## 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.**

CE

### ▣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℃ (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/s² (50G) in X, Y, Z direction for 3 times | | | | | | | |
| Indicator | Output operation indicator (Red LED) | | | | | | | |
| Ambient temperature | -25 to 70℃ (at non-freezing status) | | | | | | | |
| Storage temperature | -30 to 80℃ (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. | φ3.5×2P, 2m | | φ4×2P, 2m | | φ5×2P, 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 chlorde (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.

## ●DC 3-wire type

| Model | PR08-1.5DN<br>PR08-1.5DP<br>PR08-1.5DN2<br>PR08-1.5DP2<br>PRL08-1.5DN<br>PRL08-1.5DP<br>PRL08-1.5DN2<br>PRL08-1.5DP2 | PR08-2DN<br>PR08-2DP<br>PR08-2DN2<br>PR08-2DP2<br>PRL08-2DN<br>PRL08-2DP<br>PRL08-2DN2<br>PRL08-2DP2 | PR12-2DN<br>PR12-2DP<br>PR12-2DN2<br>PR12-2DP2<br>PRS12-2DN<br>PRS12-2DP<br>PRS12-2DN2<br>PRS12-2DP2 | PR12-4DN<br>PR12-4DP<br>PR12-4DN2<br>PR12-4DP2<br>PRS12-4DN<br>PRS12-4DP<br>PRS12-4DN2<br>PRS12-4DP2<br>PRL12-4DN<br>PRL12-4DP | PR18-5DN<br>PR18-5DP<br>PR18-5DN2<br>PR18-5DP2<br>PRL18-5DN<br>PRL18-5DP<br>PRL18-5DN2<br>PRL18-5DP2 | PR18-8DN<br>PR18-8DP<br>PR18-8DN2<br>PR18-8DP2<br>PRL18-8DN<br>PRL18-8DP<br>PRL18-8DN2<br>PRL18-8DP2 | PR30-10DN<br>PR30-10DP<br>PR30-10DN2<br>PR30-10DP2<br>PRL30-10DN<br>PRL30-10DP<br>PRL30-10DN2<br>PRL30-10DP2 | PR30-15DN<br>PR30-15DP<br>PR30-15DN2<br>PR30-15DP2<br>PRL30-15DN<br>PRL30-15DP<br>PRL30-15DN2<br>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<br>(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℃ within temperature range of -25 to 70℃, 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/s² (50G) in X, Y, Z direction for 3 times | | | | | | | |
| Indicator | Output operation indicator(Red LED) | | | | | | | |
| Ambient temperature | -25 to 70℃ (at non-freezing status) | | | | | | | |
| Storage temperature | -30 to 80℃ (at non-freezing status) | | | | | | | |
| Ambient humidity | 35 to 95%RH | | | | | | | |
| Protection circuit | Surge protection circuit, Reverse polarity proteciton circuit, Overload & Short protection circuit | | | | | | | |
| Protection | IP67 (IEC standard) | | | | | | | |
| Material | Case/Nut: Nikel plated Brass, Washer: Nikel plated Iron, Sensing surface: Heat-resistant ABS,<br>Standard cable(Black): Polyvinyl chloride(PVC), Oil resistant cable(Gray): Oil resistant Polyvinyl chlorde(PVC) | | | | | | | |
| Cable spec. | φ3.5×3P, 2m | | φ4×3P, 2m | | φ5×3P, 2m | | | |
| Approval | CE | | | | | | | |
| Unit weight | PR:Approx. 52g<br>PRL:Approx. 54g | | PR:Approx. 72g, PRS:Approx. 70g,<br>PRL:Approx. 76g | | PR:Approx. 110g<br>PRL:Approx. 130g | | PR:Approx. 170g<br>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<br>PR12-2AC | PR12-4AO<br>PR12-4AC | PR18-5AO<br>PR18-5AC<br>PRL18-5AO<br>PRL18-5AC | PR18-8AO<br>PR18-8AC<br>PRL18-8AO<br>PRL18-8AC | PR30-10AO<br>PR30-10AC<br>PRL30-10AO<br>PRL30-10AC | PR30-15AO<br>PR30-15AC<br>PRL30-15AO<br>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<br>(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℃ within temperature range of -25 to 70℃ | | | | | |
| 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/s² (50G) in X, Y, Z direction for 3 times | | | | | |
| Indicator | Operation indicator(Red LED) | | | | | |
| Ambient temperature | -25 to 70℃ (at non-freezing status) | | | | | |
| Storage temperature | -30 to 80℃ (at non-freezing status) | | | | | |
| Ambient humidity | 35 to 95%RH | | | | | |
| Protection circuit | Surge protection circuit | | | | | |
| Protection | IP67 (IEC standard) | | | | | |
| Cable spec. | φ4×2P, 2m | | φ5×2P, 2m | | | |
| Material | Case/Nut: Nikel plated Brass, Washer: Nikel plated Iron, Sensing surface: Heat-resistant ABS,<br>Standard cable(Black): Polyvinyl chloride(PVC) | | | | | |
| Approval | CE | | | | | |
| Unit weight | Approx. 66g | | PR : Appox. 133g<br>PRL : Appox. 150g | | PR : Appox. 185g<br>PRL : Appox. 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.