Autonics

LONG DISTANCE INDUCTIVE PROXIMITY SENSOR (SPATTER RESISTANT TYPE) PRDAT/PRDAWT SERIES



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

Caution for your safety

XPlease keep these instructions and review them before using this unit.

Please observe the cautions that follow;

Warning Serious injury may result if instructions are not followed.

⚠ Caution Product may be damaged, or injury may result if instructions are not followed.

The following is an explanation of the symbols used in the operation manual ▲Caution: Injury or danger may occur under special conditions.

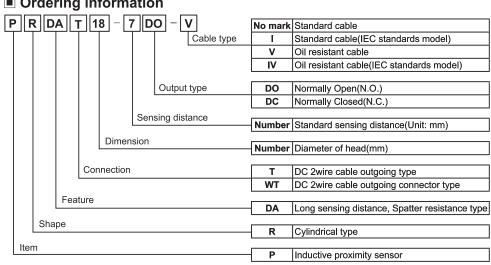
- 1. In case of using this unit with machinery(Ex: nuclear power control, medical equipment, ship, vehicle, train, airplane, combustion apparatus, safety device, crime/disaster prevention equipment, etc)which may cause damages to human life or property, it is required to install fail-safe device. It may result in serious damage, fire or human injury
- 2. Do not connect power directly without load.

It may result in damage to inner components or burn them out

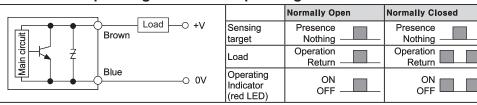
∧Caution

- 1. Do not use this unit in place where there are flammable, explosive gas, chemical or strong alkalis, acids. It may cause a fire or explosion.
- 2. Do not impact on this unit.
- It may result in malfunction or damage to the product
- 3. Do not apply AC power and observe specification rating. It may result in serious damage to the product.

Ordering information



Control output diagram & Load operating



*The above specifications are subject to change and some models may be discontinued without notice.

Specifications

Туре		Cable outgoing type	Cable outgoing connector type	Cable outgoing type	Cable outgoing connector type						
Model		PRDAT18-7DO PRDAT18-7DC PRDAT18-7 DO-V PRDAT18-7DC-V	PRDAWT18-7DO PRDAWT18-7DC PRDAWT18-7DO-I PRDAWT18-7DC-I PRDAWT18-7DC-IV PRDAWT18-7DC-IV	PRDAT30-15DO PRDAT30-15DC PRDAT30-15DO-V PRDAT30-15DC-V	PRDAWT30-15DO PRDAWT30-15DC-I PRDAWT30-15DO-I PRDAWT30-15DC-IV PRDAWT30-15DC-IV PRDAWT30-15DC-IV						
Sensin	g distance	7mm 15mm									
Hystere	esis	Max. 10% of sensing distance									
Standard	d sensing target	20×20×1mm(Iron) 45×45×1mm(Iron)									
Setting of	distance	0~4.9mm 0~10.5mm									
	upply ng voltage)	12-24VDC (10-30VDC)									
	e current	Max. 0.6mA									
Respor	nse frequency ^{×1}	250Hz	250Hz 100Hz								
Residua	l voltage	Max. 3.5Vx									
Affection	n by Temp.	Max. ±10% for sensing distance at anbient temperature 20°C									
Control	output	2 ~ 100mA									
Insulatio	on resistance	Min. 50MΩ(500VDC megger)									
Dielectric strength 1,500VAC 50/60Hz for 1minute											
Vibratio	on .	1mm amplitude at freq	nm amplitude at frequency of 10 ~ 55Hz in each of X, Y, Z directions for 2 hours								
Shock		500m/s²(50G) X, Y, Z directions for 3 times									
Indicato	or	Operating indicator(red LED)									
Environ	Ambient temperature	-25 ~ 70°C, Storage: -30 ~ 80°C									
-ment	Ambient humidity	35 ~ 95%RH, Storage: 35 ~ 95%RH									
Protection circuit Protection		Surge protection circuit, Overcurrent protection									
		IP67(IEC Standards)									
		Ø5, 2-wire, 2m	-	Ø5, 2-wire, 2m	 -						
Cable	PRDAT	(AWG22, Core diameter: 0.08mm, Number of cores: 60, Insulator out diameter: Ø1.25mm)	-	(AWG22, Core diameter: 0.08mm, Number of cores: 60, Insulator out diameter: Ø1.25mm)	_						
	PRDAWT	-	Ø5, 2-wire, 300mm, M12 connector	-	Ø5, 2-wire, 300mm M12 connector						
Meterials		Case/Nut: Teton coated Brass, Washer: Teton coated Iron, Sensing surface: Teton Standard cable(Black): Polyvinyl chloride(PVC), Oil resistant cable(Gray): Oil resistant Polyvinyl chloride(PVC)									
Approval		C€									
Weight ^{**2}		Approx. 134g (Approx. 122g)	Approx. 77g (Approx. 65g)	Approx. 221g (Approx. 184g)	Approx. 155g (Approx. 143g)						

- ×1: 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: The weight with packaging and the weight in parentheses is only unit weight. Environment resistance is rated at no freezing or condensation

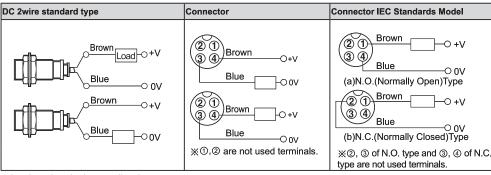
Dimensions

1	Toma	Outgoing type	Outgoing connector type	Nut, Washer	
l	Туре	PRDAT(M18, M30)	PRDAWT(M18, M30)		
	Flush	B S S S S S S S S S S S S S S S S S S S	B	H	

уре			Α	В	С	D	F	G	Н	J
	M18	PRDAT	M18×1	47.5	29.5	4	5	24	29	2,000
lush		PRDAWT	M18×1	47.5	29.5	4	5	24	29	300
iusn	M30	PRDAT	M30×1.5	58.5	38.5	5	5	35	42	2,000
		PRDAWT	M30×1.5	58.5	38.5	5	5	35	42	300

%"J" type standard: Cable outgoing type/2,000mm, Cable outgoing connector type/300mm

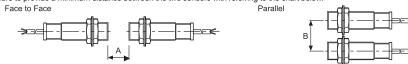
Connections



XLoad can be wired to any direction

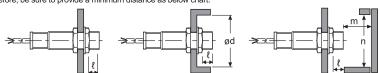
■ Mutual-interference & Influence by surrounding metals

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 with referring to the chart below



Influence by surrounding metals

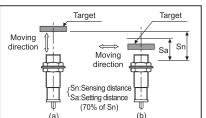
When sensors are mounted on metallic panel, it is required to protect the sensors from being affected by any metallic object except target Therefore, be sure to provide a minimum distance as below chart.



(Unit:mm)

PRDA T18-7D				PRDALT30-15D			
Α	42	ød	18	Α	90	ød	30
В	36	m	21	В	60	m	45
ł	0	n	27	ł	0	n	45

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%

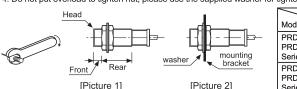
Ex)PRDAT18-7DO

Setting distance(Sa) = 7mm × 0.7 = 4.9mm

Caution for using

(Unit:mm)

- 1. This equipment shall not be used outdoors or beyond specified temperature range
- 2. Do not apply over tensile strength of cord. (ø4: 30N max., ø5: 50N max.)
- 3. Do not use the same conduit with cord of this unit and electric power line or power line 4. Do not put overload to tighten nut, please use the supplied washer for tightening



Strength		Front		Rear				
Model		Size	Torque Torque					
PRDAT18 PRDAWT18 Series	Flush	-	150kgfam (14.7Nm)					
PRDAT30 PRDAWT30 Series		26mm	500kgfam (49Nm)	800kgfam (78.4Nm)				
		[Table 1	1					

Note1)Allowable tightening torque of a nut may be different by the distance from the head. For allowable tightening torque and the range of front and rear parts, refer to [Table 1] and above [Picture 1] respectively. The rear part includes a nut on the head side(see above [Picture 1]). Please apply a tightening torque of the front part when the nut on the front is located in the front

Note2) The allowable tightening torque denotes a torque value when using a provided washer as above [Picture 2].

- Please check the voltage changes of power source in order not to excess rating power input.
- Do not use this unit during transient time(80ms) after apply power.
- 7. It might result in damage to this product, if use automatic transformer. So please use insulated transformer. 8. Please make wire as short as possible in order to avoid noise.
- 9. Be sure to use cable as indicated specification on this product. If wrong cable or bended cable is used, it shall not maintain the water-proof.
- 10. It is possible to extend cable with over 0.3mm² and max. 200m.
- 11. If the target is plated, the operating distance can be changed by the plating material.
- 13. 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. 14. If connecting the load with big inrush current(DC type bulb) to this unit, the big inrush current will flow since 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.
- 15. If making a transceiver close to proximity sensor or wire connection, it may cause malfunction.
- 16. In case of the load current is small: Make the residual current is less than return current to connect the bleeder resistor to load in

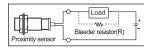
Switching mode power supplies

■ Control switches/Lamps/Buzzer

Laser welding/soldering system

Vs:Power supply, Io:Min.operating current for proximity sensor, Ioff:Return current of load, P:Resistance W of Bleeder resistor

 $\times R \le \frac{Vs}{lo-loff}(k\Omega)$ P> $\frac{Vs^2}{D}$



⊗It may cause malfunction if above instructions are not followed

Major products

- Photoelectric sensors Temperature controllers

 - SSR/Power controller
- Timers Area sensors
- Proximity sensors Panel meters
- Rotary encoders ■ Connector/Sockets ■ Sensor controllers
- Tachometer/Pulse(Rate
- Graphic/Logic panels Field network devices ■ Laser marking system(Fiber, CO₂, Nd:YAG)
- I/O Terminal Blocks & Cables Satisfiable Partner For Factory Automation ■ Stepper motors/drivers/motion controllers
 - HEAD QUARTERS
 - OVERSEAS SALES: #402-404, Bucheon Techno Park, 655, Fyeur Wommi-gu, Bucheon, Gyeonggi-do, Korea TEL: 82-32-610-2730 / FAX: 82-32-329-0728 eon Techno Park, 655, Pyeongo

Autonics Corporation

FP-KF-07-0460D