

PR Series Cylindrical Type Proximity Sensor

Cylindrical type proximity sensor

■ Features

- Improved the noise resistance with dedicated IC
- Integrated surge protection circuit
- Integrated overload & short protection circuit (DC 2-wire, 3-wire type)
- Integrated reverse polarity protection circuit (DC 3-wire type)
- Long life cycle and high reliability, and simple operation
- Red LED status indication
- Protection structure IP67 (IEC standard)
- Replaceable for micro switches and limit switches

⚠ Please read "Caution for your safety" in operation manual before using.



■ Specifications

● DC 2-wire type

| Model | PRT08-1.5DO PRT08-1.5DC | PRT08-2DO PRT08-2DC | PRT12-2DO PRT12-2DC | PRT12-4DO PRT12-4DC | PRT18-5DO PRT18-5DC | PRT18-8DO PRT18-8DC | PRT30-10DO PRT30-10DC | PRT30-15DO PRT30-15DC |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|---------------------------------------------------------------|------------------------|------------------------|------------------------|--------------------------|--------------------------|
| Sensing distance | 1.5mm | 2mm | 2mm | 4mm | 5mm | 8mm | 10mm | 15mm |
| Hysteresis | Max. 10% of sensing distance | | | | | | | |
| Standard sensing target | 8 × 8 × 1mm (Iron) | | 12 × 12 × 1mm (Iron) | | 18 × 18 × 1mm (Iron) | 25 × 25 × 1mm (Iron) | 30 × 30 × 1mm (Iron) | 45 × 45 × 1mm (Iron) |
| Setting distance | 0 to 1.05mm | 0 to 1.4mm | 0 to 1.4mm | 0 to 2.8mm | 0 to 3.5mm | 0 to 5.6mm | 0 to 7mm | 0 to 10.5mm |
| Power supply (Operation voltage) | 12-24VDC (10-30VDC) | | | | | | | |
| Leakage current | Max. 0.6mA | | | | | | | |
| Response frequency(*1) | 1.5kHz | 1kHz | 1.5kHz | 500Hz | | 350Hz | 400Hz | 200Hz |
| Residual voltage | Max. 3.5V | | | | | | | |
| Affection by Temp. | ±10% Max. for sensing distance at 20°C (For PRT08 series : ±20% Max.) | | | | | | | |
| Control output | 2 to 100mA | | | | | | | |
| Insulation resistance | Min. 50MΩ (at 500VDC megger) | | | | | | | |
| 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) in X, Y, Z direction for 3 times | | | | | | | |
| Indicator | Output operation indicator (Red LED) | | | | | | | |
| Ambient temperature | -25 to 70°C (at non-freezing status) | | | | | | | |
| Storage temperature | -30 to 80°C (at non-freezing status) | | | | | | | |
| Ambient humidity | 35 to 95%RH | | | | | | | |
| Protection circuit | Surge protection circuit | | Surge protection circuit, Overload & Short protection circuit | | | | | |
| Protection | IP67 (IEC standard) | | | | | | | |
| Cable spec. | φ 3.5 × 2P, 2m | | φ 4 × 2P, 2m | | | φ 5 × 2P, 2m | | |
| Material | Case/Nut: Nikel plated Brass, Washer: Nikel 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 | Approx. 52g | | Approx. 72g | | Approx. 110g | | Approx. 170g | |

*(*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.

- (A) Photo electric sensor
- (B) Fiber optic sensor
- (C) Door/Area sensor
- (D) Proximity sensor**
- (E) Pressure sensor
- (F) Rotary encoder
- (G) Connector/Socket
- (H) Temp. controller
- (I) SSR/Power controller
- (J) Counter
- (K) Timer
- (L) Panel meter
- (M) Tacho/Speed/Pulse meter
- (N) Display unit
- (O) Sensor controller
- (P) Switching power supply
- (Q) Stepping motor & Driver & Controller
- (R) Graphic/Logic panel
- (S) Field network device
- (T) Production stoppage models & replacement

PR Series

●DC 3-wire type

| | | | | | | | | |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| Model | PR08-1.5DN PR08-1.5DP PR08-1.5DN2 PR08-1.5DP2 PRL08-1.5DN PRL08-1.5DN2 PRL08-1.5DP2 | PR08-2DN PR08-2DP PR08-2DN2 PR08-2DP2 PRL08-2DN PRL08-2DN2 PRL08-2DP2 | PR12-2DN PR12-2DP PR12-2DN2 PR12-2DP2 PRS12-2DN PRS12-2DN2 PRS12-2DP2 | PR12-4DN PR12-4DP PR12-4DN2 PR12-4DP2 PRS12-4DN PRS12-4DN2 PRS12-4DP2 PRL12-4DN PRL12-4DP | PR18-5DN PR18-5DP PR18-5DN2 PR18-5DP2 PRL18-5DN PRL18-5DN2 PRL18-5DP2 | PR18-8DN PR18-8DP PR18-8DN2 PR18-8DP2 PRL18-8DN PRL18-8DN2 PRL18-8DP2 | PR30-10DN PR30-10DP PR30-10DN2 PR30-10DP2 PRL30-10DN PRL30-10DN2 PRL30-10DP2 | PR30-15DN PR30-15DP PR30-15DN2 PR30-15DP2 PRL30-15DN PRL30-15DN2 PRL30-15DP2 |
| Sensing distance | 1.5mm | 2mm | 2mm | 4mm | 5mm | 8mm | 10mm | 15mm |
| Hysteresis | Max. 10% of sensing distance | | | | | | | |
| Standard sensing target | 8×8×1mm(Iron) | | 12×12×1mm(Iron) | | 18×18×1mm(Iron) | 25×25×1mm(Iron) | 30×30×1mm(Iron) | 45×45×1mm(Iron) |
| Setting distance | 0 to 1.05mm | 0 to 1.4mm | 0 to 1.4mm | 0 to 2.8mm | 0 to 3.5mm | 0 to 5.6mm | 0 to 7mm | 0 to 10.5mm |
| Power supply (Operation voltage) | 12-24VDC (10-30VDC) | | | | | | | |
| Leakage current | Max. 10mA | | | | | | | |
| Response frequency(*1) | 1.5kHz | 1kHz | 1.5kHz | 500Hz | | 350Hz | 400Hz | 200Hz |
| Residual voltage | Max. 1.5V | | | | | | | |
| Affection by Temp. | ±10% Max. for sensing distance at 20°C within temperature range of -25 to 70°C, PR08 Series : Max. ±20% | | | | | | | |
| Control output | Max. 200mA | | | | | | | |
| Insulation resistance | Min. 50MΩ (at 500VDC megger) | | | | | | | |
| 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) in X, Y, Z direction for 3 times | | | | | | | |
| Indicator | Output operation indicator (Red LED) | | | | | | | |
| Ambient temperature | -25 to 70°C (at non-freezing status) | | | | | | | |
| Storage temperature | -30 to 80°C (at non-freezing status) | | | | | | | |
| Ambient humidity | 35 to 95%RH | | | | | | | |
| Protection circuit | Surge protection circuit, Reverse polarity protection circuit, Overload & Short protection circuit | | | | | | | |
| Protection | IP67 (IEC standard) | | | | | | | |
| Material | Case/Nut: Nikel plated Brass, Washer: Nikel plated Iron, Sensing surface: Heat-resistant ABS, Standard cable (Black): Polyvinyl chloride (PVC), Oil resistant cable (Gray): Oil resistant Polyvinyl chloride (PVC) | | | | | | | |
| Cable spec. | φ 3.5×3P, 2m | | φ 4×3P, 2m | | φ 5×3P, 2m | | | |
| Approval | CE | | | | | | | |
| Unit weight | PR: Approx. 52g PRL: Approx. 54g | | PR: Approx. 72g, PRS: Approx. 70g, PRL: Approx. 76g | | PR: Approx. 110g PRL: Approx. 130g | | PR: Approx. 170g PRL: Approx. 210g | |

※(*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.

●AC 2-wire type

| | | | | | | |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------------------------------------------|------------------------------------------------|----------------------------------------------------|----------------------------------------------------|
| Model | PR12-2AO PR12-2AC | PR12-4AO PR12-4AC | PR18-5AO PR18-5AC PRL18-5AO PRL18-5AC | PR18-8AO PR18-8AC PRL18-8AO PRL18-8AC | PR30-10AO PR30-10AC PRL30-10AO PRL30-10AC | PR30-15AO PR30-15AC PRL30-15AO PRL30-15AC |
| Sensing distance | 2mm | 4mm | 5mm | 8mm | 10mm | 15mm |
| 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) |
| Setting distance | 0 to 1.4mm | 0 to 2.8mm | 0 to 3.5mm | 0 to 5.6mm | 0 to 7mm | 0 to 10.5mm |
| Power supply (Operation voltage) | 100-240VAC (85-264VAC) | | | | | |
| Leakage current | Max. 2.5mA | | | | | |
| Response frequency(*1) | 20Hz | | | | | |
| Residual voltage | Max. 10V | | | | | |
| Affection by Temp. | ±10% Max. for sensing distance at 20°C within temperature range of -25 to 70°C | | | | | |
| Control output | 5 to 150mA | | | 5 to 200mA | | |
| Insulation resistance | Min. 50MΩ (at 500VDC megger) | | | | | |
| Dielectric strength | 2,500VAC 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 (50G) in X, Y, Z direction for 3 times | | | | | |
| Indicator | Operation indicator (Red LED) | | | | | |
| Ambient temperature | -25 to 70°C (at non-freezing status) | | | | | |
| Storage temperature | -30 to 80°C (at non-freezing status) | | | | | |
| Ambient humidity | 35 to 95%RH | | | | | |
| Protection circuit | Surge protection circuit | | | | | |
| Protection | IP67 (IEC standard) | | | | | |
| Cable spec. | φ 4×2P, 2m | | | φ 5×2P, 2m | | |
| Material | Case/Nut: Nikel plated Brass, Washer: Nikel plated Iron, Sensing surface: Heat-resistant ABS, Standard cable (Black): Polyvinyl chloride (PVC) | | | | | |
| Approval | CE | | | | | |
| Unit weight | Approx. 66g | | PR : Approx. 133g PRL : Approx. 150g | | PR : Approx. 185g PRL : Approx. 222g | |

※(*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.