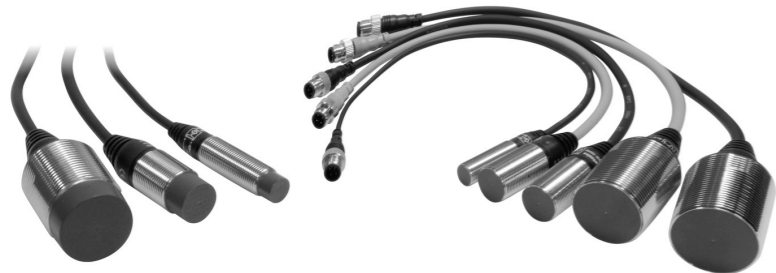


Autonics

**INDUCTIVE PROXIMITY SENSOR
LONG DISTANCE CYLINDRICAL TYPE DC 3WIRE**

INSTRUCTION MANUAL

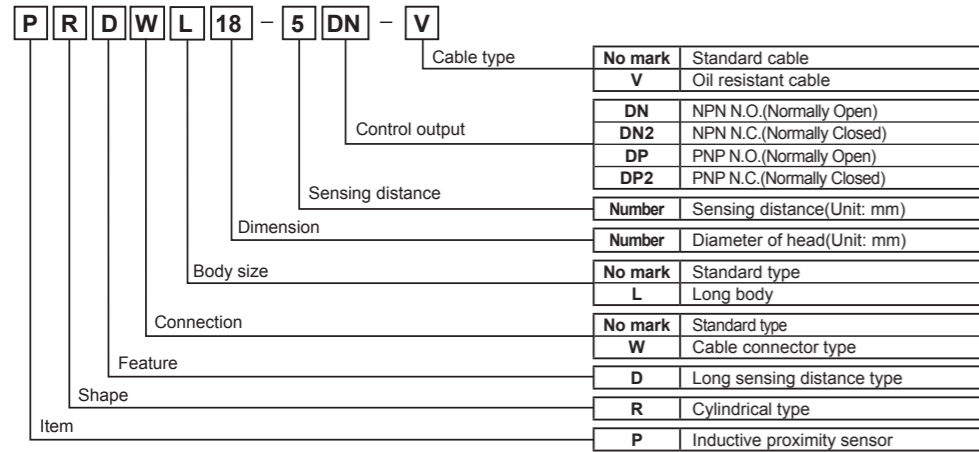


Thank you for choosing our Autonics product.
Please read the following safety considerations before use.

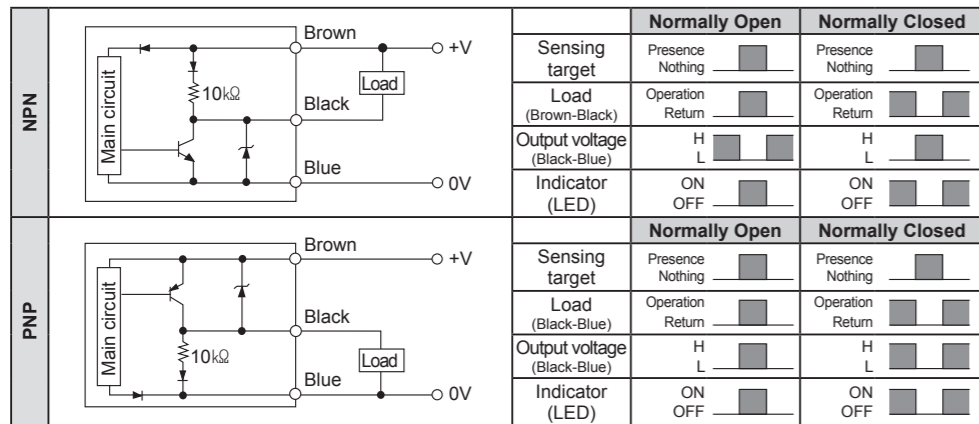
■ Safety Considerations

- ※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.
 - ⚠ Warning**
- 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.
 - Do not disassemble or modify the unit.**
Failure to follow this instruction may result in fire.
 - Do not connect, repair, or inspect the unit while connected to a power source.**
Failure to follow this instruction may result in fire.
 - 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.
 - Use dry cloth to clean the unit, and do not use water or organic solvent.**
Failure to follow this instruction may result in fire.
 - 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.

■ Ordering Information



■ Control Output Diagram & Load Operating



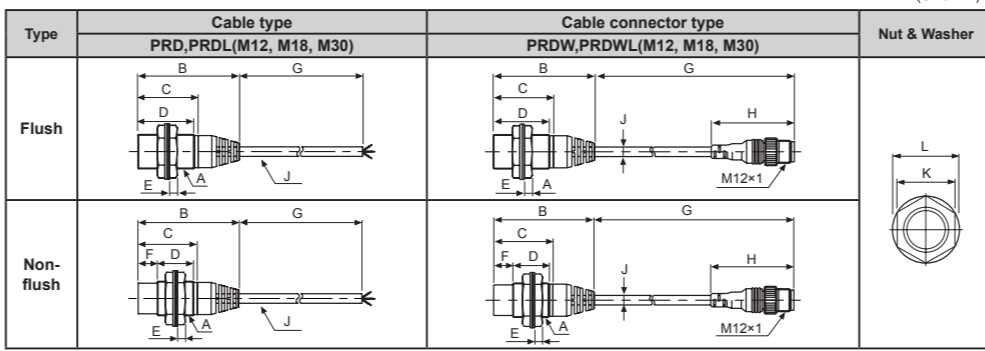
※The above specifications are subject to change and some models may be discontinued without notice.
※Be sure to follow cautions written in the instruction manual and the technical descriptions (catalog, homepage).

■ Specifications

Model	PRD12-4DN PRD12-4DP PRD12-4DN2 PRD12-4DP2 PRDL12-4DN PRDL12-4DP PRDL12-4DN2 PRDL12-4DP2 PRDW12-4DN PRDW12-4DP PRDW12-4DN2 PRDW12-4DP2 PRDWL12-4DN PRDWL12-4DP PRDWL12-4DN2 PRDWL12-4DP2 PRDW12-4DN-V PRDW12-4DP-V	PRD12-8DN PRD12-8DP PRD12-8DN2 PRD12-8DP2 PRDL12-8DN PRDL12-8DP PRDL12-8DN2 PRDL12-8DP2 PRDW12-8DN PRDW12-8DP PRDW12-8DN2 PRDW12-8DP2 PRDWL12-8DN PRDWL12-8DP PRDWL12-8DN2 PRDWL12-8DP2 PRDW12-8DN-V PRDW12-8DP-V	PRD18-7DN PRD18-7DP PRD18-7DN2 PRD18-7DP2 PRDL18-7DN PRDL18-7DP PRDL18-7DN2 PRDL18-7DP2 PRDW18-7DN PRDW18-7DP PRDW18-7DN2 PRDW18-7DP2 PRDWL18-7DN PRDWL18-7DP PRDWL18-7DN2 PRDWL18-7DP2 PRDW18-7DN-V PRDW18-7DP-V	PRD18-14DN PRD18-14DP PRD18-14DN2 PRD18-14DP2 PRDL18-14DN PRDL18-14DP PRDL18-14DN2 PRDL18-14DP2 PRDW18-14DN PRDW18-14DP PRDW18-14DN2 PRDW18-14DP2 PRDWL18-14DN PRDWL18-14DP PRDWL18-14DN2 PRDWL18-14DP2 PRDW18-14DN-V PRDW18-14DP-V	PRD30-15DN PRD30-15DP PRD30-15DN2 PRD30-15DP2 PRDL30-15DN PRDL30-15DP PRDL30-15DN2 PRDL30-15DP2 PRDW30-15DN PRDW30-15DP PRDW30-15DN2 PRDW30-15DP2 PRDWL30-15DN PRDWL30-15DP PRDWL30-15DN2 PRDWL30-15DP2 PRDW30-15DN-V PRDW30-15DP-V	PRD30-25DN PRD30-25DP PRD30-25DN2 PRD30-25DP2 PRDL30-25DN PRDL30-25DP PRDL30-25DN2 PRDL30-25DP2 PRDW30-25DN PRDW30-25DP PRDW30-25DN2 PRDW30-25DP2 PRDWL30-25DN PRDWL30-25DP PRDWL30-25DN2 PRDWL30-25DP2 PRDW30-25DN-V PRDW30-25DP-V	
Sensing distance	4mm	8mm	7mm	14mm	15mm	25mm	
Hysteresis	Max. 10% of sensing distance						
Standard sensing target	12×12×1mm(Iron)	25×25×1mm(Iron)	20×20×1mm(Iron)	40×40×1mm(Iron)	45×45×1mm(Iron)	75×75×1mm(Iron)	
Setting distance	0 to 2.8mm	0 to 5.6mm	0 to 4.9mm	0 to 9.8mm	0 to 10.5mm	0 to 17.5mm	
Power supply (Operating voltage)	12-24VDC(=) (10-30VDC(=))						
Current consumption	Max. 10mA						
Response frequency^{*)}	500Hz	400Hz	300Hz	200Hz	100Hz	100Hz	
Residual voltage	Max. 1.5V						
Affection by Temp.	Within ±10°C max. of sensing distance at 20°C in temperature range of -25 to 70°C						
Control output	Max. 200mA						
Insulation resistance	Min. 50MΩ(500VDC megger)						
Dielectric strength	1,500VAC 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 (approx. 50G) X, Y, Z directions for 3 times						
Indicator	Operating indicator(RED LED)						
Environment	Ambient temp. -25 to 70°C, Storage: -30 to 80°C Ambient humi. 35 to 95%RH, Storage: 35 to 95%RH						
Protection circuit	Surge protection, reverse polarity protection, overload & short circuit protection						
Protection	IP67(IEC Standards)						
Cable	Cable type: Ø4mm, 3 cores, 2m Ø5mm, 3 cores, 2m			Cable connector type: AWG22, core diameter: 0.08mm, number of cores: 60, insulator diameter: Ø1.25mm			
Materials	Case/Nut: Nickel plated Brass, Washer: Nickel plated Iron, Sensing surface: Heat-resistant ABS, Standard cable(Black): Polyvinyl chloride(PVC), Oil resistant cable(Gray): Oil resistant Polyvinyl chloride(PVC)						
Approval	CE						
Unit Weight	PRD: Approx. 74g PRDL: Approx. 94g PRDW: Approx. 44g PRDWL: Approx. 64g	PRD: Approx. 72g PRDL: Approx. 92g PRDW: Approx. 42g PRDWL: Approx. 62g	PRD: Approx. 115g PRDL: Approx. 145g PRDW: Approx. 80g PRDWL: Approx. 110g	PRD: Approx. 110g PRDL: Approx. 140g PRDW: Approx. 75g PRDWL: Approx. 105g	PRD: Approx. 175g PRDL: Approx. 215g PRDW: Approx. 140g PRDWL: Approx. 180g	PRD: Approx. 180g PRDL: Approx. 220g PRDW: Approx. 145g PRDWL: Approx. 185g	

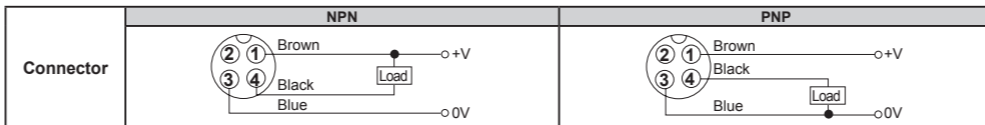
- * 1: The response frequency is the average value. The standard sensing target is used and the width is set as 2 times of the standard sensing target, 1/2 of the sensing distance for the distance.
- * 2: Do not pull the Ø4mm cable with a tensile strength of 30N or over and the Ø5mm cable with a tensile strength of 50N or over. It may result in fire due to the broken wire. When extending wire, use AWG22 cable or over within 20m.
- * Environment resistance is rated at no freezing or condensation.

■ Dimensions



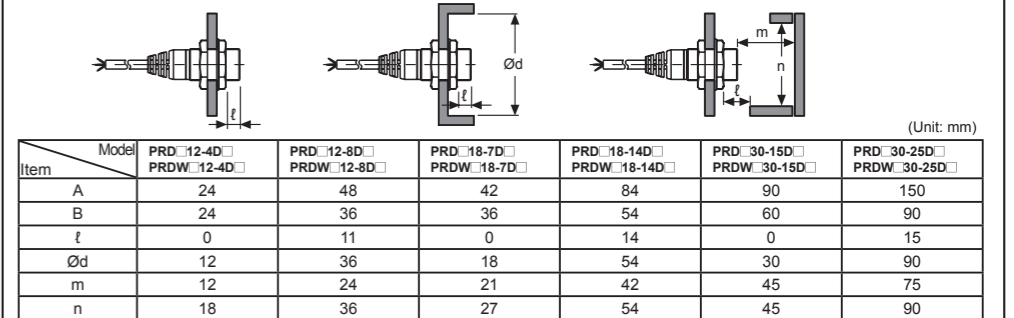
Type	A	B	C	D	E	F	G	H	J	K	L
Flush	PRD M12×1	51.8	33.5	31.5	4	-	2,000	-	4	17	21
	PRDW M12×1	51.8	33.5	31.5	4	-	300	44	4		
	PRDL M12×1	64.3	46	44	4	-	2,000	-	4		
	PRDWL M12×1	64.3	46	44	4	-	300	44	4		
Flush	PRD M18×1	53.2	31.5	29.5	4	-	2,000	-	5	24	29
	PRDW M18×1	53.2	31.5	29.5	4	-	300	44	5		
	PRDL M18×1	85.7	64	62	4	-	2,000	-	5		
	PRDWL M18×1	85.7	64	62	4	-	300	44	5		
Non-flush	PRD M30×1.5	62	40.3	38	5	-	2,000	-	5	35	42
	PRDW M30×1.5	62	40.3	38	5	-	300	44	5		
	PRDL M30×1.5	84	62.3	60	5	-	2,000	-	5		
	PRDWL M30×1.5	84	62.3	60	5	-	300	44	5		
Non-flush	PRD M12×1	51.8	33.5	24.5	4	7	2,000	-	4	17	21
	PRDW M12×1	51.8	33.5	24.5	4	7	300	44	4		
	PRDL M12×1	64.3	46	37	4	7	2,000	-	4		
	PRDWL M12×1	64.3	46	37	4	7	300	44	4		
Non-flush	PRD M18×1	52.7	31	19	4	10	2,000	-	5	24	29
	PRDW M18×1	52.7	31	19	4	10	300	44	5		
	PRDL M18×1	85.7	64	52	4	10	2,000	-	5		
	PRDWL M18×1	85.7	64	52	4	10	300	44	5		
Non-flush	PRD M30×1.5	62	40.3	28	5	10	2,000	-	5	35	42
	PRDW M30×1.5	62	40.3	28	5	10	300	44	5		
	PRDL M30×1.5	84	62.3	50	5	10	2,000	-	5		
	PRDWL M30×1.5	84	62.3	50	5	10	300	44	5		

■ Connections

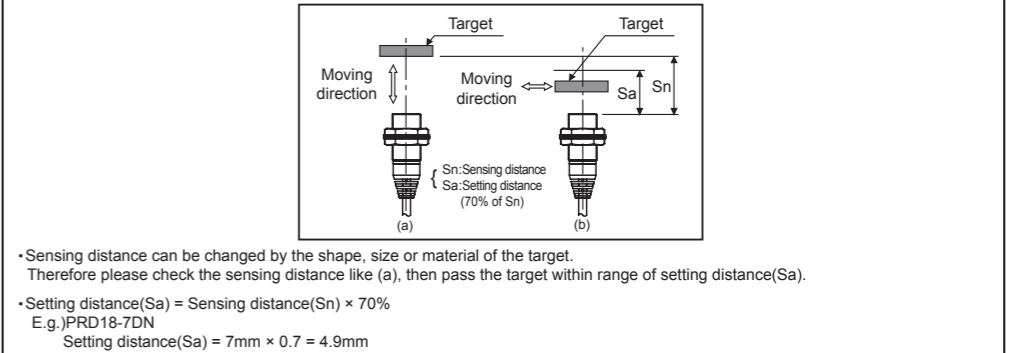


■ Mutual-interference & Influence by Surrounding Metals

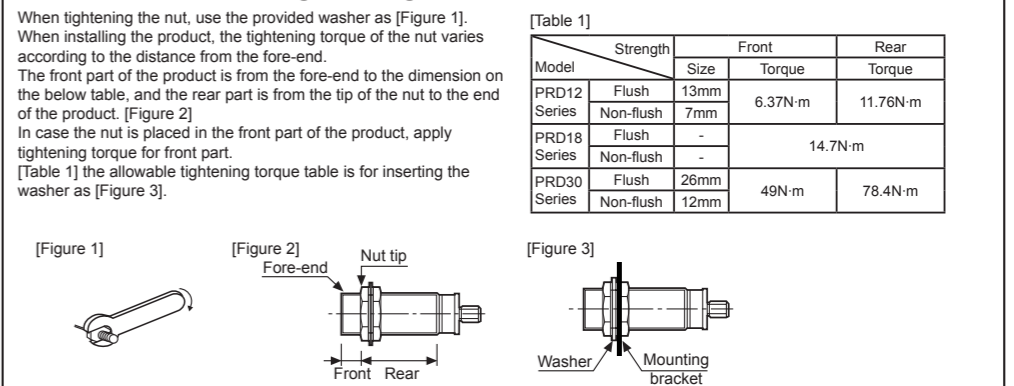
- Mutual-interference**
When several proximity sensors are mounted closely, malfunction of sensor may be caused due to mutual interference. Therefore, be sure to provide a minimum distance between the two sensors with referring to the chart below.
- Influence by surrounding metals**
When sensors are 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.



■ Setting Distance



■ Installation and Tightening Torque



■ 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.
- Use the product, after 0.8 sec of supplying power.
- 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 to remove surge.
- This unit may be used in the following environments.
 - ① Indoors (in the environment condition rated in 'Specifications')
 - ② Altitude max. 2,000m
 - ③ Pollution degree 2
 - ④ Installation category II

■ Major Products

- Photoelectric Sensors
- Fiber Optic Sensors
- Door Sensors
- Door Side Sensors
- Area Sensors
- Proximity Sensors
- Pressure Sensors
- Rotary Encoders
- Connectors/Sockets
- Switching Mode Power Supplies
- Control Switches/Lamps/Buzzers
- I/O Terminal Blocks & Cables
- Stepper Motors/Drivers/Motion Controllers
- Temperature Controllers
- Temperature/Humidity Transducers
- SSRs/Power Controllers
- Counters
- Timers
- Panel Meters
- Tachometers/Pulse(Rate) Meters
- Display Units
- Sensor Controllers
- Graphic/Logic Panels
- Field Network Devices
- Laser Marking System(Fiber, CO₂, Nd:YAG)
- Laser Welding/Cutting System

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