

Autonics

**INDUCTIVE PROXIMITY SENSOR
(CYLINDRICAL METAL AC CONNECTOR TYPE)
PRCM SERIES**

M A N U A L



Thank you very much for selecting Autonics products.
For your safety, please read the following before using.

Caution for your safety

- ※Please keep "Caution for your safety" to avoid accidents or damages as using it correctly.
- ※The meaning of 'Warning' and 'Caution' is as follows:
 - Warning** In case a serious injury or dead may be occurred.
 - Caution** In case a little injury or damage of this unit may be occurred.
- ※The meaning of the mark on the product and manual is as follows:
 - ⚠ is a caution mark for danger in special condition.

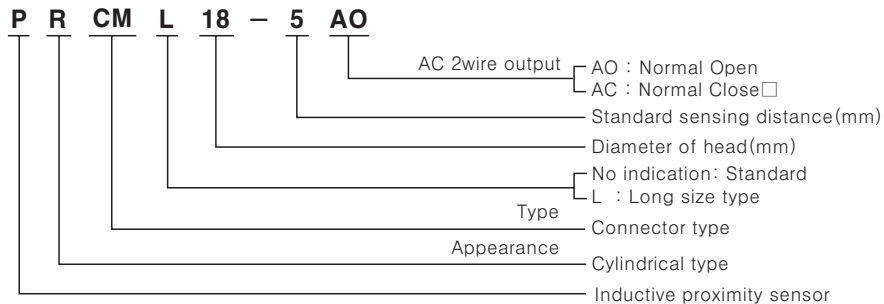
Warning

- Please use it with double safety devices when it is used at the equipments which may cause damages to human life or assets(Ex:Nuclear power control, Medical equipment, Vehicle, Train, Air plane, Combustion apparatus, Entertainment or Safety device etc.)**
It may cause a fire, human life or assets.
- Do not connect power directly without load.**
It may result in damage to inner components or burn them out.

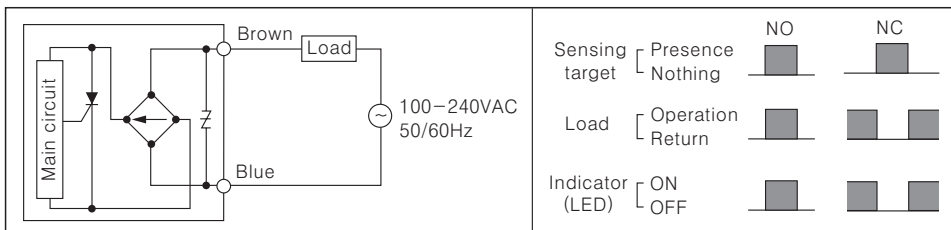
Caution

- Do not use this unit in place where there is flammable, explosive gas, chemical or strong alkalis, acids.**
It may cause a fire or explosion.
- Do not impact on this unit.**
It may result in malfunction or damage to the product.
- Please observe specification rating.**
It may result in serious damage to the product.

Ordering information



Control output diagram & Load operating



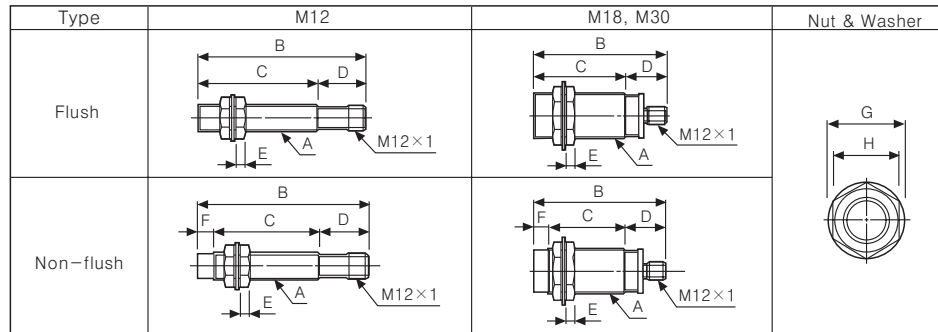
※The above specification are changeable without notice anytime.

Specifications

Model	PRCM12-2AO PRCM12-2AC	PRCM12-4AO PRCM12-4AC	PRCM18-5AO PRCM18-5AC PRCML18-5AO PRCML18-5AC	PRCM18-8AO PRCM18-8AC PRCML18-8AO PRCML18-8AC	PRCM30-10AO PRCM30-10AC PRCML30-10AO PRCML30-10AC	PRCM30-15AO PRCM30-15AC PRCML30-15AO PRCML30-15AC
Sensing distance	2mm ±10%	4mm ±10%	5mm ±10%	8mm ±10%	10mm ±10%	15mm ±10%
Hysteresis	Max. 10% of sensing distance					
Standard sensing target	12×12×1mm(Iron)	18×18×1mm(Iron)	25×25×1mm(Iron)	30×30×1mm(Iron)	45×45×1mm(Iron)	45×45×1mm(Iron)
Setting distance	0 to 1.4	0 to 2.8	0 to 3.5	0 to 5.6	0 to 7	0 to 10.5
Power supply (Operating voltage)	100-240VAC 50/60Hz (85-264VAC)					
Leakage current	Max. 2.5mA					
Response frequency	20Hz					
Residual voltage	Max. 10V					
Affection by Temp.	±10% Max. of sensing distance at +20°C within temperature range of -25 to +70°C					
Control output	150mA	200mA				
Insulation resistance	Min. 50MΩ (500VDC)					
Dielectric strength	1500VAC 50/60Hz for 1minute					
Vibration	1mm amplitude at frequency of 10 to 55Hz in each of X, Y, Z directions for 2 hours					
Shock	500m/s ² (50G) X, Y, Z directions for 3 times					
Indicator	Operating indicator : Red LED					
Ambient temperature	-25 to +70°C (non-freezing condition)					
Storage temperature	-30 to +80°C (non-freezing condition)					
Ambient humidity	35 to 95%RH					
Protection circuit	Surge protection circuit					
Protection	IP67(IEC standard)					
Insulation type(*1)	□					
Unit weight	Approx. 30g	PRCM : Approx. 53g PRCML : Approx. 74g		PRCM : Approx. 134g PRCML : Approx. 169g		

※(*1) "□" Mark indicated that equipment protected throughout by double insulation or reinforced insulation.

Dimensions

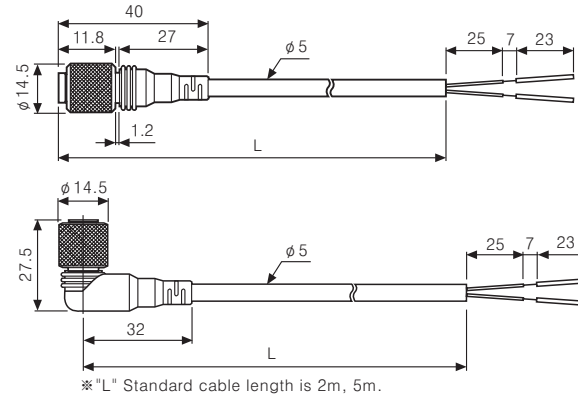


Type		A	B	C	D	E	F	G	H	
Flush	M12	PRCM	M12×1	71.8	48.5	23.3	4	0	21	17
		PRCML	M18×1	59.1	35.3	23.8	4	0	29	24
	M18	PRCML	M18×1	85.8	62	23.8	4	0	29	24
		PRCM	M30×1.5	62.8	38	24.8	5	0	42	35
	M30	PRCML	M30×1.5	84.8	60	24.8	5	0	42	35
		PRCM	M12×1	71.8	41.5	23.3	4	7	21	17
Non-flush	M12	PRCM	M18×1	59.1	25.3	23.8	4	10	29	24
		PRCML	M18×1	85.8	52	23.8	4	10	29	24
	M18	PRCML	M18×1	85.8	28	24.8	5	10	42	35
		PRCM	M30×1.5	62.8	28	24.8	5	10	42	35
	M30	PRCML	M30×1.5	84.8	50	24.8	5	10	42	35
		PRCM	M30×1.5	84.8	50	24.8	5	10	42	35

●CIA2-□ (AC Type)

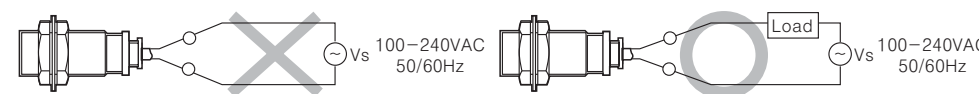


●CLA2-□ (AC Type)



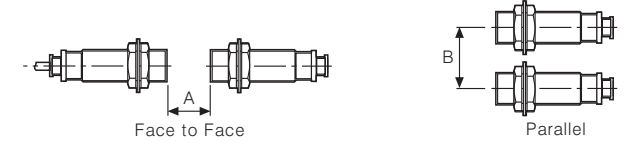
Connection of the power supply

Be sure to connect the power after connecting the load, because direct connection of the proximity sensor may cause damage to the inner elements of this product.

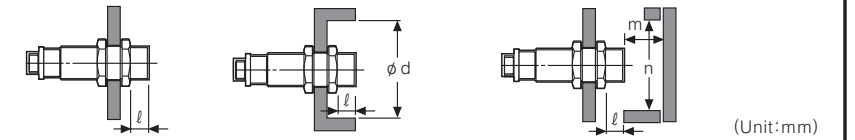


Mutual-interference & Influence by surrounding metals

○Mutual-interference
When several proximity sensors are mounted closely, malfunction of sensor may be caused due to mutual interference. Therefore, be sure to provide a minimum distance between the two sensors, as below charts.

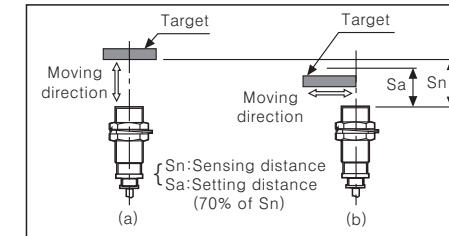


○Influence by surrounding metals
When sensors are mounted on metallic panel, it is required to protect the sensors from being affected by any metallic object except target. Therefore, be sure to provide a minimum distance as below chart.



Model Item	PRCM12-2AO	PRCM12-4AO	PRCM(L)18-5AO	PRCM(L)18-8AO	PRCM(L)30-10AO	PRCM(L)30-15AO
A	12	24	30	48	60	90
B	24	36	36	54	60	90
ℓ	0	11	0	14	0	15
φd	12	36	18	54	30	90
m	6	12	15	24	30	54
n	18	36	27	54	45	90

Setting distance



●Sensing distance can be changed by the shape, size or material of the target. Therefore please check the sensing distance like (a), then pass the target within range of setting distance(Sa).

●Setting distance (Sa)
=Sensing distance(Sn) × 70%
Ex)PRCM30-10AO(See ordering information)
Setting distance(Sa)=10mm × 0.7=7mm

Caution for using

- This equipment shall not be used outdoors or beyond specified temperature range.
 - Do not load over than tensile strength of cord. (φ4:30N max., φ5:50N max.)
 - Do not use the same conduit with cord of this unit and electric power line or power line. Also avoid the same connection.
 - Do not put overload to tighten nut, please use washer for tightening.
 - Note1) Allowable strength may be different by the length of head. As see the picture, allowable tightening strength of front part and rear part are in (Chart 1). Rear part includes head nut as like picture.
 - Note2) (Chart 1) is for using washer.
 - Please check the voltage changes of power source in order not to excess rating power input.
 - Do not connect capacity load to output part directly.
 - Please make wire short as much as possible in order to avoid noise.
 - Be sure to cable as indicated specification on this product. If use wrong cable or bended cable, it shall not maintain the water-proof.
 - It is possible to extend cable with over 0.3mm² and max. 200m.
 - If the target is plated, the operating distance can be changed by the plating material.
 - It may result in malfunction by metal particle on product.
 - If there are machines(motor, welding etc), which occurs big surge around this unit, please install the Varistor or absorber to source of surge, even though there is built-in surge absorber in this unit.
 - If connect the load with big inrush current(DC type bulb) to this unit, the big inrush current will flow due to the initial resistance is low. If the current flows, the resistance of load will be bigger, then it will return to standard current. In this case, proximity sensor might be damaged by inrush current. If you use DC type bulb, please connect extra relay or resistance in order to protect proximity sensor from.
 - In case of the load current is small : When the load current is under 5mA, make the residual voltage is less than return voltage to connect the bleeder resistor to load in parallel.
 - ※110VAC 50/60Hz:20kΩ, Min. 3W, 220VAC 50/60Hz:39kΩ, Min. 5W
 - If make a transceiver close to proximity sensor or wire connection, it may cause malfunction.
- ※It may cause malfunction if above instructions are not followed.

Model	Strength	Front		Rear
		Size	Torque	Torque
PRCM12 Series	Flush	13mm	65kgf-cm	120kgf-cm
	Non-flush	7mm	150kgf-cm	150kgf-cm
PRCM18 Series	Flush	—	150kgf-cm	150kgf-cm
	Non-flush	—	500kgf-cm	800kgf-cm
PRCM30 Series	Flush	26mm	500kgf-cm	800kgf-cm
	Non-flush	12mm	—	—

Major products

- PROXIMITY SENSOR ■ PHOTOELECTRIC SENSOR
- AREA SENSOR ■ FIBER OPTIC SENSOR
- DOOR/DOOR SIDE SENSOR ■ PRESSURE SENSOR
- ROTARY ENCODER ■ COUNTER
- TIMER ■ TEMPERATURE CONTROLLER
- TEMPERATURE/HUMIDITY TRANSDUCER
- POWER CONTROLLER ■ PANEL METER
- TACHO/LINE SPEED/PULSE METER
- DISPLAY UNIT ■ SENSOR CONTROLLER
- SWITCHING POWER SUPPLY
- GRAPHIC PANEL
- 5-PHASE STEPPING MOTOR & DRIVER & CONTROLLER
- LASER MARKING SYSTEM(CO₂, Nd:YAG)

Autonics Corporation
http://www.autonics.com

Satisfiable Partner For Factory Automation

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