

Magnetic Sensor

CS-05 series



CS-06 series



CS-07 series



CS-11 series



CS-15 series



CS-16 series



CS-18 series



CS-21 series



CS-30 series



CS-31 series



CS-33 series



CS-36 series



CS-37 series



CS-38 series



CS-40 series



CS-47 series



CS-48 series



CS-50 series



CS-53 series



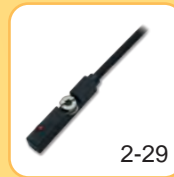
CS-58 series



CS-59 series



CS-65 series



CS-71 series



CS-75 series



CS-77 series



CS-6100 series



CS-6200 series



Bracket



Clamp



Magnet



CS-65-EX & CS-65-UL

Patented
2-30/31



CS-28

Magnetic Proximity Sensor

2-14



CS-1000D

Weld-field Immune Sensor

2-37



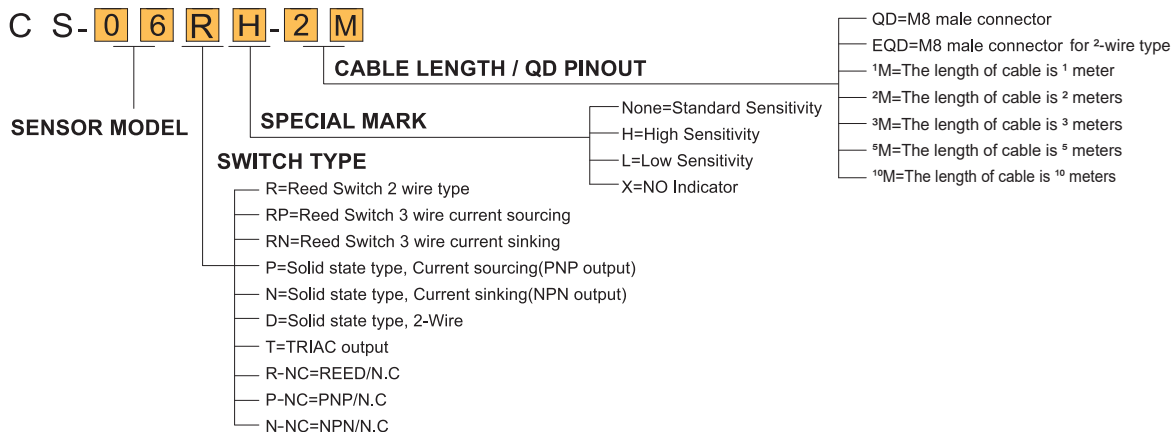
CS-1001D

Weld-field Immune Sensor

2-39



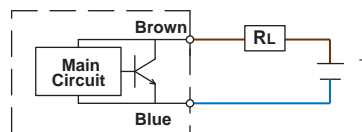
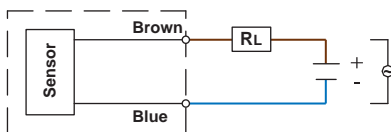
ORDERING INFORMATION



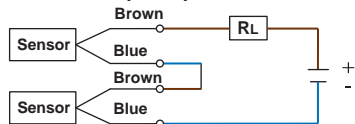
CONNECTION METHOD

2 wire sensor connection

▶ General connection

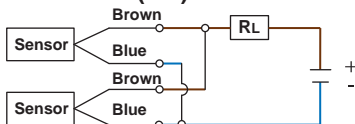


▶ Series Connection (AND)



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

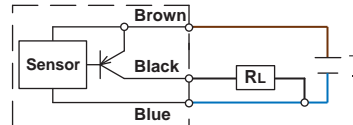
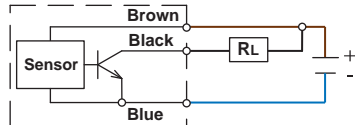
▶ Parallel Connection (OR)



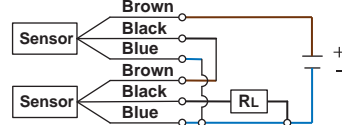
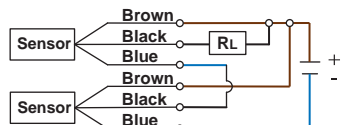
1. When connecting non-contact 2-wire sensors in parallel (OR), leakage current will increase and cause improper load operation.
2. When connecting 2-wire reed sensors in parallel(OR), possible concurrent operation will cause dim LED illumination due to lower current distribution.

3 wire NPN connection

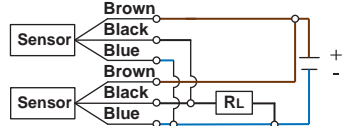
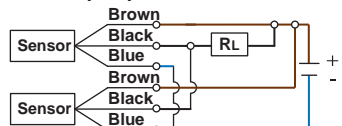
▶ General connection



▶ Series connection (AND)



▶ Parallel connection (OR)



3 wire PNP connection

Cylinder / Magnetic SW. Cross Index



Round cylinder 

 BK P. 2-43	 BKC-1 P. 2-43	 BK P. 2-43		 PN PH PAB P. 2-42	 PAB P. 2-42	 BKC-1 P. 2-45
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ISO profile cylinder 

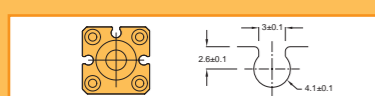
	 PF7 P. 2-41		 PF7 P. 2-41	 PI P. 2-39	 PI P. 2-39	 PF7 P. 2-41
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Tie-rod cylinder 

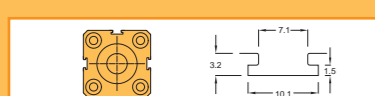
	 DT7 P. 2-41		 DT7 P. 2-41	 PM P. 2-39	 PM P. 2-39	 DT7 P. 2-41
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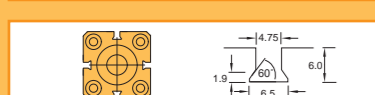
						
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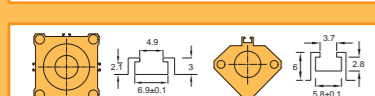
						
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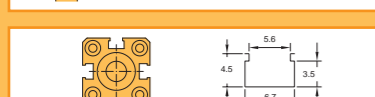
						
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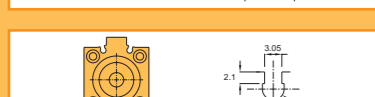
						
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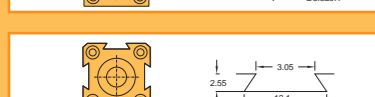
						
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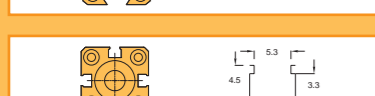
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		 BL-1 P. 2-44		 BS P. 2-43	 BL-1 P. 2-44				 BKT-1 P. 2-46		 BP P. 2-36 BKT-1 P. 2-46	 BL-1 P. 2-44			 BP P. 2-36 PMB P. 2-36
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 PF7 P. 2-41	 PF7 P. 2-41	 PF P. 2-40			 PF P. 2-40				 PF P. 2-40		 PF P. 2-40	 PF P. 2-40			
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 DT7 P. 2-41	 DT7 P. 2-41	 DT P. 2-40 FST P. 2-47			 DT P. 2-40 FST P. 2-47				 DT P. 2-40 FST P. 2-47		 DT P. 2-40 FST P. 2-47	 DT P. 2-40			
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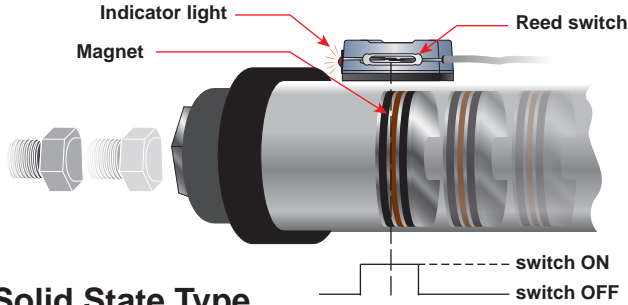
															
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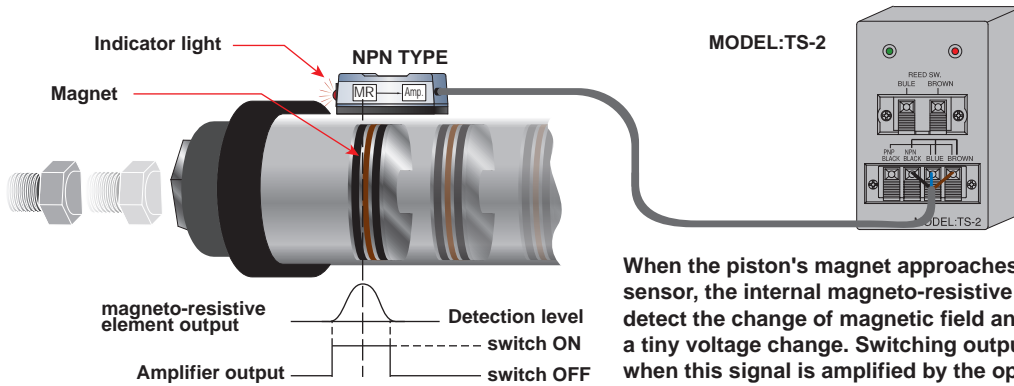
															
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Reed SW. Type



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

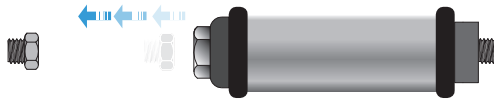


When the piston's magnet approaches the magnetic sensor, the internal magneto-resistive element can detect the change of magnetic field and cause a tiny voltage change. Switching output is achieved when this signal is amplified by the operation amplifier circuit in the magnetic sensor.

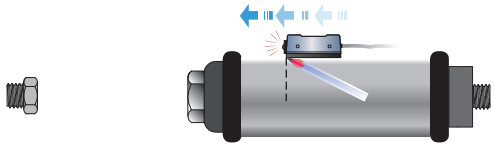
How to install the Magnetic sensor

▶ END OF STROKE DETECTION

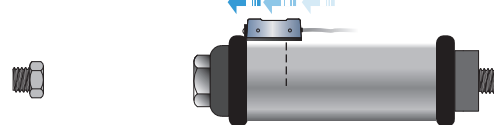
STEP 1 Set the piston to the end of stroke position.



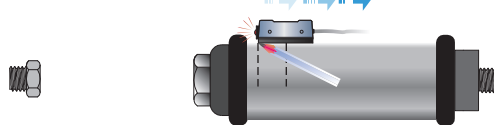
STEP 2 Slide the magnetic sensor forward and keep it close to the cylinder wall. Make a mark at the sensor turn-on point.



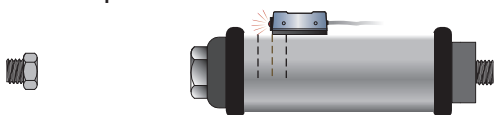
STEP 3 Slide the sensor forward continuously until the sensor turns off.



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.

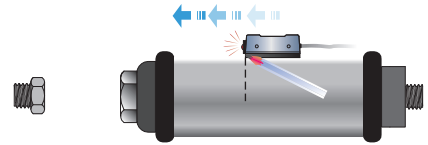


▶ INTERMEDIATE STROKE POSITION

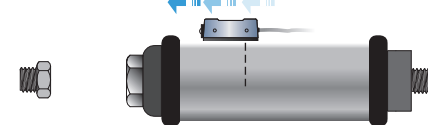
STEP 1 Set the piston to the required position.



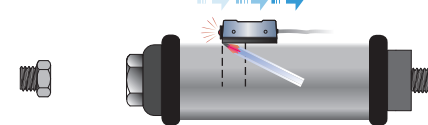
STEP 2 Slide the magnetic sensor forward and keep it close to the cylinder wall. Make a mark at the sensor turn-on point.



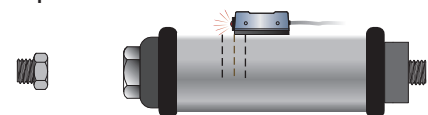
STEP 3 Slide the sensor forward continuously until the sensor turns off.



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.

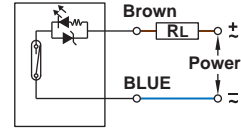


CAUTION

Magnetic Sensor

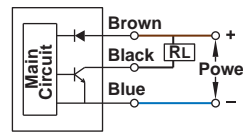
1. Do not exceed specification, permanent damage to the sensor may occur.

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

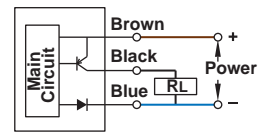


3. For solid-state type sensors, polarity must also be observed. Connect brown wire to the positive (+) and the blue to the negative (-) of DC power source. The black wire must connect to the load only. If the black wire is accidentally connected to the power source, permanent damage to the sensor may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

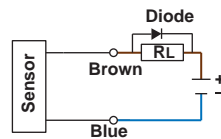
(NPN Output)



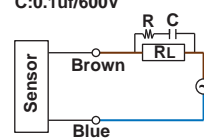
(PNP Output)



4. An external protection circuit may be required if the reed 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 below.

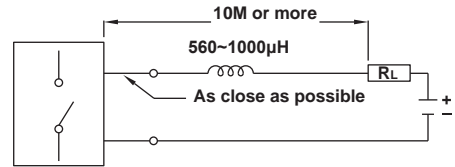


R: 2.7KΩ
C: 0.1μf/600V

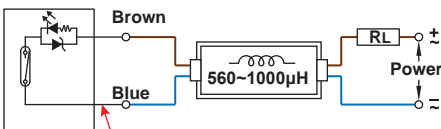


5. Keep sensors away from strong magnetic field to prevent malfunctions.

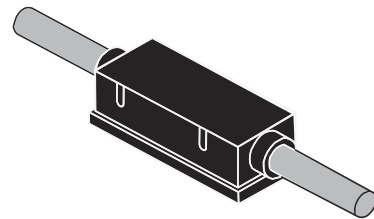
6. When using reed sensor with capacitive load or if the lead wire length exceed 10-meter, an inductor (560 ~ 1000 μH) or SR-1 (surge suppressor) must be installed in series with the sensor to prevent damage (Sticking effect).



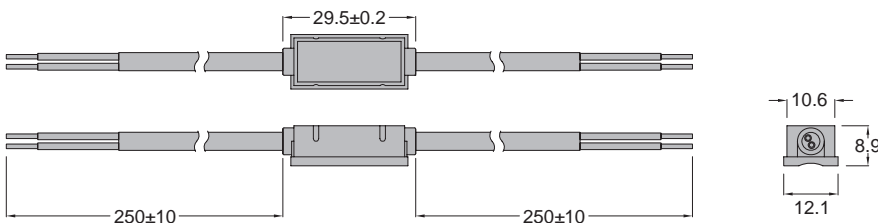
MODEL:SR-1 (Surge Suppressor)



Connection cable between sensor and SR-1 must be as close as possible.



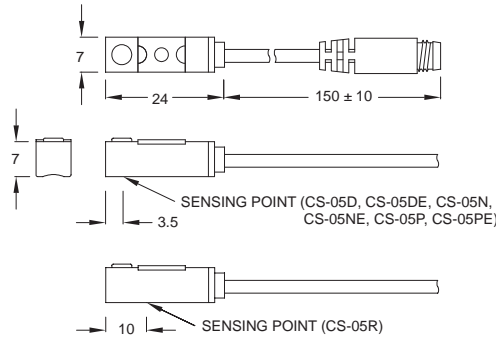
DIMENSION





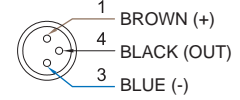
■ DIMENSIONS

CS-05R, CS-05D, CS-05DE, CS-05N, CS-05NE,
 CS-05P, CS-05PE /
 CS-05R-QD, CS-05D-QD, CS-05DE-QD,
 CS-05N-QD, CS-05NE-QD, CS-05P-QD, CS-05PE-QD

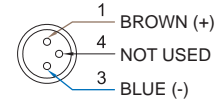


■ QD PINOUT

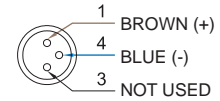
*3 wire QD wiring



*2 wire QD wiring



*2 wire EQD wiring



■ SPECIFICATIONS

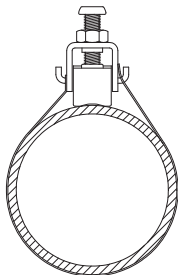
Unit:mm

TYPE	CS-05R	CS-05D	CS-05DE	CS-05N	CS-05NE	CS-05P	CS-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	
Operating Voltage	5~240V DC/AC		10~28V DC		5~30V DC		
Switching Current	100mA max.		50mA max.		200mA max.		
Contact Rating (*1)	10W max.		1.5W max.		6W max.		
Current Consumption	-			8mA @ 24V DC max.		6mA @ 24V DC max.	
Voltage Drop	3.5V max.		3.7V max.		1V @ 200mA max.		0.5V @ 200mA max.
Leakage Current	-		0.8mA max.		0.1mA(40uA) max.		0.01mA max.
Indicator	Red LED				Green LED		
Cable	ø2.8, 2C, PVC			ø2.8, 3C, PVC			
Operating Frequency	200Hz		1000Hz max.				
Magnet Requirement (*2)	55Gauss	80Gauss	40~1000Gauss	80Gauss	40~1000Gauss	80Gauss	40~1000Gauss
Temperature Range	-10~70°C (+14~158°F)						
Shock (*3)	30G			50G			
Vibration (*4)	9G						
Enclosure Classification	IEC 60529 IP67 (NEMA 6)						
Protection Circuit (*5)	1	2,4	3,4	2,3,4	3,4	2,3,4	3,4

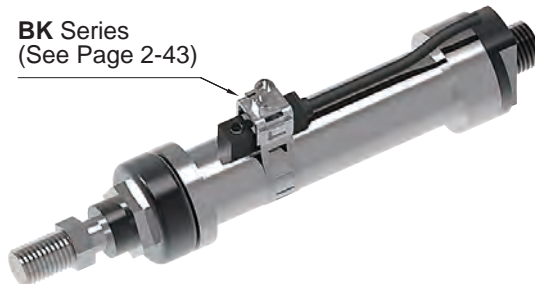
NOTE:

1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent damage to sensor will occur.
2. Measuring standard target: ø15.5Xø8X5t (Anisotropy rubber magnet)
3. Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
4. Double amplitude 1.5 mm / 10Hz~55Hz~10Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
5. 1=None / 2=Short-circuit / 3=Power Source Reverse polarity / 4=Surge Suppression

■ MOUNTING CLAMPS



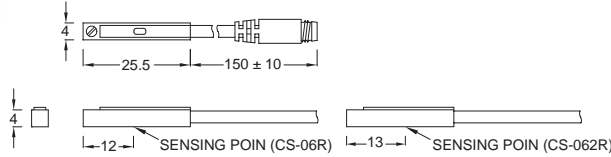
BK Series
 (See Page 2-43)



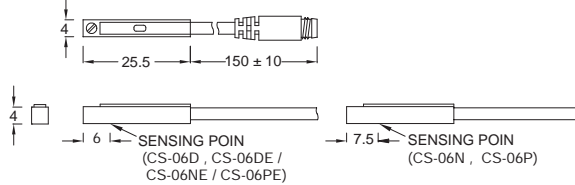


■ DIMENSIONS

CS-06R, CS-062R / CS-06R-QD, CS-062R-QD



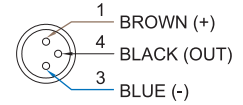
CS-06D, CS-06DE, CS-06N, CS-06NE, CS-06P, CS-06PE /
CS-06D-QD, CS-06DE-QD, CS-06N-QD, CS-06NE-QD, CS-06P-QD,
CS-06PE-QD



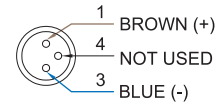
Unit:mm

■ QD PINOUT

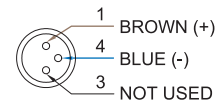
*3 wire QD wiring



*2 wire QD wiring



*2 wire EQD wiring



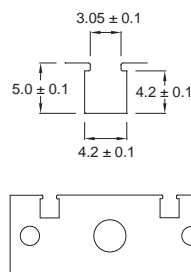
■ SPECIFICATIONS

TYPE	CS-06R	CS-062R	CS-06D	CS-06DE	CS-06N	CS-06NE	CS-06P	CS-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	5~120V DC/AC	5~240V DC/AC	10~28V DC		5~30V DC			
Switching Current	100mA max.		4~40mA max.	50mA max.	200mA max.			
Contact Rating (*1)	10W max.		1.1W max.	1.5W max.	6W max.			
Current Consumption	-				8mA @ 24V DC max.	6mA @ 24V DC max.	8mA @ 24V DC max.	6mA @ 24V DC max.
Voltage Drop	3.5V max.			3.7V max.	1V @ 200mA max.	0.5V @ 200mA max.	1V @ 200mA max.	0.5V @ 200mA max.
Leakage Current	-		1mA max.	0.1mA(40uA) max.	0.01mA max.			
Indicator	Red LED	Green LED	Red LED				Green LED	
Cable	ø2.8, 2C, PUR				ø2.8, 3C, PUR			
Operating Frequency	200Hz		1000Hz max.					
Magnet Requirement (*2)	70Gauss		40Gauss	40~1000Gauss	40Gauss	40~1000Gauss	40Gauss	40~1000Gauss
Temperature Range	-10~70°C (+14~158°F)							
Shock (*3)	30G		50G					
Vibration (*4)	9G							
Enclosure Classification	IEC 60529 IP67 (NEMA 6)							
Protection Circuit (*5)	1		4	3,4	2,3,4	3,4	2,3,4	3,4

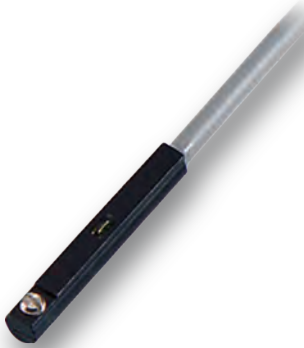
NOTE:

1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent damage to sensor will occur.
2. Measuring standard target: ø15.5Xø8X5t (Anisotropy rubber magnet)
3. Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
4. Double amplitude 1.5 mm / 10Hz~55Hz~10Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
5. 1=None / 2=Short-circuit / 3=Power Source Reverse polarity / 4=Surge Suppression

■ GROOVE DIMENSIONS

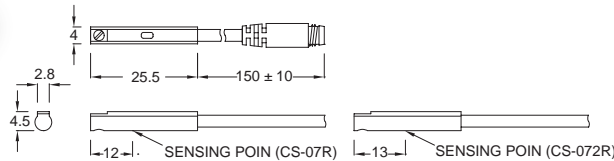


Unit:mm

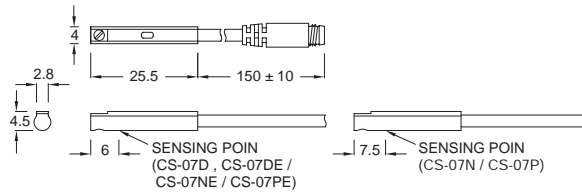


■ DIMENSIONS

CS-07R, CS-072R / CS-07R-QD, CS-072R-QD



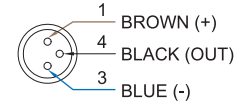
CS-07D, CS-07DE, CS-07N, CS-07NE, CS-07P, CS-07PE /
CS-07D-QD, CS-07DE-QD, CS-07N-QD, CS-07NE-QD, CS-07P-QD,
CS-07PE-QD



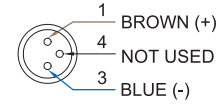
Unit:mm

■ QD PINOUT

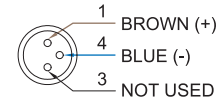
*3 wire QD wiring



*2 wire QD wiring



*2 wire EQD wiring



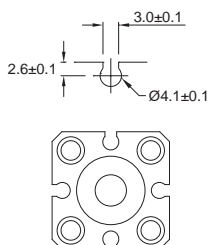
■ SPECIFICATIONS

TYPE	CS-07R	CS-072R	CS-07D	CS-07DE	CS-07N	CS-07NE	CS-07P	KT-07PE
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	5~120V DC/AC	5~240V DC/AC	10~28V DC		5~30V DC			
Switching Current	100mA max.		4~40mA max.	50mA max.	200mA max.			
Contact Rating (*1)	10W max.		1.1W max.	1.5W max.	6W max.			
Current Consumption	-				8mA @ 24V DC max.	6mA @ 24V DC max.	8mA @ 24V DC max.	6mA @ 24V DC max.
Voltage Drop	3.5V max.			3.7V max.	1V @ 200mA max.	0.5V @ 200mA max.	1V @ 200mA max.	0.5V @ 200mA max.
Leakage Current	-		1mA max.	0.1mA(40uA) max.	0.01mA max.			
Indicator	Red LED	Green LED	Red LED				Green LED	
Cable	ø2.8, 2C, PUR				ø2.8, 3C, PUR			
Operating Frequency	200Hz		1000Hz max.					
Magnet Requirement (*2)	70Gauss		40Gauss	40~1000Gauss	40Gauss	40~1000Gauss	40Gauss	40~1000Gauss
Temperature Range	-10~70°C (+14~158°F)							
Shock (*3)	30G		50G					
Vibration (*4)	9G							
Enclosure Classification	IEC 60529 IP67 (NEMA 6)							
Protection Circuit (*5)	1		4	3,4	2,3,4	3,4	2,3,4	3,4

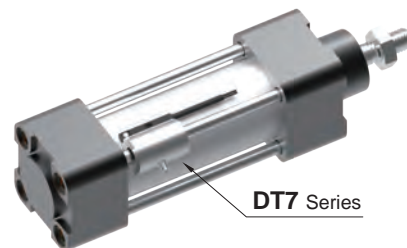
NOTE:

1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent damage to sensor will occur.
2. Measuring standard target: ø15.5Xø8X5t (Anisotropy rubber magnet)
3. Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
4. Double amplitude 1.5 mm / 10Hz~55Hz~10Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
5. 1=None / 2=Short-circuit / 3=Power Source Reverse polarity / 4=Surge Suppression

■ GROOVE DIMENSIONS



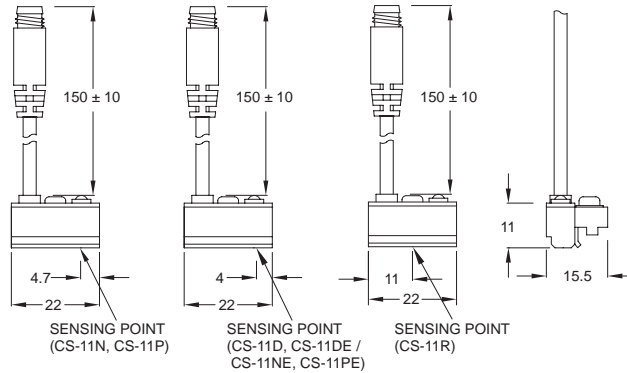
■ BRACKET



Unit:mm

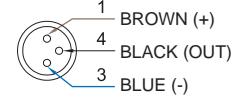
■ DIMENSIONS

CS-11R, CS-11D, CS-11DE, CS-11N, CS-11NE, CS-11P, CS-11PE /
CS-11R-QD, CS-11D-QD, CS-11DE-QD, CS-11N-QD, CS-11NE-QD,
CS-11P-QD, CS-11PE-QD

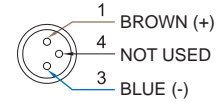


■ QD PINOUT

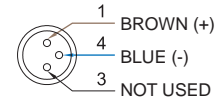
*3 wire QD wiring



*2 wire QD wiring



*2 wire EQD wiring



Unit:mm

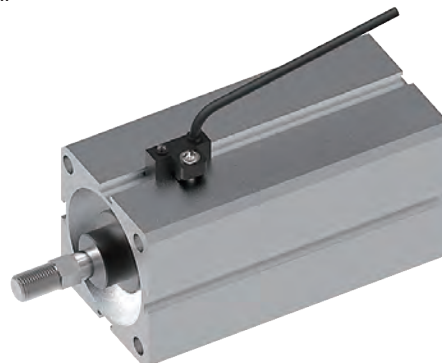
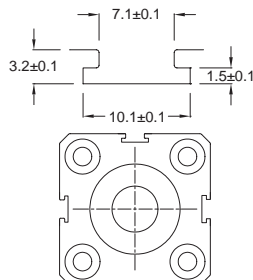
■ SPECIFICATIONS

TYPE	CS-11R	CS-11D	CS-11DE	CS-11N	CS-11NE	CS-11P	CS-11PE
CONNECT DIAGRAM							
CHARACTERISTICS							
Wiring Method	2-Wire type			3-Wire type			
Switching Logic	SPST, Normally Open			Solid State Output, Normally Open			
Sensor Type	Reed Switch			-		NPN Current Sinking / PNP Current Sourcing	
Operating Voltage	5~240V DC/AC	10~28V DC		5~30V DC			
Switching Current	100mA max.	4~40mA max.	50mA max.	200mA max.			
Contact Rating (*1)	10W max.	1.1W max.	1.5W max.	6W max.			
Current Consumption	-			22mA @ 24V DC max.	6mA @ 24V DC max.	20mA @ 24V DC max.	6mA @ 24V DC max.
Voltage Drop	3.5V max.		3.7V max.	0.5V max.			
Leakage Current	-	1mA max.	0.1mA(40uA) max.	0.01mA max.			
Indicator	Red LED	Green LED		Red LED		Green LED	
Cable	ø3.3, 2C, PVC			ø3.3, 3C, PVC			
Operating Frequency	200Hz	1000Hz max.					
Magnet Requirement (*2)	70Gauss	60Gauss	40~1000Gauss	60Gauss	40~1000Gauss	60Gauss	40~1000Gauss
Temperature Range	-10~70°C (+14~158°F)						
Shock (*3)	30G		50G				
Vibration (*4)	9G						
Enclosure Classification	IEC 60529 IP67 (NEMA 6)						
Protection Circuit (*5)	1	4					3,4

NOTE:

1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent damage to sensor will occur.
2. Measuring standard target: ø15.5xø8X5t (Anisotropy rubber magnet)
3. Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
4. Double amplitude 1.5 mm / 10Hz~55Hz~10Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
5. 1=None / 2=Short-circuit / 3=Power Source Reverse polarity / 4=Surge Suppression

■ GROOVE DIMENSIONS

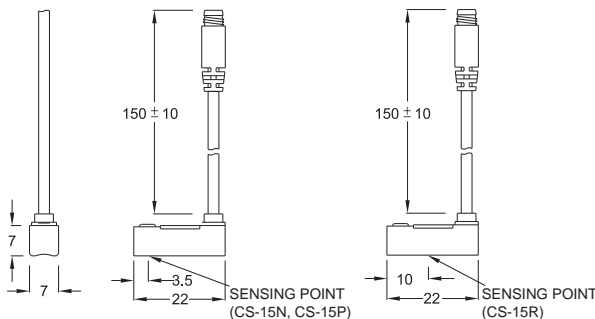


Unit:mm

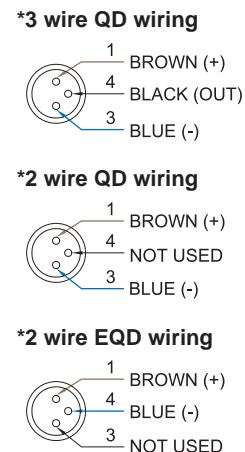


■ DIMENSIONS

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



■ QD PINOUT



■ SPECIFICATIONS

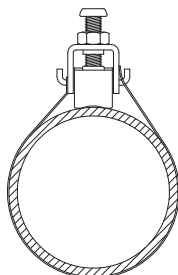
Unit:mm

TYPE	CS-15R	CS-15N	CS-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	5~240V DC/AC	5~30V DC	
Switching Current	100mA max.	200mA max.	
Contact Rating (*1)	10W max.	6W max.	
Current Consumption	-	20mA @ 24V DC max.	
Voltage Drop	3.5V max.	0.5 V max.	
Leakage Current	-	0.01 mA max.	
Indicator	Red LED		Green LED
Cable	ø2.8, 2C, PVC	ø2.8, 3C, PVC	
Operating Frequency	200 Hz	1000 Hz	
Magnet Requirement (*2)	50Gauss	40Gauss	
Temperature Range	-10~70°C (+14~158°F)		
Shock (*3)	30G	50G	
Vibration (*4)	9G		
Enclosure Classification	IEC 60529 IP67 (NEMA 6)		
Protection Circuit (*5)	1	3,4	

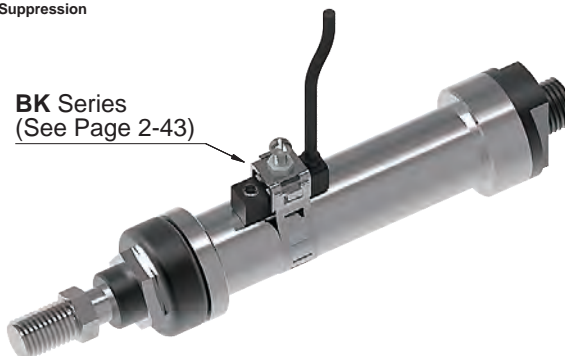
NOTE:

1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent damage to sensor will occur.
2. Measuring standard target: ø15.5xø8X5t (Anisotropy rubber magnet)
3. Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
4. Double amplitude 1.5 mm / 10Hz~55Hz~10Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
5. 1=None / 2=Short-circuit / 3=Power Source Reverse polarity / 4=Surge Suppression

■ MOUNTING CLAMPS



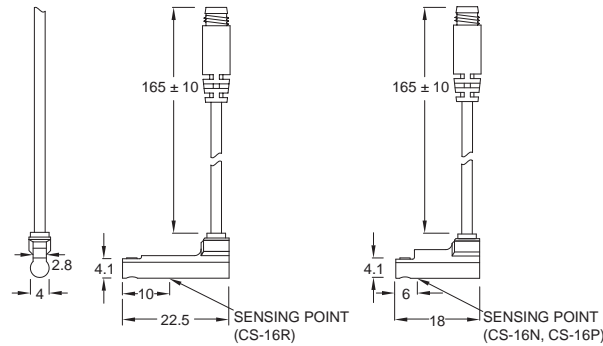
BK Series
 (See Page 2-43)



Unit:mm

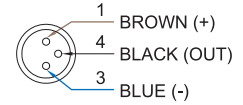
■ DIMENSIONS

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

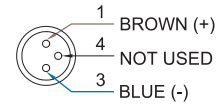


■ QD PINOUT

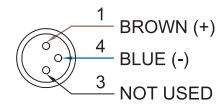
*3 wire QD wiring



*2 wire QD wiring



*2 wire EQD wiring



■ SPECIFICATIONS

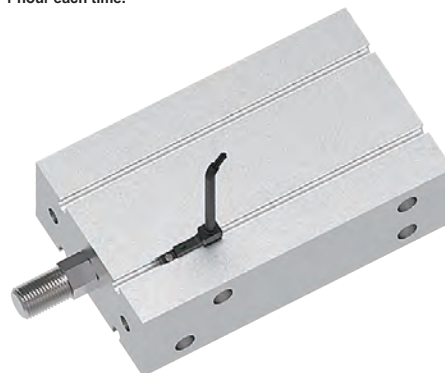
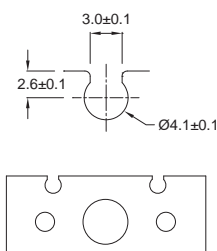
Unit:mm

TYPE	CS-16R	CS-16N	CS-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	5~120V DC/AC	5~30V DC	
Switching Current	100mA. max.	50mA max.	
Contact Rating (*1)	6W max.	1.5W max.	
Current Consumption	-	7mA @ 24V DC max.	9mA @ 24V DC max.
Voltage Drop	3.5 V max.	1.5V @ 50mA max.	
Leakage Current	-	0.01 mA max.	
Indicator	Red LED		Green LED
Cable	ø2.8, 2C, PUR	ø2.8, 3C, PUR	
Operating Frequency	200 Hz	1000 Hz	
Magnet Requirement (*2)	70 Gauss	40 Gauss	
Temperature Range	-10~70°C (+14~158°F)		
Shock (*3)	30G	50G	
Vibration (*4)	9G		
Enclosure Classification	IEC 60529 IP67 (NEMA 6)		
Protection Circuit (*5)	1	3,4	

NOTE:

1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent damage to sensor will occur.
2. Measuring standard target: ø15.5xø8X5t (Anisotropy rubber magnet)
3. Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
4. Double amplitude 1.5 mm / 10Hz~55Hz~10Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
5. 1=None / 2=Short-circuit / 3=Power Source Reverse polarity / 4=Surge Suppression

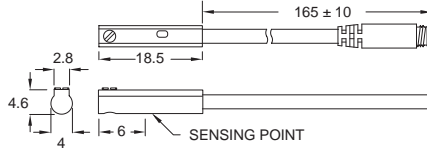
■ GROOVE DIMENSIONS



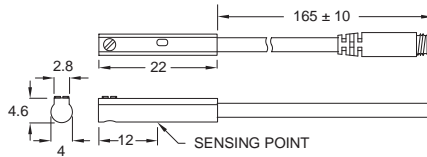
Unit:mm

■ DIMENSION

CS-18N, CS-18P, CS-18N-NC, CS-18P-NC
 / CS-18N-QD, CS-18P-QD, CS-18N-NC-QD, CS-18P-NC-QD

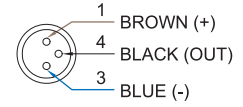


CS-18R, CS-18RH / CS-18R-QD, CS-18RH-QD

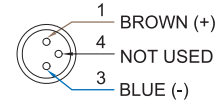


■ QD PINOUT

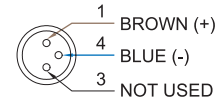
*3 wire QD wiring



*2 wire QD wiring



*2 wire EQD wiring



■ SPECIFICATIONS

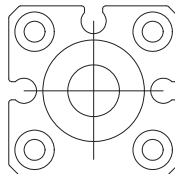
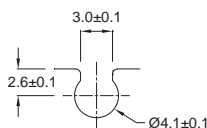
Unit:mm

TYPE	CS-18RH	CS-18R	CS-18N	CS-18N-NC	CS-18P	CS-18P-NC
CONNECT DIAGRAM						
CHARACTERISTICS						
Wiring Method	2-Wire Type		3-Wire Type			
Switching Logic	SPST, Normally Open		Solid State Output, Normally Open	Solid State Output, Normally Close	Solid State Output, Normally Open	Solid State Output, Normally Close
Sensor Type	Reed Switch		NPN Current Sinking		PNP Current Sourcing	
Operating Voltage	5-120V DC/AC		5-28V DC			
Switching Current	50mA max.		100mA max.			
Contact Rating (*1)	6W max.		3W max.			
Current Consumption	-		10mA @ 24V DC max.			
Voltage Drop	3.0 V max.		0.5 V @ 50mA max.			
Leakage Current	-		0.05 mA max.			
Indicator	Red LED				Green LED	
Cable	ø2.8, 2C, PUR		ø2.8, 3C, PUR			
Operating Frequency	200 Hz		1000 Hz			
Magnet Requirement (*2)	40Gauss Parallel	60Gauss Parallel	30Gauss Parallel			
Temperature Range	-10~70°C (+14~158°F)					
Shock (*3)	30G				50G	
Vibration (*4)	9G					
Enclosure Classification	IEC 60529 IP67 (NEMA 6)					
Protection Circuit (*5)	1		3,4			
Set Screw Max. Torque	1.77 in-lbs (0.2 N-m)					

NOTE:

1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent damage to sensor will occur.
2. Measuring standard target: ø15.5Xø8X5t (Anisotropy rubber magnet)
3. Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
4. Double amplitude 1.5 mm / 10Hz-55Hz-10Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
5. 1=None / 2=Short-circuit / 3=Power Source Reverse polarity / 4=Surge Suppression

■ GROOVE DIMENSIONS

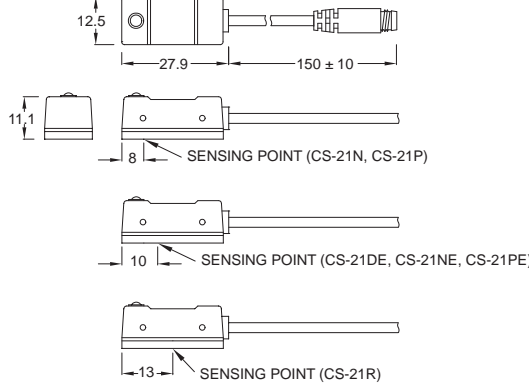


Unit:mm



■ DIMENSIONS

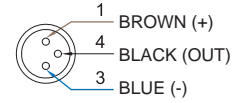
CS-21R, CS-21DE, CS-21N, CS-21NE, CS-21P, CS-21PE / CS-21R-QD, CS-21DE-QD, CS-21N-QD, CS-21NE-QD, CS-21P-QD, CS-21PE-QD



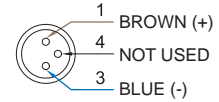
Unit:mm

■ QD PINOUT

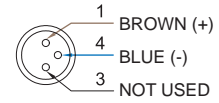
*3 wire QD wiring



*2 wire QD wiring



*2 wire EQD wiring



■ SPECIFICATIONS

TYPE	CS-21R	CS-21DE	CS-21N	CS-21NE	CS-21P	CS-21PE
CONNECT DIAGRAM						
CHARACTERISTICS						
Wiring Method	2-Wire type		3-Wire type			
Switching Logic	SPST, Normally Open		Solid State Output, Normally Open			
Sensor Type	Reed Switch	-	NPN Current Sinking		PNP Current Sourcing	
Operating Voltage	5-240V DC/AC		5-30V DC			
Switching Current	100mA max.	50mA max.	200mA max.			
Contact Rating (*1)	10W max.	1.5W max.	6W max.			
Current Consumption	-		15mA @ 24V DC max.	6mA @ 24V DC max.	15mA @ 24V DC max.	6mA @ 24V DC max.
Voltage Drop	3.5V max.	3.7V max.	1.5V max.	0.5V max.	1.5V max.	0.5V max.
Leakage Current	-	0.1mA(40uA) max.	0.01mA max.			
Indicator	Green LED	Red LED		Green LED		
Cable	ø4, 2C, PVC		ø4, 3C, PVC			
Operating Frequency	200Hz	1000Hz max.				
Magnet Requirement (*2)	80Gauss	40-1000Gauss	70Gauss	40-1000Gauss	70Gauss	40-1000Gauss
Temperature Range	-10~70°C (+14~158°F)					
Shock (*3)	30G	50G				
Vibration (*4)	9G					
Enclosure Classification	IEC 60529 IP67 (NEMA 6)					
Protection Circuit (*5)	1	3,4	2,3,4	3,4	2,3,4	3,4

- NOTE:
1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent damage to sensor will occur.
 2. Measuring standard target: ø15.5Xø8X5t (Anisotropy rubber magnet)
 3. Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
 4. Double amplitude 1.5 mm / 10Hz-55Hz-10Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
 5. 1=None / 2=Short-circuit / 3=Power Source Reverse polarity / 4=Surge Suppression

■ CLAMPS / BRACKET

CS-21 series can be applied to many kind of cylinders

PAB Series
(See Page 2-42)



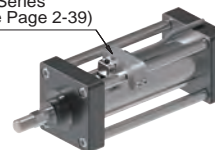
PN Series
(See Page 2-42)



PH Series
(See Page 2-42)



PM Series
(See Page 2-39)



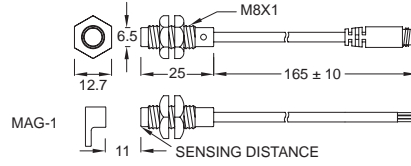
PI Series
(See Page 2-39)



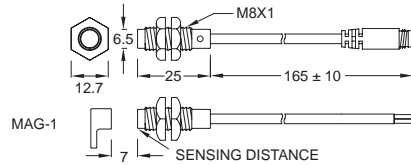


■ DIMENSION

CS-28N, CS-28P, CS-28N-NC
CS-28N-QD, CS-28P-QD, CS-28N-NC-QD



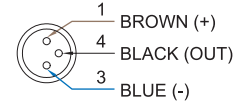
CS-28R / CS-28R-QD



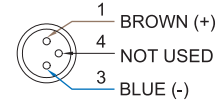
Unit:mm

■ QD PINOUT

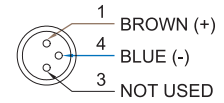
*3 wire QD wiring



*2 wire QD wiring



*2 wire EQD wiring



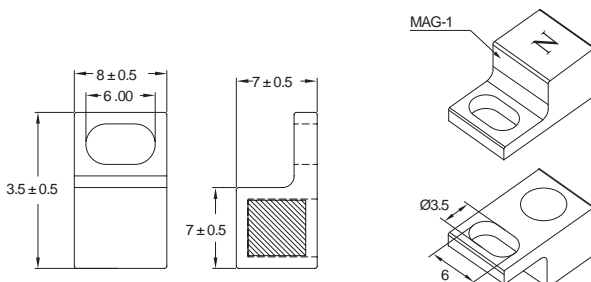
■ SPECIFICATION

TYPE	CS-28R	CS-28N	CS-28N-NC	CS-28P
CONNECT DIAGRAM				
CHARACTERISTICS				
Wiring Method	2-Wire Type		3-Wire Type	
Switching Logic	SPST, Normally Open	Solid State Output, Normally Open	Normally Close	Solid State Output, Normally Open
Sensor Type	Reed Switch	NPN Current Sinking		PNP Current Sourcing
Operating Voltage	5~120V DC/AC	5~30V DC		
Switching Current	40mA max.	100mA max.		
Contact Rating (*1)	5W max.	6W max.		
Current Consumption	-	18mA @ 24V DC max.		
Voltage Drop	2.5 V max.	0.5 V max.		
Leakage Current	-	0.01 mA max.		
Indicator	Red LED		Green LED	
Cable	ø3.3, 2C, PVC	ø3.3, 3C, PVC		
Operating Frequency	200 Hz	1000 Hz		
Sensing Distance (*2)	7 mm max.	11 mm max.		
Temperature Range	-10~70°C (+14~158°F)			
Shock (*3)	30G	50G		
Vibration (*4)	9G			
Enclosure Classification	IEC 60529 IP67 (NEMA 6)			
Protection Circuit (*5)	1	3,4		

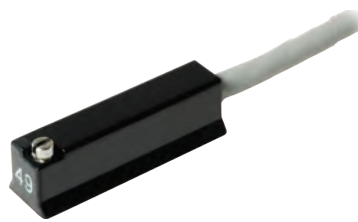
NOTE:

1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent damage to sensor will occur.
2. Measuring standard target: ø15.5Xø8X5t (Anisotropy rubber magnet)
3. Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
4. Double amplitude 1.5 mm / 10Hz~55Hz~10Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
5. 1=None / 2=Short-circuit / 3=Power Source Reverse polarity / 4=Surge Suppression

■ NdFeB MAGNET

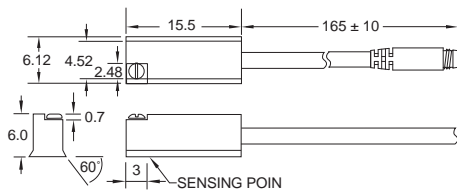


Unit:mm

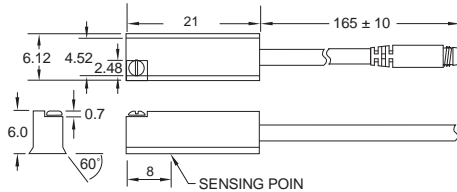


■ DIMENSION

CS-30N, CS-30P / CS-30N-QD, CS-30P-QD



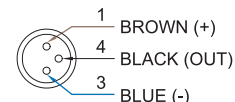
CS-30R / CS-30R-QD



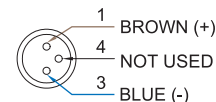
Unit:mm

■ QD PINOUT

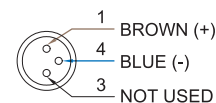
*3 wire QD wiring



*2 wire QD wiring



*2 wire EQD wiring



■ SPECIFICATION

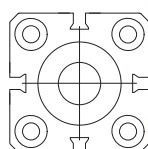
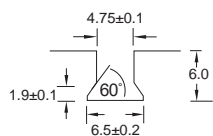
TYPE	CS-30R	CS-30N	CS-30P
CONNECT DIAGRAM			
CHARACTERISTICS			
Wiring Method	2-Wire Type	3-Wire Type	
Switching Logic	SPST, Normally Open	Solid State Output, Normally Open	
Sensor Type	Reed Switch	NPN Current Sinking	PNP Current Sourcing
Operating Voltage	5~120V DC/AC	5~30V DC	
Switching Current	50mA max.	200mA max.	
Contact Rating (*1)	6W max.	6W max.	
Current Consumption	-	17mA @ 24V DC max.	
Voltage Drop	2.5 V max.	0.5 V @ 25mA max.	
Leakage Current	-	0.01 mA max.	
Indicator	Red LED		
Cable	ø2.8, 2C, PUR	ø2.8, 3C, PUR	ø3, 3C, PUR
Operating Frequency	200 Hz	1000 Hz	
Magnet Requirement (*2)	40 Gauss Parallel		
Temperature Range	-10~70°C (+14~158°F)		
Shock (*3)	30G	50G	
Vibration (*4)	9G		
Enclosure Classification	IEC 60529 IP67 (NEMA 6)		
Protection Circuit (*5)	1	3,4	
Set Screw Max. Torque	1.77 in-lbs (0.2 N-m)		

NOTE:

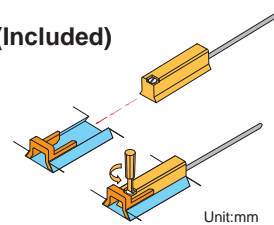
1. **WARNING:** Never exceed rating (Watt=Voltage x Amperage). Permanent damage to sensor will occur.
2. Measuring standard target: ø15.5Xø8X5t (Anisotropy rubber magnet)
3. Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
4. Double amplitude 1.5 mm / 10Hz~55Hz~10Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
5. 1=None / 2=Short-circuit / 3=Power Source Reverse polarity / 4=Surge Suppression

■ GROOVE DIMENSIONS

1/4" dovetail



3/8" dovetail adaptor(Included)

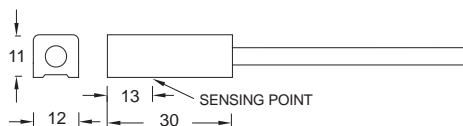


Unit:mm

**HIGH TEMP. RESISTANT
MAX 140°C**

■ DIMENSIONS

■ M8 Connector option is not available



■ SPECIFICATIONS

Unit:mm

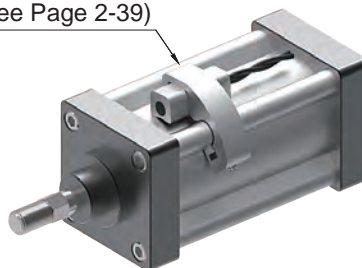
TYPE	CS-31R
CONNECT DIAGRAM	
CHARACTERISTICS	
Wiring Method	2-Wire Type
Switching Logic	SPST, Normally Open
Sensor Type	Reed Switch
Operating Voltage	5-240V DC/AC
Switching Current	500mA max.
Contact Rating (*1)	10W max.
Current Consumption	-
Voltage Drop	0.5V max.
Leakage Current	-
Indicator	-
Cable	ø3, 2C, Teflon
Operating Frequency	200Hz
Magnet Requirement (*2)	40Gauss
Temperature Range	-10~140°C (+14~284°F)
Shock (*3)	30G
Vibration (*4)	9G
Enclosure Classification	IEC 60529 IP67 (NEMA 6)
Protection Circuit (*5)	1

NOTE:

1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent damage to sensor will occur.
2. Measuring standard target: ø15.5Xø8X5t (Anisotropy rubber magnet)
3. Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
4. Double amplitude 1.5 mm / 10Hz-55Hz-10Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
5. 1=None / 2=Short-circuit / 3=Power Source Reverse polarity / 4=Surge Suppression

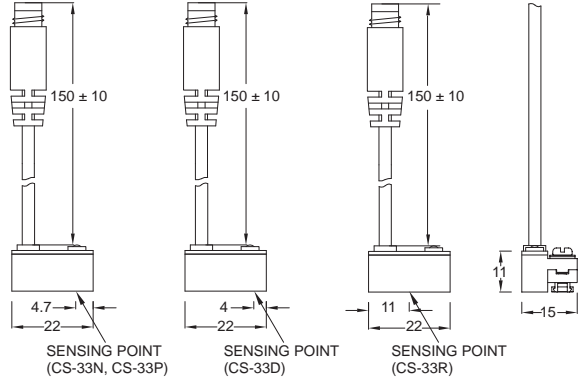
■ BRACKET

PI Series
(See Page 2-39)



■ DIMENSIONS

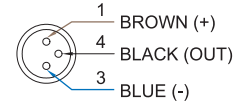
CS-33R, CS-33D, CS-33N, CS-33P /
CS-33R-QD, CS-33D-QD, CS-33N-QD, CS-33P-QD



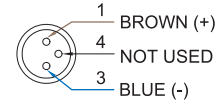
Unit:mm

■ QD PINOUT

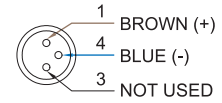
*3 wire QD wiring



*2 wire QD wiring



*2 wire EQD wiring

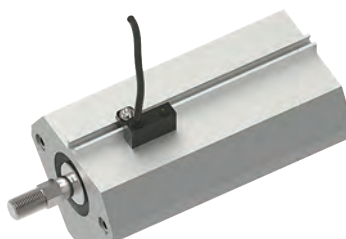
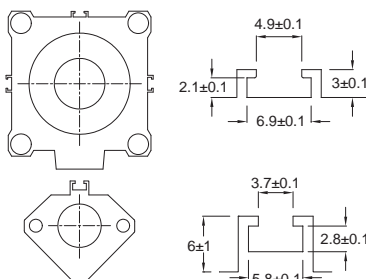


TYPE	CS-33R	CS-33D	CS-33N	CS-33P
CONNECT DIAGRAM				
CHARACTERISTICS				
Wiring Method	2-Wire Type		3-Wire Type	
Switching Logic	SPST, Normally Open		Solid State Output, Normally Open	
Sensor Type	Reed Switch	-	NPN Current Sinking	PNP Current Sourcing
Operating Voltage	5~240V DC/AC	10~28V DC	5~30V DC	
Switching Current	100mA max.	4~40mA max.	200mA max.	
Contact Rating (*1)	10W max.	1.5W max.	6W max.	
Current Consumption	-		22mA @ 24V DC max.	20mA @ 24V DC max.
Voltage Drop	3.5V max.		0.5V max.	
Leakage Current	-	1mA max.	0.01mA max.	
Indicator	Red LED	Green LED	Red LED	Green LED
Cable	ø3.3, 2C, PVC		ø3.3, 3C, PVC	
Operating Frequency	200Hz		1000Hz	
Magnet Requirement (*2)	80Gauss		70Gauss	
Temperature Range	-10~70°C (+14~158°F)			
Shock (*3)	30G		50G	
Vibration (*4)	9G			
Enclosure Classification	IEC 60529 IP67 (NEMA 6)			
Protection Circuit (*5)	1	4	3,4	

NOTE:

1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent damage to sensor will occur.
2. Measuring standard target: ø15.5Xø8X5t (Anisotropy rubber magnet)
3. Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
4. Double amplitude 1.5 mm / 10Hz~55Hz~10Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
5. 1=None / 2=Short-circuit / 3=Power Source Reverse polarity / 4=Surge Suppression

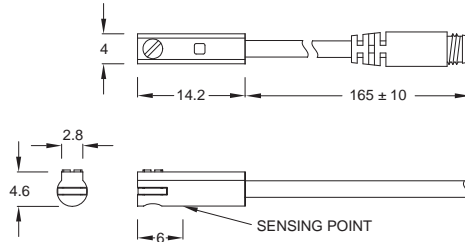
■ GROOVE DIMENSIONS



Unit:mm

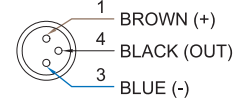
■ DIMENSIONS

CS-36D, CS-36DE, CS-36N, CS-36NE, CS-36P, CS-36PE, /
 CS-36D-QD, CS-36DE-QD, CS-36N-QD, CS-36NE-QD,
 CS-36P-QD, CS-36PE-QD

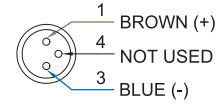


■ QD PINOUT

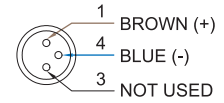
*3 wire QD wiring



*2 wire QD wiring



*2 wire EQD wiring



■ SPECIFICATIONS

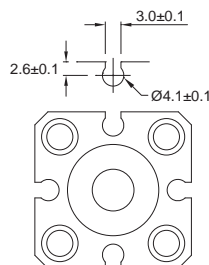
Unit:mm

TYPE	CS-36D	CS-36DE	CS-36N	CS-36NE	CS-36P	CS-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	10~28V DC	5~30V DC	4.5~28V DC	5~30V DC	4.5~28V DC	5~30V DC
Switching Current	4~20mA max.		50mA max.			
Contact Rating (*1)	0.6W max.		1.5W max.			
Current Consumption	-		10mA @ 24V DC max.			
Voltage Drop	3.5V max.		0.5V @ 50mA max.			
Leakage Current	0.8mA max.	0.1mA(40uA) max.	0.01mA max.			
Indicator	Red LED					
Cable	ø2.8, 2C, PU		ø2.8, 3C, PU			
Operating Frequency	1000Hz max.					
Magnet Requirement (*2)	40Gauss	40~1000Gauss	40Gauss	40~1000Gauss	40Gauss	40~1000Gauss
Temperature Range	-10~70°C (+14~158°F)					
Shock (*3)	50G					
Vibration (*4)	9G					
Enclosure Classification	IEC 60529 IP67 (NEMA 6)					
Protection Circuit (*5)	4		3,4			

NOTE:

1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent damage to sensor will occur.
2. Measuring standard target: ø15.5Xø8X5t (Anisotropy rubber magnet)
3. Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
4. Double amplitude 1.5 mm / 10Hz~55Hz~10Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
5. 1=None / 2=Short-circuit / 3=Power Source Reverse polarity / 4=Surge Suppression

■ GROOVE DIMENSIONS

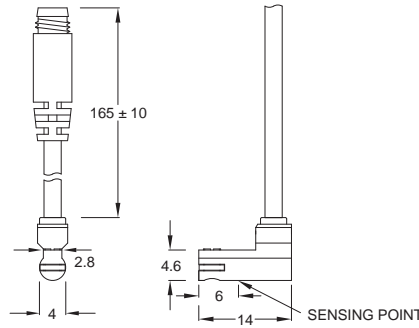


Unit:mm

■ DIMENSIONS

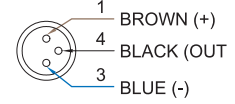


CS-37D, CS-37DE, CS-37N, CS-37NE, CS-37P, CS-37PE, /
CS-37D-QD, CS-37DE-QD, CS-37N-QD, CS-37NE-QD,
CS-37P-QD, CS-37PE-QD

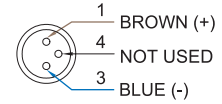


■ QD PINOUT

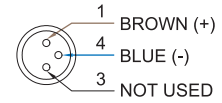
*3 wire QD wiring



*2 wire QD wiring



*2 wire EQD wiring



■ SPECIFICATIONS

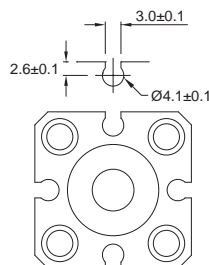
Unit:mm

TYPE	CS-37D	CS-37DE	CS-37N	CS-37NE	CS-37P	CS-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	10~28V DC	5~30V DC	4.5~28V DC	5~30V DC	4.5~28V DC	5~30V DC
Switching Current	4~20mA max.		50mA max.			
Contact Rating (*1)	0.6W max.		1.5W max.			
Current Consumption	-		10mA @ 24V DC max.			
Voltage Drop	3.5V max.		0.5V @ 50mA max.			
Leakage Current	0.8mA max.	0.1mA(40uA) max.	0.01mA max.			
Indicator	Red LED					
Cable	ø2.6, 2C, PVC		ø2.6, 3C, PVC			
Operating Frequency	1000Hz max.					
Magnet Requirement (*2)	40Gauss	40~1000Gauss	40Gauss	40~1000Gauss	40Gauss	40~1000Gauss
Temperature Range	-10~70°C (+14~158°F)					
Shock (*3)	50G					
Vibration (*4)	9G					
Enclosure Classification	IEC 60529 IP67 (NEMA 6)					
Protection Circuit (*5)	4		3,4			

NOTE:

1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent damage to sensor will occur.
2. Measuring standard target: ø15.5xø8X5t (Anisotropy rubber magnet)
3. Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
4. Double amplitude 1.5 mm / 10Hz~55Hz~10Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
5. 1=None / 2=Short-circuit / 3=Power Source Reverse polarity / 4=Surge Suppression

■ GROOVE DIMENSIONS



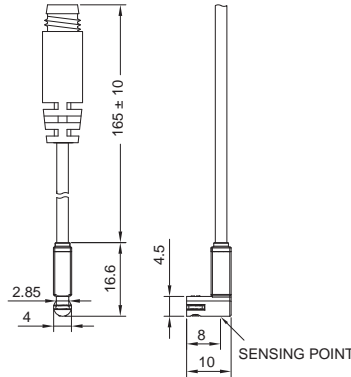
Unit:mm

COMPACT SIZE



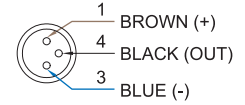
■ DIMENSIONS

CS-38D, CS-38N, CS-38P /
 CS-38D-QD, CS-38N-QD, CS-38P-QD

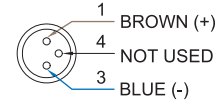


■ QD PINOUT

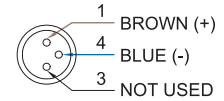
*3 wire QD wiring



*2 wire QD wiring



*2 wire EQD wiring



■ SPECIFICATIONS

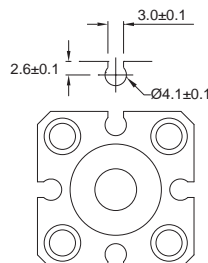
Unit:mm

TYPE	CS-38D	CS-38N	CS-38P
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	10~28V DC	5~28V DC	
Switching Current	4~20mA max.	50mA max.	
Contact Rating (*1)	0.6W max.	1.5W max.	
Current Consumption	-	10mA @ 24V DC max.	
Voltage Drop	3.5V max.	0.5V @ 50mA max.	
Leakage Current	0.8mA max.	0.01mA max.	
Indicator	Red LED		
Cable	ø2.6, 2C, PVC	ø2.6, 3C, PVC	
Operating Frequency	1000Hz		
Magnet Requirement (*2)	40Gauss		
Temperature Range	-10~70°C (+14~158°F)		
Shock (*3)	50G		
Vibration (*4)	9G		
Enclosure Classification	IEC 60529 IP67 (NEMA 6)		
Protection Circuit (*5)	4	3,4	

NOTE:

1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent damage to sensor will occur.
2. Measuring standard target: ø15.5Xø8X5t (Anisotropy rubber magnet)
3. Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
4. Double amplitude 1.5 mm / 10Hz~55Hz~10Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
5. 1=None / 2=Short-circuit / 3=Power Source Reverse polarity / 4=Surge Suppression

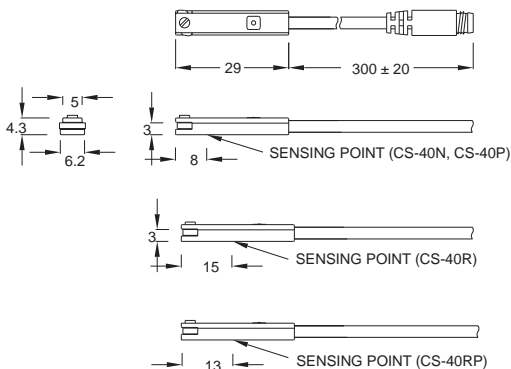
■ GROOVE DIMENSIONS



Unit:mm

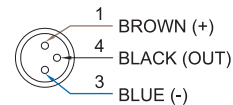
■ DIMENSIONS

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

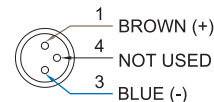


■ QD PINOUT

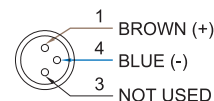
*3 wire QD wiring



*2 wire QD wiring



*2 wire EQD wiring



■ SPECIFICATIONS

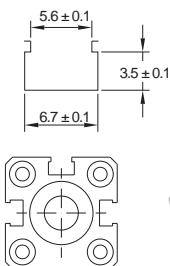
Unit:mm

TYPE	CS-40R	CS-40N	CS-40P	CS-40RP
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	Reed Switch
Operating Voltage	5~120V DC/AC		10~30V DC	
Switching Current	100mA max.		500mA max.	
Contact Rating (*1)	10W max.	3W max.		10W max.
Current Consumption	-	8mA @ 24V DC max.		10mA @ 24V DC max.
Voltage Drop	3.5V max.	1.5V max.		0.1V @ 100mA max.
Leakage Current	-	0.01mA max.		-
Indicator	Red LED		Yellow LED	
Cable	ø3.2, 2C, PUR		ø3.3, 3C, PUR	
Operating Frequency	200Hz	1000Hz		200Hz
Magnet Requirement (*2)	50Gauss	45Gauss		
Temperature Range	-10~70°C (+14~158°F)			
Shock (*3)	30G	50G		30G
Vibration (*4)	9G			
Enclosure Classification	IEC 60529 IP67 (NEMA 6)			
Protection Circuit (*5)	1	2,3,4		1

NOTE:

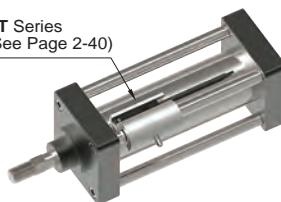
1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent damage to sensor will occur.
2. Measuring standard target: ø15.5xø8X5t (Anisotropy rubber magnet)
3. Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
4. Double amplitude 1.5 mm / 10Hz~55Hz~10Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
5. 1=None / 2=Short-circuit / 3=Power Source Reverse polarity / 4=Surge Suppression

■ GROOVE DIMENSIONS



■ CLAMP / BRACKET

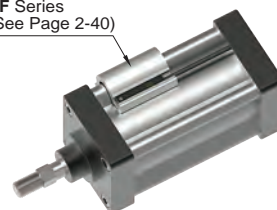
DT Series
(See Page 2-40)



BL-1 Series
(See Page 2-44)

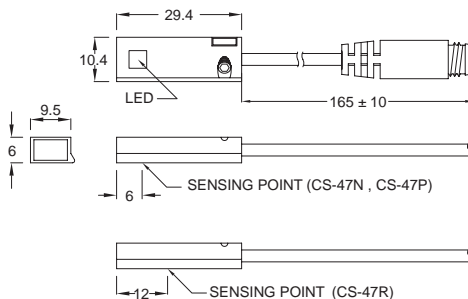


PF Series
(See Page 2-40)



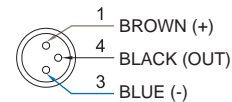
■ DIMENSIONS

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

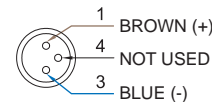


■ QD PINOUT

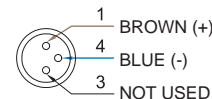
*3 wire QD wiring



*2 wire QD wiring

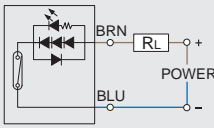
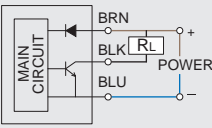
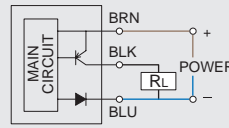


*2 wire EQD wiring



■ SPECIFICATIONS

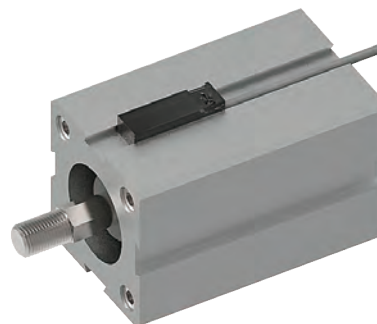
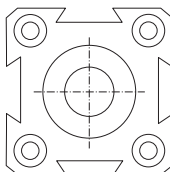
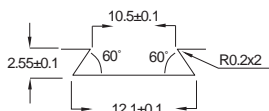
Unit:mm

TYPE	CS-47R	CS-47N	CS-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	5~240V DC/AC	5~30V DC	
Switching Current	500mA. max.	200mA max.	
Contact Rating (*1)	10W max.	6W max.	
Current Consumption	-	22mA @ 24V DC max.	20mA @ 24V DC max.
Voltage Drop	3.0 V max.	2.0V max.	2.5 V max.
Leakage Current	-	0.01 mA max.	
Indicator	Yellow LED		
Cable	ø2.8, 2C, PVC	ø2.8, 3C, PUR	
Operating Frequency	200 Hz	1000 Hz	
Magnet Requirement (*2)	50 Gauss		
Temperature Range	-10~70°C (+14~158°F)		
Shock (*3)	30G	50G	
Vibration (*4)	9G		
Enclosure Classification	IEC 60529 IP67 (NEMA 6)		
Protection Circuit (*5)	1	2,3,4	

NOTE:

1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent damage to sensor will occur.
2. Measuring standard target: ø15.5Xø8X5t (Anisotropy rubber magnet)
3. Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
4. Double amplitude 1.5 mm / 10Hz~55Hz~10Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
5. 1=None / 2=Short-circuit / 3=Power Source Reverse polarity / 4=Surge Suppression

■ GROOVE DIMENSIONS

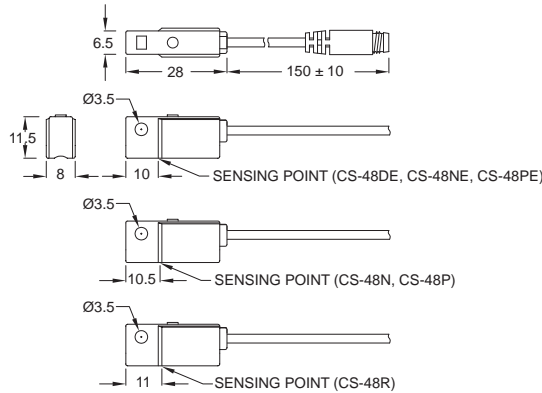


Unit:mm



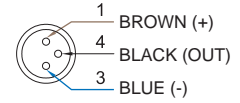
■ DIMENSIONS

CS-48R, CS-48DE, CS-48N, CS-48NE, CS-48P, CS-48PE /
 CS-48R-QD, CS-48DE-QD, CS-48N-QD, CS-48NE-QD,
 CS-48P-QD, CS-48PE-QD

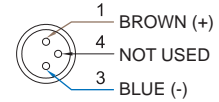


■ QD PINOUT

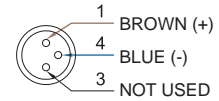
*3 wire QD wiring



*2 wire QD wiring



*2 wire EQD wiring



■ SPECIFICATIONS

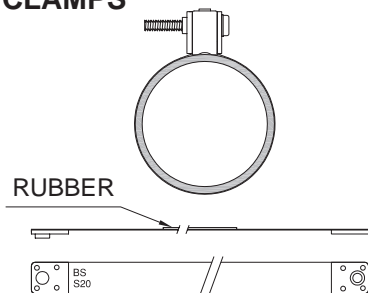
Unit:mm

TYPE	CS-48R	CS-48DE	CS-48N	CS-48NE	CS-48P	CS-48PE
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	5-240V DC/AC	5-30V DC	5-28V DC	5-30V DC	5-28V DC	5-30V DC
Switching Current	100mA max.	50mA max.		200mA max.	50mA max.	200mA max.
Contact Rating (*1)	10W max.	1.5W max.		6W max.	1.5W max.	6W max.
Current Consumption	-		10mA @ 24V DC max.	6mA @ 24V DC max.	10mA @ 24V DC max.	6mA @ 24V DC max.
Voltage Drop	3.5V max.	3.7V max.	1.5V @ 50mA max.	0.5V @ 200mA max.	1.5V @ 50mA max.	0.5V @ 200mA max.
Leakage Current	-	0.1mA(40uA) max.	0.01mA max.			
Indicator	Red LED				Green LED	
Cable	ø3.3, 2C, PVC		ø3.3, 3C, PVC			
Operating Frequency	200Hz		1000Hz max.			
Magnet Requirement (*2)	110Gauss	40-1000Gauss	75Gauss	40-1000Gauss	75Gauss	40-1000Gauss
Temperature Range	-10~70°C (+14~158°F)					
Shock (*3)	30G		50G			
Vibration (*4)	9G					
Enclosure Classification	IEC 60529 IP67 (NEMA 6)					
Protection Circuit (*5)	1		3,4			

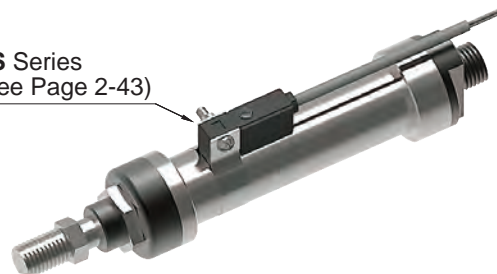
NOTE:

1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent damage to sensor will occur.
2. Measuring standard target: ø15.5Xø8X5t (Anisotropy rubber magnet)
3. Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
4. Double amplitude 1.5 mm / 10Hz-55Hz-10Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
5. 1=None / 2=Short-circuit / 3=Power Source Reverse polarity / 4=Surge Suppression

■ MOUNTING CLAMPS



BS Series
 (See Page 2-43)

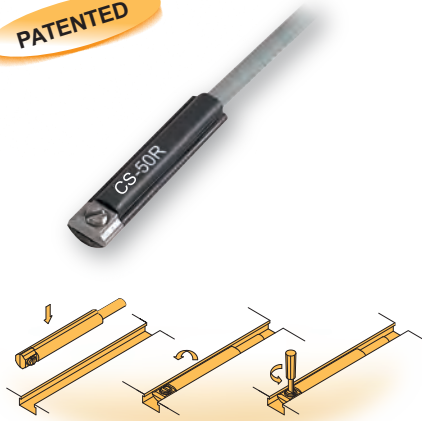


CS-50



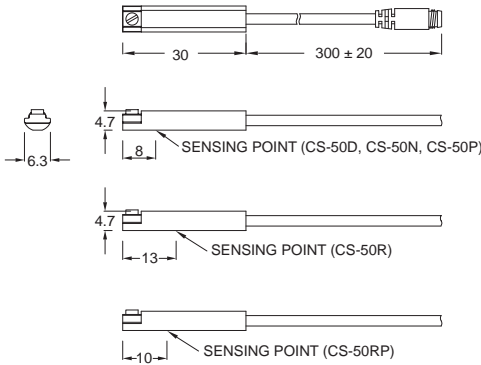
Magnetic Sensor

PATENTED



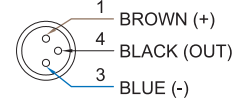
DIMENSIONS

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

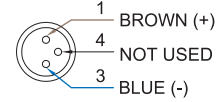


QD PINOUT

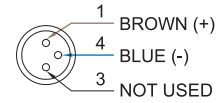
*3 wire QD wiring



*2 wire QD wiring



*2 wire EQD wiring



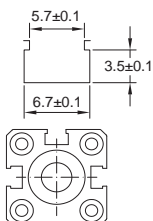
SPECIFICATIONS

TYPE	CS-50R	CS-50D	CS-50N	CS-50P	CS-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	5~240V DC/AC	10~28V DC	10~30V DC		10~30V DC/AC
Switching Current	100mA max.	50mA max.	200mA max.		500mA max.
Contact Rating (*1)	10W max.	1.5W max.	6W max.		10W max.
Current Consumption	-		20mA @ 24V DC max.		5mA @ 24V DC max.
Voltage Drop	3.5V max.		1.5V max.		0.1V @ 100mA max.
Leakage Current	-	0.8mA max.	0.05mA max.		-
Indicator	Red LED			Yellow LED	
Cable	ø3, 2C, PUR		ø3, 3C, PUR		
Operating Frequency	200Hz	1000Hz			200Hz
Magnet Requirement (*2)	70Gauss				
Temperature Range	-10~70°C (+14~158°F)				
Shock (*3)	30G	50G		30G	
Vibration (*4)	9G				
Enclosure Classification	IEC 60529 IP67 (NEMA 6)				
Protection Circuit (*5)	1	2,4	2,3,4		1

NOTE:

1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent damage to sensor will occur.
2. Measuring standard target: ø15.5Xø8X5t (Anisotropy rubber magnet)
3. Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
4. Double amplitude 1.5 mm / 10Hz~55Hz~10Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
5. 1=None / 2=Short-circuit / 3=Power Source Reverse polarity / 4=Surge Suppression

GROOVE DIMENSIONS ■ CLAMP / BRACKET

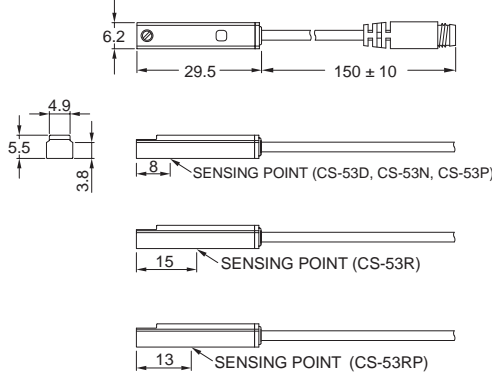


Unit:mm



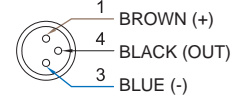
■ DIMENSIONS

CS-53R, CS-53D, CS-53N, CS-53P, CS-53RP /
CS-53R-QD, CS-53D-QD, CS-53N-QD, CS-53P-QD,
CS-53RP-QD

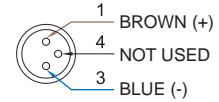


■ QD PINOUT

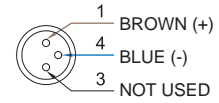
*3 wire QD wiring



*2 wire QD wiring



*2 wire EQD wiring



■ SPECIFICATIONS

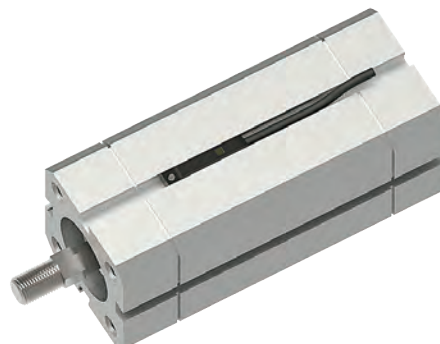
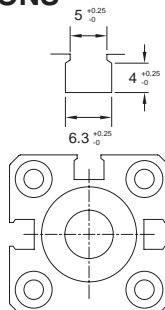
Unit:mm

TYPE	CS-53R	CS-53D	CS-53N	CS-53P	CS-53RP
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			SPST, Normally Open
Sensor Type	Reed Switch	-	NPN Current Sinking	PNP Current Sourcing	Reed Switch
Operating Voltage	5~240V DC/AC	10~28V DC	10~30V DC		10~30V DC/AC
Switching Current	100mA max.	50mA max.	100mA max.		500mA max.
Contact Rating (*1)	10W max.	1.5W max.	3W max.		10W max.
Current Consumption	-		8mA @ 24V DC max.		10mA @ 24V DC max.
Voltage Drop	3.5V max.		1.5V max.		0.1V @ 100mA max.
Leakage Current	-	0.8mA max.	0.01mA max.		-
Indicator	Red LED			Yellow LED	
Cable	ø3, 2C, PUR		ø3, 3C, PUR		
Operating Frequency	200Hz	1000Hz			200Hz
Magnet Requirement (*2)	70Gauss	50Gauss			70Gauss
Temperature Range	-10~70°C (+14~158°F)				
Shock (*3)	30G	50G			30G
Vibration (*4)	9G				
Enclosure Classification	IEC 60529 IP67 (NEMA 6)				
Protection Circuit (*5)	1	2,4	2,3,4		1

NOTE:

1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent damage to sensor will occur.
2. Measuring standard target: ø15.5Xø8X5t (Anisotropy rubber magnet)
3. Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
4. Double amplitude 1.5 mm / 10Hz~55Hz~10Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
5. 1=None / 2=Short-circuit / 3=Power Source Reverse polarity / 4=Surge Suppression

■ GROOVE DIMENSIONS

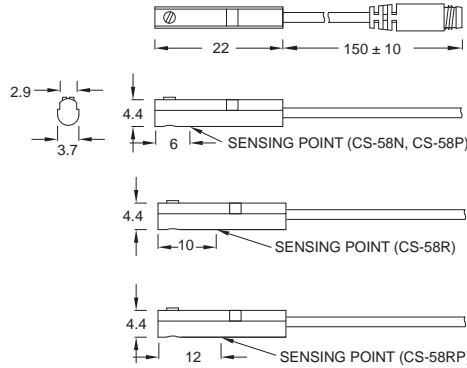


Unit:mm



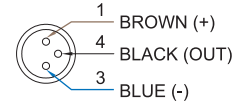
■ DIMENSIONS

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

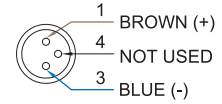


■ QD PINOUT

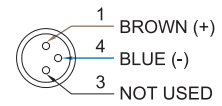
*3 wire QD wiring



*2 wire QD wiring



*2 wire EQD wiring



■ SPECIFICATIONS

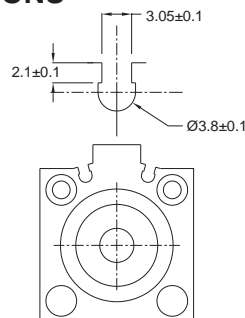
Unit:mm

TYPE	CS-58R	CS-58N	CS-58P	CS-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	5~120V DC/AC	10~30V DC		10~30V DC/AC
Switching Current	100mA max.	200mA max.		500mA max.
Contact Rating (*1)	10W max.	6W max.		10W max.
Current Consumption	-	10mA @ 24V DC max.		5mA @ 24V DC max.
Voltage Drop	3.5V max.	0.5V @ 50mA max.		0.1V @ 100mA max.
Leakage Current	-	0.01mA max.		-
Indicator	Red LED		Yellow LED	
Cable	ø2.5, 2C, PUR	ø2.5, 3C, PUR		
Operating Frequency	200Hz	1000Hz		200Hz
Magnet Requirement (*2)	70Gauss	40Gauss		50Gauss
Temperature Range	-10~70°C (+14~158°F)			
Shock (*3)	30G	50G		30G
Vibration (*4)	9G			
Enclosure Classification	IEC 60529 IP67 (NEMA 6)			
Protection Circuit (*5)	1	3,4		1

NOTE:

1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent damage to sensor will occur.
2. Measuring standard target: ø15.5xø8X5t (Anisotropy rubber magnet)
3. Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
4. Double amplitude 1.5 mm / 10Hz~55Hz~10Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
5. 1=None / 2=Short-circuit / 3=Power Source Reverse polarity / 4=Surge Suppression

■ GROOVE DIMENSIONS



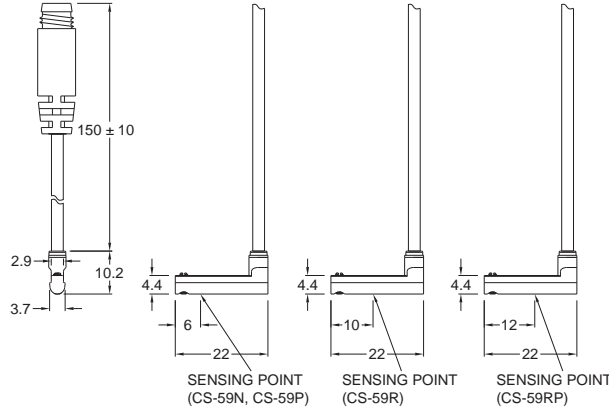
Unit:mm

NEW



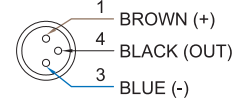
■ DIMENSIONS

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

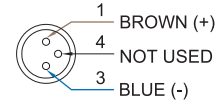


■ QD PINOUT

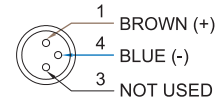
*3 wire QD wiring



*2 wire QD wiring



*2 wire EQD wiring



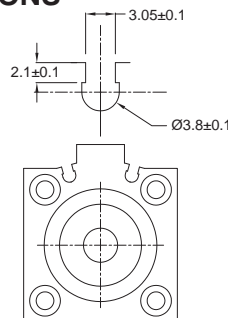
■ SPECIFICATIONS

TYPE	CS-59R	CS-59N	CS-59P	CS-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	5~120V DC/AC	10~30V DC		10~30V DC/AC
Switching Current	100mA max.	200mA max.		500mA max.
Contact Rating (*1)	10W max.	6W max.		10W max.
Current Consumption	-	10mA @ 24V DC max.		5mA @ 24V DC max.
Voltage Drop	3.5V max.	0.5V @ 50mA max.		0.1V @ 100mA max.
Leakage Current	-	0.01mA max.		-
Indicator	Red LED		Yellow LED	
Cable	ø2.5, 2C, PUR		ø2.5, 3C, PUR	
Operating Frequency	200Hz	1000Hz		200Hz
Magnet Requirement (*2)	70Gauss	40Gauss		50Gauss
Temperature Range	-10~70°C (+14~158°F)			
Shock (*3)	30G	50G		30G
Vibration (*4)	9G			
Enclosure Classification	IEC 60529 IP67 (NEMA 6)			
Protection Circuit (*5)	1	3,4		1

NOTE:

1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent damage to sensor will occur.
2. Measuring standard target: ø15.5xø8X5t (Anisotropy rubber magnet)
3. Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
4. Double amplitude 1.5 mm / 10Hz~55Hz~10Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
5. 1=None / 2=Short-circuit / 3=Power Source Reverse polarity / 4=Surge Suppression

■ GROOVE DIMENSIONS

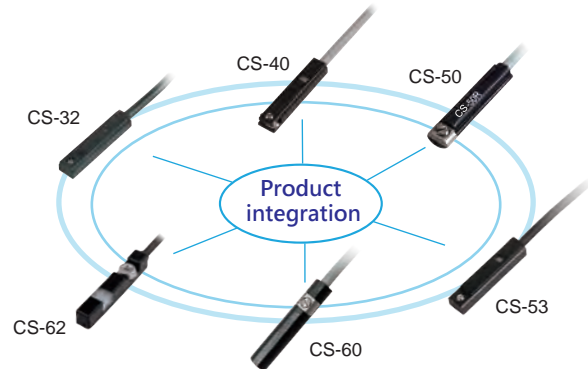
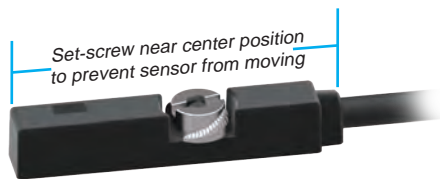


Unit:mm

CS-65 / CS-75 series can be applied to many kind of cylinders

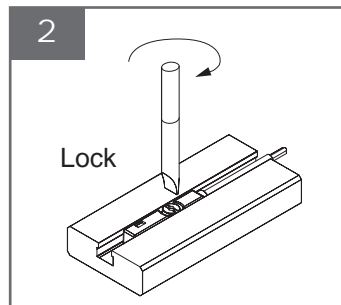
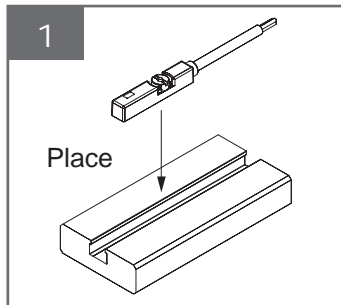
New Structure

- 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, replace all other T-slot sensors, reducing inventory items.

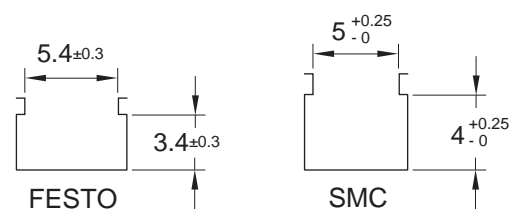


Quick Installation

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

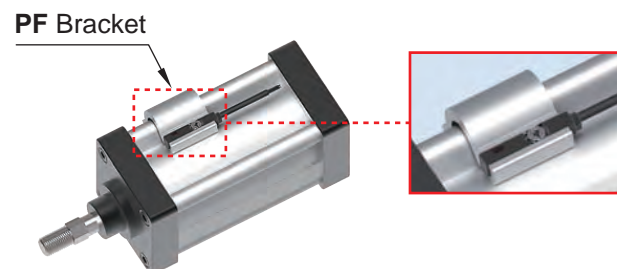
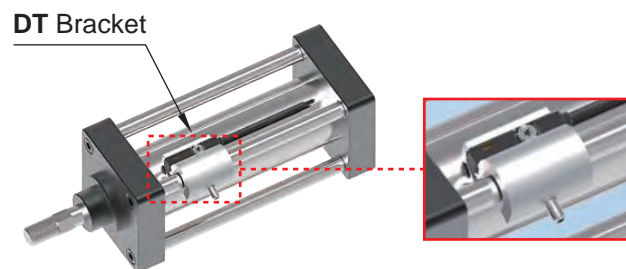


Common cylinder slot dimensions



Mounting Adapter for other cylinder types

- DT bracket can be applied to Tie-rod cylinder.
- PF bracket can be applied to ISO profile cylinder.



CS-65



SERIES

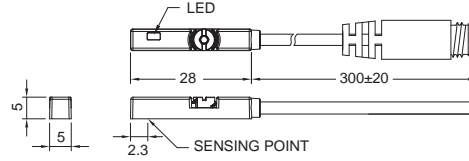
Magnetic Sensor

PATENTED

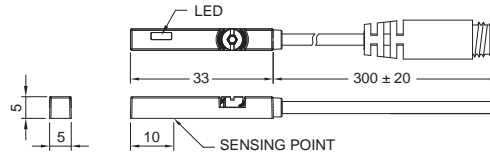


■ DIMENSIONS

CS-65D, CS-65DE, CS-65N, CS-65NE, CS-65P, CS-65PE / CS-65D-QD, CS-65DE-QD, CS-65N-QD, CS-65NE-QD, CS-65P-QD, CS-65PE-QD

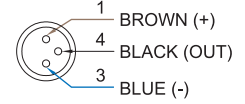


CS-65R, CS-65RP / CS-65R-QD, CS-65RP-QD

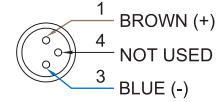


■ QD PINOUT

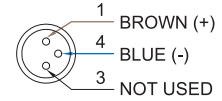
*3 wire QD wiring



*2 wire QD wiring



*2 wire EQD wiring



■ SPECIFICATIONS

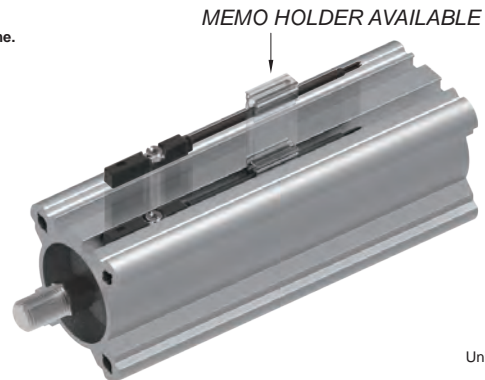
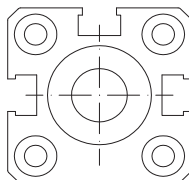
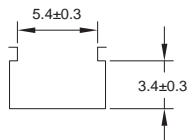
Unit:mm

TYPE	CS-65R	CS-65D	CS-65DE	CS-65N	CS-65NE	CS-65P	CS-65PE	CS-65RP	
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 Open			SPST, Normally Open	
Sensor Type	Reed Switch	-			NPN Current Sinking		PNP Current Sourcing		
Operating Voltage	5~240V DC/AC	10~28V DC	5~30V DC	10~28V DC	5~30V DC	10~28V DC	5~30V DC	10~30V DC/AC	
Switching Current	100mA max.	50mA max.			200mA max.			500mA max.	
Contact Rating (*1)	10W max.	1.5W max.			5.5W max.	6W max.	5.5W max.	6W max.	10W max.
Current Consumption	-			10mA @ 24V DC max.	6mA @ 24V DC max.	10mA @ 24V DC max.	6mA @ 24V DC max.	10mA @ 24V DC max.	
Voltage Drop	3.0V max.	3.5V max.	3.7V max.	1.5V max.	0.5V @ 200mA max.	1.5V max.	0.5V @ 200mA max.	0.1V @ 100mA max.	
Leakage Current	-	0.8mA max.	0.1mA(40uA) max.	0.05mA max.	0.01mA max.	0.05mA max.	0.01mA max.	-	
Indicator	Red LED					Yellow LED			
Cable	ø2.8, 2C, PUR				ø2.8, 3C, PUR				
Operating Frequency	200Hz	1000Hz max.					200Hz		
Magnet Requirement (*2)	75Gauss	50Gauss	40~1000Gauss	50Gauss	40~1000Gauss	50Gauss	40~1000Gauss	65Gauss	
Temperature Range	-10~70°C (+14~158°F)								
Shock (*3)	30G	50G					30G		
Vibration (*4)	9G								
Enclosure Classification	IEC 60529 IP67 (NEMA 6)								
Protection Circuit (*5)	1	2	3,4	2,3,4	3,4	2,3,4	3,4	1	

NOTE:

1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent damage to sensor will occur.
2. Measuring standard target: ø15.5Xø8X5t (Anisotropy rubber magnet)
3. Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
4. Double amplitude 1.5 mm / 10Hz~55Hz~10Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
5. 1=None / 2=Short-circuit / 3=Power Source Reverse polarity / 4=Surge Suppression

■ GROOVE DIMENSIONS



Unit:mm

CS-65-EX SERIES



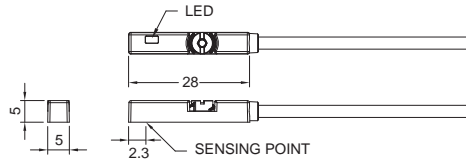
Magnetic Sensor

PATENTED
EXPLOSION PROOF

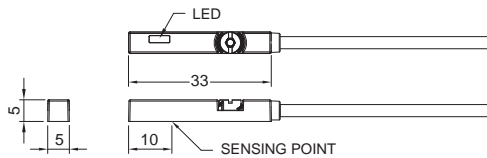


■ DIMENSIONS

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



CS-65R-EX, CS-65RP-EX



■ M8 Connector option is not available

■ SPECIFICATIONS

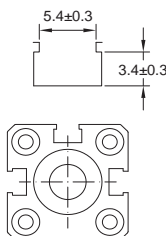
Unit:mm

TYPE	CS-65R-EX	CS-65D-EX	CS-65N-EX	CS-65N-NC-EX	CS-65P-EX	CS-65P-NC-EX	CS-65RP-EX
CONNECT DIAGRAM							
CHARACTERISTICS							
Wiring Method	2-Wire Type			3-Wire Type			
Switching Logic	SPST, Normally Open	Solid State Output, Normally Open		Solid State Output, Normally Close	Solid State Output, Normally Open	Solid State Output, Normally Close	SPST, Normally Open
Sensor Type	Reed Switch	-	NPN Current Sinking		PNP Current Sourcing		Reed Switch
Operating Voltage	5-30V DC/AC	10-28V DC					10-30V DC/AC
Switching Current	100mA max.	50mA max.	200mA max.		500mA max.		
Contact Rating (*1)	10W max.	1.5W max.	5.5W max.		10W max.		
Current Consumption	-		10mA @ 24V DC max.				
Voltage Drop	3.0V max.	3.5V max.	1.5V max.				0.1V @ 100mA max.
Leakage Current	-	0.8mA max.	0.05mA max.				
Indicator	Red LED			Yellow LED			
Cable	ø2.8, 2C, PUR			ø2.8, 3C, PUR			
Operating Frequency	200Hz	1000Hz		200Hz			
Magnet Requirement (*2)	65Gauss	50Gauss		65Gauss			
Temperature Range	-10~70°C (+14~158°F)						
Shock (*3)	30G	50G		30G			
Vibration (*4)	9G						
Enclosure Classification	IEC 60529 IP67 (NEMA 6)						
Protection Circuit (*5)	1	2	2,3,4		1		
CE ATEX APPROVAL Baseefa14ATEX0118	Ex II 3GD 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 x Amperage). Permanent damage to sensor will occur.
2. Measuring standard target: ø15.5xø8x5t (Anisotropy rubber magnet)
3. Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
4. Double amplitude 1.5 mm / 10Hz-55Hz-10Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
5. 1=None / 2=Short-circuit / 3=Power Source Reverse polarity / 4=Surge Suppression

■ GROOVE DIMENSIONS

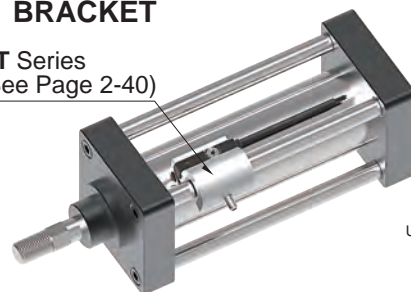


MEMO HOLDER AVAILABLE



■ BRACKET

DT Series
(See Page 2-40)

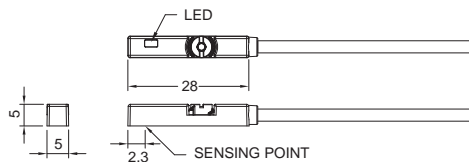


Unit:mm

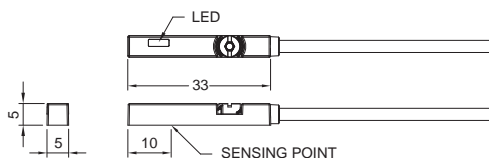
PATENTED



■ DIMENSIONS
CS-65N-UL, CS-65P-UL, CS-65D-UL



CS-65R-UL, CS-65RP-UL



■ SPECIFICATIONS

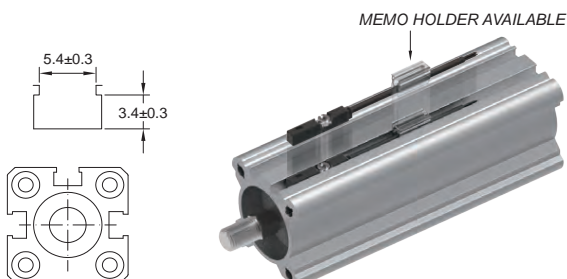
Unit:mm

TYPE	CS-65R-UL	CS-65D-UL	CS-65N-UL	CS-65P-UL	CS-65RP-UL
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		SPST, Normally Open
Sensor Type	Reed Switch	-	NPN Current Sinking	PNP Current Sourcing	Reed Switch
Operating Voltage	5~30V DC/AC		10~28V DC		10~30V DC/AC
Switching Current	60mA max.	40mA max.	100mA max.		
Contact Rating (*1)	1.8W max.	1.2W max.	3W max.		
Current Consumption	-		10mA @ 24V DC max.		
Voltage Drop	3.0V max.	3.5V max.	1.5V max.		0.1V @ 100mA max.
Leakage Current	-	0.8mA max.	0.05mA max.		-
Indicator	Red LED			Yellow LED	
Cable	ø2.8, 2C, PUR		ø2.8, 3C, PUR		
Operating Frequency	200Hz		1000Hz		200Hz
Magnet Requirement (*2)	75Gauss		50Gauss		65Gauss
Temperature Range	-10~60°C		-10~70°C (+14~158°F)		
Shock (*3)	30G		50G		30G
Vibration (*4)			9G		
Enclosure Classificaz	IEC 60529 IP67 (NEMA 6)				
Protection Circuit (*5)	1	2	2,3,4		1

NOTE:

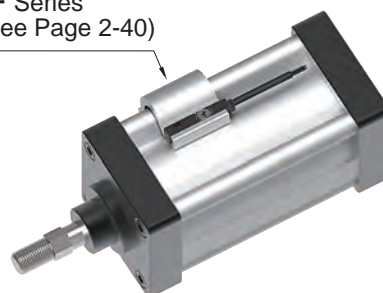
1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent damage to sensor will occur.
2. Measuring standard target: ø15.5Xø8X5t (Anisotropy rubber magnet)
3. Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
4. Double amplitude 1.5 mm / 10Hz~55Hz~10Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
5. 1=None / 2=Short-circuit / 3=Power Source Reverse polarity / 4=Surge Suppression

■ GROOVE DIMENSIONS



■ BRACKET

PF Series
(See Page 2-40)

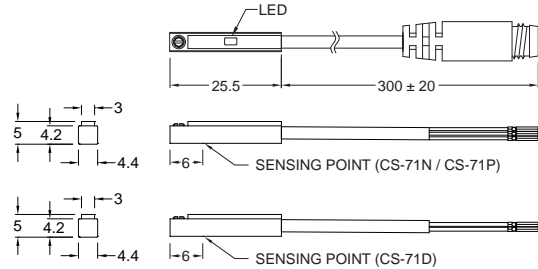


Unit:mm

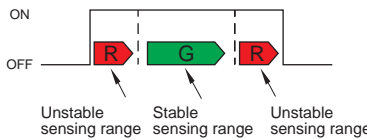


■ DIMENSIONS

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

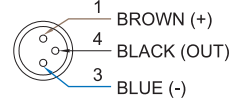


■ SW OUT

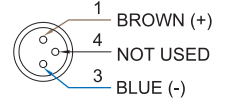


■ QD PINOUT

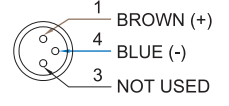
*3 wire QD wiring



*2 wire QD wiring



*2 wire EQD wiring

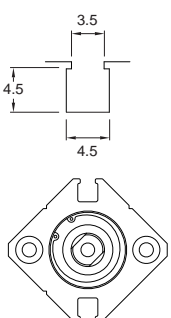


■ SPECIFICATIONS

TYPE	CS-71D	CS-71N	CS-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	10~28V DC		
Switching Current	80mA max.		
Contact Rating (*1)	2W max.		
Current Consumption	-	10mA @ 24V DC max.	
Voltage Drop	4V max.	1.5V max.	
Leakage Current	1mA max.	0.05mA max.	
Indicator	Red / Green LED		
Cable	ø2.8, 2C, PUR	ø2.8, 3C, PUR	
Operating Frequency	1000Hz		
Magnet Requirement (*2)	85Gauss		
Temperature Range	-10~60°C (+14~140°F)		
Shock (*3)	50G		
Vibration (*4)	9G		
Enclosure Classification	IEC 60529 IP67 (NEMA 6)		
Protection Circuit (*5)	2,3,4		

- NOTE:
1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent damage to sensor will occur.
 2. Measuring standard target: ø15.5Xø8X5t (Anisotropy rubber magnet)
 3. Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
 4. Double amplitude 1.5 mm / 10Hz~55Hz~10Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
 5. 1=None / 2=Short-circuit / 3=Power Source Reverse polarity / 4=Surge Suppression

■ GROOVE DIMENSIONS



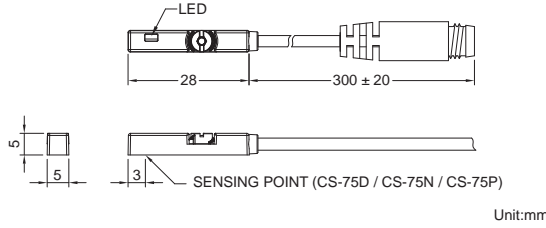
PATENTED



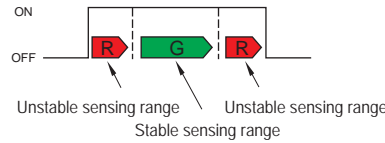
Dual Color LED allow more precise positioning

■ DIMENSIONS

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

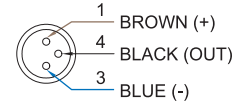


■ SW OUT

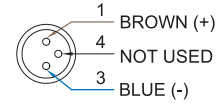


■ QD PINOUT

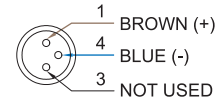
*3 wire QD wiring



*2 wire QD wiring



*2 wire EQD wiring



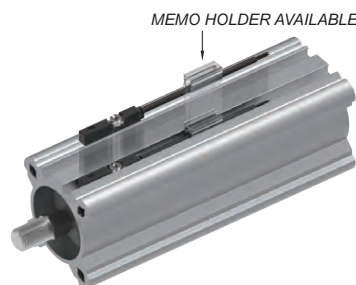
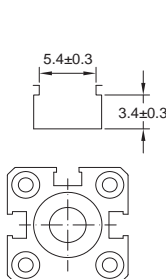
■ SPECIFICATIONS

TYPE	CS-75D	CS-75N	CS-75P
CONNECT DIAGRAM			
CHARACTERISTICS			
Wiring Method	2-Wire Type	3-Wire Type	
Switching Logic	Solid State Output, Normally Open		
Sensor Type	-	NPN Current Sinking	PNP Current Sourcing
Operating Voltage	10~28V DC		
Switching Current	80mA max.		
Contact Rating (*1)	2W max.		
Current Consumption	-	10mA @ 24V DC max.	
Voltage Drop	4V max.	1.5V max.	
Leakage Current	1mA max.	0.05mA max.	
Indicator	Red / Green LED		
Cable	ø2.8, 2C, PUR	ø2.8, 3C, PUR	
Operating Frequency	1000Hz		
Magnet Requirement (*2)	85Gauss		
Temperature Range	-10~60°C (+14~140°F)		
Shock (*3)	50G		
Vibration (*4)	9G		
Enclosure Classification	IEC 60529 IP67 (NEMA 6)		
Protection Circuit (*5)	2,3,4		

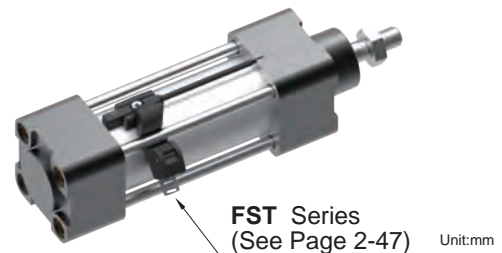
NOTE:

1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent damage to sensor will occur.
2. Measuring standard target: ø15.5Xø8X5t (Anisotropy rubber magnet)
3. Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
4. Double amplitude 1.5 mm / 10Hz~55Hz~10Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
5. 1=None / 2=Short-circuit / 3=Power Source Reverse polarity / 4=Surge Suppression

■ GROOVE DIMENSIONS



■ MOUNTING CLAMPS

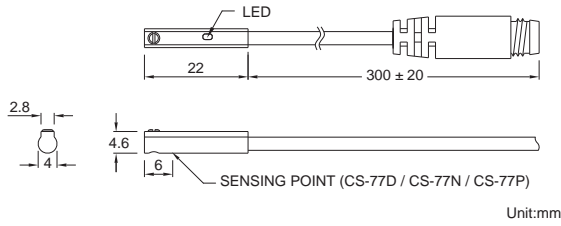




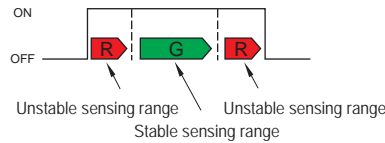
Dual Color LED allow more precise positioning

■ DIMENSIONS

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

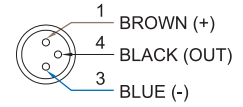


■ SW OUT

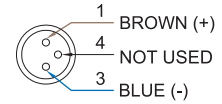


■ QD PINOUT

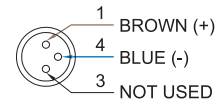
*3 wire QD wiring



*2 wire QD wiring



*2 wire EQD wiring



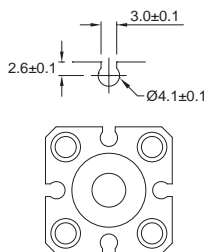
■ SPECIFICATIONS

TYPE	CS-77D	CS-77N	CS-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	10~28V DC		
Switching Current	80mA max.		
Contact Rating (*1)	2W max.		
Current Consumption	-	10mA @ 24V DC max.	
Voltage Drop	4V max.	1.5V max.	
Leakage Current	1mA max.	0.05mA max.	
Indicator	Red / Green LED		
Cable	ø2.8, 2C, PUR	ø2.8, 3C, PUR	
Operating Frequency	1000Hz		
Magnet Requirement (*2)	85Gauss		
Temperature Range	-10~60°C (+14~140°F)		
Shock (*3)	50G		
Vibration (*4)	9G		
Enclosure Classification	IEC 60529 IP67 (NEMA 6)		
Protection Circuit (*5)	2,3,4		

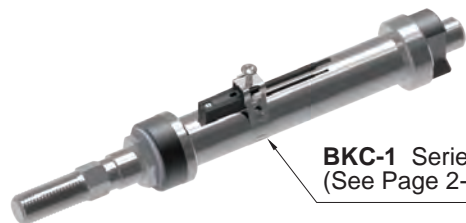
NOTE:

1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent damage to sensor will occur.
2. Measuring standard target: ø15.5Xø8X5t (Anisotropy rubber magnet)
3. Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
4. Double amplitude 1.5 mm / 10Hz~55Hz~10Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
5. 1=None / 2=Short-circuit / 3=Power Source Reverse polarity / 4=Surge Suppression

■ GROOVE DIMENSIONS



■ MOUNTING CLAMPS



BKC-1 Series (See Page 2-45)

Unit:mm

CS-6100 SERIES

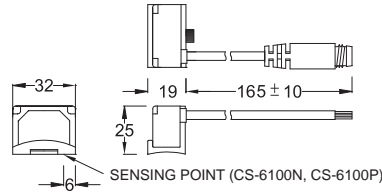


Magnetic Sensor

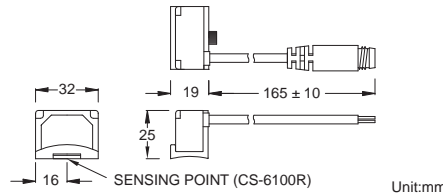


■ DIMENSIONS

CS-6100N, CS-6100P / CS-6100N-QD, CS-6100P-QD



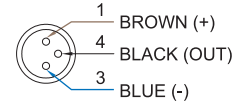
CS-6100R / CS-6100-QD



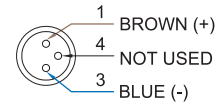
Unit:mm

■ QD PINOUT

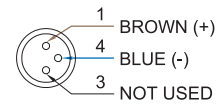
*3 wire QD wiring



*2 wire QD wiring



*2 wire EQD wiring



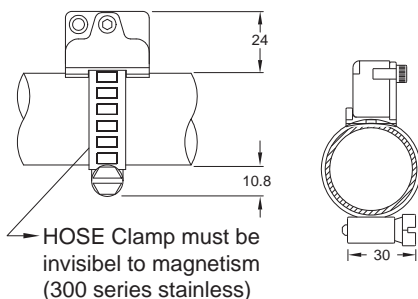
■ SPECIFICATIONS

TYPE	CS-6100R	CS-6100N	CS-6100P
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	5~240V DC/AC	5~30V DC	
Switching Current	1Amp. max.		
Contact Rating (*1)	30W max.		
Current Consumption	-	42mA @ 24V DC max.	30mA @ 24V DC max.
Voltage Drop	3.5V max.	1.5V @ 0.5A max.	
Leakage Current	-	0.01 mA max.	
Indicator	Red LED	Power : Green LED , Output : Red LED	
Cable	ø4.5, 2C, PVC	ø4.5, 3C, PVC	
Operating Frequency	200 Hz	1000 Hz	
Magnet Requirement (*2)	80 Gauss	60 Gauss	
Temperature Range	-10~70°C (+14~158°F)		
Shock (*3)	30G	50G	
Vibration (*4)	9G		
Enclosure Classification	IEC 60529 IP67 (NEMA 6)		
Protection Circuit (*5)	4	3,4	

NOTE:

1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent damage to sensor will occur.
2. Measuring standard target: ø15.5xø8X5t (Anisotropy rubber magnet)
3. Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
4. Double amplitude 1.5 mm / 10Hz~55Hz~10Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
5. 1=None / 2=Short-circuit / 3=Power Source Reverse polarity / 4=Surge Suppression

■ MOUNTING CLAMPS



Unit:mm

CS-6200 SERIES

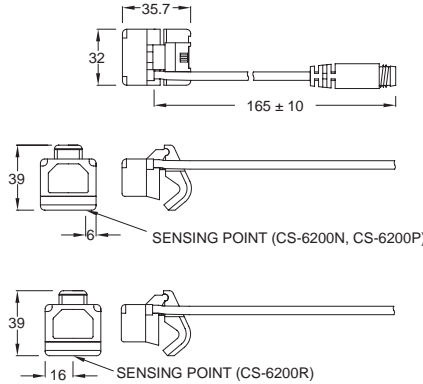


Magnetic Sensor



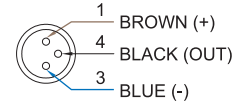
■ DIMENSIONS

CS-6200R, CS-6200N, CS-6200P /
CS-6200R-QD, CS-6200N-QD, CS-6200P-QD

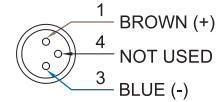


■ QD PINOUT

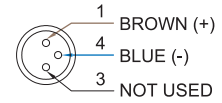
*3 wire QD wiring



*2 wire QD wiring



*2 wire EQD wiring



■ SPECIFICATIONS

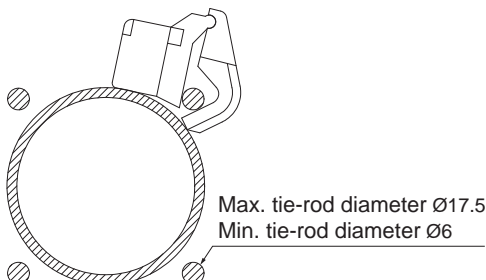
Unit:mm

TYPE	CS-6200R	CS-6200N	KT-6200P
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	5~240V DC/AC	5~30V DC	
Switching Current	1Amp. max.		
Contact Rating (*1)	30W max.		
Current Consumption	-	42mA @ 24V DC max.	30mA @ 24V DC max.
Voltage Drop	3.5V max.	1.5V @ 0.5A max.	
Leakage Current	-	0.01 mA max.	
Indicator	Red LED	Power : Green LED , Output : Red LED	
Cable	ø4.5, 2C, PVC	ø4.5, 3C, PVC	
Operating Frequency	200 Hz	1000 Hz	
Magnet Requirement (*2)	80 Gauss	40 Gauss	
Temperature Range	-10~70°C (+14~158°F)		
Shock (*3)	30G	9G	50G
Vibration (*4)	9G		
Enclosure Classification	IEC 60529 IP67 (NEMA 6)		
Protection Circuit (*5)	4	3,4	

NOTE:

1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent damage to sensor will occur.
2. Measuring standard target: ø15.5Xø8X5t (Anisotropy rubber magnet)
3. Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
4. Double amplitude 1.5 mm / 10Hz~55Hz~10Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
5. 1=None / 2=Short-circuit / 3=Power Source Reverse polarity / 4=Surge Suppression

■ SELF MOUNTING CLAMPS



Unit:mm

CS-1000D



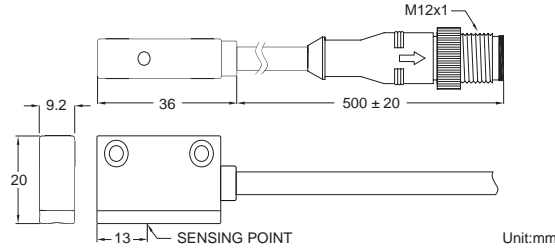
Magnetic Sensor

MAGNETIC FIELD RESISTANT

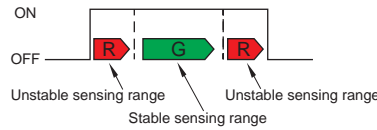


Dual Color LED allow more precise positioning

DIMENSIONS

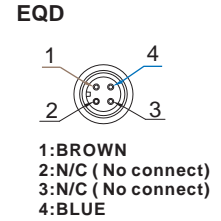
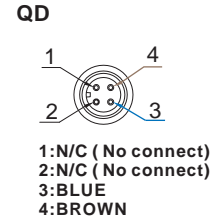


SW OUT



The function of three sensing range indicators ensures the preciseness of setting position.

QD PINOUT



SPECIFICATIONS

TYPE	CS-1000D
CONNECT DIAGRAM	
CHARACTERISTICS	
Wiring Method	2-Wire Type
Switching Logic	Solid State Output, Normally Open
Sensor Type	-
Operating Voltage	10~28V DC
Switching Current	5~50mA max.
Contact Rating (*1)	1.5W max.
Current Consumption	-
Voltage Drop	5V max.
Leakage Current	1mA max.
Indicator	Red LED : unstable sensing range Green LED : stable sensing range
Cable	ø5.4, 2C, PVC
Operating Time	50ms max.
Magnetic Field Resistance (*2)	16000A
Magnet Requirement (*3)	85 Gauss
Temperature Range	-10~60°C (+14~140°F)
Shock (*4)	30G
Vibration (*5)	9G
Enclosure Classification	IEC 60529 IP67 (NEMA 6)
Protection Circuit (*6)	3,4

NOTE:

1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent damage to sensor will occur.
2. The operational distance can be 0 mm between CS-1000D and welding gun (welding conductor or cable) when the welding current less than 16000 A.
3. Measuring standard target: ø15.5Xø8X5t (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 / 10Hz~55Hz~10Hz (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

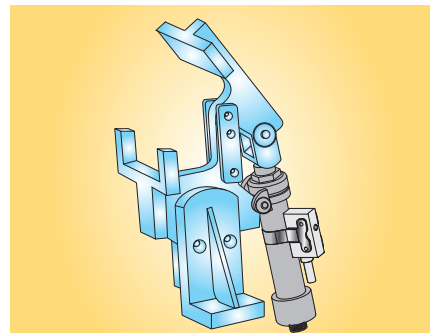
ORDERING INFORMATION

CS-1000D -

Cable Length / Connector

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

APPLICATION MOUNTING



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

CS-1000D

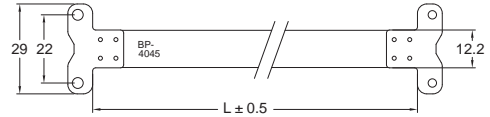
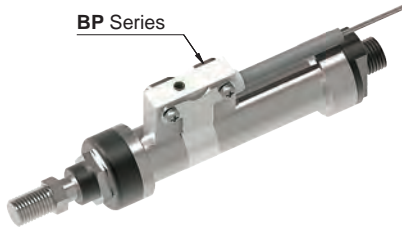


Magnetic Sensor

CLAMPS

BP

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



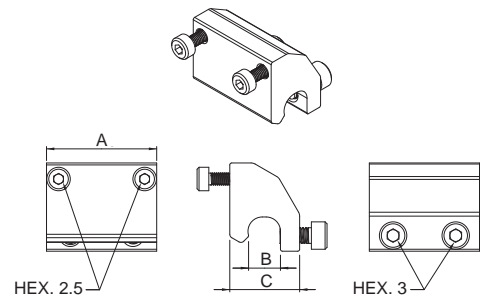
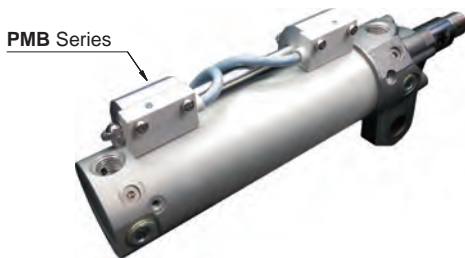
NO.	Model	" L "	I.D.	O.D.
1	BP-4045	154	∅40	∅45
2	BP-4047	161	∅40	∅47
3	BP-5055	188	∅50	∅55
4	BP-5058	197	∅50	∅58
5	BP-6368	228	∅63	∅68
6	BP-6372	240	∅63	∅72

Unit:mm

BRACKET

PMB

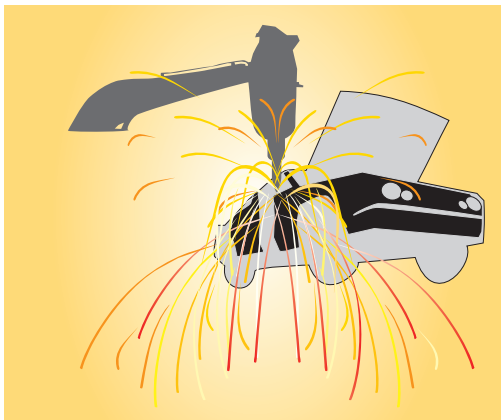
Clamp is designed for mounting CS-1000D on round cylinder.



Model	DIM.	A	B	C
PMB-040		28.15	8.15	17.85

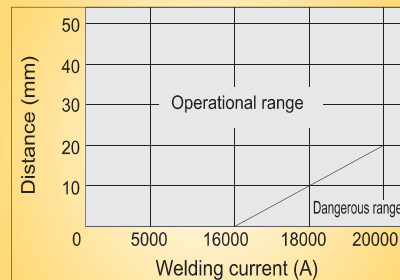
Unit:mm

APPLICATION ENVIRONMENT



CS-1000D can be applied in the strong magnetic field environment such as automotive manufacturing or areas near welding machine. When CS-1000D detects the magnetic AC field (50 or 60 Hz) it will keep the status of output and will not be effected.

WELD-FIELD IMMUNE



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

CS-1001D



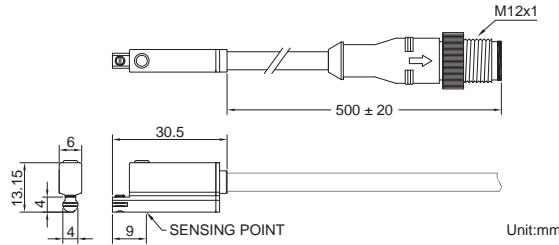
Magnetic Sensor

MAGNETIC FIELD RESISTANT



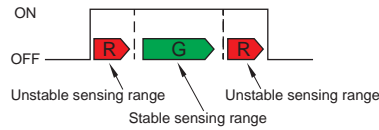
Dual Color LED allow more precise positioning

■ DIMENSIONS



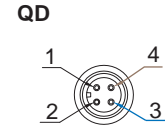
Unit:mm

■ SW OUT



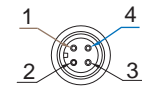
The function of three sensing range indicators ensures the preciseness of setting position.

■ QD PINOUT



- 1:N/C (No connect)
- 2:N/C (No connect)
- 3:BLUE
- 4:BROWN

EQD



- 1:BROWN
- 2:N/C (No connect)
- 3:N/C (No connect)
- 4:BLUE

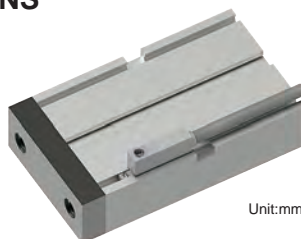
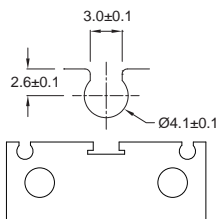
■ SPECIFICATIONS

TYPE	CS-1001D
CONNECT DIAGRAM	
CHARACTERISTICS	
Wiring Method	2-Wire Type
Switching Logic	Solid State Output, Nornally Open
Sensor Type	-
Operating Voltage	10~28V DC
Switching Current	5~50mA max.
Contact Rating (*1)	1.5W max.
Current Consumption	-
Voltage Drop	5V max.
Leakage Current	1mA max.
Indicator	Red LED : unstable sensing range Green LED : stable sensing range
Cable	ø4.8, 2C, PVC
Operating Time	50ms max.
Magnetic Feild Resistance (*2)	16000A
Magnet Requirement (*3)	85 Gauss
Temperature Range	-10~60°C (+14~140°F)
Shock (*4)	50G
Vibration (*5)	9G
Enclosure Classification	IEC 60529 IP67 (NEMA 6)
Protection Circuit (*6)	3,4

NOTE:

1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent damage to sensor will occur.
2. 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.
3. Measuring standard target: ø15.5Xø8X5t (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 / 10Hz~55Hz~10Hz (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

■ ORDERING INFORMATION

CS-1001D-

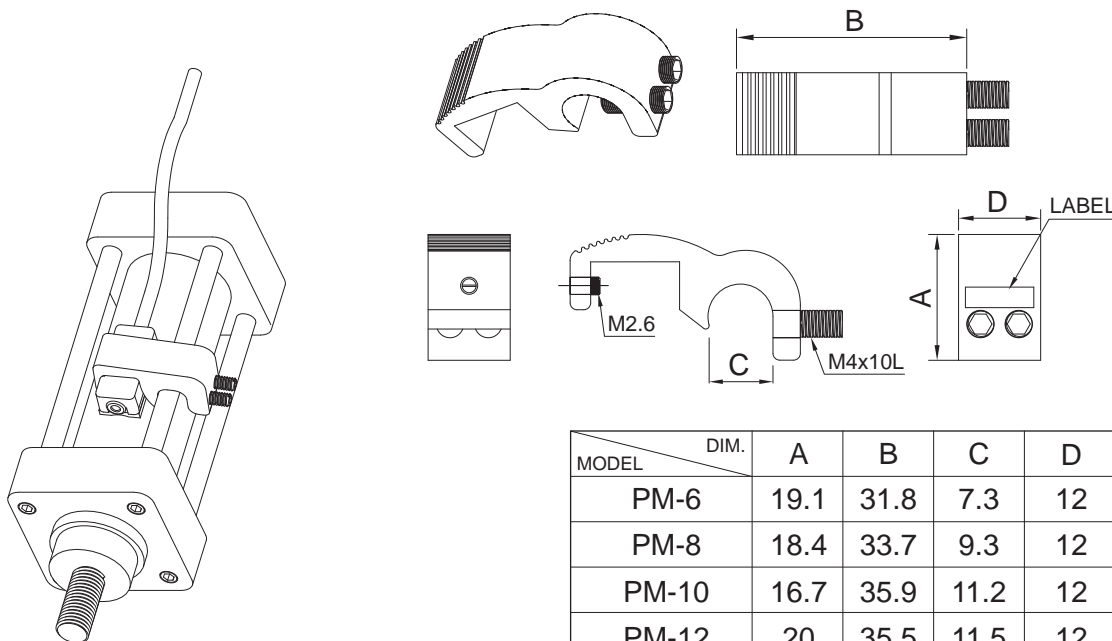
Cable Length / Connector

Blank: With 3 meter cable

QD: With M12 4Pin male connector

PM

Bracket is designed for mounting CS-21 & CS-31 series sensor on tie-rod cylinder.

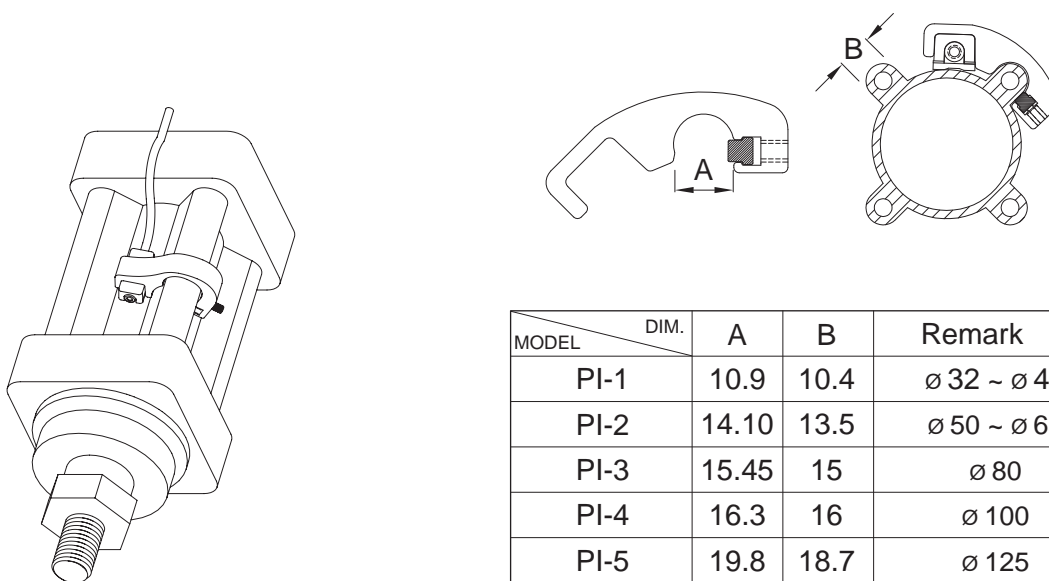


MODEL	DIM.	A	B	C	D
PM-6		19.1	31.8	7.3	12
PM-8		18.4	33.7	9.3	12
PM-10		16.7	35.9	11.2	12
PM-12		20	35.5	11.5	12
PM-14		24	38.0	13.5	12
PM-16		24	40.0	15.5	12

Unit:mm

PI

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



MODEL	DIM.	A	B	Remark
PI-1		10.9	10.4	ø 32 ~ ø 40
PI-2		14.10	13.5	ø 50 ~ ø 63
PI-3		15.45	15	ø 80
PI-4		16.3	16	ø 100
PI-5		19.8	18.7	ø 125
PI-6		26.5	25.7	ø 150

Unit:mm

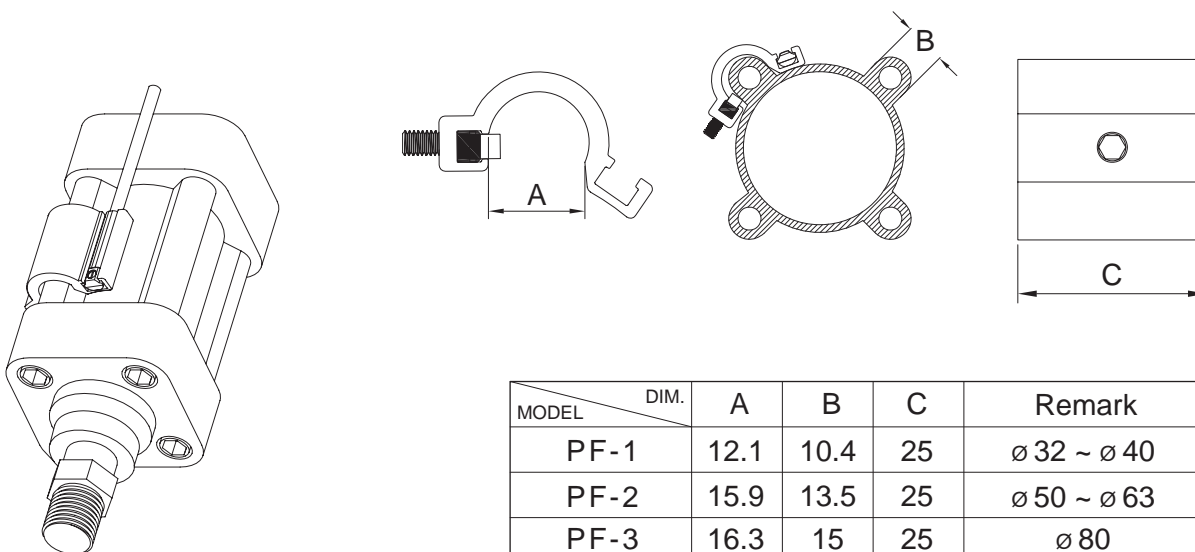
BRACKET

PF/DT
SERIES

Magnetic Sensor

PF

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

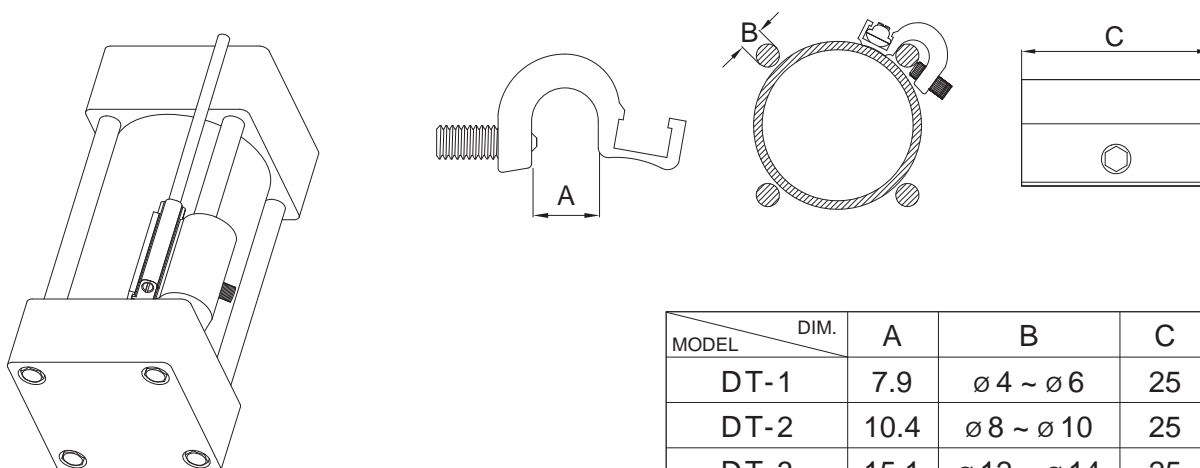


MODEL	DIM.	A	B	C	Remark
PF-1		12.1	10.4	25	ø 32 ~ ø 40
PF-2		15.9	13.5	25	ø 50 ~ ø 63
PF-3		16.3	15	25	ø 80
PF-4		17.9	16	25	ø 100
PF-5		19.7	18.7	25	ø 125

Unit:mm

DT

Bracket is designed for mounting CS-40 & CS-50 & CS-65 & CS-75 series sensor on tie-rod cylinder.



MODEL	DIM.	A	B	C
DT-1		7.9	ø 4 ~ ø 6	25
DT-2		10.4	ø 8 ~ ø 10	25
DT-3		15.1	ø 12 ~ ø 14	25
DT-4		20.6	ø 16	25
DT-5		24.9	ø 20 ~ ø 24	30

Unit:mm

BRACKET

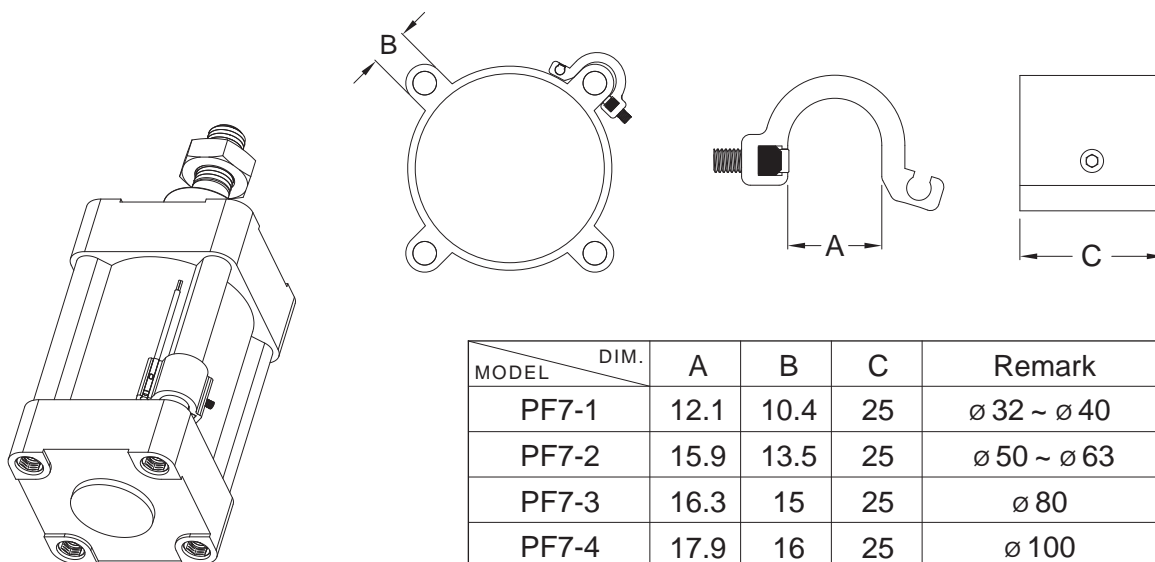
PF7/DT7

SERIES

Magnetic Sensor

PF7

Bracket is designed for mounting CS-07 & CS-16 & CS-18 & CS-36 & CS-37 & CS-38 & CS-77 series sensor on ISO profile cylinder.

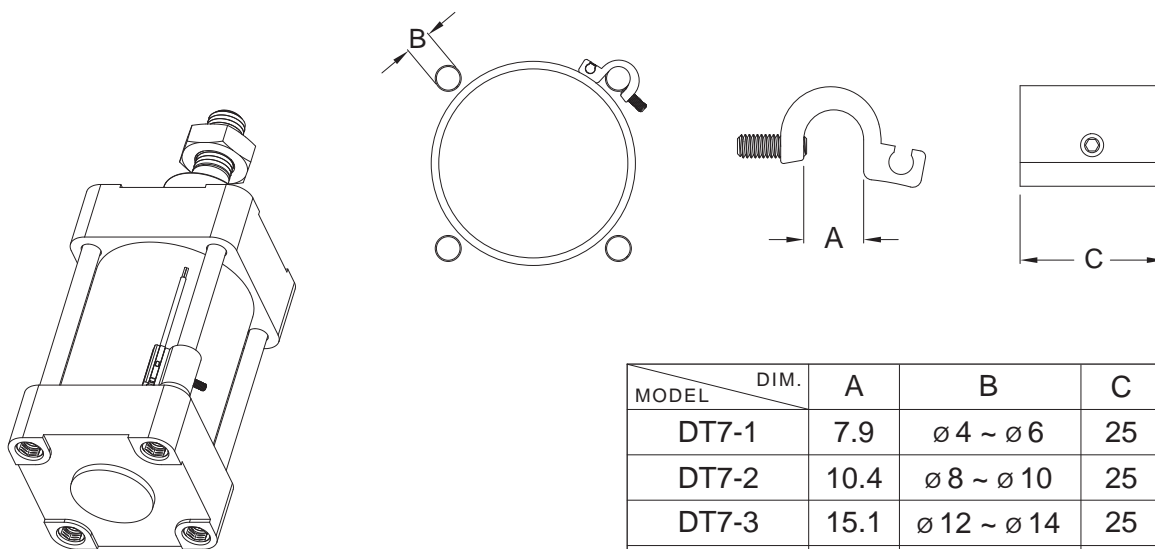


MODEL \ DIM.	A	B	C	Remark
PF7-1	12.1	10.4	25	ø 32 ~ ø 40
PF7-2	15.9	13.5	25	ø 50 ~ ø 63
PF7-3	16.3	15	25	ø 80
PF7-4	17.9	16	25	ø 100
PF7-5	19.7	18.7	25	ø 125
PF7-6	27.6	25.7	25	ø 160

Unit:mm

DT7

Bracket is designed for mounting CS-07 & CS-16 & CS-18 & CS-36 & CS-37 & CS-38 & CS-77 series sensor on tie-rod cylinder.



MODEL \ DIM.	A	B	C
DT7-1	7.9	ø 4 ~ ø 6	25
DT7-2	10.4	ø 8 ~ ø 10	25
DT7-3	15.1	ø 12 ~ ø 14	25
DT7-4	20.6	ø 16	25

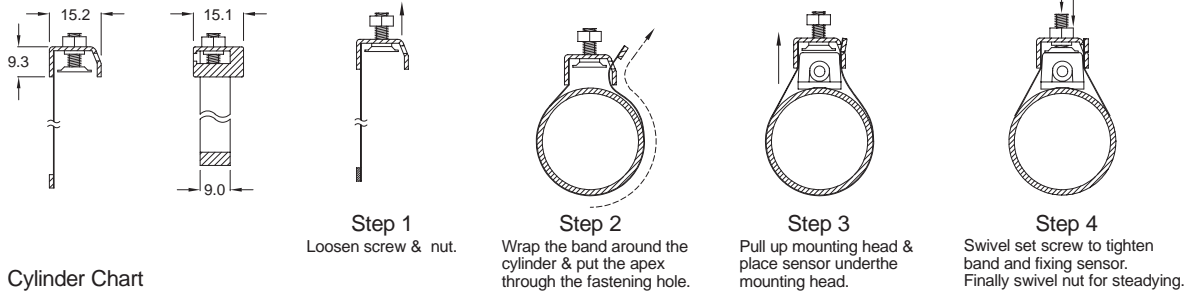
Unit:mm

CLAMP PN/PH/PAB SERIES

Magnetic Sensor

PN

Clamp is designed for mounting CS-21 & CS-31 series sensor on round cylinder.



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			

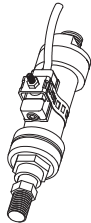
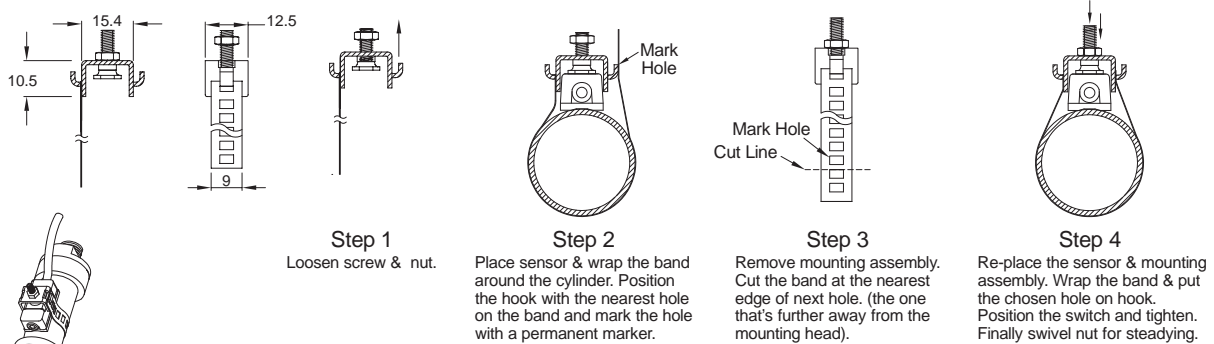


PN - S 2 0

— Cylinder bore size.
S : For cylinder body is stainless steel.
A : For cylinder body is aluminium steel.

PH

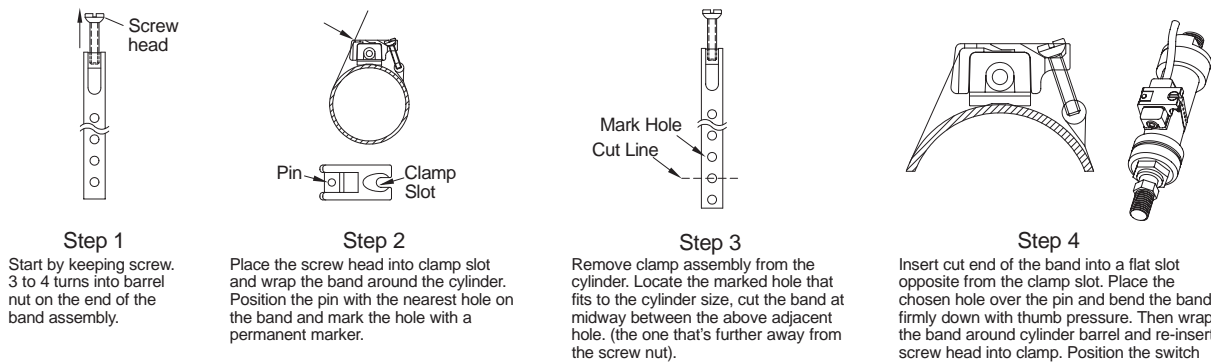
Clamp is designed for mounting CS-21 & CS-31 series sensor on round cylinder.



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

PAB

Clamp is designed for mounting CS-21 & CS-31 series sensor Ø12 ~ Ø100 on round cylinder.



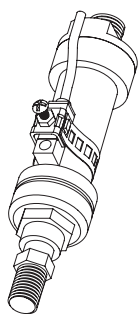
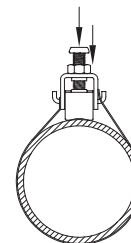
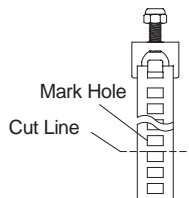
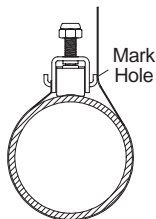
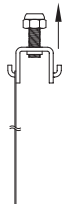
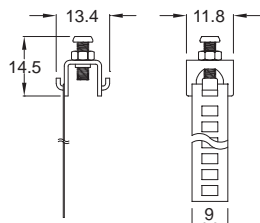
PAB : For Ø12 ~ Ø100 round cylinder use.

CLAMP

BK/BS SERIES

Magnetic Sensor

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



Step 1
Loosen screw & nut.

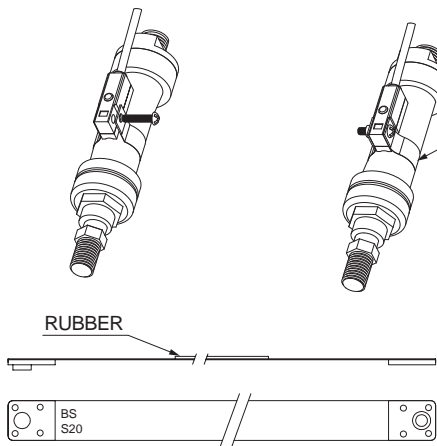
Step 2
Place sensor & wrap the band around the cylinder. Position the hook with the nearest hole on the band and mark the hole with a permanent marker.

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).

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.

BK-81 : For $\varnothing 6 \sim \varnothing 32$ round cylinder use.
BK-82 : For $\varnothing 6 \sim \varnothing 63$ round cylinder use.

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



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

BS - **S** **2** **5**

- 12 : $\varnothing 12$ cylinder
- 16 : $\varnothing 16$ cylinder
- ...
- 40 : $\varnothing 40$ cylinder

S : For cylinder body is stainless steel.
A : For cylinder body is aluminum alloy.

EX : **BS-S25** : It is used on $\varnothing 25$ cylinder and material of cylinder tube is stainless.

Cylinder Chart

Model	Bore Size	Barrel Material	O.D. (mm)	Model	Bore Size	Barrel Material	O.D. (mm)
BS-A20	$\varnothing 20$	Aluminum	25	BS-S6	$\varnothing 6$	Stainless	8.5
BS-A25	$\varnothing 25$	Aluminum	30	BS-S8	$\varnothing 8$	Stainless	10
BS-A30	$\varnothing 30$	Aluminum	35	BS-S10	$\varnothing 10$	Stainless	11
BS-A32	$\varnothing 32$	Aluminum	37	BS-S12	$\varnothing 12$	Stainless	13.2
BS-A40	$\varnothing 40$	Aluminum	45	BS-S16	$\varnothing 16$	Stainless	17
BS-A50	$\varnothing 50$	Aluminum	55	BS-S20	$\varnothing 20$	Stainless	21.6
BS-A63	$\varnothing 63$	Aluminum	70	BS-S25	$\varnothing 25$	Stainless	26.5
BS-A80	$\varnothing 80$	Aluminum	87.7	BS-S32	$\varnothing 32$	Stainless	33.6
				BS-S40	$\varnothing 40$	Stainless	42

BL-1

Clamp is designed for mounting CS-40 & CS-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

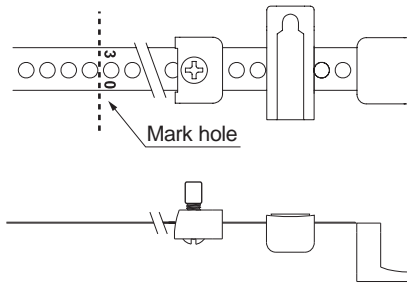


How to use:

Example: Use with Ø40 stainless body cylinder

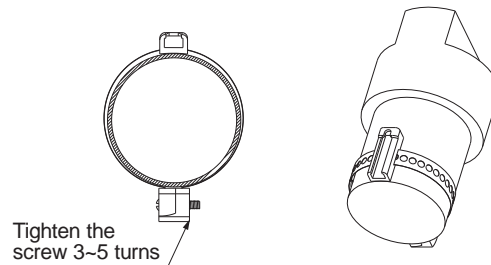
Step 1

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



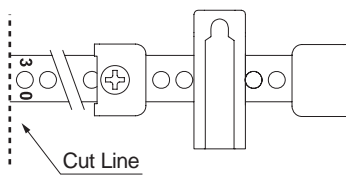
Step 4

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



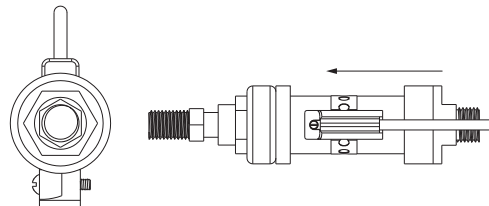
Step 2

Cut off excessive mounting band.



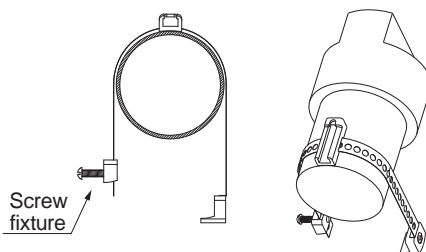
Step 5

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



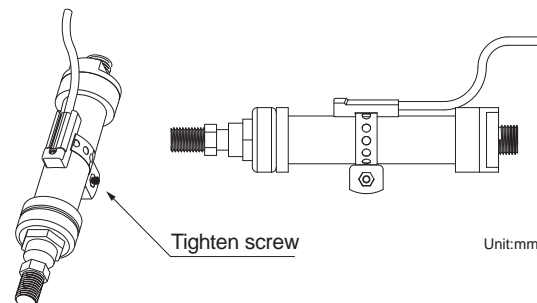
Step 3

Insert screw through screw fixture and the appropriate hole.



Step 6

Adjust sensor to the sensing position and tighten.



▶ BKC-1

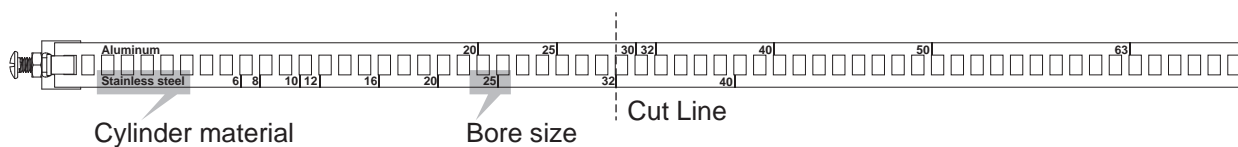
BKC-1 is designed for mounting CS-07 & CS-77 series sensor on round cylinder.



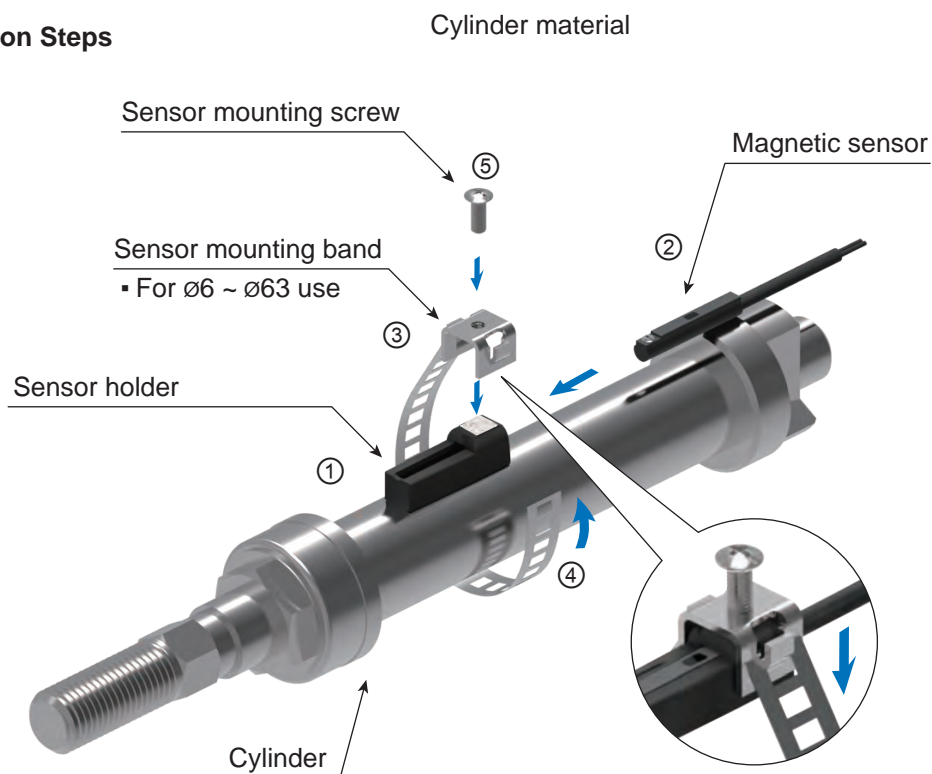
How to use :

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

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



2. Installation Steps



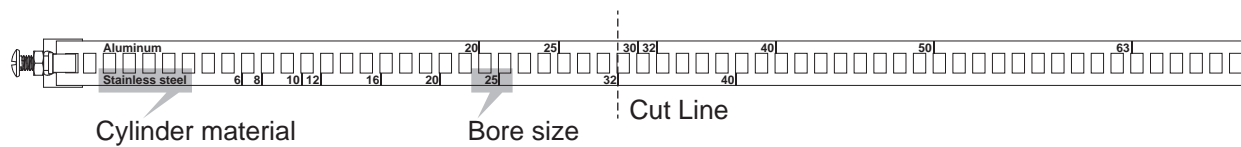
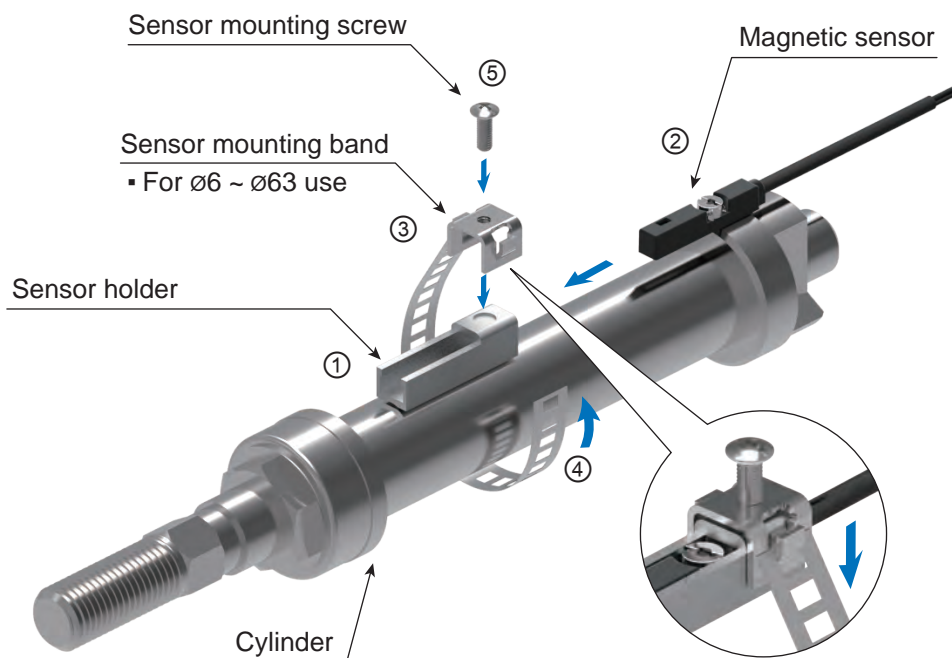
Unit:mm

▶ BKT-1

BKT-1 is designed for mounting CS-65 & CS-75 series sensor on round cylinder.

**How to use :****1. Example: Use with $\varnothing 32$ stainless body cylinder.**

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

**2. Installation Steps**

Unit:mm

FST

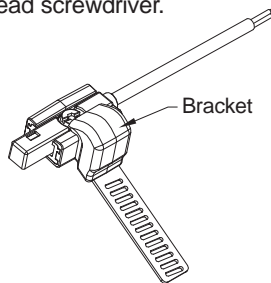
FST is designed for CS-40 & CS-50 & CS-65 & CS-75 series sensor on tie-rod cylinder.



How to mount:

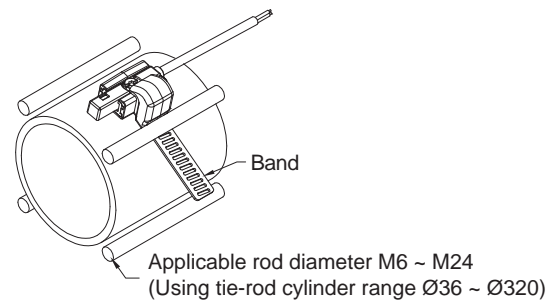
Step 1

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



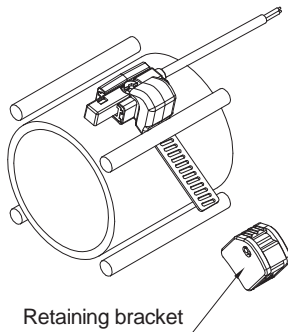
Step 2

Insert the band between cylinder tube and tie-rod.



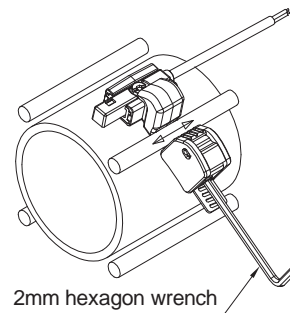
Step 3

Slide the retaining bracket onto the band.



Step 4

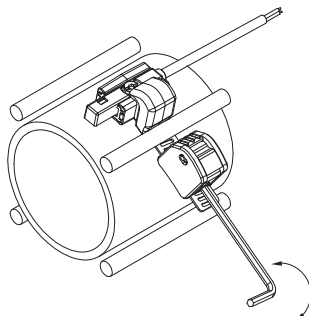
Adjust by moving bracket to most ideal sensing position and tighten screw. (Torque: 5~7 kgs).



How to dismount:

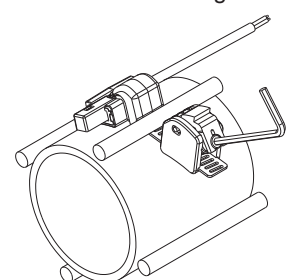
Step 1

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



Step 2

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

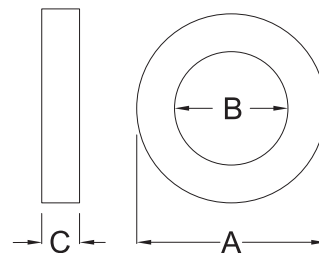


Unit:mm

ANISOTROPIC RUBBER MAGNET

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

MODEL \ DIM.	A / ± 0.00 -0.80	B / ± 0.80 -0.00	C / ± 0.2
ME - 16 - 8 × 5	15.50	8.00	5.00
ME - 20 - 9 × 5	19.50	9.00	5.00
ME - 25 - 13 × 5	24.50	13.00	5.00
ME - 30 - 21 × 5	29.50	21.00	5.00
ME - 32 - 21 × 5	31.50	21.00	5.00
ME - 40 - 22 × 5	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



CHARACTERISTIC

A. 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

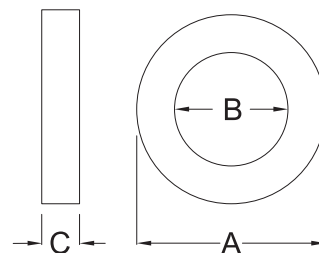
B. Physical property:

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

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



CHARACTERISTIC

A. 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

B. 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