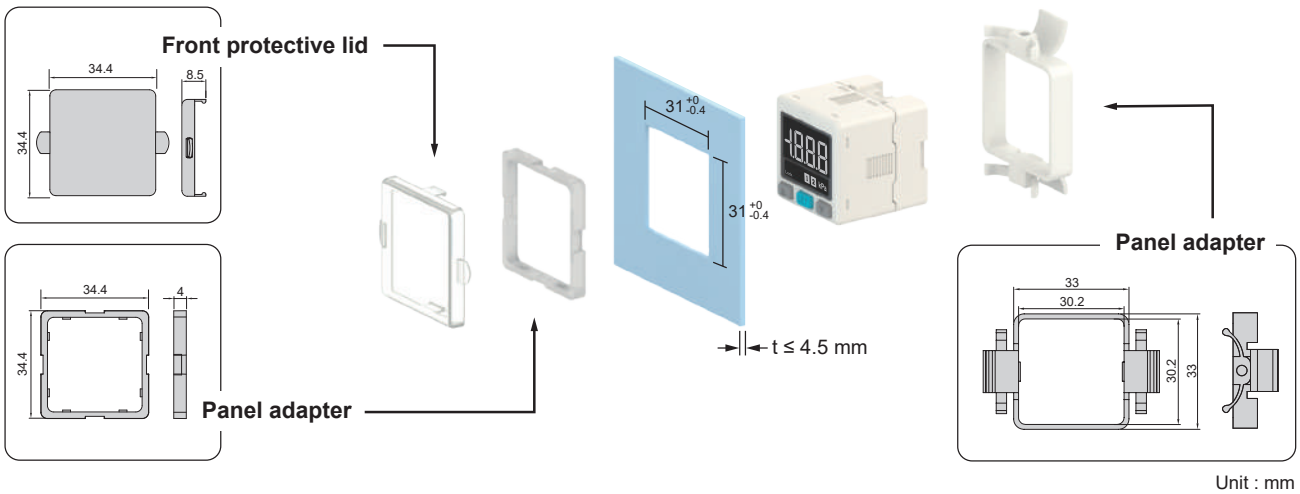


Optional Parts Dimensions

1 Mounting Bracket



2 Panel Mount Adapter + Front Protective Lid



Unit : mm

KP7800 SERIES Differential Pressure Sensor

Features

- Digital LCD display, easy readout
- Pressure range :
  -10 ~ 10 kPa, -1 ~ 1 kPa,
  -2 ~ 2 kPa, -5 ~ 5 kPa
- RS485 Modbus RTU
- Remote control /
  Real-time monitoring

RS485 MODBUS CONTROL

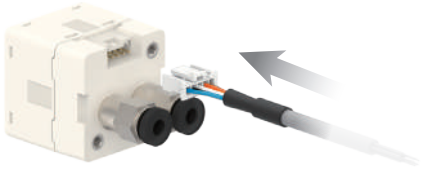
Filter Detection

IoT

Features Highlight

1 Quick Installation

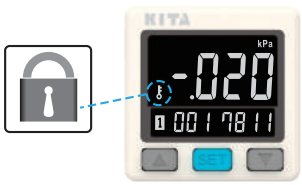
- Save Installation Time
- Easy Removal



(Removable Data Cable)

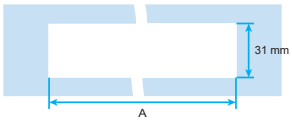
2 Key-lock Function

- Key-lock icon is shown on the display when the function is enabled.



3 Save Installation Space

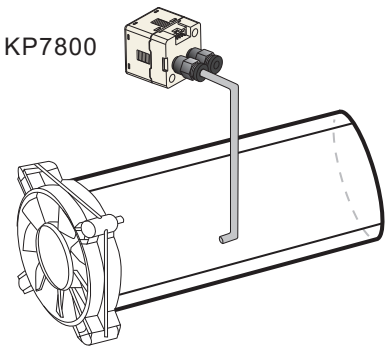
Panel opening for multiple pressure controller



Calculation factor (A) = (34.4 x n) - 3.4
n = number of controller

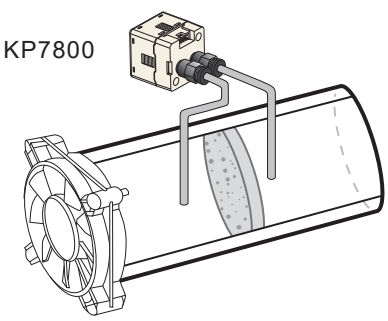
Actual dimension after installation

4 Air Flow Detection

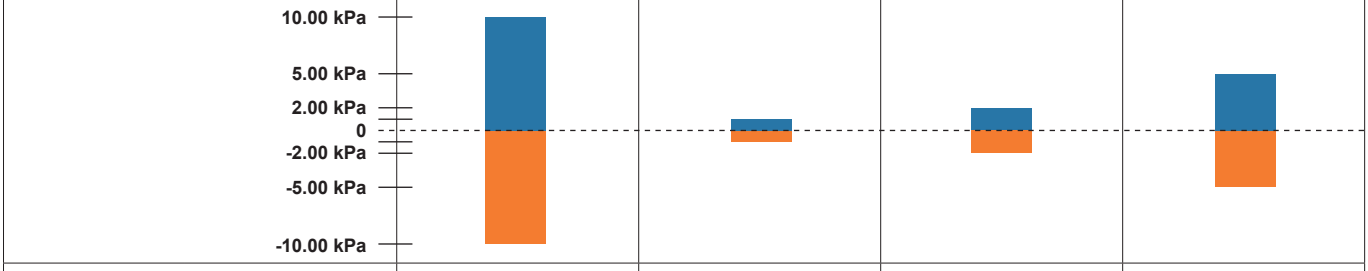


5 Filter Air Monitoring

- To monitor the clogging of filter by detecting the differential pressure.



Specifications

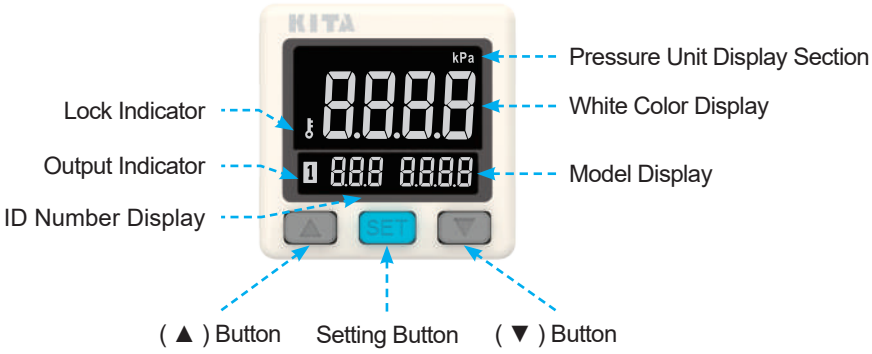
MODEL		KP7810	KP7811	KP7812	KP7815
					
Rated Pressure Range		-10.00 ~ 10.00 kPa	-1.000 ~ 1.000 kPa	-2.00 ~ 2.00 kPa	-5.00 ~ 5.00 kPa
Set Pressure Range		-10.00 ~ 10.00 kPa	-1.000 ~ 1.000 kPa	-2.00 ~ 2.00 kPa	-5.00 ~ 5.00 kPa
Withstand Pressure		30 kPa	3 kPa	6 kPa	15 kPa
Fluid		Filtered air, Non-corrosive / Non-flammable gas			
Set Pressure Resolution	kPa	0.01	0.001	0.01	0.01
	mmAq ※1	1	0.1	1	1
Power Supply Voltage		12 ~ 24 V DC ± 10 %, Ripple (P-P) ≤ 10 %			
Current Consumption		≤ 40 mA (with no load)			
Switch Output		1 NPN open collector output Max. Load Current : 125 mA Max. Supply Voltage : 30 V DC Residual Voltage : ≤ 1.5 V		1 PNP open collector output Max. Load current : 125 mA Max. Supply Voltage : 24 V DC Residual Voltage : ≤ 1.5 V	
Repeatability		± 0.5 % F.S. ± 1 digit			
Hysteresis	Hysteresis Mode	Adjustable			
	Window Comparator Mode				
Response Time		≤ 2.0 ms (Chattering-proof function : 32 ms, 128 ms, 1024 ms selectable)			
Output Short Circuit Protection		Yes			
Display		4 digital, 7 segment LCD display (White) (Sampling rate : 0.1 ~ 3 sec select)			
Indicator Accuracy		± 2 % F.S. ± 1 digit (Ambient temperature : 25 ± 3 °C)			
Switch on Indicator		White Indicator 1 : OUT1			
Environment	Enclosure	IP40			
	Ambient Temp. Range	Operation : 0 ~ 50 °C ; Storage : -10 ~ 60 °C (No condensation or freezing)			
	Ambient Humidity Range	Operation / Storage : 35 ~ 85 % RH (No condensation)			
	Withstand Voltage	1000 V AC in 1-min (between case and lead wire)			
	Insulation Resistance	≥ 50 MΩ (at 500 V DC, between case and lead wire)			
	Vibration	Total amplitude 1.5 mm or 10 G, 10 Hz ~ 150 Hz ~ 10 Hz scan for 1 minute, 2 hours each direction of X, Y and Z			
	Shock	100 m/s² (10 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)			
Communication Interface		RS485			
Port Size		M5 : M5 female thread			
Lead Wire		Ø4 Oil-resistance cable (PVC) - 26 AWG (0.15 mm²) - 5 cores			
Weight (with 2 meter lead wire)		Approx. 75 g			

NOTE

※1 : When the unit is mmAq, the pressure unit is not displayed.

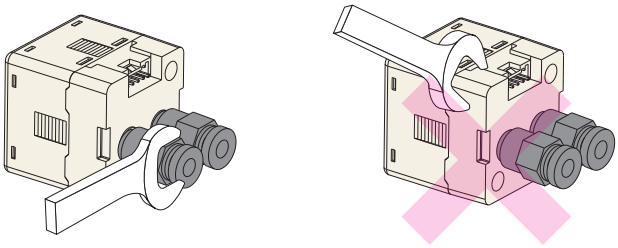
KP7800 SERIES Differential Pressure Sensor

Panel Description



Installation Precautions

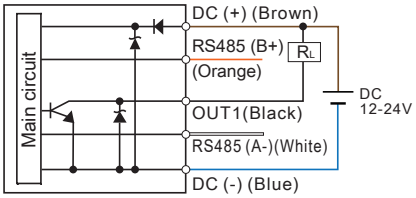
- Do not use the wrench on the plastic body while connecting the sensor connector or pressure port.
- Over tightening may cause damage to the port thread, mounting bracket and pressure sensor. Under tightening may result loosen or leakage.
- Apply air pressure and power after installation, make necessary adjustments and inspect any possible signs of leakage to ensure proper installation.
- Do not insert metal or sharp objects into the pressure port.



Output Circuit Wiring Diagrams

KP78□ - 02 - M5

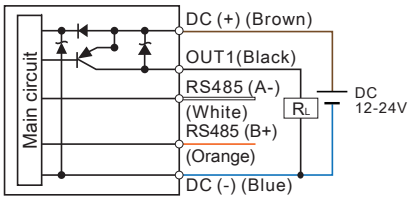
1 NPN + RS485



※ Wiring for RS485 MODBUS :
Please connect RS485 (B+) or (A-) before connecting power supply to avoid short circuit to damage to product.

KP78□ - 04 - M5

1 PNP + RS485



Ordering Information

K P 7 8 1 0 - 0 2 - M 5

Pressure Range

10 : -10.00 ~ 10.00 kPa
11 : -1.000 ~ 1.000 kPa
12 : -2.00 ~ 2.00 kPa
15 : -5.00 ~ 5.00 kPa

Output Specifications

02 : 1 NPN output + RS485
04 : 1 PNP output + RS485

Optional Parts

BT-20 : Mounting bracket
BT-21 : Mounting bracket
PA-C : Panel adapter
PA-D : Panel adapter + Front protective lid

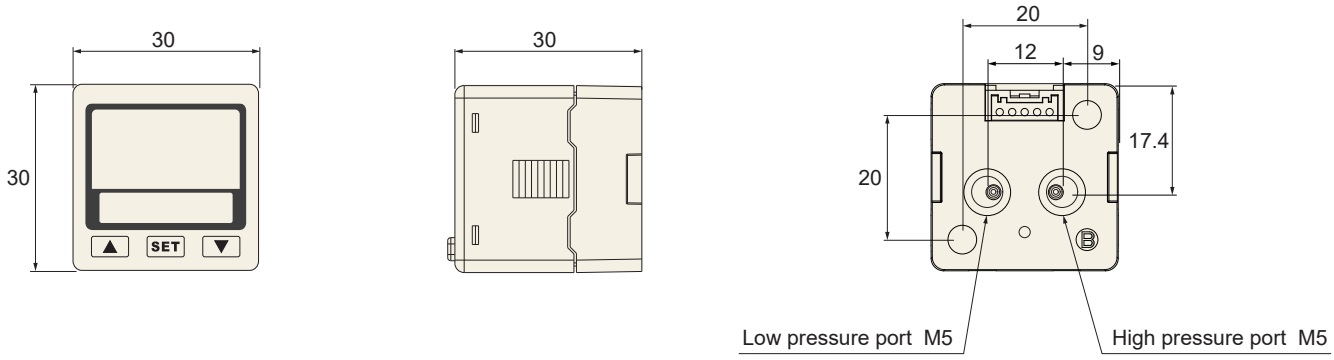
Optional Parts

- Mounting Bracket : BT-20 / BT-21

- Panel Adapter : PA-C

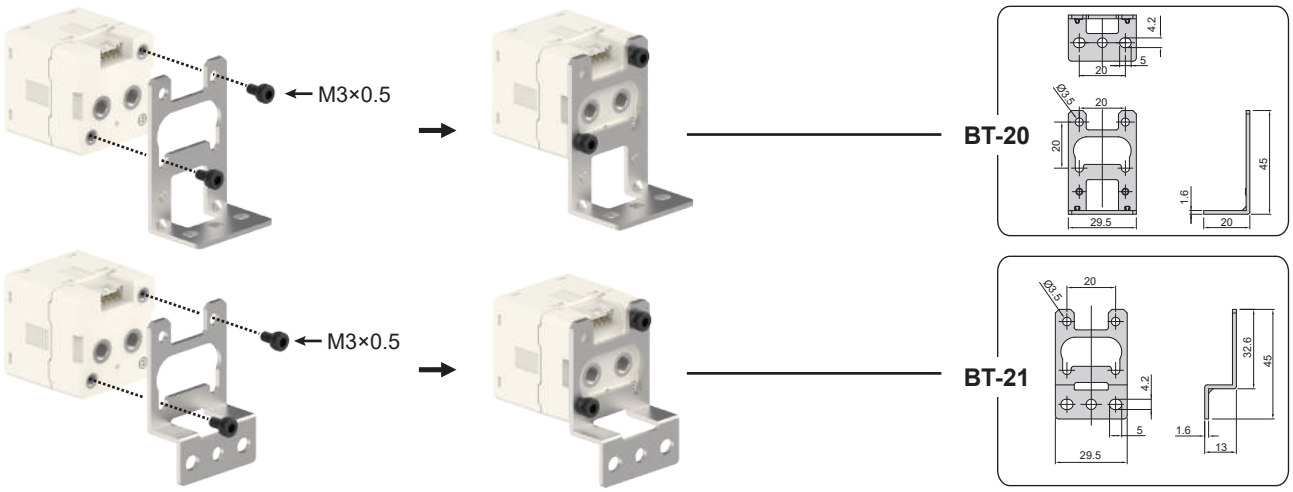
- Panel Adapter + Front Protective Lid : PA-D

Dimensions

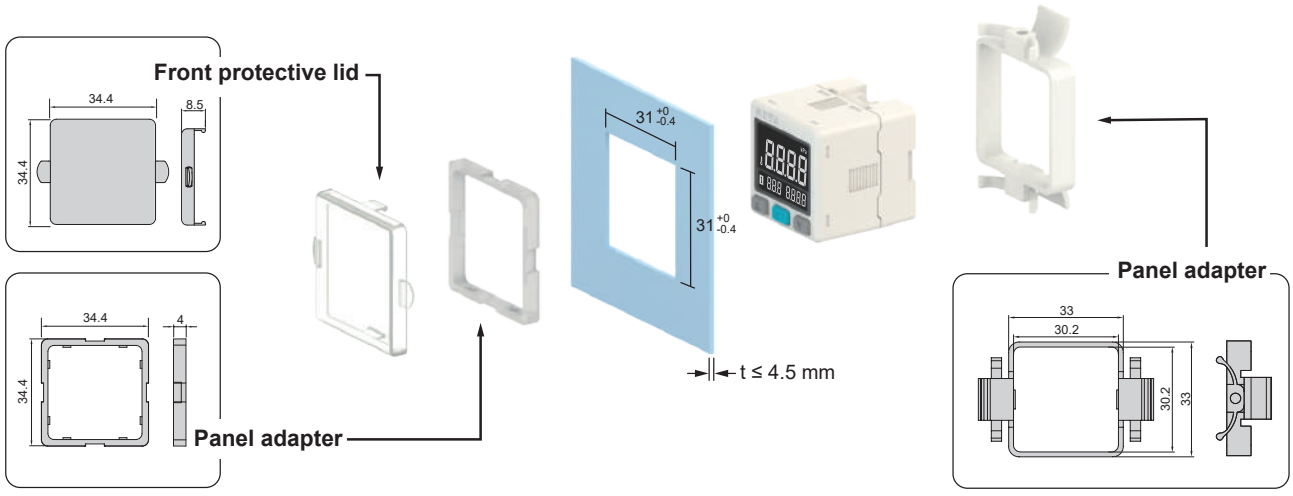


Optional Parts Dimensions

1 Mounting Bracket



2 Panel Mount Adapter + Front Protective Lid



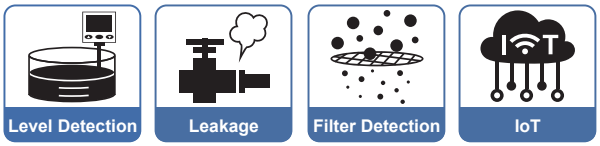
Unit : mm

KDS SERIES High Differential Pressure Sensor

Features

- Digital LCD display
- IP65 enclosure
- Pressure range : 0 ~ 1000 kPa
- RS485 Modbus RTU
- High-resolution (10x)
- Selectable NPN or PNP open collector

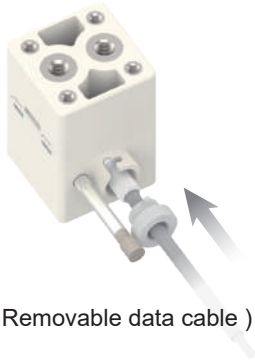
RS485 MODBUS CONTROL



Features Highlight

1 Quick Installation

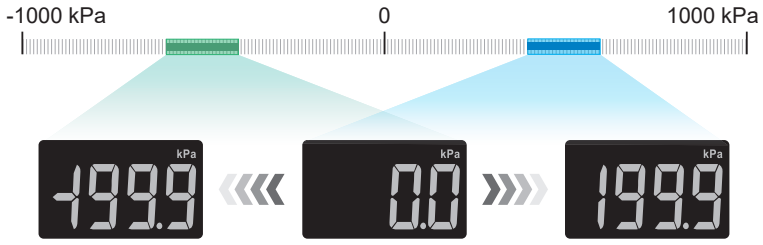
- Save Installation Time
- Easy Removal



(Removable data cable)

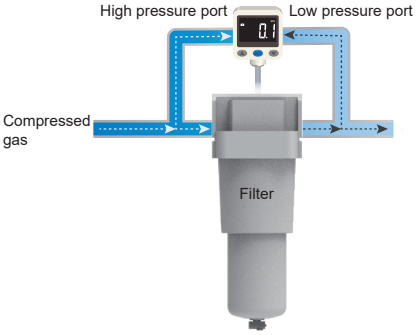
2 High Resolution Mode

- High resolution mode is settable in differential pressure range : -199.9 kPa ~ 199.9 kPa.
  Under high resolution mode, the detection are 10 times accuracy that able to meansure differential pressure.



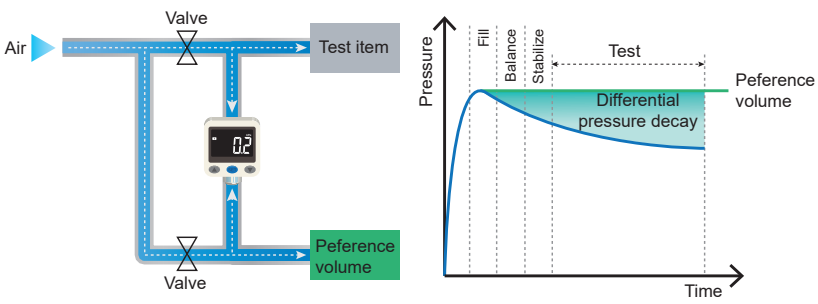
3 Filter Air Monitoring

- To monitor the clogging of filter by detecting the differential pressure.

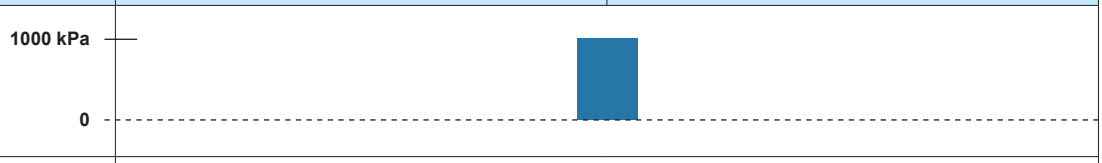


4 Leakage Test

- To detect the differential pressure decay by sensing the change of line pressure.



Specifications

Model		KDS-P-02	KDS-P-04
			
Rated Pressure Range		-1000 ~ 1000 kPa	
Setting Pressure Range		0 ~ 1000 kPa	
Withstand Pressure		1200 kPa	
Fluid		Filtered air, Non-corrosive / Non-flammable gas	
Set Pressure Resolution	Standard Mode	1 kPa	
	High Resolution Mode ※1	0.1 kPa	
Power Supply Voltage		12 ~ 24 V DC ± 10 %, Ripple (P-P) ≤ 10 %	
Current Consumption		≤ 20 mA	
Switch Output		1 NPN open collector ※2 Max. Load Current : 200 mA Max. Supply Voltage : 30 V DC Residual Voltage : ≤ 1.5 V	1 PNP open collector ※2 Max. Load Current : 200 mA Max. Supply Voltage : 24 V DC Residual Voltage : ≤ 1.5 V
Repeatability (Switch Output)		± 0.2 % F.S. ± 1 digit	
Hysteresis	Hysteresis Mode	1 ~ 15 digits	
	Window Comparator Mode		
Output Short Circuit Protection		Yes	
7 Segment LCD Display		3 ½ digital, 7 segment LCD display (White) (Sampling rate : 5 times / sec.)	
Indicator Accuracy	Standard Mode	± 0.3 % F.S. ± 1 digit (Ambient temperature : 25 ± 3 °C)	
	High Resolution Mode	± 0.1 % F.S. ± 1 digit (Ambient temperature : 25 ± 3 °C)	
Switch on Indicator		White indicator 1 : OUT1	
Environment	Enclosure	IP65 ※3	
	Ambient Temp. Range	Operation : 0 ~ 50 °C ; Storage : -10 ~ 60 °C (No condensation or freezing)	
	Ambient Humidity Range	35 ~ 85 % RH (No condensation)	
	Withstand Voltage	1000 V AC in 1-min (between case and lead wire)	
	Insulation Resistance	≥ 50 MΩ (at 500 V 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	100 m/s² (10 G), 3 times each in direction of X, Y and Z	
Temperature Characteristic	Standard Mode	± 0.5 % F.S. of detected pressure (25 °C) at temp. Range of 0 ~ 50 °C	
	High Resolution Mode	± 5 % F.S. of detected pressure (25 °C) at temp. Range of 0 ~ 50 °C	
Communication Interface		RS485	
Port Size		M5 : M5 female thread	
Lead Wire		Ø4 Oil-resistance cable (PVC) - 26 AWG (0.15 mm²) - 5 cores	
Weight (with 2 meter lead wire)		Approx. 104 g	

NOTE

※1 : High resolution mode is settable in differential pressure range : -199.9 kPa ~ 199.9 kPa

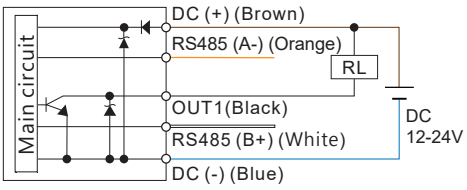
※2 : Selectable NPN or PNP open collector circuits in setting.

※3 : Dustproof protector must be installed to maintain IP65.

Panel Description

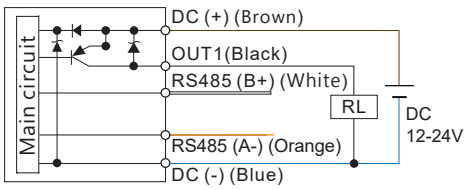
Output Circuit Wiring Diagrams

KDS - P - 02
NPN + RS485



※ Wiring for RS485 MODBUS :
Please connect RS485 (B+) or (A-) before connecting power supply to avoid short circuit to damage to product.

KDS - P - 04
PNP + RS485



Ordering Information

K D S - P - 0 2 - M 5

Pressure Range
P : Positive pressure (0 ~ 1000 kPa)

Output Specifications
02 : 1 NPN Output + RS485
04 : 1 PNP Output + RS485

Optional Parts
BT-18 : Mounting bracket
BT-19 : Mounting bracket
PA-E : Panel adapter
PA-F : Panel adapter + Front protective lid

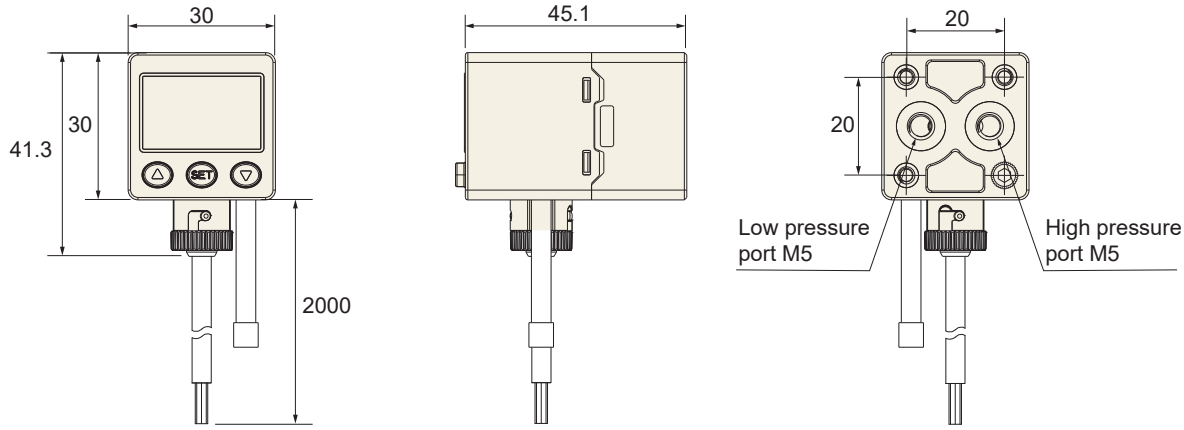
Optional Parts

- Mounting bracket : BT-18 / BT-19

- Panel adapter : PA-E

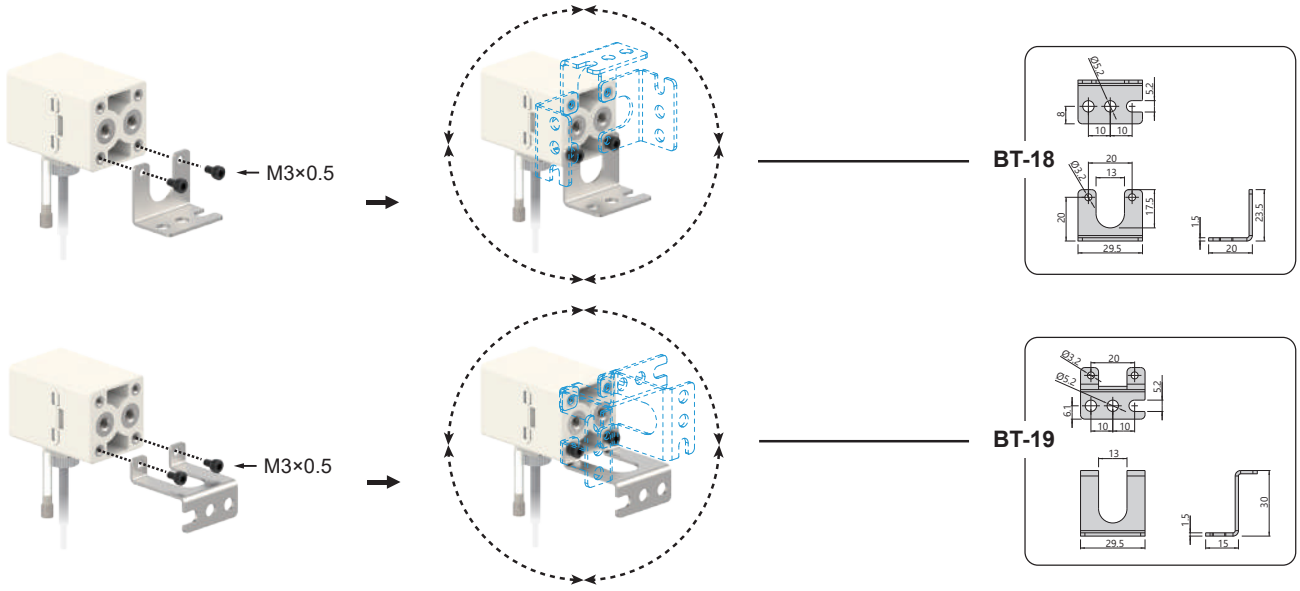
- Panel adapter + Front protective lid : PA-F

Dimensions



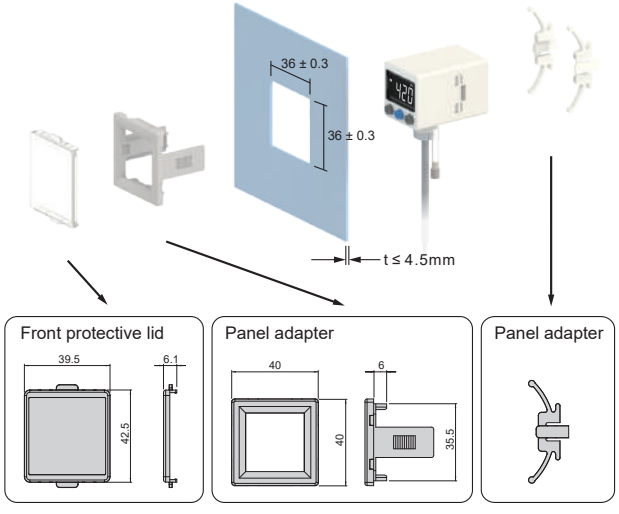
Optional Parts Dimensions

1 Mounting Bracket

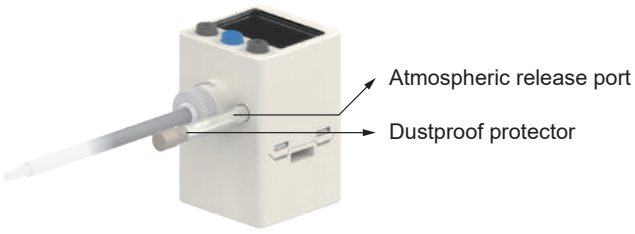


4 mounting directions available

2 Panel Mount Adapter + Front Protective Lid



3 IP65 Protector



⚠

Caution :
This device must be installed to maintain IP65 (Dust and splash proof) enclosure rating.

Unit : mm

KGS SERIES Gap Sensor

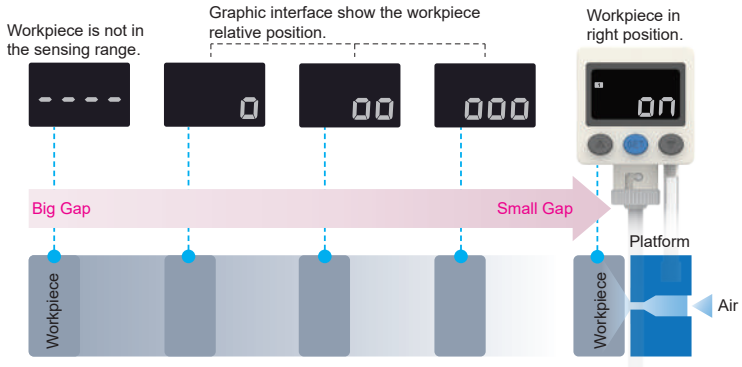
Features

- Digital LCD display, easy readout
- IP65 enclosure
- Detection distance : 0.01 ~ 0.10 mm
- Repeatability : ± 5 μm

Features Highlight

1 Easy to Check Workpiece Located on the Right Place

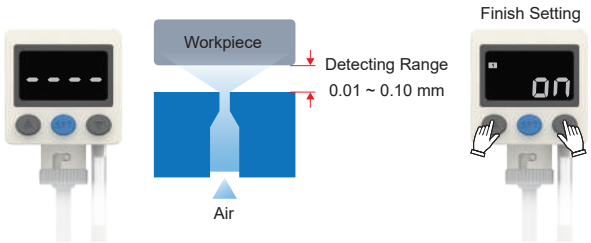
- Intuitive recognize in graphic interface, easy to check the gap between workpiece and platform.



2 IP65 Compliance

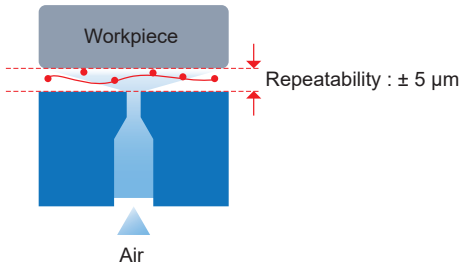
3 Reference Gap Easy Setting

- To set the reference gap by press up △ + down ▽ at the same time.

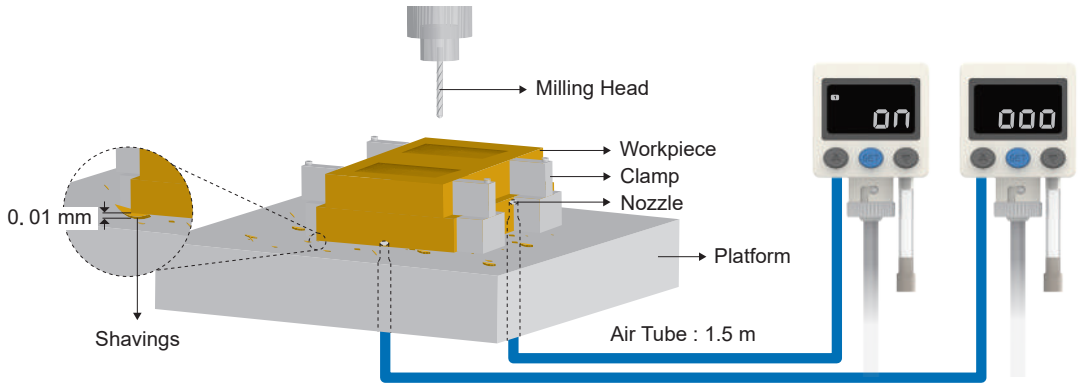


4 Repeatability : ± 5 μm

- The higher repeatability is, the more guarantee is.



5 The Gap Cause by Shavings Can Be Detectable

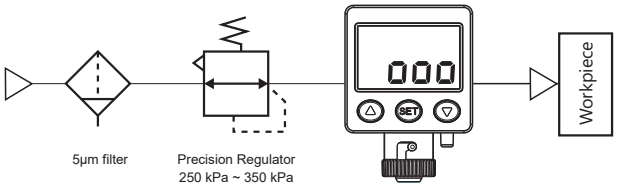


Specifications

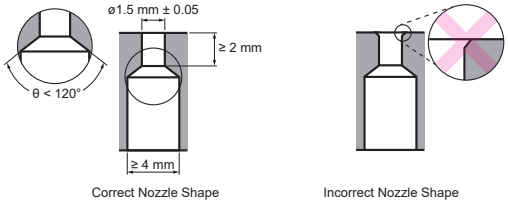
MODEL		KGS01-G-02	KGS01-G-04
Detection Distance		0.01 ~ 0.10 mm	
Operating Pressure Range		250 ~ 350 kPa	
Withstand Pressure		600 kPa	
Fluid		Clean air, Non-corrosive / Non-flammable gas ※1	
Power Supply Voltage		12 ~ 24 V DC ± 10 %, Ripple (P-P) ≤ 10 %	
Current Consumption		≤ 20 mA	
Switch Output		1 NPN : open collector 1 output Max. Load Current : 125 mA Max. Supply Voltage : 30 V DC Residual Voltage : ≤ 1.5 V	1 PNP : open collector 1 output Max. Load Current : 125 mA Max. Supply Voltage : 24 V DC Residual Voltage : ≤ 1.5 V
Consumption Flow Rate		≤ 16 L / min @ 300 kPa	
Repeatability		± 5 μm	
Hysteresis		Adjustable 1 ~ 30 digits	
Output Short Circuit Protection		Yes	
Display		3 ½ digital, 7 segment LCD display (White) (Sampling rate : 5 times / sec.)	
Switch on Indicator		White Indicator 1 : OUT1	
Detection Nozzle		Ø1.5 mm ※2	
Environment	Enclosure	IP65 ※3	
	Ambient Temp. Range	Operation : 0 ~ 50 °C ; Storage : -10 ~ 60 °C (No condensation or freezing)	
	Ambient Humidity Range	Operation / Storage : 35 ~ 85 % RH (No condensation)	
	Withstand Voltage	1000 V AC in 1-min (between case and lead wire)	
	Insulation Resistance	≥ 50 MΩ (at 500 V 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	100 m/s² (10 G), 3 times each in direction of X, Y and Z	
Piping Specifications	Supply Port	Rc1/8" ※4	
	Detection Port		
Lead Wire		Ø4 Oil-resistance cable (PVC) - 26 AWG (0.15 mm²) - 3 cores	
Weight (with 2 meter lead wire)		Approx. 115 g	

NOTE

※1 : Please use air filter to clean air（5 μm or less）and install precision regulator.



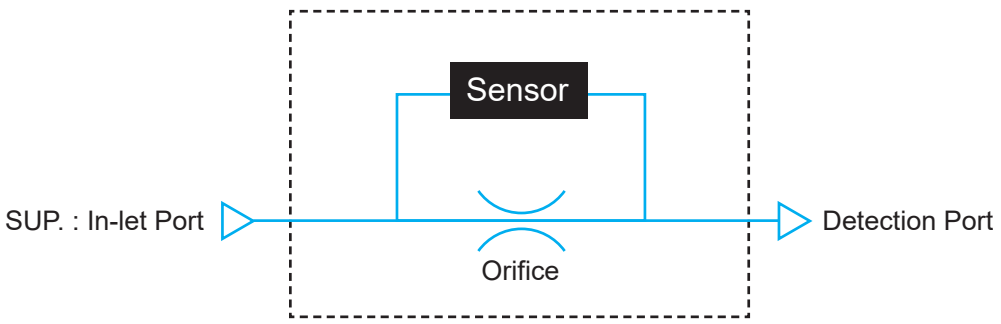
※2 : Detection nozzle



※3 : Dustproof protector must be installed to maintain IP65.

※4 : Back side of product, please refer to product dimension.

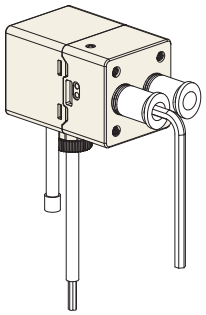
Detection Circuit



Panel Description

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 loosen or leakage.

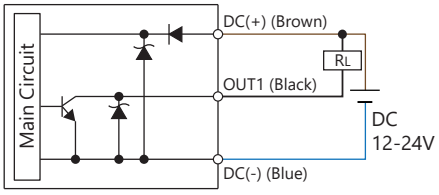


※ Internal Hex Straight Tube-to-Tube Adaptors are recommended.

Circuit Wiring Diagrams

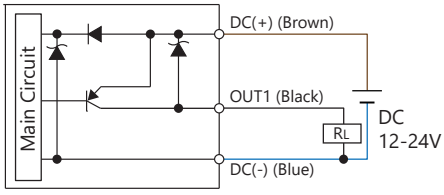
KGS01 - G - 02

1 NPN Output



KGS01 - G - 04

1 PNP Output



Ordering Information

K G S 0 1 - G - 0 2 - F 1 C

Rated Distance Range

G : 0.01 ~ 0.10 mm

Output Specifications

02 : 1 NPN Output
04 : 1 PNP Output

Pressure Port

F1C : Rc1/8”

Optional Parts

BT-18 : Mounting bracket
BT-19 : Mounting bracket
PA-E : Panel adapter
PA-F : Panel adapter + Front protective lid

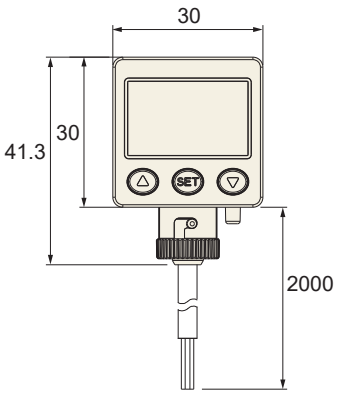
Optional Parts

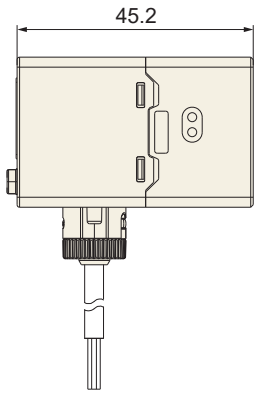
- Mounting bracket : BT-18 / BT-19

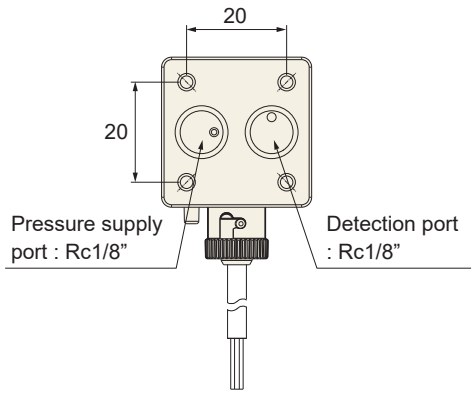
- Panel adapter : PA-E

- Panel adapter + Front protective lid : PA-F

Dimensions

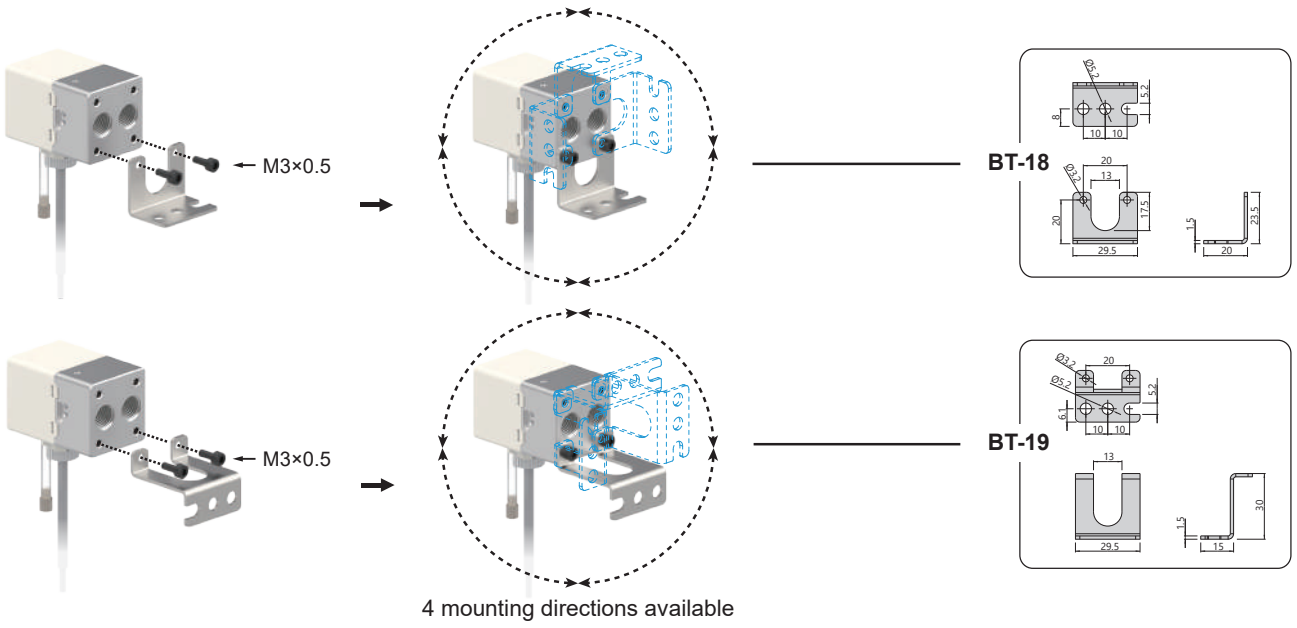






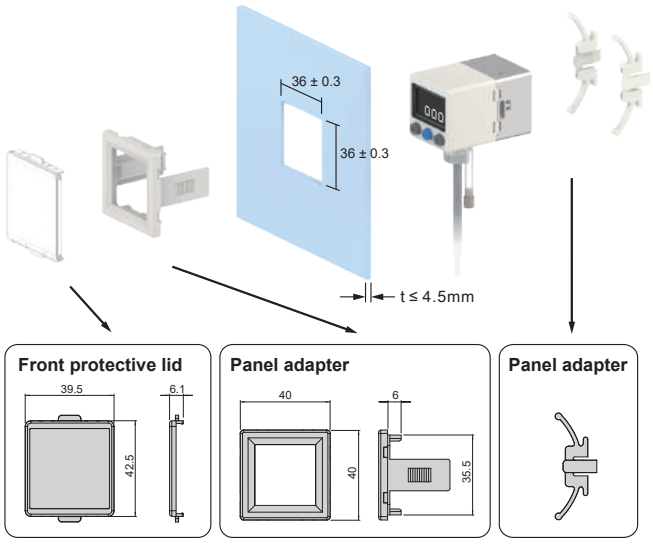
Optional Parts Dimensions

1 Mounting Bracket

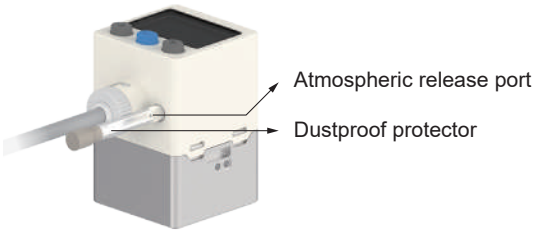


4 mounting directions available

2 Panel Mount Adapter + Front Protective Lid



3 IP65 Protector



Caution :
This device must be installed to maintain IP65 (Dust and splash proof) enclosure rating.

Unit：mm

KF01A SERIES Digital Flow Sensor

Features

- **Invertible display makes digital easier to read.**
- **7 segment 8 digit LCD display.**
  Accumulated flow rate display at a glance.
- **Real-time monitoring.**

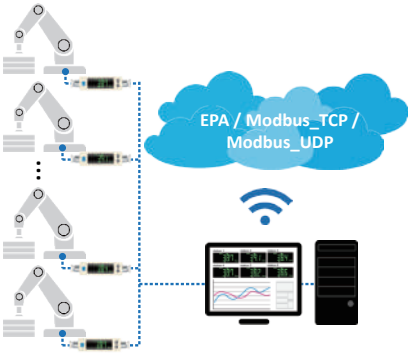
Patented **RS485 MODBUS CONTROL**

Features Highlight

1 3-color LED display

	SoG	Sor	Grn	rEd
ON	Green	Red	Green	Red
OFF	Red	Green	Green	Red

2 Real-time monitoring



3 High Performance

- High Precision

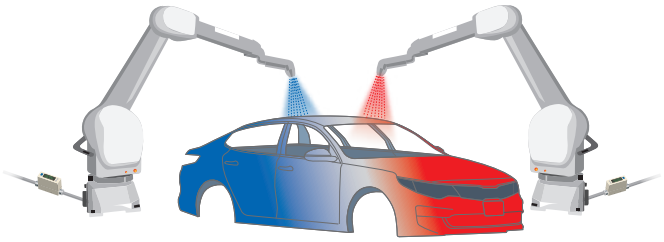
Indicator accuracy	± 3 % F.S.
Repeatability	± 1 % F.S.

- Multiple Output Function

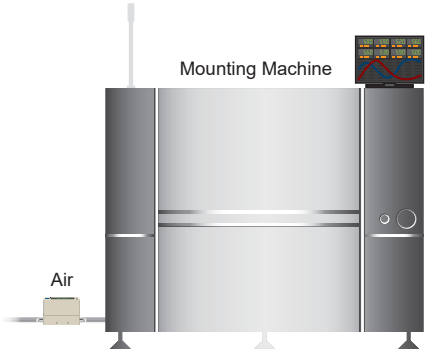
Digital Display	Instantaneous flow value Accumulated flow value
Switch Output	NPN output PNP output
Analog output	Voltage output 1~5 V Current output 4~20 mA
Accumulated Pulse Output	50ms pulse output

4 Wide range of applications

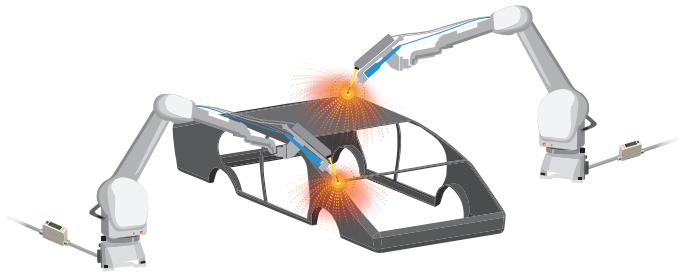
- Painting Robot :
  Air flow management of paint and coating processes

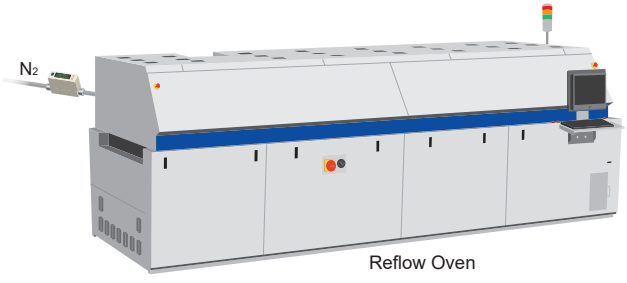


- Reflow Oven / Mounting Machine :
  N_2 & Air consumption of the whole equipment management



- Laser Welding Robot :
  Management of shielding gas, flow rate





Specifications

Model				005	010	050	100	500	101	201
Fluid				Dry air, N_2, CO_2, Ar, Non-corrosive / Non-flammable gas						
Sensor Element		Measured Flow Rate Range		0 ~ 500 mL/min	0 ~ 1000 mL/min	0 ~ 5 L/min	0 ~ 10 L/min	0 ~ 50 L/min	0 ~ 100 L/min	0 ~ 200 L/min
		Flow Direction		Unidirection						
Display				4 digital (Flow) / 8 digital (Accumulated Flow), 7 segment LCD display (Red / Green / Orange)						
	Instant Flow Rate	Display Range		0 ~ 525 mL/min	0 ~ 1050 mL/min	0 ~ 5.25 L/min	0 ~ 10.50 L/min	0 ~ 52.5 L/min	0 ~ 105.0 L/min	0 ~ 210 L/min
		Minimum Setting Scale	LPM	1 mL/min	1 mL/min	0.01 L/min	0.01 L/min	0.1 L/min	0.1 L/min	1 L/min
			CFM ※1	0.01 ft^3/min	0.01 ft^3/min	0.1 ft^3/min	0.1 ft^3/min	1 ft^3/min	1 ft^3/min	1 ft^3/min
	Accumulated Flow	Display Range		99999999 mL	99999999 mL	999999.99 L	999999.99 L	9999999.9 L	9999999.9 L	99999999 L
		Minimum Setting Scale ※1		1 mL	1 mL	0.01 L	0.01 L	0.1 L	0.1 L	1 L
				0.01 ft^3	0.01 ft^3	0.1 ft^3	0.1 ft^3	1 ft^3	1 ft^3	1 ft^3
Accuracy ※6		Guaranteed Range		2 ~ 100 % F.S.						
		Indicator Accuracy		± 3 % F.S. ± 1 digit ※2						
		Analog Output Accuracy		± 5 % F.S. ※2						
		Repeatability		± 1 % F.S. ± 1 digit ※3						
		Linearity		± 3 % F.S. ※3						
		Temp. Characteristic		± 5 % F.S. ※3						
		Pressure Characteristic		± 5 % F.S. ± 1 digit ※4						
Switch Output				2 NPN open collector outputs Max. Load Current : 125 mA Max. Supply Voltage : 24 V DC Voltage Drop : ≤ 1.5 V			2 PNP open collector outputs Max. Load Current : 125 mA Max. Supply Voltage : 24 V DC Voltage Drop : ≤ 1.5 V			
	Output Mode			Hysteresis Mode, Window Comparator Mode, Accumulated Output, Accumulated Pulse Output						
	Hysteresis			Adjustable						
	Response Time			800 ms (50 ms, 80 ms, 120 ms, 200 ms, 400 ms, 1500 ms selectable)						
	Output Short Circuit Proterction			Yes						
	Accumulated Pulse Output ※1			5 mL/Pulse	10 mL/Pulse	0.05 L/Pulse	0.1 L/Pulse	0.5 L/Pulse	1 L/Pulse	2 L/Pulse
				0.02 ft^3/Pulse	0.04 ft^3/Pulse	0.2 ft^3/Pulse	0.4 ft^3/Pulse	2 ft^3/Pulse	4 ft^3/Pulse	7 ft^3/Pulse
Analog Output	Voltage Output			Voltage Output Range : 1 ~ 5 V Output Impedance : 1 KΩ						
	Current Output			Current Output Range : 4 ~ 20 mA Load Impedance : ≤ 300 Ω						
External Input				Non-voltage input, < 0.4 V, ≥ 30 ms						
Communication Interface				RS485 ※5						
Power		Power Supply Voltage		12 ~ 24 V DC ± 10 %, Ripple (P-P) ≤ 10 % (UL class 2)						
		Current Consumption		≤ 50 mA						
Environment	Working Pressure Range			-0.1 ~ 1 MPa						
	Withstand Pressure			1 MPa						
	Enclosure			IP40						
	Working Fluid Temp.			0 ~ 50 °C (No condensation or freezing)						
	Ambient Temp. Range			Operation : 0 ~ 50 °C ; Storage : -10 ~ 60 °C (No condensation or freezing)						
	Ambient Humidity Range			Operation / Storage : 35 ~ 85 % R.H. (No condensation)						
	Withstand Voltage			1000 V AC in 1-min (between case and lead wire)						
	Insulation Resistance			≥ 50 MΩ (500 V 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			100 m/s² (10 G), 3 times each in direction of X, Y and Z						
Lead Wire				Ø4 Oil-resistance cable (PVC) - 26 AWG (0.15 mm^2) - 6 cores						
Weight (with 2 meter lead wire)				Approx. 112.1 g (Ø6 port) ; Approx. 116 g (Ø8 port) ; Approx. 122.4 g (Rc1/4" port) ; Approx. 132.4 g (Rc1/8" port)						

NOTE

※1 : CFM (ft^3/min × 10^{-2}) and $ft^3 \times 10^{-2}$

※2 : CONDITION : Inlet Pressure : 300 kPa, Outlet Pressure : 1 atmospheric pressure, 25 °C

※3 : CONDITION : Outlet Pressure : 1 atmospheric pressure, 25 °C

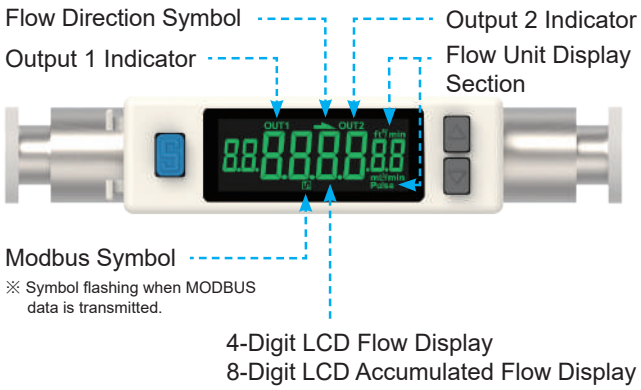
※4 : -0.1 ~ 1 MPa, Outlet Pressure : 1 atmospheric pressure, 25 °C

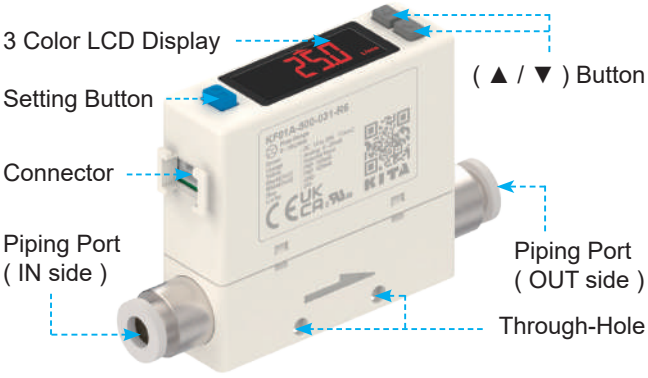
※5 : This function only available for Output Specification -02 and -04.

※6 : Accuracy : It is based on dry compressed air and KITA standard flow meter. It is a reference only for other gases.

KF01A SERIES Digital Flow Sensor

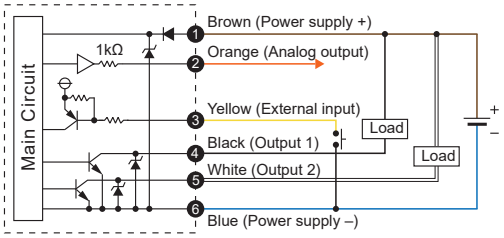
Panel Description



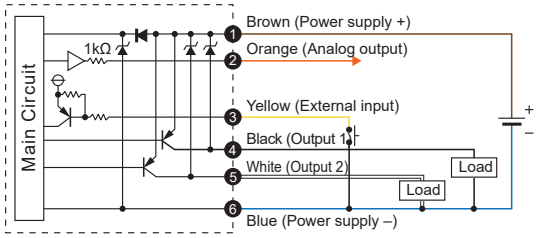


Output Circuit Wiring Diagrams

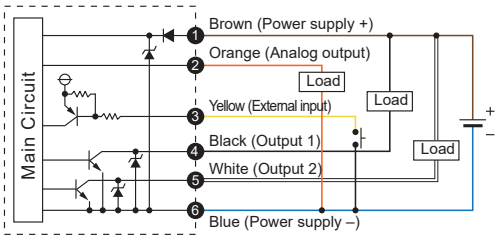
▪ NPN Output / Analog Voltage Output / External Input



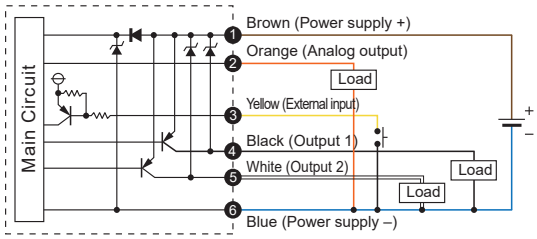
▪ PNP Output / Analog Voltage Output / External Input



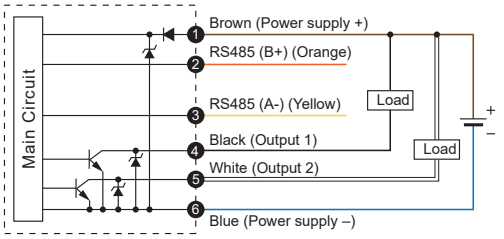
▪ NPN Output / Analog Current Output / External Input



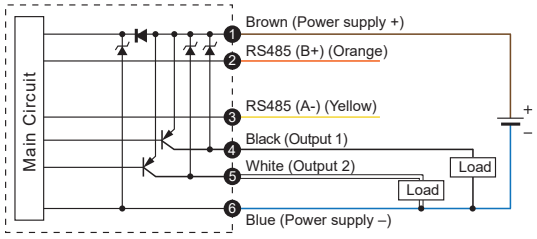
▪ PNP Output / Analog Current Output / External Input



▪ NPN Output / RS485 MODBUS Mode



▪ PNP Output / RS485 MODBUS Mode



※ Wiring for RS485 MODBUS : Please connect RS485 (B+) or (A-) before connecting power supply to avoid short circuit to damage to product.

Ordering Information

K F 0 1 A - 0 0 5 - 0 1 0 - R 6

Flow Rate Range

005 : 500 mL/min
010 : 1000 mL/min
050 : 5 L/min
100 : 10 L/min
500 : 50 L/min
101 : 100 L/min
201 : 200 L/min

Output Specifications

010 : 2 NPN output + Analog output (1 ~ 5 V)
011 : 2 NPN output + Analog output (4 ~ 20 mA)
02 : 2 NPN output + RS485
030 : 2 PNP output + Analog output (1 ~ 5 V)
031 : 2 PNP output + Analog output (4 ~ 20 mA)
04 : 2 PNP output + RS485

Port Size

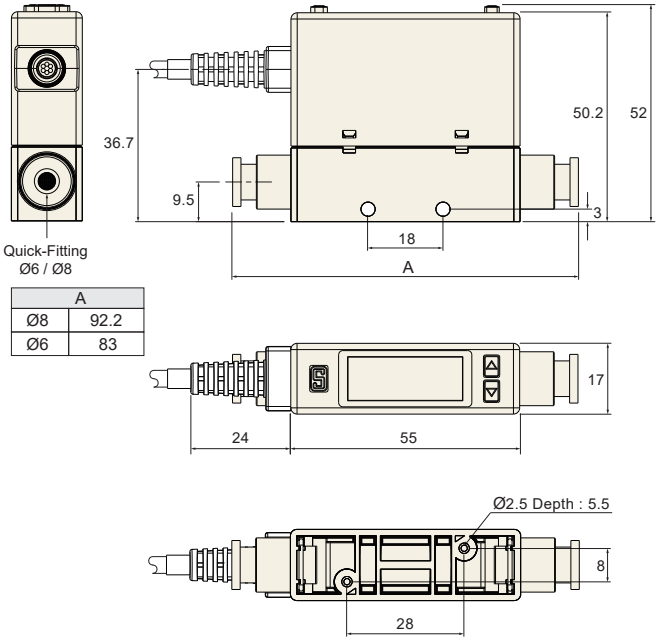
R6 : Ø6 mm, for Flow Rate Range 005, 010, 050, 100, 500
R8 : Ø8 mm, for Flow Rate Range 101, 201
F1C : Rc1/8", with internal threads, for Flow Rate Range 005, 010, 050, 100, 500
F4C : Rc1/4", with internal threads, for Flow Rate Range 101, 201

Optional Parts

BT-26 : Mounting bracket
PA-G : Panel adapter
PA-H : Panel adapter + Front protective lid

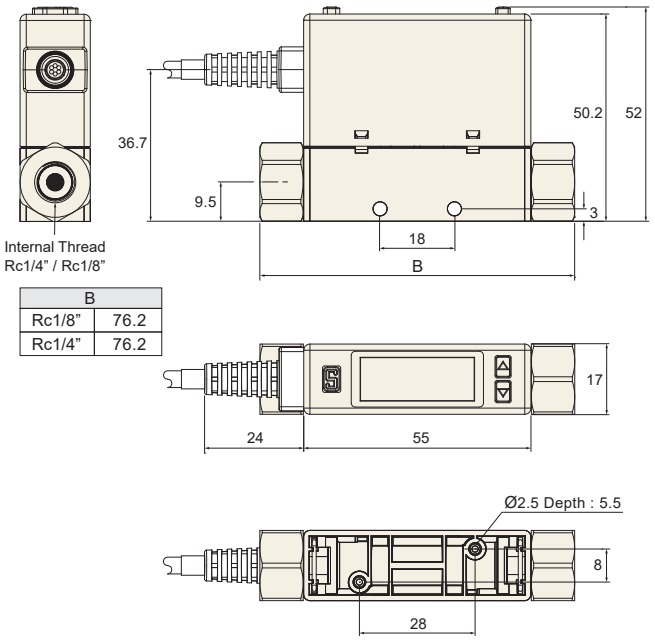
Dimensions

▪ Port Size : Ø6, Ø8



A	
Ø8	92.2
Ø6	83

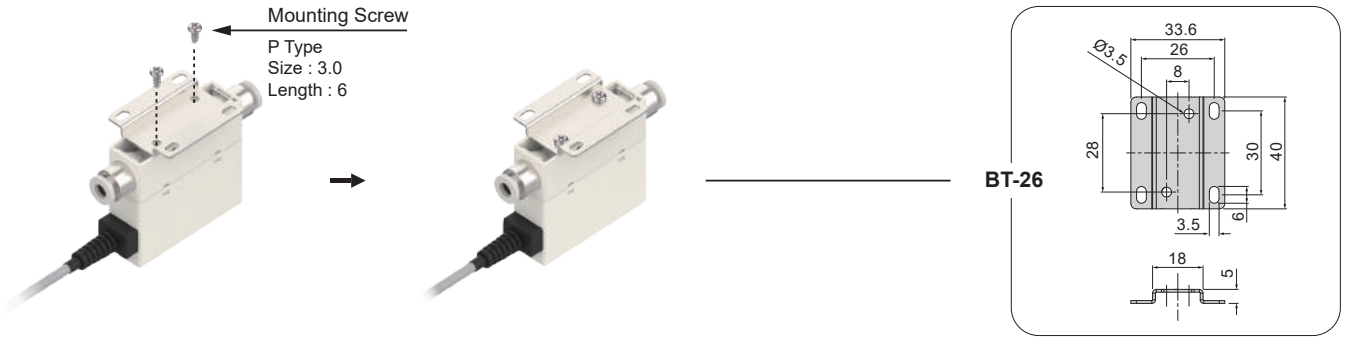
▪ Port Size : Rc1/8”, Rc1/4”



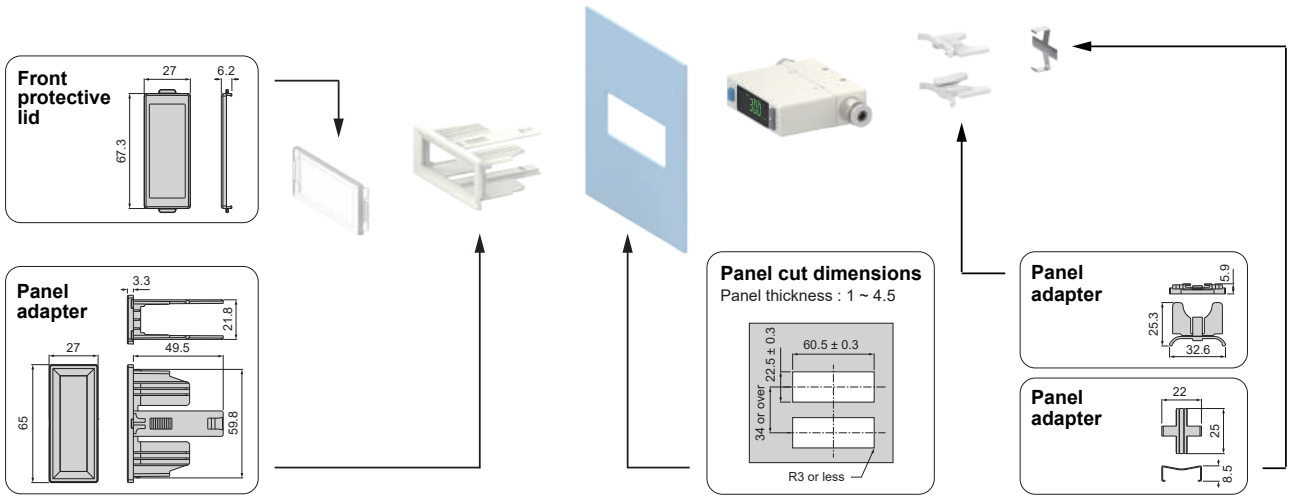
B	
Rc1/8”	76.2
Rc1/4”	76.2

Optional Parts Dimensions

1 Mounting Bracket



2 Panel Mount Adapter + Front Protective Lid



Unit : mm

KF02A SERIES Digital Flow Sensor

Features

- Design for large flow.
- 200 : 1 ratio covers a wider flow range.
- Invertible display makes digital easier to read.
- 8 digit 7 segment LCD display.
  Accumulated flow rate display at a glance.
- Real-time monitoring.

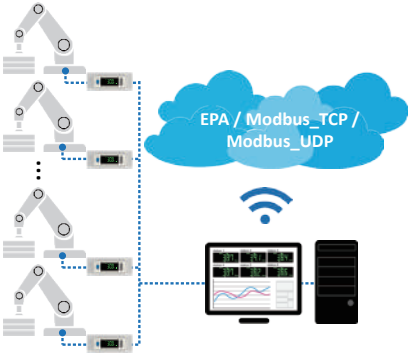
Patented RS485 MODBUS CONTROL

Features Highlight

1 3-color LED display

	SoU	Sor	Grn	rEd
ON	Green	Red	Green	Red
OFF	Red	Green	Green	Red

2 Real-time monitoring



3 High Performance

- High Precision

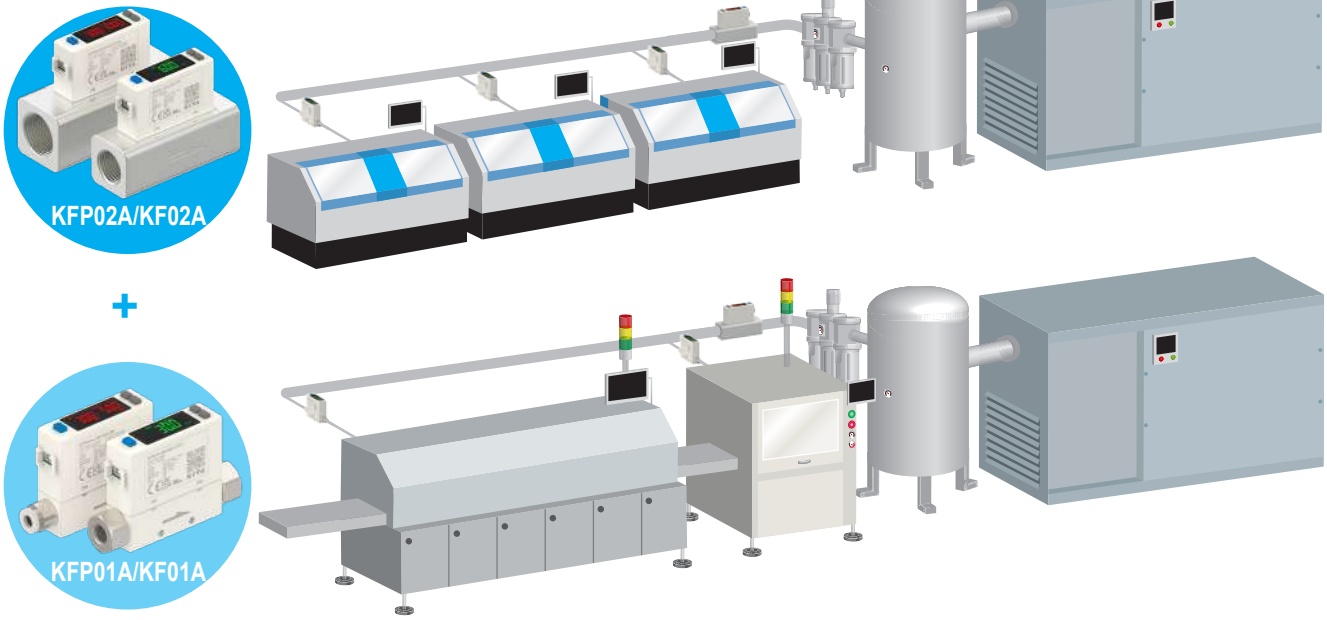
Indicator accuracy	± 3 % F.S.
Repeatability	± 1 % F.S.

- Multiple Output Function

Digital Display	Instantaneous flow value Accumulated flow value
Switch Output	NPN output PNP output
Analog output	Voltage output 1 ~ 5 V Current output 4 ~ 20 mA
Accumulated Pulse Output	50 ms pulse output

4 Air Consumption Monitoring

- Monitor air consumption of devices



Specifications

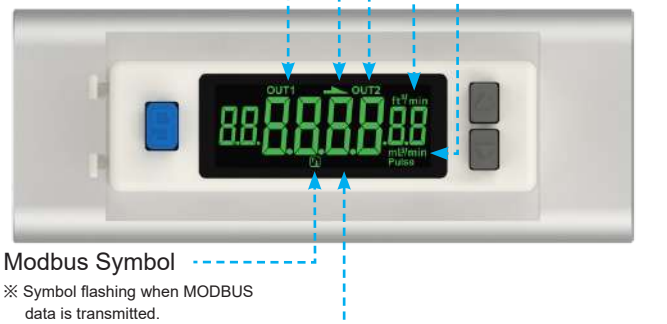
Model				501	102	202
Fluid				Dry air, N_2, Non-corrosive / Non-flammable gas		
Sensor Element		Measured Flow Rate Range		2 ~ 500 L/min	5 ~ 1000 L/min	10 ~ 2000 L/min
		Flow Direction		Unidirection		
Display				4 digital (Flow) / 8 digital (Accumulated Flow), 7 segment LCD display (Red / Green / Orange)		
	Instant Flow Rate	Display Range		0 ~ 525 L/min	0 ~ 1050 L/min	0 ~ 2100 L/min
		Minimum Setting Scale	LPM	1 L/min		
			CFM	0.1 ft^3/min		
	Accumulated Flow	Display Range		99999999 L		
		Minimum Setting Scale		1 L		
				0.1 ft^3		
Accuracy		Guaranteed Range		2 ~ 100 % F.S.		
		Indicator Accuracy		± 3 % F.S. ± 1 digit ※1		
		Analog Output Accuracy		± 5 % F.S. ※1		
		Repeatability		± 1 % F.S. ± 1 digit (± 2 % F.S. when response time is set to 50 ms) ※2		
		Linearity		± 3 % F.S. ※2		
		Temp. Characteristic		± 5 % F.S. ※2		
		Pressure Characteristic		± 5 % F.S. ± 1 digit ※3		
Switch Output				2 NPN : open collector 2 outputs Max. Load Current : 125 mA Max. Supply Voltage : 24 V DC Voltage Drop : ≤ 1.5 V		2 PNP : open collector 2 outputs Max. Load Current : 125 mA Max. Supply Voltage : 24 V DC Voltage Drop : ≤ 1.5 V
	Output Mode			Hysteresis Mode, Window Comparator Mode, Accumulated Output, Accumulated Pulse Output		
	Hysteresis			Adjustable		
	Response Time			800 ms (50 ms, 80 ms, 120 ms, 200 ms, 400 ms, 1500 ms selectable)		
	Output Short Circuit Proterction			Yes		
	Accumulated Pulse Output			5 L/Pulse	10 L/Pulse	10 L/Pulse
				20 ft^3/Pulse	40 ft^3/Pulse	40 ft^3/Pulse
Analog Output	Voltage Output			Voltage Output Range : 1 ~ 5 V Output Impedance : 1 KΩ		
	Current Output			Current Output Range : 4 ~ 20 mA Load Impedance : ≤ 300 Ω		
External Input				Non-voltage input, ≤ 0.4 V, ≥ 30 ms		
Communication Interface				RS485 ※4		
Power		Power Supply Voltage		12 ~ 24 V DC ± 10 %, Ripple (P-P) ≤ 10 % (UL class 2)		
		Current Consumption		≤ 50 mA		
Environment	Working Pressure Range			0 ~ 1.0 MPa		
	Withstand Pressure			1.5 MPa		
	Enclosure			IP40		
	Working Fluid Temp.			0 ~ 50 °C (No condensation or freezing)		
	Ambient Temp. Range			Operation : 0 ~ 50 °C ; Storage : -10 ~ 60 °C (No condensation or freezing)		
	Ambient Humidity Range			Operation / Storage : 35 ~ 85 % R.H. (No condensation)		
	Withstand Voltage			250 V AC in 1-min (between case and lead wire)		
	Insulation Resistance			≥ 2 MΩ (50 V 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			100 m/s² (10 G), 3 times each in direction of X, Y and Z		
Lead Wire				Ø4 Oil-resistance cable (PVC) - 26 AWG (0.15 mm^2) - 6 cores		
Weight (without 2 meter lead wire)				Approx. 281.7 g (500 / 1000 L) ; Approx. 344 g (2000 L)		

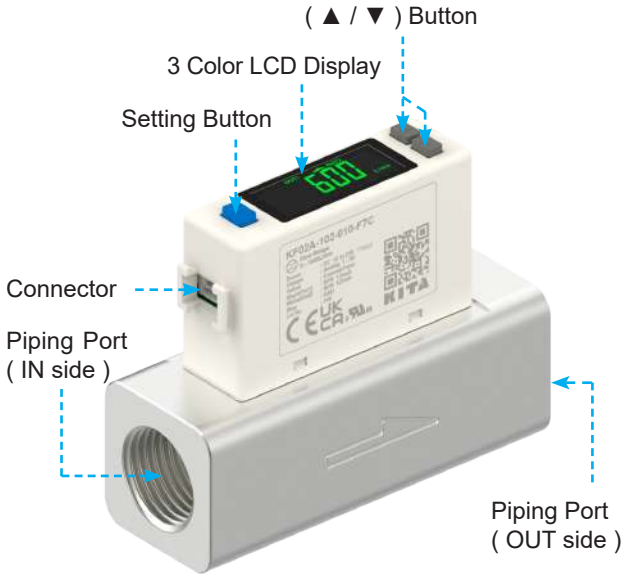
NOTE

※1 : CONDITION : Inlet Pressure : 600 kPa, Outlet Pressure : 1 atmospheric pressure, 25 °C
※2 : CONDITION : Outlet Pressure : 1 atmospheric pressure, 25 °C
※3 : 0 ~ 1.0 MPa, Outlet Pressure : 1 atmospheric pressure, 25 °C
※4 : This function only available for Output Specification -02 and -04.

KF02A SERIES Digital Flow Sensor

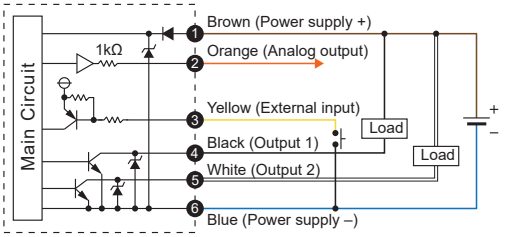
Panel Description



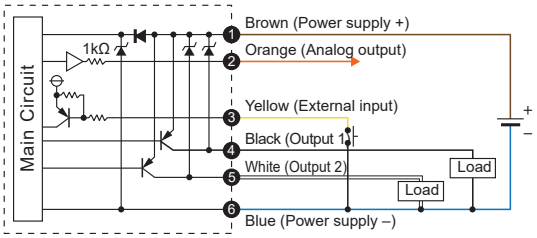


Output Circuit Wiring Diagrams

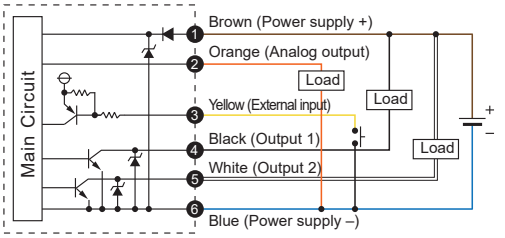
▪ NPN Output / Analog Voltage Output / External Input



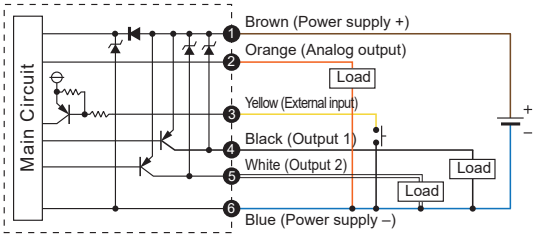
▪ PNP Output / Analog Voltage Output / External Input



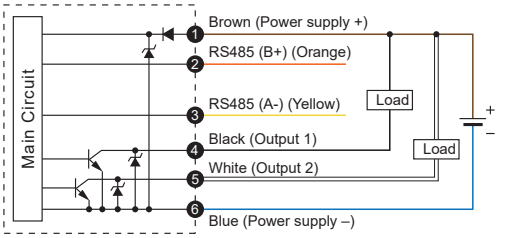
▪ NPN Output / Analog Current Output / External Input



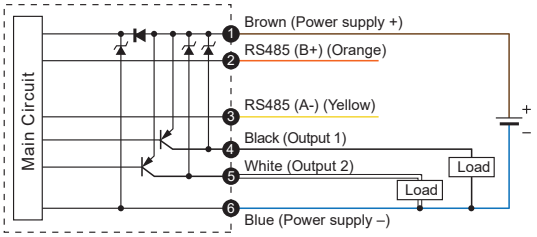
▪ PNP Output / Analog Current Output / External Input



▪ NPN Output / RS485 MODBUS Mode



▪ PNP Output / RS485 MODBUS Mode



※ Wiring for RS485 MODBUS : Please connect RS485 (B+) or (A-) before connecting power supply to avoid short circuit to damage to product.

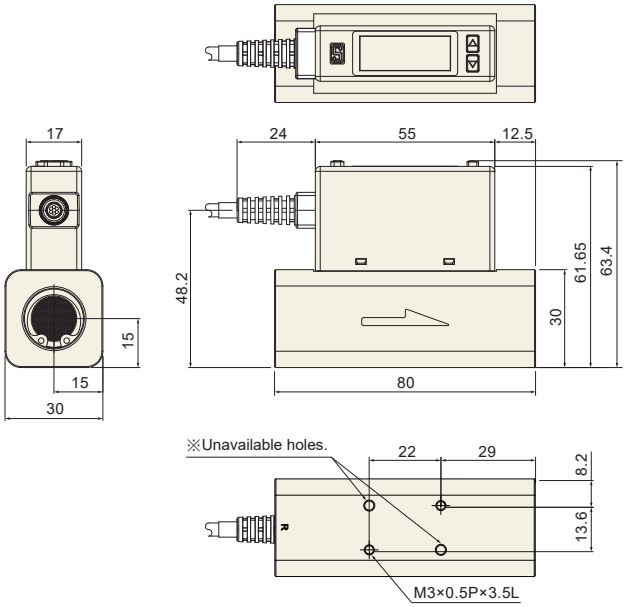
Ordering Information

K F 0 2 A - 5 0 1 - 0 1 0 - F 7 C

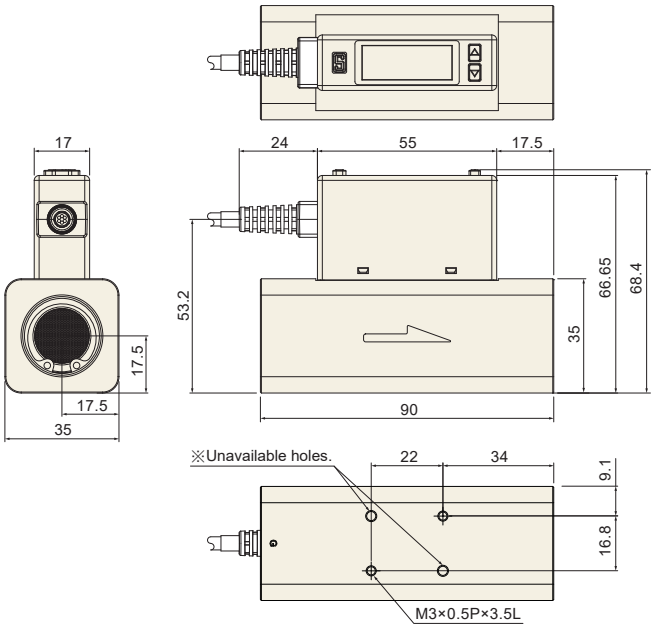
Flow Rate Range	Output Specifications	Port Size	Optional Parts
501 : 500 L/min 102 : 1000 L/min 202 : 2000 L/min	010 : 2 NPN output + Analog output (1 ~ 5 V) 011 : 2 NPN output + Analog output (4 ~ 20 mA) 02 : 2 NPN output + RS485 030 : 2 PNP output + Analog output (1 ~ 5 V) 031 : 2 PNP output + Analog output (4 ~ 20 mA) 04 : 2 PNP output + RS485	F7C : Rc1/2", for Flow Rate Range 501/102. F9C : G1/2", for Flow Rate Range 501/102. F10C : Rc3/4", for Flow Rate Range 202. F12C : G3/4", for Flow Rate Range 202.	BT-27 : Mounting bracket, for Flow Rate Range 501/102. BT-28 : Mounting bracket, for Flow Rate Range 202.

Dimensions

- **Flow Rate Range 501, 102 (Port Size : Rc1/2", G1/2")**

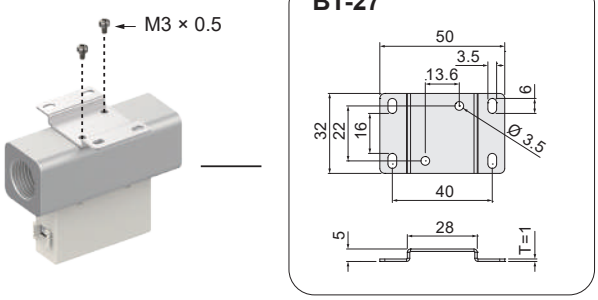


- **Flow Rate Range 202 (Port Size : Rc3/4", G3/4")**

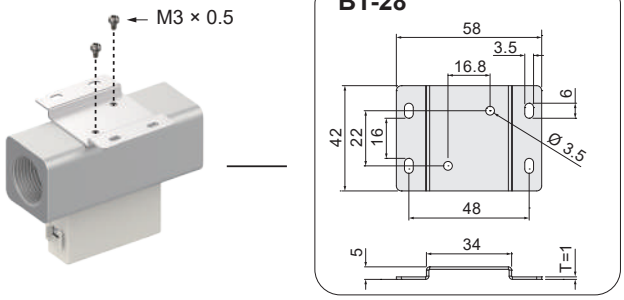


Optional Parts Dimensions

- **Mounting Bracket : BT-27 (Flow Rate Range 501, 102)**



- **Mounting Bracket : BT-28 (Flow Rate Range 202)**



Unit : mm

KFP01A SERIES Digital Flow and Pressure Sensor

Features

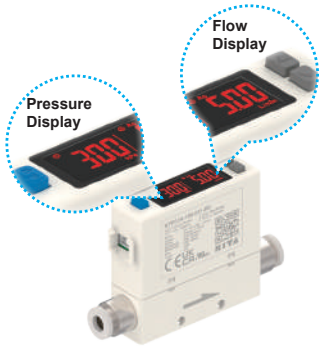
- **Flow and pressure dual sensor.**
- **Flow and pressure 4 digit, 7 segment dual LCD display.**
- **7 segment 8 digit LCD display.**
  Accumulated flow rate display at a glance.

Patented **RS485 MODBUS CONTROL**

Features Highlight

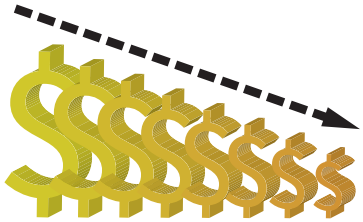
1 2-in-1 Design

- Pressure and flow rate simultaneous monitoring



2 Cost Reduction

- KFP01A series significantly reduces costs comparing with conventional product



3 High Performance

- High Precision

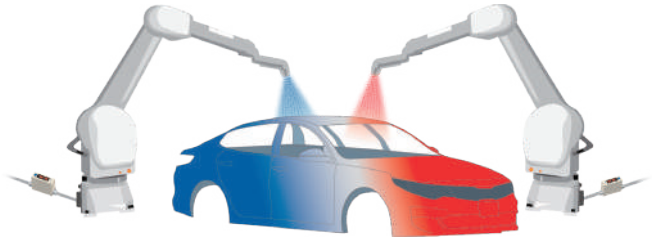
	Pressure	Flow
Indicator accuracy	± 2 % F.S.	± 3 % F.S.
Repeatability	± 0.2 % F.S.	± 1 % F.S.

- Multiple Output Function

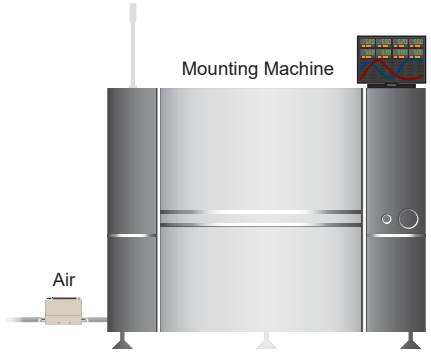
Digital Display	Instantaneous flow value Accumulated flow value Pressure value
Switch Output	NPN output PNP output
Analog output	Voltage output 1~5 V Current output 4~20 mA
Accumulated Pulse Output	50ms pulse output

4 Wide range of applications

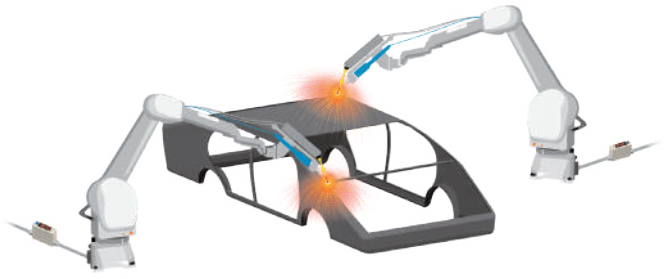
- Painting Robot :
  Air flow and pressure management of paint and coating processes

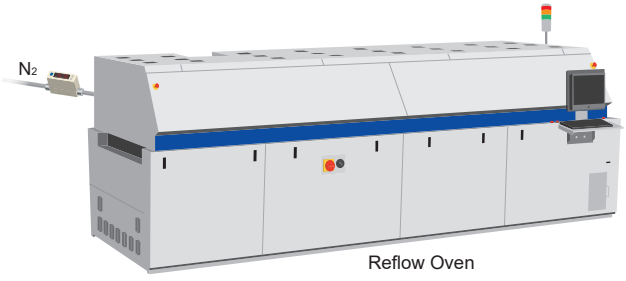


- Reflow Oven / Mounting Machine :
  N_2 & Air consumption of the whole equipment management



- Laser Welding Robot :
  Management of shielding gas, flow rate and pressure





Specifications

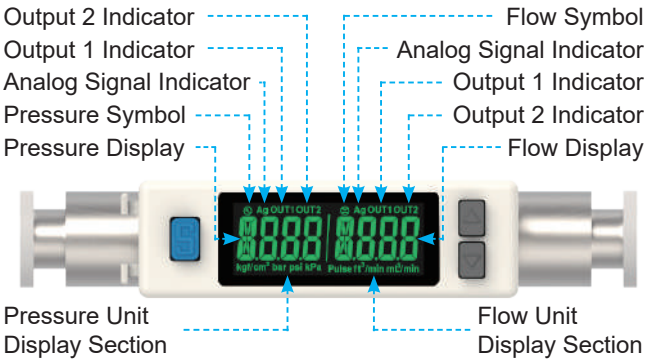
Model				005	010	050	100	500	101	201
Fluid				Dry air, N_2, CO_2, Ar, Non-corrosive / Non-flammable gas						
Sensor Element	Flow	Measured Flow Rate Range		0 ~ 500 mL/min	0 ~ 1000 mL/min	0 ~ 5 L/min	0 ~ 10 L/min	0 ~ 50 L/min	0 ~ 100 L/min	0 ~ 200 L/min
		Flow Direction		Unidirection						
	Pressure	Rated Pressure Range		-100 ~ 1000 kPa						
Display				4 digital × 4 digital, 7 segment LCD display (Red / Green / Orange)						
	Instant Flow Rate	Display Range		0 ~ 525 mL/min	0 ~ 1050 mL/min	0 ~ 5.25 L/min	0 ~ 10.50 L/min	0 ~ 52.5 L/min	0 ~ 105.0 L/min	0 ~ 210 L/min
		Minimum Setting Scale	LPM	1 mL/min	1 mL/min	0.01 L/min	0.01 L/min	0.1 L/min	0.1 L/min	1 L/min
			CFM ※1	0.01 ft^3/min	0.01 ft^3/min	0.1 ft^3/min	0.1 ft^3/min	1 ft^3/min	1 ft^3/min	1 ft^3/min
	Accumulated Flow	Display Range		99999999 mL	99999999 mL	999999.99 L	999999.99 L	9999999.9 L	9999999.9 L	99999999 L
		Minimum Setting Scale ※1		1 mL	1 mL	0.01 L	0.01 L	0.1 L	0.1 L	1 L
				0.01 ft^3	0.01 ft^3	0.1 ft^3	0.1 ft^3	1 ft^3	1 ft^3	1 ft^3
	Pressure Display	Display Range		-100 ~ 1000 kPa						
		Minimum Setting Scale	kPa	1						
			kgf/cm^2	0.01						
			bar	0.01						
			psi	0.1						
Accuracy	Flow ※8	Guaranteed Range		2 ~ 100 % F.S.						
		Indicator Accuracy		± 3 % F.S. ± 1 digit ※2						
		Analog Output Accuracy		± 5 % F.S. ※2						
		Repeatability		± 1 % F.S. ± 1 digit ※3						
		Linearity		± 3 % F.S. ※3						
		Temp. Characteristic		± 5 % F.S. ※3						
		Pressure Characteristic		± 5 % F.S. ± 1 digit ※4						
	Pressure	Guaranteed Range		0 ~ 100 % F.S.						
		Indicator Accuracy		± 2 % F.S. ± 1 digit ※5						
		Analog Output Accuracy		± 2.5 % F.S. ※5						
		Repeatability		± 0.2 % F.S. ± 1 digit ※5						
		Linearity		± 1 % F.S. ※5						
		Temp. Characteristic		± 2 % F.S. ※5						
Switch Output				2 NPN open collector outputs Max. Load Current : 125 mA Max. Supply Voltage : 24 V DC Voltage Drop : ≤ 1.5 V			2 PNP open collector outputs Max. Load Current : 125 mA Max. Supply Voltage : 24 V DC Voltage Drop : ≤ 1.5 V			
	Output Mode	Flow		Hysteresis Mode, Window Comparator Mode, Accumulated Output, Accumulated Pulse Output						
		Pressure		One Point Set Mode, Hysteresis Mode, Window Comparator Mode						
	Hysteresis			Adjustable						
	Response Time	Flow		800 ms (50 ms, 80 ms, 120 ms, 200 ms, 400 ms, 1500 ms selectable)						
		Pressure		2.5 ms (25 ms, 100 ms, 250 ms, 500 ms, 1000 ms, 1500 ms selectable)						
	Output Short Circuit Proterction			Yes						
	Accumulated Pulse Output ※1			5 mL/Pulse	10 mL/Pulse	0.05 L/Pulse	0.1 L/Pulse	0.5 L/Pulse	1 L/Pulse	2 L/Pulse
				0.02 ft^3/Pulse	0.04 ft^3/Pulse	0.2 ft^3/Pulse	0.4 ft^3/Pulse	2 ft^3/Pulse	4 ft^3/Pulse	7 ft^3/Pulse
Analog Output	Voltage Output			Voltage Output Range : 1 ~ 5 V ※6 Output Impedance : 1 KΩ						
	Current Output			Current Output Range : 4 ~ 20 mA ※6 Load Impedance : ≤ 300 Ω						
External Input				Non-voltage input, < 0.4 V, ≥ 30 ms						
Communication Interface				RS485 ※7						
Power		Power Supply Voltage		12 ~ 24 V DC ± 10 %, Ripple (P-P) ≤ 10 % (UL class 2)						
		Current Consumption		≤ 50 mA						
Environment	Withstand Pressure			1 MPa						
	Enclosure			IP40						
	Working Fluid Temp.			0 ~ 50 °C (No condensation or freezing)						
	Ambient Temp. Range			Operation : 0 ~ 50 °C ; Storage : -10 ~ 60 °C (No condensation or freezing)						
	Ambient Humidity Range			Operation / Storage : 35 ~ 85 % R.H. (No condensation)						
	Withstand Voltage			1000 V AC in 1-min (between case and lead wire)						
	Insulation Resistance			≥ 50 MΩ (500 V 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			100 m/s² (10 G), 3 times each in direction of X, Y and Z						
Lead Wire				Ø4 Oil-resistance cable (PVC) - 26 AWG (0.15 mm^2) - 6 cores						
Weight (with 2 meter lead wire)				Approx. 112.1 g (Ø6 port) ; Approx. 116 g (Ø8 port) ; Approx. 122.4 g (Rc1/4" port) ; Approx. 132.4 g (Rc1/8" port)						

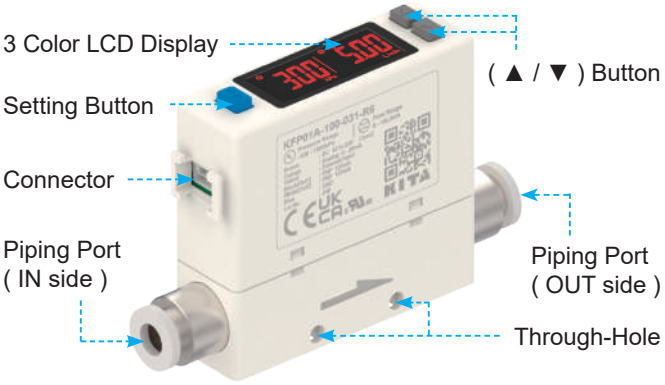
NOTE

※1 : CFM ($ft^3/min \times 10^{-2}$) and $ft^3 \times 10^{-2}$
※2 : CONDITION : Inlet Pressure : 300 kPa, Outlet Pressure : 1 atmospheric pressure, 25 °C
※3 : CONDITION : Outlet Pressure : 1 atmospheric pressure, 25 °C
※4 : -100 ~ 1000 kPa, Outlet Pressure : 1 atmospheric pressure, 25 °C
※5 : Outlet flow rate = 0 L/min, 25 °C
※6 : Corresponding to pressure sensor 0 ~ 1000 kPa
※7 : This function only available for Output Specification -02 and -04.
※8 : Accuracy: It is based on dry compressed air and KITA standard flow meter. It is a reference only for other gases.

KFP01A SERIES Digital Flow and Pressure Sensor

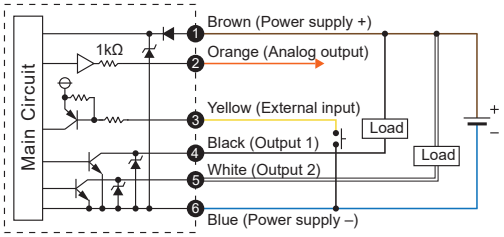
Panel Description



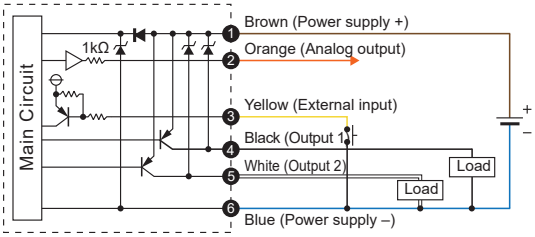


Output Circuit Wiring Diagrams

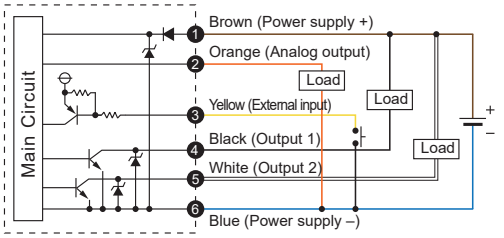
NPN Output / Analog Voltage Output / External Input



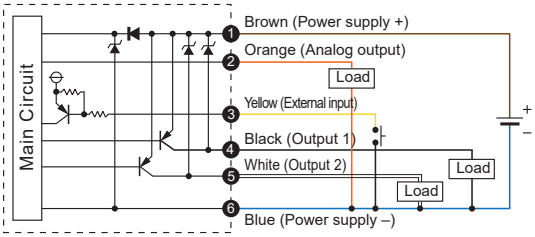
PNP Output / Analog Voltage Output / External Input



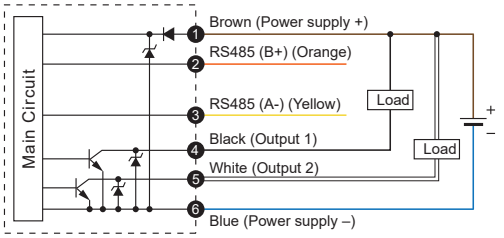
NPN Output / Analog Current Output / External Input



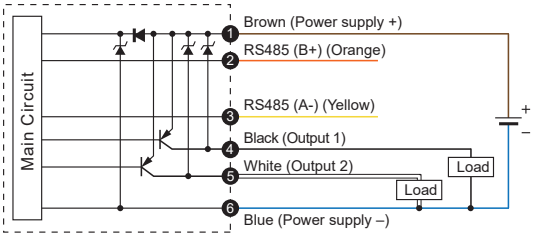
PNP Output / Analog Current Output / External Input



NPN Output / RS485 MODBUS Mode



PNP Output / RS485 MODBUS Mode



※ Wiring for RS485 MODBUS : Please connect RS485 (B+) or (A-) before connecting power supply to avoid short circuit to damage to product.

Ordering Information

K F P 0 1 A - 0 0 5 - 0 1 0 - R 6

Flow Rate Range

005 : 500 mL/min
010 : 1000 mL/min
050 : 5 L/min
100 : 10 L/min
500 : 50 L/min
101 : 100 L/min
201 : 200 L/min

Output Specifications

010 : 2 NPN output + Analog output (1 ~ 5 V)
011 : 2 NPN output + Analog output (4 ~ 20 mA)
02 : 2 NPN output + RS485
030 : 2 PNP output + Analog output (1 ~ 5 V)
031 : 2 PNP output + Analog output (4 ~ 20 mA)
04 : 2 PNP output + RS485

Port Size

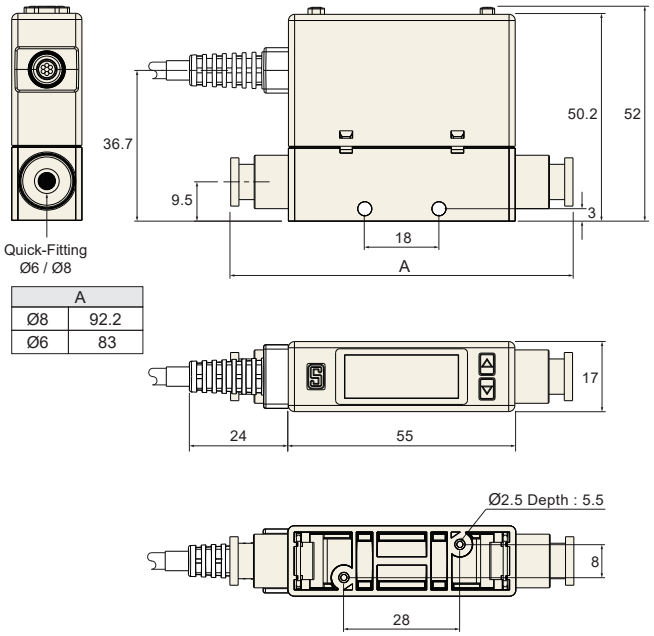
R6 : Ø6 mm, for Flow Rate Range 005, 010, 050, 100, 500
R8 : Ø8 mm, for Flow Rate Range 101, 201
F1C : Rc1/8", with internal threads, for Flow Rate Range 005, 010, 050, 100, 500
F4C : Rc1/4", with internal threads, for Flow Rate Range 101, 201

Optional Parts

BT-26 : Mounting bracket
PA-G : Panel adapter
PA-H : Panel adapter + Front protective lid

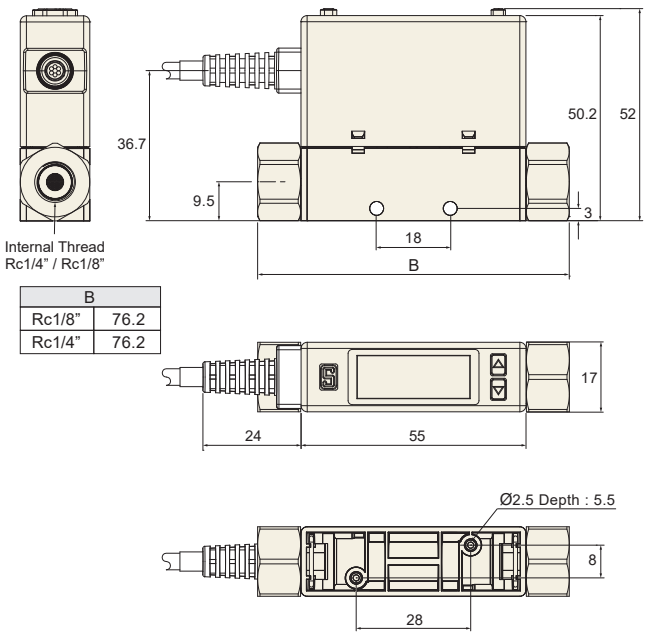
Dimensions

■ Port Size : Ø6, Ø8



A	
Ø8	92.2
Ø6	83

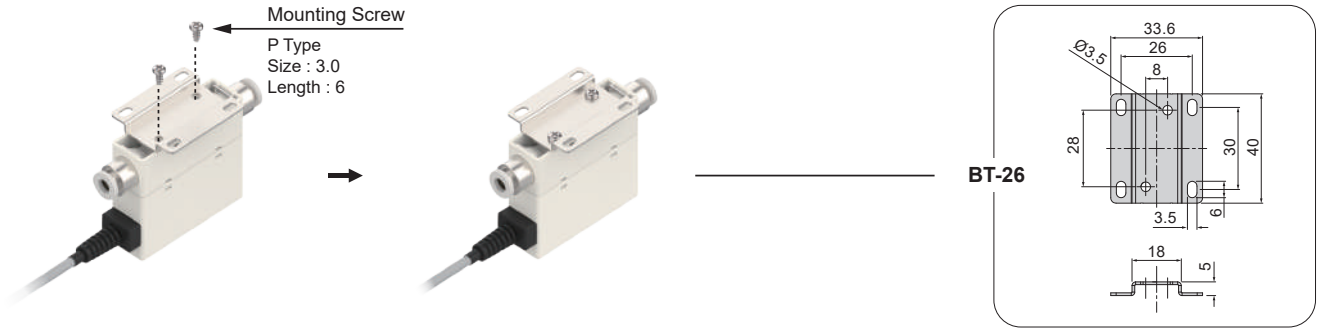
■ Port Size : Rc1/8”, Rc1/4”



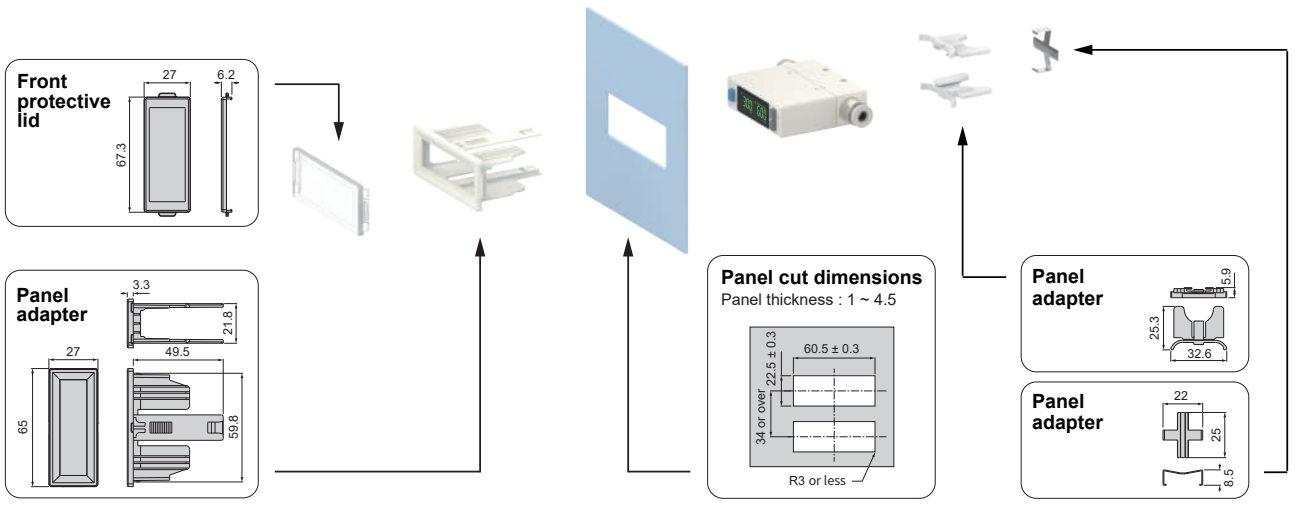
B	
Rc1/8”	76.2
Rc1/4”	76.2

Optional Parts Dimensions

1 Mounting Bracket



2 Panel Mount Adapter + Front Protective Lid



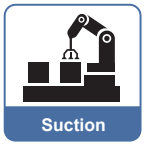
Unit : mm

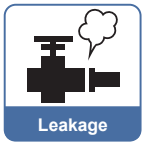
KFP02A SERIES Digital Flow and Pressure Sensor

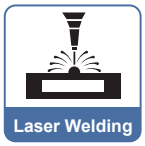
Features

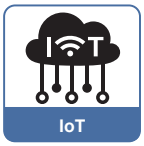
- Design for large flow.
- Flow and pressure dual sensor.
- 200 : 1 ratio covers a wider flow range.
- Flow and pressure 4 digit, 7 segment dual LCD display.
- 7 segment 8 digit LCD display.
  Accumulated flow rate display at a glance.
- Real-time monitoring.

Patented RS485 MODBUS CONTROL









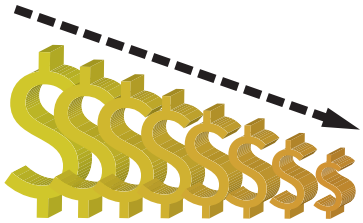
Features Highlight

1 2-in-1 Design

- Pressure and flow rate simultaneous monitoring

2 Cost Reduction

- KFP02A series significantly reduces costs comparing with conventional product



3 High Performance

- High Precision

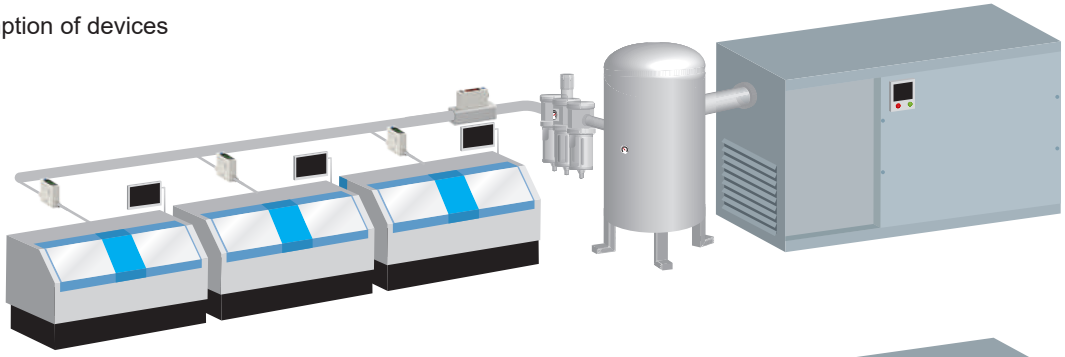
	Pressure	Flow
Indicator accuracy	± 2 % F.S.	± 3 % F.S.
Repeatability	± 0.2 % F.S.	± 1 % F.S.

- Multiple Output Function

Digital Display	Instantaneous flow value Accumulated flow value Pressure value
Switch Output	NPN output PNP output
Analog output	Voltage output 1~5 V Current output 4~20 mA
Accumulated Pulse Output	50ms pulse output

4 Air Consumption Monitoring

- Monitor air consumption of devices



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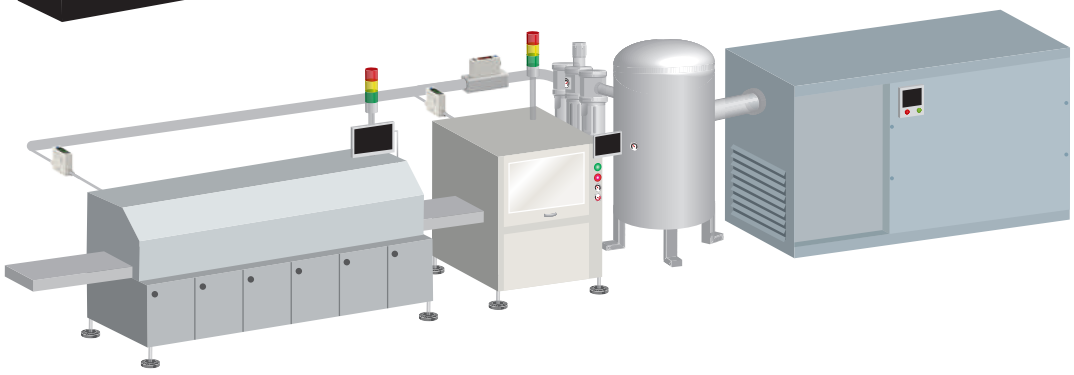


Specifications

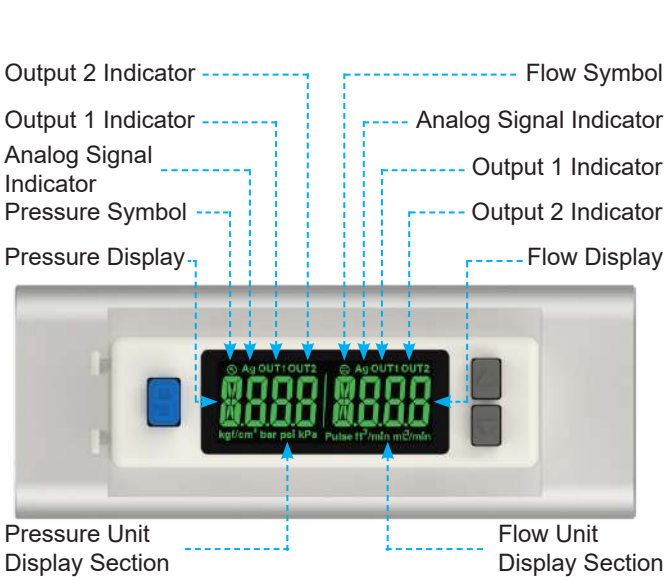
Model				501	102	202
Fluid				Dry air, N_2, Non-corrosive / Non-flammable gas		
Sensor Element	Flow	Measured Flow Rate Range		2 ~ 500 L/min	5 ~ 1000 L/min	10 ~ 2000 L/min
		Flow Direction		Unidirection		
	Pressure	Rated Pressure Range		-100 ~ 1000 kPa		
Display				4 digital × 4 digital, 7 segment LCD display (Red / Green / Orange)		
	Instant Flow Rate	Display Range		0 ~ 525 L/min	0 ~ 1050 L/min	0 ~ 2100 L/min
		Minimum Setting Scale	LPM	1 L/min		
			CFM	0.1 ft^3/min		
	Accumulated Flow	Display Range		99999999 L		
		Minimum Setting Scale		1 L		
				1 ft^3		
	Pressure Display	Display Range		-100 ~ 1000 kPa		
		Minimum Setting Scale	kPa	1		
			kgf/cm^2	0.01		
			bar	0.01		
			psi	0.1		
Accuracy	Flow	Guaranteed Range		2 ~ 100 % F.S.		
		Indicator Accuracy		± 3 % F.S. ± 1 digit ※1		
		Analog Output Accuracy		± 5 % F.S. ※1		
		Repeatability		± 1 % F.S. ± 1 digit (± 2 % F.S. when response time is set to 50 ms) ※2		
		Linearity		± 3 % F.S. ※2		
		Temp. Characteristic		± 5 % F.S. ※2		
		Pressure Characteristic		± 5 % F.S. ± 1 digit ※3		
	Pressure	Guaranteed Range		0 ~ 100 % F.S.		
		Indicator Accuracy		± 2 % F.S. ± 1 digit ※4		
		Analog Output Accuracy		± 2.5 % F.S. ※4		
		Repeatability		± 0.2 % F.S. ± 1 digit ※4		
		Linearity		± 1 % F.S. ※4		
		Temp. Characteristic		± 2 % F.S. ※4		
Switch Output				2 NPN : open collector 2 outputs Max. Load Current : 125 mA Max. Supply Voltage : 24 V DC Voltage Drop : ≤ 1.5 V		2 PNP : open collector 2 outputs Max. Load Current : 125 mA Max. Supply Voltage : 24 V DC Voltage Drop : ≤ 1.5 V
	Output Mode	Flow		Hysteresis Mode, Window Comparator Mode, Accumulated Output, Accumulated Pulse Output		
		Pressure		One Point Set Mode, Hysteresis Mode, Window Comparator Mode		
	Hysteresis			Adjustable		
	Response Time	Flow		800 ms (50 ms, 80 ms, 120 ms, 200 ms, 400 ms, 1500 ms selectable)		
		Pressure		2.5 ms (25 ms, 100 ms, 250 ms, 500 ms, 1000 ms, 1500 ms selectable)		
	Output Short Circuit Proterction			Yes		
	Accumulated Pulse Output			5 L/Pulse	10 L/Pulse	10 L/Pulse
				20 ft^3/Pulse	40 ft^3/Pulse	40 ft^3/Pulse
Analog Output	Voltage Output			Voltage Output Range : 1 ~ 5 V ※5 Output Impedance : 1 KΩ		
	Current Output			Current Output Range : 4 ~ 20 mA ※5 Load Impedance : ≤ 300 Ω		
External Input				Non-voltage input, ≤ 0.4 V, ≥ 30 ms		
Communication Interface				RS485 ※6		
Power		Power Supply Voltage		12 ~ 24 V DC ± 10 %, Ripple (P-P) ≤ 10 % (UL class 2)		
		Current Consumption		≤ 50 mA		
Environment	Withstand Pressure			1.5 MPa		
	Enclosure			IP40		
	Working Fluid Temp.			0 ~ 50 °C (No condensation or freezing)		
	Ambient Temp. Range			Operation : 0 ~ 50 °C ; Storage : -10 ~ 60 °C (No condensation or freezing)		
	Ambient Humidity Range			Operation / Storage : 35 ~ 85 % R.H. (No condensation)		
	Withstand Voltage			250 V AC in 1-min (between case and lead wire)		
	Insulation Resistance			≥ 2 MΩ (50 V 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			100 m/s² (10 G), 3 times each in direction of X, Y and Z		
Lead Wire				Ø4 Oil-resistance cable (PVC) - 26 AWG (0.15 mm^2) - 6 cores		
Weight (without 2 meter lead wire)				Approx. 281.7 g (500 / 1000 L) ; Approx. 344 g (2000 L)		

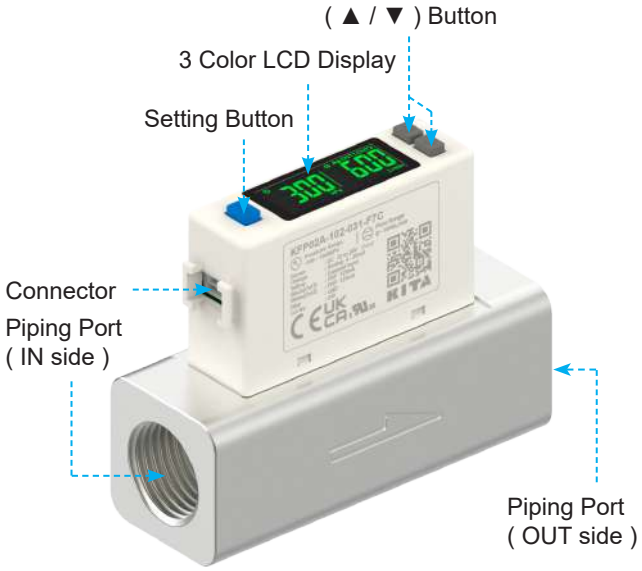
NOTE

※1 : CONDITION : Inlet Pressure : 600 kPa, Outlet Pressure : 1 atmospheric pressure, 25 °C
※2 : CONDITION : Outlet Pressure : 1 atmospheric pressure, 25 °C
※3 : 0 ~ 1.0 MPa, Outlet Pressure : 1 atmospheric pressure, 25 °C
※4 : Outlet flow rate = 0 L/min, 25 °C
※5 : Corresponding to pressure sensor 0 ~ 1000 kPa
※6 : This function only available for Output Specification -02 and -04.

KFP02A SERIES Digital Flow and Pressure Sensor

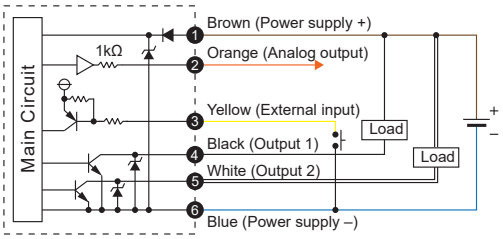
Panel Description



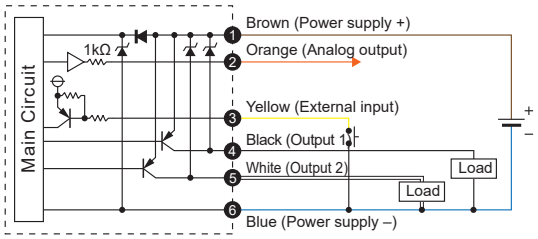


Output Circuit Wiring Diagrams

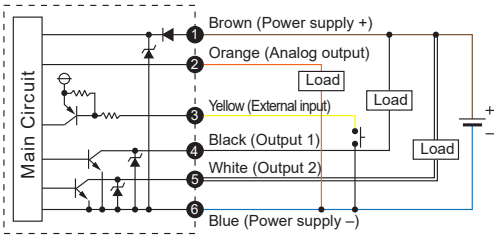
▪ NPN Output / Analog Voltage Output / External Input



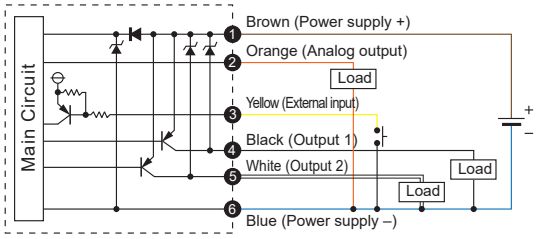
▪ PNP Output / Analog Voltage Output / External Input



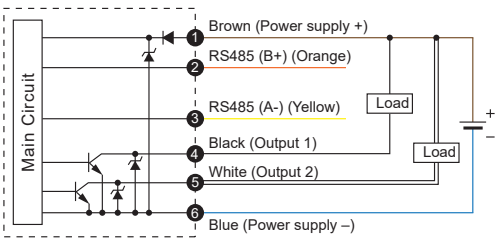
▪ NPN Output / Analog Current Output / External Input



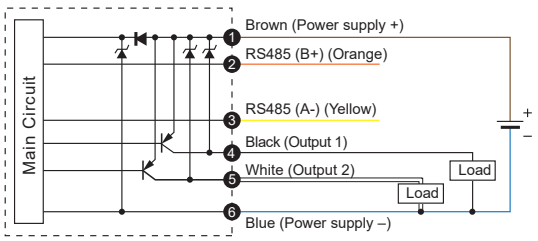
▪ PNP Output / Analog Current Output / External Input



▪ NPN Output / RS485 MODBUS Mode



▪ PNP Output / RS485 MODBUS Mode



※ Wiring for RS485 MODBUS : Please connect RS485 (B+) or (A-) before connecting power supply to avoid short circuit to damage to product.

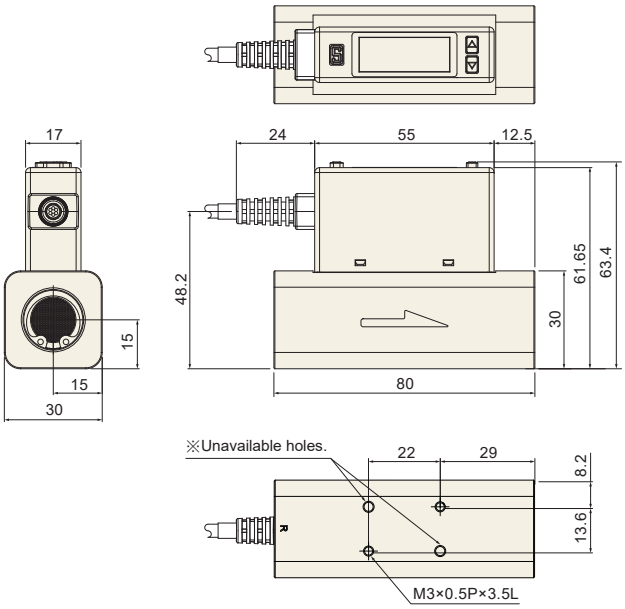
Ordering Information

K F P 0 2 A - 5 0 1 - 0 1 0 - F 7 C

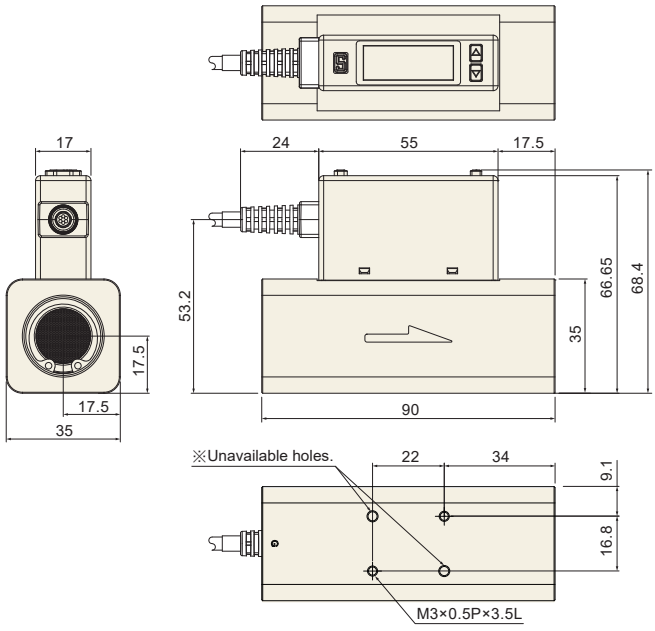
Flow Rate Range	Output Specifications	Port Size	Optional Parts
501 : 500 L/min 102 : 1000 L/min 202 : 2000 L/min	010 : 2 NPN output + Analog output (1 ~ 5 V) 011 : 2 NPN output + Analog output (4 ~ 20 mA) 02 : 2 NPN output + RS485 030 : 2 PNP output + Analog output (1 ~ 5 V) 031 : 2 PNP output + Analog output (4 ~ 20 mA) 04 : 2 PNP output + RS485	F7C : Rc1/2", for Flow Rate Range 501/102. F9C : G1/2", for Flow Rate Range 501/102. F10C : Rc3/4", for Flow Rate Range 202. F12C : G3/4", for Flow Rate Range 202.	BT-27 : Mounting bracket, for Flow Rate Range 501/102. BT-28 : Mounting bracket, for Flow Rate Range 202.

Dimensions

▪ **Flow Rate Range 501, 102**
(Port Size : Rc1/2", G1/2")

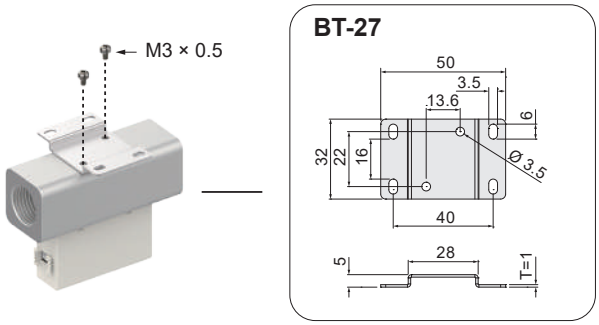


▪ **Flow Rate Range 202**
(Port Size : Rc3/4", G3/4")

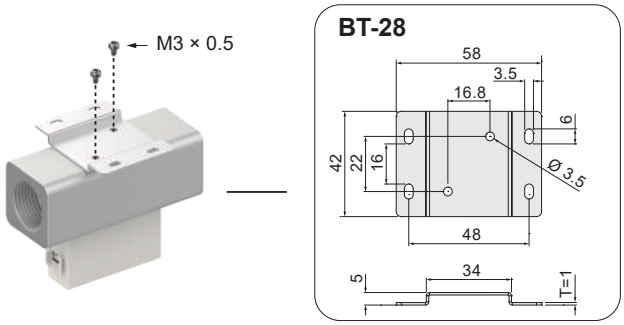


Optional Parts Dimensions

▪ **Mounting Bracket : BT-27**
(Flow Rate Range 501, 102)



▪ **Mounting Bracket : BT-28**
(Flow Rate Range 202)



Unit : mm

Magnetic Sensor

KL Series
Patented

P.108

KT-05 Series

P.110

KT-06 Series

P.111

KT-07 Series ★
Hot Sale

P.112

KT-09 Series

P.113

KT-11 Series

P.114

KT-13 Series
Patented

P.115

KT-15 Series

P.116

KT-16 Series

P.117

KT-20 Series

P.118

KT-21 Series

P.119

KT-31 Series
High Temp. Resistant

P.120

KT-32 Series
ATEX

P.121

KT-33 Series

P.123

KT-36 Series ★
Compact Size
Hot Sale

P.124

KT-37 Series
Compact Size

P.125

KT-39 Series ★
Compact Size
Hot Sale

P.126

KT-40 Series

P.127

KT-47 Series

P.128

KT-48 Series

P.129

KT-50 Series

P.130

KT-53 Series

P.131

KT-58 Series

P.132

KT-59 Series

P.133

KT-65 Series ★
Patented
Hot Sale

P.134

KT-65-EX Series
Patented
ATEX

P.135

KT-65-UL Series
Patented
c UL us

P.136

KT-71 Series

P.137

KT-75 Series ★
Patented
Hot Sale

P.138

KT-77 Series

P.139

KT-1000D Series
Magnetic-Field Resistant

P.140

KT-1001D Series
Magnetic-Field Resistant

P.142

Bracket

P.143

Clamp

P.147

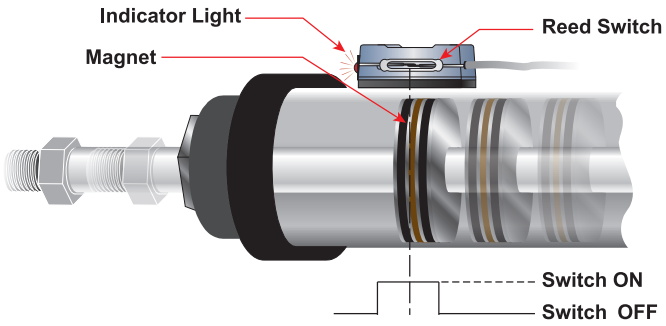
Magnet

P.152

※ Product surfaces with slight luminance non-uniformity, color cast, tiny scratching, little stains etc. are regarded as qualified products.

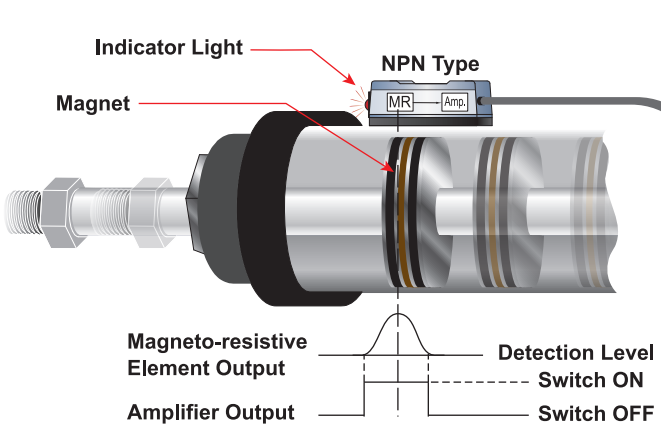
Magnetic Sensor Operating & Installing

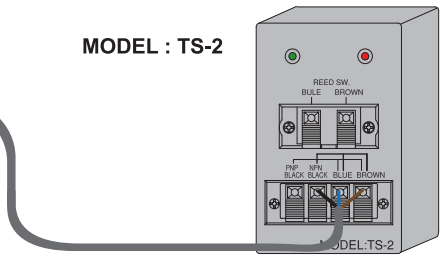
Reed SW. Type



When the piston's magnet approaches the magnetic sensor, the internal reed switch will detect the change of magnetic field and close the contacts.

Solid State Type



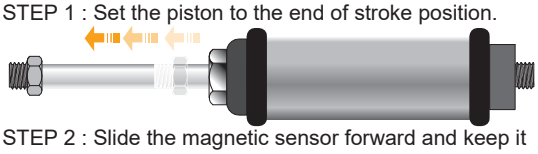


When the piston's magnet approaches the magnetic sensor, the internal magneto-resistive element can detect the change of magnetic field and cause a tiny voltage change. Switching output is achieved when this signal is amplified by the operation amplifier circuit in the magnetic sensor.

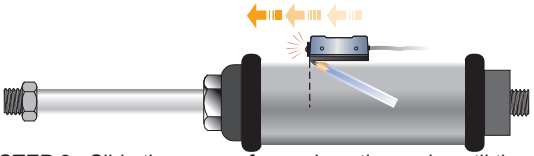
How To Install The Magnetic Sensor

1 End Of Stroke Detection

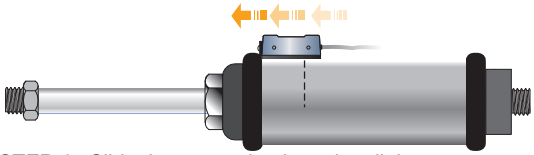
- STEP 1 : Set the piston to the end of stroke position.



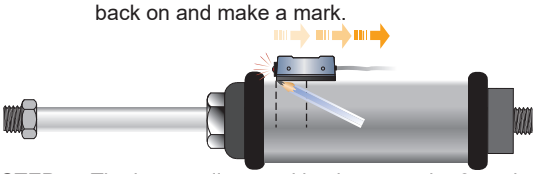
- STEP 2 : Slide the magnetic sensor forward and keep it close to the cylinder wall. Make a mark at the sensor turn-on point.



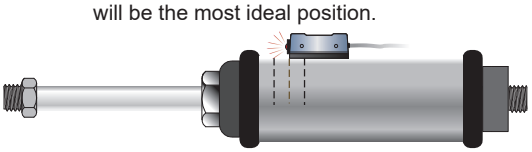
- STEP 3 : Slide the sensor forward continuously until the sensor turns off.



- STEP 4 : Slide the sensor backward until the sensor turns back on and make a mark.

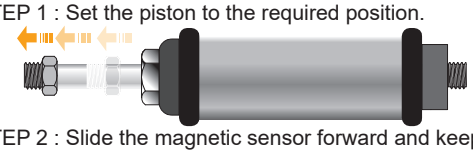


- STEP 5 : The intermediate position between the 2 marks will be the most ideal position.

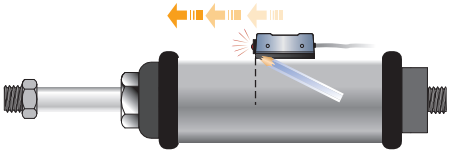


2 Intermediate Stroke Position

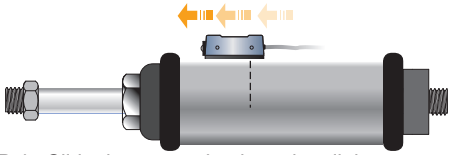
- STEP 1 : Set the piston to the required position.



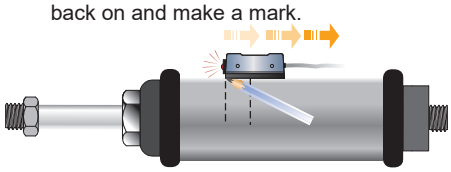
- STEP 2 : Slide the magnetic sensor forward and keep it close to the cylinder wall. Make a mark at the sensor turn-on point.



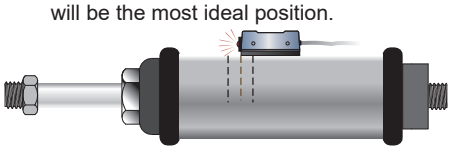
- STEP 3 : Slide the sensor forward continuously until the sensor turns off.



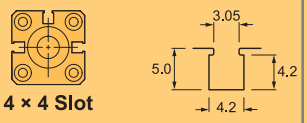
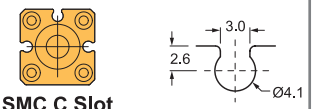
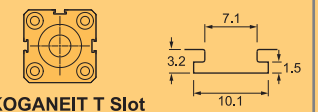
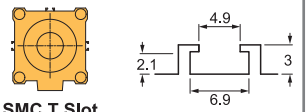
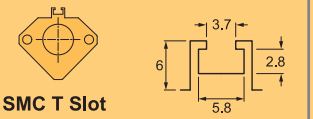
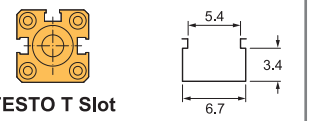
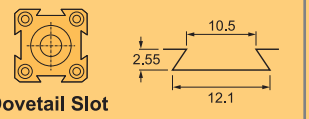
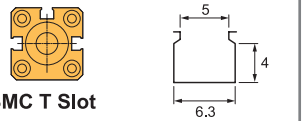
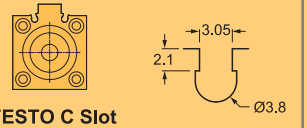
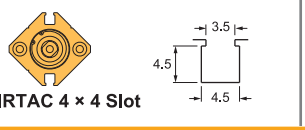
- STEP 4 : Slide the sensor backward until the sensor turns back on and make a mark.



- STEP 5 : The intermediate position between the 2 marks will be the most ideal position.



Cylinder / Magnetic SW. Cross Index

MODEL	KL	KT-05	KT-06	KT-07	KT-09	KT-11	KT-13	KT-15	KT-16	KT-20	KT-21	KT-31	KT-32
Round Cylinder 		● BK Clamp P.148		● BKC-1 Clamp P.150				● BK Clamp P.148		● PN / PH Clamp P.147	● PN / PH Clamp P.147		
ISO Profile Cylinder 				● PF7 Bracket P.145					● PF7 Bracket P.145	● PI Bracket P.143	● PI Bracket P.143	● PI Bracket P.143	● PF Bracket P.144
Tie-Rod Cylinder 				● DT7 Bracket P.145	●		●		● DT7 Bracket P.145	● PM Bracket P.143	● PM Bracket P.143	● PM Bracket P.143	● DT Bracket P.144 FST Clamp P.151
4 × 4 Slot 			●										
SMC C Slot 	●			●					●				
KOGANEIT T Slot 						●							
SMC T Slot 													
SMC T Slot 													
FESTO T Slot 	●			● PB Bracket P.146					● PB Bracket P.146				●
Dovetail Slot 													
SMC T Slot 	●			● PB Bracket P.146					● PB Bracket P.146				
FESTO C Slot 	●												
AIRTAC 4 × 4 Slot 													

※ Figures above are for reference only; sizes will vary according to individual cylinder manufacturer.

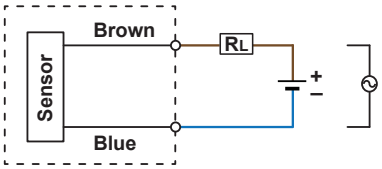
KT-33	KT-36	KT-37	KT-39	KT-40	KT-47	KT-48	KT-50	KT-53	KT-58	KT-59	KT-65	KT-71	KT-75	KT-77	KT-1000D	KT-1001D
	BKC-1 Bracket P.150			BL-1 Clamp P.149		BS Clamp P.148	BL-1 Clamp P.149				BKT-1 Clamp P.150		BKT-1 Clamp P.150	BKC-1 Clamp P.150	BP Clamp P.141 PMB Bracket P.141	
	PF7 Bracket P.145	PF7 Bracket P.145	PF7 Bracket P.145	PF Bracket P.144			PF Bracket P.144				PF Bracket P.144		PF Bracket P.144	PF7 Bracket P.145		
	DT7 Bracket P.145	DT7 Bracket P.145	DT7 Bracket P.145	DT Bracket P.144 FST Clamp P.151			DT Bracket P.144 FST Clamp P.151				DT Bracket P.144 FST Clamp P.151		DT Bracket P.144 FST Clamp P.151	DT7 Bracket P.145		
																PB Bracket P.146
	PB Bracket P.146	PB Bracket P.146	PB Bracket P.146											PB Bracket P.146		PB Bracket P.146

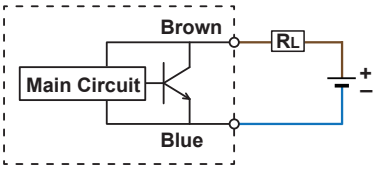
Connection Method

Connection Method

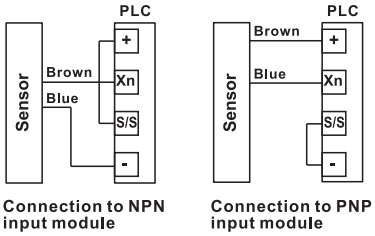
1 2 Wire Sensor Connection

- **General Connection (Reed Switch)**

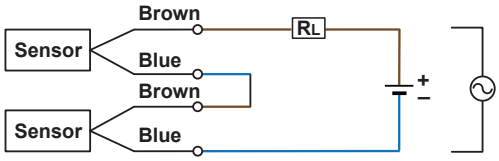




(PLC)

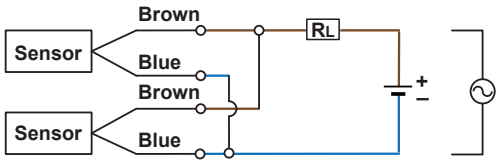


- **Series Connection (AND)**



When connecting 2-wire sensors in series (AND), don't exceed more than two sensors due to the internal voltage drop (Typical V drop = 2.5 ~ 4 V per switch). Excessive Voltage drop will cause non-operation of the load.

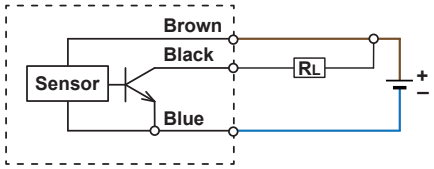
- **Parallel Connection (OR)**



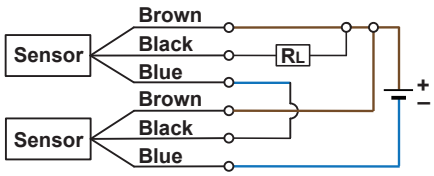
1. When connecting solid state 2-wire sensors in parallel (OR), leakage current will increase and cause improper load operation.
2. When connecting 2-wire reed sensors in parallel (OR), possible concurrent operation will cause dim LED illumination due to lower current distribution.

2 3 Wire NPN Connection

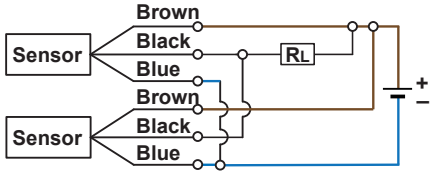
- **General Connection**



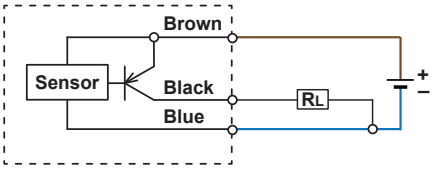
- **Series Connection (AND)**

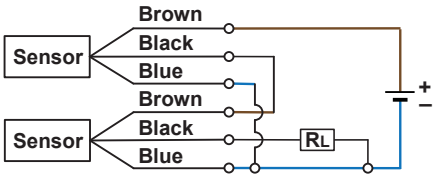


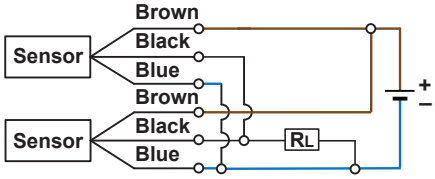
- **Parallel Connection (OR)**



3 3 Wire PNP Connection





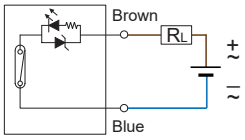


Regarding TPU material :

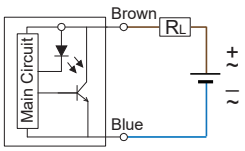
- It's green material. During storage and usage, product will hydrolyse and age when exposed to temperature, light, air, oxygen and humidity environments.
- The product should be kept in dry environment when stored. The storage conditions are suggested between 20 ~ 30 °C, relative humidity at 50 % RH, and avoiding ultraviolet radiation.

Caution ⚠

1 Do not exceed specification, permanent damage to the sensor may occur.

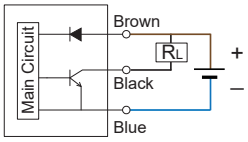


2 For reed sensor type sensors, polarity must also be observed for the proper function of LED. Connect the brown wire in series with load to positive (+) and the blue wire to negative (-) of power source. If the polarity is reversed, reed sensor remain functional but LED will remain in " OFF " state.

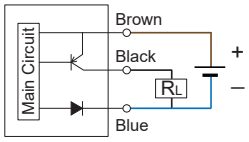


3 For solid-state type sensors, polarity must also be observed. Connect brown wire to the positive (+) and the blue to the negative (-) of DC power source.
The black wire must connect to the load only. If the black wire is accidentally connected to the power source, permanent damage to the sensor may occur.

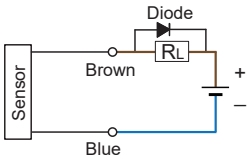
(NPN Output)



(PNP Output)

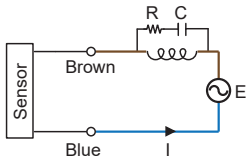


4 An external protection circuit may be required if the magnetic sensor is used with inductive load, such as relay or solenoid. For DC inductive load, attach an external diode parallel to the load and use R-C circuit parallel with AC inductive load as illustrated.



$C = I^2/10$ [μF]

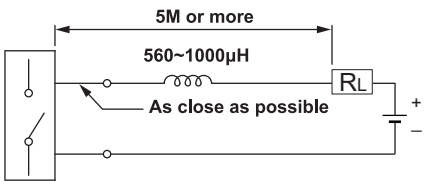
$R = E/10\ I^{(1+50/E)}$ [Ω]



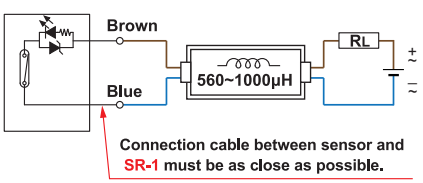
PS:
C : Capacitor
I : Load current
R : Resistance
E : AC power

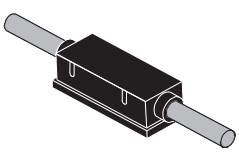
5 Keep sensors away from strong magnetic field to prevent malfunctions.

6 Reed sensors are without protection circuit.
When a reed sensor is used with a capacitive load or with more than 5 meters lead wire, the life of the contact will be shortened. (especially when the switch is always ON)
Note : Please install a surge suppressor SR-1 within 1 meter or an inductor (560 ~ 1000 μH) in series of the sensor to prevent damage.

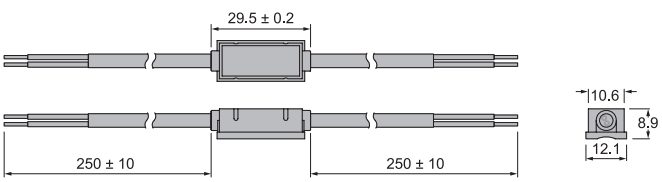


▪ MODEL : SR-1 (Surge Suppressor)





▪ Dimension



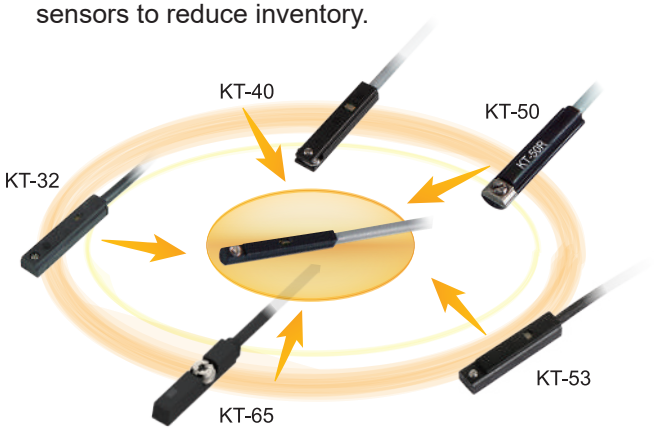
Unit : mm

Hot Sale

Product Integration

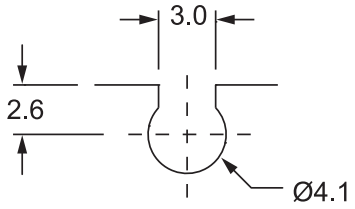
- **KT-39, KT-36, KT-07 Series**

- Fits in most C-slot cylinder, replace all other T-slot sensors to reduce inventory.

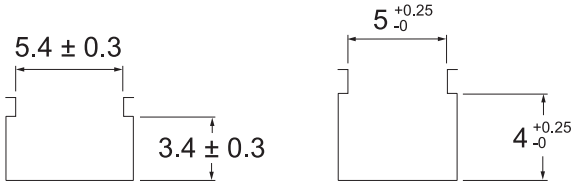


Common Cylinder Slot Dimensions

※ **C-slot cylinder dimensions**



※ **T-slot cylinder dimensions**



Unit : mm

Mounting Adapter for Other Cylinder Types

- Applied to many kind of cylinders.

PF7 bracket mount with ISO profile cylinder

P.145

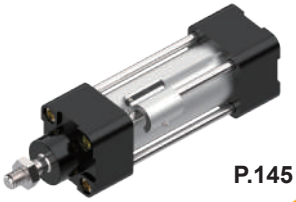
BKC-1 clamp mount with round cylinder

P.150

C-slot cylinder

KT-07 P.112
KT-36 P.124
KT-39 P.126

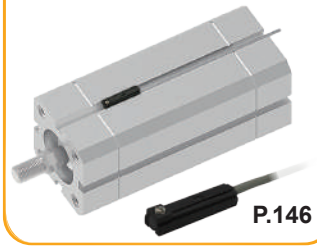
DT7 bracket mount with Tie-Rod cylinder



P.145

KT-39, KT-36, KT-07 Series

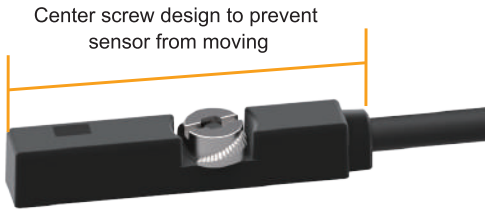
PB bracket mount with T-slot cylinder



P.146

New Structure

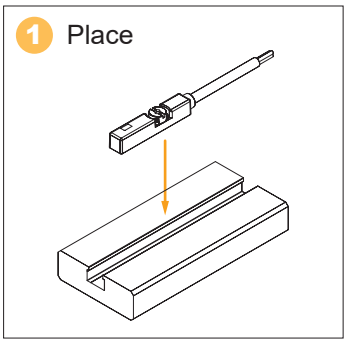
- **KT-65 & KT-75 Series**
- Set-screw near center position to prevent sensor from moving, combined with new set-screw design to provide solid stance when attached to the cylinder.

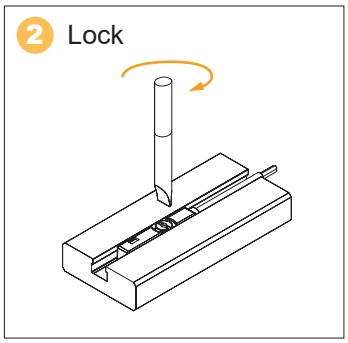


- Fits in most T-slot cylinder, replace all other T-slot sensors to reduce inventory.

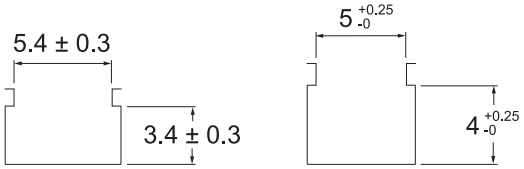
Quick Installation

- Install sensor from top of cylinder, directly placed into T-slot to achieve quick installation.





※ **T-slot cylinder dimensions**



Unit : mm

Mounting Adapter for Other Cylinder Types

- Applied to many kind of cylinders.

PF bracket mount with ISO profile cylinder

P.144

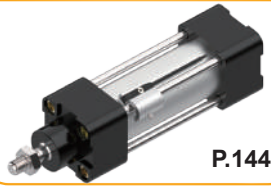
FST clamp mount with Tie-Rod cylinder

P.151

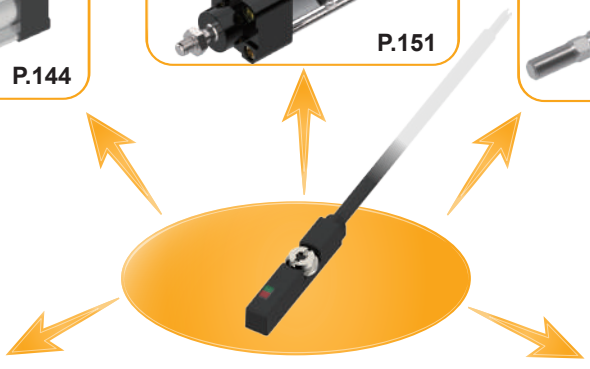
BKT-1 clamp mount with round cylinder

P.150

DT bracket mount with Tie-Rod cylinder



P.144



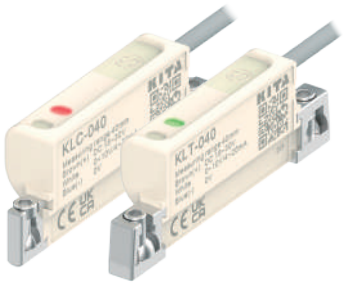
KT-65 & KT-75 Series

T-slot cylinder

KT-65 P.134
KT-75 P.138

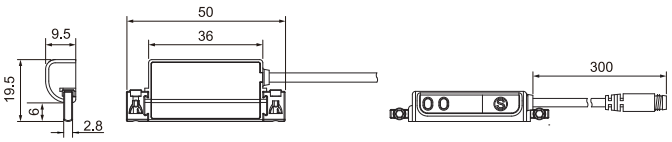
KLC / KLT SERIES

Patented

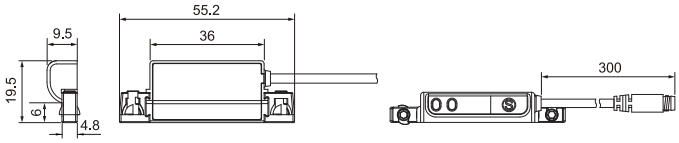


Dimensions

KLC - 040 / KLC - 040 - QD



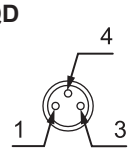
KLT - 040 / KLT - 040 - QD



Unit : mm

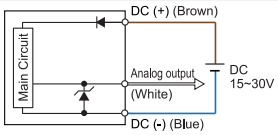
M8 QD Pinout

- **QD**



1 : DC (+)
3 : DC (-)
4 : Analog output

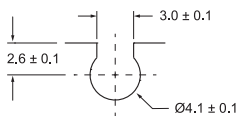
Specifications

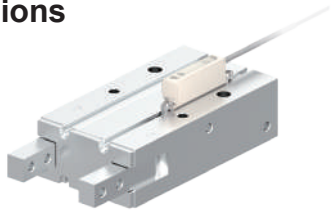
MODEL		KL□ - 040
Connect Diagram / Characteristics		
Measuring Range		40 mm, ± 1 mm
Power Supply Voltage		15 ~ 30 V DC, Ripple (P-P) ≤ 10 %
Current Consumption		≤ 15 mA (with no load)
Displacement Resolution ※1		0.001 mm
Linearity Error ※1		± 0.2 mm @ 25 °C
Repeatability ※1		± 0.01 mm @ 25 °C
Sampling Time		≤ 0.3 ms
Analog Output (Voltage Output) ※2		Output Voltage : 0 ~ 10 V Min. Load Impedance : 2 KΩ Linearity : ± 0.05 % F.S. @ 25 °C Sensitivity : 0.25 mV/μm
Analog Output (Current Output) ※2		Output Current : 4 ~ 20 mA Max. Load Impedance : 500 Ω Linearity : ± 0.05 % F.S. @ 25 °C Sensitivity : 0.4 μA/μm
Magnetic Field Strength ※1, 3		20 ~ 200 Gauss
Environment	Enclosure	IEC 60529 IP69
	Ambient Temp. Range	Operation : 0 ~ 50 °C ; Storage : -10 ~ 60 °C (No condensation or freezing)
	Ambient Humidity Range	Operation / Storage : 35 ~ 85 % RH (No condensation)
	Withstand Voltage	1000 V AC in 1-min (between case and lead wire)
	Insulation Resistance	≥ 50 MΩ (at 500 V DC, between case and lead wire)
	Shock ※4	30 G
	Vibration ※5	10 G
Protection Circuit ※6		3, 4
Lead Wire		Ø2.9 PUR - 26 AWG (0.15mm^2) - 3 cores
Weight (with 2 meter lead wire)		Approx. 33 g (KLC-040) ; Approx. 37 g (KLT-040)

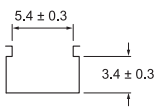
NOTE

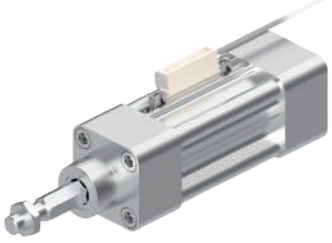
※1 : Measuring standard target : Ø15.5 × Ø8 × 5t
(The movement of anisotropy rubber magnet and piston are from same direction.)
※2 : Only one of Analog output can be selected while setting.
※3 : The difference of magnetism, environment, and interference of magnetic field can cause the deviation of measurement.
※4 : Sin wave / X , Y , Z 3 directions / 3 times each direction / 11 ms each time.
※5 : Double amplitude 1.5 mm or 10 G / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 2 hours each time.
※6 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

Groove Dimensions





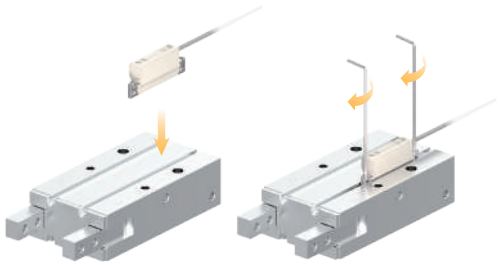




Unit : mm

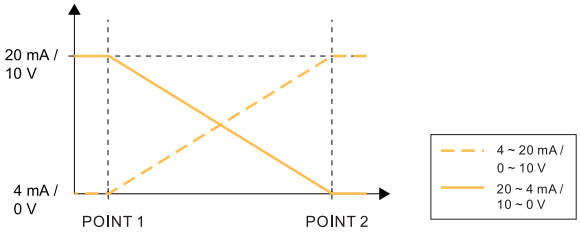
Features Highlight

1 Quick Installation

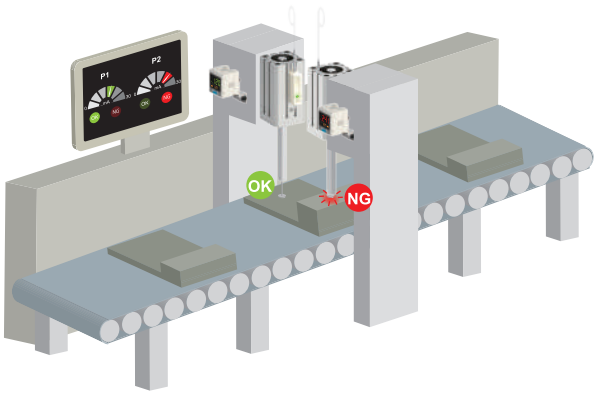


2 Analog Output Function

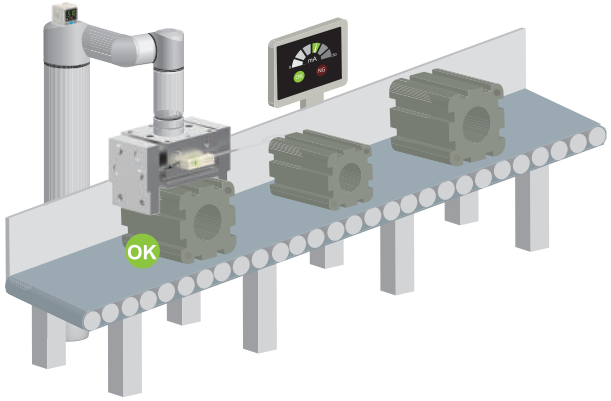
- Analog voltage / current output can be switched.
- Analog output can be inverted.



3 Thickness Differentiation

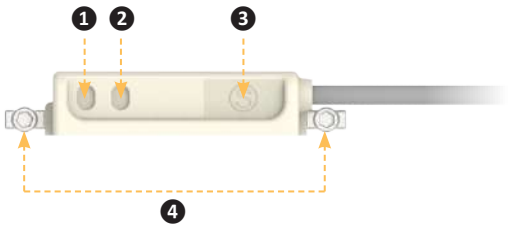


4 Dimension Measurement



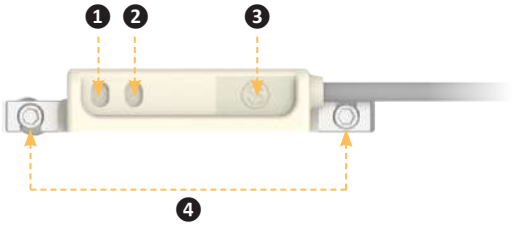
Panel Description

- **KLC - 040 - ☐**



No.	Content
❶	Mode Indicator
❷	Information Indicator
❸	Setting Button
❹	Mounting screw, Hexagon wrench (2.0 mm)

- **KLT - 040 - ☐**



Ordering Information

K L C - 0 4 0 - ☐

Cylinder Type
C : C slot
T : T slot

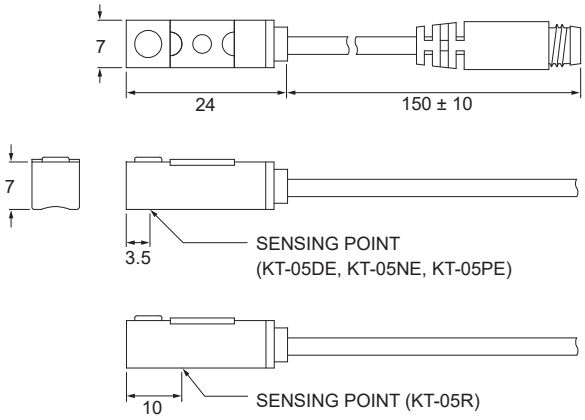
Measuring Range
040 : 40 mm

Cable Length / Connector
Blank : 2M
QD : With M8 3Pin male connector

KT-05 SERIES

Dimensions

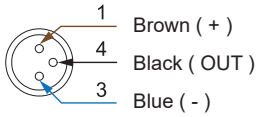
KT-05R, KT-05DE, KT-05NE, KT-05PE /
KT-05R-QD, KT-05DE-QD, KT-05NE-QD, KT-05PE-QD



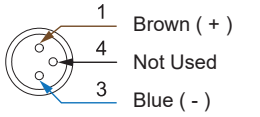
Unit : mm

M8 QD Pinout

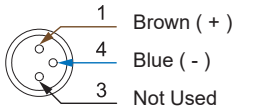
- **3 wire QD wiring**



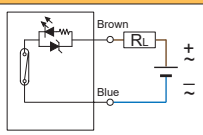
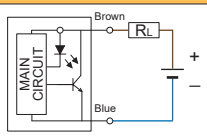
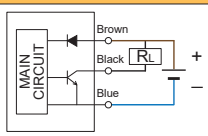
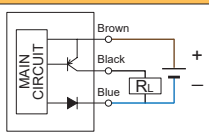
- **2 wire QD wiring**



- **2 wire EQD wiring**



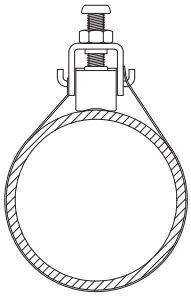
Specifications

MODEL	KT-05R	KT-05DE	KT-05NE	KT-05PE
Connect Diagram / Characteristics				
Wiring Method	2-Wire type		3-Wire type	
Switching Logic	SPST, Normally Open	Solid State Output, Normally Open		
Sensor Type	Reed Switch	-	NPN Current Sinking	PNP Current Sourcing
Operating Voltage	5 ~ 240 V DC / AC	5 ~ 30 V DC		
Switching Current	100 mA max.	50 mA max.	200 mA max.	
Contact Rating ※1	10 W max.	1.5 W max.	6 W max.	
Current Consumption ※2	-		6 mA @ 24 V DC max.	
Voltage Drop ※2	3.5 V max.	3.7 V max.	0.5 V @ 200 mA max.	
Leakage Current ※2	-	0.1 mA (40 uA) max.	0.01 mA max.	
Indicator	Red LED			Green LED
Lead Wire	Ø2.8 PVC - 26 AWG (0.15 mm²) - 2 cores		Ø2.8 PVC - 24 AWG (0.22 mm²) - 3 cores	
Operating Frequency	200 Hz	1000 Hz max.		
Magnet Requirement ※2, 3	55 Gauss	40 ~ 1000 Gauss		
Temperature Range	-10 ~ 70 °C			
Shock ※4	30 G	50 G		
Vibration ※5	9 G			
Enclosure	IEC 60529 IP67			
Protection Circuit ※6	1	3, 4		

NOTE

※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage).
Permanent demage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)
※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
※5 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
※6 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

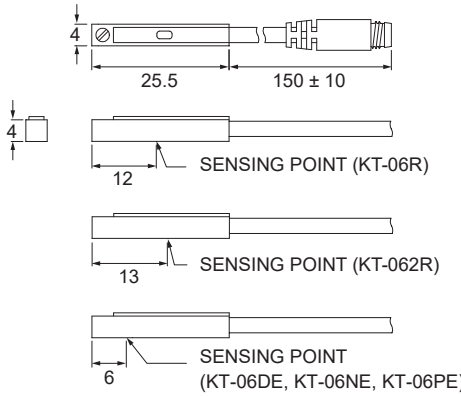
Clamp



KT-06 SERIES

Dimensions

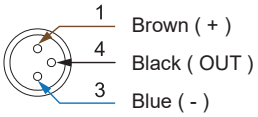
KT-06R, KT-062R, KT-06DE, KT-06NE, KT-06PE / KT-06R-QD, KT-062R-QD, KT-06DE-QD, KT-06NE-QD, KT-06PE-QD



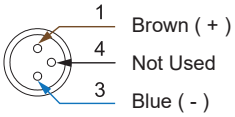
Unit : mm

M8 QD Pinout

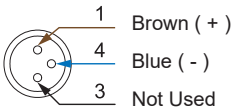
- **3 wire QD wiring**



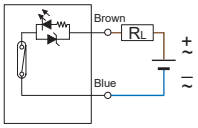
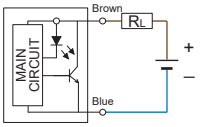
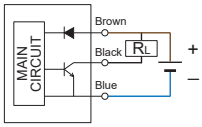
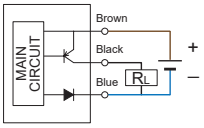
- **2 wire QD wiring**



- **2 wire EQD wiring**



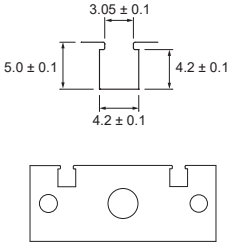
Specifications

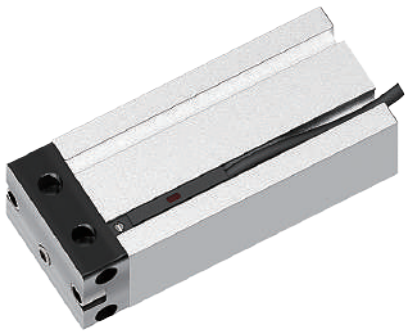
MODEL	KT-06R	KT-062R	KT-06DE	KT-06NE	KT-06PE
Connect Diagram / Characteristics					
Wiring Method	2-Wire Type			3-Wire Type	
Switching Logic	SPST, Normally Open		Solid State Output, Normally Open		
Sensor Type	Reed Switch		-	NPN Current Sinking	PNP Current Sourcing
Operating Voltage	5 ~ 120 V DC / AC	5 ~ 240 V DC / AC	5 ~ 30 V DC		
Switching Current	100 mA max.		50 mA max.	200 mA max.	
Contact Rating ※1	10 W max.		1.5 W max.	6 W max.	
Current Consumption ※2	-			6 mA @ 24 V DC max.	
Voltage Drop ※2	3.5 V max.		3.7 V max.	0.5 V @ 200 mA max.	
Leakage Current ※2	-		0.1 mA (40 uA) max.	0.01 mA max.	
Indicator	Red LED	Green LED	Red LED		Green LED
Lead Wire	Ø2.8 PUR - 26 AWG (0.15 mm²) - 2 cores			Ø2.8 PUR - 26 AWG (0.15 mm²) - 3 cores	
Operating Frequency	200 Hz		1000 Hz max.		
Magnet Requirement ※2, 3	70 Gauss		40 ~ 1000 Gauss		
Temperature Range	-10 ~ 70 °C				
Shock ※4	30 G		50 G		
Vibration ※5	9 G				
Enclosure	IEC 60529 IP67				
Protection Circuit ※6	1		3, 4		

NOTE

※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage). Permanent demage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)
※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
※5 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
※6 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

Groove Dimensions



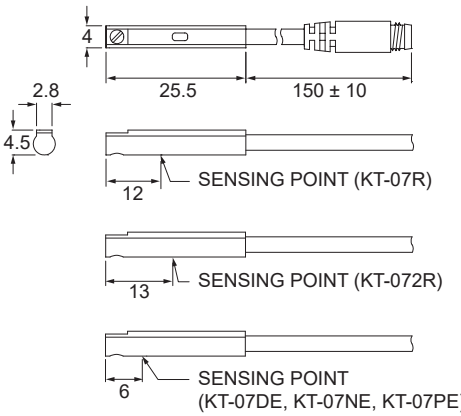


Unit : mm

KT-07 SERIES

Dimensions

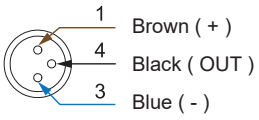
KT-07R, KT-072R, KT-07DE, KT-07NE, KT-07PE / KT-07R-QD, KT-072R-QD, KT-07DE-QD, KT-07NE-QD, KT-07PE-QD



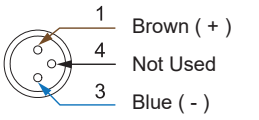
Unit : mm

M8 QD Pinout

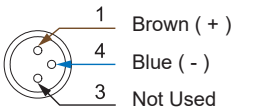
- **3 wire QD wiring**



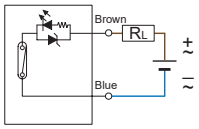
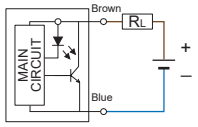
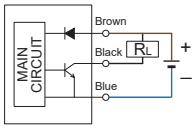
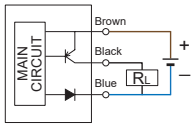
- **2 wire QD wiring**



- **2 wire EQD wiring**



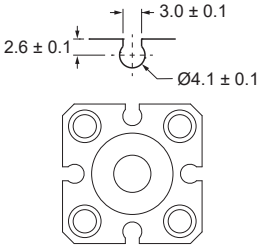
Specifications

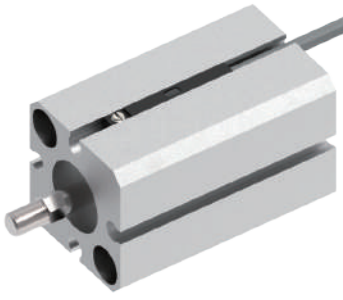
MODEL	KT-07R	KT-072R	KT-07DE	KT-07NE	KT-07PE
Connect Diagram / Characteristics					
Wiring Method	2-Wire Type			3-Wire Type	3-Wire Type
Switching Logic	SPST, Normally Open		Solid State Output, Normally Open		
Sensor Type	Reed Switch		-	NPN Current Sinking	PNP Current Sourcing
Operating Voltage	5 ~ 120 V DC / AC	5 ~ 240 V DC / AC	5 ~ 30 V DC		
Switching Current	100 mA max.		50 mA max.	200 mA max.	
Contact Rating ※1	10 W max.		1.5 W max.	6 W max.	
Current Consumption ※2	-			6 mA @ 24 V DC max.	
Voltage Drop ※2	3.5 V max.		3.7 V max.	0.5 V @ 200 mA max.	
Leakage Current ※2	-		0.1 mA (40 uA) max.	0.01 mA max.	
Indicator	Red LED	Green LED	Red LED		Green LED
Lead Wire	Ø2.8 PUR - 26 AWG (0.15 mm²) - 2 cores			Ø2.8 PUR - 26 AWG (0.15 mm²) - 3 cores	
Operating Frequency	200 Hz		1000 Hz max.		
Magnet Requirement ※2, 3	70 Gauss		40 ~ 1000 Gauss		
Temperature Range	-10 ~ 70 °C				
Shock ※4	30 G		50 G		
Vibration ※5	9 G				
Enclosure	IEC 60529 IP67				
Protection Circuit ※6	1		3, 4		

NOTE

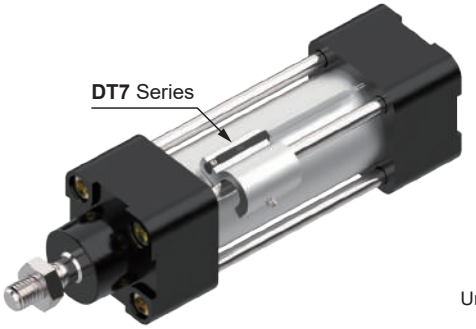
※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage). Permanent demage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)
※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
※5 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
※6 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

Groove Dimensions





Bracket

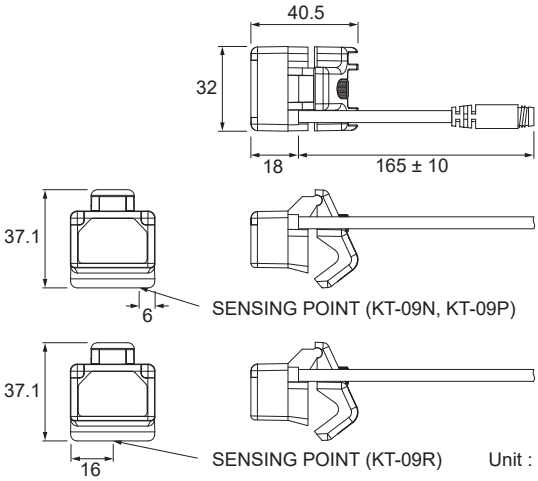


Unit : mm

KT-09 SERIES

Dimensions

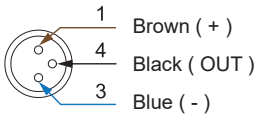
KT-09R, KT-09N, KT-09P /
KT-09R-QD, KT-09N-QD, KT-09P-QD



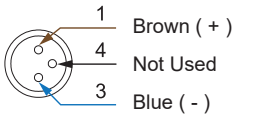
Unit : mm

M8 QD Pinout

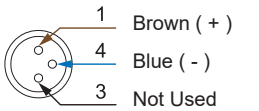
- **3 wire QD wiring**



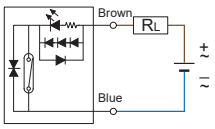
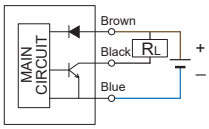
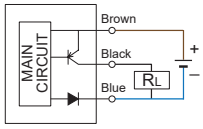
- **2 wire QD wiring**



- **2 wire EQD wiring**



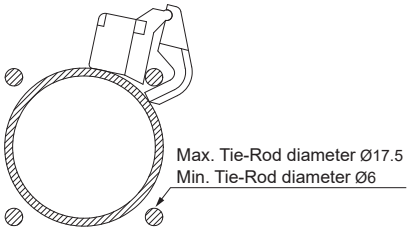
Specifications

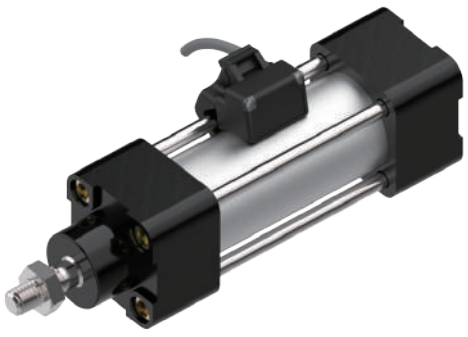
MODEL	KT-09R	KT-09N	KT-09P
Connect Diagram / Characteristics			
Wiring Method	2-Wire Type	3-Wire Type	
Switching Logic	SPST, Normally Open	Solid State Output, Normally Open	
Sensor Type	Reed Switch	NPN Current Sinking	PNP Current Sourcing
Operating Voltage	5 ~ 240 V DC / AC	5 ~ 30 V DC	
Switching Current	1 Amp. max.		
Contact Rating ※1	30 W max.		
Current Consumption ※2	-	42 mA @ 24 V DC max.	30 mA @ 24 V DC max.
Voltage Drop ※2	3.5 V max.	1.5 V @ 0.5 A max.	
Leakage Current ※2	-	0.01 mA max.	
Indicator	Red LED	Power : Green LED , Output : Red LED	
Lead Wire	Ø4.5 PVC - 24 AWG (0.22 mm²) - 2 cores	Ø4.5 PVC - 24 AWG (0.22 mm²) - 3 cores	
Operating Frequency	200 Hz	1000 Hz	
Magnet Requirement ※2, 3	80 Gauss	45 Gauss	
Temperature Range	-10 ~ 70 °C		
Shock ※4	30 G	50 G	
Vibration ※5	9 G		
Enclosure	IEC 60529 IP67		
Protection Circuit ※6	4	3, 4	

NOTE

※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage).
Permanent demage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)
※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
※5 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
※6 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

Bracket



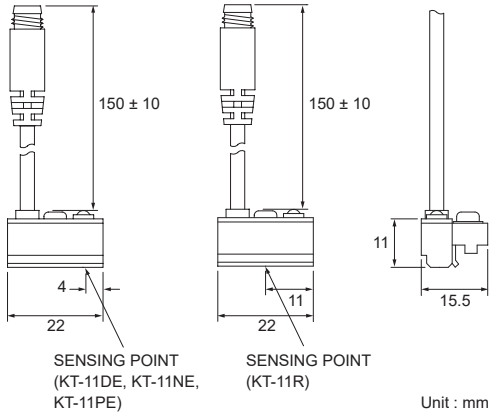


Unit : mm

KT-11 SERIES

Dimensions

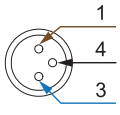
KT-11R, KT-11DE, KT-11NE, KT-11PE /
KT-11R-QD, KT-11DE-QD, KT-11NE-QD, KT-11PE-QD



Unit : mm

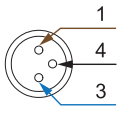
M8 QD Pinout

- **3 wire QD wiring**



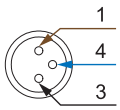
Brown (+)
Black (OUT)
Blue (-)

- **2 wire QD wiring**



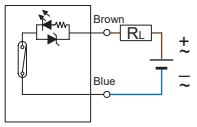
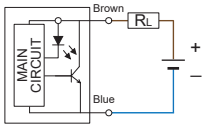
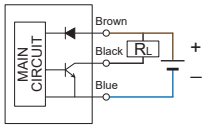
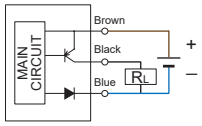
Brown (+)
Not Used
Blue (-)

- **2 wire EQD wiring**



Brown (+)
Blue (-)
Not Used

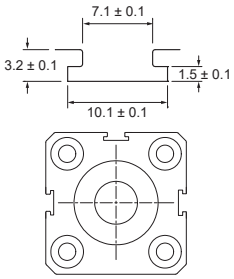
Specifications

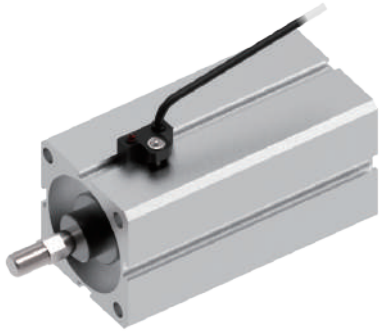
MODEL	KT-11R	KT-11DE	KT-11NE	KT-11PE
Connect Diagram / Characteristics				
Wiring Method	2-Wire type		3-Wire type	
Switching Logic	SPST, Normally Open	Solid State Output, Normally Open		
Sensor Type	Reed Switch	-	NPN Current Sinking	PNP Current Sourcing
Operating Voltage	5 ~ 240 V DC / AC	5 ~ 30 V DC		
Switching Current	100 mA max.	50 mA max.	200 mA max.	
Contact Rating ※1	10 W max.	1.5 W max.	6 W max.	
Current Consumption ※2	-		6 mA @ 24 V DC max.	
Voltage Drop ※2	3.5 V max.	3.7 V max.	0.5 V @ 200 mA max.	
Leakage Current ※2	-	0.1 mA (40 uA) max.	0.01 mA max.	
Indicator	Red LED	Green LED	Red LED	Green LED
Lead Wire	Ø3.3 PVC - 24 AWG (0.22 mm²) - 2 cores		Ø3.3 PVC - 24 AWG (0.22 mm²) - 3 cores	
Operating Frequency	200 Hz	1000 Hz max.		
Magnet Requirement ※2, 3	70 Gauss	40 ~ 1000 Gauss		
Temperature Range	-10 ~ 70 °C			
Shock ※4	30 G	50 G		
Vibration ※5	9 G			
Enclosure	IEC 60529 IP67			
Protection Circuit ※6	1	3, 4		

NOTE

※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage).
Permanent demage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)
※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
※5 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
※6 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

Groove Dimensions





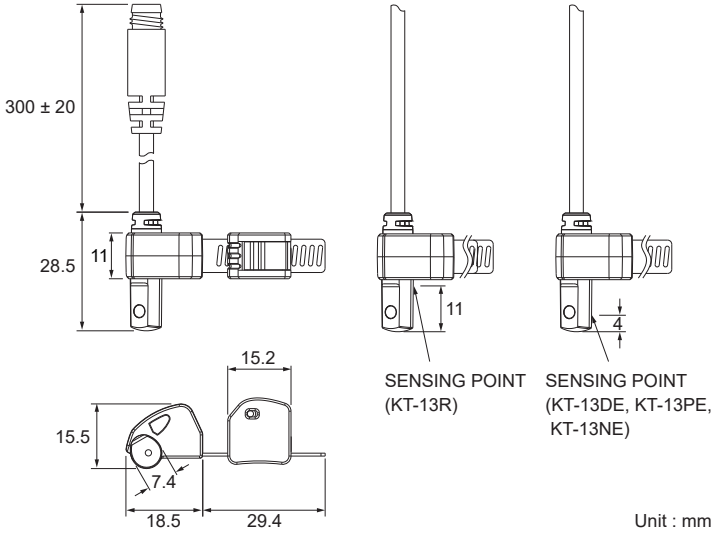
Unit：mm

KT-13 SERIES

Patented

Dimensions

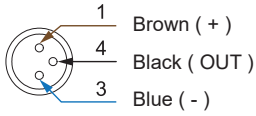
KT-13R, KT-13DE, KT-13NE, KT-13PE /
KT-13R-QD, KT-13DE-QD, KT-13NE-QD, KT-13PE-QD



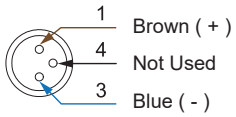
Unit : mm

M8 QD Pinout

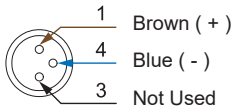
- **3 wire QD wiring**



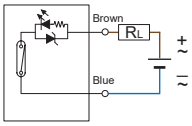
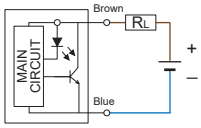
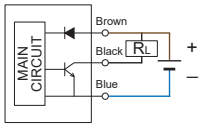
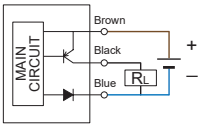
- **2 wire QD wiring**



- **2 wire EQD wiring**



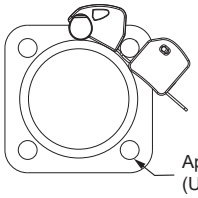
Specifications

MODEL	KT-13R	KT-13DE	KT-13NE	KT-13PE
Connect Diagram / Characteristics				
Wiring Method	2-Wire Type		3-Wire Type	
Switching Logic	SPST, Normally Open	Solid State Output, Normally Open		
Sensor Type	Reed Switch	-	NPN Current Sinking	PNP Current Sourcing
Operating Voltage	5 ~ 240 V DC / AC	5 ~ 30 V DC		
Switching Current	100 mA max.	50 mA max.	200 mA max.	
Contact Rating ※1	10 W max.	1.5 W max.	6 W max.	
Current Consumption ※2	-		6 mA @ 24 V DC max.	
Voltage Drop ※2	3.5 V max.	3.7 V max.	0.5 V @ 200 mA max.	
Leakage Current ※2	-	0.1 mA (40 uA) max.	0.01 mA max.	
Indicator	Red LED			Green LED
Lead Wire	Ø3.3 PVC - 24 AWG (0.22 mm²) - 2 cores		Ø3.3 PVC - 24 AWG (0.22 mm²) - 3 cores	
Operating Frequency	200 Hz	1000 Hz max.		
Magnet Requirement ※2, 3	55 Gauss	40 ~ 1000 Gauss		
Temperature Range	-10 ~ 70 °C			
Shock ※4	30 G	50 G		
Vibration ※5	9 G			
Enclosure	IEC 60529 IP67			
Protection Circuit ※6	1	3, 4		

NOTE

※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage).
Permanent demage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)
※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
※5 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
※6 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

Clamp



Applicable rod diameter Ø6 ~ Ø16
(Using ISO Tie-Rod cylinder range Ø32 ~ Ø200)

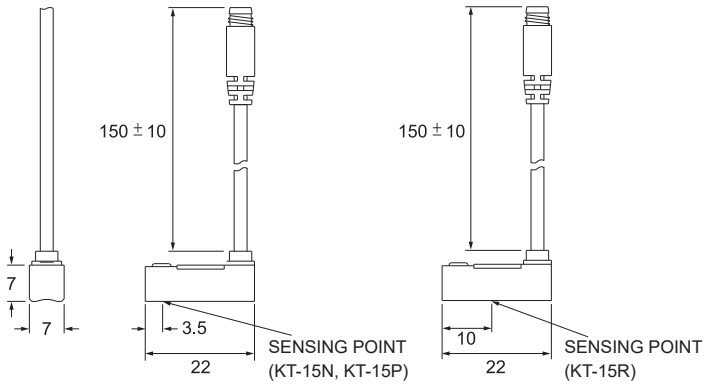
Hex key Size：2 mm

Unit：mm

KT-15 SERIES

Dimensions

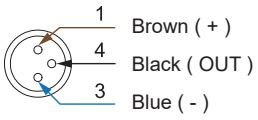
KT-15R, KT-15N, KT-15P /
KT-15R-QD, KT-15N-QD, KT-15P-QD



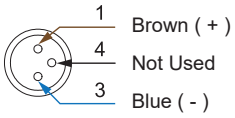
Unit : mm

M8 QD Pinout

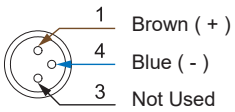
- **3 wire QD wiring**



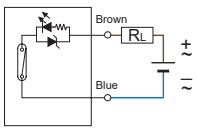
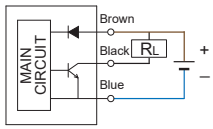
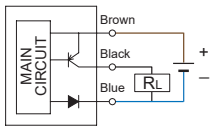
- **2 wire QD wiring**



- **2 wire EQD wiring**



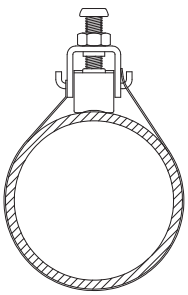
Specifications

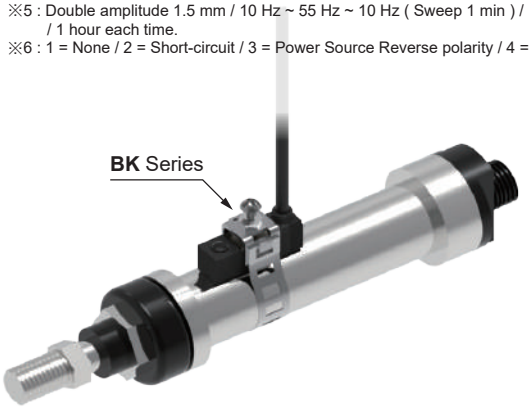
MODEL	KT-15R	KT-15N	KT-15P
Connect Diagram / Characteristics			
Wiring Method	2-Wire Type	3-Wire Type	
Switching Logic	SPST, Normally Open	Solid State Output, Normally Open	
Sensor Type	Reed Switch	NPN Current Sinking	PNP Current Sourcing
Operating Voltage	5 ~ 240 V DC / AC	5 ~ 30 V DC	
Switching Current	100 mA max.	200 mA max.	
Contact Rating ※1	10 W max.	6 W max.	
Current Consumption ※2	-	20 mA @ 24 V DC max.	
Voltage Drop ※2	3.5 V max.	0.5 V max.	
Leakage Current ※2	-	0.01 mA max.	
Indicator	Red LED		Green LED
Lead Wire	Ø2.8 PVC - 26 AWG (0.15 mm²) - 2 cores	Ø2.8 PVC - 24 AWG (0.22 mm²) - 3 cores	
Operating Frequency	200 Hz	1000 Hz	
Magnet Requirement ※2, 3	50 Gauss	40 Gauss	
Temperature Range	-10 ~ 70 °C		
Shock ※4	30 G	50 G	
Vibration ※5	9 G		
Enclosure	IEC 60529 IP67		
Protection Circuit ※6	1	3, 4	

NOTE

※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage).
Permanent demage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)
※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
※5 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
※6 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

Clamp

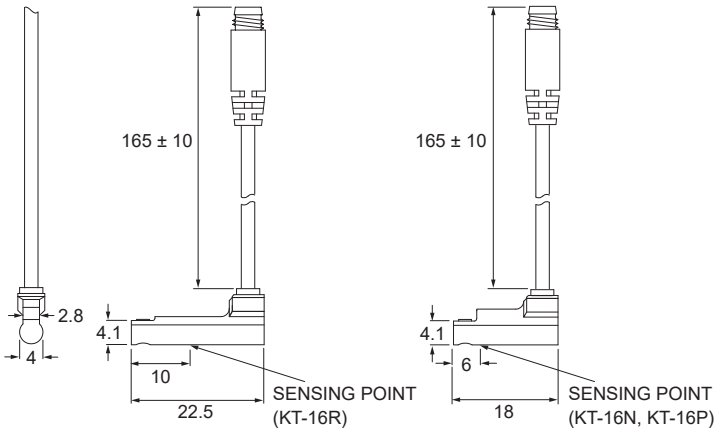




KT-16 SERIES

Dimensions

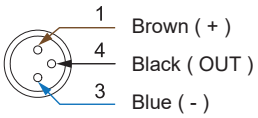
KT-16R, KT-16N, KT-16P /
KT-16R-QD, KT-16N-QD, KT-16P-QD



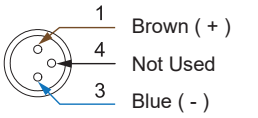
Unit : mm

M8 QD Pinout

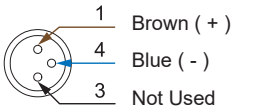
- **3 wire QD wiring**



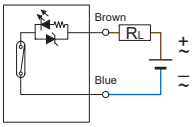
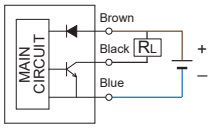
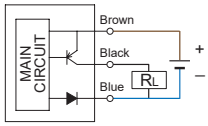
- **2 wire QD wiring**



- **2 wire EQD wiring**



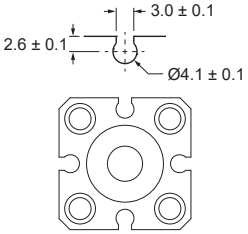
Specifications

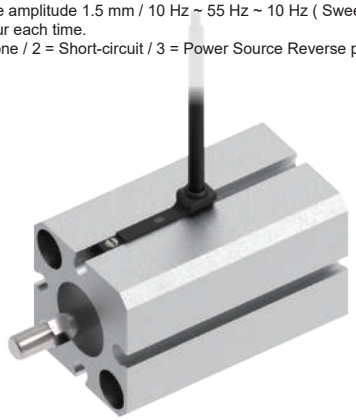
MODEL	KT-16R	KT-16N	KT-16P
Connect Diagram / Characteristics			
Wiring Method	2-Wire Type	3-Wire Type	
Switching Logic	SPST, Normally Open	Solid State Output, Normally Open	
Sensor Type	Reed Switch	NPN Current Sinking	PNP Current Sourcing
Operating Voltage	5 ~ 120 V DC / AC	5 ~ 30 V DC	
Switching Current	100 mA max.	50 mA max.	
Contact Rating ※1	6 W max.	1.5 W max.	
Current Consumption ※2	-	7 mA @ 24 V DC max.	9 mA @ 24 V DC max.
Voltage Drop ※2	3.5 V max.	1.5 V @ 50 mA max.	
Leakage Current ※2	-	0.01 mA max.	
Indicator	Red LED		Green LED
Lead Wire	Ø2.8 PUR - 26 AWG (0.15 mm²) - 2 cores	Ø2.8 PUR - 26 AWG (0.15 mm²) - 3 cores	
Operating Frequency	200 Hz	1000 Hz	
Magnet Requirement ※2, 3	70 Gauss	40 Gauss	
Temperature Range	-10 ~ 70 °C		
Shock ※4	30 G	50 G	
Vibration ※5	9 G		
Enclosure	IEC 60529 IP67		
Protection Circuit ※6	1	3, 4	

NOTE

※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage).
Permanent demage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)
※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
※5 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
※6 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

Groove Dimensions



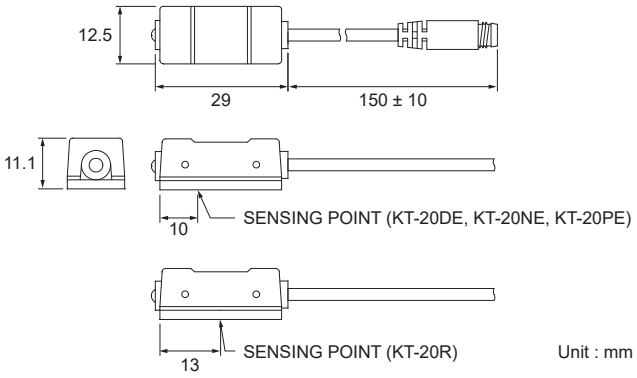


Unit : mm

KT-20 SERIES

Dimensions

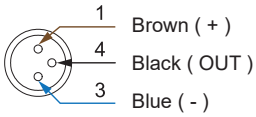
KT-20R, KT-20DE, KT-20NE, KT-20PE /
KT-20R-QD, KT-20DE-QD, KT-20NE-QD, KT-20PE-QD



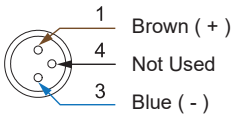
Unit : mm

M8 QD Pinout

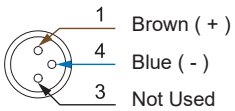
3 wire QD wiring



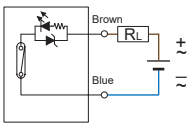
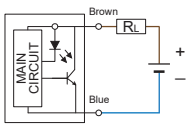
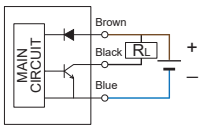
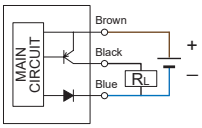
2 wire QD wiring



2 wire EQD wiring



Specifications

MODEL	KT-20R	KT-20DE	KT-20NE	KT-20PE
Connect Diagram / Characteristics				
Wiring Method	2-Wire type		3-Wire type	
Switching Logic	SPST, Normally Open	Solid State Output, Normally Open		
Sensor Type	Reed Switch	-	NPN Current Sinking	PNP Current Sourcing
Operating Voltage	5 ~ 240 V DC / AC	5 ~ 30 V DC		
Switching Current	100 mA max.	50 mA max.	200 mA max.	
Contact Rating ※1	10 W max.	1.5 W max.	6 W max.	
Current Consumption ※2	-		6 mA @ 24 V DC max.	
Voltage Drop ※2	3.5 V max.	3.7 V max.	0.5 V max.	
Leakage Current ※2	-	0.1 mA (40 uA) max.	0.01 mA max.	
Indicator	Green LED	Red LED		Green LED
Lead Wire	Ø3.9 PVC - 24 AWG (0.22 mm²) - 2 cores	Ø4 PVC - 24 AWG (0.22 mm²) - 2 cores	Ø4 PVC - 24 AWG (0.22 mm²) - 3 cores	
Operating Frequency	200 Hz	1000 Hz max.		
Magnet Requirement ※2, 3	80 Gauss	50 ~ 1000 Gauss		
Temperature Range	-10 ~ 70 °C			
Shock ※4	30 G	50 G		
Vibration ※5	9 G			
Enclosure	IEC 60529 IP67			
Protection Circuit ※6	1	3, 4		

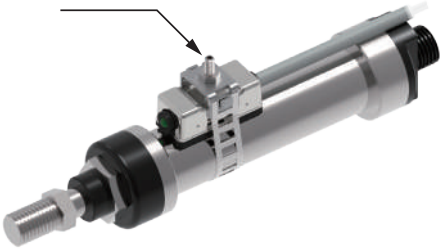
NOTE

※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage).
Permanent demage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)
※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
※5 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
※6 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

Clamp / Bracket

KT-20 & KT-21 series can be applied to many kind of cylinders

PH Series

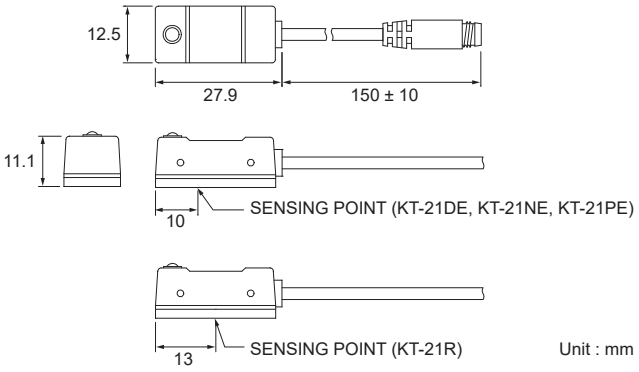


PI Series

KT-21 SERIES

Dimensions

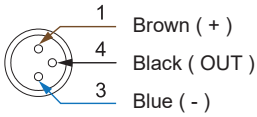
KT-21R, KT-21DE, KT-21NE, KT-21PE /
KT-21R-QD, KT-21DE-QD, KT-21NE-QD, KT-21PE-QD



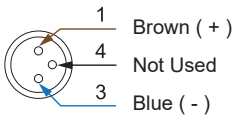
Unit : mm

M8 QD Pinout

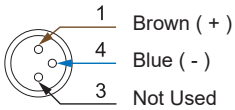
- **3 wire QD wiring**



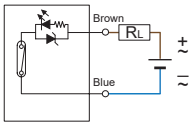
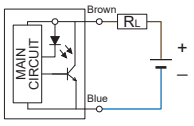
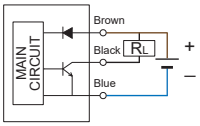
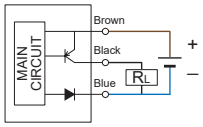
- **2 wire QD wiring**



- **2 wire EQD wiring**



Specifications

MODEL	KT-21R	KT-21DE	KT-21NE	KT-21PE
Connect Diagram / Characteristics				
Wiring Method	2-Wire type		3-Wire type	
Switching Logic	SPST, Normally Open	Solid State Output, Normally Open		
Sensor Type	Reed Switch	-	NPN Current Sinking	PNP Current Sourcing
Operating Voltage	5 ~ 240 V DC / AC	5 ~ 30 V DC		
Switching Current	100 mA max.	50 mA max.	200 mA max.	
Contact Rating ※1	10 W max.	1.5 W max.	6 W max.	
Current Consumption ※2	-		6 mA @ 24 V DC max.	
Voltage Drop ※2	3.5 V max.	3.7 V max.	0.5 V max.	
Leakage Current ※2	-	0.1 mA (40 uA) max.	0.01 mA max.	
Indicator	Green LED	Red LED		Green LED
Lead Wire	Ø3.9 PVC - 24 AWG (0.22 mm²) - 2 cores	Ø4 PVC - 24 AWG (0.22 mm²) - 2 cores	Ø4 PVC - 24 AWG (0.22 mm²) - 3 cores	
Operating Frequency	200 Hz	1000 Hz max.		
Magnet Requirement ※2, 3	80 Gauss	50 ~ 1000 Gauss		
Temperature Range	-10 ~ 70 °C			
Shock ※4	30 G	50 G		
Vibration ※5	9 G			
Enclosure	IEC 60529 IP67			
Protection Circuit ※6	1	3, 4		

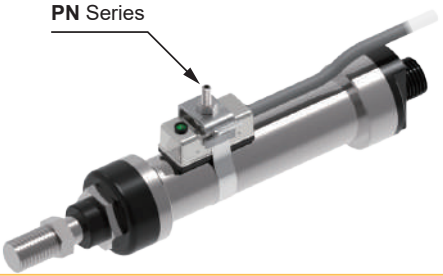
NOTE

※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage).
Permanent demage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)
※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
※5 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
※6 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

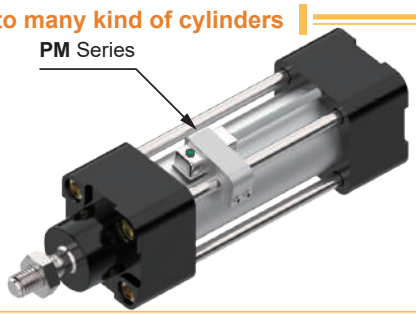
Clamp / Bracket

KT-20 & KT-21 series can be applied to many kind of cylinders

PN Series



PM Series

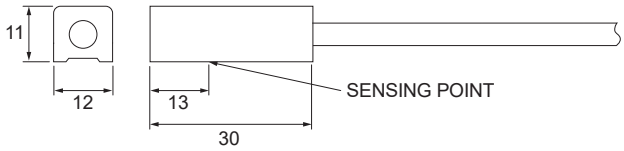


KT-31 SERIES

High Temp. Resistant
Max 140 °C

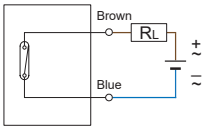
Dimensions

M8 Connector option is not available



Unit：mm

Specifications

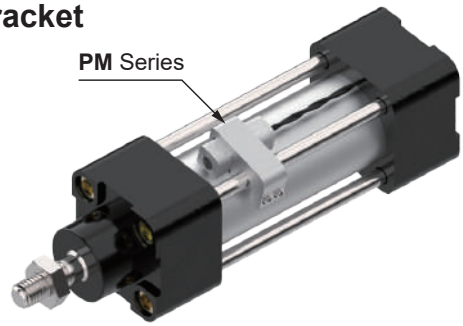
MODEL	KT-31R
Connect Diagram / Characteristics	
Wiring Method	2-Wire Type
Switching Logic	SPST, Normally Open
Sensor Type	Reed Switch
Operating Voltage	5 ~ 240 V DC / AC
Switching Current	500 mA max.
Contact Rating ※1	10 W max.
Current Consumption ※2	-
Voltage Drop ※2	0.5 V max.
Leakage Current ※2	-
Indicator	-
Lead Wire	Ø3 Teflon - 24 AWG (0.22 mm²) - 2 cores
Operating Frequency	200 Hz
Magnet Requirement ※2, 3	40 Gauss
Temperature Range	-10 ~ 140 °C
Shock ※4	30 G
Vibration ※5	9 G
Enclosure	IEC 60529 IP67
Protection Circuit ※6	1

NOTE

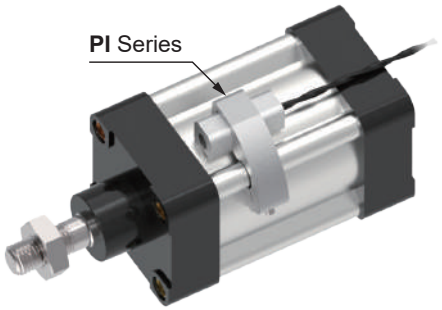
※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage). Permanent demage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)
※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
※5 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
※6 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

Bracket

PM Series



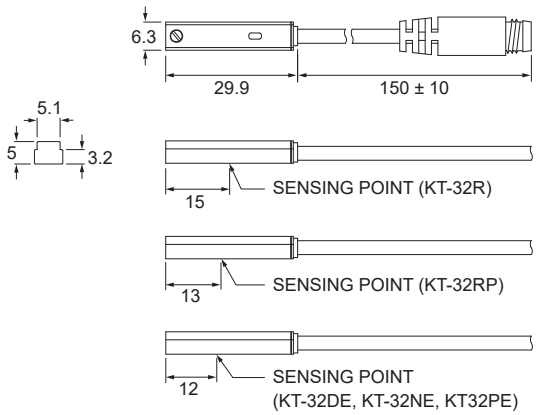
PI Series



KT-32 SERIES

Dimensions

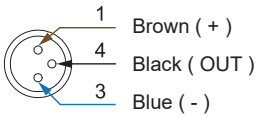
KT-32R, KT-32DE, KT-32NE, KT-32PE, KT-32RP / KT-32R-QD, KT-32DE-QD, KT-32NE-QD, KT-32PE-QD, KT-32RP-QD



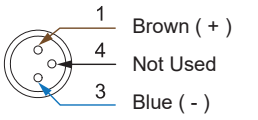
Unit : mm

M8 QD Pinout

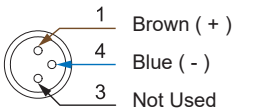
- **3 wire QD wiring**



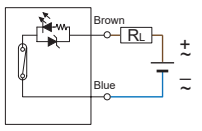
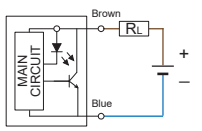
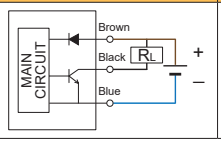
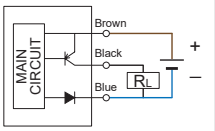
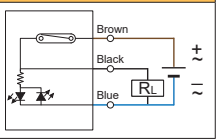
- **2 wire QD wiring**



- **2 wire EQD wiring**



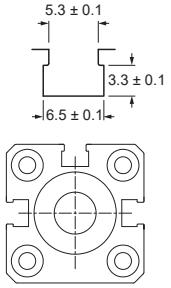
Specifications

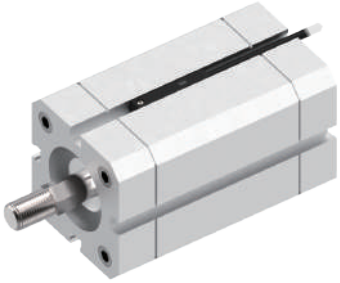
MODEL	KT-32R	KT-32DE	KT-32NE	KT-32PE	KT-32RP
Connect Diagram / Characteristics					
Wiring Method	2-Wire Type		3-Wire Type		
Switching Logic	SPST, Normally Open	Solid State Output, Normally Open			SPST, Normally Open
Sensor Type	Reed Switch	-	NPN Current Sinking	PNP Current Sourcing	Reed Switch
Operating Voltage	5 ~ 240 V DC / AC	5 ~ 30 V DC			10 ~ 30 V DC / AC
Switching Current	100 mA max.	50 mA max.	200 mA max.		500 mA max.
Contact Rating ※1	10 W max.	1.5 W max.	6 W max.		10 W max.
Current Consumption ※2	-		6 mA @ 24 V DC max.		10 mA @ 24 V DC max.
Voltage Drop ※2	3.5 V max.	3.7 V max.	0.5 V @ 200 mA max.		0.1 V @ 100 mA max.
Leakage Current ※2	-	0.1 mA (40 uA) max.	0.01 mA max.		-
Indicator	Red LED			Green LED	Yellow LED
Lead Wire	Ø3.3 PVC - 24 AWG (0.22 mm²) - 2 cores		Ø3.2 PVC - 24 AWG (0.22 mm²) - 3 cores		
Operating Frequency	200 Hz	1000 Hz			200 Hz
Magnet Requirement ※2, 3	70 Gauss	40 ~ 1000 Gauss			60 Gauss
Temperature Range	-10 ~ 70 °C				
Shock ※4	30 G	50 G			30 G
Vibration ※5	9 G				
Enclosure	IEC 60529 IP67				
Protection Circuit ※6	1	3, 4			1

NOTE

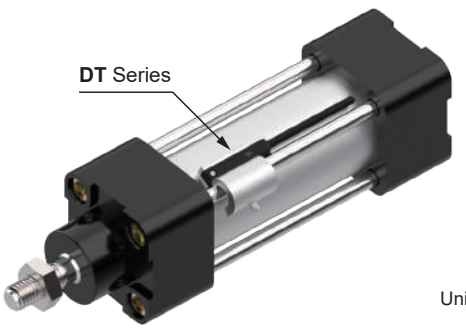
※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage). Permanent demage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)
※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
※5 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
※6 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

Groove Dimensions





Bracket



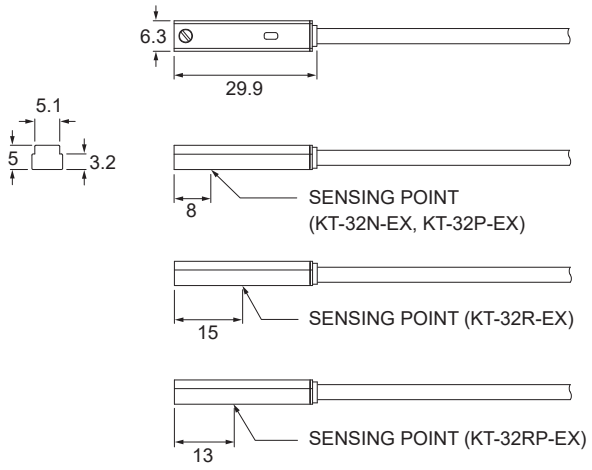
Unit : mm

KT-32-EX SERIES

Explosion Proof

Dimensions

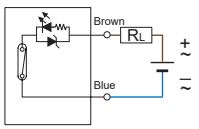
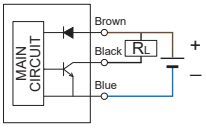
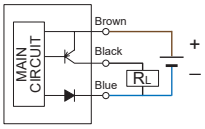
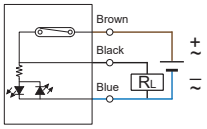
KT-32R-EX, KT-32N-EX, KT-32P-EX, KT-32RP-EX



Unit : mm

M8 Connector option is not available

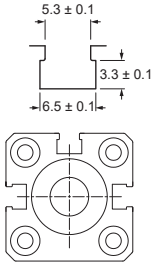
Specifications

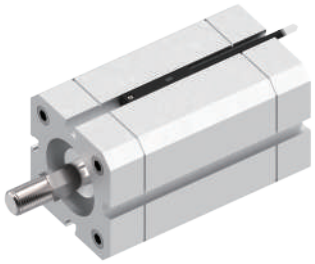
MODEL	KT-32R-EX	KT-32N-EX	KT-32P-EX	KT-32RP-EX
Connect Diagram / Characteristics				
Wiring Method	2-Wire Type	3-Wire Type		
Switching Logic	SPST, Normally Open	Solid State Output, Normally Open		SPST, Normally Open
Sensor Type	Reed Switch	NPN Current Sinking	PNP Current Sourcing	Reed Switch
Operating Voltage	5 ~ 30 V DC / AC	10 ~ 30 V DC		10 ~ 30 V DC / AC
Switching Current	100 mA max.			500 mA max.
Contact Rating ※1	10 W max.	3 W max.		10 W max.
Current Consumption ※2	-	17 mA @ 24 V DC max.	8 mA @ 24 V DC max.	10 mA @ 24 V DC max.
Voltage Drop ※2	3.5 V max.	1.5 V max.		0.1 V @ 100 mA max.
Leakage Current ※2	-	0.01 mA max.		-
Indicator	Red LED		Yellow LED	
Lead Wire	Ø3.3 PVC - 24 AWG (0.22 mm²) - 2 cores	Ø3.2 PVC - 24 AWG (0.22 mm²) - 3 cores		
Operating Frequency	200 Hz	1000 Hz		200 Hz
Magnet Requirement ※2, 3	70 Gauss	60 Gauss		
Temperature Range	-10 ~ 70 °C			
Shock ※4	30 G	50 G		30 G
Vibration ※5	9 G			
Enclosure	IEC 60529 IP67			
Protection Circuit ※6	1	2, 3, 4		1
CE ATEX APPROVAL Baseefa14ATEX0118	Ex II 3 GD Ex ic IIB T4 Gc (-10 °C ≤ Ta ≤ +70 °C) Ex ic IIIC T135 °C Dc (-10 °C ≤ Ta ≤ +70 °C)			

NOTE

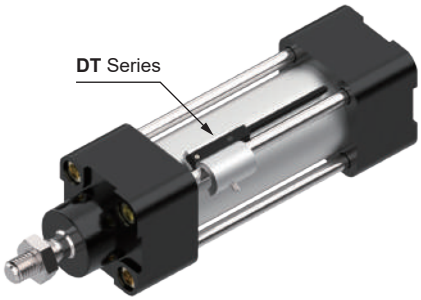
※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage). Permanent demage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)
※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
※5 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
※6 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

Groove Dimensions





Bracket

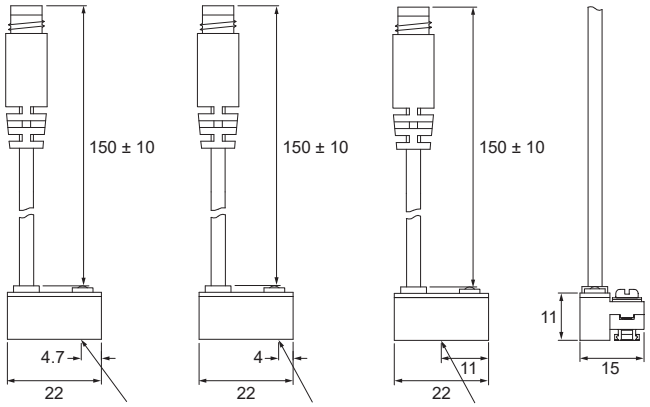


Unit : mm

KT-33 SERIES

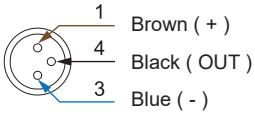
Dimensions

KT-33R, KT-33D, KT-33N, KT-33P /
KT-33R-QD, KT-33D-QD, KT-33N-QD, KT-33P-QD

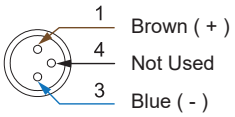


M8 QD Pinout

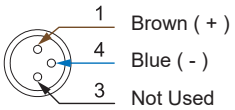
- **3 wire QD wiring**



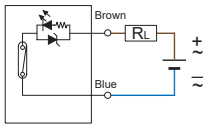
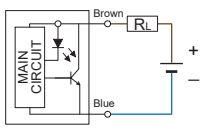
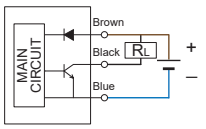
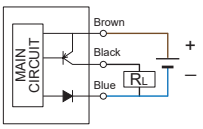
- **2 wire QD wiring**



- **2 wire EQD wiring**



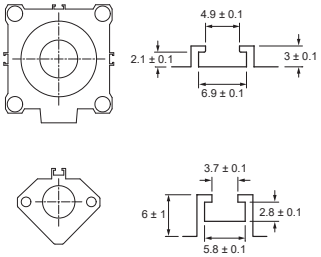
Specifications

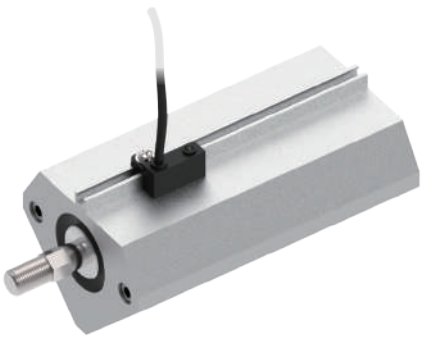
MODEL	KT-33R	KT-33D	KT-33N	KT-33P
Connect Diagram / Characteristics				
Wiring Method	2-Wire Type		3-Wire Type	
Switching Logic	SPST, Normally Open	Solid State Output, Normally Open		
Sensor Type	Reed Switch	-	NPN Current Sinking	PNP Current Sourcing
Operating Voltage	5 ~ 240 V DC / AC	10 ~ 28 V DC	5 ~ 30 V DC	
Switching Current	100 mA max.	4 ~ 40 mA max.	200 mA max.	
Contact Rating ※1	10 W max.	1.5 W max.	6 W max.	
Current Consumption ※2	-		22 mA @ 24 V DC max.	20 mA @ 24 V DC max.
Voltage Drop ※2	3.5 V max.		0.5 V max.	
Leakage Current ※2	-	1 mA max.	0.01 mA max.	
Indicator	Red LED	Green LED	Red LED	Green LED
Lead Wire	Ø3.3 PVC - 24 AWG (0.22 mm²) - 2 cores		Ø3.2 PVC - 24 AWG (0.22 mm²) - 3 cores	
Operating Frequency	200 Hz	1000 Hz		
Magnet Requirement ※2, 3	80 Gauss	70 Gauss		
Temperature Range	-10 ~ 70 °C			
Shock ※4	30 G	50 G		
Vibration ※5	9 G			
Enclosure	IEC 60529 IP67			
Protection Circuit ※6	1	4	3, 4	

NOTE

※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage).
Permanent demage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)
※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
※5 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
※6 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

Groove Dimensions





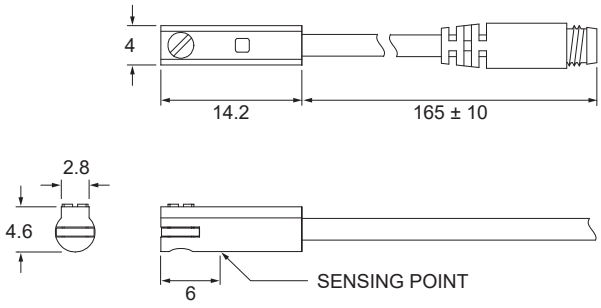
Unit : mm

KT-36 SERIES

Compact Size

Dimensions

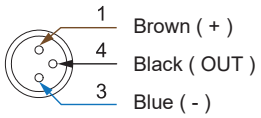
KT-36DE, KT-36NE, KT-36PE /
KT-36DE-QD, KT-36NE-QD, KT-36PE-QD



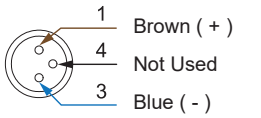
Unit : mm

M8 QD Pinout

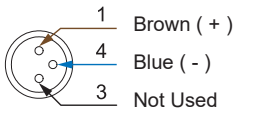
- **3 wire QD wiring**



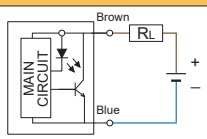
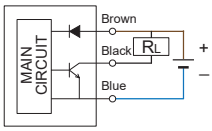
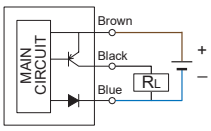
- **2 wire QD wiring**



- **2 wire EQD wiring**



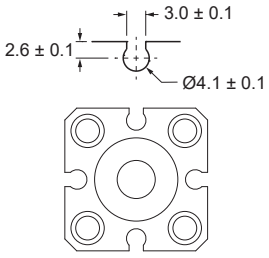
Specifications

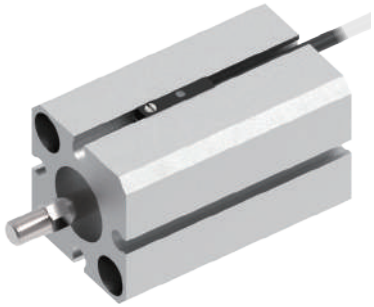
MODEL	KT-36DE	KT-36NE	KT-36PE
Connect Diagram / Characteristics			
Wiring Method	2-Wire type	3-Wire type	
Switching Logic	Solid State Output, Normally Open		
Sensor Type	-	NPN Current Sinking	PNP Current Sourcing
Operating Voltage	5 ~ 30 V DC		
Switching Current	50 mA max.		
Contact Rating ※1	1.5 W max.		
Current Consumption ※2	-	10 mA @ 24 V DC max.	
Voltage Drop ※2	3.5 V max.	0.5 V @ 50 mA max.	
Leakage Current ※2	0.1 mA (40 uA) max.	0.01 mA max.	
Indicator	Red LED		
Lead Wire	Ø2.6 PVC - 26 AWG (0.15 mm²) - 2 cores	Ø2.6 PVC - 26 AWG (0.15 mm²) - 3 cores	
Operating Frequency	1000 Hz max.		
Magnet Requirement ※2, 3	40 ~ 1000 Gauss		
Temperature Range	-10 ~ 70 °C		
Shock ※4	50 G		
Vibration ※5	9 G		
Enclosure	IEC 60529 IP67		
Protection Circuit ※6	3, 4		

NOTE

※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage).
Permanent demage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)
※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
※5 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
※6 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

Groove Dimensions





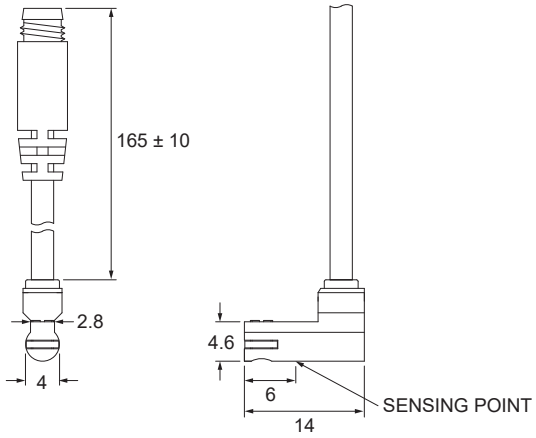
Unit : mm

KT-37 SERIES

Compact Size

Dimensions

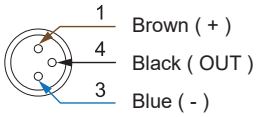
KT-37DE, KT-37NE, KT-37PE /
KT-37DE-QD, KT-37NE-QD, KT-37PE-QD



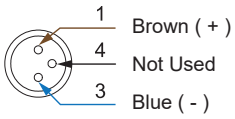
Unit : mm

M8 QD Pinout

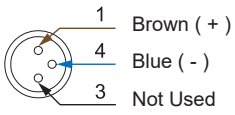
- **3 wire QD wiring**



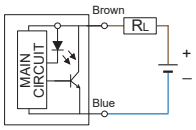
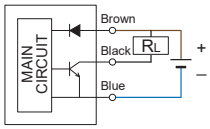
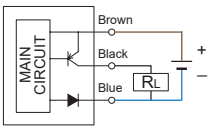
- **2 wire QD wiring**



- **2 wire EQD wiring**



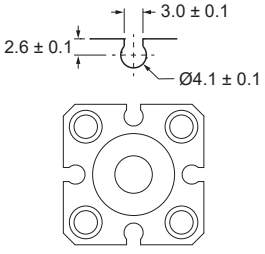
Specifications

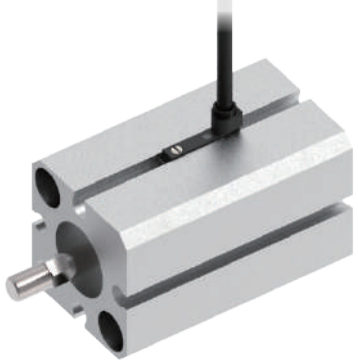
MODEL	KT-37DE	KT-37NE	KT-37PE
Connect Diagram / Characteristics			
Wiring Method	2-Wire type	3-Wire type	
Switching Logic	Solid State Output, Normally Open		
Sensor Type	-	NPN Current Sinking	PNP Current Sourcing
Operating Voltage	5 ~ 30 V DC		
Switching Current	50 mA max.		
Contact Rating ※1	1.5 W max.		
Current Consumption ※2	-	10 mA @ 24 V DC max.	
Voltage Drop ※2	3.5 V max.	0.5 V @ 50 mA max.	
Leakage Current ※2	0.1 mA (40 uA) max.	0.01 mA max.	
Indicator	Red LED		
Lead Wire	Ø2.6 PVC - 26 AWG (0.15 mm²) - 2 cores	Ø2.6 PVC - 26 AWG (0.15 mm²) - 3 cores	
Operating Frequency	1000 Hz max.		
Magnet Requirement ※2, 3	40 ~ 1000 Gauss		
Temperature Range	-10 ~ 70 °C		
Shock ※4	50 G		
Vibration ※5	9 G		
Enclosure	IEC 60529 IP67		
Protection Circuit ※6	3, 4		

NOTE

※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage).
Permanent demage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)
※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
※5 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
※6 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

Groove Dimensions





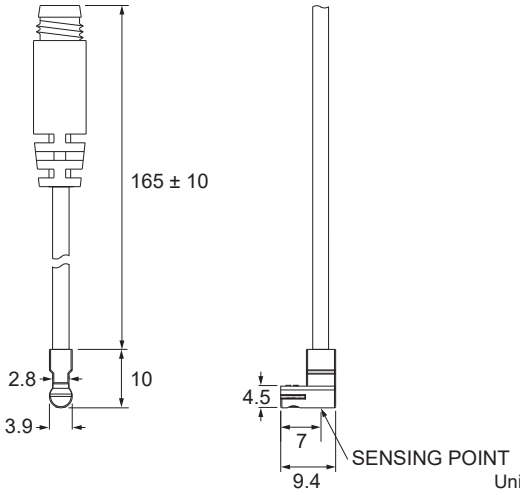
Unit : mm

KT-39 SERIES

Compact Size

Dimensions

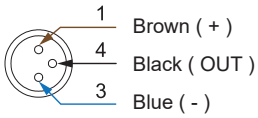
KT-39DE, KT-39NE, KT-39PE /
KT-39DE-QD, KT-39NE-QD, KT-39PE-QD



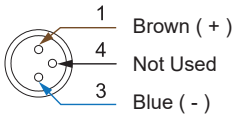
Unit : mm

M8 QD Pinout

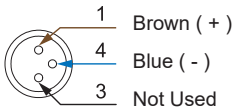
3 wire QD wiring



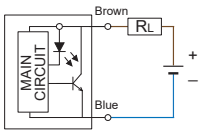
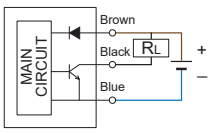
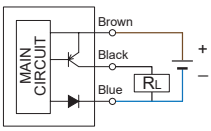
2 wire QD wiring



2 wire EQD wiring



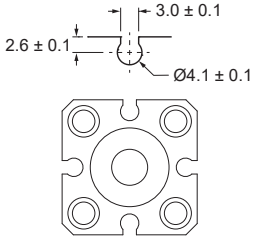
Specifications

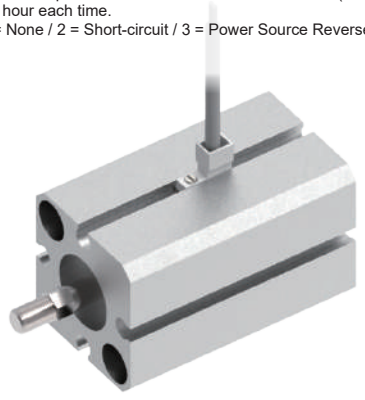
MODEL	KT-39DE	KT-39NE	KT-39PE
Connect Diagram / Characteristics			
Wiring Method	2-Wire type	3-Wire type	
Switching Logic	Solid State Output, Normally Open		
Sensor Type	-	NPN Current Sinking	PNP Current Sourcing
Operating Voltage	5 ~ 30 V DC		
Switching Current	50 mA max.	80 mA max.	
Contact Rating ※1	1.5 W max.	2.2 W max.	
Current Consumption ※2	-	6 mA @ 24 V DC max.	
Voltage Drop ※2	3.5 V max.	0.5 V @ 50 mA max.	
Leakage Current ※2	0.1 mA (40 uA) max.	0.01 mA max.	
Indicator	Red LED		
Lead Wire	Ø2.6 PVC - 26 AWG (0.15 mm²) - 2 cores	Ø2.6 PVC - 26 AWG (0.15 mm²) - 3 cores	
Operating Frequency	1000 Hz		
Magnet Requirement ※2, 3	40 ~ 1000 Gauss		
Temperature Range	-10 ~ 70 °C		
Shock ※4	50 G		
Vibration ※5	9 G		
Enclosure	IEC 60529 IP67		
Protection Circuit ※6	3, 4		

NOTE

※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage).
Permanent demage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)
※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
※5 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
※6 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

Groove Dimensions



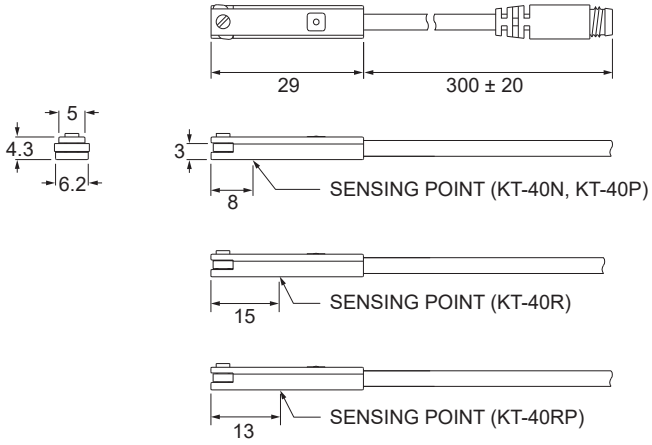


Unit : mm

KT-40 SERIES

Dimensions

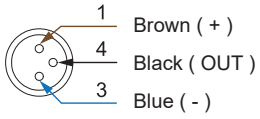
KT-40R, KT-40N, KT-40P, KT-40RP /
KT-40R-QD, KT-40N-QD, KT-40P-QD, KT-40RP-QD



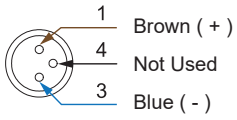
Unit : mm

M8 QD Pinout

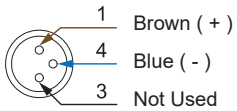
- **3 wire QD wiring**



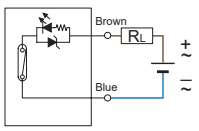
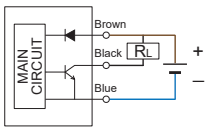
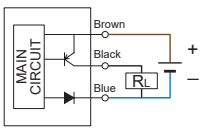
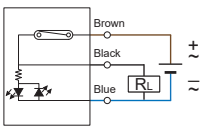
- **2 wire QD wiring**



- **2 wire EQD wiring**



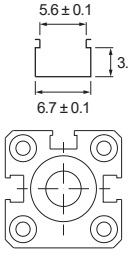
Specifications

MODEL	KT-40R	KT-40N	KT-40P	KT-40RP
Connect Diagram / Characteristics				
Wiring Method	2-Wire Type	3-Wire Type		
Switching Logic	SPST, Normally Open	Solid State Output, Normally Open		SPST, Normally Open
Sensor Type	Reed Switch	NPN Current Sinking	PNP Current Sourcing	Reed Switch
Operating Voltage	5 ~ 120 V DC / AC	10 ~ 30 V DC		10 ~ 30 V DC / AC
Switching Current	100 mA max.			500 mA max.
Contact Rating ※1	10 W max.	3 W max.		10 W max.
Current Consumption ※2	-	8 mA @ 24 V DC max.		10 mA @ 24 V DC max.
Voltage Drop ※2	3.5 V max.	1.5 V max.		0.1 V @ 100 mA max.
Leakage Current ※2	-	0.01 mA max.		-
Indicator	Red LED		Yellow LED	
Lead Wire	Ø3 PUR - 26 AWG (0.15 mm²) - 2 cores	Ø3 PUR - 26 AWG (0.15 mm²) - 3 cores		
Operating Frequency	200 Hz	1000 Hz		200 Hz
Magnet Requirement ※2, 3	50 Gauss	45 Gauss		
Temperature Range	-10 ~ 70 °C			
Shock ※4	30 G	50 G		30 G
Vibration ※5	9 G			
Enclosure	IEC 60529 IP67			
Protection Circuit ※6	1	2, 3, 4		1

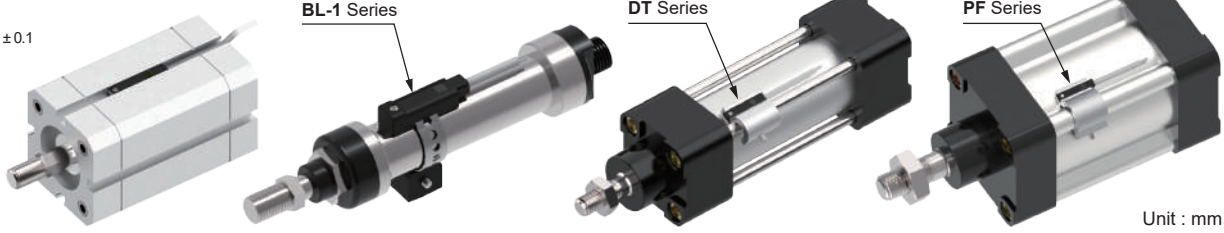
NOTE

※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage).
Permanent demage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)
※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
※5 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
※6 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

Groove Dimensions



Clamp / Bracket

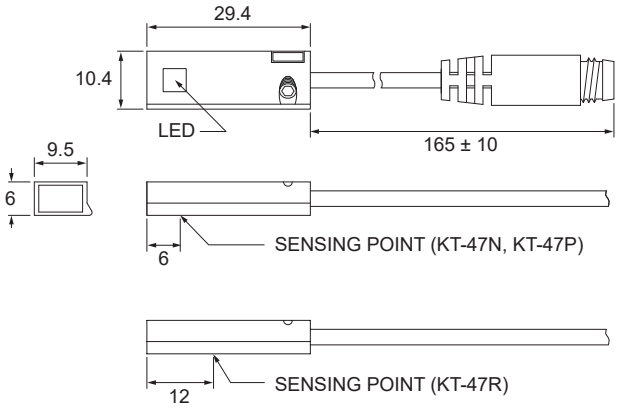


Unit : mm

KT-47 SERIES

Dimensions

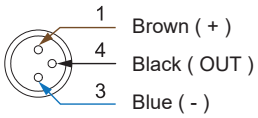
KT-47R, KT-47N, KT-47P /
KT-47R-QD, KT-47N-QD, KT-47P-QD



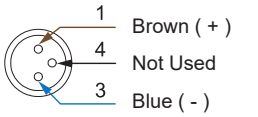
Unit : mm

M8 QD Pinout

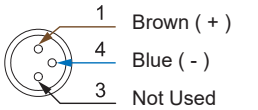
- **3 wire QD wiring**



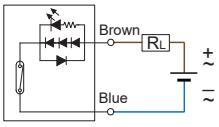
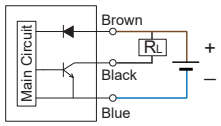
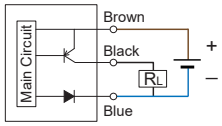
- **2 wire QD wiring**



- **2 wire EQD wiring**



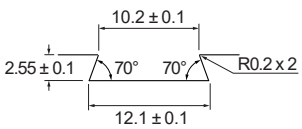
Specifications

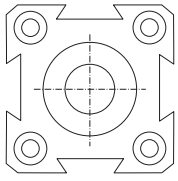
MODEL	KT-47R	KT-47N	KT-47P
Connect Diagram / Characteristics			
Wiring Method	2-Wire Type	3-Wire Type	
Switching Logic	SPST, Normally Open	Solid State Output, Normally Open	
Sensor Type	Reed Switch	NPN Current Sinking	PNP Current Sourcing
Operating Voltage	5 ~ 240 V DC / AC	5 ~ 30 V DC	
Switching Current	500 mA max.	200 mA max.	
Contact Rating ※1	10 W max.	6 W max.	
Current Consumption ※2	-	22 mA @ 24 V DC max.	20 mA @ 24 V DC max.
Voltage Drop ※2	3.0 V max.	2.0 V max.	2.5 V max.
Leakage Current ※2	-	0.01 mA max.	
Indicator	Yellow LED		
Lead Wire	Ø2.8 PVC - 26 AWG (0.15 mm²) - 2 cores	Ø2.8 PUR - 26 AWG (0.15 mm²) - 3 cores	
Operating Frequency	200 Hz	1000 Hz	
Magnet Requirement ※2, 3	50 Gauss		
Temperature Range	-10 ~ 70 °C		
Shock ※4	30 G	50 G	
Vibration ※5	9 G		
Enclosure	IEC 60529 IP67		
Protection Circuit ※6	1	2, 3, 4	

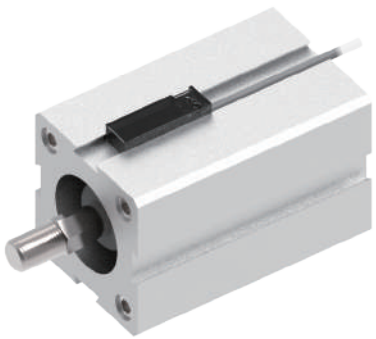
NOTE

※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage).
Permanent demage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)
※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
※5 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
※6 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

Groove Dimensions





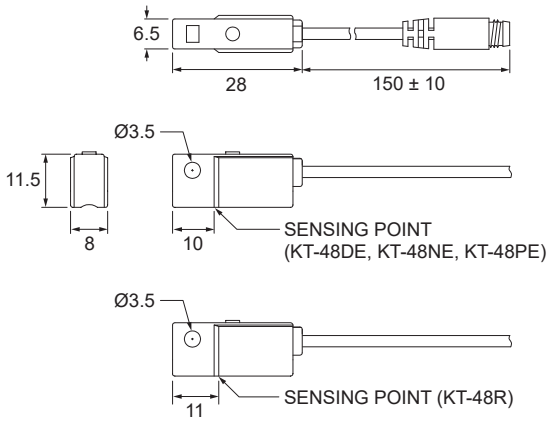


Unit : mm

KT-48 SERIES

Dimensions

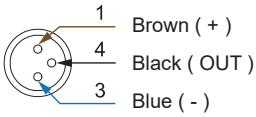
KT-48R, KT-48DE, KT-48NE, KT-48PE /
KT-48R-QD, KT-48DE-QD, KT-48NE-QD, KT-48PE-QD



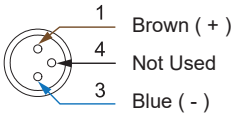
Unit : mm

M8 QD Pinout

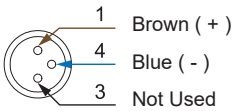
- **3 wire QD wiring**



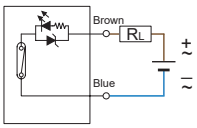
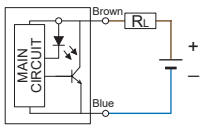
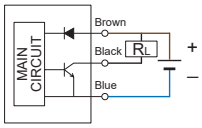
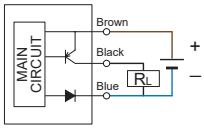
- **2 wire QD wiring**



- **2 wire EQD wiring**



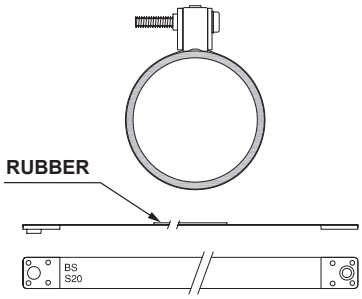
Specifications

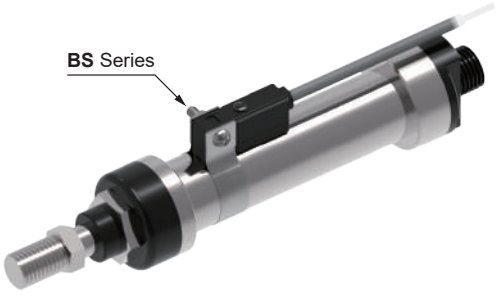
MODEL	KT-48R	KT-48DE	KT-48NE	KT-48PE
Connect Diagram / Characteristics				
Wiring Method	2-Wire type		3-Wire type	
Switching Logic	SPST, Normally Open	Solid State Output, Normally Open		
Sensor Type	Reed Switch	-	NPN Current Sinking	PNP Current Sourcing
Operating Voltage	5 ~ 240 V DC / AC	5 ~ 30 V DC		
Switching Current	100 mA max.	50 mA max.	200 mA max.	
Contact Rating ※1	10 W max.	1.5 W max.	6 W max.	
Current Consumption ※2	-		6 mA @ 24 V DC max.	
Voltage Drop ※2	3.5 V max.	3.7 V max.	0.5 V @ 200 mA max.	
Leakage Current ※2	-	0.1 mA (40 uA) max.	0.01 mA max.	
Indicator	Red LED			Green LED
Lead Wire	Ø3.3 PVC - 24 AWG (0.22 mm²) - 2 cores		Ø3.3 PVC - 24 AWG (0.22 mm²) - 3 cores	
Operating Frequency	200 Hz		1000 Hz max.	
Magnet Requirement ※2, 3	110 Gauss	40 ~ 1000 Gauss		
Temperature Range	-10 ~ 70 °C			
Shock ※4	30 G	50 G		
Vibration ※5	9 G			
Enclosure	IEC 60529 IP67			
Protection Circuit ※6	1	3, 4		

NOTE

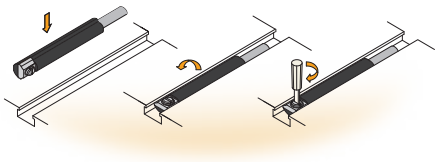
※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage).
Permanent demage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)
※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
※5 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
※6 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

Clamp



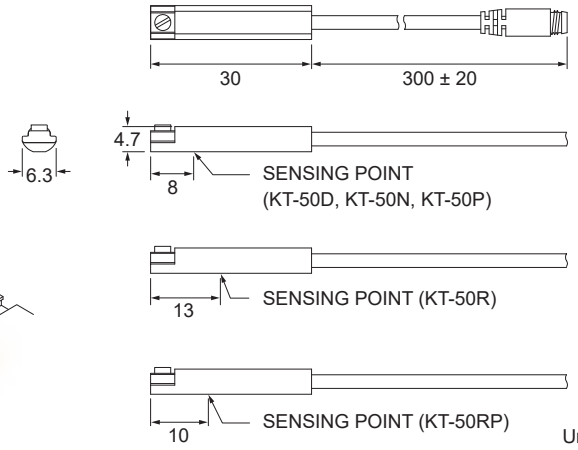


KT-50 SERIES



Dimensions

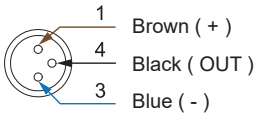
KT-50R, KT-50D, KT-50N, KT-50P, KT-50RP / KT-50R-QD, KT-50D-QD, KT-50N-QD, KT-50P-QD, KT-50RP-QD



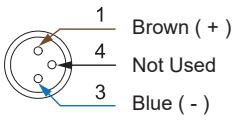
Unit : mm

M8 QD Pinout

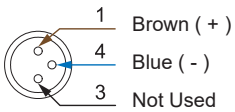
- **3 wire QD wiring**



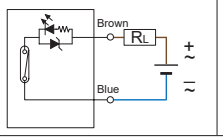
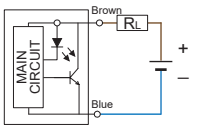
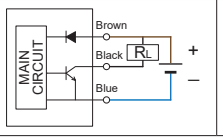
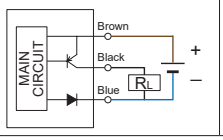
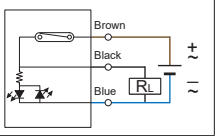
- **2 wire QD wiring**



- **2 wire EQD wiring**



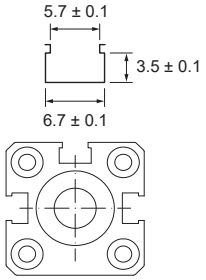
Specifications

MODEL	KT-50R	KT-50D	KT-50N	KT-50P	KT-50RP
Connect Diagram / Characteristics					
Wiring Method	2-Wire Type		3-Wire Type		
Switching Logic	SPST, Normally Open	Solid State Output, Normally Open			SPST, Normally Open
Sensor Type	Reed Switch	-	NPN Current Sinking	PNP Current Sourcing	Reed Switch
Operating Voltage	5 ~ 240 V DC / AC	10 ~ 28 V DC	10 ~ 30 V DC		10 ~ 30 V DC / AC
Switching Current	100 mA max.	50 mA max.	200 mA max.		500 mA max.
Contact Rating ※1	10 W max.	1.5 W max.	6 W max.		10 W max.
Current Consumption ※2	-		20 mA @ 24 V DC max.		5 mA @ 24 V DC max.
Voltage Drop ※2	3.5 V max.		1.5 V max.		0.1 V @ 100 mA max.
Leakage Current ※2	-	0.8 mA max.	0.05 mA max.		-
Indicator	Red LED			Yellow LED	
Lead Wire	Ø3 PUR - 26 AWG (0.15 mm²) - 2 cores		Ø3 PUR - 26 AWG (0.15 mm²) - 3 cores		
Operating Frequency	200 Hz	1000 Hz			200 Hz
Magnet Requirement ※2, 3	70 Gauss				
Temperature Range	-10 ~ 70 °C				
Shock ※4	30 G	50 G			30 G
Vibration ※5	9 G				
Enclosure	IEC 60529 IP67				
Protection Circuit ※6	1	2, 4	2, 3, 4		1

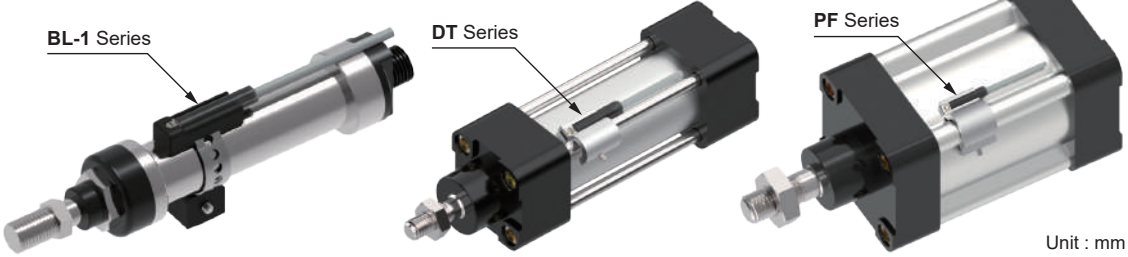
NOTE

※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage). Permanent demage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)
※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
※5 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
※6 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

Groove Dimensions



Clamp / Bracket

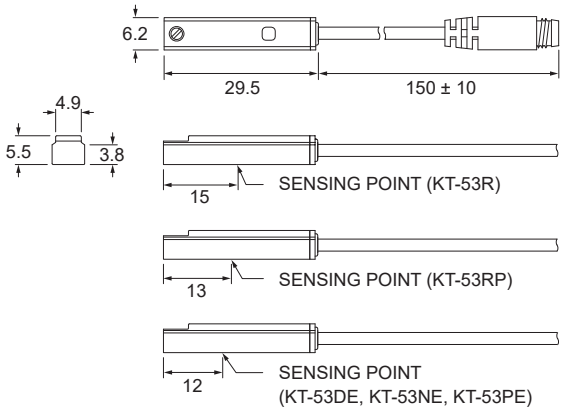


Unit : mm

KT-53 SERIES

Dimensions

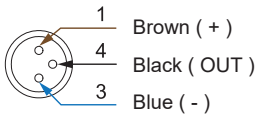
KT-53R, KT-53DE, KT-53NE, KT-53PE, KT-53RP / KT-53R-QD, KT-53DE-QD, KT-53NE-QD, KT-53PE-QD, KT-53RP-QD



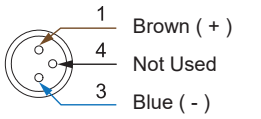
Unit : mm

M8 QD Pinout

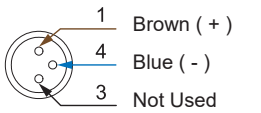
- **3 wire QD wiring**



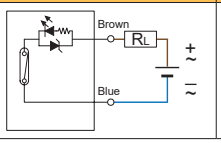
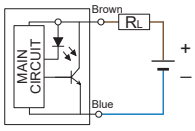
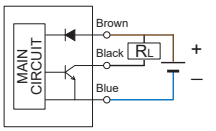
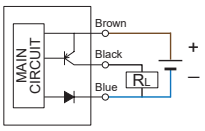
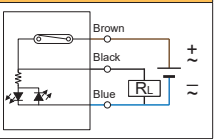
- **2 wire QD wiring**



- **2 wire EQD wiring**



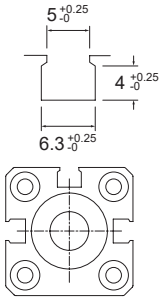
Specifications

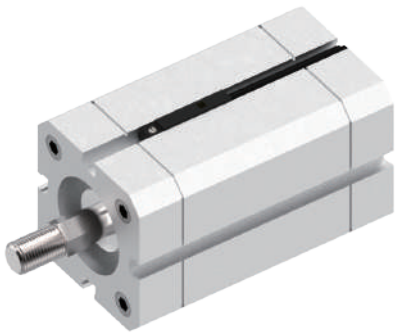
MODEL	KT-53R	KT-53DE	KT-53NE	KT-53PE	KT-53RP
Connect Diagram / Characteristics					
Wiring Method	2-Wire Type		3-Wire Type		
Switching Logic	SPST, Normally Open	Solid State Output, Normally Open			SPST, Normally Open
Sensor Type	Reed Switch	-	NPN Current Sinking	PNP Current Sourcing	Reed Switch
Operating Voltage	5 ~ 240 V DC / AC	5 ~ 30 V DC			10 ~ 30 V DC / AC
Switching Current	100 mA max.	50 mA max.	200 mA max.		500 mA max.
Contact Rating ※1	10 W max.	1.5 W max.	6 W max.		10 W max.
Current Consumption ※2	-		6 mA @ 24 V DC max.		10 mA @ 24 V DC max.
Voltage Drop ※2	3.5 V max.	3.7 V max.	0.5 V @ 200 mA max.		0.1 V @ 100 mA max.
Leakage Current ※2	-	0.1 mA (40 uA) max.	0.01 mA max.		-
Indicator	Red LED			Green LED	Yellow LED
Lead Wire	Ø3 PUR - 26 AWG (0.15 mm²) - 2 cores		Ø3 PUR - 26 AWG (0.15 mm²) - 3 cores		
Operating Frequency	200 Hz	1000 Hz			200 Hz
Magnet Requirement ※2, 3	70 Gauss	40 ~ 1000 Gauss			70 Gauss
Temperature Range	-10 ~ 70 °C				
Shock ※4	30 G	50 G			30 G
Vibration ※5	9 G				
Enclosure	IEC 60529 IP67				
Protection Circuit ※6	1	3, 4			1

NOTE

※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage). Permanent demage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)
※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
※5 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
※6 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

Groove Dimensions



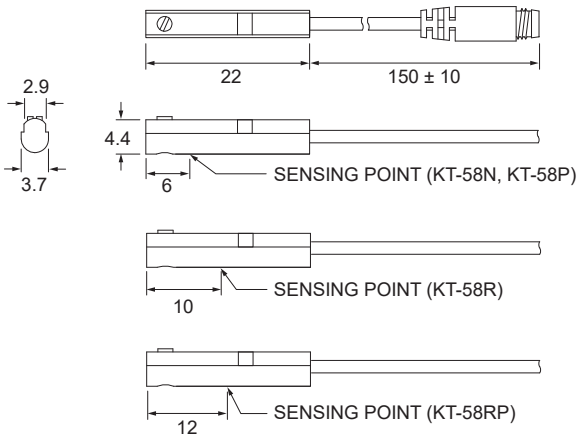


Unit : mm

KT-58 SERIES

Dimensions

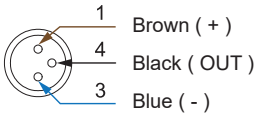
KT-58R, KT-58N, KT-58P, KT-58RP /
KT-58R-QD, KT-58N-QD, KT-58P-QD, KT-58RP-QD



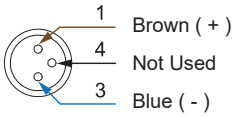
Unit : mm

M8 QD Pinout

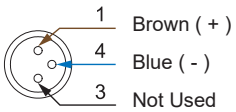
- **3 wire QD wiring**



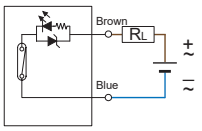
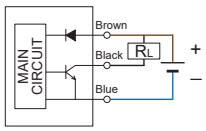
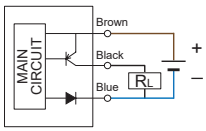
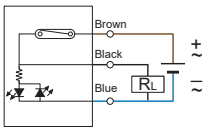
- **2 wire QD wiring**



- **2 wire EQD wiring**



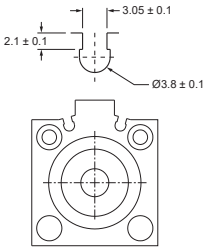
Specifications

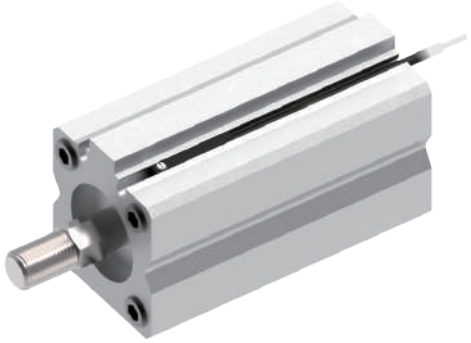
MODEL	KT-58R	KT-58N	KT-58P	KT-58RP
Connect Diagram / Characteristics				
Wiring Method	2-Wire Type	3-Wire Type		
Switching Logic	SPST, Normally Open	Solid State Output, Normally Open		SPST, Normally Open
Sensor Type	Reed Switch	NPN Current Sinking	PNP Current Sourcing	Reed Switch
Operating Voltage	5 ~ 120 V DC / AC	10 ~ 30 V DC		10 ~ 30 V DC / AC
Switching Current	100 mA max.	200 mA max.		500 mA max.
Contact Rating ※1	10 W max.	6 W max.		10 W max.
Current Consumption ※2	-	10 mA @ 24 V DC max.		5 mA @ 24 V DC max.
Voltage Drop ※2	3.5 V max.	0.5 V @ 50 mA max.		0.1 V @ 100 mA max.
Leakage Current ※2	-	0.01 mA max.		-
Indicator	Red LED		Yellow LED	
Lead Wire	Ø2.5 PUR - 28 AWG (0.082 mm²) - 2 cores	Ø2.5 PUR - 28 AWG (0.082 mm²) - 3 cores		
Operating Frequency	200 Hz	1000 Hz		200 Hz
Magnet Requirement ※2, 3	70 Gauss	40 Gauss		50 Gauss
Temperature Range	-10 ~ 70 °C			
Shock ※4	30 G	50 G		30 G
Vibration ※5	9 G			
Enclosure	IEC 60529 IP67			
Protection Circuit ※6	1	3, 4		1

NOTE

※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage).
Permanent demage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)
※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
※5 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
※6 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

Groove Dimensions



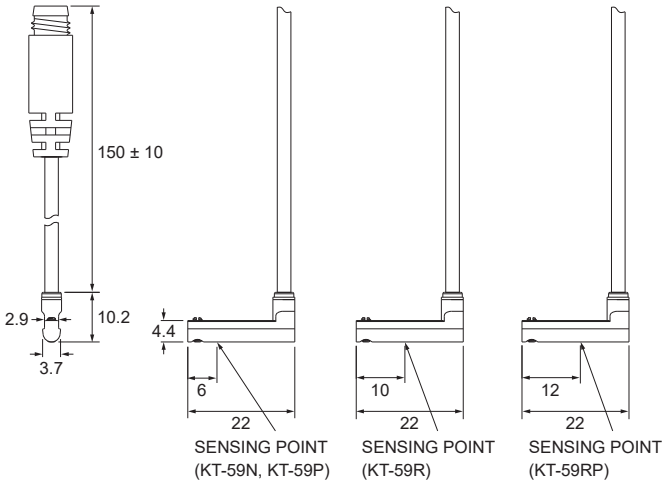


Unit : mm

KT-59 SERIES

Dimensions

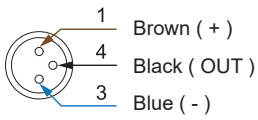
KT-59R, KT-59N, KT-59P, KT-59RP /
KT-59R-QD, KT-59N-QD, KT-59P-QD, KT-59RP-QD



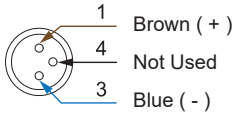
Unit : mm

M8 QD Pinout

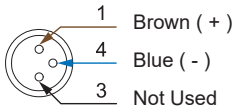
- **3 wire QD wiring**



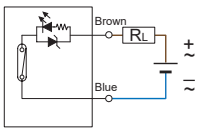
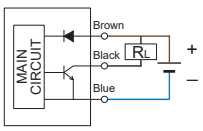
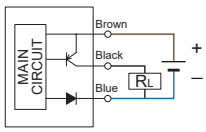
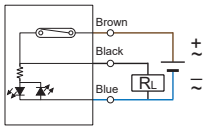
- **2 wire QD wiring**



- **2 wire EQD wiring**



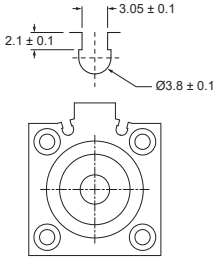
Specifications

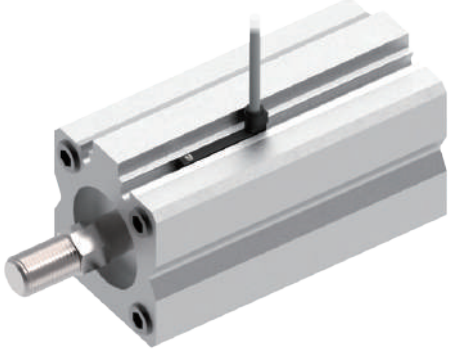
MODEL	KT-59R	KT-59N	KT-59P	KT-59RP
Connect Diagram / Characteristics				
Wiring Method	2-Wire Type	3-Wire Type		
Switching Logic	SPST, Normally Open	Solid State Output, Normally Open		SPST, Normally Open
Sensor Type	Reed Switch	NPN Current Sinking	PNP Current Sourcing	Reed Switch
Operating Voltage	5 ~ 120 V DC / AC	10 ~ 30 V DC		10 ~ 30 V DC / AC
Switching Current	100 mA max.	200 mA max.		500 mA max.
Contact Rating ※1	10 W max.	6 W max.		10 W max.
Current Consumption ※2	-	10 mA @ 24 V DC max.		5 mA @ 24 V DC max.
Voltage Drop ※2	3.5 V max.	0.5 V @ 50 mA max.		0.1 V @ 100 mA max.
Leakage Current ※2	-	0.01 mA max.		-
Indicator	Red LED		Yellow LED	
Lead Wire	Ø2.5 PUR - 28 AWG (0.082 mm²) - 2 cores	Ø2.5 PUR - 28 AWG (0.082 mm²) - 3 cores		
Operating Frequency	200 Hz	1000 Hz		200 Hz
Magnet Requirement ※2, 3	70 Gauss	40 Gauss		50 Gauss
Temperature Range	-10 ~ 70 °C			
Shock ※4	30 G	50 G		30 G
Vibration ※5	9 G			
Enclosure	IEC 60529 IP67			
Protection Circuit ※6	1	3, 4		1

NOTE

※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage).
Permanent demage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)
※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
※5 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
※6 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

Groove Dimensions

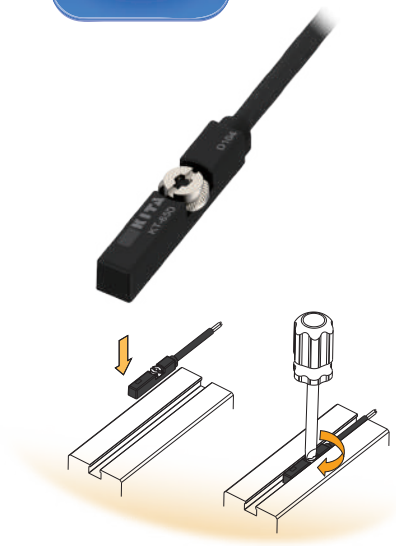




Unit : mm

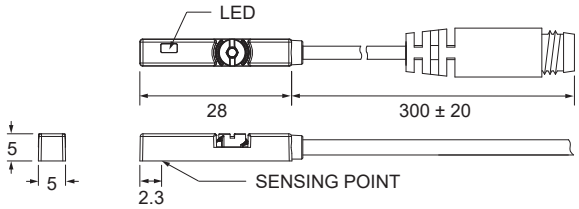
KT-65 SERIES

Patented

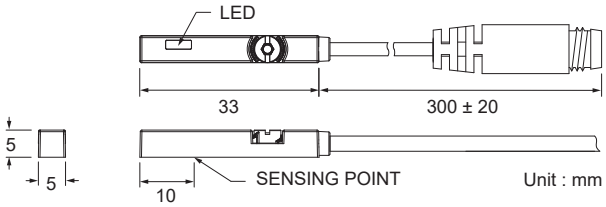


Dimensions

KT-65DE, KT-65NE, KT-65PE /
KT-65DE-QD, KT-65NE-QD, KT-65PE-QD

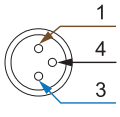


KT-65R, KT-65RP / KT-65R-QD, KT-65RP-QD

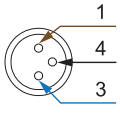


M8 QD Pinout

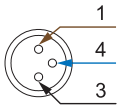
- **3 wire QD wiring**



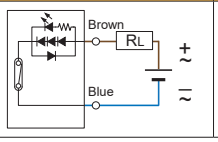
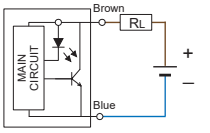
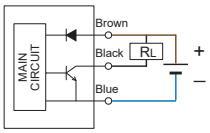
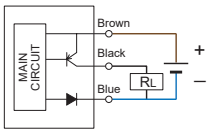
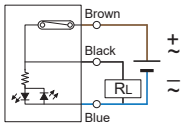
- **2 wire QD wiring**



- **2 wire EQD wiring**



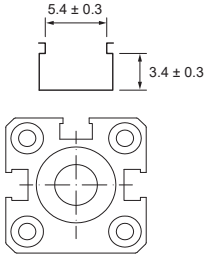
Specifications

MODEL	KT-65R	KT-65DE	KT-65NE	KT-65PE	KT-65RP
Connect Diagram / Characteristics					
Wiring Method	2-Wire Type		3-Wire Type		
Switching Logic	SPST, Normally Open	Solid State Output, Normally Open			SPST, Normally Open
Sensor Type	Reed Switch	-	NPN Current Sinking	PNP Current Sourcing	Reed Switch
Operating Voltage	5 ~ 240 V DC / AC	5 ~ 30 V DC			10 ~ 30 V DC / AC
Switching Current	100 mA max.	50 mA max.	200 mA max.		500 mA max.
Contact Rating ※1	10 W max.	1.5 W max.	6 W max.		10 W max.
Current Consumption ※2	-		6 mA @ 24 V DC max.		10 mA @ 24 V DC max.
Voltage Drop ※2	3.0 V max.	3.7 V max.	0.5 V @ 200 mA max.		0.1 V @ 100 mA max.
Leakage Current ※2	-	0.1 mA (40 uA) max.	0.01 mA max.		-
Indicator	Red LED			Yellow LED	
Lead Wire	Ø2.8 PUR - 26 AWG (0.15 mm²) - 2 cores		Ø2.8 PUR - 26 AWG (0.15 mm²) - 3 cores		
Operating Frequency	200 Hz	1000 Hz max.			200 Hz
Magnet Requirement ※2, 3	75 Gauss	40 ~ 1000 Gauss			65 Gauss
Temperature Range	-10 ~ 70 °C				
Shock ※4	30 G	50 G			30 G
Vibration ※5	9 G				
Enclosure	IEC 60529 IP67				
Protection Circuit ※6	1	3, 4			1

NOTE

※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage).
Permanent demage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)
※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
※5 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
※6 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

Groove Dimensions



Unit : mm

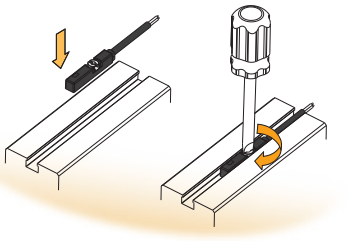
BKT-1 Series

KT-65-EX SERIES

RoHS UK CA ATEX

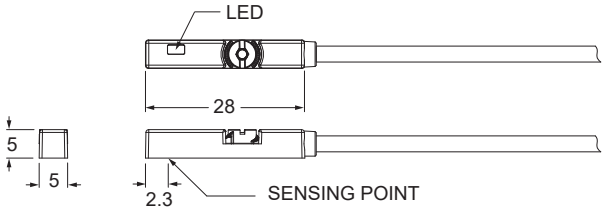
Explosion Proof

Patented

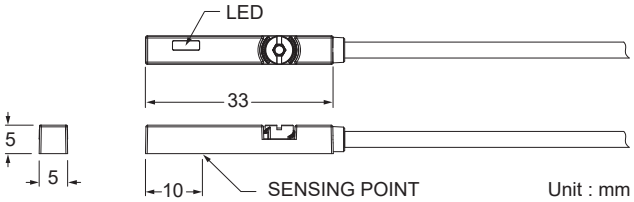


Dimensions

KT-65N-EX, KT-65N-NC-EX, KT-65P-EX, KT-65P-NC-EX, KT-65D-EX



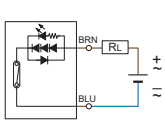
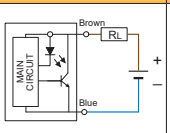
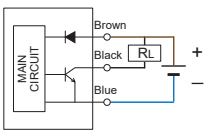
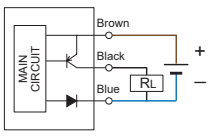
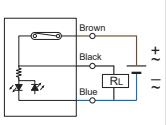
KT-65R-EX, KT-65RP-EX



Unit : mm

M8 Connector option is not available

Specifications

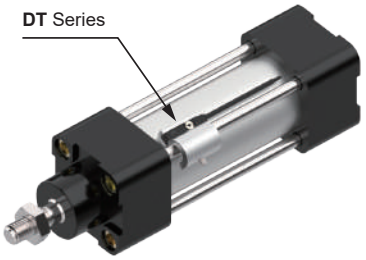
MODEL	KT-65R-EX	KT-65D-EX	KT-65N-EX	KT-65N-NC-EX	KT-65P-EX	KT-65P-NC-EX	KT-65RP-EX
Connect Diagram / Characteristics							
Wiring Method	2-Wire Type		3-Wire Type				
Switching Logic	SPST, Normally Open	Solid State Output, Normally Open		Solid State Output, Normally Close	Solid State Output, Normally Open	Solid State Output, Normally Close	SPST, Normally Open
Sensor Type	Reed Switch	-	NPN Current Sinking		PNP Current Sourcing		Reed Switch
Operating Voltage	5 ~ 30 V DC / AC	10 ~ 28 V DC					10 ~ 30 V DC / AC
Switching Current	100 mA max.	50 mA max.	200 mA max.				500 mA max.
Contact Rating ※1	10 W max.	1.5 W max.	5.5 W max.				10 W max.
Current Consumption ※2	-	10 mA @ 24 V DC max.					
Voltage Drop ※2	3.0 V max.	3.5 V max.	1.5 V max.				0.1 V @ 100 mA max.
Leakage Current ※2	-	0.8 mA max.	0.05 mA max.				-
Indicator	Red LED				Yellow LED		
Lead Wire	Ø2.8 PUR - 26 AWG (0.15 mm²) - 2 cores		Ø2.8 PUR - 26 AWG (0.15 mm²) - 3 cores				
Operating Frequency	200 Hz	1000 Hz					200 Hz
Magnet Requirement ※2, 3	65 Gauss	50 Gauss					65 Gauss
Temperature Range	-10 ~ 70 °C						
Shock ※4	30 G	50 G					30 G
Vibration ※5	9 G						
Enclosure	IEC 60529 IP67						
Protection Circuit ※6	1	2	2, 3, 4				1
CE ATEX APPROVAL Baseefa14ATEX0118	Ⓔx II 3 GD Ex ic IIB T4 Gc (-10 °C ≤ Ta ≤ +70 °C) Ex ic IIIC T135 °C Dc (-10 °C ≤ Ta ≤ +70 °C)						

NOTE

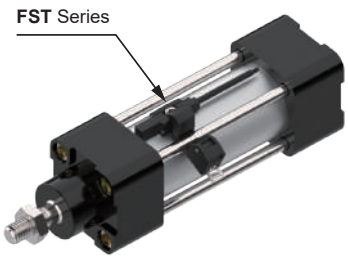
※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage). Permanent demage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)
※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
※5 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
※6 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

KT-65 series can be applied to many kind of cylinders

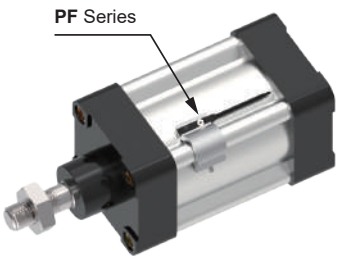
DT Series



FST Series

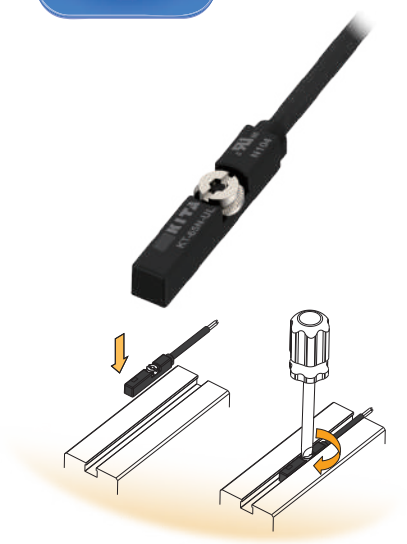


PF Series



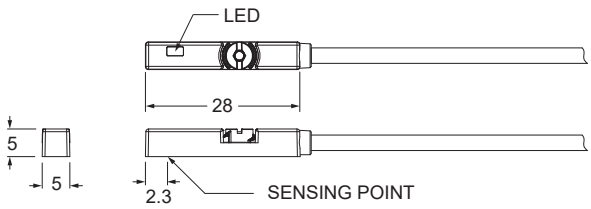
KT-65-UL SERIES

Patented

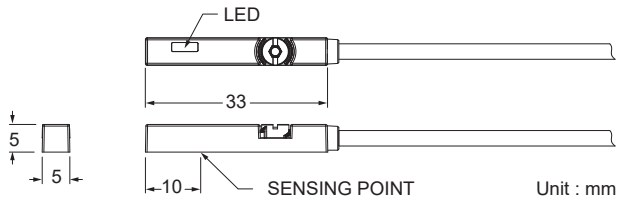


Dimensions

KT-65N-UL, KT-65P-UL, KT-65D-UL



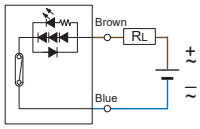
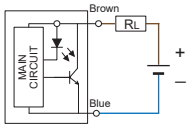
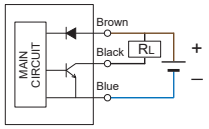
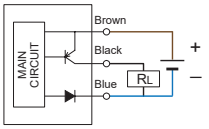
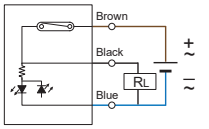
KT-65R-UL, KT-65RP-UL



Unit : mm

M8 Connector option is not available

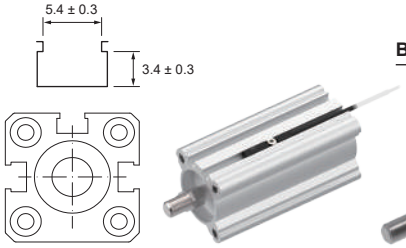
Specifications

MODEL	KT-65R-UL	KT-65D-UL	KT-65N-UL	KT-65P-UL	KT-65RP-UL
Connect Diagram / Characteristics					
Wiring Method	2-Wire Type		3-Wire Type		
Switching Logic	SPST, Normally Open	Solid State Output, Normally Open			SPST, Normally Open
Sensor Type	Reed Switch	-	NPN Current Sinking	PNP Current Sourcing	Reed Switch
Operating Voltage	5 ~ 30 V DC / AC	10 ~ 28 V DC			10 ~ 30 V DC / AC
Switching Current	60 mA max.	40 mA max.	100 mA max.		
Contact Rating ※1	1.8 W max.	1.2 W max.	3 W max.		
Current Consumption ※2	-		10 mA @ 24 V DC max.		
Voltage Drop ※2	3.0 V max.	3.5 V max.	1.5 V max.		0.1 V @ 100 mA max.
Leakage Current ※2	-	0.8 mA max.	0.05 mA max.		-
Indicator	Red LED			Yellow LED	
Lead Wire	Ø2.8 PUR - 26 AWG (0.15 mm²) - 2 cores		Ø2.8 PUR - 26 AWG (0.15 mm²) - 3 cores		
Operating Frequency	200 Hz	1000 Hz			200 Hz
Magnet Requirement ※2, 3	75 Gauss	50 Gauss			65 Gauss
Temperature Range	-10 ~ 60 °C	-10 ~ 70 °C			
Shock ※4	30 G	50 G			30 G
Vibration ※5	9 G				
Enclosure	IEC 60529 IP67				
Protection Circuit ※6	1	2	2, 3, 4		1

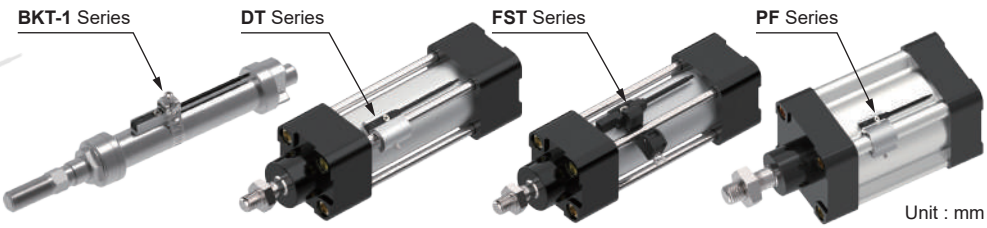
NOTE

※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage). Permanent demage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)
※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
※5 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
※6 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

Groove Dimensions



Clamp / Bracket



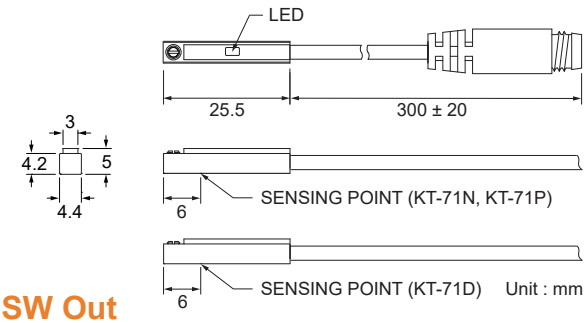
Unit : mm

KT-71 SERIES

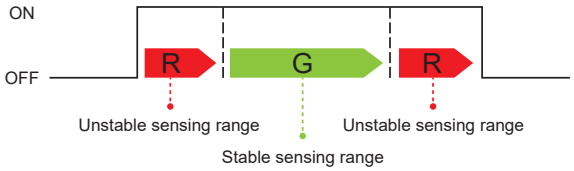
- Dual Color LED allow more precise positioning

Dimensions

KT-71D, KT-71N, KT-71P /
KT-71D-QD, KT-71N-QD, KT-71P-QD

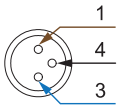


SW Out

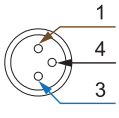


M8 QD Pinout

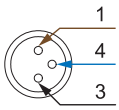
3 wire QD wiring



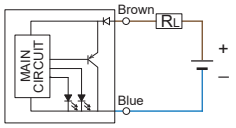
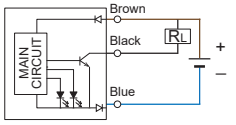
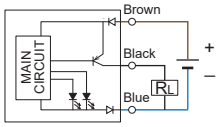
2 wire QD wiring



2 wire EQD wiring



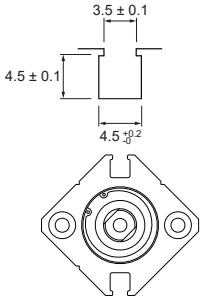
Specifications

MODEL	KT-71D	KT-71N	KT-71P
Connect Diagram / Characteristics			
Wiring Method	2-Wire Type	3-Wire Type	
Switching Logic	Solid State Output, Normally Open		
Sensor Type	-	NPN Current Sinking	PNP Current Sourcing
Operating Voltage	10 ~ 28 V DC		
Switching Current	80 mA max.		
Contact Rating ※1	2 W max.		
Current Consumption ※2	-	10 mA @ 24 V DC max.	
Voltage Drop ※2	4 V max.	1.5 V max.	
Leakage Current ※2	1 mA max.	0.05 mA max.	
Indicator	Red LED : unstable sensing range ; Green LED : stable sensing range		
Lead Wire	Ø2.8 PUR - 26 AWG (0.15 mm²) - 2 cores	Ø2.8 PUR - 26 AWG (0.15 mm²) - 3 cores	
Operating Frequency	1000 Hz		
Magnet Requirement ※2, 3	85 Gauss		
Temperature Range	-10 ~ 60 °C		
Shock ※4	50 G		
Vibration ※5	9 G		
Enclosure	IEC 60529 IP67		
Protection Circuit ※6	2, 3, 4		

NOTE

※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage). Permanent demage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)
※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
※5 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
※6 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

Groove Dimensions



Unit : mm

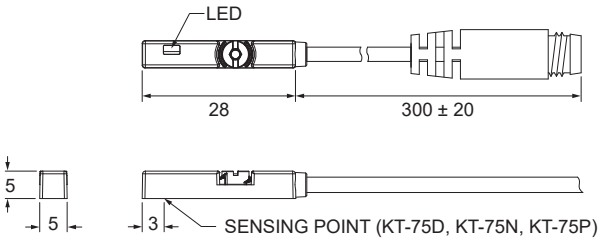
KT-75 SERIES

Patented

- Dual Color LED allow more precise positioning

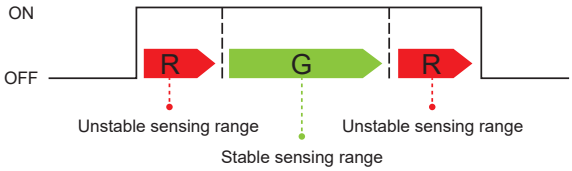
Dimensions

KT-75D, KT-75N, KT-75P /
KT-75D-QD, KT-75N-QD, KT-75P-QD



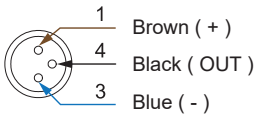
Unit : mm

SW Out

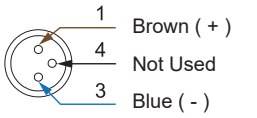


M8 QD Pinout

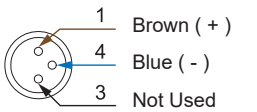
3 wire QD wiring



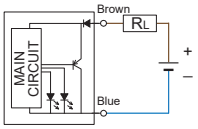
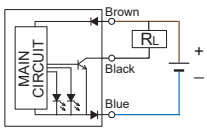
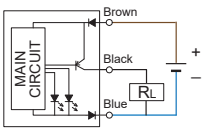
2 wire QD wiring



2 wire EQD wiring



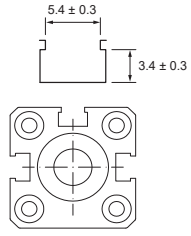
Specifications

MODEL	KT-75D	KT-75N	KT-75P
Connect Diagram / Characteristics			
Wiring Method	2-Wire Type	3-Wire Type	
Switching Logic	Solid State Output, Normally Open		
Sensor Type	-	NPN Current Sinking	PNP Current Sourcing
Operating Voltage	10 ~ 28 V DC		
Switching Current	80 mA max.		
Contact Rating ※1	2 W max.		
Current Consumption ※2	-	10 mA @ 24 V DC max.	
Voltage Drop ※2	4 V max.	1.5 V max.	
Leakage Current ※2	1 mA max.	0.05 mA max.	
Indicator	Red LED : unstable sensing range ; Green LED : stable sensing range		
Lead Wire	Ø2.8 PUR - 26 AWG (0.15 mm²) - 2 cores	Ø2.8 PUR - 26 AWG (0.15 mm²) - 3 cores	
Operating Frequency	1000 Hz		
Magnet Requirement ※2, 3	85 Gauss		
Temperature Range	-10 ~ 60 °C		
Shock ※4	50 G		
Vibration ※5	9 G		
Enclosure	IEC 60529 IP67		
Protection Circuit ※6	2, 3, 4		

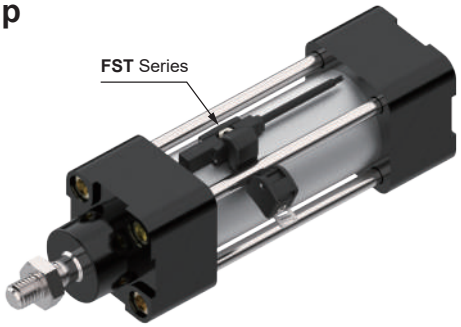
NOTE

※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage).
Permanent demage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)
※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
※5 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
※6 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

Groove Dimensions



Clamp



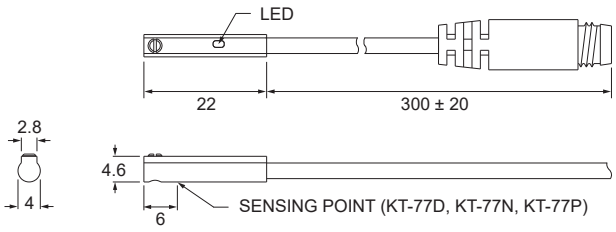
Unit : mm

KT-77 SERIES

- Dual Color LED allow more precise positioning

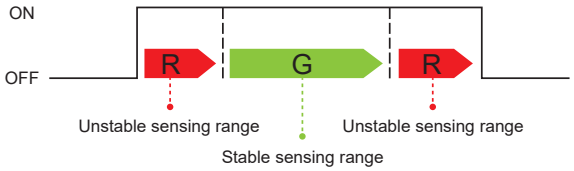
Dimensions

KT-77D, KT-77N, KT-77P /
KT-77D-QD, KT-77N-QD, KT-77P-QD



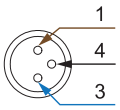
Unit : mm

SW Out

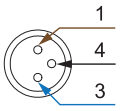


M8 QD Pinout

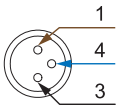
3 wire QD wiring



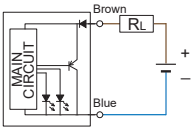
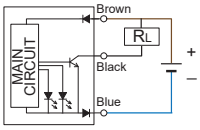
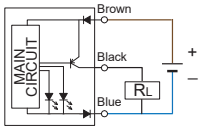
2 wire QD wiring



2 wire EQD wiring



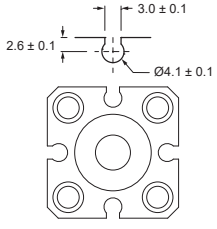
Specifications

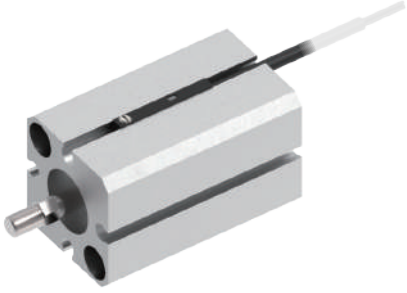
MODEL	KT-77D	KT-77N	KT-77P
Connect Diagram / Characteristics			
Wiring Method	2-Wire Type	3-Wire Type	
Switching Logic	Solid State Output, Normally Open		
Sensor Type	-	NPN Current Sinking	PNP Current Sourcing
Operating Voltage	10 ~ 28 V DC		
Switching Current	80 mA max.		
Contact Rating ※1	2 W max.		
Current Consumption ※2	-	10 mA @ 24 V DC max.	
Voltage Drop ※2	4 V max.	1.5 V max.	
Leakage Current ※2	1 mA max.	0.05 mA max.	
Indicator	Red LED : unstable sensing range ; Green LED : stable sensing range		
Lead Wire	Ø2.8 PUR - 26 AWG (0.15 mm²) - 2 cores	Ø2.8 PUR - 26 AWG (0.15 mm²) - 3 cores	
Operating Frequency	1000 Hz		
Magnet Requirement ※2, 3	85 Gauss		
Temperature Range	-10 ~ 60 °C		
Shock ※4	50 G		
Vibration ※5	9 G		
Enclosure	IEC 60529 IP67		
Protection Circuit ※6	2, 3, 4		

NOTE

※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage).
Permanent demage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)
※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
※5 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
※6 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

Groove Dimensions





Clamp

Unit : mm

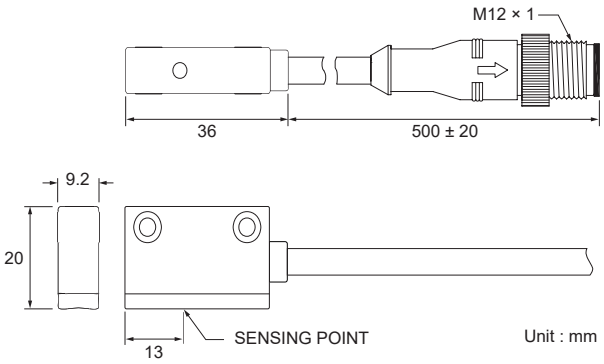
KT-1000D SERIES

Weld-Field Immune Sensor

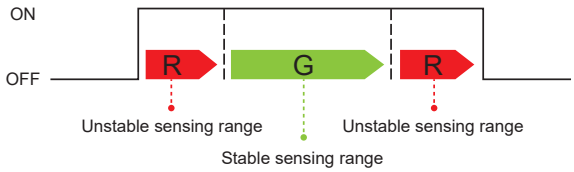
Magnetic Field Resistant

- Dual Color LED allow more precise positioning

Dimensions

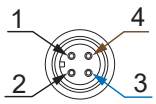


SW Out



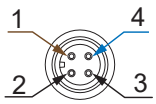
M12 QD Pinout

- **QD**



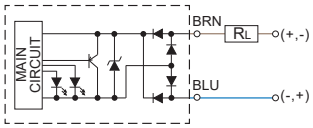
1 : Not Used
2 : Not Used
3 : Blue
4 : Brown

- **EQD**



1 : Brown
2 : Not Used
3 : Not Used
4 : Blue

Specifications

MODEL	KT-1000D
Connect Diagram / Characteristics	
Wiring Method	2-Wire Type
Switching Logic	Solid State Output, Normally Open
Sensor Type	-
Operating Voltage	10 ~ 28 V DC
Switching Current	5 ~ 50 mA max.
Contact Rating ※1	1.5 W max.
Voltage Drop ※2	5 V max.
Leakage Current ※2	1 mA max.
Indicator	Red LED : unstable sensing range ; Green LED : stable sensing range
Lead Wire	Ø5.4 PVC - 20 AWG (0.5 mm²) - 2 cores
Operating Time	50 ms max.
Magnetic Feild Resistance ※3	16000 A
Magnet Requirement ※2, 4	85 Gauss
Temperature Range	-10 ~ 60 °C
Shock ※5	30 G
Vibration ※6	9 G
Enclosure	IEC 60529 IP67
Protection Circuit ※7	3, 4

NOTE

※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage). Permanent demage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor.
Voltage drop increases in pace with cable length.
※3 : The operational distance can be 0 mm between KT-1000D and welding gun (welding conductor or cable) when the welding current less than 16000 A.
※4 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)
※5 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
※6 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
※7 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

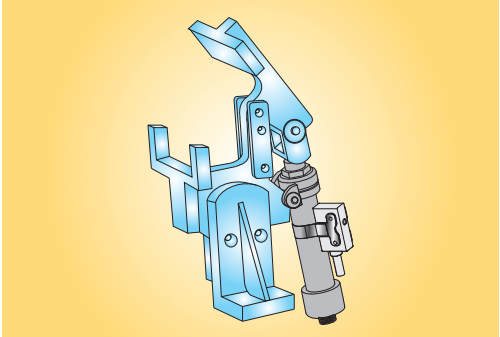
Ordering Information

K T - 1 0 0 0 D - ☐

Cable Length / Connector

Blank : With 3 meter cable
QD : With M12 4Pin male connector

Application Mounting



- KT-1000D detects the position of the cylinder piston and it is especially suitable for clamp cylinder.

KT-1000D SERIES

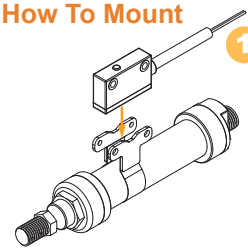
Weld-field Immune Sensor

RoHS

BP Clamp

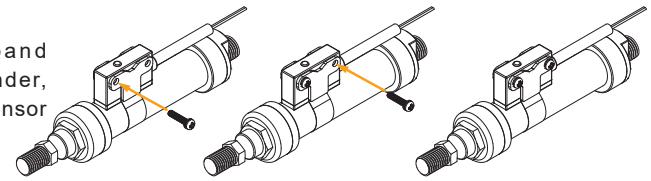
Clamp is designed for mounting KT-1000D on round cylinder.

How To Mount



1 Step 1

Wrap the band around cylinder, and place sensor on cylinder.



2 Step 2

Insert screw into clamp. Adjust sensor to the sensing position and tighten.

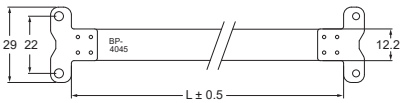
B P - 4 0 4 5

Cylinder I.D.

40 : Ø40 round cylinder
50 : Ø50 round cylinder
63 : Ø63 round cylinder

Cylinder O.D.

45 : Ø45 round cylinder
47 : Ø47 round cylinder
⋮
72 : Ø72 round cylinder



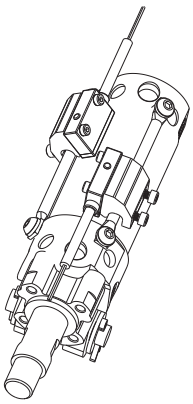
Cylinder Chart

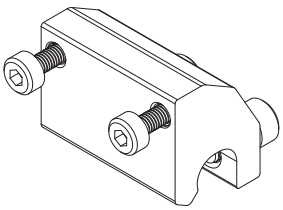
MODEL	"L"	I.D.	O.D.
BP-4045	154	Ø40	Ø45
BP-4047	161	Ø40	Ø47
BP-5055	188	Ø50	Ø55
BP-5058	197	Ø50	Ø58
BP-6368	228	Ø63	Ø68
BP-6372	240	Ø63	Ø72

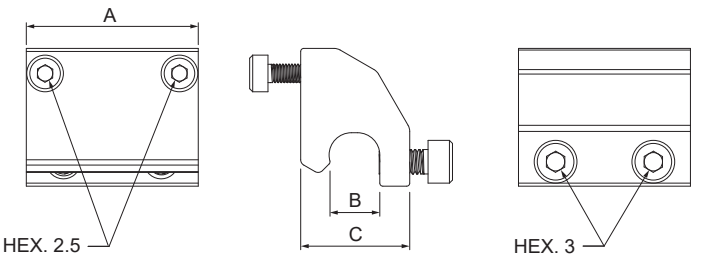
Unit : mm

PMB Bracket

Bracket is designed for mounting KT-1000D on round cylinder.



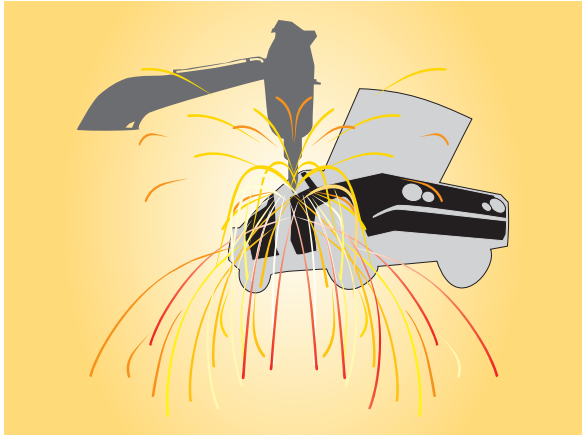




MODEL \ DIM.	A	B	C
PMB-040	28.15	8.15	17.85

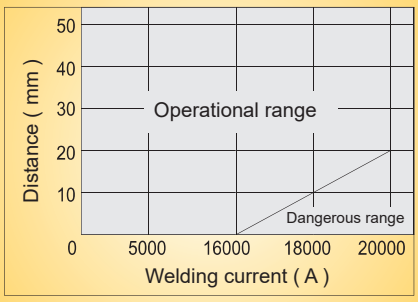
Unit : mm

Application Environment



- KT-1000D can be applied in the strong magnetic field environment such as automotive manufacturing or areas near welding machine.
- When KT-1000D detects the magnetic AC field (50 or 60 Hz), it will keep the status of output without being affected.

Weld-Field Immune



- The operational distance can be 0 mm between KT-1000D and welding gun (welding conductor or cable) when the welding current less than 16000 A.

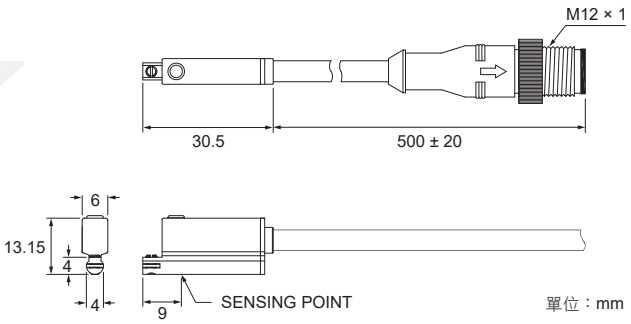
KT-1001D SERIES

Weld-Field Immune Sensor

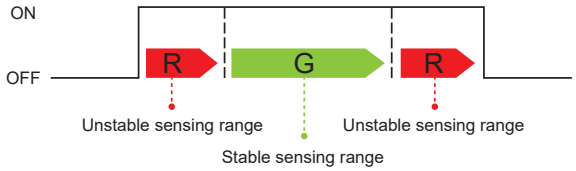
Magnetic Field Resistant

- Dual Color LED allow more precise positioning

Dimensions

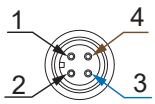


SW Out



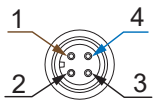
M12 QD Pinout

- **QD**



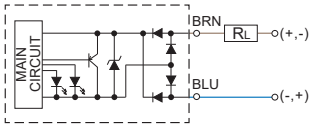
1 : Not Used
2 : Not Used
3 : Blue
4 : Brown

- **EQD**



1 : Brown
2 : Not Used
3 : Not Used
4 : Blue

Specifications

MODEL	KT-1001D
Connect Diagram / Characteristics	
Wiring Method	2-Wire Type
Switching Logic	Solid State Output, Normally Open
Sensor Type	-
Operating Voltage	10 ~ 28 V DC
Switching Current	5 ~ 50 mA max.
Contact Rating ※1	1.5 W max.
Voltage Drop ※2	5 V max.
Leakage Current ※2	1 mA max.
Indicator	Red LED : unstable sensing range ; Green LED : stable sensing range
Lead Wire	Ø4.8 PVC - 20 AWG (0.5 mm²) - 2 cores
Operating Time	50 ms max.
Magnetic Feild Resistance ※3	16000 A
Magnet Requirement ※2, 4	85 Gauss
Temperature Range	-10 ~ 60 °C
Shock ※5	50 G
Vibration ※6	9 G
Enclosure	IEC 60529 IP67
Protection Circuit ※7	3, 4

NOTE

※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage). Permanent demage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : The operational distance can be 0 mm between KT-1001D and welding gun (welding conductor or cable) when the welding current less than 16000 A.
※4 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)
※5 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
※6 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
※7 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

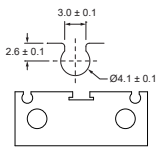
Ordering Information

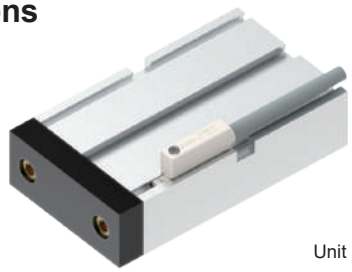
K T - 1 0 0 1 D - □

Cable Length / Connector

Blank : With 3 meter cable
QD : With M12 4Pin male connector

Groove Dimensions





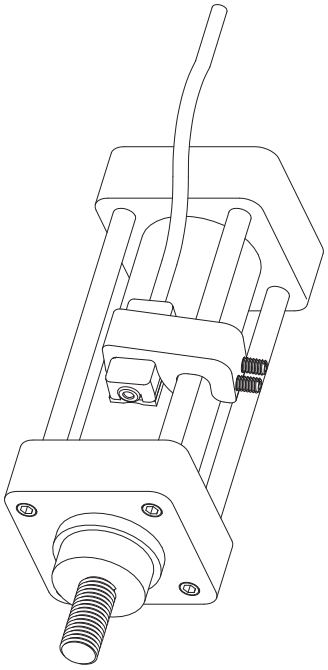
Unit : mm

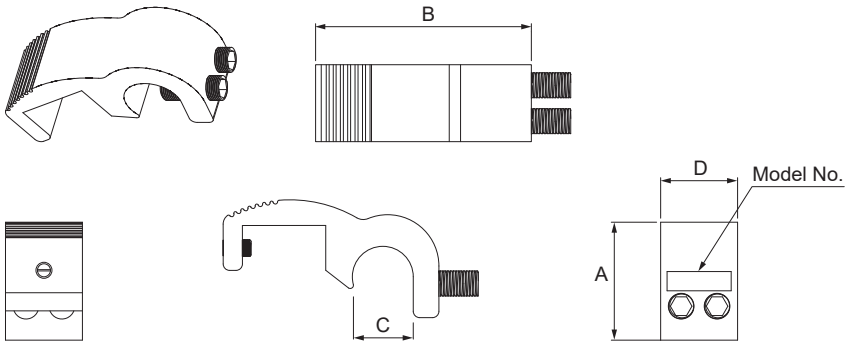
BRACKET SERIES

RoHS

PM Series

Bracket is designed for mounting KT-20 & KT-21 & KT-31 series sensor on Tie-Rod cylinder.



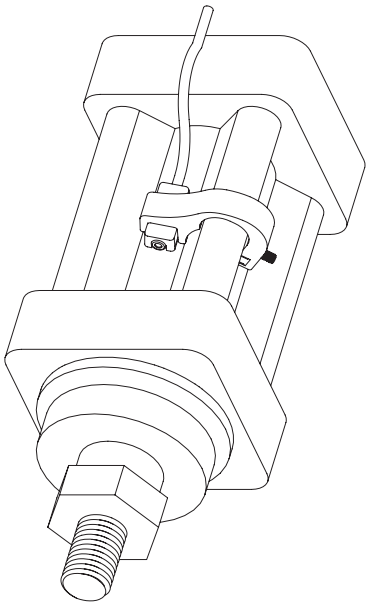


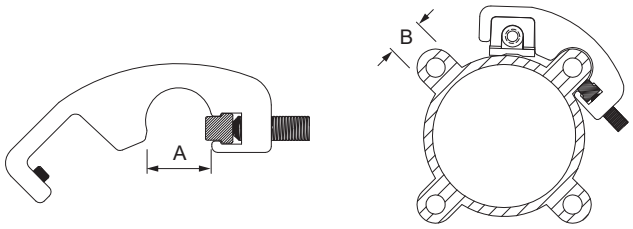
MODEL \ DIM.	A	B	C	D
PM-6	19.1	31.8	7.3	12
PM-8	18.4	33.7	9.3	12
PM-10	16.7	35.9	11.2	12
PM-12	20	35.5	11.5	12
PM-14	24	38.0	13.5	12
PM-16	24	40.0	15.5	12

Unit : mm

PI Series

Bracket is designed for mounting KT-20 & KT-21 & KT-31 series sensor on ISO profile cylinder.





MODEL \ DIM.	A	B	Remark
PI-1	10.9	0.4	Ø32 ~ Ø40
PI-2	14.10	13.5	Ø50 ~ Ø63
PI-3	15.45	15	Ø80
PI-4	16.3	16	Ø100
PI-5	19.8	18.7	Ø125
PI-6	26.5	25.7	Ø150

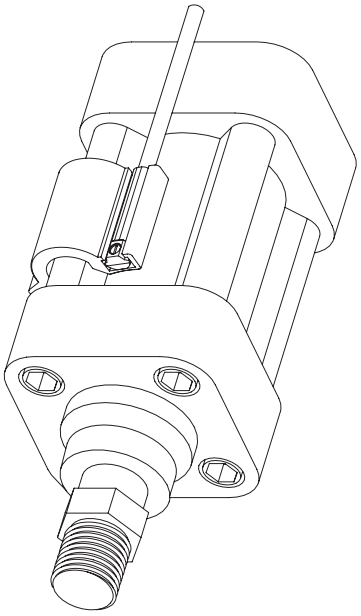
Unit : mm

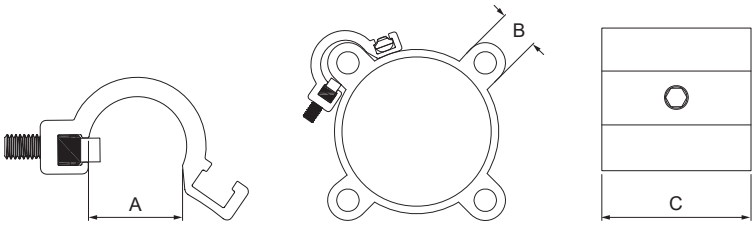
BRACKET SERIES

RoHS

PF Series

Bracket is designed for mounting KT-32 & KT-40 & KT-50 & KT-65 & KT-75 series sensor on ISO profile cylinder.



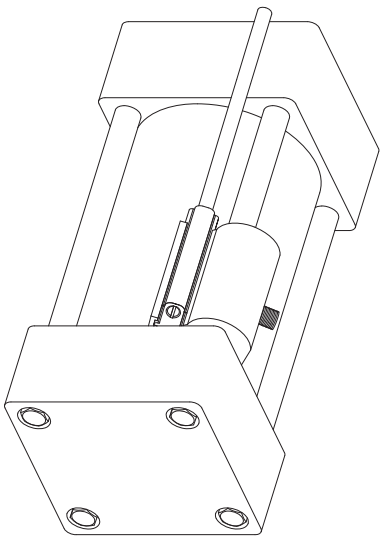


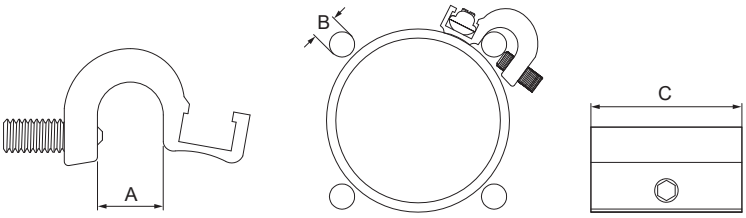
MODEL \ DIM.	A	B	C	Remark
PF-1	12.1	10.4	25	Ø32 ~ Ø40
PF-2	15.9	13.5	25	Ø50 ~ Ø63
PF-3	16.3	15	25	Ø80
PF-4	17.9	16	25	Ø100
PF-5	19.7	18.7	25	Ø125

Unit : mm

DT Series

Bracket is designed for mounting KT-32 & KT-40 & KT-50 & KT-65 & KT-75 series sensor on Tie-Rod cylinder.





MODEL \ DIM.	A	B	C
DT-1	7.9	Ø4 ~ Ø6	25
DT-2	10.4	Ø8 ~ Ø10	25
DT-3	15.1	Ø12 ~ Ø14	25
DT-4	20.6	Ø16	25
DT-5	24.9	Ø20 ~ Ø24	30

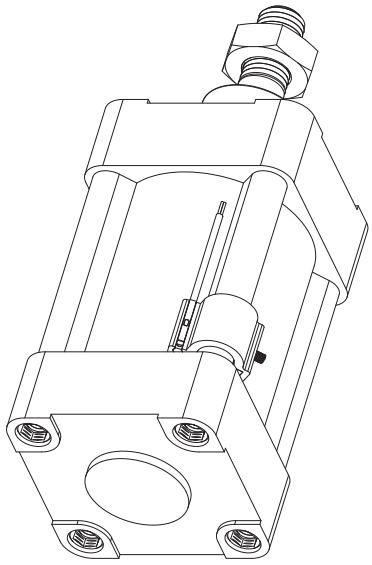
Unit : mm

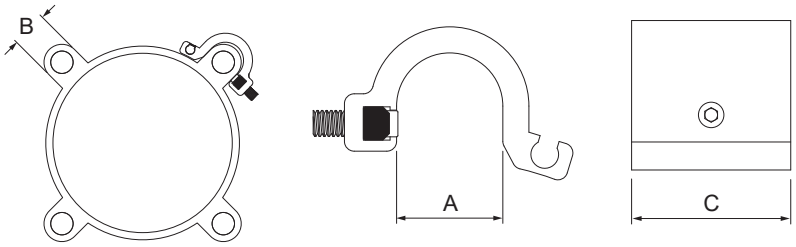
BRACKET SERIES

RoHS

PF7 Series

Bracket is designed for mounting KT-07 & KT-16 & KT-36 & KT-37 & KT-39 & KT-77 series sensor on ISO profile cylinder.



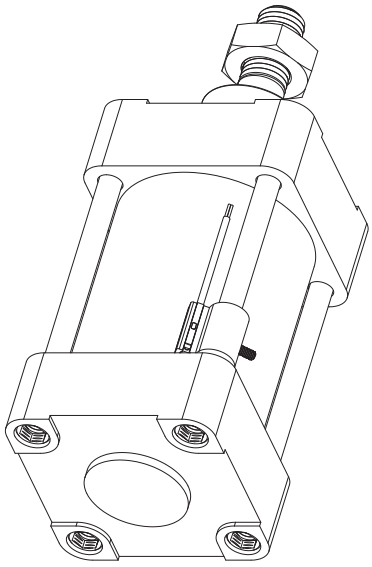


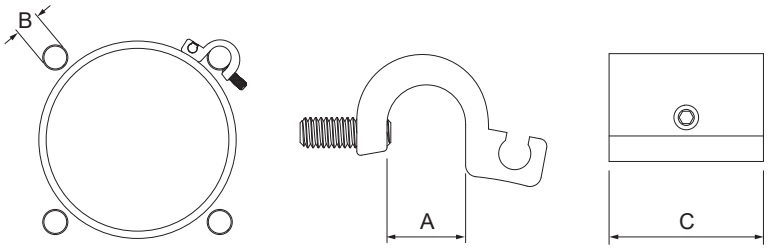
MODEL \ DIM.	A	B	C	Remark
PF7-1	12.1	10.4	25	Ø32 ~ Ø40
PF7-2	15.9	13.5	25	Ø50 ~ Ø63
PF7-3	16.3	15	25	Ø80
PF7-4	17.9	16	25	Ø100
PF7-5	19.7	18.7	25	Ø125
PF7-6	27.6	25.7	25	Ø160

Unit : mm

DT7 Series

Bracket is designed for mounting KT-07 & KT-16 & KT-36 & KT-37 & KT-39 & KT-77 series sensor on Tie-Rod cylinder.





MODEL \ DIM.	A	B	C
DT7-1	7.9	Ø4 ~ Ø6	25
DT7-2	10.4	Ø8 ~ Ø10	25
DT7-3	15.1	Ø12 ~ Ø14	25
DT7-4	20.6	Ø16	25

Unit : mm

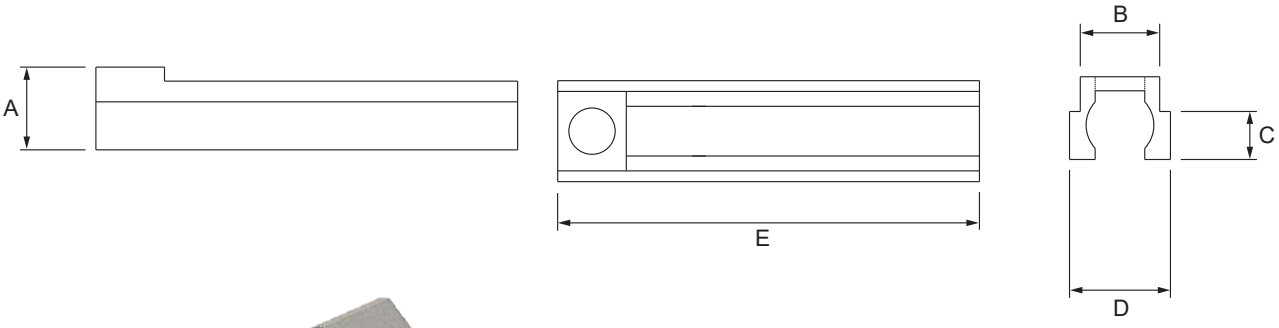
BRACKET SERIES

RoHS

PB Series

PB-01 & PB-03 bracket is designed for mounting KT-07 & KT-16 & KT-1001D series sensor on T-slot cylinder.
PB-12 bracket is designed for mounting KT-07 & KT-16 & KT-36 & KT-37 & KT-39 & KT-77 & KT-1001D series sensor on T-slot cylinder.

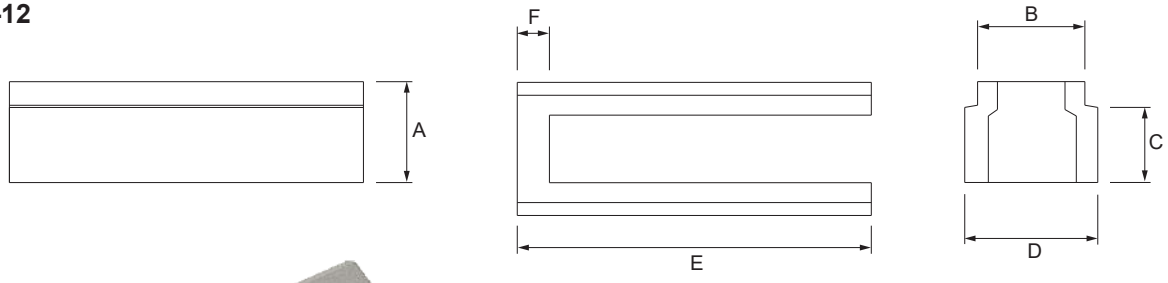
▪ PB-01 & PB-03

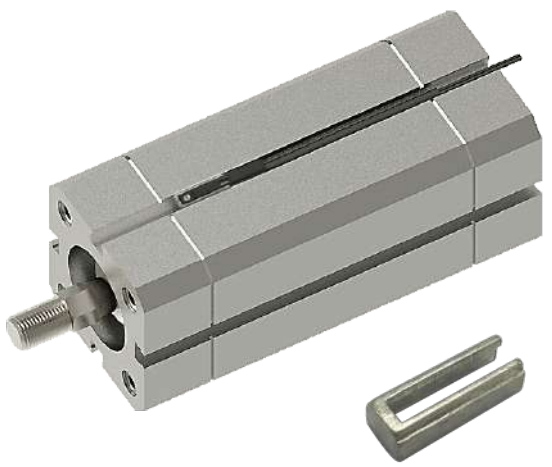


MODEL \ DIM.	A	B	C	D	E	Groove Dimensions
PB-01	5.0	4.8	2.9	6.1	25.5	5.4 ± 0.3 / 3.4 ± 0.3
PB-03	5.0	4.8	3.8	6.1	25.5	$5^{+0.25}_{-0}$ / $4^{+0.25}_{-0}$

Unit : mm

▪ PB-12





MODEL \ DIM.	A	B	C	D	E	F	Groove Dimensions
PB-12	4.7	5.0	3.5	6.2	16.5	1.5	$5^{+0.25}_{-0}$ / $4^{+0.25}_{-0}$

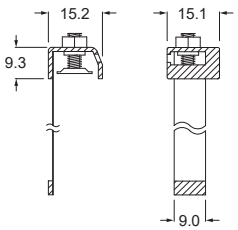
Unit : mm

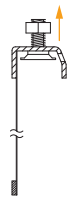
CLAMP SERIES

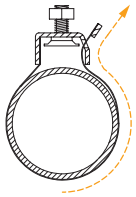
RoHS

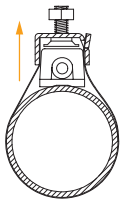
PN Series

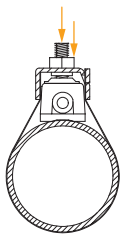
Clamp is designed for mounting KT-20 & KT-21 series sensor on round cylinder.











How to Mount

1 Step 1
Loosen screw & nut.

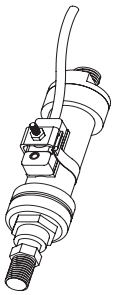
2 Step 2
Wrap the band around the cylinder & put the apex through the fastening hole.

3 Step 3
Pull up mounting head & place sensor under the mounting head.

4 Step 4
Swivel set screw to tighten band and fixing sensor.
Finally swivel nut for steadying.

Cylinder Chart

Model	Bore Size	Barrel Material	Model	Bore Size	Barrel Material
PN-A16	Ø16	Aluminum	PN-S10	Ø10	Stainless
PN-A20	Ø20	Aluminum	PN-S12	Ø12	Stainless
PN-A25	Ø25	Aluminum	PN-S16	Ø16	Stainless
PN-A30	Ø30	Aluminum	PN-S20	Ø20	Stainless
PN-A32	Ø32	Aluminum	PN-S25	Ø25	Stainless
PN-A40	Ø40	Aluminum	PN-S32	Ø32	Stainless
PN-A50	Ø50	Aluminum	PN-S40	Ø40	Stainless
PN-A63	Ø63	Aluminum			



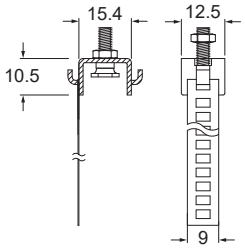
P N - S 2 0

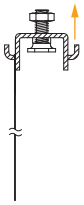
Barrel Material
S : Stainless steel
A : Aluminum alloy

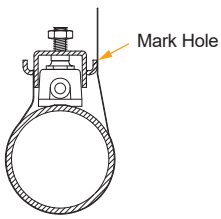
Bore Size
10 : Ø10 round cylinder
12 : Ø12 round cylinder
⋮
40 : Ø40 round cylinder

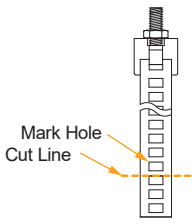
PH Series

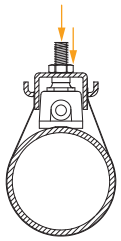
Clamp is designed for mounting KT-20 & KT-21 series sensor on round cylinder.











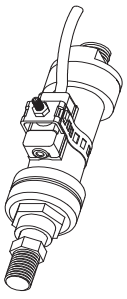
How to Mount

1 Step 1
Loosen screw & nut.

2 Step 2
Place sensor & wrap the band around the cylinder.
Position the hook with the nearest hole on the band and mark the hole with a permanent marker.

3 Step 3
Remove mounting assembly.
Cut the band at the nearest edge of next hole. (the one that's further away from the mounting head).

4 Step 4
Re-place the sensor & mounting assembly.
Wrap the band & put the chosen hole on hook.
Position the switch and tighten.
Finally swivel nut for steadying.



P H - 1

Band No.
1 : For Ø6 ~ Ø63 round cylinder use.
2 : For Ø6 ~ Ø125 round cylinder use.

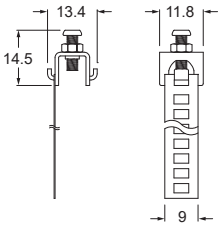
Unit : mm

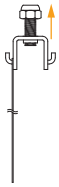
CLAMP SERIES

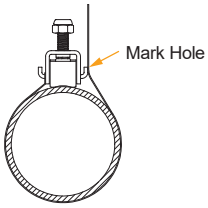
RoHS

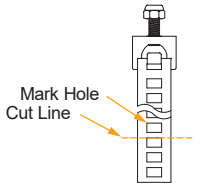
BK Series

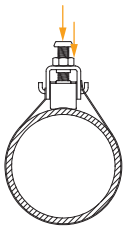
Clamp is designed for mounting KT-05 & KT-15 series sensor on round cylinder.











How to Mount

1 Step 1

Loosen screw & nut.

2 Step 2

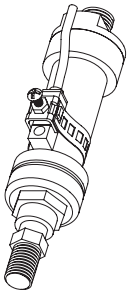
Place sensor & wrap the band around the cylinder.
Position the hook with the nearest hole on the band and mark the hole with a permanent marker.

3 Step 3

Remove mounting assembly.
Cut the band at the nearest edge of next hole. (the one that's further away from the mounting head).

4 Step 4

Re-place the sensor & mounting assembly.
Wrap the band & put the chosen hole on hook.
Position the switch and tighten.
Finally swivel nut for steadying.



B K - 8 1

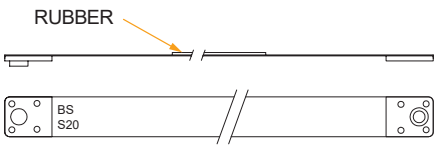
Band No.

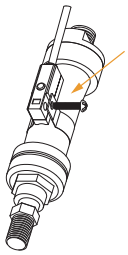
81 : For Ø6 ~ Ø32 round cylinder use.
82 : For Ø6 ~ Ø63 round cylinder use.

BS Series

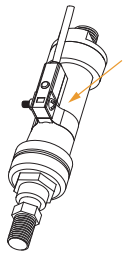
Clamp is designed for mounting KT-48 series sensor on round cylinder.

How to Mount





Wrap the band around cylinder barrel and re-insert screw head into clamp.



Position the switch and tighten.

B S - S 2 5

Barrel Material

S : Stainless steel
A : Aluminum alloy

Bore Size

6 : Ø6 round cylinder
8 : Ø8 round cylinder
⋮
40 : Ø40 round cylinder

Cylinder Chart

Model	Bore Size	Barrel Material	O.D. (mm)	Model	Bore Size	Barrel Material	O.D. (mm)
BS-A20	Ø20	Aluminum	25	BS-S6	Ø6	Stainless	8.5
BS-A25	Ø25	Aluminum	30	BS-S8	Ø8	Stainless	10
BS-A30	Ø30	Aluminum	35	BS-S10	Ø10	Stainless	11
BS-A32	Ø32	Aluminum	37	BS-S12	Ø12	Stainless	13.2
BS-A40	Ø40	Aluminum	45	BS-S16	Ø16	Stainless	17
BS-A50	Ø50	Aluminum	55	BS-S20	Ø20	Stainless	21.6
BS-A63	Ø63	Aluminum	70	BS-S25	Ø25	Stainless	26.5
BS-A80	Ø80	Aluminum	87.7	BS-S32	Ø32	Stainless	33.6
				BS-S40	Ø40	Stainless	42

Unit : mm

CLAMP SERIES

RoHS

BL-1 Series

Clamp is designed for mounting KT-40 & KT-50 series sensor on round cylinder.

Cylinder Chart

Bore Size	Barrel Material	O.D. (mm)	Recommended mounting hole	Bore Size	Barrel Material	O.D. (mm)	Recommended mounting hole
Ø10	Stainless	11	10	Ø30	Aluminum	35	26
Ø12	Stainless	13.2	11	Ø32	Stainless	33.6	24
Ø16	Stainless	17	14	Ø32	Aluminum	37	27
Ø20	Stainless	21.6	16	Ø40	Stainless	42	30
Ø20	Aluminum	25	19	Ø40	Aluminum	45	32
Ø25	Stainless	26.5	20	Ø50	Aluminum	55	40
Ø25	Aluminum	30	22	Ø63	Aluminum	70	50

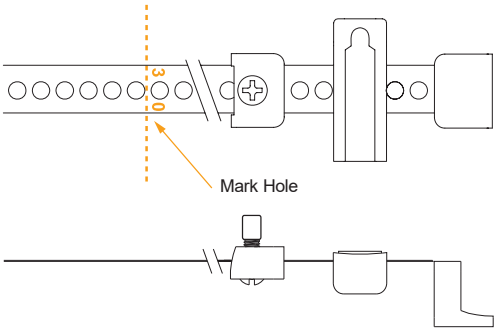
BL-1 Series

How to Mount

Example : Use with Ø40 stainless body cylinder.

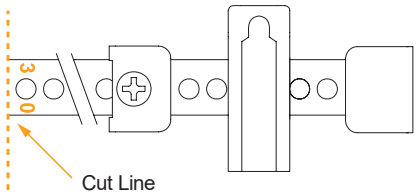
1 Step 1

Refer to the cylinder chart, make marking next to the 30th hole. (On the 31st hole, see below)



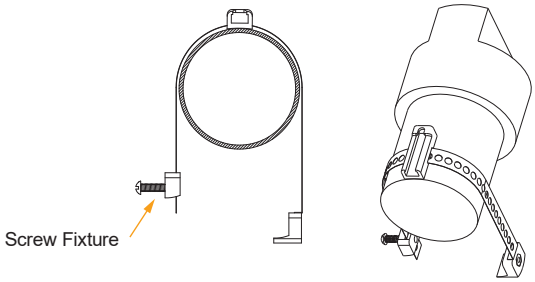
2 Step 2

Cut off excessive mounting band.



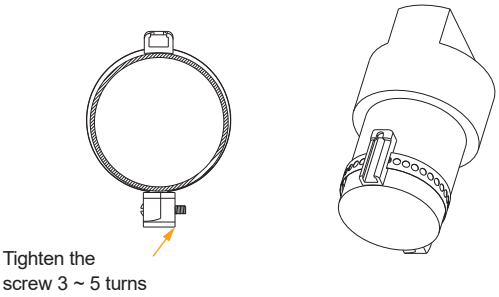
3 Step 3

Insert screw through screw fixture and the apropriate hole.



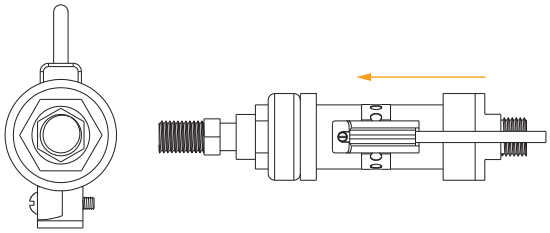
4 Step 4

Wrap the mounting band around the cylinder barrel and tighten the screw 3 ~ 5 turns.



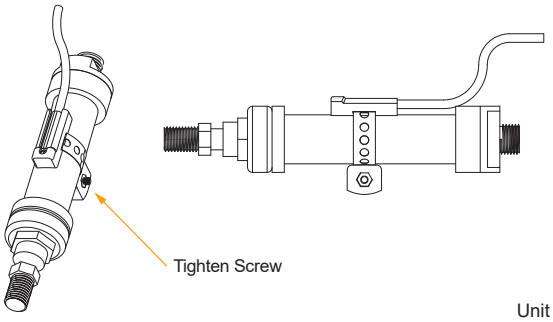
5 Step 5

Mount the sensor in the BL-1 series bracket and tighten.



6 Step 6

Adjust sensor to the sensing postion and tighten.



Unit : mm

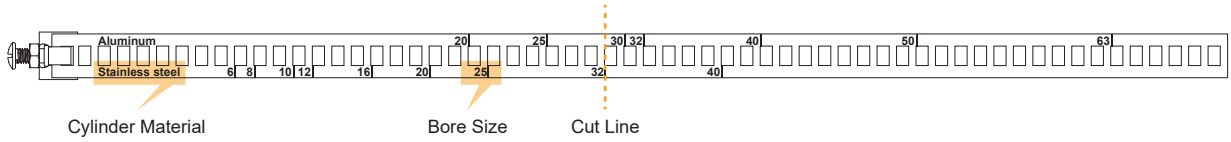
RoHS

BKC-1

BKC-1 is designed for mounting C Slot sensor KT-07 & KT-36 & KT-77 on round cylinder.

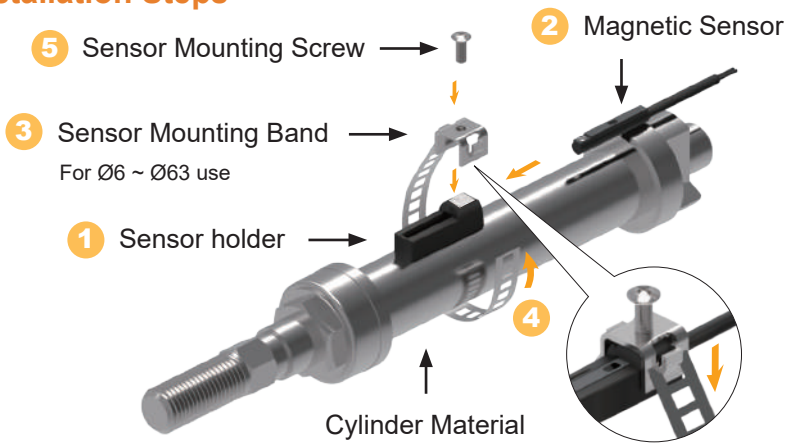
How to Mount

Example : Use with Ø32 stainless body cylinder.
Refer to the clamp marking "Stainless steel 32", and cut off the excessive portion.



▪ BKC-1

Installation Steps

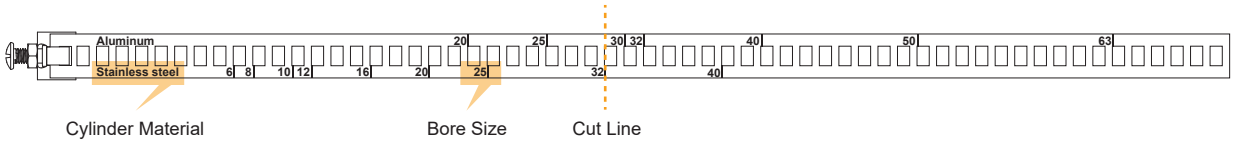


BKT-1

BKT-1 is designed for mounting T Slot sensor KT-65 & KT-75 on round cylinder.

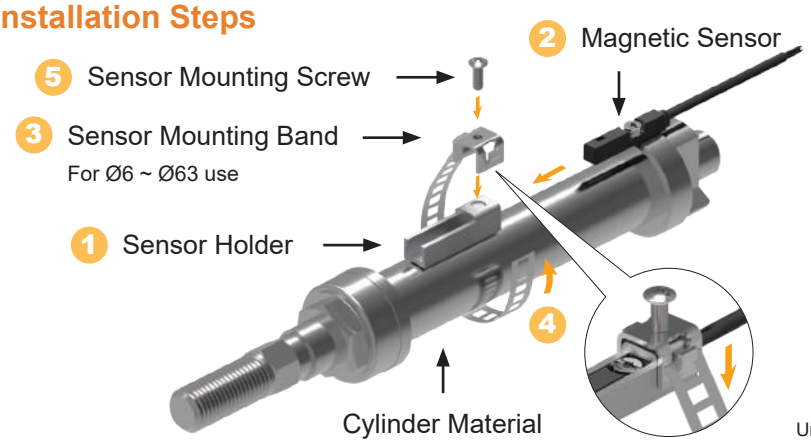
How to Mount

Example : Use with Ø32 stainless body cylinder.
Refer to the clamp marking "Stainless steel 32", and cut off the excessive portion.



▪ BKT-1

Installation Steps



Unit : mm

CLAMP SERIES

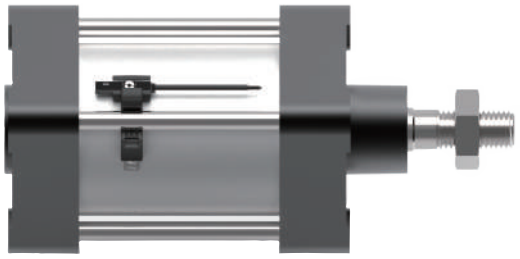
RoHS

FST

FST is designed for KT-32 & KT-40 & KT-50 & KT-65 & KT-75 series sensor on Tie-Rod cylinder.

Patented

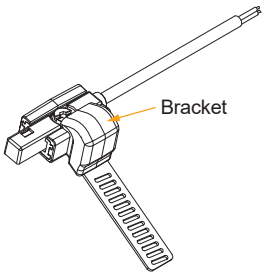
▪ FST



How to mount

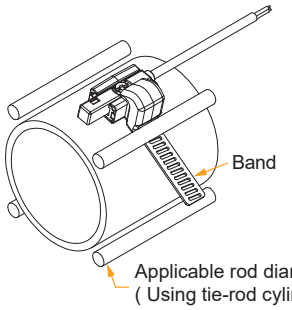
1 Step 1

Fix sensor on bracket with 2mm hexagon wrench or flathead screwdriver.



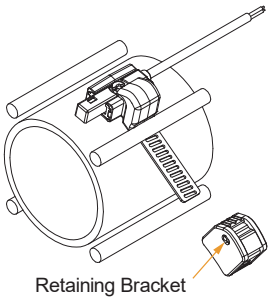
2 Step 2

Insert the band between cylinder tube and Tie-Rod.



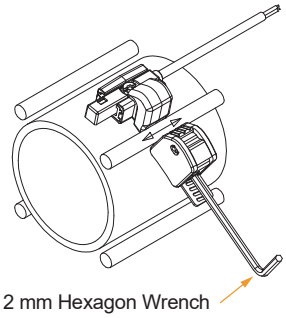
3 Step 3

Slide the retaining bracket onto the band.



4 Step 4

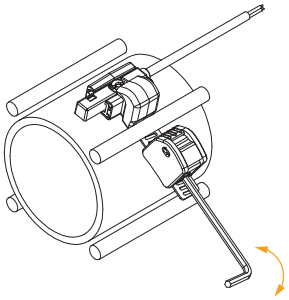
Adjust by moving bracket to most ideal sensing position and tighten screw. (Torque : 5 ~ 7 kgs).



How to dismount

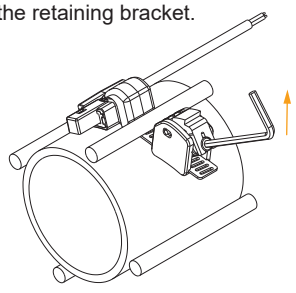
1 Step 1

Use 2 mm hexagon wrench to release the screw for 2 ~ 3 turns.



2 Step 2

Use 2 mm hexagon wrench to lift up the screw cap to remove the retaining bracket.

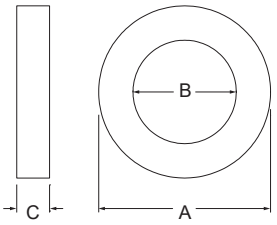


RoHS

Anisotropic Rubber Magnet

DIM. / MODEL	A / +0.00 -0.80	B / +0.80 -0.00	C / ± 0.2
ME - 16 - 8 × 4	15.50	8.00	4.00
ME - 20 - 9 × 4	19.50	9.00	4.00
ME - 25 - 13 × 4	24.50	13.00	4.00
ME - 30 - 21 × 4	29.50	21.00	4.00
ME - 32 - 21 × 4	31.50	21.00	4.00
ME - 40 - 22 × 4	39.50	22.00	4.00
ME - 50 - 32 × 4	49.50	32.00	4.00
ME - 63 - 42 × 4	62.50	42.00	4.00
ME - 80 - 58 × 4	79.50	58.00	4.00
ME - 100 - 78 × 4	99.50	78.00	4.00
ME - 125 - 79 × 4	124.50	79.00	4.00
ME - 125 - 108 × 4	124.50	108.00	4.00
ME - 150 - 125 × 4	149.50	125.00	4.00
ME - 200 - 176 × 4	195.50	176.00	4.00

DIM. / MODEL	A / +0.00 -0.80	B / +0.80 -0.00	C / ± 0.2
ME - 16 - 8 × 5	15.50	8.00	5.00
ME - 20 - 9 × 5	19.50	9.00	5.00
ME - 25 - 13 × 5	24.50	13.00	5.00
ME - 30 - 21 × 5	29.50	21.00	5.00
ME - 32 - 21 × 5	31.50	21.00	5.00
ME - 40 - 22 × 5A	39.50	22.00	5.00
ME - 50 - 32 × 5	49.50	32.00	5.00
ME - 63 - 42 × 5	62.50	42.00	5.00
ME - 80 - 58 × 5	79.50	58.00	5.00
ME - 100 - 78 × 5	99.50	78.00	5.00



Unit : mm

Magnetic Property

- Residual flux density (Br) : 2300 - 2500 gauss
- Coercive force (iHC) : 3000 - 3800 Oe
  (bHC) : 2000 - 2300 Oe
- Maximum energy product : 1.3 - 1.5 Mg.Oe

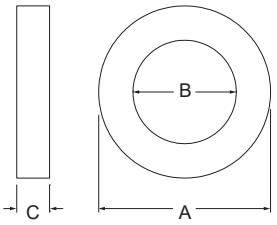
Physical Property

- Resistant power : 20 - 50 kgf / cm^2
- Lengthen : 5 - 20 %
- Hardness (Shore D) : 30 - 50
- Specific gravity : 3.5 - 3.7 g / cm^3
- Temperature range : -20 °C ~ +70 °C

Anisotropic Plastic Magnet

DIM. / MODEL	A / +0.00 -0.30	B / +0.30 -0.00	C / ± 0.2
PME - 20 - 9 × 4	19.50	9.00	4.00
PME - 25 - 13 × 4	24.50	13.00	4.00
PME - 30 - 21 × 4	29.50	21.00	4.00
PME - 32 - 21 × 4	31.50	21.00	4.00
PME - 40 - 22 × 4	39.50	22.00	4.00
PME - 50 - 32 × 4	49.50	32.00	4.00
PME - 63 - 42 × 4	62.50	42.00	4.00
PME - 80 - 58 × 4	79.50	58.00	4.00
PME - 100 - 78 × 4	99.50	78.00	4.00

DIM. / MODEL	A / +0.00 -0.30	B / +0.30 -0.00	C / ± 0.2
PME - 12 - 6 × 5	11.50	6.00	5.00
PME - 16 - 8 × 5	15.50	8.00	5.00
PME - 20 - 9 × 5	19.50	9.00	5.00
PME - 25 - 13 × 5	24.50	13.00	5.00
PME - 30 - 21 × 5	29.50	21.00	5.00
PME - 32 - 21 × 5	31.50	21.00	5.00
PME - 40 - 22 × 5	39.50	22.00	5.00
PME - 50 - 32 × 5	49.50	32.00	5.00
PME - 63 - 42 × 5	62.50	42.00	5.00
PME - 80 - 58 × 5	79.50	58.00	5.00
PME - 100 - 78 × 5	99.50	78.00	5.00



Unit : mm

Magnetic Property

- Residual flux density (Br) : 2500 - 3000 gauss
- Coercive force (iHC) : 2700 - 3100 Oe
  (bHC) : 2400 - 2500 Oe
- Maximum energy product : 1.8 Mg.Oe

Physical Property

- Resistant power : 80 kgf / cm^2
- Lengthen : 6.7 %
- Hardness (Shore D) : 120
- Specific gravity : 3.2 g / cm^3
- Temperature range : -20 °C ~ +100 °C

Unit : mm

M8□R Series

P.152

KM8□R Series

P.153

M8□QD Series

P.154

M8□SW Series

P.155

M12□R Series

P.156

M12□QD Series

P.157

※ Product surfaces with slight luminance non-uniformity, color cast, tiny scratching, little stains etc. are regarded as qualified products.

M8□R SERIES

RoHS

Ordering Information

M 8 3 R - P U R - 2 M

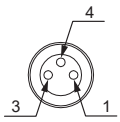
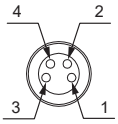
Cable Length
2M : 2 meters
5M : 5 meters

Type of Connector
R : Female, straight cable socket
RL : Female, angle cable socket

Cable Material
PVC : Ø4.5 PVC cable
PUR : Ø4.5 PUR cable

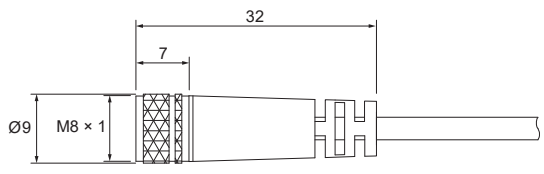
Connector Series
M83 : M8 3Pin connector
M84 : M8 4Pin connector

Specifications

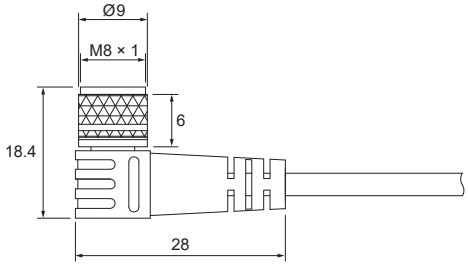
MODEL	M83R - □ M83RL - □		M84R - □ M84RL - □	
Female Pinout / Characteristics				
Conductor Colors	1 : Brown 3 : Blue 4 : Black		1 : Brown 2 : White 3 : Blue 4 : Black	
Number of Contacts	3		4	
Rated Voltage	60 V AC / DC			
Rated Current	3 A			
Contact Material	Gold plated brass			
Contact Bearer Material	PA			
Housing Material	PP			
Housing Color	Black			
Cable Material	PVC	PUR	PVC	PUR
Cable Color	Gray	Black	Gray	Black
Cable Conductor	24 AWG (0.22 mm^2)			
Circuit	-			
Led Color	-			
Enclosure	IEC 60529 IP67			
Temperature Range	-20 ~ 80 °C			

Dimensions

- **M83R / M84R**



- **M83RL / M84RL**



Unit : mm

KM8□R SERIES

RoHS

Ordering Information

K M 8 3 R - P U R - 2 M

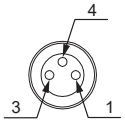
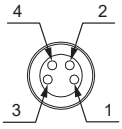
Connector Series
KM83 : M8 3Pin connector
KM84 : M8 4Pin connector

Type of Connector
R : Female, straight cable socket
RL : Female, angle cable socket

Cable material
PVC : Ø4.5 PVC cable
PUR : Ø4.5 PUR cable

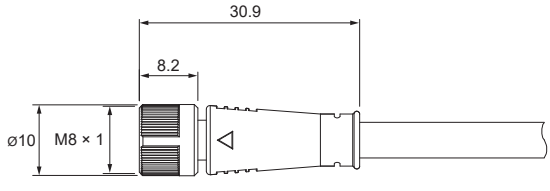
Cable Length
2M : 2 meters
5M : 5 meters

Specifications

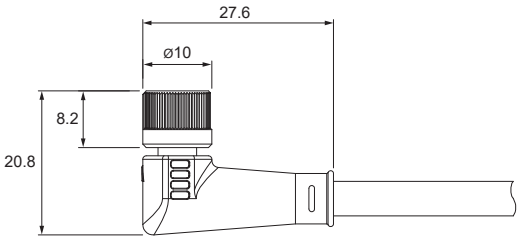
MODEL	KM83R - □ KM83RL - □		KM84R - □ KM84RL - □	
Female Pinout / Characteristics				
Conductor Colors	1 : Brown 3 : Blue 4 : Black		1 : Brown 2 : White 3 : Blue 4 : Black	
Number of Contacts	3		4	
Rated Voltage	60 V AC / DC			
Rated Current	3 A			
Contact Material	Gold plated brass			
Contact Bearer Material	PC + ABS			
Housing Material	TPV			
Housing Color	Black			
Cable Material	PVC	PUR	PVC	PUR
Cable Color	Gray	Black	Gray	Black
Cable Conductor	24 AWG (0.22 mm^2)			
Circuit	-			
Led Color	-			
Enclosure	IEC 60529 IP67			
Temperature Range	-20 ~ 80 °C			

Dimensions

- **KM83R / KM84R**



- **KM83RL / KM84RL**



Unit : mm

M8□QD SERIES

RoHS

Ordering Information

M 8 3 Q D - P U R - 2 M

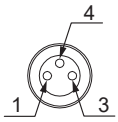
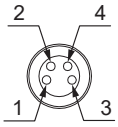
Cable length
2M : 2 meters
5M : 5 meters

Type of Connector
QD : Male, straight cable plug

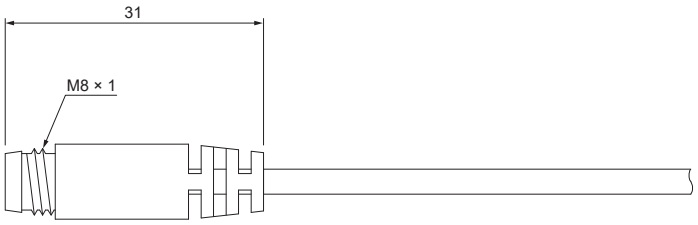
Cable Material
PVC : Ø4.5 PVC cable
PUR : Ø4.5 PUR cable

Connector Series
M83 : M8 3Pin connector
M84 : M8 4Pin connector

Specifications

MODEL	M83QD - □		M84QD - □	
Male Pinout / Characteristics				
Conductor Colors	1 : Brown 3 : Blue 4 : Black		1 : Brown 2 : White 3 : Blue 4 : Black	
Number of Contacts	3		4	
Rated Voltage	60 V AC / DC			
Rated Current	3 A			
Contact Material	Gold plated brass			
Contact Bearer Material	PA			
Housing Material	PP			
Housing Color	Black			
Cable Material	PVC	PUR	PVC	PUR
Cable Color	Gray	Black	Gray	Black
Cable Conductor	24 AWG (0.22 mm^2)			
Circuit	-			
Led Color	-			
Enclosure	IEC 60529 IP67			
Temperature Range	-20 ~ 80 °C			

Dimensions



Unit : mm

M8□SW SERIES

RoHS

Ordering Information

M 8 3 S W - P U R - 2 M

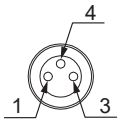
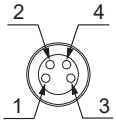
Cable Length
2M : 2 meters
5M : 5 meters

Type of Connector
SW : Male, swivel lock nut, straight cable plug
SWL : Male, swivel lock nut, angle cable plug

Cable Material
PVC : Ø4.5 PVC cable
PUR : Ø4.5 PUR cable

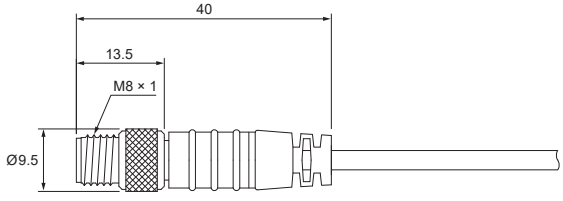
Connector Series
M83 : M8 3Pin connector
M84 : M8 4Pin connector

Specifications

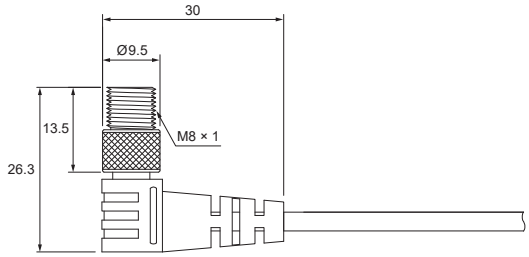
MODEL	M83SW - □ M83SWL - □		M84SW - □ M84SWL - □	
Male Pinout / Characteristics				
Conductor Colors	1 : Brown 3 : Blue 4 : Black		1 : Brown 2 : White 3 : Blue 4 : Black	
Number of Contacts	3		4	
Rated Voltage	60 V AC / DC			
Rated Current	3 A			
Contact Material	Gold plated brass			
Contact Bearer Material	PU			
Housing Material	PU			
Housing Color	Black			
Cable Material	PVC	PUR	PVC	PUR
Cable Color	Gray	Black	Gray	Black
Cable Conductor	24 AWG (0.22 mm^2)			
Circuit	-			
Led Color	-			
Enclosure	IEC 60529 IP67			
Temperature Range	-20 ~ 80 °C			

Dimensions

- **M83SW / M84SW**



- **M83SWL / M84SWL**



Unit : mm

M12□R SERIES

RoHS

Ordering Information

M 1 2 3 R - P U R - 2 M

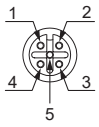
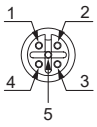
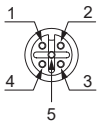
Cable Length
2M : 2 meters
5M : 5 meters

Type of Connector
R : Female, straight cable socket
RL : Female, angle cable socket

Cable Material
PVC : Ø5 PVC cable
PUR : Ø5 PUR cable

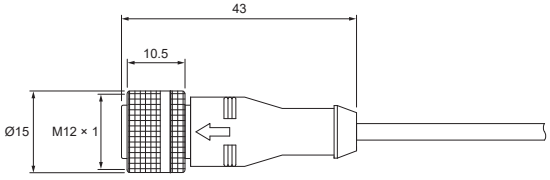
Connector Series
M123 : M12 3Pin connector
M124 : M12 4Pin connector
M125 : M12 5Pin connector

Specifications

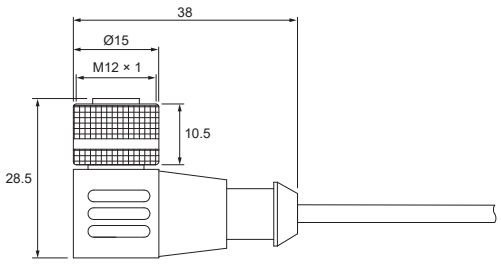
MODEL	M123R - □ M123RL - □		M124R - □ M124RL - □		M125R - □ M125RL - □	
Female Pinout / Characteristics						
Conductor Colors	1 : Brown 2 : Not Used 3 : Blue 4 : Black 5 : Not Used		1 : Brown 2 : White 3 : Blue 4 : Black 5 : Not Used		1 : Brown 2 : White 3 : Blue 4 : Black 5 : Gray	
Number of Contacts	3		4		5	
Rated Voltage	250 V AC / DC				60 V AC / DC	
Rated Current	4 A					
Contact Material	Gold plated brass					
Contact Bearer Material	PU					
Housing Material	PU					
Housing Color	Black					
Cable Material	PVC	PUR	PVC	PUR	PVC	PUR
Cable Color	Black					
Cable Conductor	22 AWG (0.33 mm^2)					
Circuit	-					
Led Color	-					
Enclosure	IEC 60529 IP67					
Temperature Range	-20 ~ 80 °C					

Dimensions

- **M123R / M124R / M125R**



- **M123RL / M124RL / M125RL**



Unit : mm

M12□QD SERIES

RoHS

Ordering Information

M 1 2 3 Q D - P U R - 2 M

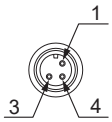
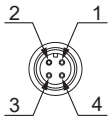
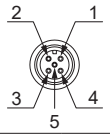
Connector Series
M123 : M12 3Pin connector
M124 : M12 4Pin connector
M125 : M12 5Pin connector

Type of Connector
QD : Male, straight cable plug
QDL : Male, angle cable plug

Cable Material
PVC : Ø5 PVC cable
PUR : Ø5 PUR cable

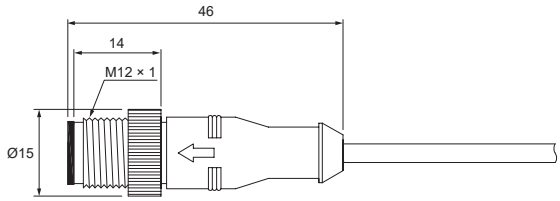
Cable Length
2M : 2 meters
5M : 5 meters

Specifications

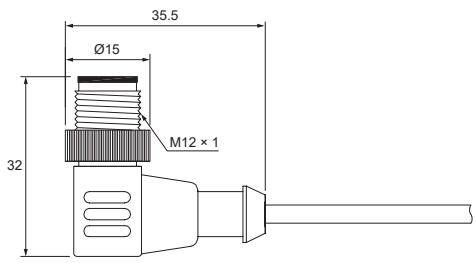
MODEL	M123QD - □ M123QDL - □		M124QD - □ M124QDL - □		M125QD - □ M125QDL - □	
Male Pinout / Characteristics						
Conductor Colors	1 : Brown 3 : Blue 4 : Black		1 : Brown 2 : White 3 : Blue 4 : Black		1 : Brown 2 : White 3 : Blue 4 : Black 5 : Gray	
Number of Contacts	3		4		5	
Rated Voltage	250 V AC / DC				60 V AC / DC	
Rated Current	4 A					
Contact Material	Gold plated brass					
Contact Bearer Material	PU					
Housing Material	PU					
Housing Color	Black					
Cable Material	PVC	PUR	PVC	PUR	PVC	PUR
Cable Color	Black					
Cable Conductor	22 AWG (0.33 mm^2)					
Circuit	-					
Led Color	-					
Enclosure	IEC 60529 IP67					
Temperature Range	-20 ~ 80 °C					

Dimensions

- **M123QD / M124QD / M125QD**



- **M123QDL / M124QDL / M125QDL**



Unit : mm

Conversion Factors

Length

inch - mm	inch × 25.4 = mm	mm × 0.03937 = inch
inch - cm	inch × 2.54 = cm	cm × 0.3937 = inch
feet - m	feet × 0.3048 = m	m × 3.2808 = feet
yard - m	yard × 0.9144 = m	m × 1.0936 = yard

Weight

g - ounce	g × 0.0352 = oz	ounce × 28.349 = g
kg - pound	kg × 2.2046 = lb.	lb. × 0.4535 = kg

Pressure (Vacuum)

Pa - kgf / cm^2	Pa × 0.00001 = kgf / cm^2	kgf / cm^2 × 98070 = Pa
kPa - kgf / cm^2	kPa × 0.0102 = kgf / cm^2	kgf / cm^2 × 980.71 = kPa
MPa - kgf / cm^2	MPa × 1.02 = kgf / cm^2	kgf / cm^2 × 0.098 = MPa
Pa - psi	Pa × 0.000145 = psi	psi × 6895 = Pa
kPa - psi	kPa × 0.145 = psi	psi × 6.895 = kPa
MPa - psi	MPa × 145 = psi	psi × 0.006895 = MPa
kPa - in. Hg	kPa × 0.2953 = in. Hg	in. Hg × 3.3864 = kPa
mmHg - in. Hg	mmHg × 0.03937 = in. Hg	in. Hg × 25.4 = mmHg
mmHg - Torr	mmHg + 760 = Torr	Torr - 760 = mmHg

Air Flow

SCFM - Nl / min	SCFM × 28.57 = Nl / min	Nl / min × 0.035 = SCFM

Effective Cross-Sectional Area - Cv Factor

mm^2 = Cv	mm^2 × 0.0542 = Cv	Cv × 18.45 = mm^2

Temperature

°C - °F	°C × 9 / 5 + 32 = °F	(°F - 32) × 5 / 9 = °C

Force

N - kgf	N × 0.10197 = kgf	kgf × 9.8067 = N
N - lbf	N × 0.22481 = lbf	lbf × 4.4482 = N
kgf - lbf	kgf × 2.20462 = lbf	lbf × 0.45359 = kgf

Torque

N. m - kgf. m	N. m × 0.10197 = kgf. m	kgf. m × 9.8067 = N. m
N. m - lbf. ft	N. m × 0.73756 = lbf. ft	lbf. ft × 1.3558 = N. m
kgf. m - lbf. ft	kgf. m × 7.233 = lbf. ft	lbf. ft × 0.13826 = kgf. m

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2022.08 PRINTING