Magnetic Sensor

CS-05 series

2-06

CS-06 series

2-07

CS-07 series

2-08

CS-11 series

2-09

CS-15 series

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CS-16 series

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CS-18 series

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CS-21 series

2-13

CS-30 series

2-16

CS-31 series

2-17

CS-32 series

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CS-33 series

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CS-36 series

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CS-37 series

2-21

CS-38 series

2-22

CS-40 series

2-23

CS-47 series

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CS-48 series

2-25

CS-50 series

2-26

CS-53 series

2-27

CS-58 series

2-28

CS-65 series

2-29

CS-75 series

2-30

CS-77 series

2-32

CS-6100 series

2-33

CS-6200 series

2-34

Bracket

2-38

Clamp

2-40

Magnet

2-43

CS-22
Gear Tooth Sensor
2-14

CS-28
Magnetic Proximity Sensor
2-15

CS-1000D
Weld-field Immune Sensor
2-35

CS-1001D
Weld-field Immune Sensor
2-37

ORDERING INFORMATION

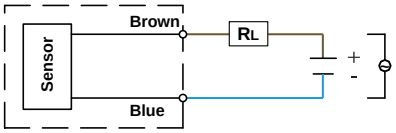
C S- 0 6 R H- 2 M

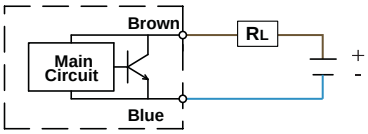
- SENSOR MODEL
- SWITCH TYPE
  - R=Reed Switch 2 wire type
  - RP=Reed Switch 3 wire current sourcing
  - RN=Reed Switch 3 wire current sinking
  - P=Solid state type, Current sourcing(PNP output)
  - N=Solid state type, Current sinking(NPN output)
  - D=Solid state type, 2-Wire
  - T=TRIAC output
  - R-NC=REED/N.C
  - P-NC=PNP/N.C
  - N-NC=NPN/N.C
- SPECIAL MARK
  - None=Standard Sensitivity
  - H=High Sensitivity
  - L=Low Sensitivity
  - X=NO Indicator
- CABLE LENGTH / QD PINOUT
  - QD=M8 male connector
  - EQD=M8 male connector for 2-wire type
  - 1M=The length of cable is 1 meter
  - 2M=The length of cable is 2 meters
  - 3M=The length of cable is 3 meters
  - 5M=The length of cable is 5 meters
  - 10M=The length of cable is 10 meters

CONNECTION METHOD

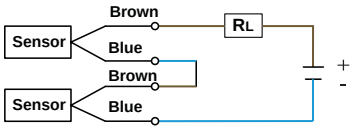
2 wire sensor connection

▶ General connection



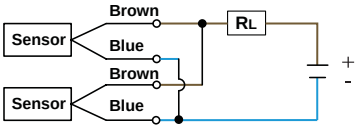


▶ Series Connection (AND)



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.

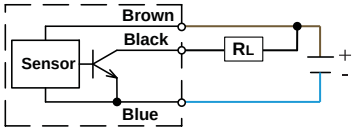
▶ Parallel Connection (OR)



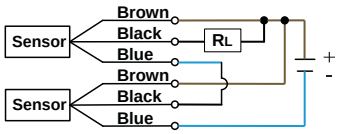
1. When connecting non-contact 2-wire sensors in parallel (OR), leakage current will increase and cause improper load operation.
2. When connecting 2-wire reed sensors in parallel(OR), possible concurrent operation will cause dim LED illumination due to lower current distribution.

3 wire NPN connection

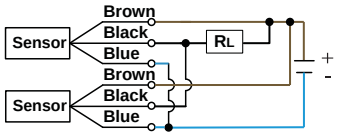
▶ General connection



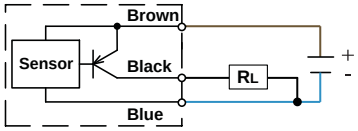
▶ Series connection (AND)

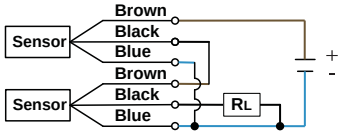


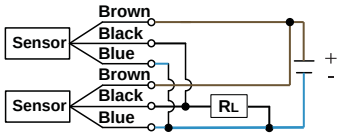
▶ Parallel connection (OR)



3 wire PNP connection



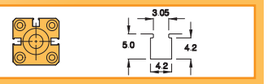
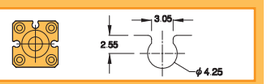
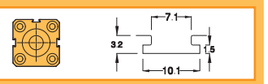
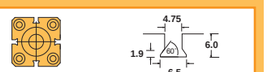
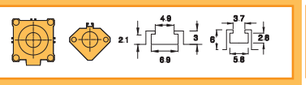
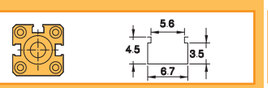
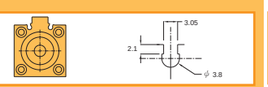
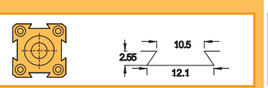
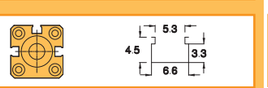
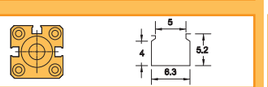




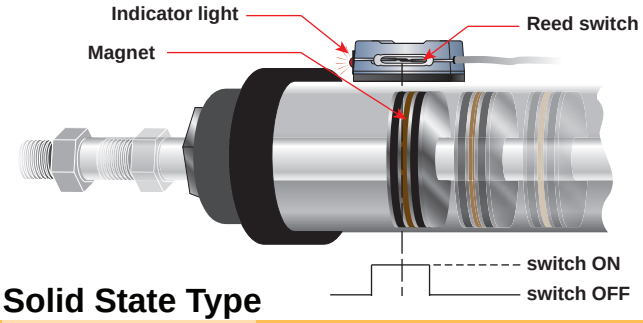
Cylinder / Magnetic SW. Cross Index

CS-05 CS-06 CS-07 CS-11 CS-15 CS-16 CS-18 CS-21 CS-30 CS-31 CS-32 CS-33

CS-36 CS-37 CS-38 CS-40 CS-47 CS-48 CS-50 CS-53 CS-58 CS-65 CS-75 CS-77 CS-6100 CS-6200 CS-1000D CS-1001D

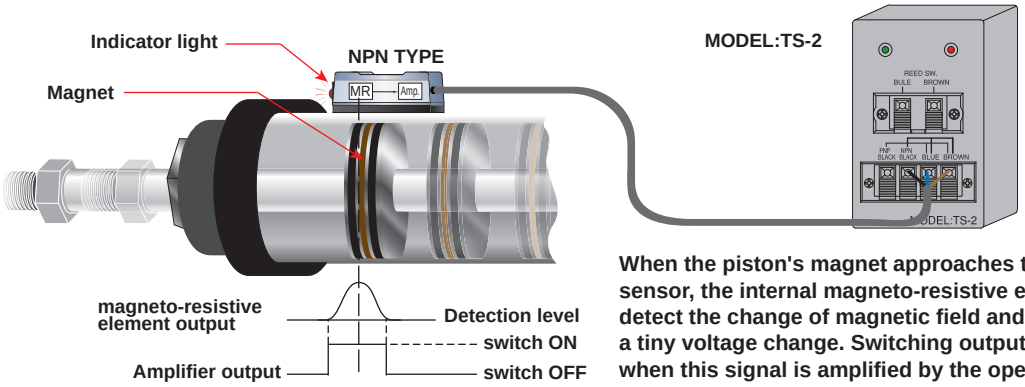
	CS-05	CS-06	CS-07	CS-11	CS-15	CS-16	CS-18	CS-21	CS-30	CS-31	CS-32	CS-33	CS-36	CS-37	CS-38	CS-40	CS-47	CS-48	CS-50	CS-53	CS-58	CS-65	CS-75	CS-77	CS-6100	CS-6200	CS-1000D	CS-1001D
Round cylinder 	BK P. 2-41				BK P. 2-41			PN PH PAB P. 2-40		PAB P. 2-40						BL-1 P. 2-42		BS P. 2-41	BL-1 P. 2-42						●		BP P. 2-36	
ISO profile cylinder 								PI P. 2-38		PI P. 2-38	PF P. 2-39					PF P. 2-39			PF P. 2-39			PF P. 2-39	PF P. 2-39					
Tie-rod cylinder 								PM PAC P. 2-38		PAC P. 2-38	DT P. 2-39					DT P. 2-39			DT P. 2-39			DT P. 2-39	DT P. 2-39		●			
		●																										
			●			●	●						●	●	●									●				●
				●																								
									●																			
												●																
											●				●				●				●					
																				●								
																	●		PB-04 P. 2-39									
																												
																				●								

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

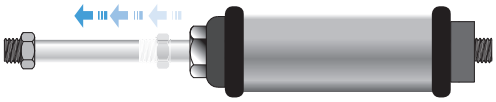


When the piston's magnet approaches the magnetic sensor, the internal magneto-resistive element can detect the change of magnetic field and cause a tiny voltage change. Switching output is achieved when this signal is amplified by the operation amplifier circuit in the magnetic sensor.

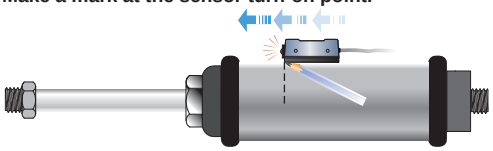
How to install the Magnetic sensor

▶ END OF STROKE DETECTION

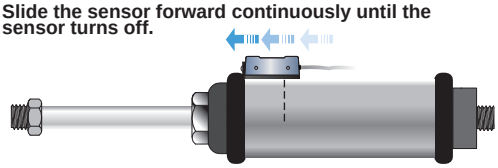
STEP 1 Set the piston to the end of stroke position.



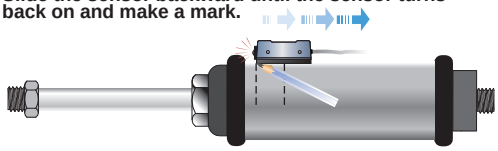
STEP 2 Slide the magnetic sensor forward and keep it close to the cylinder wall.
Make a mark at the sensor turn-on point.



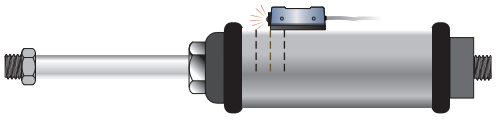
STEP 3 Slide the sensor forward continuously until the sensor turns off.



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



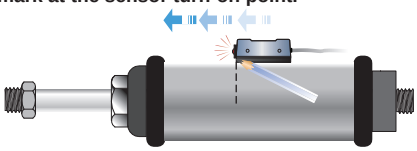
STEP 5 The intermediate position between the 2 marks will be the most ideal position.



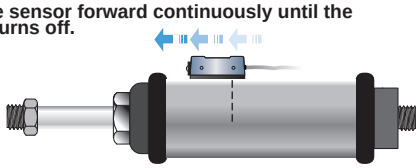
▶ INTERMEDIATE STROKE POSITION

STEP 1 Set the piston to the required position.

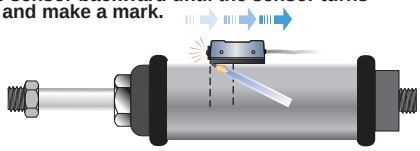
STEP 2 Slide the magnetic sensor forward and keep it close to the cylinder wall.
Make a mark at the sensor turn-on point.



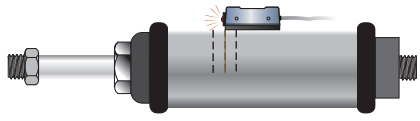
STEP 3 Slide the sensor forward continuously until the sensor turns off.



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.

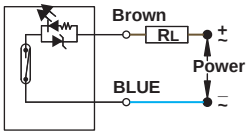


CAUTION ⚠

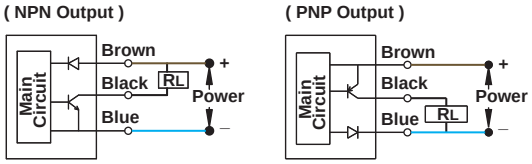
Magnetic Sensor

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

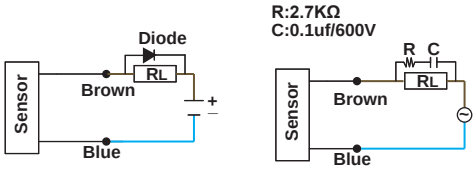
2.For reed switch type sensors, polarity must also be observed for the proper function of LED. Connect the brown wire in series with load positive (+) and the blue wire to negative (-) of power source. If the polarity is reversed, reed sensor remain functional but LED will remain in "OFF" state.



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

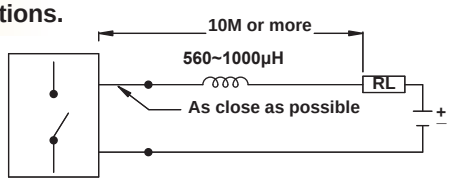


4.An external protection circuit may be required if the reed sensor is used with inductive load, such as relay or solenoid . For DC inductive load , attach an external diode parallel to the load and use R-C circuit parallel with AC inductive load as illustrated below.

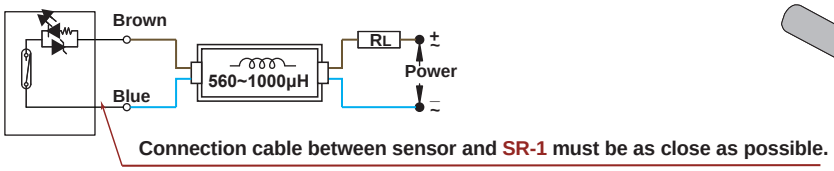


5.Keep sensors away form strong magnetic field to prevent malfunctions.

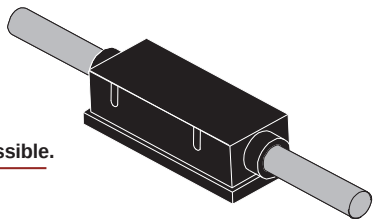
6.When using reed sensor with capacitive load or if the lead wire length exceed 10-meter, an inductor (560 ~ 1000 μH) or SR-1 (surge suppressor) must be installed in series with the sensor to prevent damage (Sticking effect).



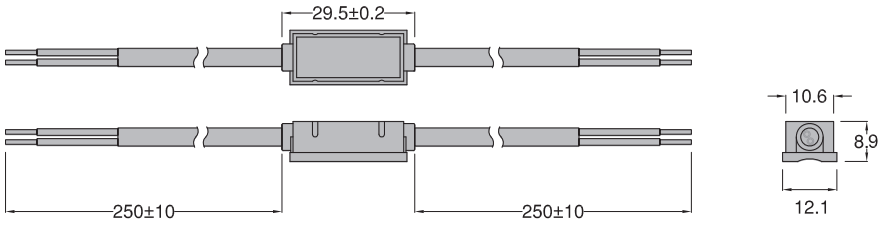
MODEL:SR-1 (Surge Suppressor)



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



DIMENSION



Unit:mm

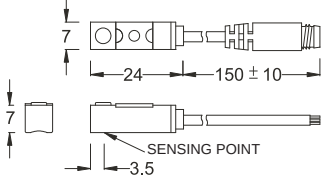
CS-05 SERIES

RoHS

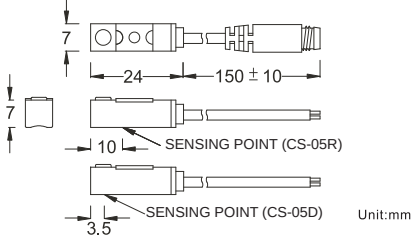
Magnetic Sensor

DIMENSION

CS-05N, CS-05P / CS-05N-QD, CS-05P-QD



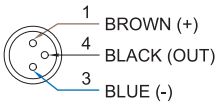
CS-05R, CS-05D / CS-05R-QD, CS-05D-QD



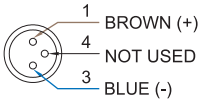
Unit:mm

QD PINOUT

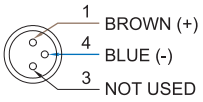
***3 wire QD wiring**



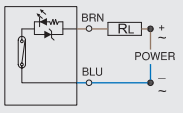
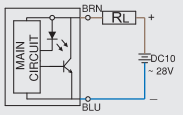
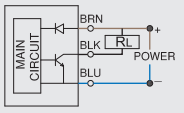
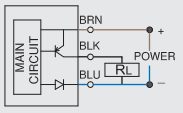
***2 wire QD wiring**



***2 wire EQD wiring**

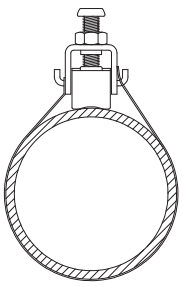


SPECIFICATION

TYPE	CS-05R	CS-05D	CS-05N	CS-05P
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	100 mA max.	50 mA max.	200 mA. max.	
CONTACT RATING (NOTE 1)	10 W max.	1.5 W max.	6W max.	
CURRENT CONSUMPTION	--		8 mA @ 24V DC max.	
VOLTAGE DROP	3.0 V max.	3.5 V max.	1 V @ 200mA max.	
LEAKAGE CURRENT	--	0.8 mA max.	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 (NOTE 2)	50 Gauss	80 Gauss		
TEMPERATURE RANGE	-10~70˚C(+14~158˚F)			
SHOCK (NOTE 3)	30 G	50 G		
VIBRATION (NOTE 4)	9 G			
ENCLOSURE CLASSIFICATION	IEC 60529 IP67 (NEMA6)			
PROTECTION CIRCUIT (NOTE 5)	1	2,4	2,3,4	

NOTE:
1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent demage 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 2-41)

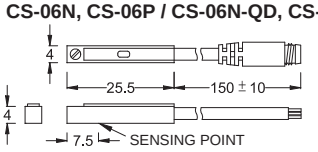
CS-06 SERIES

RoHS

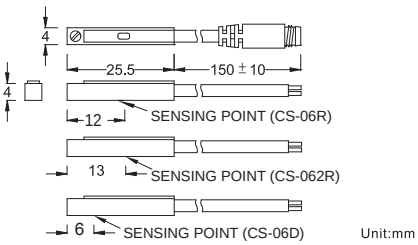
Magnetic Sensor

DIMENSION

CS-06N, CS-06P / CS-06N-QD, CS-06P-QD



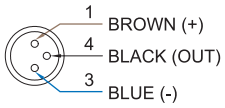
CS-06R, CS-062R, CS-06D /
CS-06R-QD, CS-062R-QD, CS-06D-QD



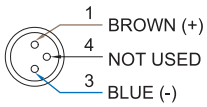
Unit:mm

QD PINOUT

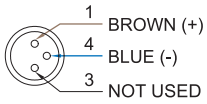
***3 wire QD wiring**



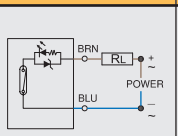
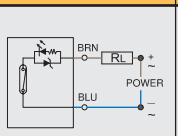
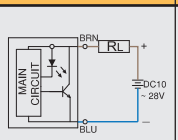
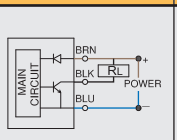
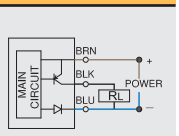
***2 wire QD wiring**



***2 wire EQD wiring**

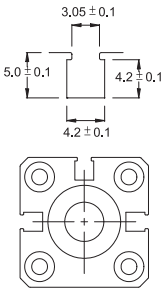


SPECIFICATION

TYPE	CS-06R	CS-062R	CS-06D	CS-06N	CS-06P
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	100 mA max.		4~40 mA max.	200 mA. max.	
CONTACT RATING (NOTE 1)	10 W max.		1.5 W max.	6W max.	
CURRENT CONSUMPTION	--			8 mA @ 24V DC max.	
VOLTAGE DROP	3.0 V max.	3.5 V max.		1 V @ 200mA max.	
LEAKAGE CURRENT	--		1 mA max.	0.01 mA max.	
INDICATOR	Red LED	Green LED	Red LED		Green LED
CABLE	ø2.8, 2C, PUR			ø2.8, 3C, PUR	
OPERATING FREQUENCY	200 Hz		1000 Hz		
MAGNET REQUIREMENT (NOTE 2)	70 Gauss		40 Gauss		
TEMPERATURE RANGE	-10~70˚C(+14~158˚F)				
SHOCK (NOTE 3)	30 G		50 G		
VIBRATION (NOTE 4)	9 G				
ENCLOSURE CLASSIFICATION	IEC 60529 IP67 (NEMA 6)				
PROTECTION CIRCUIT (NOTE 5)	1		4	2,3,4	

NOTE:
1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent demage 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 DIMENSION



Unit:mm

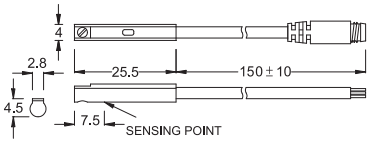
CS-07 SERIES

RoHS

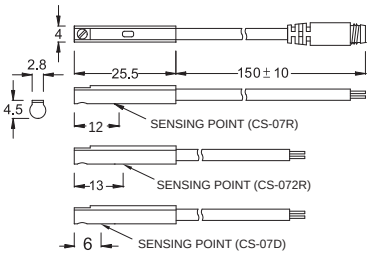
Magnetic Sensor

DIMENSION

CS-07N, CS-07P / CS-07N-QD, CS-07P-QD

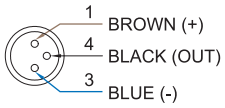


CS-07R, CS-072R, CS-07D /
CS-07R-QD, CS-072R-QD, CS-07D-QD

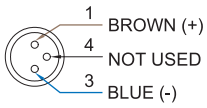


QD PINOUT

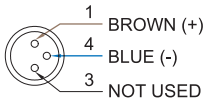
***3 wire QD wiring**



***2 wire QD wiring**

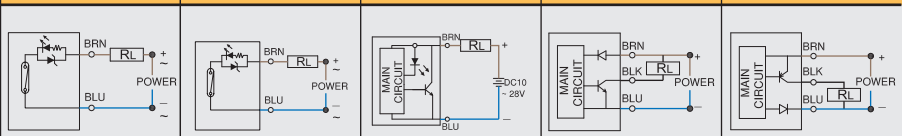


***2 wire EQD wiring**



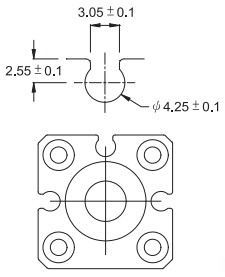
SPECIFICATION

Unit:mm

TYPE	CS-07R	CS-072R	CS-07D	CS-07N	CS-07P
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	100 mA max.		4~40 mA max.	200 mA. max.	
CONTACT RATING (NOTE 1)	10 W max.		1.5 W max.	6W max.	
CURRENT CONSUMPTION	--			8 mA @ 24V DC max.	
VOLTAGE DROP	3.0 V max.	3.5 V max.		1 V @ 200mA max.	
LEAKAGE CURRENT	--		1 mA max.	0.01 mA max.	
INDICATOR	Red LED	Green LED	Red LED		Green LED
CABLE	ø2.8, 2C, PUR			ø2.8, 3C, PUR	
OPERATING FREQUENCY	200 Hz		1000 Hz		
MAGNET REQUIREMENT (NOTE 2)	70 Gauss		40 Gauss		
TEMPERATURE RANGE	-10~70˚C(+14~158˚F)				
SHOCK (NOTE 3)	30 G		50 G		
VIBRATION (NOTE 4)	9 G				
ENCLOSURE CLASSIFICATION	IEC 60529 IP67 (NEMA 6)				
PROTECTION CIRCUIT (NOTE 5)	1		4	2,3,4	
SET SCREW MAX. TORQUE	1.77 in-lbs (0.2 N-m)				

NOTE:
1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent demage 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 DIMENSION



Unit:mm

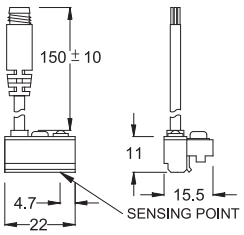
CS-11 SERIES

RoHS

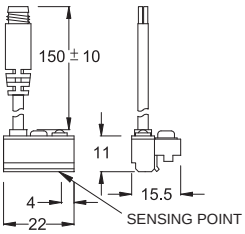
Magnetic Sensor

DIMENSION

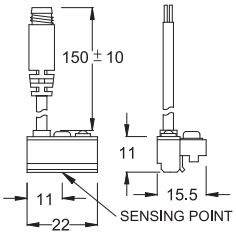
CS-11N, CS-11P
CS-11N-QD, CS-11P-QD



CS-11D / CS-11D-QD



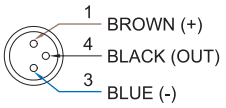
CS-11R / CS-11R-QD



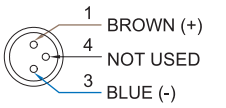
Unit:mm

QD PINOUT

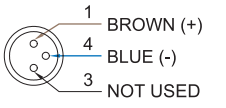
*3 wire QD wiring



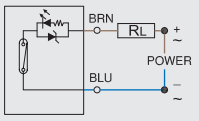
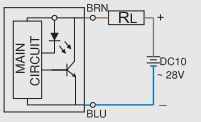
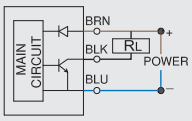
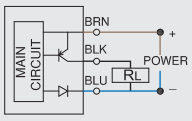
*2 wire QD wiring



*2 wire EQD wiring

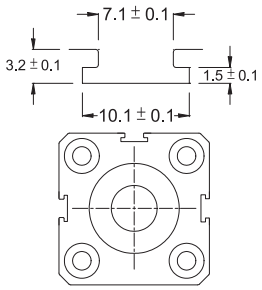


SPECIFICATION

TYPE	CS-11R	CS-11D	CS-11N	CS-11P
CONNECT DIAGRAM				
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	100 mA max.	4~40 mA max.	200 mA max.	
CONTACT RATING (NOTE 1)	10 W max.	1.5 W max.	6 W max.	
CURRENT CONSUMPTION	--		22 mA @ 24V DC max.	20 mA @ 24V DC max.
VOLTAGE DROP	3.5 V max.		0.5 V max.	
LEAKAGE CURRENT	--	1 mA max	0.01 mA max.	
INDICATOR	Red LED	Green LED	Red LED	Green LED
CABLE	ø3.3, 2C, PVC		ø3.3, 3C, PVC	
OPERATING FREQUENCY	200 Hz	1000 Hz		
MAGNET REQUIREMENT (NOTE 2)	70 Gauss	60 Gauss		
TEMPERATURE RANGE	-10~70˚C(+14~158˚F)			
SHOCK (NOTE 3)	30 G	50 G		
VIBRATION (NOTE 4)	9 G			
ENCLOSURE CLASSIFICATION	IEC 60529 IP67 (NEMA 6)			
PROTECTION CIRCUIT (NOTE 5)	1	4	3,4	

NOTE:
1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent demage 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 DIMENSION



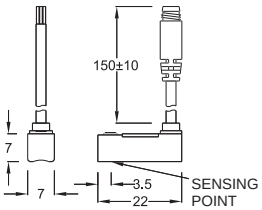
Unit:mm

CS-15 SERIES

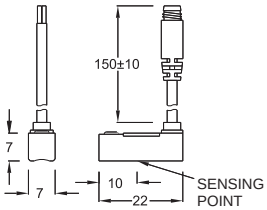
Magnetic Sensor

DIMENSION

CS-15N, CS-15P
CS-15N-QD, CS-15P-QD



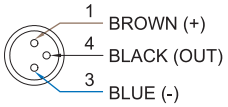
CS-15R / CS-15R-QD



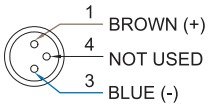
Unit:mm

QD PINOUT

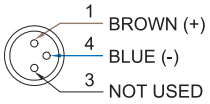
*3 wire QD wiring



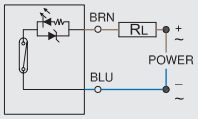
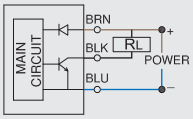
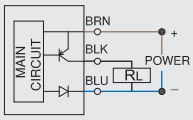
*2 wire QD wiring



*2 wire EQD wiring

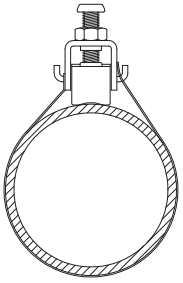


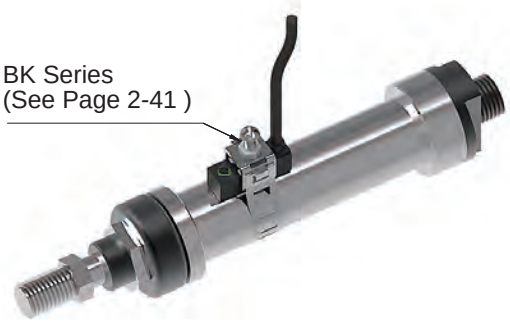
SPECIFICATION

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	100 mA max.	200 mA max.	
CONTACT RATING (NOTE 1)	10 W max.	6 W max.	
CURRENT CONSUMPTION	--	20 mA @ 24V DC max.	
VOLTAGE DROP	3 V 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 (NOTE 2)	50 Gauss	40 Gauss	
TEMPERATURE RANGE	-10~70°C (+14~158°F)		
SHOCK (NOTE 3)	30 G	50 G	
VIBRATION (NOTE 4)	9 G		
ENCLOSURE CLASSIFICATION	IEC 60529 IP67 (NEMA 6)		
PROTECTION CIRCUIT (NOTE 5)	1	3,4	

NOTE:
1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent demage 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





CS-16 SERIES

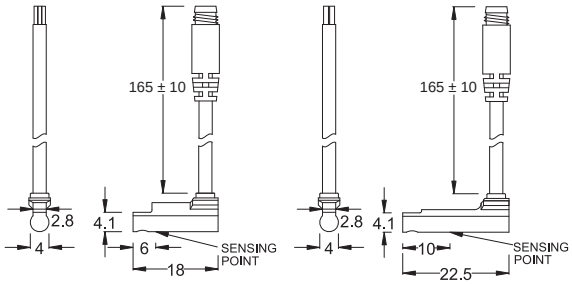
RoHS

Magnetic Sensor

DIMENSION

CS-16N, CS-16P
CS-16N-QD, CS-16P-QD

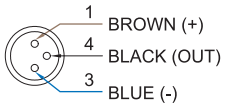
CS-16R / CS-16R-QD



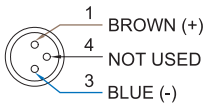
Unit:mm

QD PINOUT

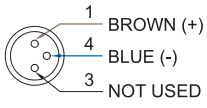
*3 wire QD wiring



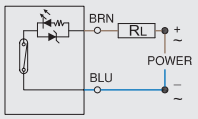
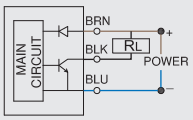
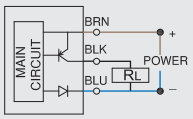
*2 wire QD wiring



*2 wire EQD wiring

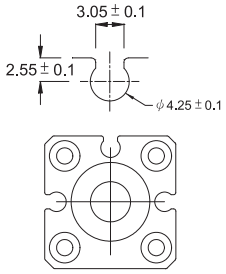


SPECIFICATION

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	50 mA max.		
CONTACT RATING (NOTE 1)	6 W max.	1.5 W max.	
CURRENT CONSUMPTION	–	7 mA @ 24V DC max.	9 mA @ 24V DC max.
VOLTAGE DROP	3.0 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 (NOTE 2)	70 Gauss	40 Gauss	
TEMPERATURE RANGE	-10~70˚C (+14~158˚F)		
SHOCK (NOTE 3)	30 G	50 G	
VIBRATION (NOTE 4)	9 G		
ENCLOSURE CLASSIFICATION	IEC 60529 IP67 (NEMA 6)		
PROTECTION CIRCUIT (NOTE 5)	1	3, 4	

NOTE:
1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent demage 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 DIMENSION



Unit:mm

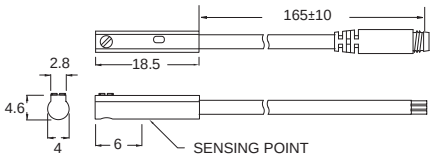
CS-18 SERIES

RoHS

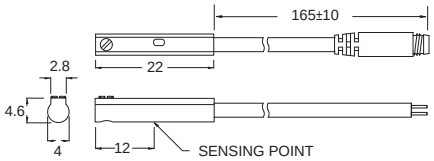
Magnetic Sensor

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



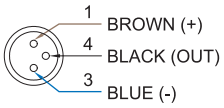
CS-18R, CS-18RH / CS-18R-QD,CS-18RH-QD



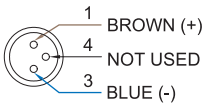
Unit:mm

QD PINOUT

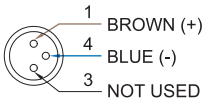
***3 wire QD wiring**



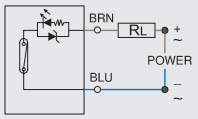
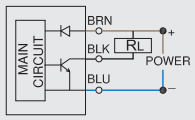
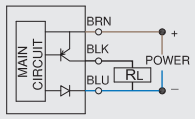
***2 wire QD wiring**



***2 wire EQD wiring**

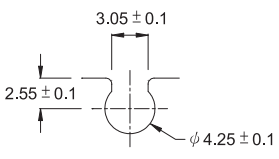


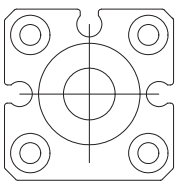
SPECIFICATION

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	50 mA max.		100 mA. max.			
CONTACT RATING (NOTE 1)	6 W max.		3 W max.			
CURRENT CONSUMPTION	–		10 mA @ 24V DC max.			
VOLTAGE DROP	3.0 V max.		0.5 V @ 50 mA 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 (NOTE 2)	40 Gauss Parallel	60 Gauss Parallel	30 Gauss Parallel			
TEMPERATURE RANGE	-10~70˚C (+14~158˚F)					
SHOCK (NOTE 3)	30 G		50 G			
VIBRATION (NOTE 4)	9 G					
ENCLOSURE CLASSIFICATION	IEC 60529 IP67 (NEMA 6)					
PROTECTION CIRCUIT (NOTE 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 demage 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 DIMENSION





Unit:mm

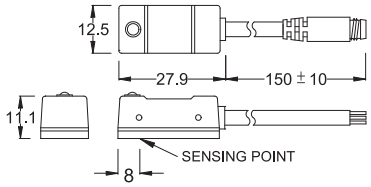
CS-21 SERIES

RoHS

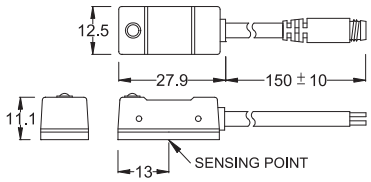
Magnetic Sensor

DIMENSION

CS-21N, CS-21P / CS-21N-QD, CS-21P-QD



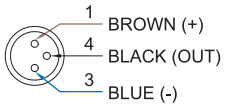
CS-21R, CS-21D / CS-21R-QD, CS-21D-QD



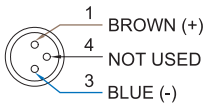
Unit:mm

QD PINOUT

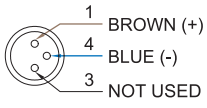
***3 wire QD wiring**



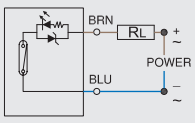
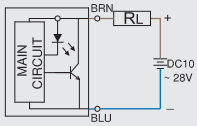
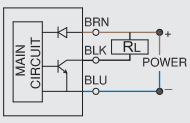
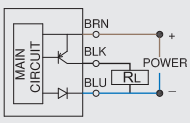
***2 wire QD wiring**



***2 wire EQD wiring**

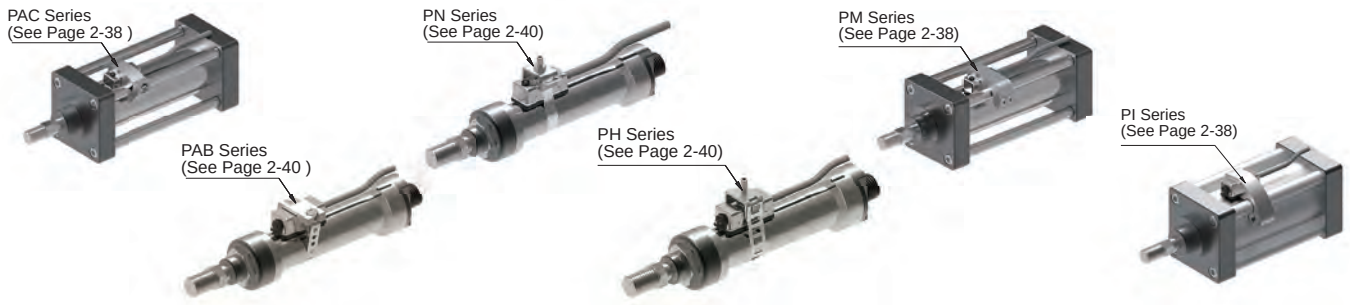


SPECIFICATION

TYPE	CS-21R	CS-21D	CS-21N	CS-21P
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/AC	5~30V DC	
SWITCHING CURRENT	100mA max.	50mA max.	200 mA max.	
CONTACT RATING (*1)	10W max.	1.5W max.	6W max.	
CURRENT CONSUMPTION	-		15mA @ 24V DC max.	
VOLTAGE DROP	3.5V max.		1.5V max.	
LEAKAGE CURRENT	-	0.1 mA max.	0.01 mA max.	
INDICATOR	Green LED	Red LED		Green LED
CABLE	ø4, 2C, PVC		ø4, 3C, PVC	
OPERATING FREQUENCY	200Hz	400Hz	1000 Hz	
MAGNET REQUIREMENT (*2)	80Gauss	50Gauss	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	3,4	2,3,4	

NOTE:
1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent demage 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

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

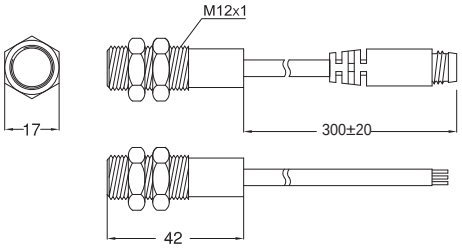


CS-22 SERIES

RoHS

Magnetic Sensor

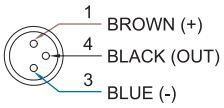
■ DIMENSION



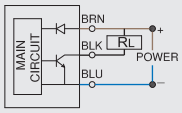
Unit:mm

■ QD PINOUT

*3 wire QD wiring

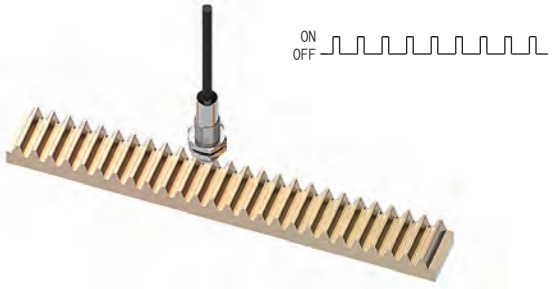


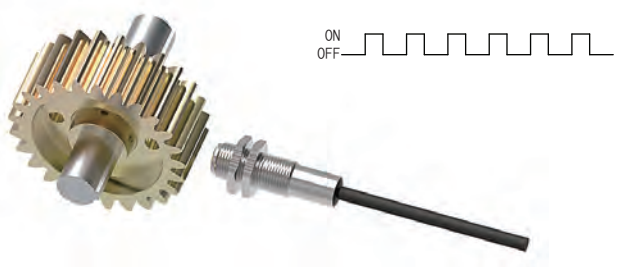
■ SPECIFICATION

TYPE	CS-22
CONNECT DIAGRAM / CHARACTERISTICS	
WIRING METHOD	3-Wire Type
SWITCHING LOGIC	Solid State Output, Normally Open
SENSOR TYPE	NPN Current Sinking
OPERATING VOLTAGE	3.5~24 V DC
SWITCHING CURRENT	25 mA. max.
CONTACT RATING (NOTE 1)	0.6W max.
CURRENT CONSUMPTION	7 mA @ 24V DC max.
VOLTAGE DROP	0.6V max.@ 25mA
LEAKAGE CURRENT	0.01 mA max.
INDICATOR	–
CABLE	ø4.5, 3C, PVC
RESPONSE FREQUENCY	50K Hz
RESPONSE DISTANCE	2 mm max.
TEMPERATURE RANGE	-10~70˚C (+14~158˚F)
SHOCK (NOTE 2)	50 G
VIBRATION (NOTE 3)	9 G
ENCLOSURE CLASSIFICATION	IEC 60529 IP67 (NEMA 6)
PROTECTION CIRCUIT (NOTE 4)	2

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

■ APPLICATION





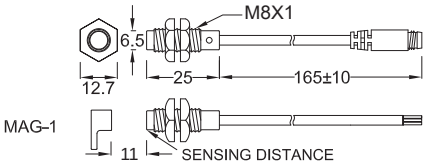
CS-28 SERIES

RoHS

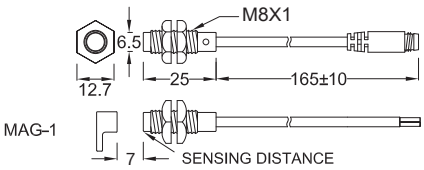
Magnetic Sensor

DIMENSION

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



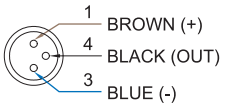
CS-28R / CS-28R-QD



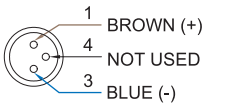
Unit:mm

QD PINOUT

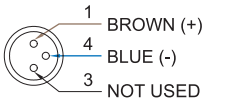
***3 wire QD wiring**



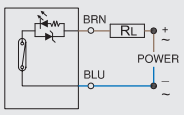
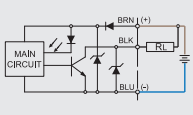
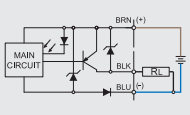
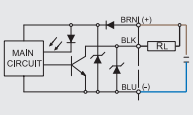
***2 wire QD wiring**



***2 wire EQD wiring**

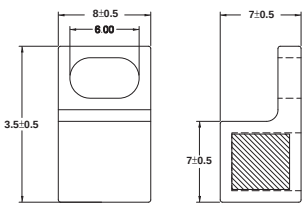


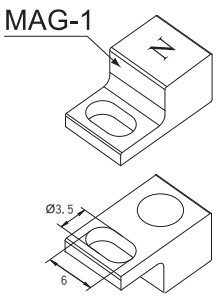
SPECIFICATION

TYPE	CS-28R	CS-28N	CS-28P	CS-28N-NC
CONNECT DIAGRAM / CHARACTERISTICS				
WIRING METHOD	2-Wire Type	3-Wire Type		
SWITCHING LOGIC	SPST, Normally Open	Solid State Output, Normally Open		Normally Close
SENSOR TYPE	Reed Switch	NPN Current Sinking	PNP Current Sourcing	NPN Current Sinking
OPERATING VOLTAGE	5~120V DC/AC	5~30V DC		
SWITCHING CURRENT	40 mA max.	100 mA. max.		
CONTACT RATING (NOTE 1)	5 W max.	6W max.		
CURRENT CONSUMPTION	--	18 mA @ 24V DC max.		
VOLTAGE DROP	2.5 V max.	0.5 V max.		
LEAKAGE CURRENT	--	0.01 mA max.		
INDICATOR	Red LED		Green LED	Red LED
CABLE	ø3.3, 2C, PVC	ø3.3, 3C, PVC		
OPERATING FREQUENCY	200 Hz	1000 Hz		
SENSING DISTANCE (NOTE 2)	7 mm max.	11 mm max.		
TEMPERATURE RANGE	-10~70˚C (+14~158˚F)			
SHOCK (NOTE 3)	30 G	50 G		
VIBRATION (NOTE 4)	9 G			
ENCLOSURE CLASSIFICATION	IEC 60529 IP67 (NEMA 6)			
PROTECTION CIRCUIT (NOTE 5)	1	3,4		

NOTE:
1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent demage 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





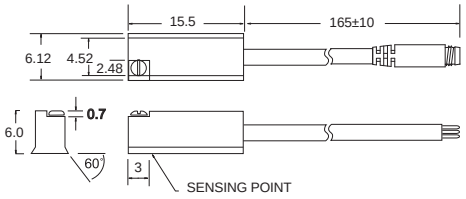
CS-30 SERIES

RoHS

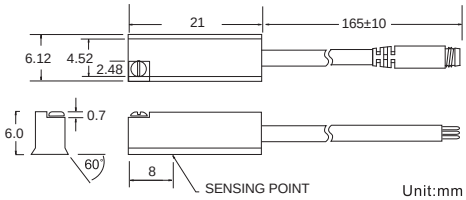
Magnetic Sensor

DIMENSION

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



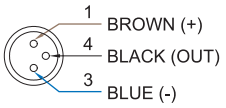
CS-30R / CS-30R-QD



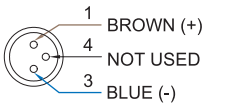
Unit:mm

QD PINOUT

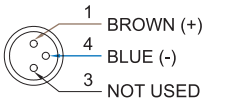
***3 wire QD wiring**



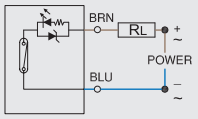
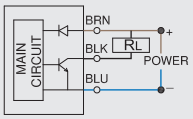
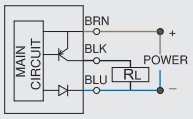
***2 wire QD wiring**



***2 wire EQD wiring**

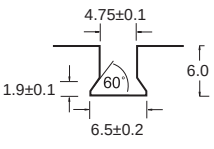


SPECIFICATION

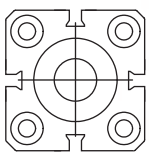
TYPE	CS-30R	CS-30N	CS-30P
CONNECT DIAGRAM			
WIRING METHOD	2-Wire Type	3-Wire Type	
SWITCHING LOGIC	SPST, Normally Open	Solid State Output, Normally Open	
SENSOR TYPE	Reed Switch	NPN Current Sinking	PNP Current Sourcing
OPERATING VOLTAGE	5~120V DC/AC	5~30V DC	
SWITCHING CURRENT	50 mA max.	200 mA max.	
CONTACT RATING (NOTE 1)	6 W max.	6 W max.	
CURRENT CONSUMPTION	–	17 mA @ 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 (NOTE 2)	40 Gauss Parallel		
TEMPERATURE RANGE	-10~70˚C (+14~158˚F)		
SHOCK (NOTE 3)	30 G	50 G	
VIBRATION (NOTE 4)	9 G		
ENCLOSURE CLASSIFICATION	IEC 60529 IP67 (NEMA 6)		
PROTECTION CIRCUIT (NOTE 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 demage 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

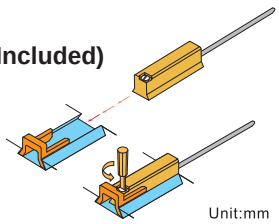
GROOVE DIMENSION



1/4" dovetail



3/8" dovetail adaptor(Included)



Unit:mm

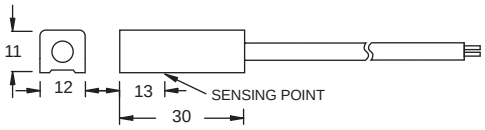
CS-31 SERIES

RoHS

Magnetic Sensor

140°HIGH TEMP

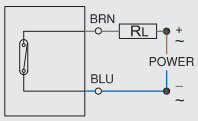
DIMENSION



Unit:mm

M8 Connector
Option is not available

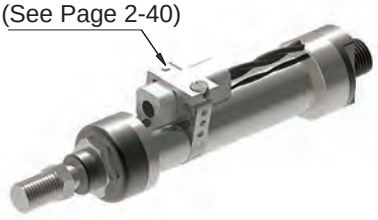
SPECIFICATION

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	500 mA max.
CONTACT RATING (NOTE 1)	10 W max.
CURRENT CONSUMPTION	–
VOLTAGE DROP	0.5 V max.
LEAKAGE CURRENT	–
INDICATOR	None
CABLE	ø3.0, 2C, Teflon
OPERATING FREQUENCY	200 Hz
MAGNET REQUIREMENT (NOTE 2)	40 Gauss Parallel
TEMPERATURE RANGE	-10~140˚C (+14~284˚F)
SHOCK (NOTE 3)	30 G
VIBRATION (NOTE 4)	9 G
ENCLOSURE CLASSIFICATION	IEC 60529 IP67 (NEMA 6)
PROTECTION CIRCUIT (NOTE 5)	None

NOTE:
1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent demage 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

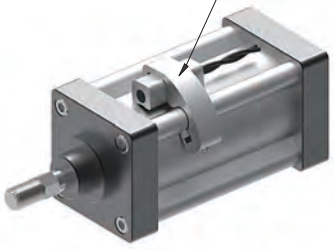
MOUNTING CLAMPS

PAB Series
(See Page 2-40)



PAC Series
(See Page 2-38)

PI Series
(See Page 2-38)



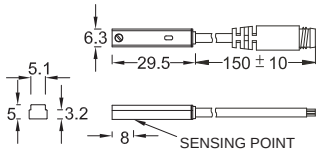
CS-32 SERIES

RoHS

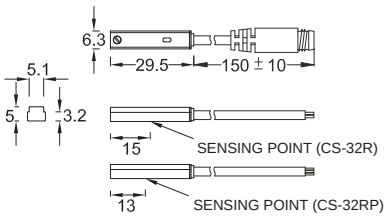
Magnetic Sensor

DIMENSION

CS-32N, CS-32P / CS-32N-QD, CS-32P-QD



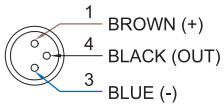
CS-32R, CS-32RP / CS-32R-EQD, CS-32RP-EQD



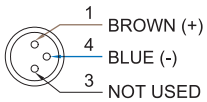
Unit:mm

QD PINOUT

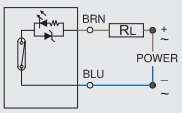
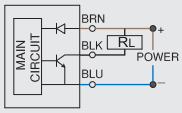
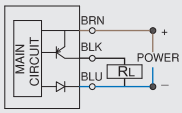
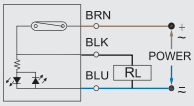
***3 wire QD wiring**



***2 wire EQD wiring**

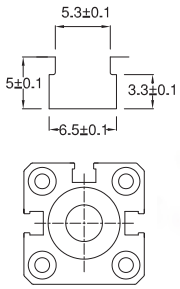


SPECIFICATION

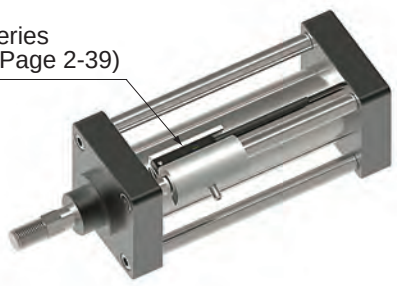
TYPE	CS-32R	CS-32N	CS-32P	CS-32RP
CONNECT DIAGRAM / CHARACTERISTICS				
WIRING METHOD	2-Wire Type	3-Wire Type		
SWITCHING LOGIC	SPST, Normally Open	Solid State Output, Normally Open		SPST, Normally Open
SENSOR TYPE	Reed Switch	NPN Current Sinking	PNP Current Sourcing	Reed Switch
OPERATING VOLTAGE	5~240V DC/AC	10~30V DC		10~30V DC/AC
SWITCHING CURRENT	100 mA max.			500 mA. max.
CONTACT RATING (NOTE 1)	10 W max.	3 W max.		10 W max.
CURRENT CONSUMPTION	--	17 mA @ 24V DC max.	8 mA @ 24V DC max.	10 mA @ 24V DC max.
VOLTAGE DROP	3.5 V max.	1.5 V max.		0.1 V @ 100mA max.
LEAKAGE CURRENT	--	0.01 mA max.		--
INDICATOR	Red LED		Yellow LED	
CABLE	ø3.3, 2C, PVC	ø3.3, 3C, PVC		
OPERATING FREQUENCY	200 Hz	1000 Hz		200 Hz
MAGNET REQUIREMENT (NOTE 2)	70 Gauss	60 Gauss		
TEMPERATURE RANGE	-10~70˚C (+14~158˚F)			
SHOCK (NOTE 3)	30 G	50 G		30 G
VIBRATION (NOTE 4)	9 G			
ENCLOSURE CLASSIFICATION	IEC 60529 IP67 (NEMA 6)			
PROTECTION CIRCUIT (NOTE 5)	1	2,3,4		1

NOTE:
1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent demage 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 DIMENSION



DT Series
(See Page 2-39)



Unit:mm

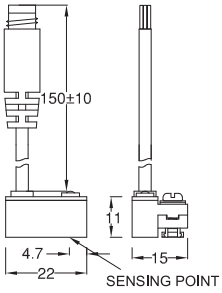
CS-33 SERIES

RoHS

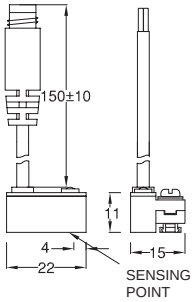
Magnetic Sensor

DIMENSION

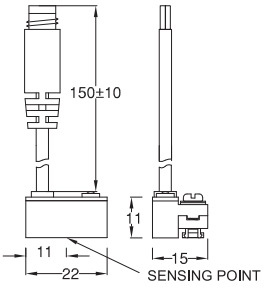
CS-33N, CS-33P
CS-33N-QD, CS-33P-QD



KT-33D / KT-33D-EQD



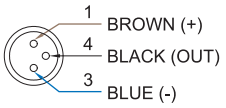
CS-33R / CS-33R-EQD



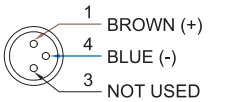
Unit:mm

QD PINOUT

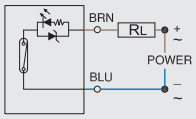
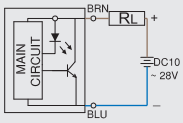
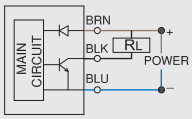
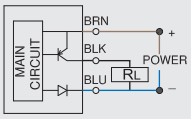
***3 wire QD wiring**



***2 wire EQD wiring**

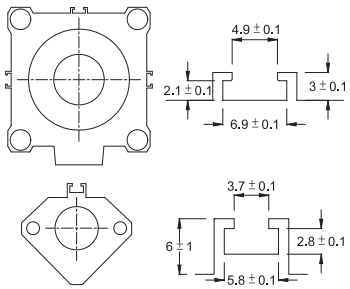


SPECIFICATION

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	100 mA max.	4~40 mA max.	200 mA max.	
CONTACT RATING (NOTE 1)	10 W max.	1.5 W max.	6 W max.	
CURRENT CONSUMPTION	--		22 mA @ 24V DC max.	20 mA @ 24V DC max.
VOLTAGE DROP	3.5 V max.		0.5 V max.	
LEAKAGE CURRENT	--	1 mA max	0.01 mA max.	
INDICATOR	Red LED	Green LED	Red LED	Green LED
CABLE	ø3.3, 2C, PVC		ø3.3, 3C, PVC	
OPERATING FREQUENCY	200 Hz	1000 Hz		
MAGNET REQUIREMENT (NOTE 2)	80 Gauss	70 Gauss		
TEMPERATURE RANGE	-10~70˚C (+14~158˚F)			
SHOCK (NOTE 3)	30 G	50 G		
VIBRATION (NOTE 4)	9 G			
ENCLOSURE CLASSIFICATION	IEC 60529 IP67			
PROTECTION CIRCUIT (NOTE 5)	1	4	3,4	

NOTE:
1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent demage 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 DIMENSION



Unit:mm

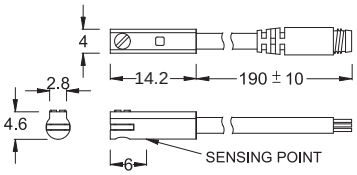
CS-36 SERIES

RoHS

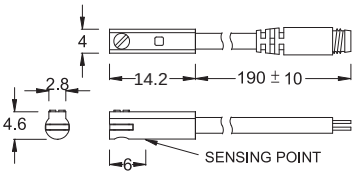
Magnetic Sensor

DIMENSION

CS-36N, CS-36P / CS-36N-QD, CS-36P-QD



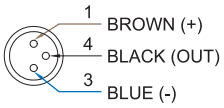
CS-36D / CS-36D-EQD



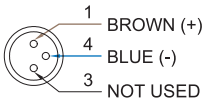
Unit:mm

QD PINOUT

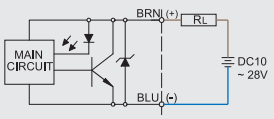
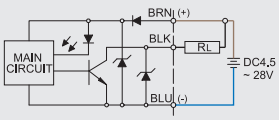
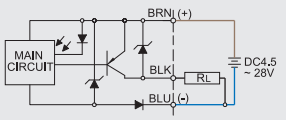
***3 wire QD wiring**



***2 wire EQD wiring**

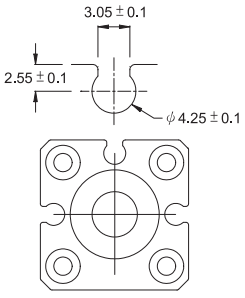


SPECIFICATION

TYPE	CS-36D	CS-36N	CS-36P
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	4.5~28V DC	
SWITCHING CURRENT	4~20 mA max.	50 mA max.	
CONTACT RATING (NOTE 1)	0.6 W max.	1.5 W max.	
CURRENT CONSUMPTION	--	10 mA @ 24V DC max.	
VOLTAGE DROP	3.5 V max.	0.5V @ 50mA max.	
LEAKAGE CURRENT	0.8 mA max.	0.01 mA max.	
INDICATOR	Red LED		
CABLE	ø2.8, 2C, PUR	ø2.8, 3C, PUR	
OPERATING FREQUENCY	1000 Hz		
MAGNET REQUIREMENT (NOTE 2)	40 Gauss Parallel		
TEMPERATURE RANGE	-10~70˚C (+14~158˚F)		
SHOCK (NOTE 3)	50 G		
VIBRATION (NOTE 4)	9 G		
ENCLOSURE CLASSIFICATION	IEC 60529 IP67 (NEMA 6)		
PROTECTION CIRCUIT (NOTE 5)	4	3, 4	

NOTE:
1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent demage 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 DIMENSION



Unit:mm

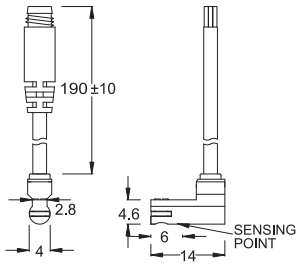
CS-37 SERIES

RoHS

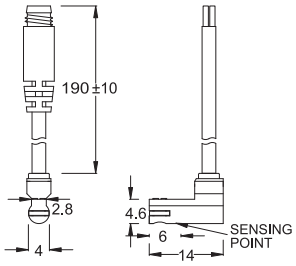
Magnetic Sensor

DIMENSION

CS-37N, CS-37P
CS-37N-QD, CS-37P-QD



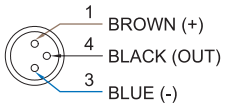
CS-37D / CS-37D-EQD



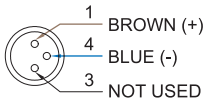
Unit:mm

QD PINOUT

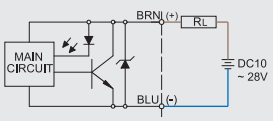
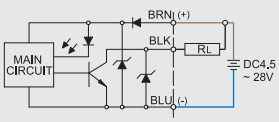
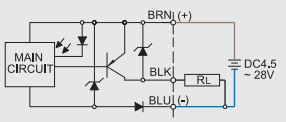
*3 wire QD wiring



*2 wire EQD wiring

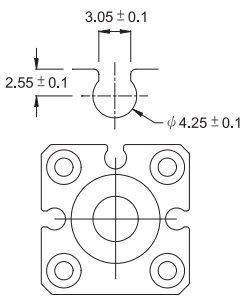


SPECIFICATION

TYPE	CS-37D	CS-37N	CS-37P
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	4.5~28V DC	
SWITCHING CURRENT	4~20 mA max.	50 mA max.	
CONTACT RATING (NOTE 1)	0.6 W max.	1.5 W max.	
CURRENT CONSUMPTION	–	10 mA @ 24V DC max.	
VOLTAGE DROP	3.5 V max.	0.5V @ 50mA max.	
LEAKAGE CURRENT	0.8 mA max.	0.01 mA max.	
INDICATOR	Red LED		
CABLE	ø2.6, 2C, PVC	ø2.6, 3C, PVC	
OPERATING FREQUENCY	1000 Hz		
MAGNET REQUIREMENT (NOTE 2)	40 Gauss Parallel		
TEMPERATURE RANGE	-10~70˚C (+14~158˚F)		
SHOCK (NOTE 3)	50 G		
VIBRATION (NOTE 4)	9 G		
ENCLOSURE CLASSIFICATION	IEC 60529 IP67 (NEMA 6)		
PROTECTION CIRCUIT (NOTE 5)	4	3, 4	

NOTE:
1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent demage 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 DIMENSION



Unit:mm

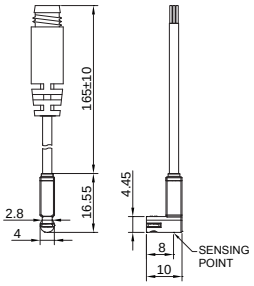
CS-38 SERIES

RoHS

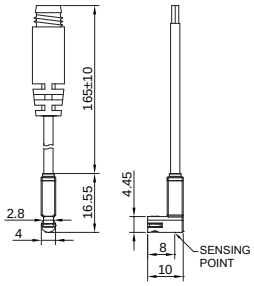
Magnetic Sensor

DIMENSION

CS-38N, CS-38P
CS-38N-QD, CS-38P-QD



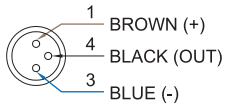
CS-38D / CS-38D-EQD



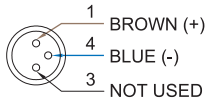
Unit:mm

QD PINOUT

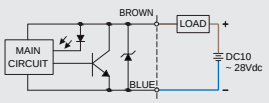
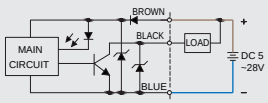
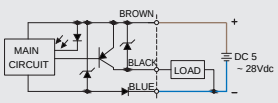
***3 wire QD wiring**



***2 wire EQD wiring**

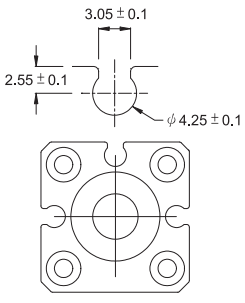


SPECIFICATION

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	4~20 mA max.	50 mA max.	
CONTACT RATING (NOTE 1)	0.6 W max.	1.5 W max.	
CURRENT CONSUMPTION	--	10 mA @ 24V DC max.	
VOLTAGE DROP	3.5 V max.	0.5V @ 50mA max.	
LEAKAGE CURRENT	0.8 mA max.	0.01 mA max.	
INDICATOR	Red LED		
CABLE	ø2.6, 2C, PVC	ø2.6, 3C, PVC	
OPERATING FREQUENCY	1000 Hz		
MAGNET REQUIREMENT (NOTE 2)	40 Gauss		
TEMPERATURE RANGE	-10~70˚C (+14~158˚F)		
SHOCK (NOTE 3)	50 G		
VIBRATION (NOTE 4)	9 G		
ENCLOSURE CLASSIFICATION	IEC 60529 IP67 (NEMA 6)		
PROTECTION CIRCUIT (NOTE 5)	4	3,4	

NOTE:
1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent demage 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 DIMENSION



Unit:mm

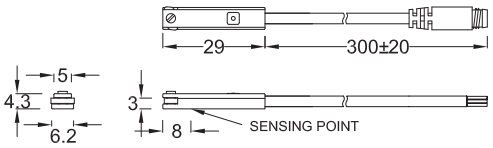
CS-40 SERIES

RoHS

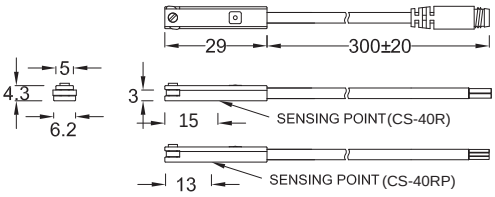
Magnetic Sensor

DIMENSION

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



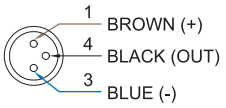
CS-40R, CS-40RP / CS-40R-QD, CS-40RP-QD



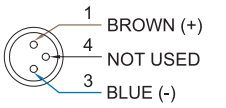
Unit:mm

QD PINOUT

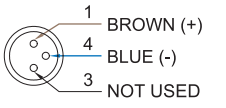
***3 wire QD wiring**



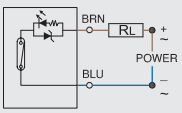
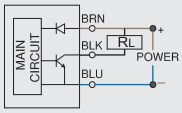
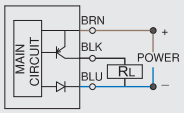
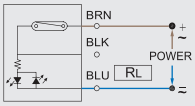
***2 wire QD wiring**



***2 wire EQD wiring**

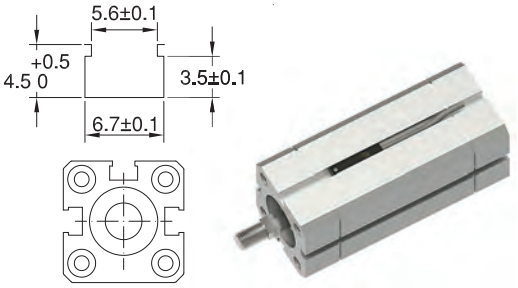


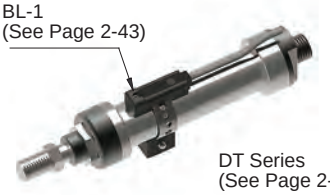
SPECIFICATION

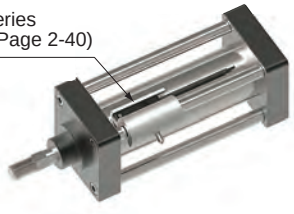
TYPE	CS-40R	CS-40N	CS-40P	CS-40RP
CONNECT DIAGRAM / CHARACTERISTICS				
WIRING METHOD	2-Wire Type	3-Wire Type		
SWITCHING LOGIC	SPST, Normally Open	Solid State Output, Normally Open		SPST, Normally Open
SENSOR TYPE	Reed Switch	NPN Current Sinking	PNP Current Sourcing	Reed Switch
OPERATING VOLTAGE	5~120V DC/AC	10~30V DC		10~30V DC/AC
SWITCHING CURRENT	100 mA max.			500 mA. max.
CONTACT RATING (NOTE 1)	10 W max.	3 W max.		10 W max.
CURRENT CONSUMPTION	--	8 mA @ 24V DC max.		10 mA @ 24V DC max.
VOLTAGE DROP	3.5 V max.	1.5 V max.		0.1 V @ 100mA max.
LEAKAGE CURRENT	--	0.01 mA max.		--
INDICATOR	Red LED		Yellow LED	
CABLE	ø3, 2C, PUR	ø3, 3C, PUR		
OPERATING FREQUENCY	200 Hz	1000 Hz		200 Hz
MAGNET REQUIREMENT (NOTE 2)	50 Gauss Parallel	45 Gauss Parallel		
TEMPERATURE RANGE	-10~70˚C (+14~158˚F)			
SHOCK (NOTE 3)	30 G	50 G		30 G
VIBRATION (NOTE 4)	9 G			
ENCLOSURE CLASSIFICATION	IEC 60529 IP67 (NEMA 6)			
PROTECTION CIRCUIT (NOTE 5)	1	2, 3, 4		1

NOTE:
1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent demage 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 DIMENSION







Unit:mm

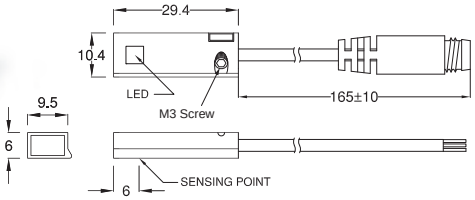
CS-47 SERIES

RoHS

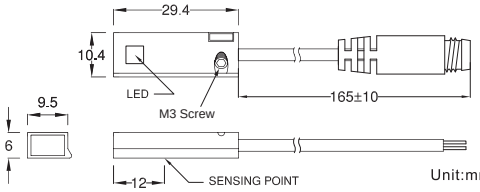
Magnetic Sensor

DIMENSION

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



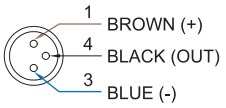
CS-47R / CS-47R-QD



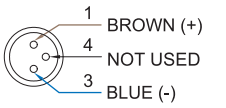
Unit:mm

QD PINOUT

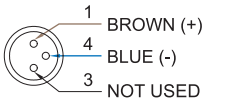
***3 wire QD wiring**



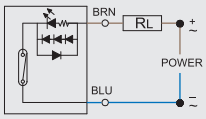
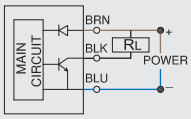
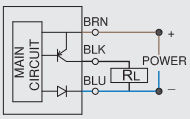
***2 wire QD wiring**



***2 wire EQD wiring**

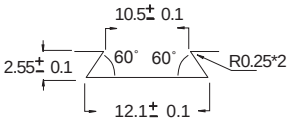


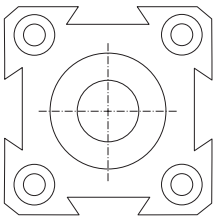
SPECIFICATION

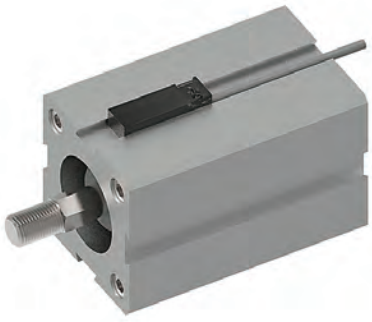
TYPE	CS-47R	CS-47N	CS-47P
CONNECT DIAGRAM / CHARACTERISTICS			
WIRING METHOD	2-Wire Type	3-Wire Type	
SWITCHING LOGIC	SPST, Normally Open	Solid State Output, Normally Open	
SENSOR TYPE	Reed Switch	NPN Current Sinking	PNP Current Sourcing
OPERATING VOLTAGE	5~240V DC/AC	5~30V DC	
SWITCHING CURRENT	500 mA max.	200 mA max.	
CONTACT RATING (NOTE 1)	10 W max.	6 W max.	
CURRENT CONSUMPTION	--	22 mA @ 24V DC max.	20 mA @ 24V DC max.
VOLTAGE DROP	3.0 V max.	2.0 V 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 (NOTE 2)	50 Gauss Parallel		
TEMPERATURE RANGE	-10~70˚C (+14~158˚F)		
SHOCK (NOTE 3)	30 G	50 G	
VIBRATION (NOTE 4)	9 G		
ENCLOSURE CLASSIFICATION	IEC 60529 IP67 (NEMA 6)		
PROTECTION CIRCUIT (NOTE 5)	1	2, 3, 4	

NOTE:
1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent demage 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 DIMENSION







Unit:mm

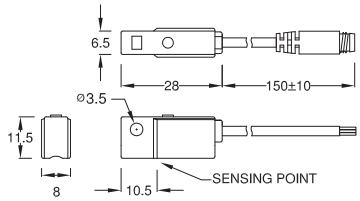
CS-48 SERIES

RoHS

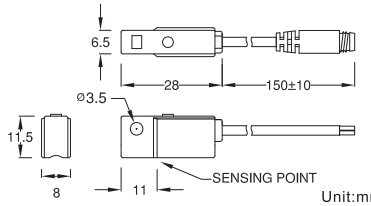
Magnetic Sensor

DIMENSION

CS-48N, CS-48P / CS-48N-QD, CS-48P-QD



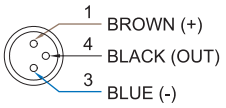
CS-48R, CS-48D / CS-48R-QD, CS-48D-QD



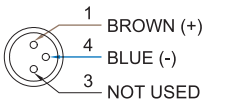
Unit:mm

QD PINOUT

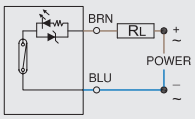
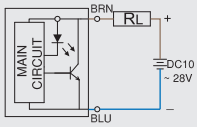
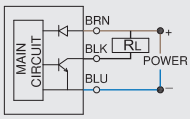
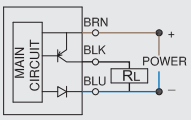
***3 wire QD wiring**



***2 wire EQD wiring**

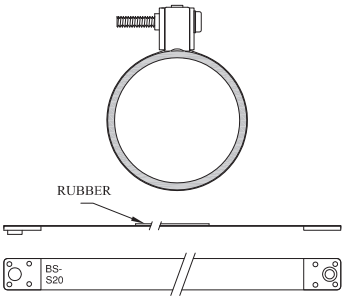


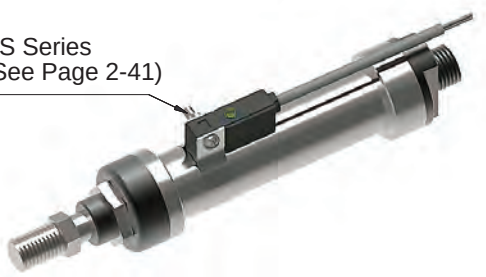
SPECIFICATION

TYPE	CS-48R	CS-48D	CS-48N	CS-48P
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/AC	5~30V DC	
SWITCHING CURRENT	100mA max.	50mA max.	200 mA max.	
CONTACT RATING (*1)	10W max.	1.5W max.		
CURRENT CONSUMPTION	-		10mA @ 24V DC max.	
VOLTAGE DROP	2.5V max.	3.5V max.	1.5V max.	
LEAKAGE CURRENT	-	0.1 mA max.	0.01 mA max.	
INDICATOR	Red LED			Green LED
CABLE	ø3.3, 2C, PVC	ø4, 2C, PVC	ø3.3, 3C, PVC	
OPERATING FREQUENCY	200Hz	400Hz	1000 Hz	
MAGNET REQUIREMENT (*2)	110Gauss	40Gauss	75Gauss	
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 demage 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



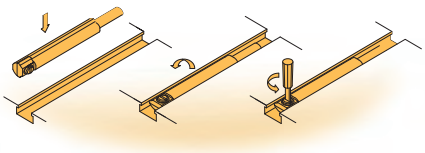


BS Series
(See Page 2-41)

CS-50 SERIES

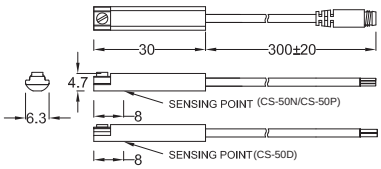
RoHS

Magnetic Sensor

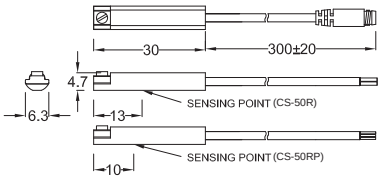


DIMENSION

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



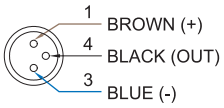
CS-50R, CS-50RP / CS-50R-QD,CS-50RP-QD



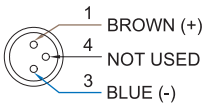
Unit:mm

QD PINOUT

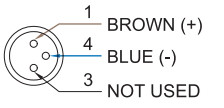
***3 wire QD wiring**



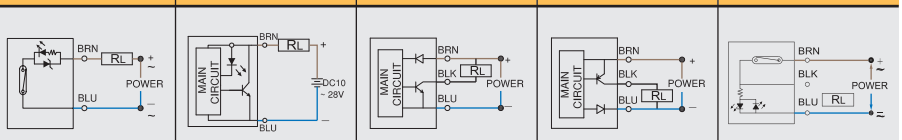
***2 wire QD wiring**



***2 wire EQD wiring**

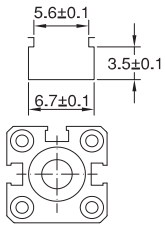


SPECIFICATION

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	100 mA max.	50 mA max.	200 mA. max		500 mA. max
CONTACT RATING (NOTE 1)	10 W max.	1.5 W max.	6W max.		10W max.
CURRENT CONSUMPTION	--		20 mA @ 24V DC max.		5 mA @ 24V DC max.
VOLTAGE DROP	3.0 V max.	3.5 V max.	1.5 V max.		0.1 V @ 100mA max.
LEAKAGE CURRENT	--	0.8 mA max.	0.05 mA max.		--
INDICATOR	Red LED			Yellow LED	
CABLE	ø3, 2C, PUR		ø3, 3C, PUR		
OPERATING FREQUENCY	200 Hz	1000 Hz			200 Hz
MAGNET REQUIREMENT (NOTE 2)	70 Gauss Parallel				
TEMPERATURE RANGE	-10~70˚C (+14~158˚F)				
SHOCK (NOTE 3)	30 G	50 G			30 G
VIBRATION (NOTE 4)	9 G				
ENCLOSURE CLASSIFICATION	IEC 60529 IP67 (NEMA 6)				
PROTECTION CIRCUIT (NOTE 5)	1	2, 4	2, 3, 4		1

NOTE:
1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent demage 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 DIMENSION



Unit:mm

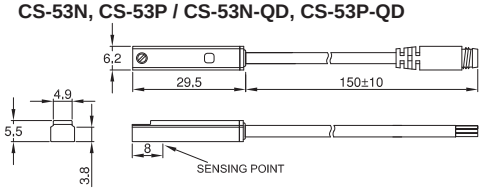
CS-53 SERIES

RoHS

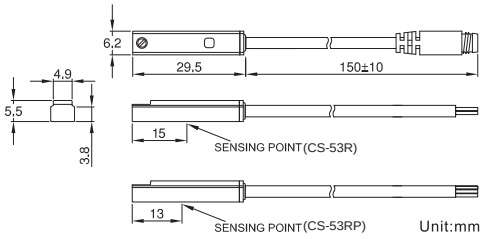
Magnetic Sensor

DIMENSION

CS-53N, CS-53P / CS-53N-QD, CS-53P-QD



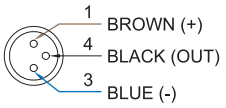
CS-53R, CS-53RP / CS-53R-EQD,CS-53RP-QD



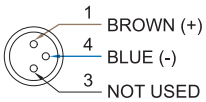
Unit:mm

QD PINOUT

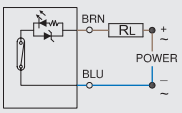
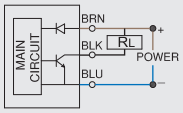
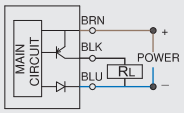
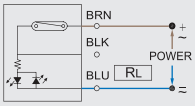
*3 wire QD wiring



*2 wire EQD wiring

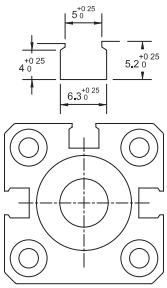


SPECIFICATION

TYPE	CS-53R	CS-53N	CS-53P	CS-53RP
CONNECT DIAGRAM / CHARACTERISTICS				
WIRING METHOD	2-Wire Type	3-Wire Type		
SWITCHING LOGIC	SPST, Normally Open	Solid State Output, Normally Open		SPST, Normally Open
SENSOR TYPE	Reed Switch	NPN Current Sinking	PNP Current Sourcing	Reed Switch
OPERATING VOLTAGE	5~240V DC/AC	10~30V DC		10~30V DC/AC
SWITCHING CURRENT	100 mA max.			500 mA. max.
CONTACT RATING (NOTE 1)	10 W max.	3 W max.		10 W max.
CURRENT CONSUMPTION	--	8 mA @ 24V DC max.		10 mA @ 24V DC max.
VOLTAGE DROP	3.5 V max.	1.5 V max.		0.1 V @ 100mA max.
LEAKAGE CURRENT	--	0.01 mA max.		--
INDICATOR	Red LED		Yellow LED	
CABLE	ø3, 2C, PUR	ø3, 3C, PUR		
OPERATING FREQUENCY	200 Hz	1000 Hz		200 Hz
MAGNET REQUIREMENT (NOTE 2)	70 Gauss Parallel	50 Gauss Parallel		70 Gauss Parallel
TEMPERATURE RANGE	-10~70˚C (+14~158˚F)			
SHOCK (NOTE 3)	30 G	50 G		30 G
VIBRATION (NOTE 4)	9 G			
ENCLOSURE CLASSIFICATION	IEC 60529 IP67 (NEMA 6)			
PROTECTION CIRCUIT (NOTE 5)	1	2, 3, 4		1

NOTE:
1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent demage 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 DIMENSION



Unit:mm

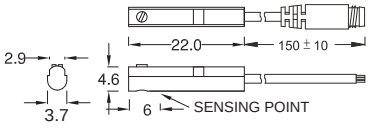
CS-58 SERIES

RoHS

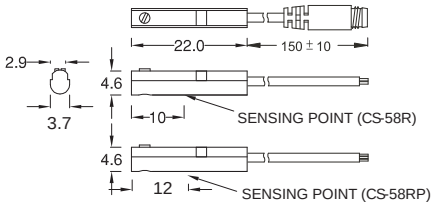
Magnetic Sensor

DIMENSION

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

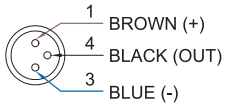


CS-58R, CS-58RP / CS-58R-EQD, CS-58RP-QD

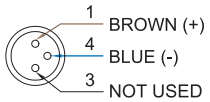


QD PINOUT

***3 wire QD wiring**

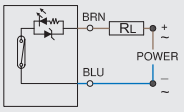
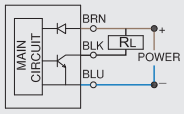
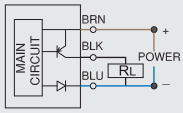
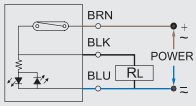


***2 wire EQD wiring**



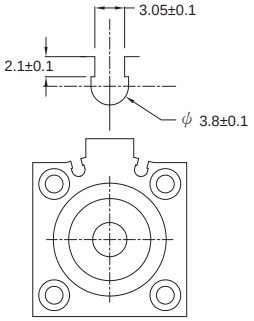
SPECIFICATION

Unit:mm

TYPE	CS-58R	CS-58N	CS-58P	CS-58RP
CONNECT DIAGRAM				
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	100 mA max.	200 mA max.		500 mA. max.
CONTACT RATING (NOTE 1)	10 W max.	6 W max.		10 W max.
CURRENT CONSUMPTION	–	10 mA @ 24V DC max.		5 mA @ 24V DC max.
VOLTAGE DROP	3.5 V max.	0.5 V @ 50mA max.		0.1 V @ 100mA max.
LEAKAGE CURRENT	–	0.01 mA max.		--
INDICATOR	Yellow LED	Red LED	Yellow LED	
CABLE	ø2.5, 2C, PUR	ø2.5, 3C, PUR		
OPERATING FREQUENCY	200 Hz	1000 Hz		200 Hz
MAGNET REQUIREMENT (NOTE 2)	70 Gauss	40 Gauss		50 Gauss
TEMPERATURE RANGE	-10~70˚C (+14~158˚F)			
SHOCK (NOTE 3)	30 G	50 G		30 G
VIBRATION (NOTE 4)	9 G			
ENCLOSURE CLASSIFICATION	IEC 60529 IP67 (NEMA 6)			
PROTECTION CIRCUIT (NOTE 5)	1	3,4		1

NOTE:
1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent demage 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 DIMENSION



Unit:mm

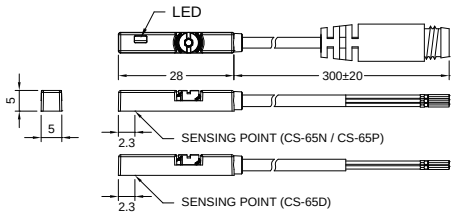
CS-65 SERIES

RoHS

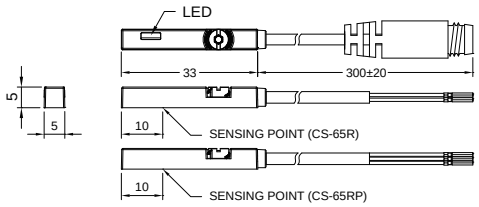
Magnetic Sensor

DIMENSION

CS-65N, CS-65P, CS-65D / CS-65N-QD, CS-65P-QD, CS-65D-EQD



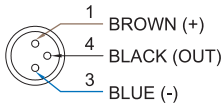
CS-65R, CS-65RP / CS-65R-EQD, CS-65RP-QD



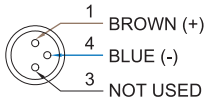
Unit:mm

QD PINOUT

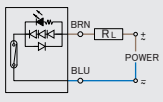
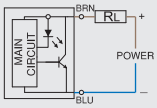
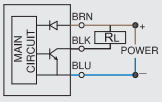
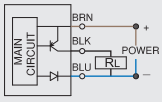
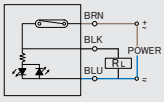
***3 wire QD wiring**



***2 wire EQD wiring**

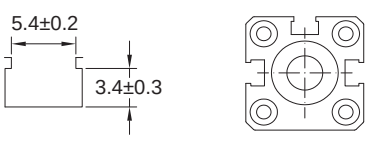


SPECIFICATION

TYPE	CS-65R	CS-65D	CS-65N	CS-65P	CS-65RP
CONNECT DIAGRAM					
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/AC
SWITCHING CURRENT	100mA max.	50mA max.	200mA max.		500mA max.
CONTACT RATING (NOTE 1)	10W max.	1.5W max.	5.5W max.		10W max.
CURRENT CONSUMPTION	--		10mA @ 24V DC max.		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, PU		ø2.8, 3C, PU		
OPERATING FREQUENCY	200Hz	1000Hz			200Hz
MAGNET REQUIREMENT (NOTE 2)	65 Gauss	50 Gauss			65 Gauss
TEMPERATURE RANGE	-10~70˚C (+14~158˚F)				
SHOCK (NOTE 3)	30G	50G			30G
VIBRATION (NOTE 4)	9G				
ENCLOSURE CLASSIFICATION	IEC 60529 IP67 (NEMA 6)				
PROTECTION CIRCUIT (NOTE 5)	1	2	2,3,4		1

NOTE:
1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent demage 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 DIMENSION



MEMO HOLDER AVAILABLE

Unit:mm

CS-75 SERIES

RoHS

Magnetic Sensor

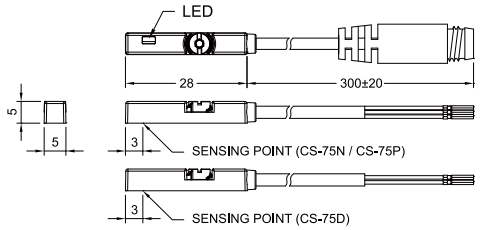
NEW

PATENTED

DUAL COLOR LED

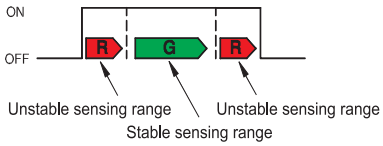
■ DIMENSION

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



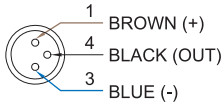
Unit:mm

SW OUT

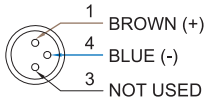


■ QD PINOUT

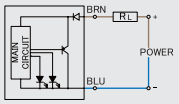
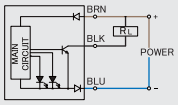
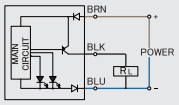
***3 wire QD wiring**



***2 wire EQD wiring**

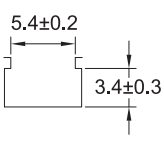


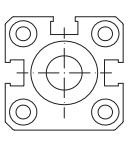
■ SPECIFICATION

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 (NOTE 1)	2.5W max.		
CURRENT CONSUMPTION	–	10mA @ 24V DC max.	
VOLTAGE DROP	4V max. @ 25˚C	1.2V max. @ 25˚C	
LEAKAGE CURRENT	1mA max.	0.05mA max.	
INDICATOR	Red / Green LED		
CABLE	ø2.8, 2C, PU	ø2.8, 3C, PU	
OPERATING FREQUENCY	1000Hz		
MAGNET REQUIREMENT (NOTE 2)	50 Gauss		
TEMPERATURE RANGE	-10~60˚C (+14~140˚F)		
SHOCK (NOTE 3)	50G		
VIBRATION (NOTE 4)	9G		
ENCLOSURE CLASSIFICATION	IEC 60529 IP67 (NEMA 6)		
PROTECTION CIRCUIT (NOTE 5)	2,3,4		

NOTE:
1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent demage 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 DIMENSION





MEMO HOLDER AVAILABLE

Unit:mm

CS-65 CS-75 SERIES

RoHS

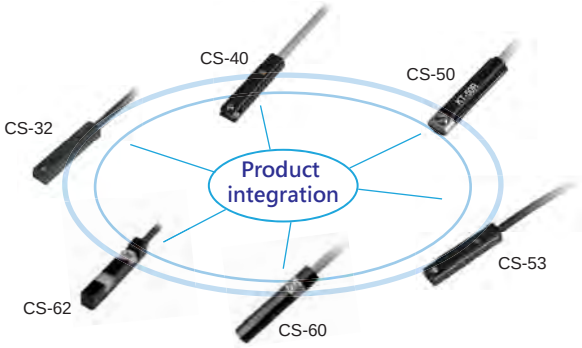
Magnetic Sensor

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

New Structure

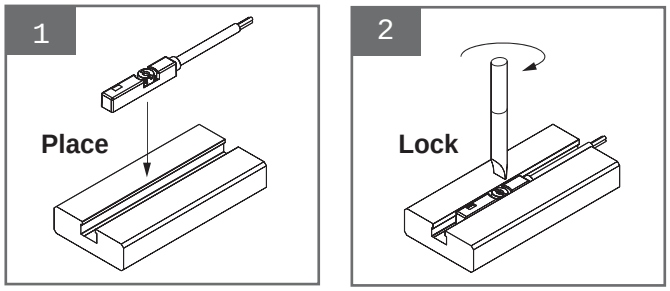
- Set-screw near center position to prevent sensor from moving, combined with new set-screw design to provide solid stance when attached to the cylinder.

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

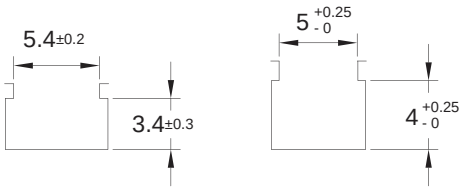


Quick Installation

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

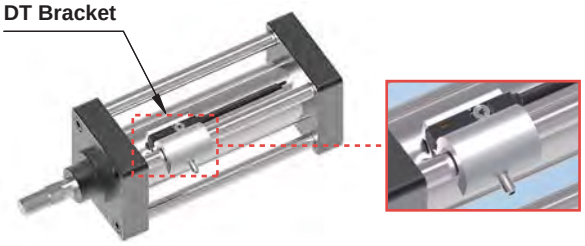


- Common cylinder slot dimensions

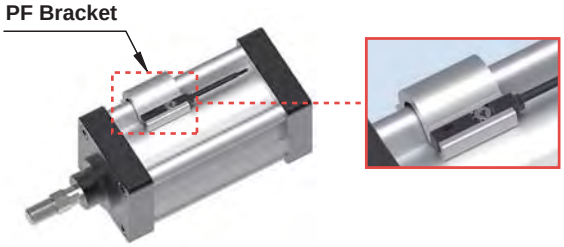


Mounting Adapter for other cylinder types

- DT bracket can be applied to Tie-rod cylinder.



- PF bracket can be applied to ISO profile cylinder.



P.S.: Bracket for round cylinder is under development.

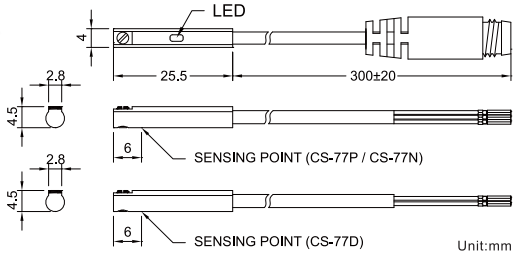
CS-77 SERIES

RoHS

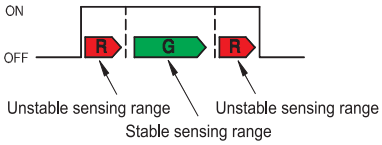
Magnetic Sensor

■ DIMENSION

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

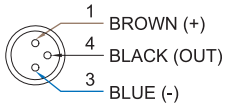


SW OUT

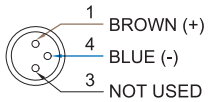


■ QD PINOUT

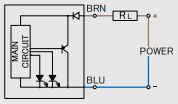
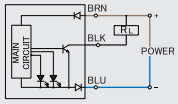
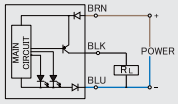
***3 wire QD wiring**



***2 wire EQD wiring**

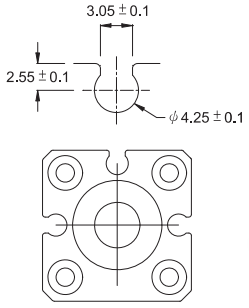


■ SPECIFICATION

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 (NOTE 1)	2.5W max.		
CURRENT CONSUMPTION	--	8mA @ 24V DC max.	
VOLTAGE DROP	4V max.	1V @ 80mA max.	
LEAKAGE CURRENT	1mA max.	0.05mA max.	
INDICATOR	Red / Green LED		
CABLE	ø2.8, 2C, PU	ø2.8, 3C, PU	
OPERATING FREQUENCY	1000Hz		
MAGNET REQUIREMENT (NOTE 2)	40 Gauss		
TEMPERATURE RANGE	-10~60°C (+14~140°F)		
SHOCK (NOTE 3)	50G		
VIBRATION (NOTE 4)	9G		
ENCLOSURE CLASSIFICATION	IEC 60529 IP67 (NEMA 6)		
PROTECTION CIRCUIT (NOTE 5)	2,3,4		

NOTE:
1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent demage 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 DIMENSION



Unit:mm

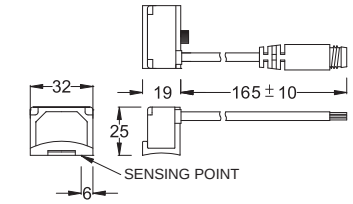
CS-6100 SERIES

RoHS

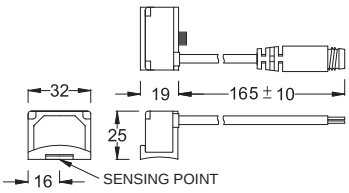
Magnetic Sensor

DIMENSION

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



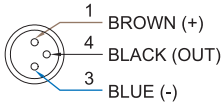
CS-6100R / CS-6100-QD



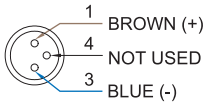
Unit:mm

QD PINOUT

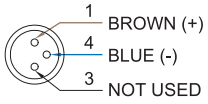
***3 wire QD wiring**



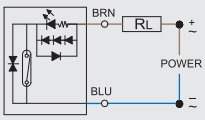
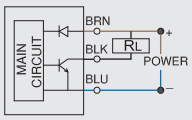
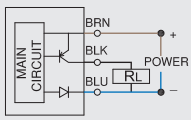
***2 wire QD wiring**



***2 wire EQD wiring**

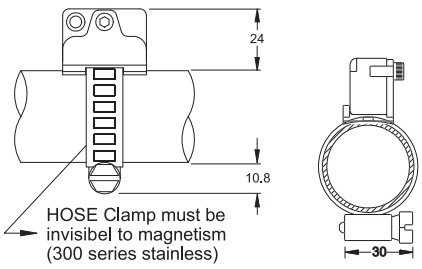


SPECIFICATION

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	1 Amp. max.		
CONTACT RATING (NOTE 1)	30 W max.		
CURRENT CONSUMPTION	--	42 mA @ 24V DC max.	30 mA @ 24V DC max.
VOLTAGE DROP	3.5 V max.	1.5 V @ 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 (NOTE 2)	80 Gauss	60 Gauss	
TEMPERATURE RANGE	-10~70˚C (+14~158˚F)		
SHOCK (NOTE 3)	30 G	50 G	
VIBRATION (NOTE 4)	9 G		
ENCLOSURE CLASSIFICATION	IEC 60529 IP67 (NEMA 6)		
PROTECTION CIRCUIT (NOTE 5)	4	3,4	

NOTE:
1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent demage 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

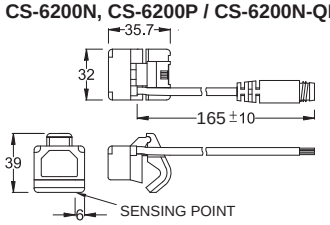
CS-6200 SERIES

RoHS

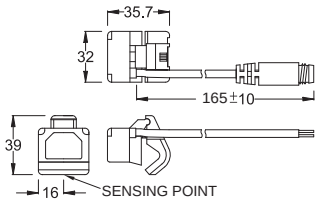
Magnetic Sensor

DIMENSION

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



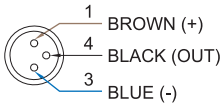
CS-6200R / CS-6200R-QD



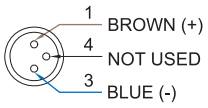
Unit:mm

QD PINOUT

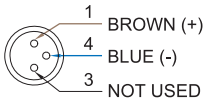
***3 wire QD wiring**



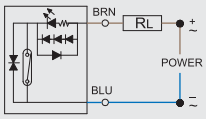
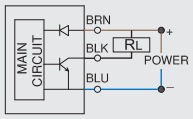
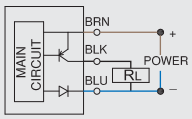
***2 wire QD wiring**



***2 wire EQD wiring**

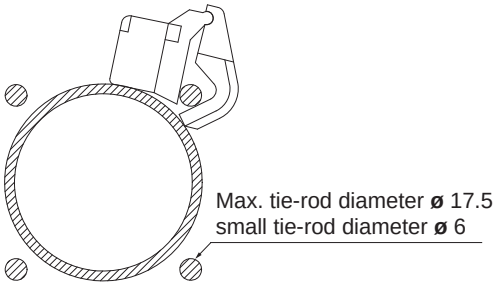


SPECIFICATION

TYPE	CS-6200R	CS-6200N	CS-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	1 Amp. max.		
CONTACT RATING (NOTE 1)	30 W max.		
CURRENT CONSUMPTION	--	42 mA @ 24V DC max.	30 mA @ 24V DC max.
VOLTAGE DROP	3.5 V max.	1.5 V @ 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 (NOTE 2)	80 Gauss	40 Gauss	
TEMPERATURE RANGE	-10~70˚C (+14~158˚F)		
SHOCK (NOTE 3)	30 G	50 G	
VIBRATION (NOTE 4)	9 G		
ENCLOSURE CLASSIFICATION	IEC 60529 IP67 (NEMA 6)		
PROTECTION CIRCUIT (NOTE 5)	4	3,4	

NOTE:
1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent demage 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

Weld-field Immune Sensor

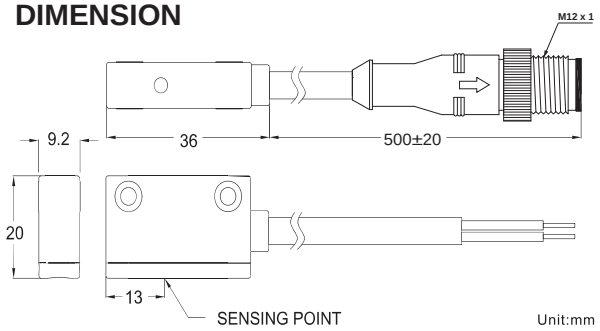
CS-1000D

RoHS

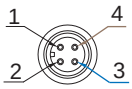
Magnetic Sensor

Dual Color LED allow more precise positioning

DIMENSION

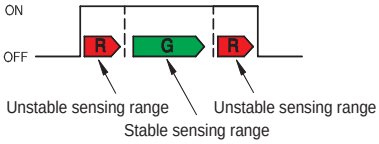


M12 QD PINOUT

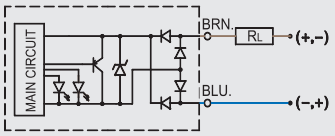


1:N/C (NO connect)
2:N/C (NO connect)
3:Blue
4:Brown

SW OUT



SPECIFICATION

TYPE	CS-1000D
CONNECT DIAGRAM	
WIRING METHOD	2-Wire Type
SWITCHING LOGIC	Solid State Output, Normally Open
SENSOR TYPE	--
OPERATING VOLTAGE	10~28 V DC
SWITCHING CURRENT	5-50 mA max.
CONTACT RATING (NOTE 1)	1.5 W max.
CURRENT CONSUMPTION	--
VOLTAGE DROP	5 V max.
LEAKAGE CURRENT	Less Then 1 mA
INDICATOR	Red LED : unstable sensing range Green LED : stable sensing range
CABLE	ø5.4, 2C, PVC
OPERATING TIME	50 ms max.
MAGNETIC FEILD RESISTANCE (NOTE 5)	16000A
MAGNET REQUIREMENT (NOTE 2)	85 Gauss Parallel
TEMPERATURE RANGE	-10~60˚C (+14~140˚F)
SHOCK (NOTE 3)	30 G
VIBRATION (NOTE 4)	9 G
ENCLOSURE CLASSIFICATION	IEC 60529 IP 67 (NEMA 6)
PROTECTION CIRCUIT	Surge Suppression, Reverse Polarity

NOTE:
1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent demage 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

ORDERING INFORMATION

CS-1000D-□

Cable Length / Connector

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

Weld-field Immune Sensor

CS-1000D

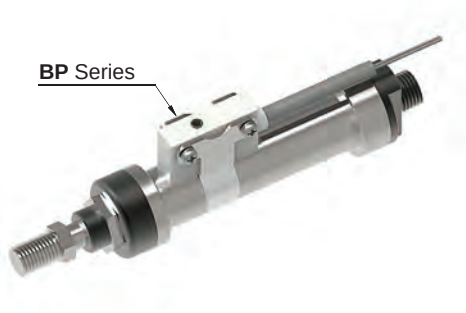
RoHS

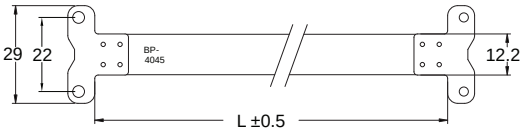
Magnetic Sensor

■ MOUNTING CLAMPS

BP

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

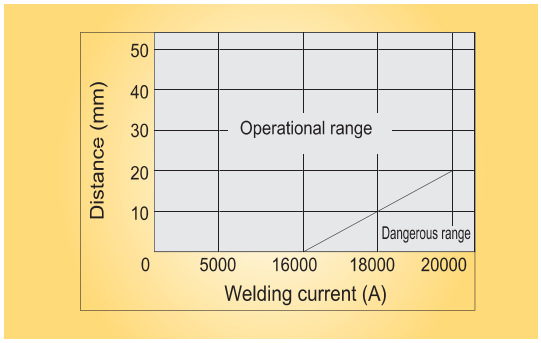




NO.	Model	" L "	I.D.	O.D.
1	BP-4045	154	ø40	ø45
2	BP-4047	161	ø40	ø47
3	BP-5055	188	ø50	ø55
4	BP-5058	197	ø50	ø58
5	BP-6368	228	ø63	ø68
6	BP-6372	240	ø63	ø72

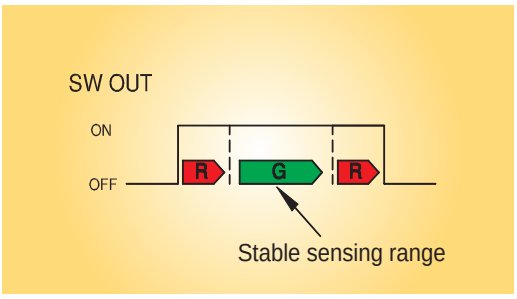
Unit：mm

■ 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.

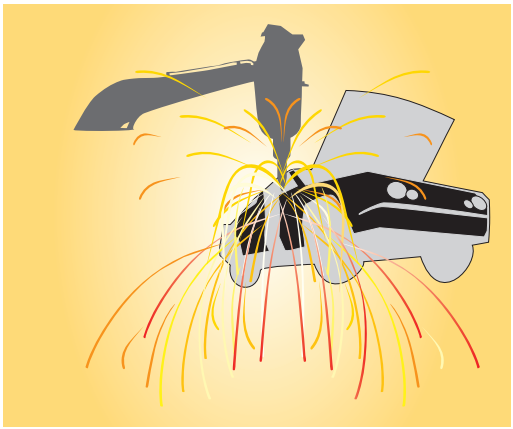
■ SWITCH OUTPUT / INDICATOR



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

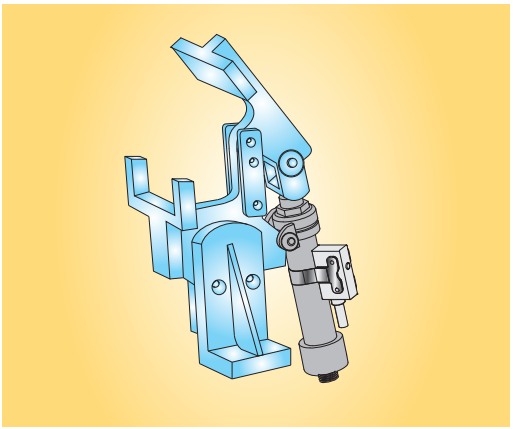
Unstable sensing range : Red LED light UP
Stable sensing range : Green LED light UP

■ APPLICATION ENVIRONMENT



The 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.

■ APPLICATION MOUNTING



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

Weld-field Immune Sensor

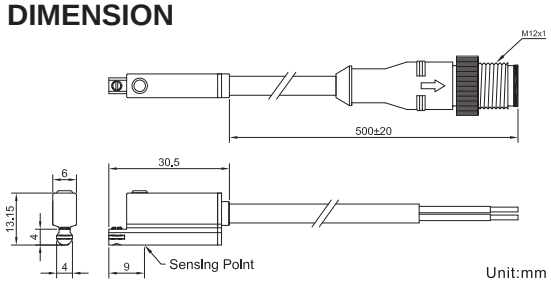
CS-1001D

RoHS

Magnetic Sensor

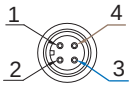
Dual Color LED allow more precise positioning

DIMENSION



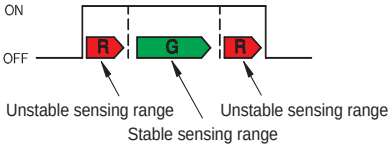
Unit:mm

QD PINOUT

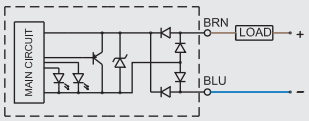


1:N/C (No connect)
2:N/C (No connect)
3:Blue
4:Brown

SW OUT

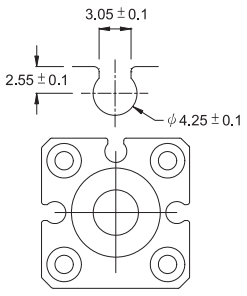


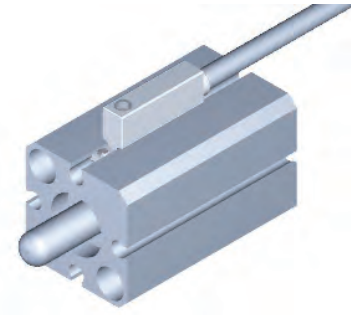
SPECIFICATION

TYPE	CS-1001D
CONNECT DIAGRAM	
WIRING METHOD	2-Wire Type
SWITCHING LOGIC	Solid State Output, Normally Open
SENSOR TYPE	--
OPERATING VOLTAGE	10~28 V DC
SWITCHING CURRENT	5-50 mA max.
CONTACT RATING (NOTE 1)	1.5 W max.
CURRENT CONSUMPTION	--
VOLTAGE DROP	5 V max.
LEAKAGE CURRENT	Less Then 1 mA
INDICATOR	Red LED : unstable sensing range Green LED : stable sensing range
CABLE	ø4.8, 2C, PVC
OPERATING TIME	50 ms max.
MAGNETIC FEILD RESISTANCE (NOTE 2)	16000A
MAGNET REQUIREMENT (NOTE 3)	85 Gauss
TEMPERATURE RANGE	-10~60˚C
SHOCK (NOTE 4)	50 G
VIBRATION (NOTE 5)	9 G
ENCLOSURE CLASSIFICATION	IEC 60529 IP 67
PROTECTION CIRCUIT (NOTE 6)	3,4

NOTE:
1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent demage 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 DIMENSION

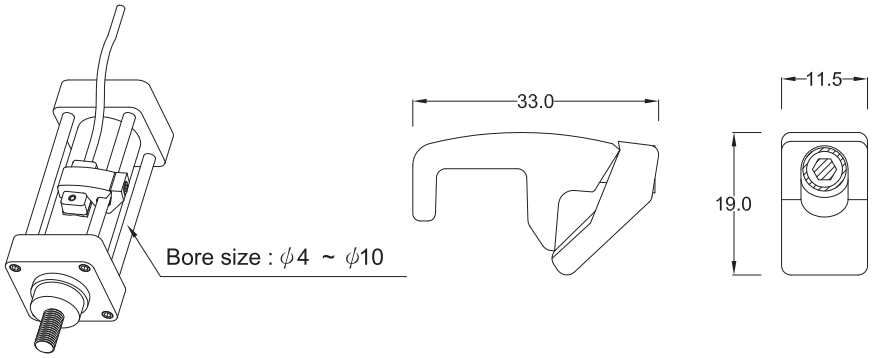




Unit:mm

PAC

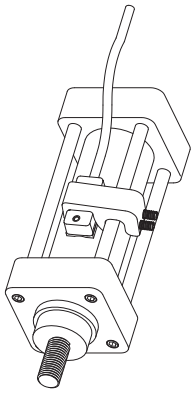
bracket is designed for mounting CS-21 & CS-31 series sensor on tie-rod cylinder.

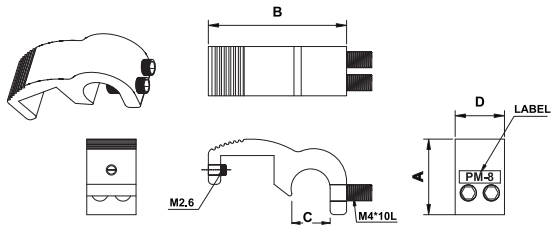


Unit:mm

PM

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



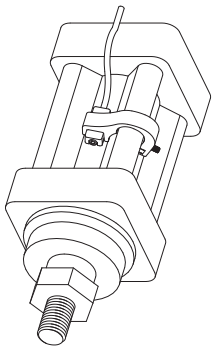


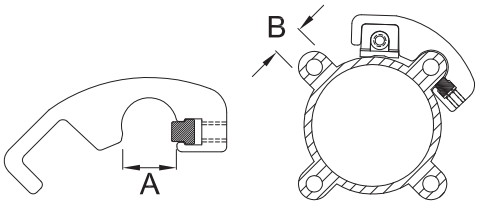
MODEL \ DIM.	A	B	C	D
PM-6	19.1	31.7	7.3	12
PM-8	18.4	33.7	9.3	12
PM-10	16.7	35.9	11.2	12
PM-12	20	35.5	11.5	12
PM-14	24	38.0	13.5	12
PM-16	24	40.0	15.5	12

Unit:mm

PI

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





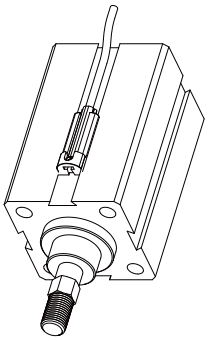
MODEL \ DIM.	A	B	Remark
PI-1	11.15	10.4	For ϕ32, ϕ40 cylinder.
PI-2	14.10	13.5	For ϕ50, ϕ63 cylinder.
PI-3	15.45	15	For ϕ 80 cylinder.
PI-4	16.3	16	For ϕ 100 cylinder.
PI-5	**19.8**	**18.7**	For ϕ125 cylinder.
PI-6	**26.5**	**25.65**	For ϕ 150 cylinder.

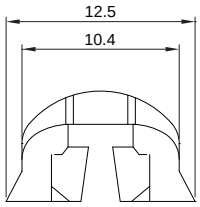
Unit:mm

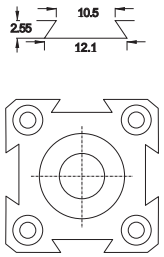
BRACKET PB/PF/DT SERIES

PB-04

bracket is designed for mounting CS-50 series sensor in 12mm Dovetail Slot.

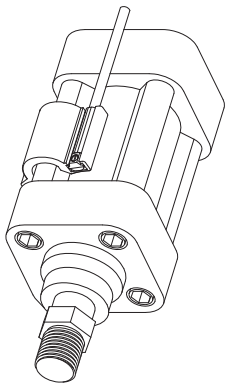


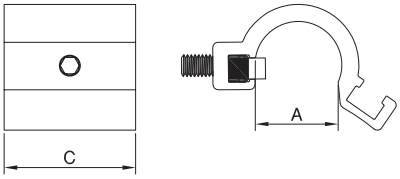




PF

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



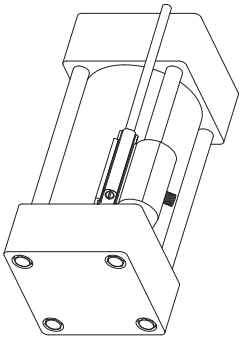


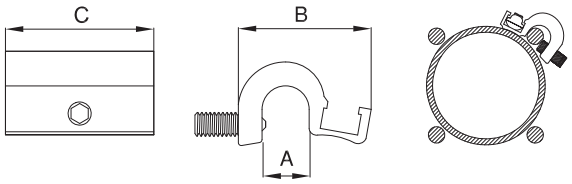
MODEL \ DIM.	A	B	C	Remark
PF-1	12.1	10.4	25	For ϕ32, ϕ40 cylinder
PF-2	15.9	13.5	25	For ϕ50, ϕ63 cylinder
PF-3	16.3	15	25	For ϕ80 cylinder
PF-4	17.9	16	25	For ϕ100 cylinder
PF-5	19.7	18.7	25	For ϕ125 cylinder

Unit:mm

DT

bracket is designed for mounting CS-32 & CS-40 & CS-50 & CS-65 & CS-75 series sensor on tie-rod cylinder.





MODEL \ DIM.	A	B	C
DT-1	7.9	22.8	25
DT-2	10.4	25.1	25
DT-3	15.1	30.3	25
DT-4	20.6	35.5	25
DT-5	24.8	42	30

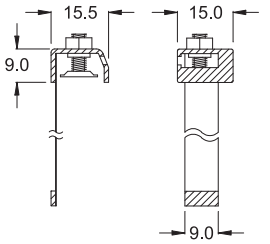
Unit:mm

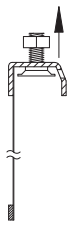
CLAMP PN/PH/PAB SERIES

Magnetic Sensor

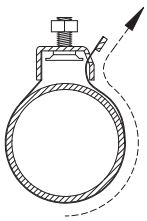
PN

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

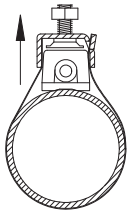




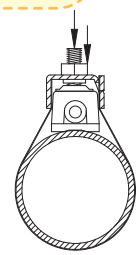
Step 1
Loosen screw & nut.



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



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



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

P N - S 2 0

- 12: ϕ 12 cylinder
- 16: ϕ 16 cylinder
- ⋮
- 150: ϕ 150 cylinder

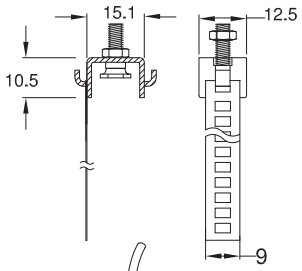
- S: For cylinder body is stainless steel.
- A: For cylinder body is aluminium alloy.

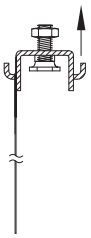
EX：PN-S25:It is use on ϕ 25 cylinder and material of cylinder tube is stainless.

Unit:mm

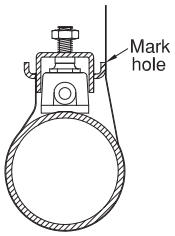
PH

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

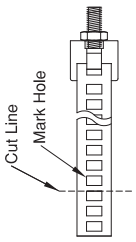




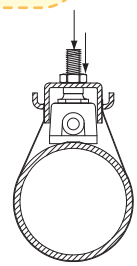
Step 1
Loosen screw & nut.



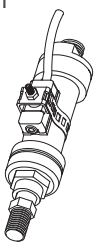
Step 2
Place sensor & wrap the band around the cylinder. Position the hook with the nearest hole on the band and mark the hole with a permanent marker.



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.

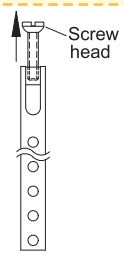


PH - 1 : For ϕ 6 ~ ϕ 63 round cylinder use.
PH - 2 : For ϕ 6 ~ ϕ 125 round cylinder use.

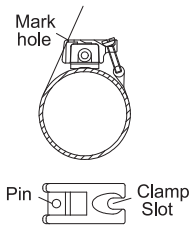
Unit:mm

PAB

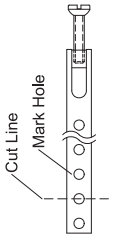
clamp is designed for mounting CS-21 & CS-31 series sensor 12ϕ ~ 100ϕ on round cylinder.



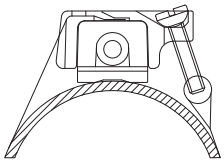
Step 1
Start by keeping screw 3 to 4 turns into barrel nut on the end of the band assembly.



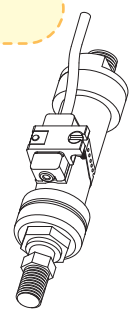
Step 2
Place the screw head into clamp slot and wrap the band around the cylinder. Position the pin with the nearest hole on the band and mark the hole with a permanent marker.



Step 3
Remove clamp assembly from the cylinder. Locate the marked hole that fits to the cylinder size, cut the band at midway between the above adjacent hole. (the one that's further away from the screw nut).



Step 4
Insert cut end of the band into a flat slot opposite from the clamp slot. Place the chosen hole over the pin and bend the band firmly down with thumb pressure. Then wrap the band around cylinder barrel and re-insert screw head into clamp. Position the switch and tighten.



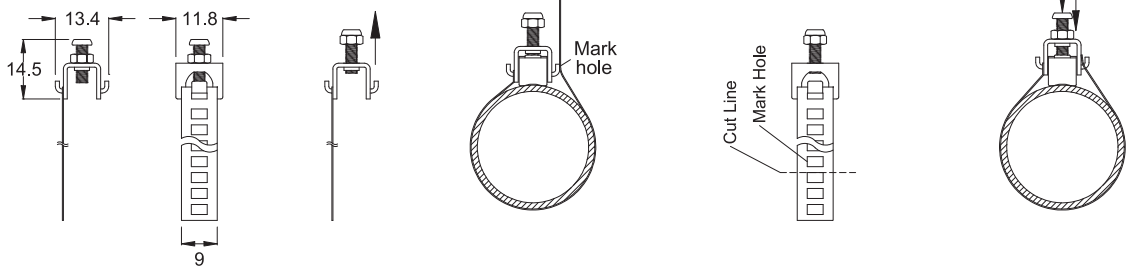
PAB: For ϕ12 ~ ϕ100 round cylinder use.

CLAMP BK/BS SERIES

Magnetic Sensor

BK

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

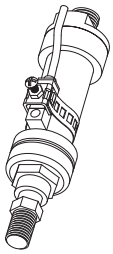


Step 1
Loosen screw & nut.

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.

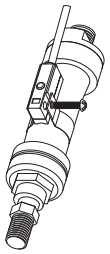


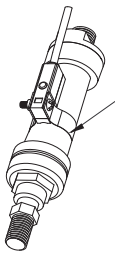
BK - 81: For ϕ6 ~ ϕ32 round cylinder use .
BK - 82: For ϕ6 ~ ϕ63 round cylinder use .

Unit:mm

BS

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

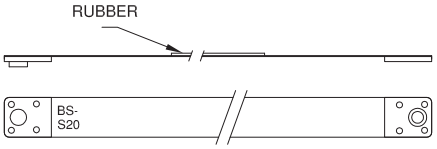




Wrap the band around cylinder barrel and re-insert screw head into clamp. Position the switch and tighten.

BS - S 2 0
- 12: ϕ12 cylinder
- 16: ϕ16 cylinder
- ⋮
- 40: ϕ40 cylinder

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



Cylinder Chart

Model	Bore Size	Barrel Material	O.D. (mm)	Model	Bore Size	Barrel Material	O.D. (mm)
BS-A20	ϕ20	Aluminum	25	BS-S6	ϕ6	Stainless	8.5
BS-A25	ϕ25	Aluminum	30	BS-S8	ϕ8	Stainless	10
BS-A30	ϕ30	Aluminum	35	BS-S10	ϕ10	Stainless	11
BS-A32	ϕ32	Aluminum	37	BS-S12	ϕ12	Stainless	13.2
BS-A40	ϕ40	Aluminum	45	BS-S16	ϕ16	Stainless	17
BS-A50	ϕ50	Aluminum	55	BS-S20	ϕ20	Stainless	21.6
BS-A63	ϕ63	Aluminum	70	BS-S25	ϕ25	Stainless	26.5
BS-A80	ϕ80	Aluminum	87.7	BS-S32	ϕ32	Stainless	33.6
				BS-S40	ϕ40	Stainless	42

Unit:mm

BL-1

BL-1 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
ϕ10	Stainless	11	10	ϕ30	Aluminum	35	26
ϕ12	Stainless	13.2	11	ϕ32	Stainless	33.6	24
ϕ16	Stainless	17	14	ϕ32	Aluminum	37	27
ϕ20	Stainless	21.6	16	ϕ40	Stainless	42	30
ϕ20	Aluminum	25	19	ϕ40	Aluminum	45	32
ϕ25	Stainless	26.5	20	ϕ50	Aluminum	55	40
ϕ25	Aluminum	30	22	ϕ63	Aluminum	70	50

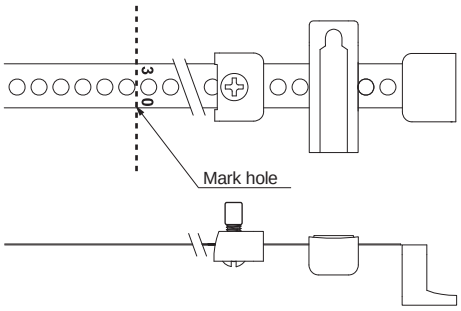
BL- 1

How to use:

Example: Use with ϕ 40 stainless body cylinder

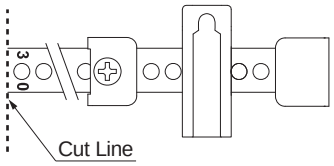
Step 1

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



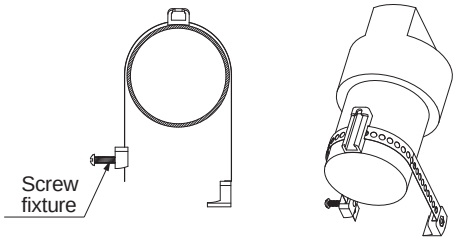
Step 2

Use cutter to cut off excessive mounting band.



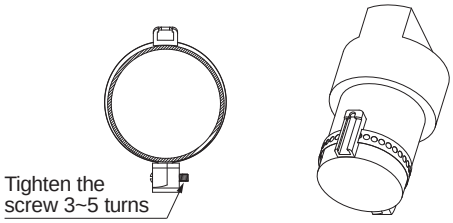
Step 3

Insert screw through screw fixture and the apropriate hole.



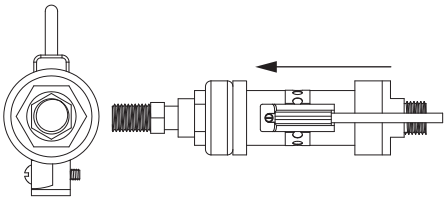
Step 4

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



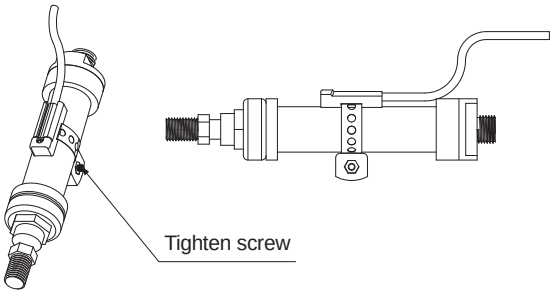
Step 5

Mount the sensor switch in the BL-1 series bracket and screw.



Step 6

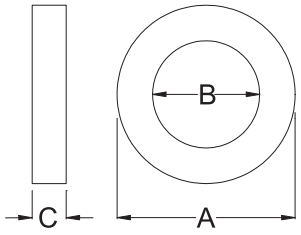
Position the sensor switch on cylinder and tighten screw .



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	199.50	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



Unit:mm

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

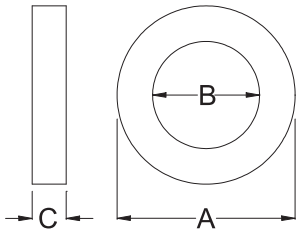
B. Physical property:

Resistant power: 20 - 50 kgf/cm^2
Lengthen: 5 -20 %
Hardness (Shore D): 30 - 50
Specific gravity: 3.5 - 3.7 g/cm^3
Temperature range: -20ºC ~ +70ºC (-4~158˚F)

ANISOTROPIC PLASTIC MAGNET

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

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



Unit:mm

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/cm^2
Lengthen: 6.7 %
Hardness (Shore D): 120
Specific gravity: 3.2 g/cm^3
Temperature range: -25ºC ~ +130ºC(-13~266˚F)