## **Autonics** INDUCTIVE PROXIMITY SENSOR DC 2-WIRE TYPE



Thank you for choosing our Autonics product.

Please read the following safety considerations before use.

#### Safety Considerations

\*\*Please observe all safety considerations for safe and proper product operation to avoid hazards

※▲ symbol represents caution due to special circumstances in which hazards may occur.

★Warning Failure to follow these instructions may result in serious injury or death.

★Caution Failure to follow these instructions may result in personal injury or product damage.

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- I. Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss. (e.g. nuclear power control, medical equipment, ships, vehicles, railways, aircraft, combustion apparatus, safety equipment, crime/disaster prevention devices, etc.)
   Failure to follow this instruction may result in fire, personal injury, or economic loss.

  2. Do not disassemble or modify the unit.

- Failure to follow this instruction may result in fire.

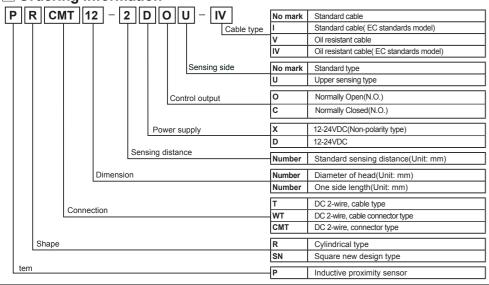
  3. Do not connect, repair, or inspect the unit while connected to a power source. Failure to follow this instruction may result in fire.
- 4. Check 'Connections' before wiring. Failure to follow this instruction may result in fire.

#### **⚠** Caution

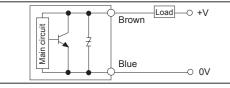
- Use the unit within the rated specifications.
   Failure to follow this instruction may result in fire or product damage.
- 2. Use dry cloth to clean the unit, and do not use water or organic solvent.
- Failure to follow this instruction may result in fire.

  3. Do not use the unit in the place where flammable/explosive/corrosive gas, humidity, direct sunlight, radiant heat, vibration, impact, or salinity may be present.
  Failure to follow this instruction may result in fire or explosion.
  4. Do not supply power without load.
  Failure to follow this instruction may result in fire or product damage.

### Ordering Information

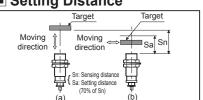


### Control Output Diagram & Load Operation



_	P	-	
		Normally Open	Normally Closed
	Sensing target	Presence Nothing	Presence Nothing
	Load	Operation Return	Operation Return
	Operation indicator (Red RED)	ON OFF	ON OFF

### Setting Distance



- Detecting distance can be changed by the shape, size or material of the target. Therefore please check the detecting distance like (a), then pass the target within range of setting distance(Sa)
- Setting distance(Sa)
- Sensing distance(Sn)× 70% E g.)PRCMT12-2DC
  - Setting distance(Sa) = 2mm × 0.7 = 1.4mm
- The above specifications are subject to change and some models may be discontinued without notice. Be sure to follow cautions written in the instruction manual and the technical descriptions (catalog, homepage)

# ■ Specifications

<b>-</b> ;	Spec	ificatio	ns							
				PRT12-2□0	PRT12-4□0	PRT18-5□0	PRT18-8□0	PRT30-10□0	PRT30-15□O	
		PRT08-1.5DO	PRT08-2DO	PRT12-2□C	PRT12-4□C	PRT18-5□C	PRT18-8□C	PRT30-10□C	PRT30-15□C	
		PRT08-1.5DC	PRT08-2DC		PRWT12-4□0				PRWT30-15□0	
		PRWT08-1.5DO		PRWT12-2□C					PRWT30-15□C	
Model	d	PRWT08-1.5DC			PRWT12-4_O-I					PSNT17-5D0
nouc			PRWT08-2DO-V							PSNT17-5DC
					PRCMT12-4DO				PRCMT30-15DO	PSNT17-5D0
					PRCMT12-4DC				PRCMT30-15DC	
		PRW108-1.5DC-IV	PRWT08-2DC-IV		PRCMT12-4DO-I PRCMT12-4DC-I				PRCMT30-15DO-I PRCMT30-15DC-I	
onoin	a distance	1 Emm	2mm	2mm	4mm	5mm	8mm	10mm	15mm	5mm
	g distance				<del> 4</del> mm	Iomm	lømm	Tiomm	Tiomin	lamm
	resis	Max. 10% of s	ensing distance	:		140 40 4	los os 4	loo oo 4	145.45.4	140 40 4
Stand		8×8×1mm(Iror	1)	12×12×1mm(li	ron)	18×18×1mm	25×25×1mm	30×30×1mm	45×45×1mm	18×18×1mn
	ng target	0.1.405			101.00	(Iron)	(Iron)	(Iron)	(Iron)	(Iron)
			0 to 1.4mm		0 to 2.8mm	0 to 3.5mm	0 to 5.6mm	0 to 7mm	0 to 10.5mm	0 to 3.5mm
		12-24VDC=								
		(10-30VDC==)								
	-	Max. 0 6mA								
	onse	1.5kHz	1.0kHz	1 5kHz	500Hz		350Hz	400Hz	200Hz	700Hz
<u> </u>	ency <sup>×1</sup>	_								
Resid oltag	ge <sup>×2</sup>	,	n-polarity type is							
Affectio	n by Temp.	Within ±10°C r	nax. of sensing	distance at 20°	C in temperatur	e range of -25	to 70°C(PRT08	Series: Max. ±	20%)	
Contr	ol output	2 to 100mA								
nsula esist	ation ance	Min. 500MΩ(50	0VDC megger)							
Dielectr	ric strenath	1,500VAC 50/60Hz for 1minute								
/ibrat		Imm amplitude at frequency 10 to 55Hz in each of X, Y, Z directions for 2 hours								
Shock			x. 50G) X, Y, Z							
ndica			cator(Red LED)							
			torage: -30 to 80							
_		i 35 to 95%RH, Storage: 35 to 95%RH it Surge protection Surge protection circuit, overload & short circuit protection								
	ction	IP67( EC Stan		Jourge protection	on circuit, overi	Jau & SHOIL CIT	uit protection			
rote	CUON									la.
ε Μ	PRT	Ø3 5mm, 3-wire, 2m (AWG24, Core diameter:		Ø4mm, 2-wire	Ø4mm, 2-wire, 2m Ø5mm, 2-wire, 2m					Ø4mm, 2-wire, 2m
TRP		0.08mm, Numb Insulator diame	er of cores: 40, eter: Ø1mm)	(AWG22, Core	Core diameter: 0.08mm, Number of cores: 60, Insulator diameter: Ø1 25mm)					
ĺ	PRWT	Ø4, 2-wire, 30	0mm, M12 conr	nector		Ø5, 2-wire, 30	0mm, M12 conr	nector		-
		Case/Nut : Nik	el plated Brass	, Washer : Nike	I plated Iron, Se	ensing surface :	PBT,			
/later	iais		e(Black) : Polyv					lyvinyl chloride	(PVC)	
ppro	oval	CE		`						
1.1.		-		PRT: Approx. 840	7/Approx 72a)	DDT:Approx 122	g(Approx. 110g)	DDT-Approx 207	7a(Approx 170a)	PSNT:
		PRT: Annroy 640	a(Annroy 52a)	I IVI. UPPION 046	y(nppion. 129)	J: 111.Ωρρίολ. 122	g(Approx. 110g)	1 × 1. αρρίολ. 201	g(hppiox. 170g)	II OITI.

- PRT: Approx. 64g(Approx. 52g) | PHX: Approx. 64g(Approx. 72g) | PHX: Approx. 17g(Approx. 17g) | PHX: Approx. 44g(Approx. 52g) | PRWT: Approx. 44g(Approx. 32g) | PRWT: Approx. 32g) | PRWT: Approx. 32g(Approx. 42g) | PRWT: Approx. 32g(Approx. 42g) | PRWT: Approx. 45g(Approx. 43g) | PRWT: Approx. 154g(Approx. 154g(Approx. 142g) | (Approx. 71g) | PRWT: Approx. 154g(Approx. 154g(Appro x1: The response frequency is the average value. The standard sensing target is used and the width is set as 2 times of the standard sensing target, 1/2 of the sensing distance for the distance.
- 2: Before using non-polarity type, check the condition of connected device because residual voltage is 5V. 3: Do not pull the Ø3.5mm cable with a tensile strength of 25N, the Ø4mm cable with a tensile strength of 30N or over and the Ø5mm cable with a tensile strength of 50N or over
- It may result in fire due to the broken wire. When extending wire, use AWG22 cable or over within 200m. X4: The weight with packaging and the weight in parentheses is only unit weight.
- X Environment resistance is rated at no freezing or condenstion

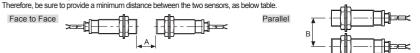
### Dimensions

Туре	Cable type	Cable connector type	Connector type	Cable type
Type	PRT(M8, M12, M18, M30)	PRWT(M8, M12, M18, M30)	PRCMT(M12, M18, M30)	PSNT17
Flush	B C J J A A A A A A A A A A A A A A A A A	B J M12×1	B C M12×1	30.8
Non- flush	B E C J	B J M12×1	B C M12×1	35.6
Nut & Washer	I O	I O		
Туре	A	B C D E F	G H J	1

Washer							<u> </u>				
Туре			Α	В	С	D	E	F	G	Н	J
	M8	PRT	M8×1	30	30	4	<u> -</u>	3 5	13	15	2,000
	INIS	PRWT	M8×1	30	30	4	<u> -</u>	4	13	15	300
		PRT	M12×1	46	31.5	4	-	4	17	21	2,000
	M12	PRWT	M12×1	46	31.5	4	Ī-	4	17	21	300
		PRCMT	M12×1	55.8	31.5	4	-	<u> -</u>	17	21	<u> </u> -
Flush		PRT	M18×1	47.5	29.5	4	<u> -</u>	5	24	29	2,000
	M18	PRWT	M18×1	47.5	29.5	4	<u> -</u>	5	24	29	300
		PRCMT	M18×1	54.3	29.5	4	-	-	24	29	<u> </u>
	M30	PRT	M30×1.5	58	38	5	<u> -</u>	5	35	42	2,000
		PRWT	M30×1.5	58	38	5	<u> </u>	5	35	42	300
		PRCMT	M30×1.5	63.8	38	5	-	-	35	42	-
	M8	PRT	M8×1	30	26	4	4	3 5	13	15	2,000
	IVIO	PRWT	M8×1	30	26	4	4	4	13	15 2,000 15 300 21 2,000 21 300 21 - 29 2,000 29 300 29 - 42 2,000 42 300 42 -	
		PRT	M12×1	46	24.5	4	7	4	17	15 2,000 15 300 21 2,000 21 300 21 300 21	2,000
	M12	PRWT	M12×1	46	24.5	4	7	4	17		
		PRCMT	M12×1	55.8	24.5	4	7	-	17		
Non-flush		PRT	M18×1	47	19	4	10	5	24	29	2,000
	M18	PRWT	M18×1	47	19	4	10	5	24	29	300
		PRCMT	M18×1	53.8	19	4	10	-	24	29	<u> </u> -
		PRT	M30×1.5	58	28	5	10	5	35	42	2,000
	M30	PRWT	M30×1 5	58	28	5	10	5	35	42	300
		PRCMT	M30×1 5	63.8	28	5	10	<u> -</u>	35	42	<u> </u>

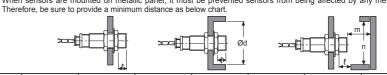
## ■ Mutual-interference & Influence by Surrounding Metals

When plural proximity sensors are mounted in a close row, malfunction of sensor may be caused due to mutual interference

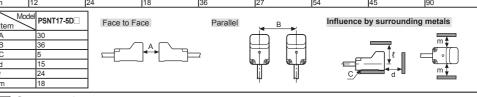


oInfluence by surrounding metals

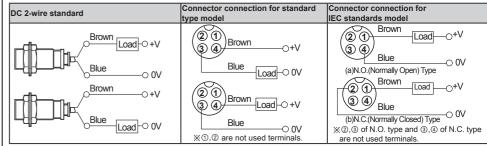
When sensors are mounted on metallic panel, it must be prevented sensors from being affected by any metallic object except target



	Helph						(Unit: mm)
PRT08-1.5D PRWT08-1.5D	PRT08-2D_	PRWT12-2	PRWT12-4	PRT18-5 🗆 🗆 PRWT18-5 🗆 🗆 PRCMT18-5 🗆	PRWT18-8 🗆 🗆		PRT30-15
9	12	12	24	30	48	60	90
16	24	24	36	36	54	60	90
0	8	0	11	0	14	0	15
8	24	12	36	18	54	30	90
4 5	6	6	12	15	24	30	45



#### Connections



XLoad can be wired to any direction.

2-Ø3.2

\*No need to consider polarity for non-polarity type of power supply.

## Installation and Tightening Torque \_

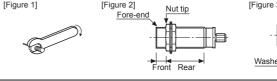
When tightening the nut, use the provided washer as [Figure 1]. When installing the product, the tightening torque of the nut varies according to the distance from the fore-end. The front part of the product is from the fore-end to the dimension on

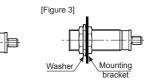
the below table, and the rear part is from the tip of the nut to the end of the product. [Figure 2]

In case the nut is placed in the front part of the product, apply tightening torque for front part.

[Table 1] the allowable tightening torque table is for inserting the washer as [Figure 3].

[Table 1]							
	Strength	Front		Rear			
Model		Size	Torque	Torque			
PRT08	Flush	7mm	3 92N m	8.82N m			
Series	Non-flush	5mm	3 9211 111	0.02IN III			
PRT12	Flush	13mm	6 37N m	11.76N m			
Series	Non-flush	7mm	0 3/ N III				
PRT18	Flush	-	14.7N m				
Series	Non-flush	-	14.7N III				
PRT30	Flush	26mm	49N m	78.4N m			
Series	Non-flush	12mm	#SIN III	/ O.4IN III			





#### Cautions during Use

- Follow instructions in 'Cautions during Use'. Otherwise, it may cause unexpected accidents.
   12-24VDC power supply should be insulated and limited voltage/current or Class 2, SELV power supply device
- 3. Use the product, after 0.8 sec of supplying power. 4. Wire as short as possible and keep away from high voltage lines or power lines, to prevent surge and inductive noise.
- Do not use near the equipment which generates strong magnetic force or high frequency noise (transceiver, etc.). In case installing the product near the equipment which generates strong surge (motor, welding machine, etc.), use diode or varistor

Laser Marking System(Fiber, CO<sub>2</sub>, Nd:YAG)

Laser Welding/Cutting System

- Do not connect capacity load to the output terminal directly.
   This unit may be used in the following environments.
- 1 Indoors (in the environment condition rated in 'Specifications')
- ③ Pollution degree 2

#### ② Altitude max. 2.000m 4 Installation category II

## Major Products

- Photoelectric Sensors Temperature Controllers Fiber Optic Sensors Temperature/Humidity Transducers Field Network Devices

- Switching Mode Power Supplies
- Control Switches/Lamps/Buzzers
  I/O Terminal Blocks & Cables
  Stepper Motors/Drivers/Motion Controllers

DRW171496AA