

Photoelectric Sensor Cylindrical Type

**OPTEX
FA**

C2 series

- C2DP-□□□ • C2RP-□□□
- C2TP-□□□
- C2DM-□□□ • C2RM-□□□
- C2TM-□□□

INSTRUCTION MANUAL

- Confirm if the item meets your needs.
- Before the use, you should first thoroughly read this manual and operate correctly as mentioned.
- You should keep this manual at hand for proper use.

Carefully read and understand the safety precautions before operation.
The important information is provided to protect your health and property.
Do not apply any other installing or operating procedure other than that described in this manual.

Specifications

| Type | | Through-Beam | Retro Reflective | | Diffuse Reflective | | |
|---------------------------------|--------------------|---|------------------------|---------------------------|--------------------|---------------|---------------|
| | | | With polarizing filter | Without polarizing filter | 110mm type | 400mm type | 800mm type |
| Plastic housing | Cable type | C2TP-2000(N,P) | C2RP-F400(N,P) | C2RP-350(N,P) | C2DP-11(N,P) | C2DP-40(N,P) | C2DP-80(N,P) |
| | M12 Connector type | C2TP-2000C(N,P) | C2RP-F400C(N,P) | C2RP-350C(N,P) | C2DP-11C(N,P) | C2DP-40C(N,P) | C2DP-80C(N,P) |
| Metal housing | Cable type | C2TM-2000(N,P) | C2RM-F400(N,P) | C2RM-350(N,P) | C2DM-11(N,P) | C2DM-40(N,P) | C2DM-80(N,P) |
| | M12 Connector type | C2TM-2000C(N,P) | C2RM-F400C(N,P) | C2RM-350C(N,P) | C2DM-11C(N,P) | C2DM-40C(N,P) | C2DM-80C(N,P) |
| Sensing Distance | | 20m | 0.01 ~ 4m (V-61) | 0.01 ~ 3.5m (V-61) | 11cm *1 | 40cm *1 | 80cm *1 |
| Spot Size | | φ1100mm / 20m | φ270mm / 4m | φ240mm / 3.5m | φ8mm / 11cm | φ20mm / 40cm | □30mm / 80cm |
| Light Source | | Red LED | | IR LED | Red LED | | |
| Supply Voltage | | DC10 ~ 30V including ripple (P-P) 10% | | | | | |
| Current Consumption | | Emitter : 20mA max. Receiver : 15mA max. | 20mA max | | | | |
| Hysteresis | | - | | | 10% max. | | |
| Response Time | | 0.5ms max. | | | | | |
| Control Output | | NPN/PNP Open Collector 100mA max. / DC30V max. (Residual voltage max. 1.8V / 100mA max.) | | | | | |
| Operation Mode | | Light ON / Dark ON selectable by control wires | | | | | |
| Sensitivity Adjustment | | 1 turn pot. | | | | | |
| LED Indicator | | Output indicator (Orange LED) / Stability indicator (Green LED) | | | | | |
| Environmental Illuminance | | Sunlight : 10,000 lux, Incandescent lamp : 3,000 lux max. | | | | | |
| Vibration Resistance | | 10 ~ 55Hz amplitude 1.5mm X Y Z each 2 hours | | | | | |
| Shock Resistance | | 500m/s*2 (50G) X Y Z each 3 times | | | | | |
| Operating / Storage Temperature | | Operating temperature -25 ~ +55°C (no freezing) / Storage temperature : -30 ~ +70°C | | | | | |
| Operating / Storage humidity | | Operating humidity 35 ~ 85%RH / Storage humidity : 35 ~ 95%RH | | | | | |
| Protection / Material | | IEC IP67(common to any type) Plastic housing : PBT (glass included) / Metal housing : BSBM, Front Cover , Lens : PMMA | | | | | |

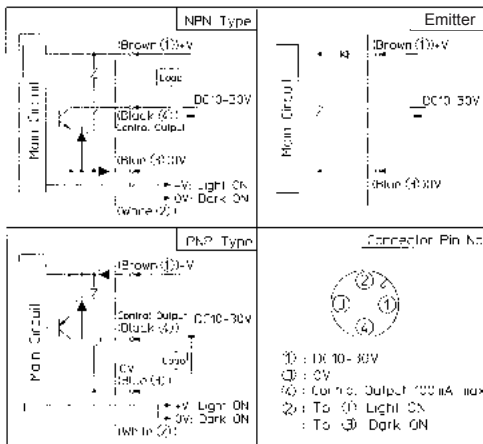
*1 White Paper 90%

Safety Precautions



- It is dangerous to wire or attach/remove the connector with the power on. Make sure to turn off the power before operation.
- Make sure to use the product with the protective cover attached and closed.
- Installing in the following places may result in malfunction:
 1. A dusty or steamy place
 2. A place generating corrosive gas
 3. A place directly receiving scattering water or oil.
 4. A place suffered from heavy vibration or impact.
- The product is not designed for outdoor use.
- Do not use the sensor in transient state after power on (approx. 100 ms).
- Do not wire with the high voltage cable or the power line. Failure to do this will cause malfunction by induction or damage.
- The sensor performance or digital display values may depend on the individual units or the condition of detected product.
- This product is not an explosion-proof construction. Do not use the product under flammable, explosive gas or liquid environment.
- Do not use the product in water.
- Do not disassemble, repair, or convert the product. Failure to do this may cause failure, fire, or electric shock.
- Operate within the rated range.

Input / Output Circuit Diagram



Operating Chart

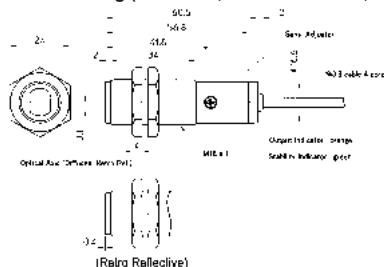
| Mode | Operation | Light ON | | Dark ON | |
|----------------------------------|-------------|----------------|-----------------|----------------|-----------------|
| | | ON at incident | ON at interrupt | ON at incident | ON at interrupt |
| Operation Status | incident | ■ | ■ | ■ | ■ |
| | interrupted | ■ | ■ | ■ | ■ |
| Operation Indicator (Orange LED) | ON | ■ | ■ | ■ | ■ |
| | OFF | ■ | ■ | ■ | ■ |
| Stability Indicator (Green LED) | ON | ■ | ■ | ■ | ■ |
| | OFF | ■ | ■ | ■ | ■ |
| Output Transistor | ON | ■ | ■ | ■ | ■ |
| | OFF | ■ | ■ | ■ | ■ |

Dimensions

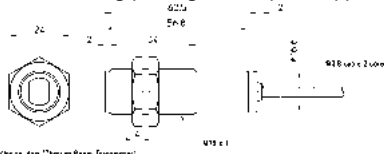


! Must not use this item as safety equipment for the purpose of human body protection.

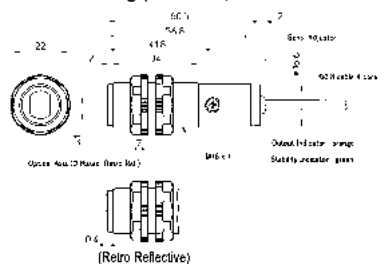
1. Metal housing (Diffused, Retro Reflective, Through Beam(Receiver))



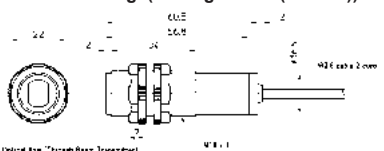
2. Metal housing (Through Beam(Emitter))



3. Plastic housing (Diffused, Retro Reflective, Through Beam(Receiver))



4. Plastic housing (Through Beam(Emitter))



Set Up Torque

• Plastic housing models

Tightening torque needs to be under 1.5N·m(15kgf·cm).

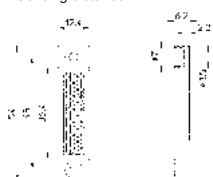
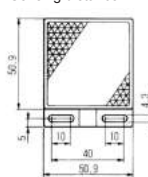
• Metal housing models

Tightening torque needs to be under 20N·m(200kgf·cm).

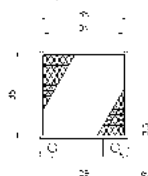


Reflectors

- Type V-61 Standard for Retro type Sensing distance : 4m
- Type P45A Optional Reflector Sensing distance : 1.4m



- Type V-42 Optional Reflector Sensing distance : 2.5m



(Unit : mm)

- Specifications and equipments are subject to change without any prior notice.
- For more information, questions and comments regarding products, contact authorized distributors of us.

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