

Magnetic Sensor

KL Series

Patented



P.108

KT-05 Series



P.110

KT-06 Series



P.111

KT-07 Series ★



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

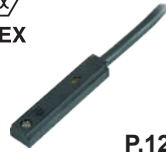
KT-31 Series

High Temp. Resistant



P.120

KT-32 Series



P.121

KT-33 Series



P.123

KT-36 Series ★

Compact Size



P.124

KT-37 Series

Compact Size



P.125

KT-39 Series ★

Compact Size



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



P.134

KT-65-EX Series

Patented



P.135

KT-65-UL Series

Patented



P.136

KT-71 Series



P.137

KT-75 Series ★

Patented



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

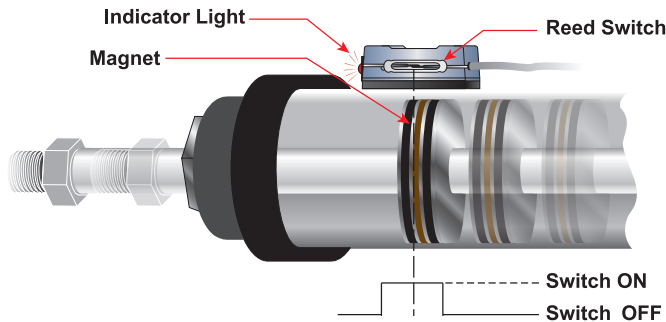
Magnet



P.152

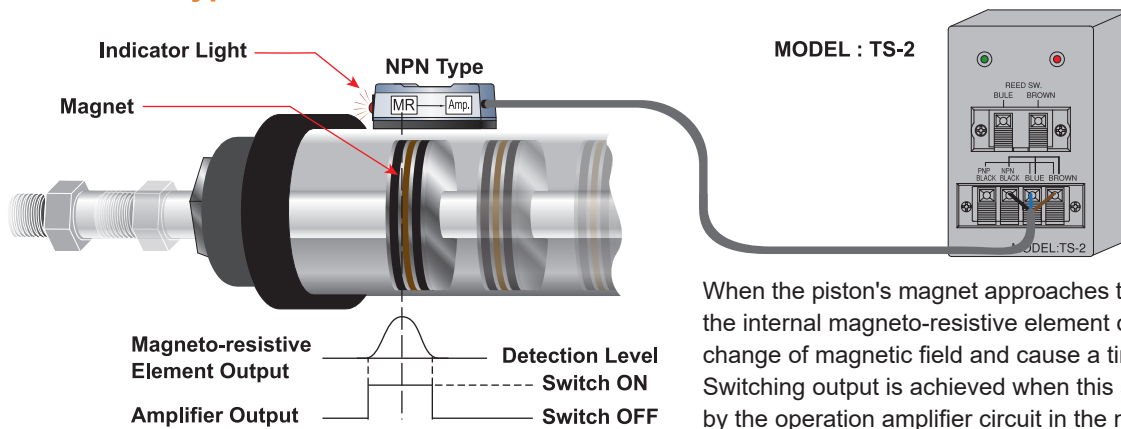
※ Product surfaces with slight luminance non-uniformity, color cast, tiny scratching, little stains etc. are regarded as qualified products.

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

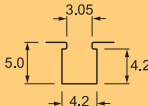
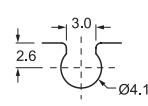
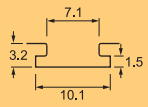
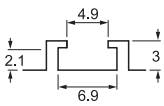
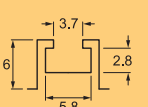
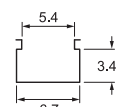
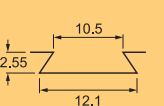
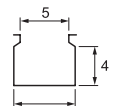
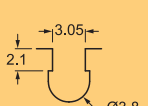
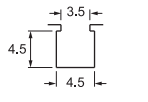
- STEP 1 : Set the piston to the end of stroke position.
- STEP 2 : Slide the magnetic sensor forward and keep it close to the cylinder wall. Make a mark at the sensor turn-on point.
- STEP 3 : Slide the sensor forward continuously until the sensor turns off.
- STEP 4 : Slide the sensor backward until 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 x 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 x 4 Slot 													

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



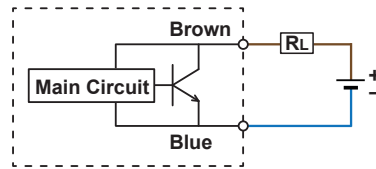
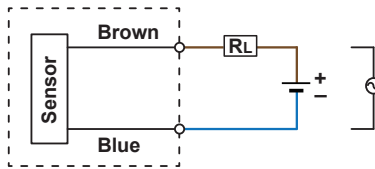
KT-33	KT-36	KT-37	KT-39	KT-40	KT-47	KT-48	KT-50	KT-53	KT-58	KT-59	KT-65	KT-71	KT-75	KT-77	KT-1000D	KT-1001D
	 BKC-1 Bracket P.150			 BL-1 Clamp P.149		 BS Clamp P.148	 BL-1 Clamp P.149				 BKT-1 Clamp P.150		 BKT-1 Clamp P.150	 BKC-1 Clamp P.150	 BP Clamp P.141 PMB Bracket P.141	
	 PF7 Bracket P.145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

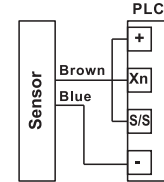
Connection Method

1 2 Wire Sensor Connection

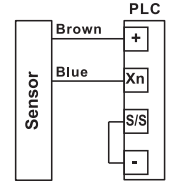
General Connection (Reed Switch)



(PLC)

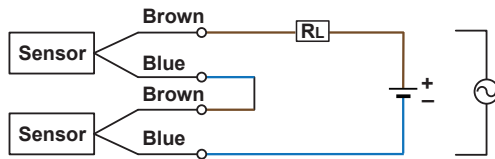


Connection to NPN input module



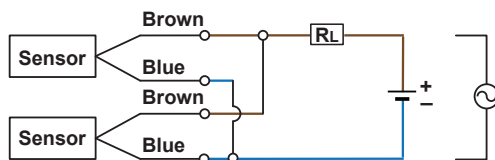
Connection to PNP input module

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.

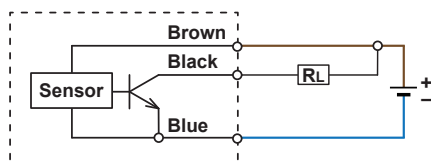
Parallel Connection (OR)



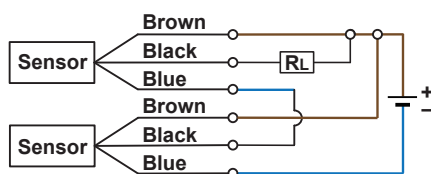
1. When connecting solid state 2-wire sensors in parallel (OR), leakage current will increase and cause improper load operation.
2. When connecting 2-wire reed sensors in parallel (OR), possible concurrent operation will cause dim LED illumination due to lower current distribution.

2 3 Wire NPN Connection

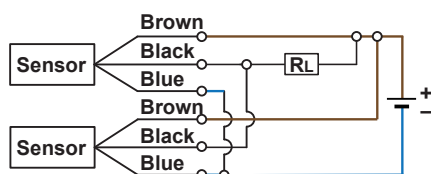
General Connection



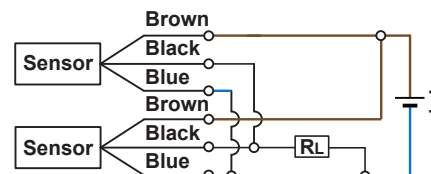
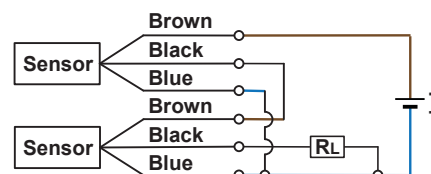
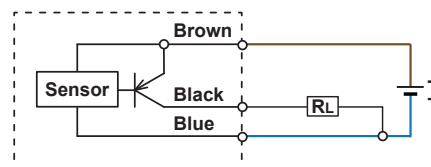
Series Connection (AND)



Parallel Connection (OR)



3 3 Wire PNP Connection

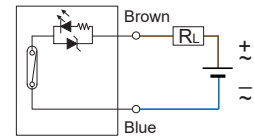


Regarding TPU material :

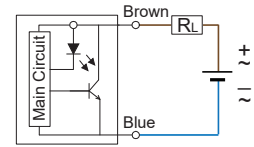
- It's green material. During storage and usage, product will hydrolyse and age when exposed to temperature, light, air, oxygen and humidity environments.
- The product should be kept in dry environment when stored. The storage conditions are suggested between 20 ~ 30 °C, relative humidity at 50 % RH,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

Caution

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

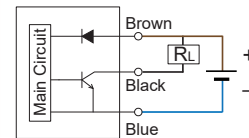


- 2 For reed sensor type sensors, polarity must also be observed for the proper function of LED. Connect the brown wire in series with load to positive (+) and the blue wire to negative (-) of power source. If the polarity is reversed, reed sensor remain functional but LED will remain in " OFF " state.

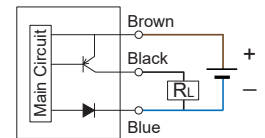


- 3 For solid-state type sensors, polarity must also be observed. Connect brown wire to the positive (+) and the blue to the negative (-) of DC power source. The black wire must connect to the load only. If the black wire is accidentally connected to the power source, permanent damage to the sensor may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

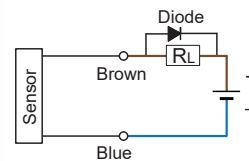
(NPN Output)



(PNP Output)

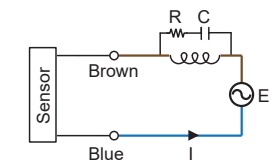


- 4 An external protection circuit may be required if the magnetic sensor is used with inductive load, such as relay or solenoid. For DC inductive load, attach an external diode parallel to the load and use R-C circuit parallel with AC inductive load as illustrated.



$$C = I^2/10 \text{ } [\mu\text{F}]$$

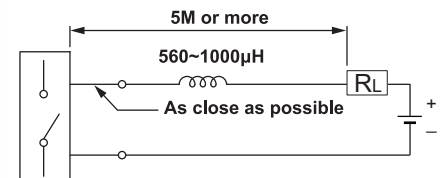
$$R = E/10 \text{ } I^{(1+50/E)} \text{ } [\Omega]$$



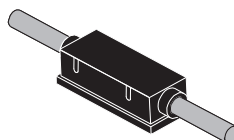
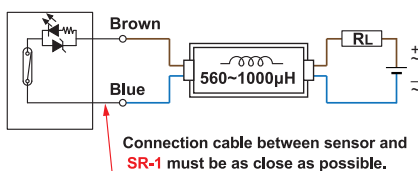
PS:
C : Capacitor I : Load current
R : Resistance E : AC power

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

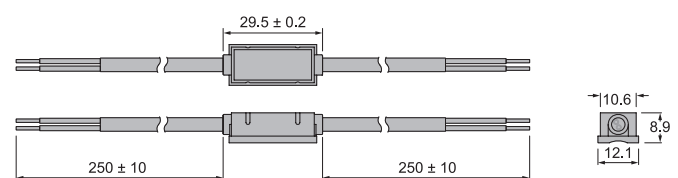
- 6 Reed sensors are without protection circuit. When a reed sensor is used with a capacitive load or with more than 5 meters lead wire, the life of the contact will be shortened. (especially when the switch is always ON)
Note : Please install a surge suppressor SR-1 within 1 meter or an inductor (560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



MODEL : SR-1 (Surge Suppressor)



Dimension



Unit : mm

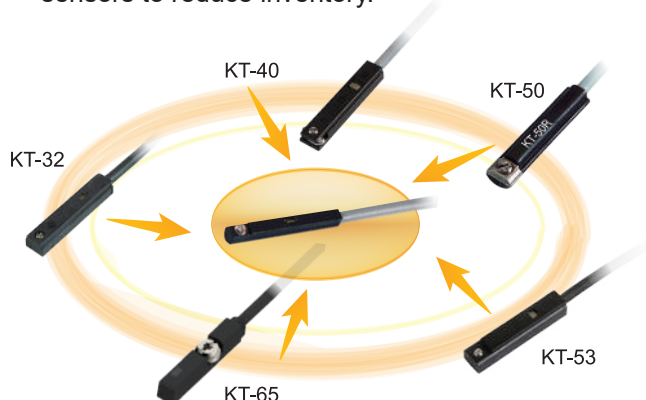
Hot Sale

Product Integration

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

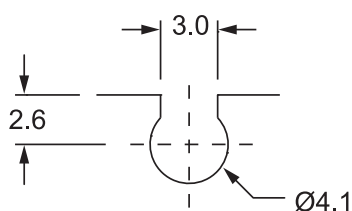


- Fits in most C-slot cylinder, replace all other T-slot sensors to reduce inventory.

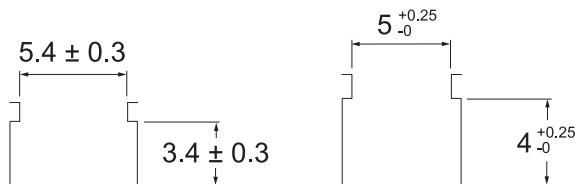


Common Cylinder Slot Dimensions

※ 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

PB bracket mount with T-slot cylinder



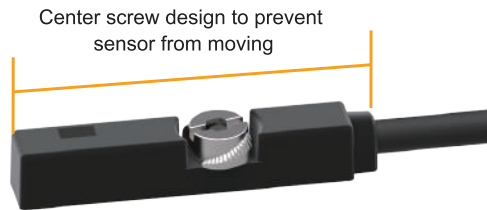
P.146

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

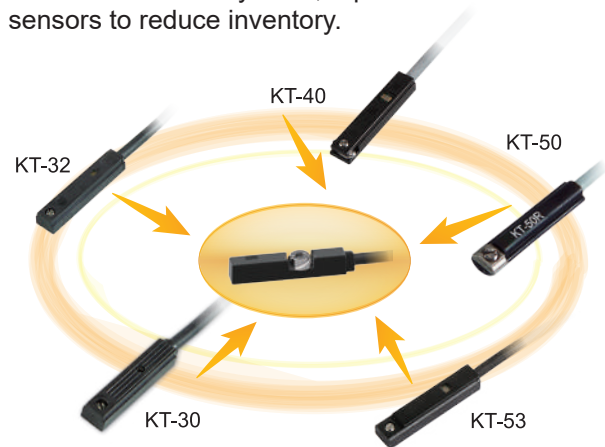
New Structure

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.

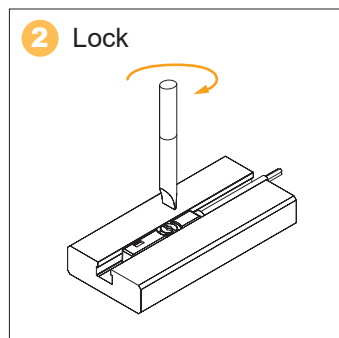
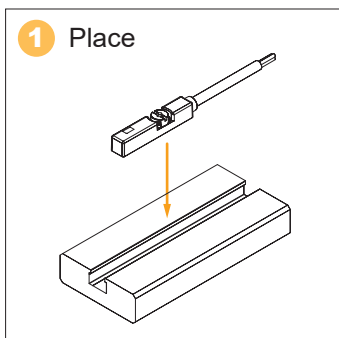


- Fits in most T-slot cylinder, replace all other T-slot sensors to reduce inventory.

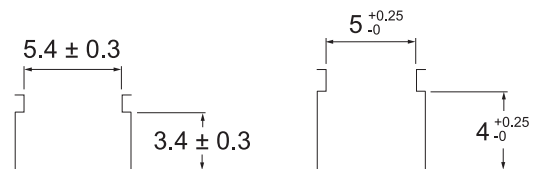


Quick Installation

- 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



FST clamp mount with Tie-Rod cylinder



BKT-1 clamp mount with round cylinder



DT bracket mount with Tie-Rod cylinder



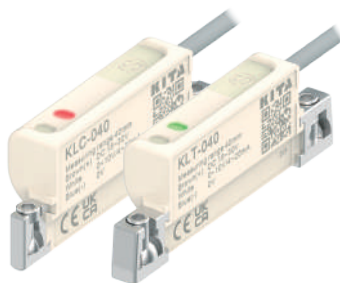
T-slot cylinder



KT-65 & KT-75 Series

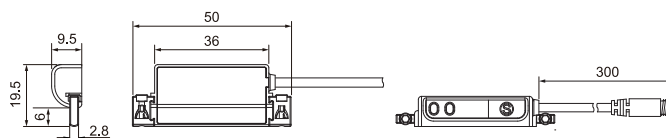
KLC/KLT SERIES

Patented

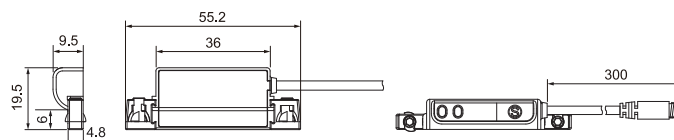


Dimensions

KLC - 040 / KLC - 040 - QD



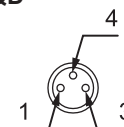
KLT - 040 / KLT - 040 - QD



Unit : mm

M8 QD Pinout

QD



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

Specifications

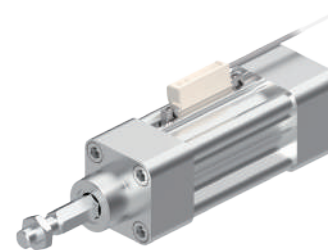
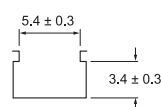
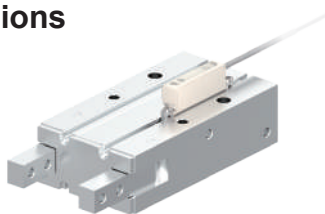
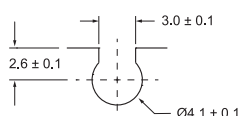
MODEL		KL□ - 040
Connect Diagram	Characteristics	
	Measuring Range	40 mm, ± 1 mm
Power Supply Voltage		15 ~ 30 V DC, Ripple (P-P) ≤ 10 %
Current Consumption		≤ 15 mA (with no load)
Displacement Resolution ※1		0.001 mm
Linearity Error ※1		± 0.2 mm @ 25 °C
Repeatability ※1		± 0.01 mm @ 25 °C
Sampling Time		≤ 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
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

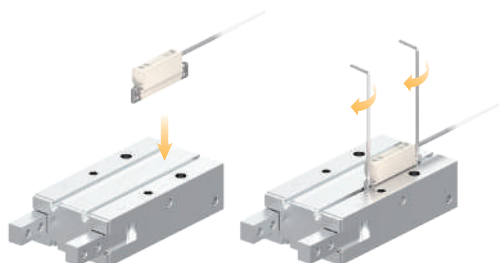
Groove Dimensions



Unit : mm

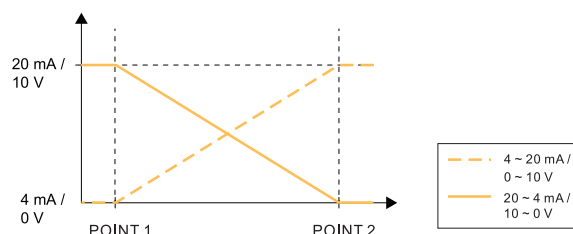
Features Highlight

1 Quick Installation

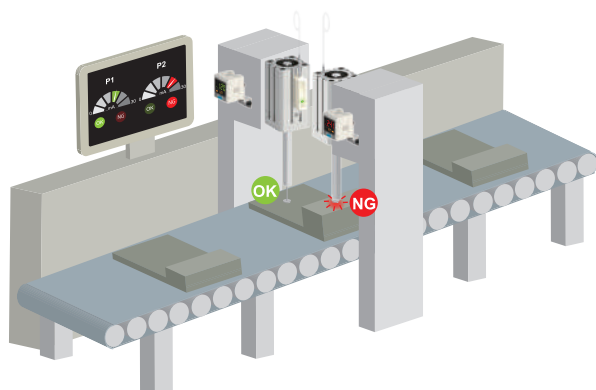


2 Analog Output Function

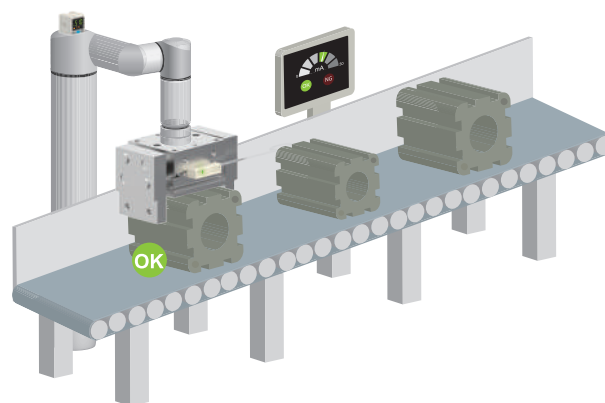
- Analog voltage / current output can be switched.
- Analog output can be inverted.



3 Thickness Differentiation

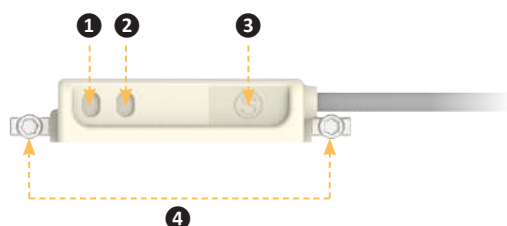


4 Dimension Measurement

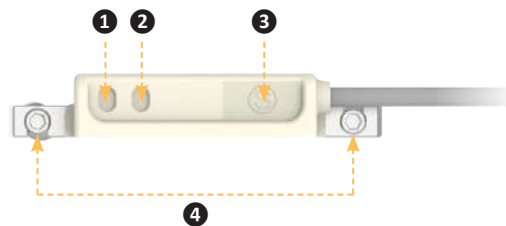


Panel Description

■ KLC - 040 - □



■ KLT - 040 - □



No.	Content
1	Mode Indicator
2	Information Indicator
3	Setting Button
4	Mounting screw, Hexagon wrench (2.0 mm)

Ordering Information

K L C - 0 4 0 - □

Cylinder Type

C : C slot
T : T slot

Measuring Range

040 : 40 mm

Cable Length / Connector

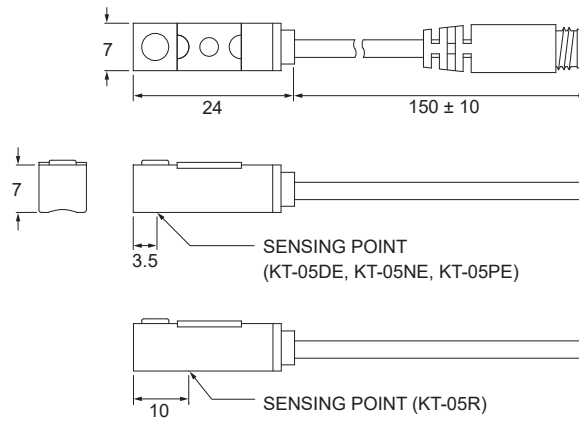
Blank : 2M
QD : With M8 3Pin male connector

KT-05 SERIES



Dimensions

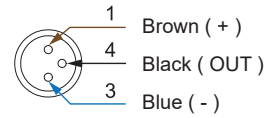
KT-05R, KT-05DE, KT-05NE, KT-05PE /
KT-05R-QD, KT-05DE-QD, KT-05NE-QD, KT-05PE-QD



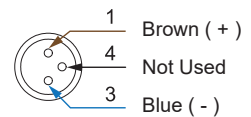
Unit : mm

M8 QD Pinout

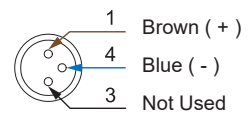
3 wire QD wiring



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 damage 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.

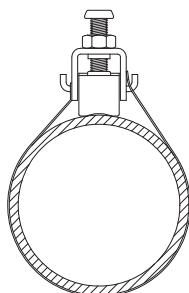
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)

※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

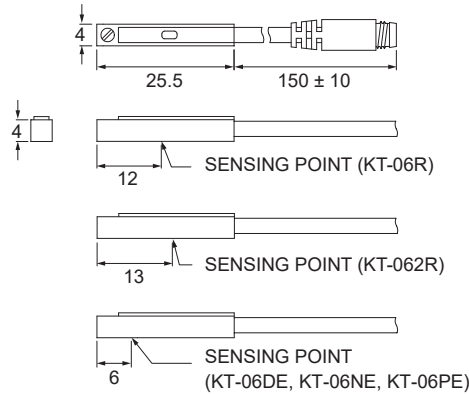


BK Series



Dimensions

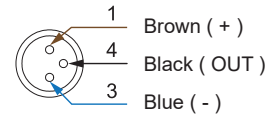
KT-06R, KT-062R, KT-06DE, KT-06NE, KT-06PE /
KT-06R-QD, KT-062R-QD, KT-06DE-QD, KT-06NE-QD,
KT-06PE-QD



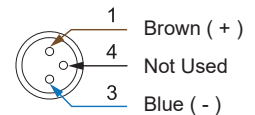
Unit : mm

M8 QD Pinout

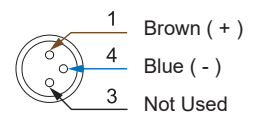
3 wire QD wiring



2 wire QD wiring



2 wire EQD wiring



Specifications

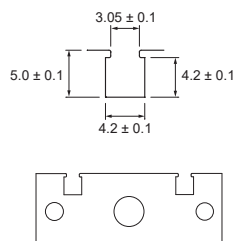
MODEL	KT-06R	KT-062R	KT-06DE	KT-06NE	KT-06PE
Connect Diagram					
Characteristics					
Wiring Method	2-Wire Type			3-Wire Type	
Switching Logic	SPST, Normally Open		Solid State Output, Normally Open		
Sensor Type	Reed Switch		-	NPN Current Sinking	PNP Current Sourcing
Operating Voltage	5 ~ 120 V DC / 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 mm ²) - 2 cores			Ø2.8 PUR - 26 AWG (0.15 mm ²) - 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 damage 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



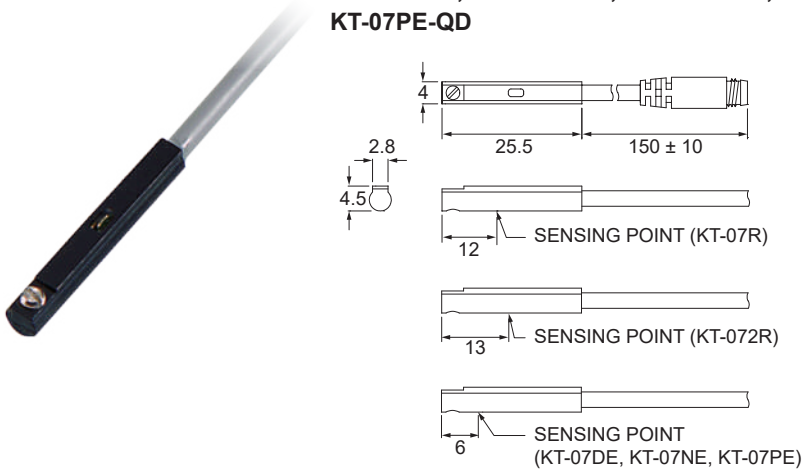
Unit : mm

KT-07 SERIES



Dimensions

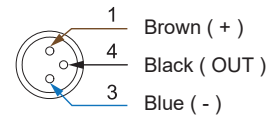
KT-07R, KT-072R, KT-07DE, KT-07NE, KT-07PE /
KT-07R-QD, KT-072R-QD, KT-07DE-QD, KT-07NE-QD,
KT-07PE-QD



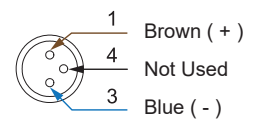
Unit : mm

M8 QD Pinout

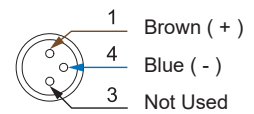
3 wire QD wiring



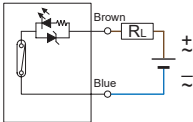
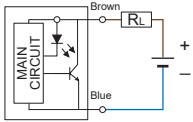
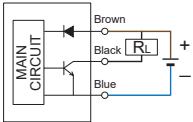
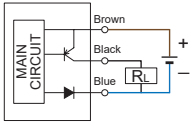
2 wire QD wiring



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 mm ²) - 2 cores				Ø2.8 PUR - 26 AWG (0.15 mm ²) - 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 damage 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.

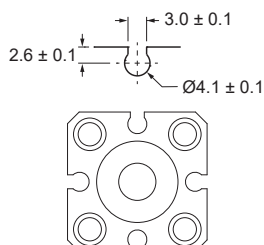
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)

※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.

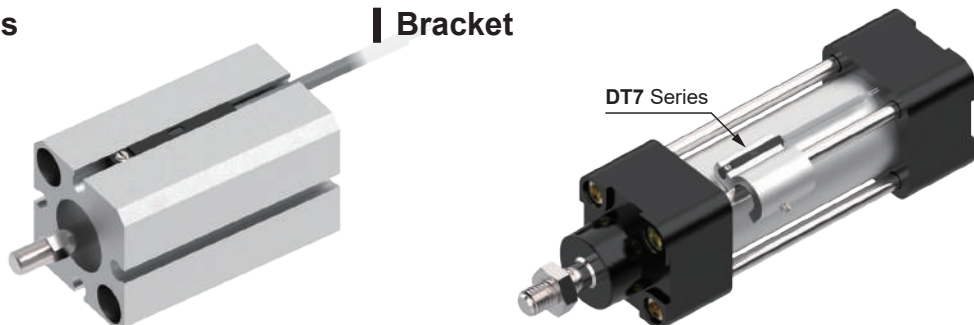
※5 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.

※6 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

Groove Dimensions



Bracket



Unit : mm

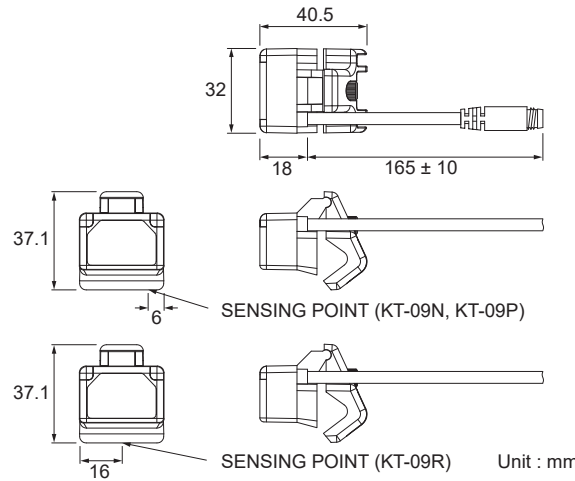
KT-09 SERIES

Magnetic Sensor



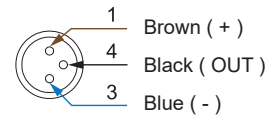
Dimensions

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

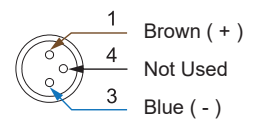


M8 QD Pinout

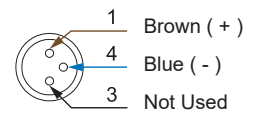
3 wire QD wiring



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 mm ²) - 2 cores	Ø4.5 PVC - 24 AWG (0.22 mm ²) - 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 damage 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.

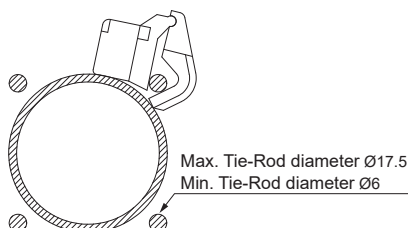
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)

※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



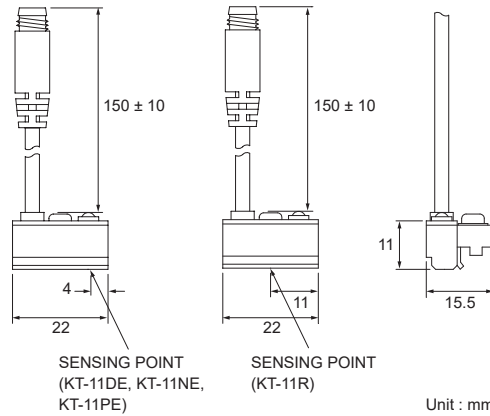
Unit : mm

KT-11 SERIES



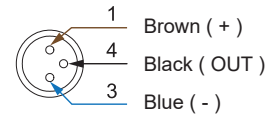
Dimensions

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

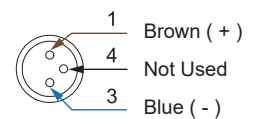


M8 QD Pinout

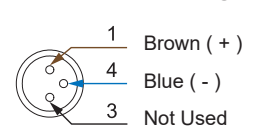
3 wire QD wiring



2 wire QD wiring



2 wire EQD wiring



Specifications

MODEL	KT-11R	KT-11DE	KT-11NE	KT-11PE
Connect Diagram Characteristics				
	2-Wire type		3-Wire type	
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 mm ²) - 2 cores		Ø3.3 PVC - 24 AWG (0.22 mm ²) - 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 damage 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.

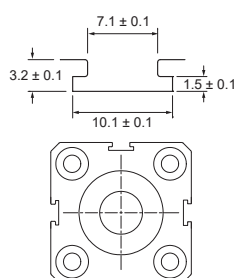
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)

※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

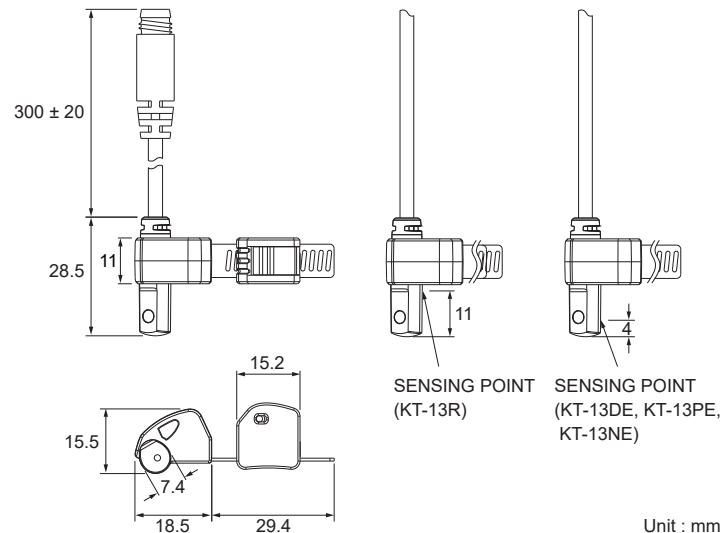
Magnetic Sensor



Patented

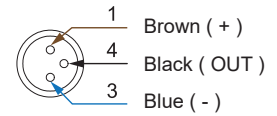
Dimensions

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

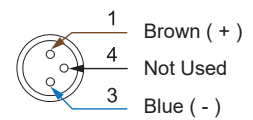


M8 QD Pinout

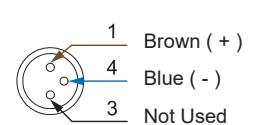
3 wire QD wiring



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 mm ²) - 2 cores		Ø3.3 PVC - 24 AWG (0.22 mm ²) - 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 damage 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.

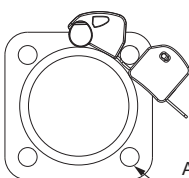
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)

※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

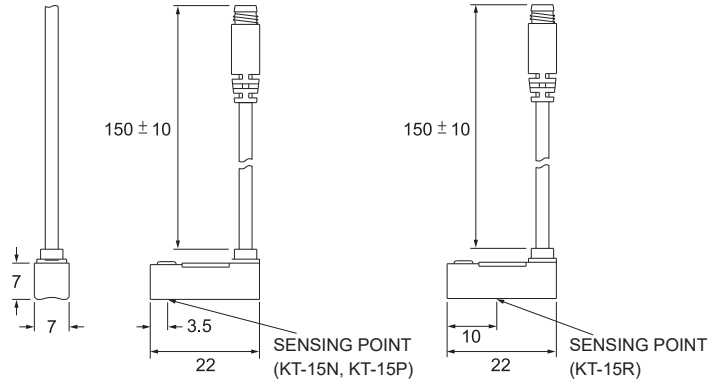
Unit : mm

KT-15 SERIES



Dimensions

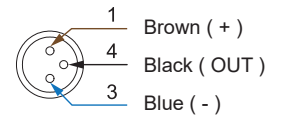
KT-15R, KT-15N, KT-15P /
KT-15R-QD, KT-15N-QD, KT-15P-QD



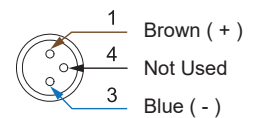
Unit : mm

M8 QD Pinout

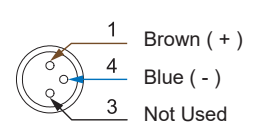
3 wire QD wiring



2 wire QD wiring



2 wire EQD wiring



Specifications

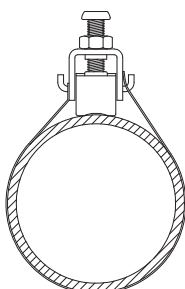
MODEL	KT-15R	KT-15N	KT-15P
Connect Diagram			
Characteristics			
Wiring Method	2-Wire Type	3-Wire Type	
Switching Logic	SPST, Normally Open	Solid State Output, Normally Open	
Sensor Type	Reed Switch	NPN Current Sinking	PNP Current Sourcing
Operating Voltage	5 ~ 240 V DC / AC	5 ~ 30 V DC	
Switching Current	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 mm ²) - 2 cores	Ø2.8 PVC - 24 AWG (0.22 mm ²) - 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 damage 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



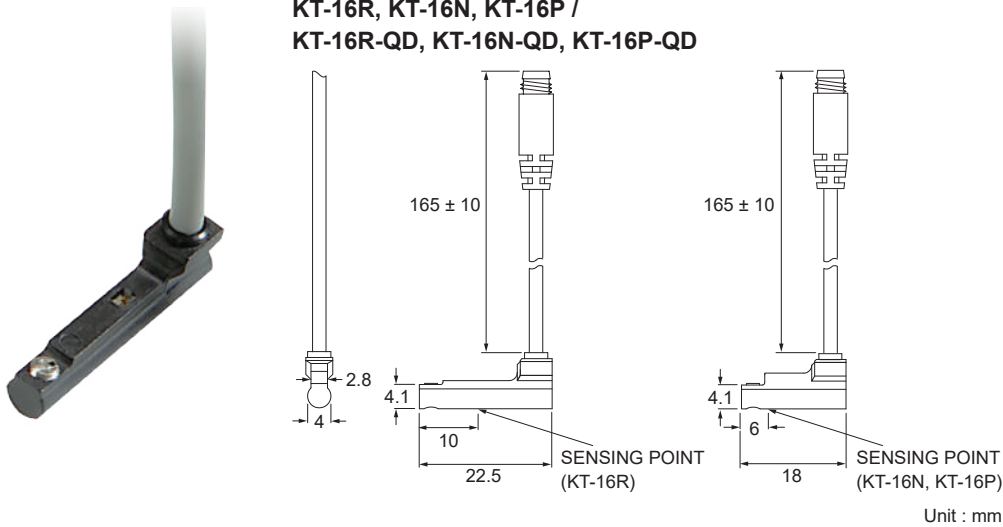
KT-16 SERIES

Magnetic Sensor



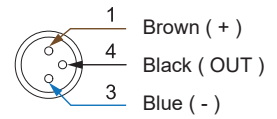
Dimensions

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

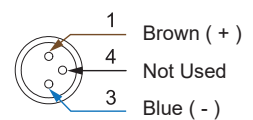


M8 QD Pinout

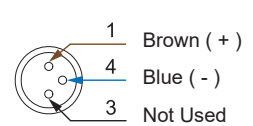
3 wire QD wiring



2 wire QD wiring

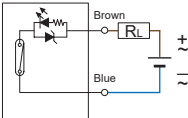
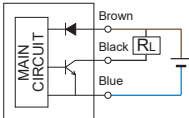
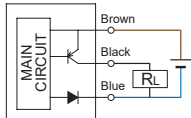


2 wire EQD wiring



Unit : mm

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 - 26AWG (0.15 mm ²) - 2 cores	Ø2.8 PUR - 26AWG (0.15 mm ²) - 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 damage 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.

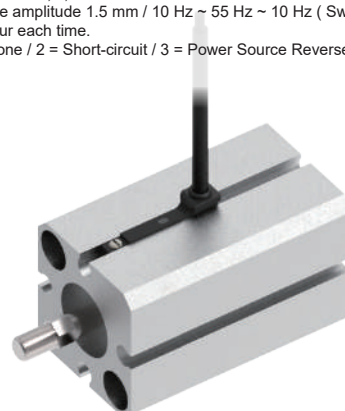
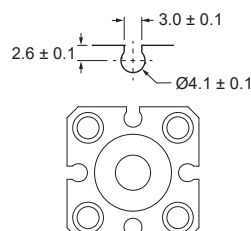
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)

※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



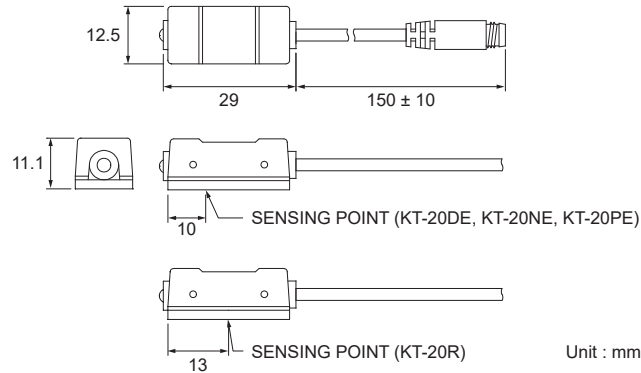
Unit : mm

KT-20 SERIES



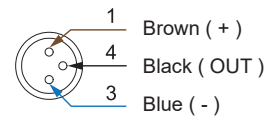
Dimensions

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

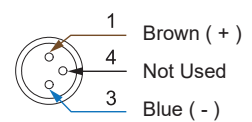


M8 QD Pinout

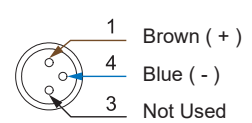
3 wire QD wiring



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 mm ²) - 2 cores	Ø4 PVC - 24 AWG (0.22 mm ²) - 2 cores	Ø4 PVC - 24 AWG (0.22 mm ²) - 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

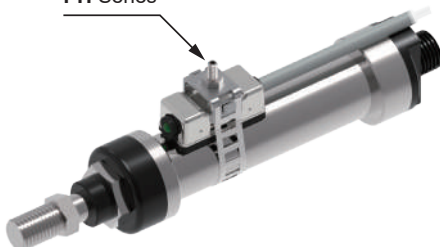
- ※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage).
Permanent damage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (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



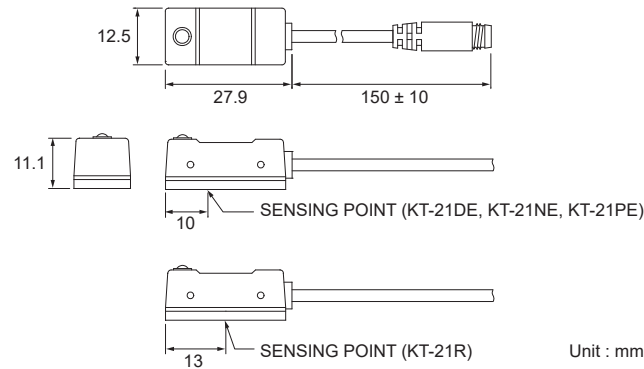
KT-21 SERIES

Magnetic Sensor



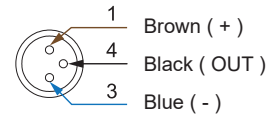
Dimensions

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

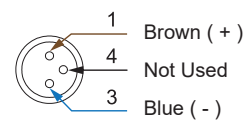


M8 QD Pinout

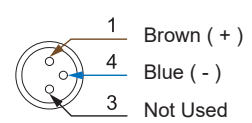
3 wire QD wiring



2 wire QD wiring



2 wire EQD wiring



Specifications

MODEL	KT-21R	KT-21DE	KT-21NE	KT-21PE
Connect Diagram				
Characteristics	2-Wire type		3-Wire type	
Wiring Method	SPST, Normally Open		Solid State Output, Normally Open	
Switching Logic	Reed Switch		NPN Current Sinking	
Sensor Type	-		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	-		6 mA @ 24 V DC max.	
Voltage Drop ※2	3.5 V max.		0.5 V max.	
Leakage Current ※2	-		0.01 mA max.	
Indicator	Green LED		Red LED	
Lead Wire	Ø3.9 PVC - 24 AWG (0.22 mm ²) - 2 cores		Ø4 PVC - 24 AWG (0.22 mm ²) - 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 damage 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.

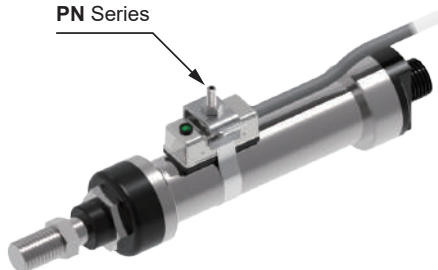
※5 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.

※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



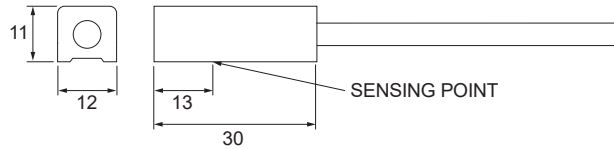
KT-31 SERIES



High Temp. Resistant
Max 140 °C

Dimensions

M8 Connector
option is not available



Unit : mm

Specifications

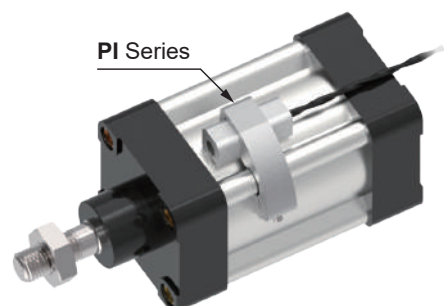
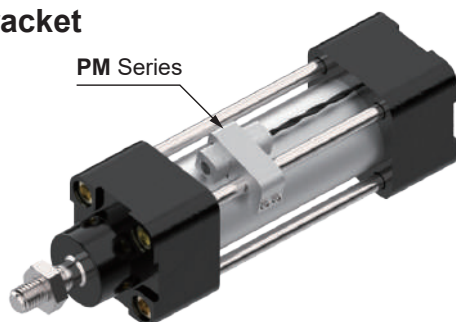
MODEL	KT-31R
Connect Diagram	
Characteristics	
Wiring Method	2-Wire Type
Switching Logic	SPST, Normally Open
Sensor Type	Reed Switch
Operating Voltage	5 ~ 240 V DC / AC
Switching Current	500 mA max.
Contact Rating ※1	10 W max.
Current Consumption ※2	-
Voltage Drop ※2	0.5 V max.
Leakage Current ※2	-
Indicator	-
Lead Wire	Ø3 Teflon - 24 AWG (0.22 mm ²) - 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 damage 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



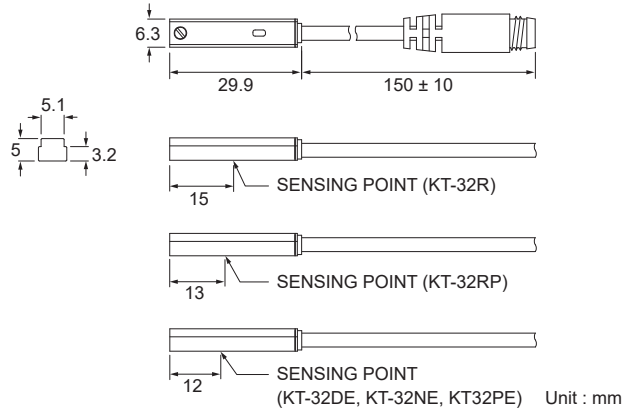
KT-32 SERIES

Magnetic Sensor



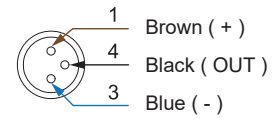
Dimensions

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

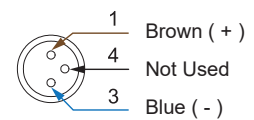


M8 QD Pinout

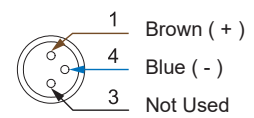
3 wire QD wiring



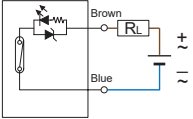
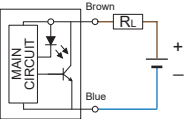
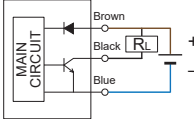
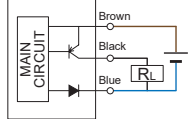
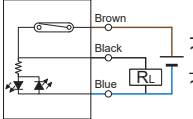
2 wire QD wiring



2 wire EQD wiring



Specifications

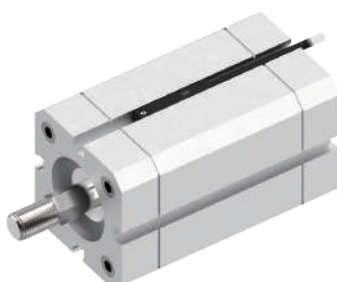
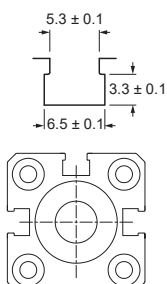
MODEL	KT-32R	KT-32DE	KT-32NE	KT-32PE	KT-32RP
Connect Diagram					
	Characteristics				
Wiring Method	2-Wire Type		3-Wire Type		
Switching Logic	SPST, Normally Open	Solid State Output, Normally Open			SPST, Normally Open
Sensor Type	Reed Switch	-	NPN Current Sinking	PNP Current Sourcing	Reed Switch
Operating 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 mm ²) - 2 cores		Ø3.2 PVC - 24 AWG (0.22 mm ²) - 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

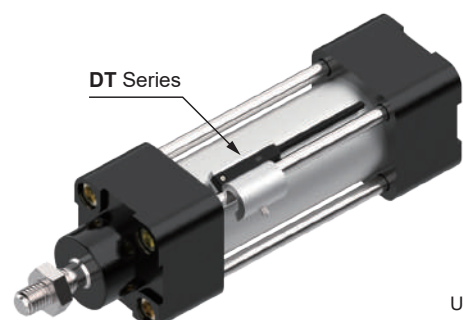
※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage).
Permanent damage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable
of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy 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



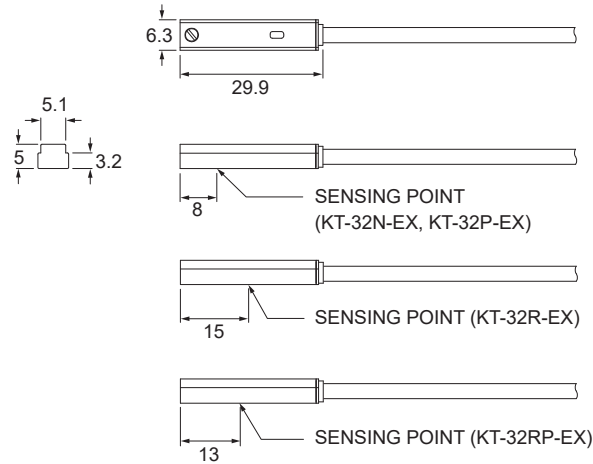
Explosion Proof

Dimensions

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

M8 Connector

option is not available



Unit : mm

Specifications

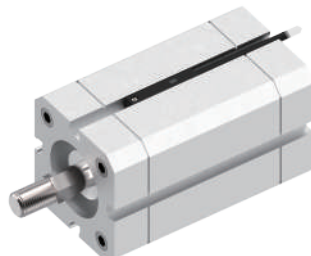
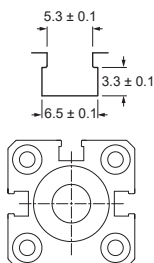
MODEL	KT-32R-EX	KT-32N-EX	KT-32P-EX	KT-32RP-EX
Connect Diagram Characteristics				
Wiring Method	2-Wire Type	3-Wire Type		
Switching Logic	SPST, Normally Open	Solid State Output, Normally Open		SPST, Normally Open
Sensor Type	Reed Switch	NPN Current Sinking	PNP Current Sourcing	Reed Switch
Operating 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 mm ²) - 2 cores		Ø3.2 PVC - 24 AWG (0.22 mm ²) - 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 ic IIB T4 Gc (-10 °C ≤ Ta ≤ +70 °C) Ex ic IIIC T135 °C Dc (-10 °C ≤ Ta ≤ +70 °C)			

NOTE

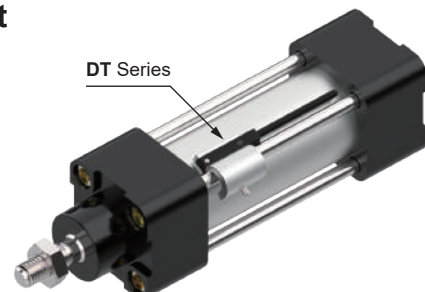
- ※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage).
Permanent damage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (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

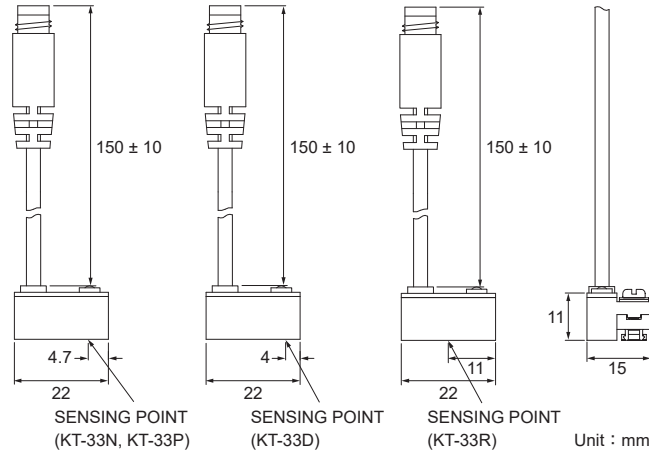
KT-33 SERIES

Magnetic Sensor



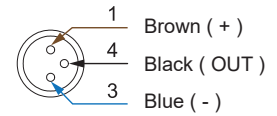
Dimensions

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

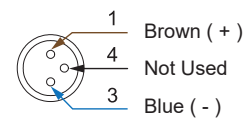


M8 QD Pinout

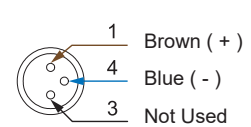
3 wire QD wiring



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 mm ²) - 2 cores		Ø3.2 PVC - 24 AWG (0.22 mm ²) - 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 damage 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.

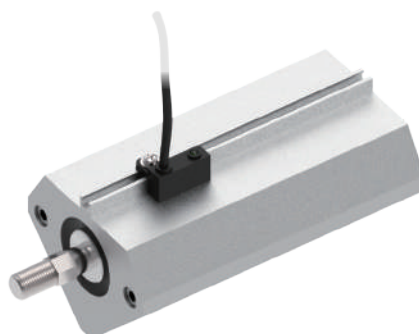
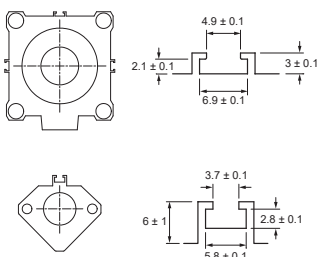
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)

※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 (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

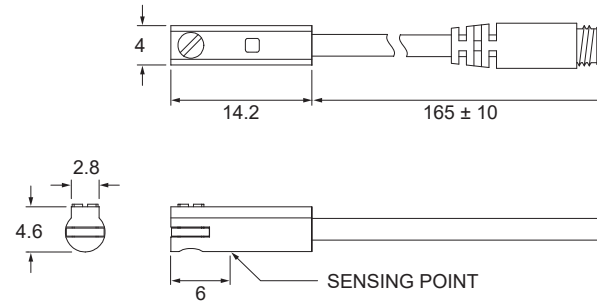


Compact Size



Dimensions

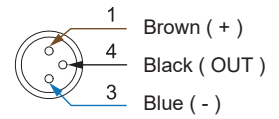
KT-36DE, KT-36NE, KT-36PE /
KT-36DE-QD, KT-36NE-QD, KT-36PE-QD



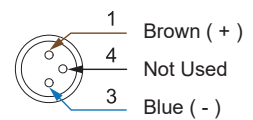
Unit : mm

M8 QD Pinout

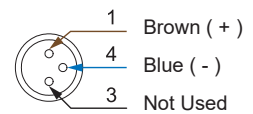
3 wire QD wiring



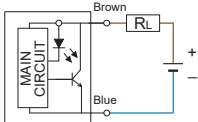
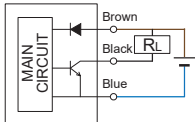
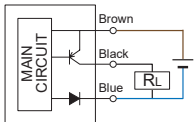
2 wire QD wiring



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 mm ²) - 2 cores	Ø2.6 PVC - 26 AWG (0.15 mm ²) - 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 damage 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.

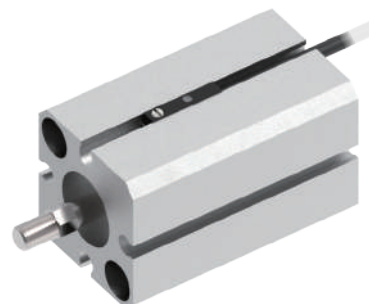
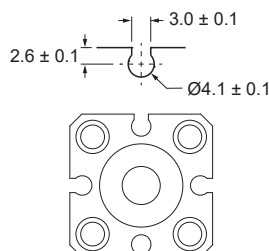
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)

※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

Magnetic Sensor

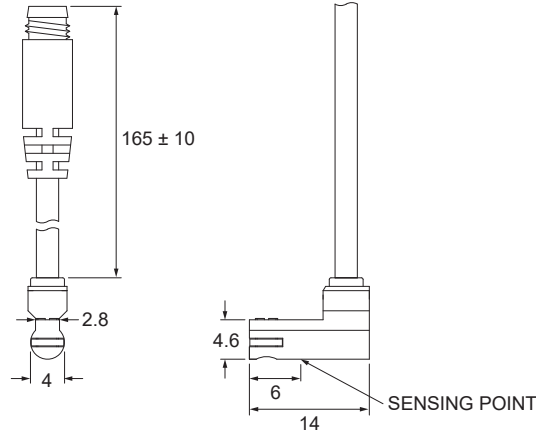


Compact Size



Dimensions

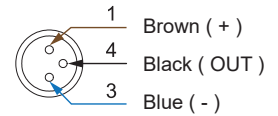
KT-37DE, KT-37NE, KT-37PE /
KT-37DE-QD, KT-37NE-QD, KT-37PE-QD



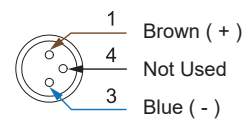
Unit : mm

M8 QD Pinout

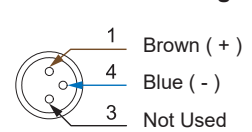
3 wire QD wiring



2 wire QD wiring



2 wire EQD wiring



Specifications

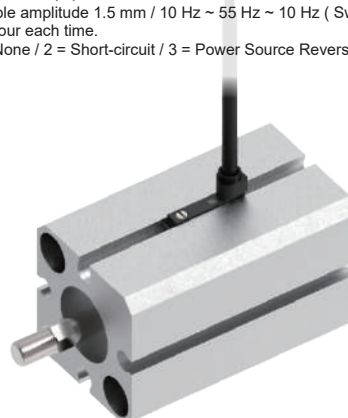
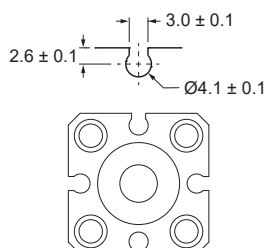
MODEL	KT-37DE	KT-37NE	KT-37PE
Connect Diagram			
	Characteristics		
Wiring Method	2-Wire type	3-Wire type	
Switching Logic	Solid State Output, Normally Open		
Sensor Type	-	NPN Current Sinking	PNP Current Sourcing
Operating Voltage	5 ~ 30 V DC		
Switching Current	50 mA max.		
Contact Rating ※1	1.5 W 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 damage 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

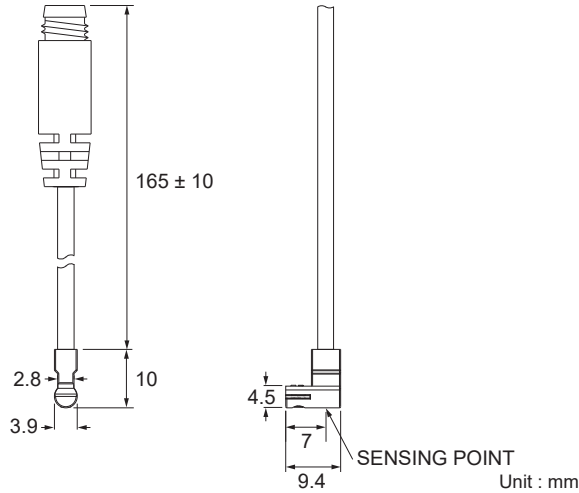


Compact Size



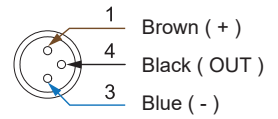
Dimensions

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

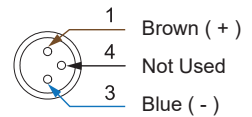


M8 QD Pinout

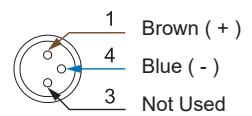
3 wire QD wiring



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 mm ²) - 2 cores	Ø2.6 PVC - 26 AWG (0.15 mm ²) - 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 damage 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.

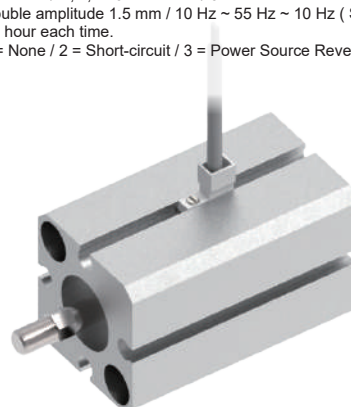
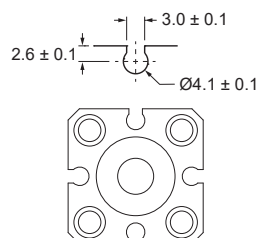
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)

※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

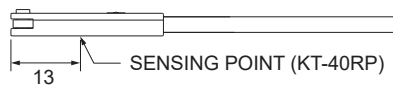
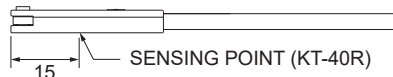
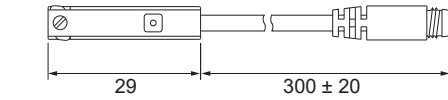
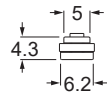
KT-40 SERIES

Magnetic Sensor



Dimensions

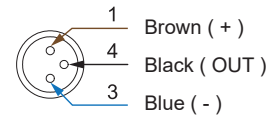
KT-40R, KT-40N, KT-40P, KT-40RP /
KT-40R-QD, KT-40N-QD, KT-40P-QD, KT-40RP-QD



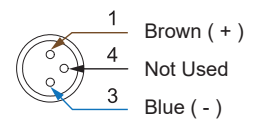
Unit : mm

M8 QD Pinout

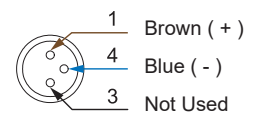
3 wire QD wiring



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 - 26AWG (0.15 mm ²) - 2 cores		Ø3 PUR - 26 AWG (0.15 mm ²) - 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 damage 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)

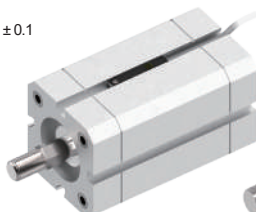
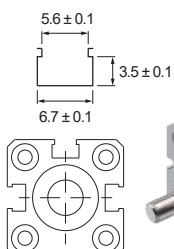
※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.

※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

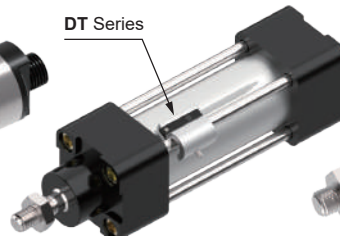
Clamp / Bracket



BL-1 Series



DT Series



PF Series

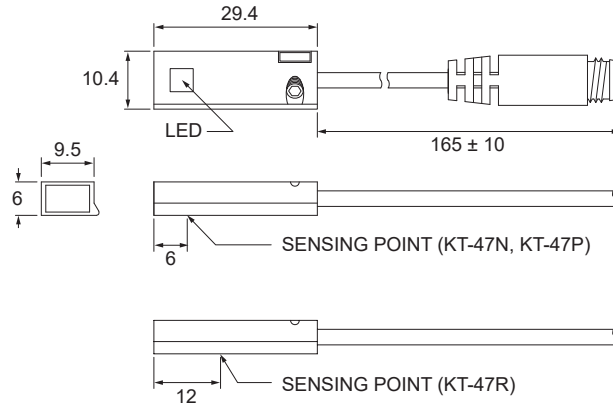
Unit : mm

KT-47 SERIES



Dimensions

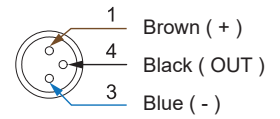
KT-47R, KT-47N, KT-47P /
KT-47R-QD, KT-47N-QD, KT-47P-QD



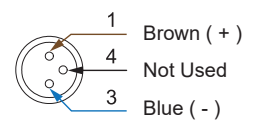
Unit : mm

M8 QD Pinout

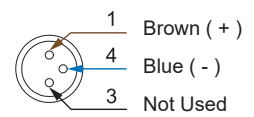
3 wire QD wiring



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 - 26AWG (0.15 mm ²) - 2 cores	Ø2.8 PUR - 26AWG (0.15 mm ²) - 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 damage 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.

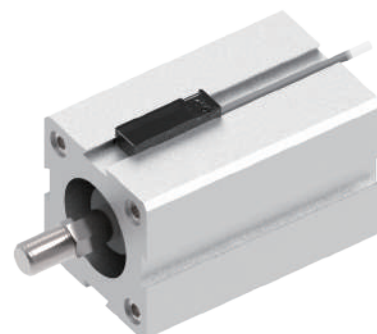
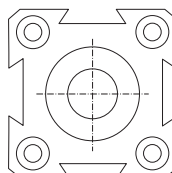
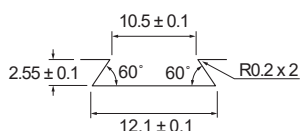
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)

※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

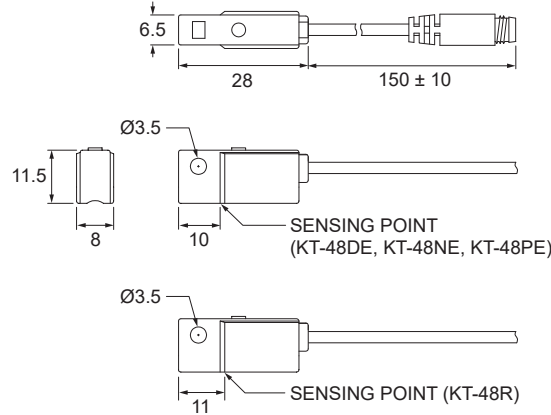
KT-48 SERIES

Magnetic Sensor



Dimensions

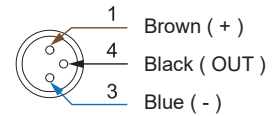
KT-48R, KT-48DE, KT-48NE, KT-48PE /
KT-48R-QD, KT-48DE-QD, KT-48NE-QD, KT-48PE-QD



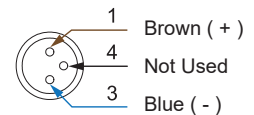
Unit : mm

M8 QD Pinout

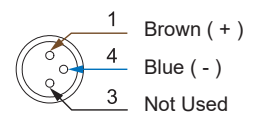
3 wire QD wiring



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 damage 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.

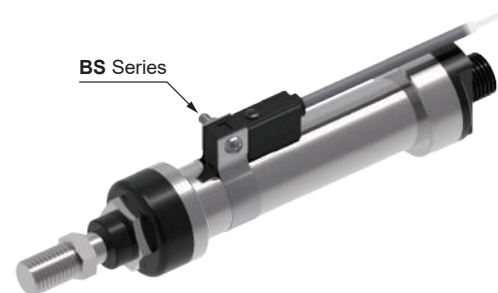
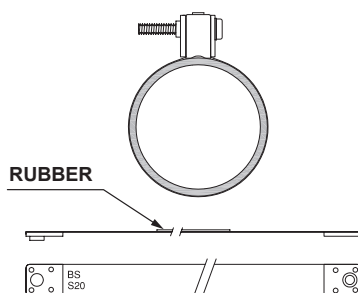
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)

※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

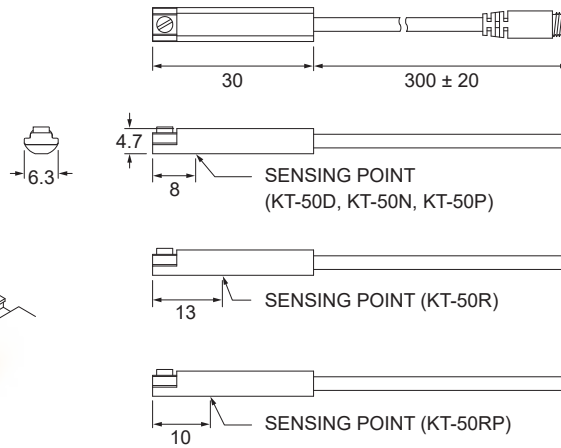


KT-50 SERIES



Dimensions

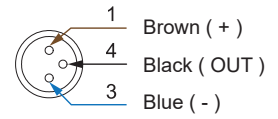
KT-50R, KT-50D, KT-50N, KT-50P, KT-50RP /
KT-50R-QD, KT-50D-QD, KT-50N-QD, KT-50P-QD,
KT-50RP-QD



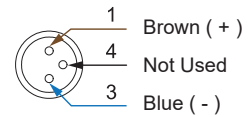
Unit : mm

M8 QD Pinout

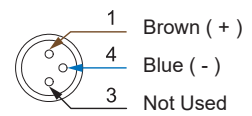
3 wire QD wiring



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 mm ²) - 2 cores		Ø3 PUR - 26 AWG (0.15 mm ²) - 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 damage 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.

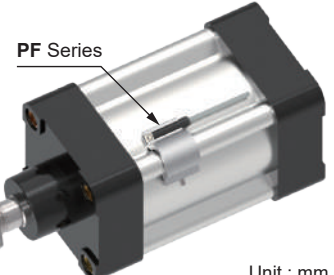
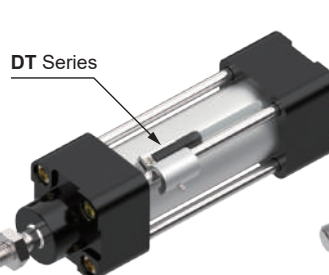
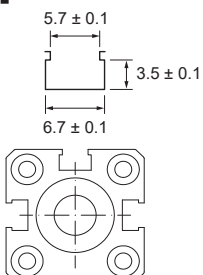
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)

※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

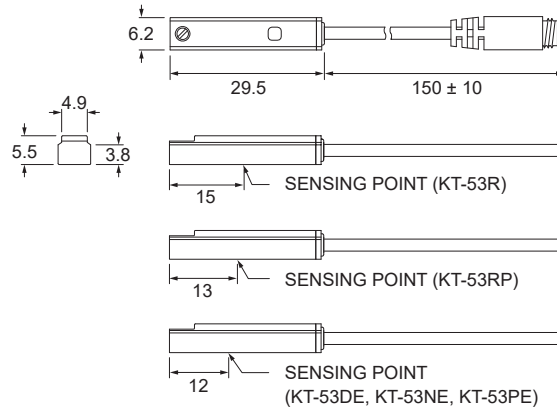
KT-53 SERIES

Magnetic Sensor



Dimensions

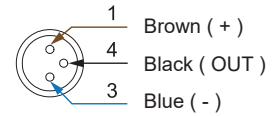
KT-53R, KT-53DE, KT-53NE, KT-53PE, KT-53RP /
KT-53R-QD, KT-53DE-QD, KT-53NE-QD, KT-53PE-QD,
KT-53RP-QD



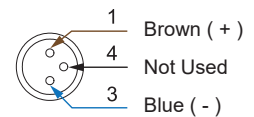
Unit : mm

M8 QD Pinout

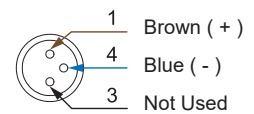
3 wire QD wiring



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 mm ²) - 2 cores		Ø3 PUR - 26 AWG (0.15 mm ²) - 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 damage 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.

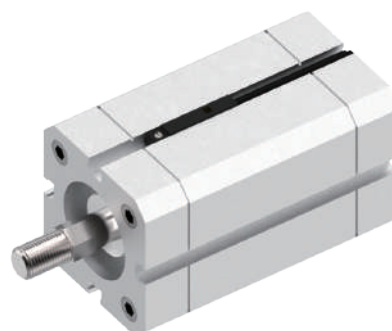
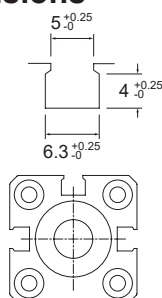
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)

※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



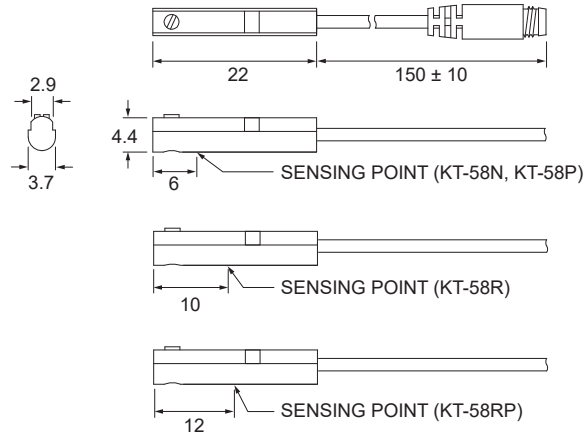
Unit : mm

KT-58 SERIES



Dimensions

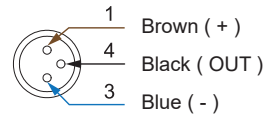
KT-58R, KT-58N, KT-58P, KT-58RP /
KT-58R-QD, KT-58N-QD, KT-58P-QD, KT-58RP-QD



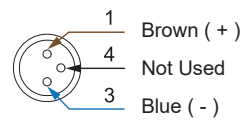
Unit : mm

M8 QD Pinout

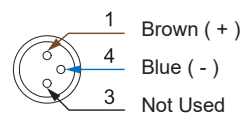
3 wire QD wiring



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 damage 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.

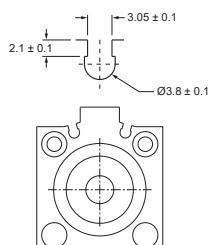
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)

※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 (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

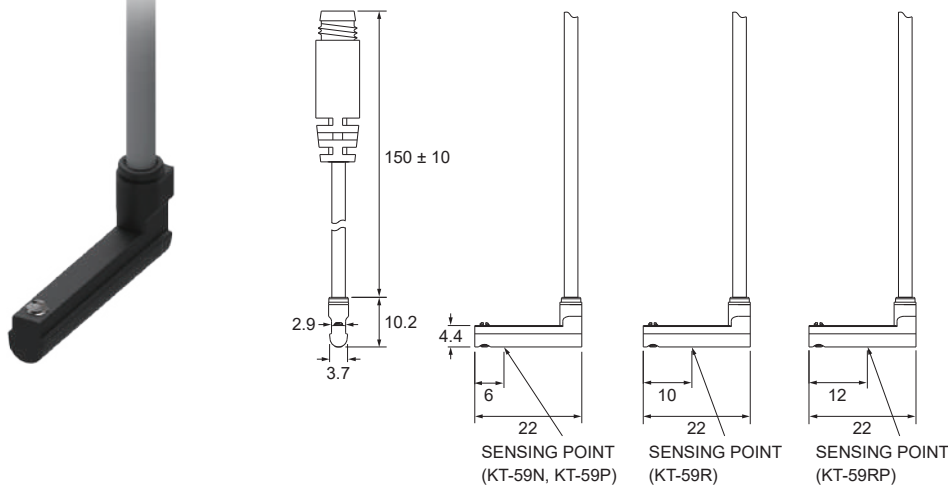
KT-59 SERIES

Magnetic Sensor



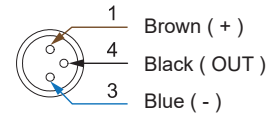
Dimensions

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

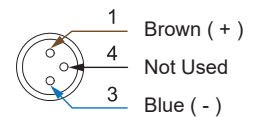


M8 QD Pinout

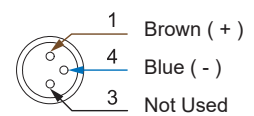
3 wire QD wiring



2 wire QD wiring



2 wire EQD wiring



Unit : mm

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 mm ²) - 2 cores		Ø2.5 PUR - 28 AWG (0.082 mm ²) - 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 damage 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.

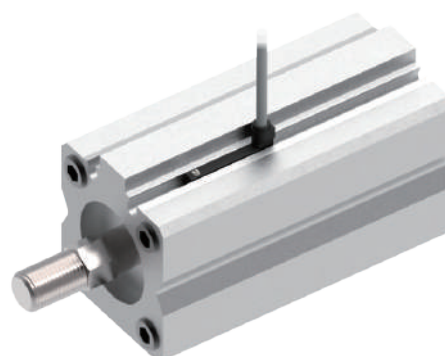
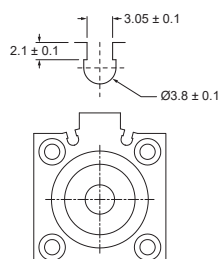
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)

※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

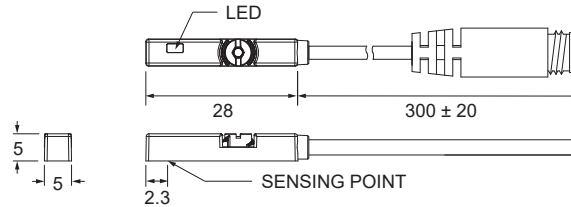
KT-65 SERIES



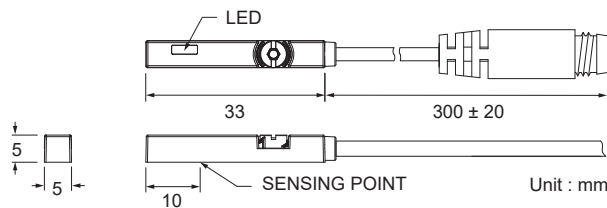
Patented

Dimensions

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

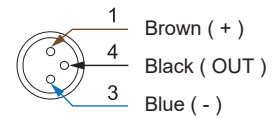


KT-65R, KT-65RP / KT-65R-QD, KT-65RP-QD

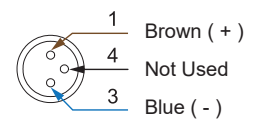


M8 QD Pinout

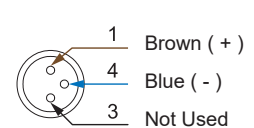
3 wire QD wiring



2 wire QD wiring



2 wire EQD wiring



Specifications

MODEL	KT-65R	KT-65DE	KT-65NE	KT-65PE	KT-65RP
Connect Diagram					

NOTE

※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage).

Permanent damage 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.

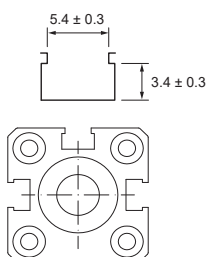
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (Anisotropy rubber magnet)

※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

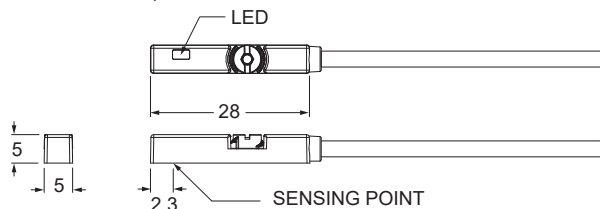


Explosion Proof

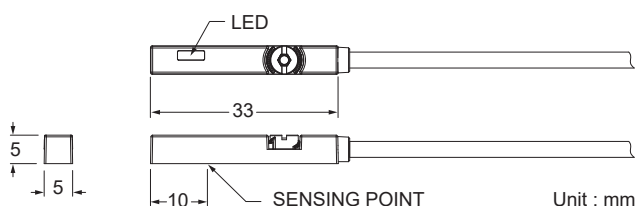
Patented

Dimensions

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



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



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	2-Wire Type		3-Wire Type					
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 mm ²) - 2 cores		Ø2.8 PUR - 26 AWG (0.15 mm ²) - 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	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)							
Baseefa14ATEX0118								

NOTE

※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage).
Permanent damage 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)

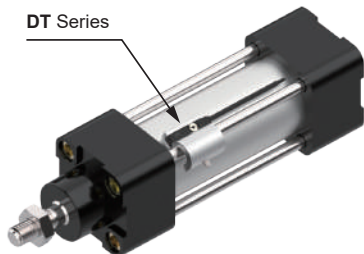
※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.

※5 : Double amplitude 1.5 mm / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.

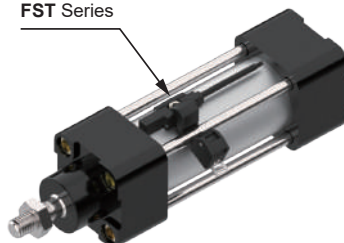
※6 : 1 = None / 2 = Short-circuit / 3 = Power Source Reverse polarity / 4 = Surge Suppression

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

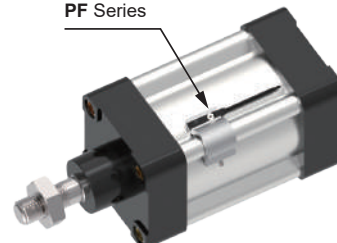
DT Series



FST Series



PF Series



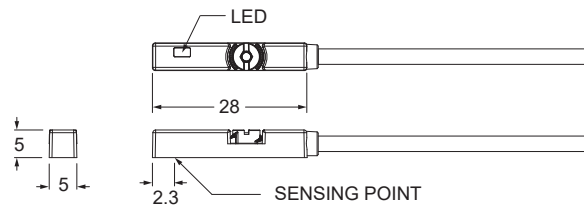
KT-65-UL SERIES



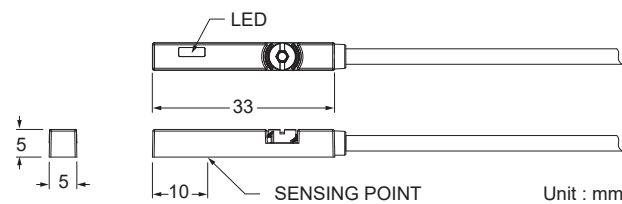
Patented

Dimensions

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

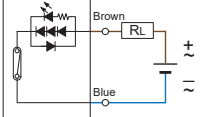
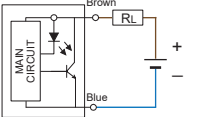
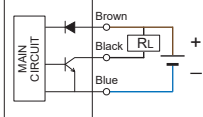
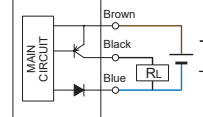
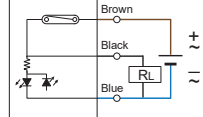


KT-65R-UL, KT-65RP-UL



Unit : mm

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 mm ²) - 2 cores		Ø2.8 PUR - 26 AWG (0.15 mm ²) - 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 damage 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)

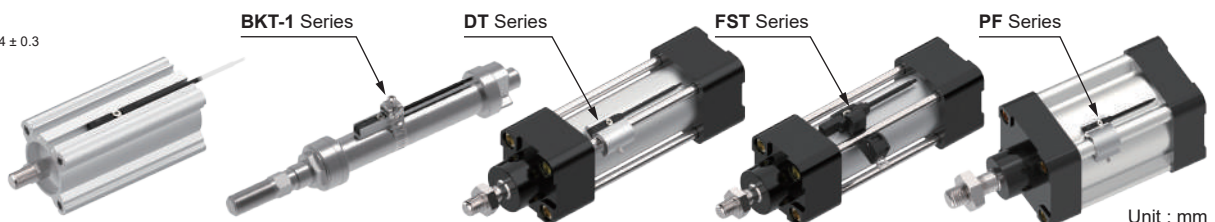
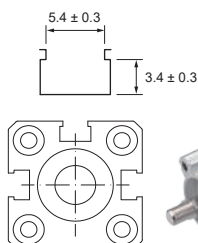
※4 : Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.

※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

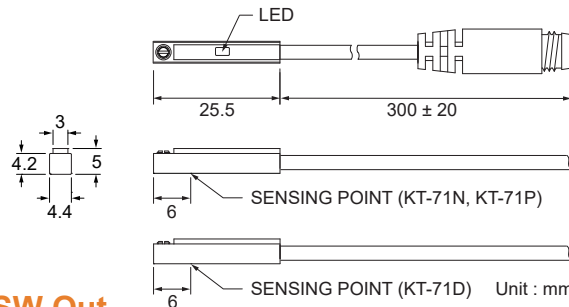
KT-71 SERIES

Magnetic Sensor

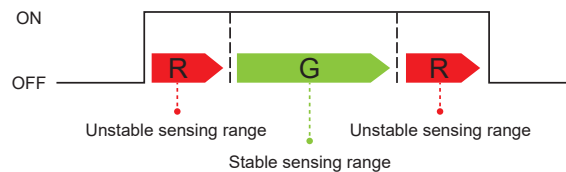


Dimensions

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



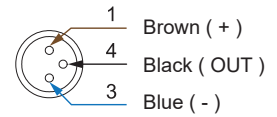
SW Out



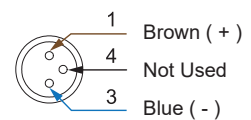
- Dual Color LED allow more precise positioning

M8 QD Pinout

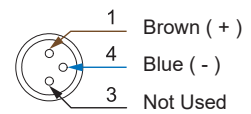
3 wire QD wiring



2 wire QD wiring



2 wire EQD wiring



Specifications

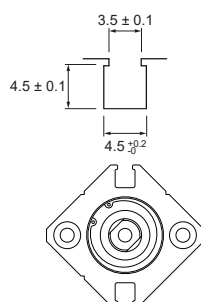
MODEL	KT-71D	KT-71N	KT-71P
Connect Diagram			
	Characteristics		
Wiring Method	2-Wire Type	3-Wire Type	
Switching Logic	Solid State Output, Normally Open		
Sensor Type	-	NPN Current Sinking	PNP Current Sourcing
Operating Voltage	10 ~ 28 V DC		
Switching Current	80 mA max.		
Contact Rating ※1	2 W max.		
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 - 26AWG (0.15 mm ²) - 2 cores	Ø2.8 PUR - 26 AWG (0.15 mm ²) - 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 damage 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

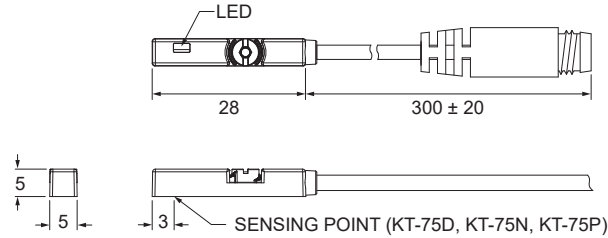


Patented



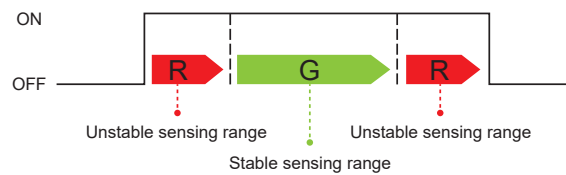
Dimensions

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



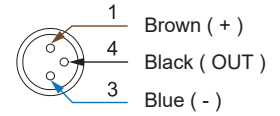
Unit : mm

SW Out

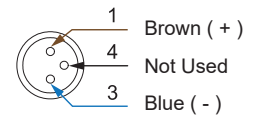


M8 QD Pinout

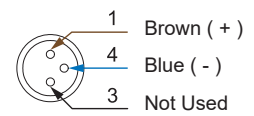
3 wire QD wiring



2 wire QD wiring

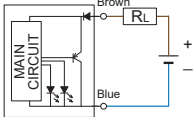
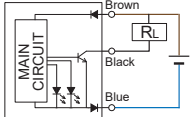
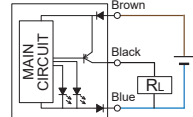


2 wire EQD wiring



- Dual Color LED allow more precise positioning

Specifications

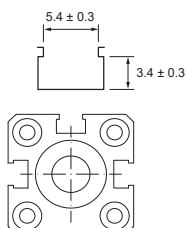
MODEL	KT-75D		KT-75N	KT-75P
Connect Diagram				
	2-Wire Type		3-Wire Type	
Characteristics	Solid State Output, Normally Open			
Wiring Method	2-Wire Type		3-Wire Type	
Switching Logic	Solid State Output, Normally Open			
Sensor Type	-		NPN Current Sinking	PNP Current Sourcing
Operating Voltage	10 ~ 28 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 mm ²) - 2 cores		Ø2.8 PUR - 26 AWG (0.15 mm ²) - 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

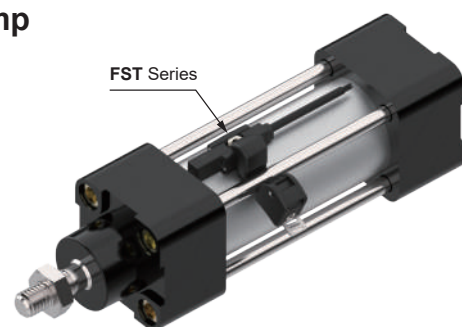
- ※1 : WARNING : Never exceed rating (Watt = Voltage × Amperage).
Permanent damage to sensor will occur.
※2 : It bases on conditions of voltage 24 V DC, ambient temp. 25 °C and 2 meters cable of sensor. Voltage drop increases in pace with cable length.
※3 : Measuring standard target : Ø15.5 × Ø8 × 5t (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

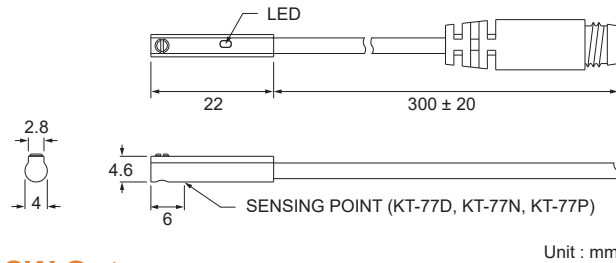
KT-77 SERIES

Magnetic Sensor

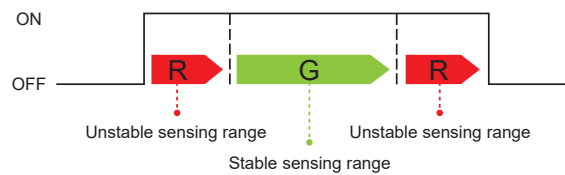


Dimensions

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

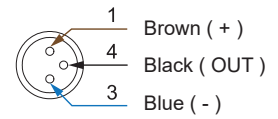


SW Out

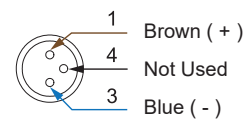


M8 QD Pinout

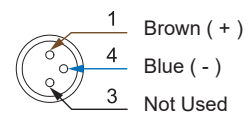
3 wire QD wiring



2 wire QD wiring



2 wire EQD wiring



- Dual Color LED allow more precise positioning

Specifications

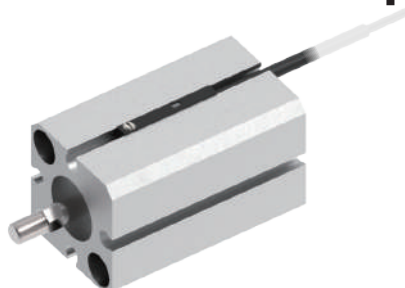
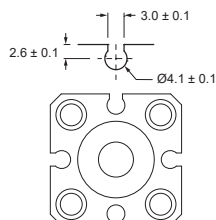
MODEL	KT-77D	KT-77N	KT-77P
Connect Diagram Characteristics			
Wiring Method	2-Wire Type	3-Wire Type	
Switching Logic	Solid State Output, Normally Open		
Sensor Type	-	NPN Current Sinking	PNP Current Sourcing
Operating Voltage	10 ~ 28 V DC		
Switching Current	80 mA max.		
Contact Rating ※1	2 W max.		
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 mm ²) - 2 cores	Ø2.8 PUR - 26 AWG (0.15 mm ²) - 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 damage 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 (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

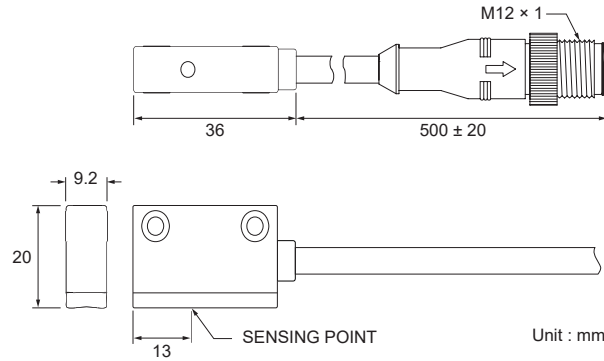
Weld-Field Immune Sensor



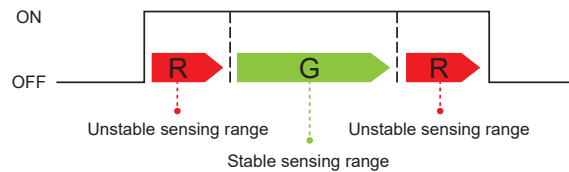
Magnetic Field Resistant



Dimensions

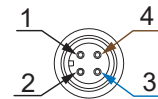


SW Out



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 mm ²) - 2 cores
Operating Time	50 ms max.
Magnetic Field 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 damage 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

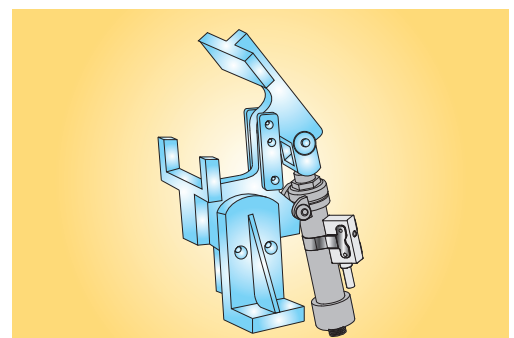
Ordering Information

KT - 1000D -

Cable Length / Connector

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

Application Mounting



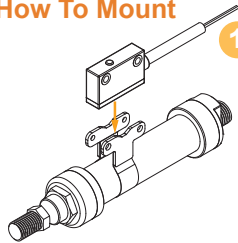
- KT-1000D detects the position of the cylinder piston and it is especially suitable for clamp cylinder.



BP Clamp

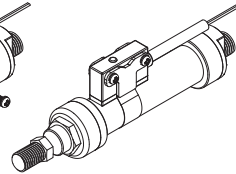
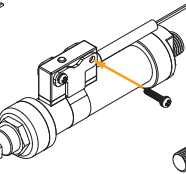
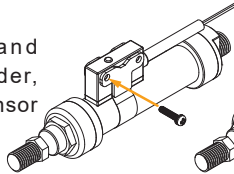
Clamp is designed for mounting KT-1000D on round cylinder.

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.

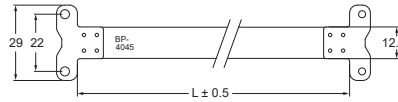
B P - 4 0 4 5

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



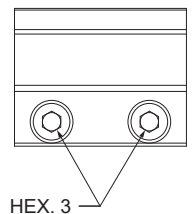
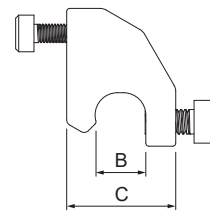
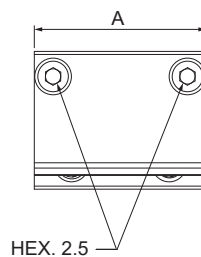
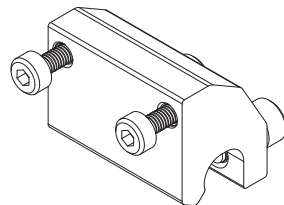
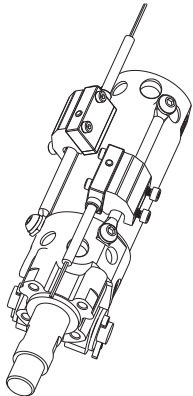
Cylinder Chart

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

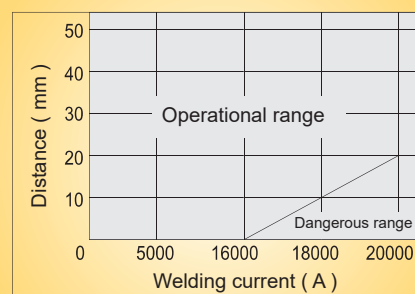
Unit : mm

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.

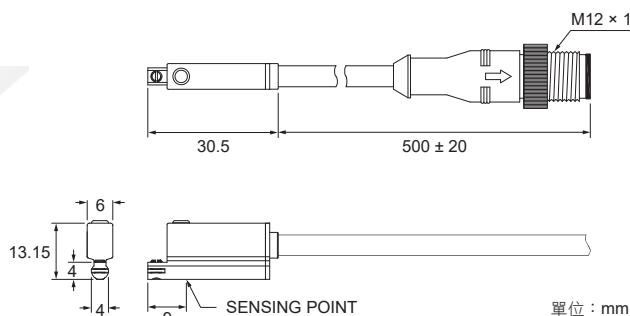
KT-1001D SERIES

Weld-Field Immune Sensor

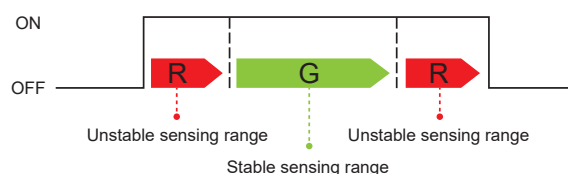


Magnetic Field Resistant

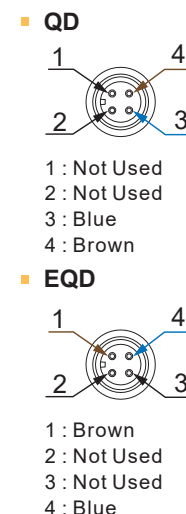
Dimensions



SW Out



M12 QD Pinout



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 mm ²) - 2 cores
Operating Time	50 ms max.
Magnetic Field 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 damage 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

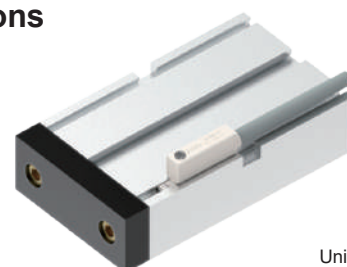
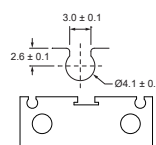
Ordering Information

KT - 1001D -

Cable Length / Connector

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

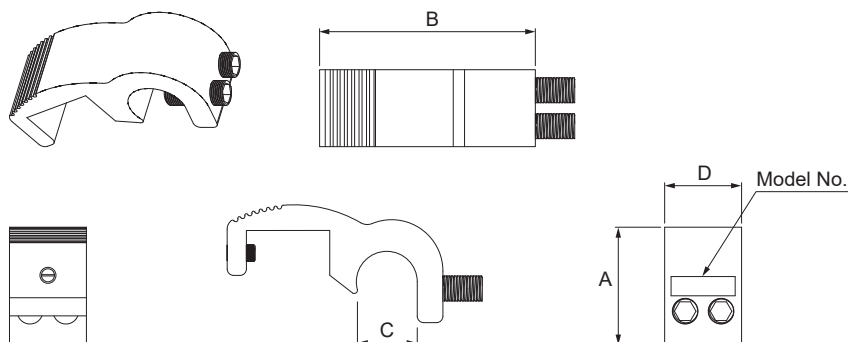
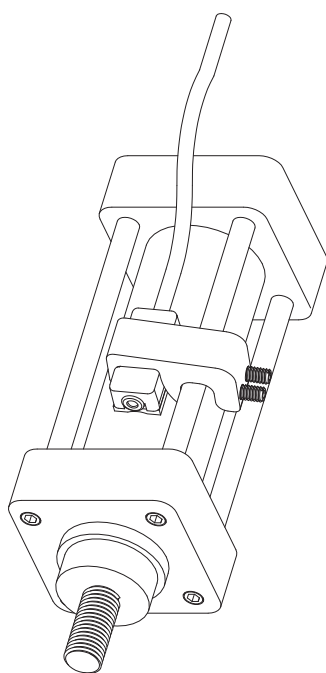
Groove Dimensions



Unit : mm

PM Series

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

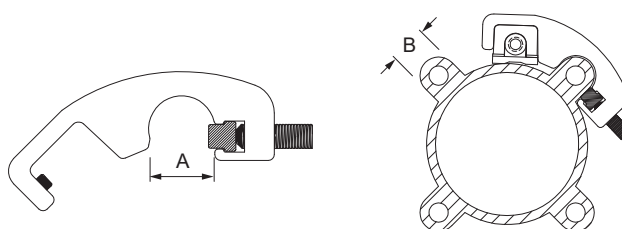
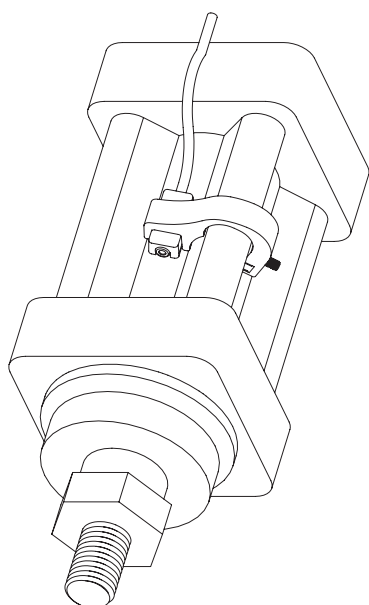


MODEL	DIM.	A	B	C	D
PM-6		19.1	31.8	7.3	12
PM-8		18.4	33.7	9.3	12
PM-10		16.7	35.9	11.2	12
PM-12		20	35.5	11.5	12
PM-14		24	38.0	13.5	12
PM-16		24	40.0	15.5	12

Unit : mm

PI Series

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

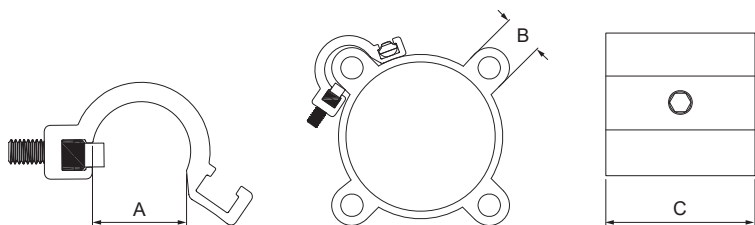
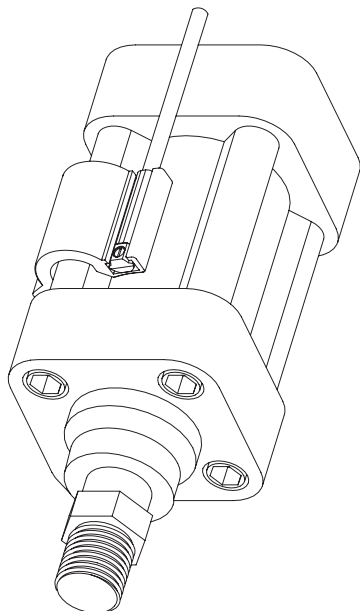


MODEL	DIM.	A	B	Remark
PI-1		10.9	0.4	Ø32 ~ Ø40
PI-2		14.10	13.5	Ø50 ~ Ø63
PI-3		15.45	15	Ø80
PI-4		16.3	16	Ø100
PI-5		19.8	18.7	Ø125
PI-6		26.5	25.7	Ø150

Unit : mm

PF Series

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

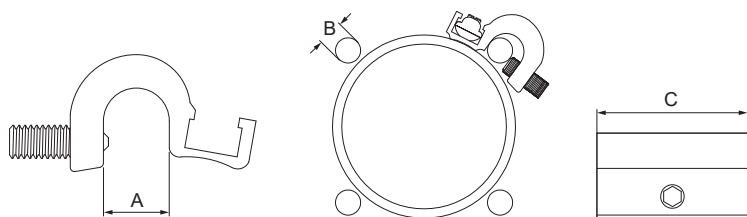
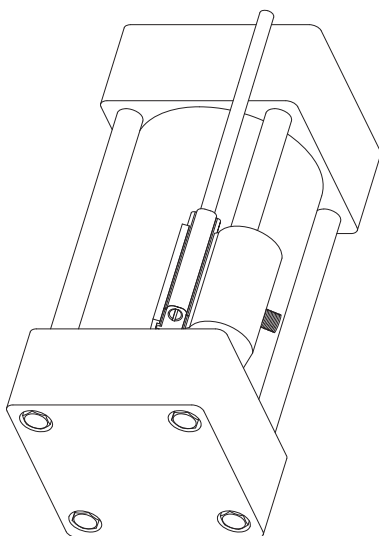


MODEL	DIM.	A	B	C	Remark
PF-1		12.1	10.4	25	Ø32 ~ Ø40
PF-2		15.9	13.5	25	Ø50 ~ Ø63
PF-3		16.3	15	25	Ø80
PF-4		17.9	16	25	Ø100
PF-5		19.7	18.7	25	Ø125

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.



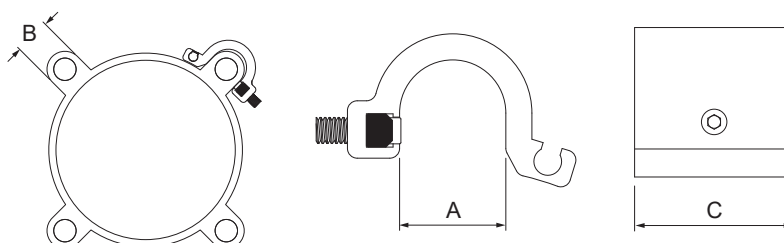
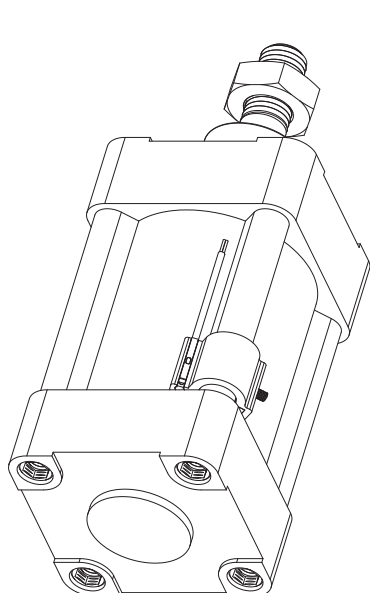
MODEL	DIM.	A	B	C
DT-1		7.9	Ø4 ~ Ø6	25
DT-2		10.4	Ø8 ~ Ø10	25
DT-3		15.1	Ø12 ~ Ø14	25
DT-4		20.6	Ø16	25
DT-5		24.9	Ø20 ~ Ø24	30

Unit : mm



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.

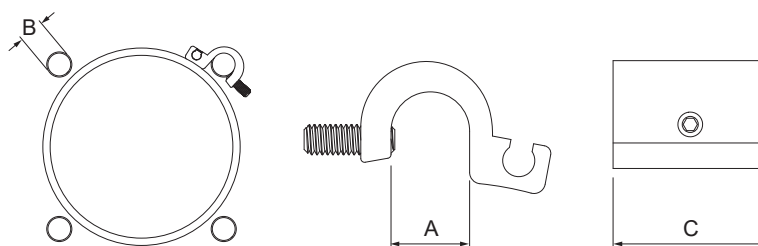
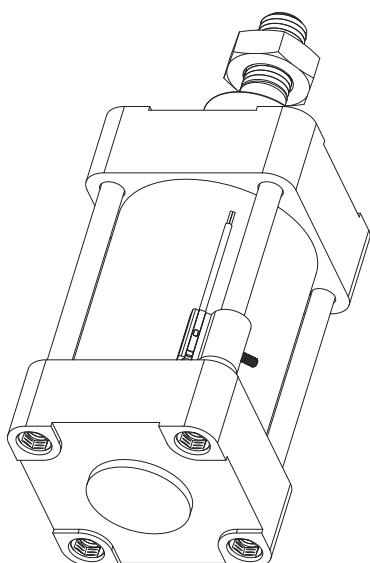


MODEL	DIM.	A	B	C	Remark
PF7-1		12.1	10.4	25	Ø32 ~ Ø40
PF7-2		15.9	13.5	25	Ø50 ~ Ø63
PF7-3		16.3	15	25	Ø80
PF7-4		17.9	16	25	Ø100
PF7-5		19.7	18.7	25	Ø125
PF7-6		27.6	25.7	25	Ø160

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.



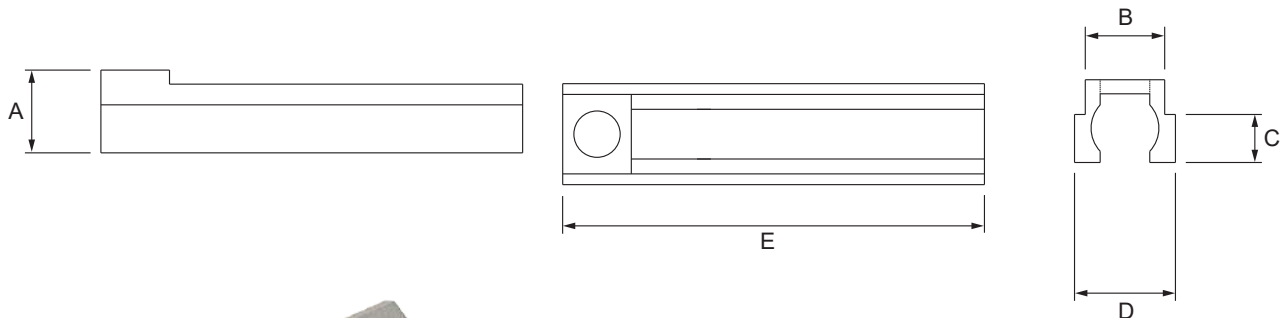
MODEL	DIM.	A	B	C
DT7-1		7.9	Ø4 ~ Ø6	25
DT7-2		10.4	Ø8 ~ Ø10	25
DT7-3		15.1	Ø12 ~ Ø14	25
DT7-4		20.6	Ø16	25

Unit : mm

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.

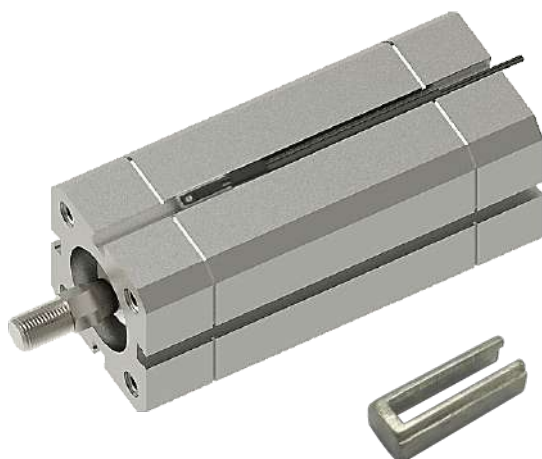
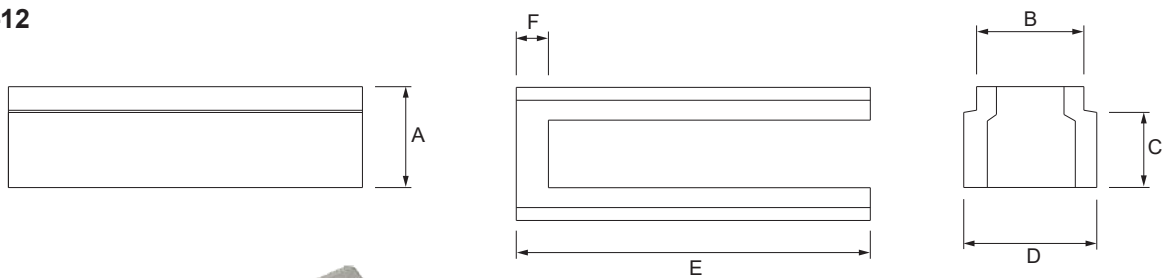
■ PB-01 & PB-03



DIM.	A	B	C	D	E	Groove Dimensions
MODEL						
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

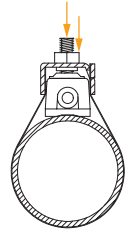
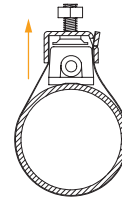
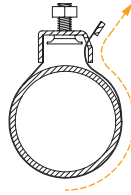
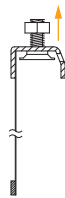
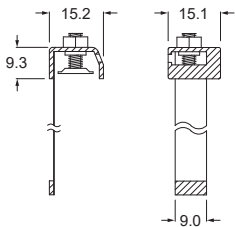


DIM.	A	B	C	D	E	F	Groove Dimensions
MODEL							
PB-12	4.7	5.0	3.5	6.2	16.5	1.5	$5^{+0.25}_{-0}$ $4^{+0.25}_{-0}$

Unit : mm

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

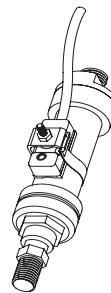
Pull up mounting head & place sensor under the mounting head.

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

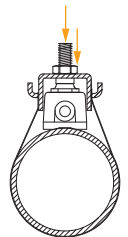
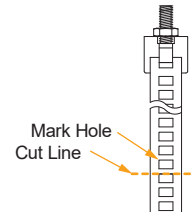
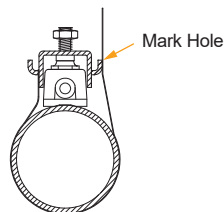
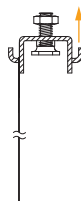
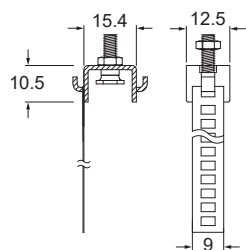
S : Stainless steel
A : Aluminum alloy

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

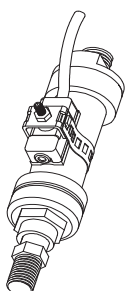
Place sensor & wrap the band around the cylinder. Position the hook with the nearest hole on the band and mark the hole with a permanent marker.

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.



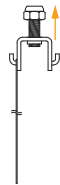
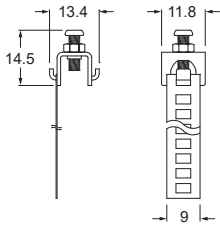
P H - 1

Band No.

1 : For Ø6 ~ Ø63 round cylinder use.
2 : For Ø6 ~ Ø125 round cylinder use.

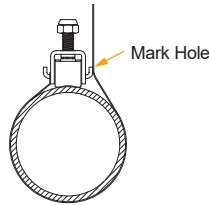
BK Series

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



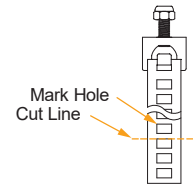
1 Step 1

Loosen screw & nut.



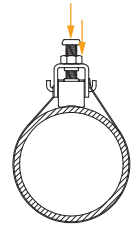
2 Step 2

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.



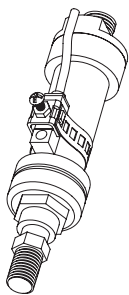
3 Step 3

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

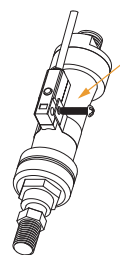
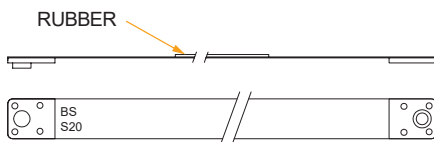
Band No.

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

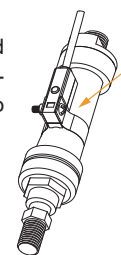
BS Series

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

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



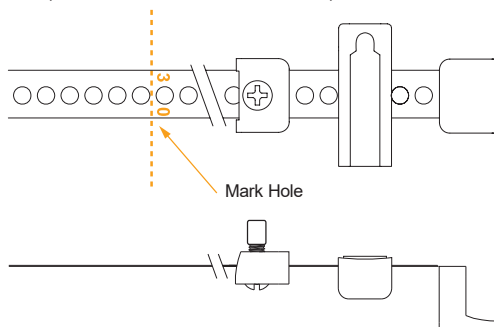
BL-1 Series

How to Mount

Example : Use with Ø40 stainless body cylinder.

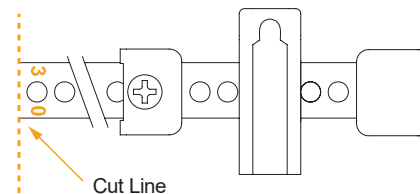
1 Step 1

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



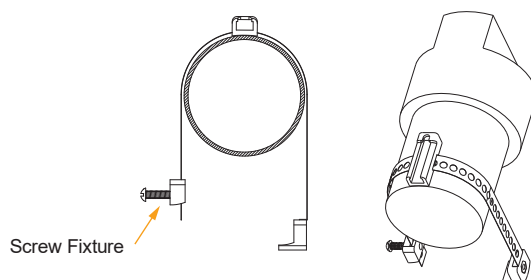
2 Step 2

Cut off excessive mounting band.



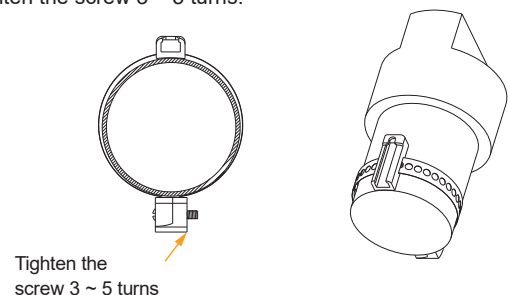
3 Step 3

Insert screw through screw fixture and the appropriate hole.



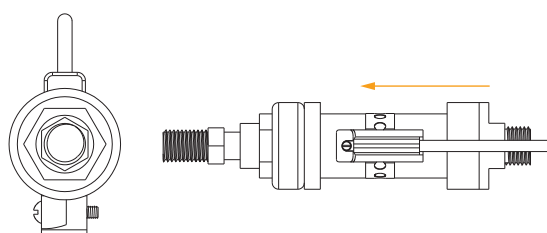
4 Step 4

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



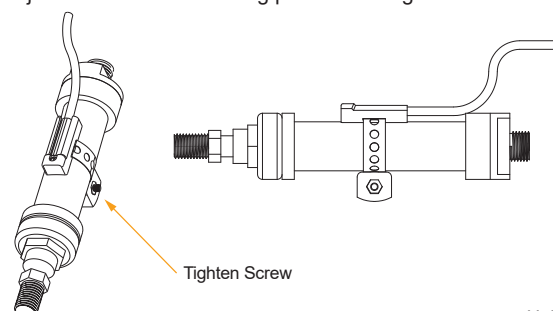
5 Step 5

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



6 Step 6

Adjust sensor to the sensing position and tighten.



Unit : mm

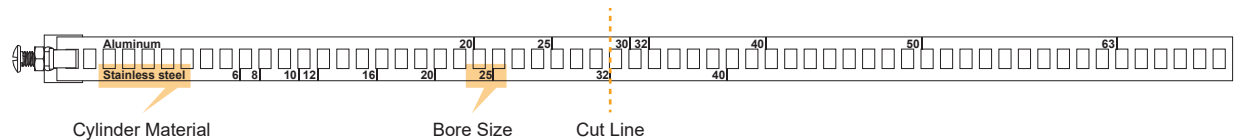
BKC-1

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

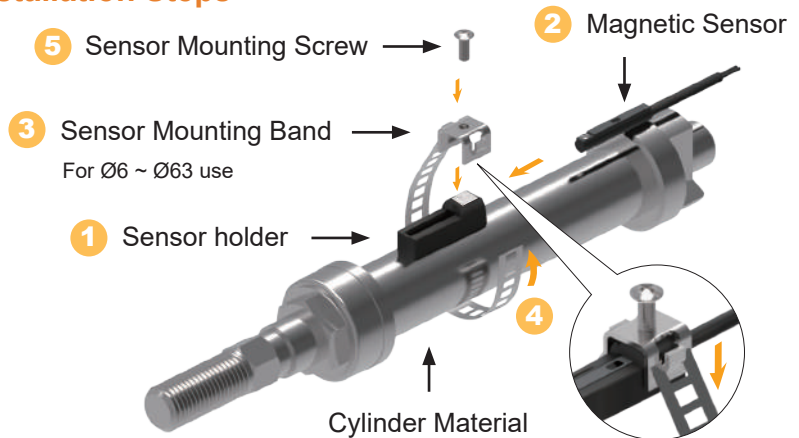
How to Mount

Example : Use with $\varnothing 32$ stainless body cylinder.

Refer to the clamp marking "Stainless steel 32", and cut off the excessive portion.



Installation Steps



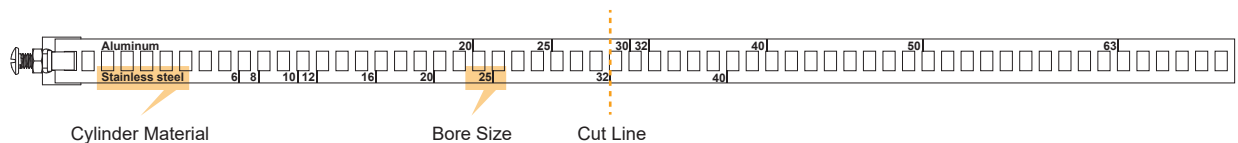
BKT-1

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

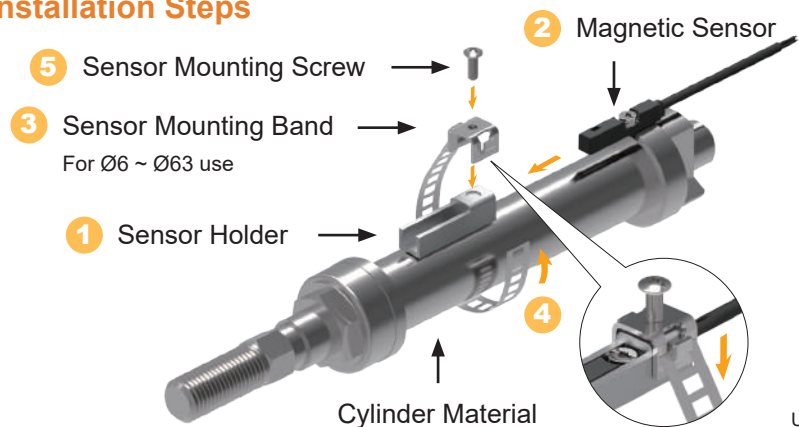
How to Mount

Example : Use with $\varnothing 32$ stainless body cylinder.

Refer to the clamp marking "Stainless steel 32", and cut off the excessive portion.



Installation Steps



Unit : mm

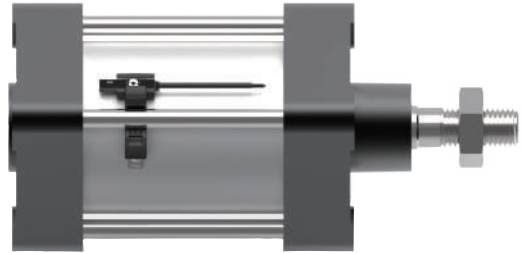
FST

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

Patented



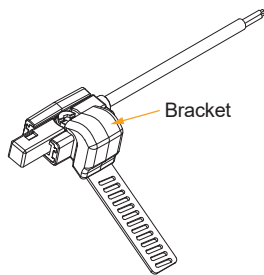
FST



How to mount

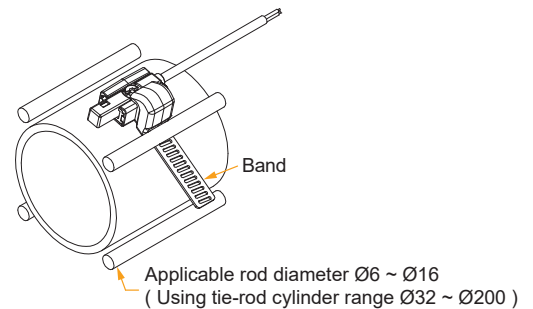
1 Step 1

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



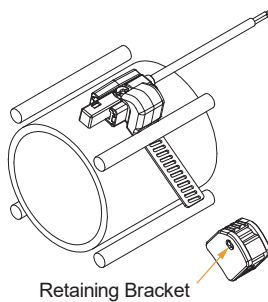
2 Step 2

Insert the band between cylinder tube and Tie-Rod.



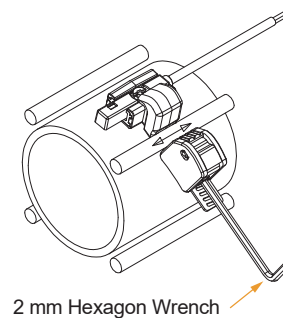
3 Step 3

Slide the retaining bracket onto the band.



4 Step 4

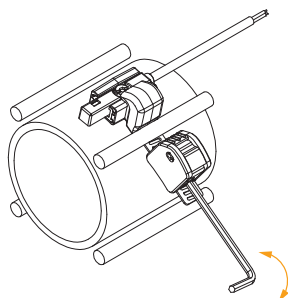
Adjust by moving bracket to most ideal sensing position and tighten screw. (Torque : 5 ~ 7 kgs).



How to dismantle

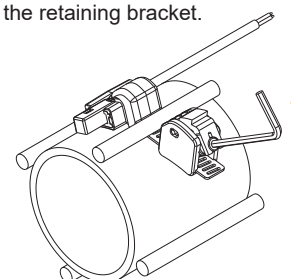
1 Step 1

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.

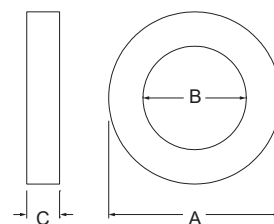


Anisotropic Rubber Magnet

MODEL	DIM.	A / $\begin{smallmatrix} +0.00 \\ -0.80 \end{smallmatrix}$	B / $\begin{smallmatrix} +0.80 \\ -0.00 \end{smallmatrix}$	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

MODEL	DIM.	A / $\begin{smallmatrix} +0.00 \\ -0.80 \end{smallmatrix}$	B / $\begin{smallmatrix} +0.80 \\ -0.00 \end{smallmatrix}$	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

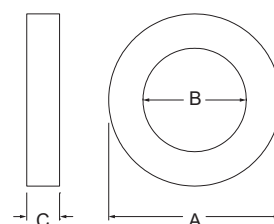
- Resistant power : 20 - 50 kgf / cm²
- Lengthen : 5 - 20 %
- Hardness (Shore D) : 30 - 50
- Specific gravity : 3.5 - 3.7 g / cm³
- Temperature range : -20 °C ~ +70 °C

Anisotropic Plastic Magnet

MODEL	DIM.	A / $\begin{smallmatrix} +0.00 \\ -0.30 \end{smallmatrix}$	B / $\begin{smallmatrix} +0.30 \\ -0.00 \end{smallmatrix}$	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

MODEL	DIM.	A / $\begin{smallmatrix} +0.00 \\ -0.30 \end{smallmatrix}$	B / $\begin{smallmatrix} +0.30 \\ -0.00 \end{smallmatrix}$	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 / cm²
- Lengthen : 6.7 %
- Hardness (Shore D) : 120
- Specific gravity : 3.2 g / cm³
- Temperature range : -20 °C ~ +100 °C

Unit : mm