

PRDCM Series Long Distance Connector Type

Long Distance Connector Type Proximity Sensor

■ Features

- Long sensing distance
(1.5 to 2 times longer sensing distance guaranteed compared to existing models)
- Advanced durability as comprehensive existing case and rear cap structure
- Easy to check operation from various angles with 4-side LED
- Shorten the time of maintenance
- Improved the noise resistance with dedicated IC
- Built-in surge protection, reverse polarity protection, overcurrent protection circuit
- Red LED operation indicator
- Protection structure IP67 (IEC standard)



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



■ Specifications

● DC 2-wire type

| Model ^{※1} | PRDCMT12-4DO PRDCMT12-4DC PRDCMT12-4DO-I PRDCMT12-4DC-I PRDCMLT12-4DO PRDCMLT12-4DC PRDCMLT12-4DO-I PRDCMLT12-4DC-I | PRDCMT18-7DO PRDCMT18-7DC PRDCMT18-7DO-I PRDCMT18-7DC-I PRDCMLT18-7DO PRDCMLT18-7DC PRDCMLT18-7DO-I PRDCMLT18-7DC-I | PRDCMT18-7DO PRDCMT18-7DC PRDCMT18-7DO-I PRDCMT18-7DC-I PRDCMLT18-7DO PRDCMLT18-7DC PRDCMLT18-7DO-I PRDCMLT18-7DC-I | PRDCMT18-14DO PRDCMT18-14DC PRDCMT18-14DO-I PRDCMT18-14DC-I PRDCMLT18-14DO PRDCMLT18-14DC PRDCMLT18-14DO-I PRDCMLT18-14DC-I | PRDCMT30-15DO PRDCMT30-15DC PRDCMT30-15DO-I PRDCMT30-15DC-I PRDCMLT30-15DO PRDCMLT30-15DC PRDCMLT30-15DO-I PRDCMLT30-15DC-I | PRDCMT30-25DO PRDCMT30-25DC PRDCMT30-25DO-I PRDCMT30-25DC-I PRDCMLT30-25DO PRDCMLT30-25DC PRDCMLT30-25DO-I PRDCMLT30-25DC-I |
|----------------------------------|--|--|--|--|--|--|
| 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 5.6mm | 0 to 9.8mm | 0 to 10.5mm | 0 to 17.5mm |
| Power supply (Operating voltage) | 12-24VDC (10-30VDC) | | | | | |
| Leakage current | Max. 0.6mA | | | | | |
| Response frequency ^{※2} | 500Hz | 400Hz | 250Hz | 200Hz | 100Hz | 100Hz |
| Residual voltage | Max. 3.5V | | | | | |
| Affection by Temp. | Max. ±10% for sensing distance at ambient temperature 20°C | | | | | |
| Control output | 2 to 100mA | | | | | |
| Insulation resistance | Min. 50MΩ (at 500VDC megger) | | | | | |
| Dielectric strength | 1,500VAC 50/60Hz for 1 minute | | | | | |
| Vibration | 1mm amplitude at frequency of 10 to 55Hz (for 1 min.) in each X, Y, Z direction for 2 hours | | | | | |
| Shock | 500m/s ² (approx. 50G) in each X, Y, Z direction for 3 times | | | | | |
| Indicator | Operation indicator (red LED) | | | | | |
| Environment | Ambient temperature | -25 to 70°C, storage: -30 to 80°C | | | | |
| | Ambient humidity | 35 to 95%RH, storage: 35 to 95%RH | | | | |
| Protection circuit | Surge protection circuit, Reverse polarity protection circuit, Overcurrent protection circuit | | | | | |
| Material | Case/Nut: Nickel plated Brass, Washer: Nickel plated Iron, Sensing surface: Heat-resistant ABS | | | | | |
| Approval | CE | | | | | |
| Protection structure | IP67 (IEC Standard) | | | | | |
| Unit weight ^{※3} | Existing | PRDCMT: Approx. 26g PRDCMLT: Approx. 36g | | PRDCMT: Approx. 48g PRDCMLT: Approx. 66g | | PRDCMT: Approx. 142g PRDCMLT: Approx. 182g |
| | Upgrade | Approx. 23.5g | Approx. 22g | Approx. 46.5g | Approx. 42.5g | Approx. 160g Approx. 165g |

※1: PRDCMT series is going to upgrade performance (4-side LED) and structure (comprehensive existing case and rear cap type).

※2: 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.

※3: **Upgrade unit weight is only for PRDCMT. Refer to the existing unit weight for the other models or existing products.**

※Environment resistance is rated at no freezing or condensation.

(A) Photoelectric Sensors

(B) Fiber Optic Sensors

(C) Door/Area Sensors

(D) Proximity Sensors

(E) Pressure Sensors

(F) Rotary Encoders

(G) Connectors/ Sockets

(H) Temperature Controllers

(I) SSRs / Power Controllers

(J) Counters

(K) Timers

(L) Panel Meters

(M) Tacho / Speed / Pulse Meters

(N) Display Units

(O) Sensor Controllers

(P) Switching Mode Power Supplies

(Q) Stepper Motors & Drivers & Controllers

(R) Graphic/ Logic Panels

(S) Field Network Devices

(T) Software

PRDCM Series

■ Specifications

● DC 3-wire type

| | | | | | | |
|-------------------------------------|--|--|--|--|--|--|
| Model | PRDCM12-4DN PRDCM12-4DP PRDCM12-4DN2 PRDCM12-4DP2 PRDCML12-4DN PRDCML12-4DP PRDCML12-4DN2 PRDCML12-4DP2 | PRDCM12-8DN PRDCM12-8DP PRDCM12-8DN2 PRDCM12-8DP2 PRDCML12-8DN PRDCML12-8DP PRDCML12-8DN2 PRDCML12-8DP2 | PRDCM18-7DN PRDCM18-7DP PRDCM18-7DN2 PRDCM18-7DP2 PRDCML18-7DN PRDCML18-7DP PRDCML18-7DN2 PRDCML18-7DP2 | PRDCM18-14DN PRDCM18-14DP PRDCM18-14DN2 PRDCM18-14DP2 PRDCML18-14DN PRDCML18-14DP PRDCML18-14DN2 PRDCML18-14DP2 | PRDCM30-15DN PRDCM30-15DP PRDCM30-15DN2 PRDCM30-15DP2 PRDCML30-15DN PRDCML30-15DP PRDCML30-15DN2 PRDCML30-15DP2 | PRDCM30-25DN PRDCM30-25DP PRDCM30-25DN2 PRDCM30-25DP2 PRDCML30-25DN PRDCML30-25DP PRDCML30-25DN2 PRDCML30-25DP2 |
| 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 ^{※1} | 500Hz | 400Hz | 300Hz | 200Hz | 100Hz | 100Hz |
| Residual voltage | Max. 1.5V | | | | | |
| Affection by Temp. | Max. ±10% for sensing distance at ambient temperature 20°C | | | | | |
| Control output | Max. 200mA | | | | | |
| Insulation resistance | Min. 50MΩ (at 500VDC megger) | | | | | |
| Dielectric strength | 1,500VAC 50/60Hz for 1 minute | | | | | |
| Vibration | 1mm amplitude at frequency of 10 to 55Hz (for 1 min.) in each X, Y, Z direction for 2 hours | | | | | |
| Shock | 500m/s ² (approx. 50G) in each X, Y, Z direction for 3 times | | | | | |
| Indicator | Operation indicator (red LED) | | | | | |
| Environment Ambient temperature | -25 to 70°C, storage: -30 to 80°C | | | | | |
| Ambient humidity | 35 to 95%RH, storage: 35 to 95%RH | | | | | |
| Protection circuit | Surge protection circuit, Reverse polarity protection circuit, Overcurrent protection circuit | | | | | |
| Protection structure | IP67 (IEC specification) | | | | | |
| Material | Case/Nut: Nickel plated Brass, Washer: Nickel plated Iron, Sensing surface: Heat-resistant ABS | | | | | |
| Approval | CE | | | | | |
| Unit Weight | PRDCM: Approx. 26g PRDCML: Approx. 34g | | PRDCM: Approx. 48g PRDCML: Approx. 66g | | PRDCM: Approx. 142g PRDCML: Approx. 182g | |

※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.

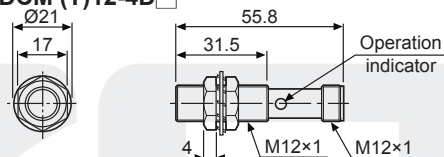
※Environment resistance is rated at no freezing or condensation.

■ Dimensions

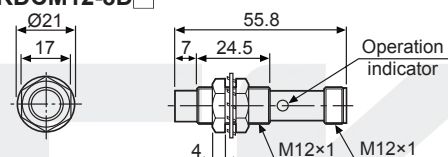
◎ PRDCM (T) Series

(unit: mm)

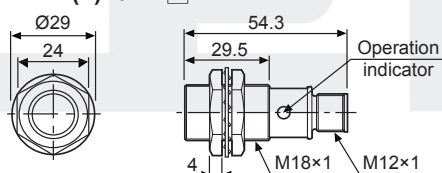
● PRDCM (T)12-4D □



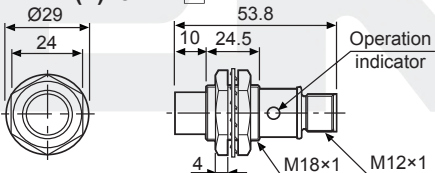
● PRDCM12-8D □



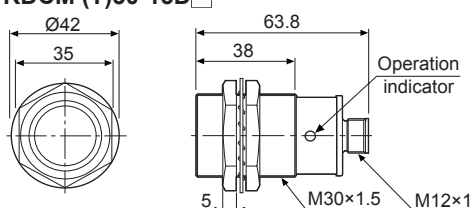
● PRDCM (T)18-7D □



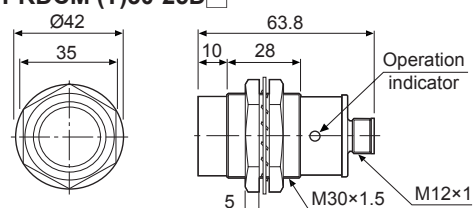
● PRDCM (T)18-14D □



● PRDCM (T)30-15D □



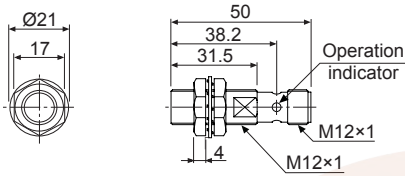
● PRDCM (T)30-25D □



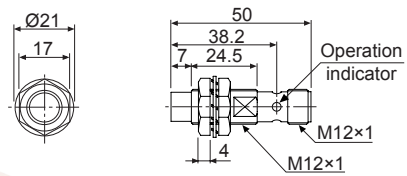
Long Distance Connector Type

■ Dimensions ◎ PRDCMT Series

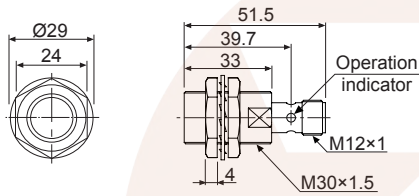
● PRDCMT12-4D □



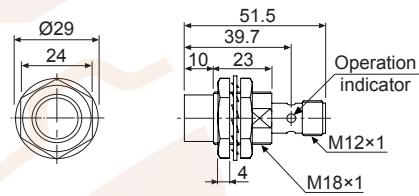
● PRDCMT12-8D □



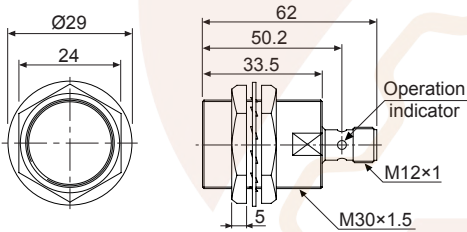
● PRDCMT18-7D □



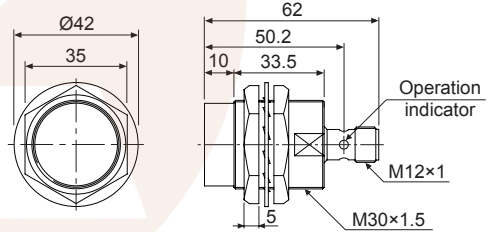
● PRDCMT18-14D □



● PRDCMT30-15D □

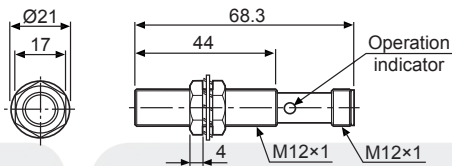


● PRDCMT30-25D □

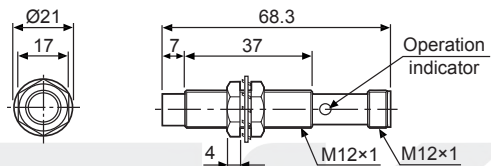


◎ PRDCML (T) Series

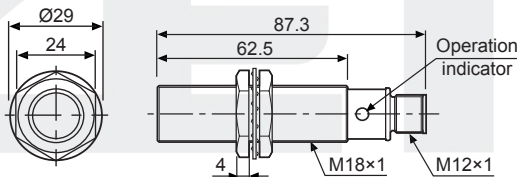
● PRDCML (T)12-4D □



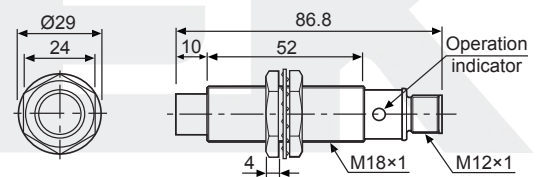
● PRDCML (T)12-8D □



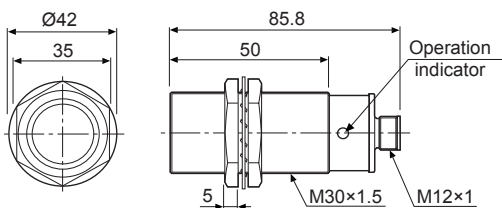
● PRDCML (T)18-7D □



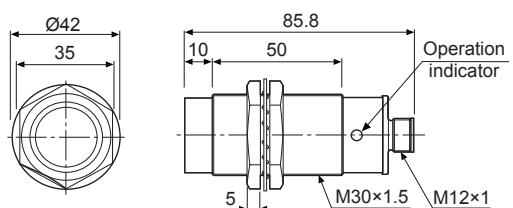
● PRDCML (T)18-14D □



● PRDCML (T)30-15D □



● PRDCML (T)30-25D □



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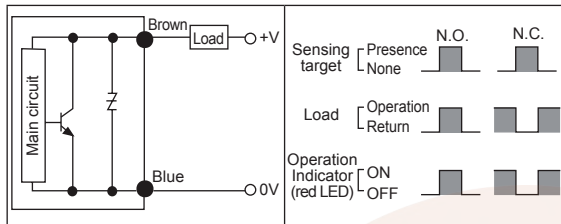
(S) Field Network Devices

(T) Software

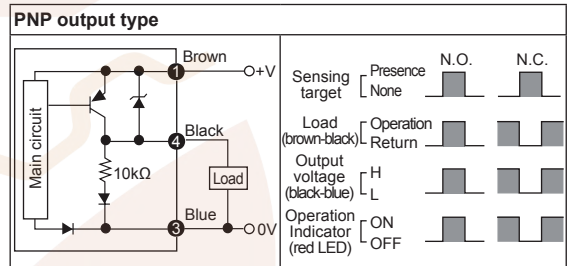
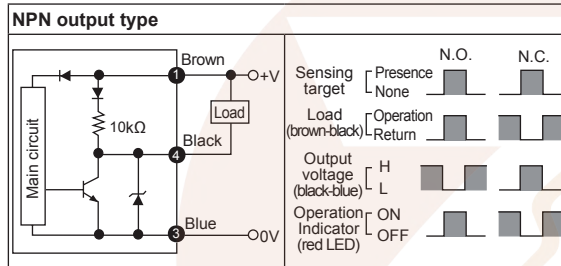
PRDCM Series

■ Control Output Diagram

◎ DC 2-wire type



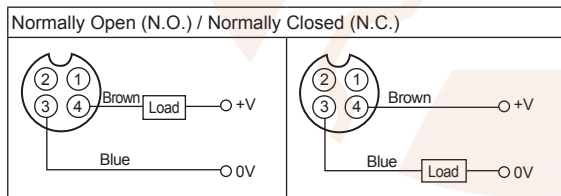
◎ DC 3-wire type



※The number in a circle is pin no. of connector.

■ Wiring Diagram

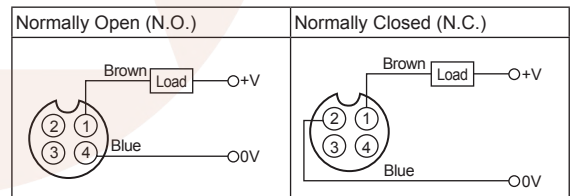
◎ DC 2-wire type (Standard type)



※Pin ①, ② are not used terminals.

※For DC 3-wire type connector cable, it is available to use with black wire (12-24VDC) and blue wire (0V).

◎ DC 2-wire type (IEC standard type)



※②, ③ of N.O. type and ③, ④ of N.C. type are not used terminals.

※The pin arrangement of connector applying IEC standard is being developed.

※Please attach "I" at the end of the name of standard type for purchasing the IEC standard product.

E.g.)PRDCMT12-4DO-I

※The connector cable for IEC standard is being developed.

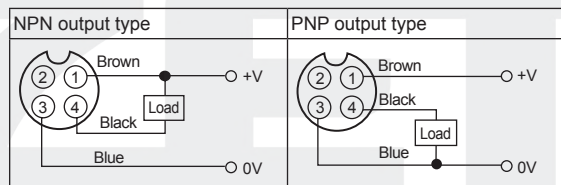
Please attach "I" at the end of the name of standard type.

E.g.)CID2-2-I, CLD2-5-I

※Please fasten the vibration part with Teflon tape.

※Refer to page G-6 about IEC standard connector wires and specifications.

◎ DC 3-wire type

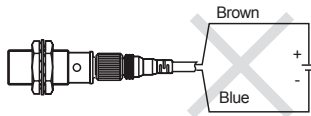


※Please fasten the cleat of connector not to show the thread. (0.39 to 0.49N·m)

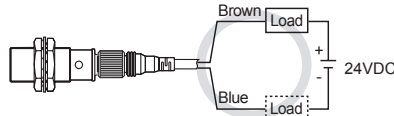
Long Distance Connector Type

■ Proper Usage

◎ Load connections



< DC 2-wire type >

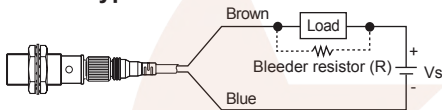


< DC 2-wire type >

When using DC 2-wire type proximity sensor, the load must be connected otherwise internal components may be damaged. The load can be connected to either wire.

◎ In case of the load current is small

● DC 2-wire type



It may cause return failure of load by residual voltage. If the load current is under 5mA, please make sure the residual voltage is less than the return voltage of the load by connecting a bleeder resistor in parallel with the load as shown in the diagram.

$$R \leq \frac{V_s}{I} \quad (\Omega) \quad P > \frac{V_s^2}{R} \quad (W)$$

[I : Action current of load, R: Bleeder resistance, P: Permissible power]

Please make the current on proximity sensor smaller than the return current of load by connecting a bleeder resistor in parallel.

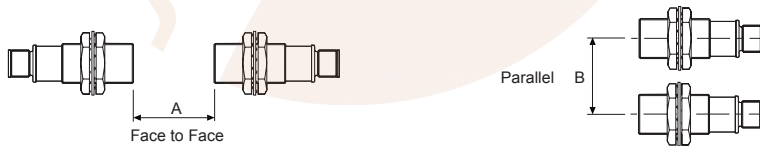
※W value of Bleeder resistor should be bigger for proper heat dissipation.

$$R \leq \frac{V_s}{I_{o-off}} \quad (\Omega) \quad P > \frac{V_s^2}{R} \quad (W)$$

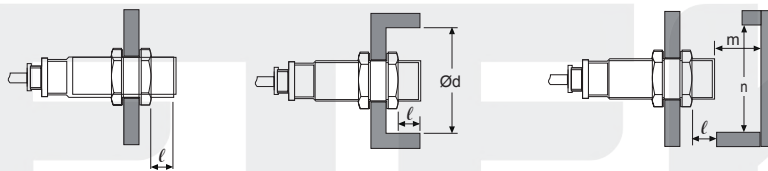
[Vs: Power supply, I_o: Min. action current of proximity sensor, I_{off}: Return current of load, P : Number of Bleeder resistance watt]

◎ Mutual-interference & Influence by surrounding metals

When several proximity sensors are mounted close to one another a malfunction of the may be caused due to mutual interference. Therefore, be sure to provide a minimum distance between the two sensors as below chart indicates.



When sensors are mounted on metallic panel, you must prevent the sensors from being affected by any metallic object except target. Therefore, be sure to provide a minimum distance as below chart indicates.



(unit: mm)

| Model | PRDCMT08 -2D□ | PRDCMT08 -4D□ | PRDCMT12 -4D□ | PRDCM (T)18 -7D□ | PRDCM (T)18 -7D□ | PRDCM (T)18 -14D□ | PRDCM (T)18 -15D□ | PRDCM (T)18 -25D□ |
|-------|------------------|------------------|------------------|---------------------|----------------------|-----------------------|-----------------------|-----------------------|
| Item | — | — | PRDCML12 -4D□ | PRDCML12 -8D□ | PRDCML (T)18 -7D□ | PRDCML (T)18 -14D□ | PRDCML (T)18 -15D□ | PRDCML (T)18 -25D□ |
| A | 12 | 24 | 24 | 48 | 42 | 84 | 90 | 150 |
| B | 16 | 24 | 24 | 36 | 36 | 54 | 60 | 90 |
| ℓ | 0 | 10 | 0 | 11 | 0 | 14 | 0 | 15 |
| Ød | 8 | 24 | 12 | 36 | 18 | 54 | 30 | 90 |
| m | 6 | 12 | 12 | 24 | 21 | 42 | 45 | 75 |
| n | 12 | 24 | 18 | 36 | 27 | 54 | 45 | 90 |

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