

Photoelectric Sensor  
Cylindrical Type



# C2 series

- C2DP-□□□ • C2RP-□□□
- C2TP-□□□ • BGS-CP □□□
- C2DM-□□□ • C2RM-□□□
- C2TM-□□□ • BGS-CM □□□

## 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

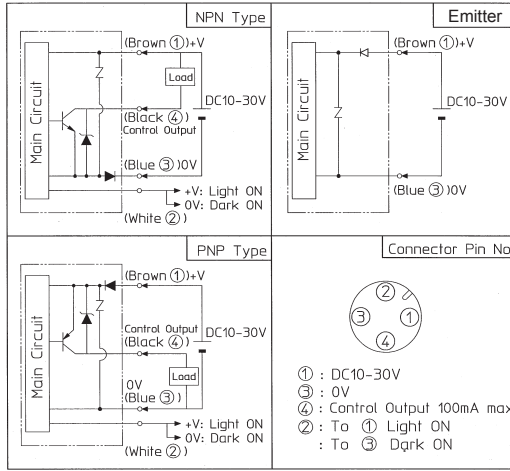
Type	Through-Beam	Retro Reflective		Diffuse Reflective			BGS	
		With polarizing filter	Without polarizing filter	110mm type	400mm type	800mm type		
Plastic housing	Cable type	C2TP-2000(N,P)	C2RP-F400(N,P)	C2RP-350(N,P)	C2DP-11(N,P)	C2DP-40(N,P)	C2DP-80(N,P)	BGS-CP30(N,P)
	M12 Connector type	C2TP-2000C(N,P)	C2RP-F400C(N,P)	C2RP-350C(N,P)	C2DP-11C(N,P)	C2DP-40C(N,P)	C2DP-80C(N,P)	BGS-CP30C(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)	BGS-CM30(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)	BGS-CM30C(N,P)
Sensing Distance	20m	0.01 ~ 4m (V-61)	0.01 ~ 3.5m (V-61)	11cm *1	40cm *1	80cm *1	0.1 ~ 30cm *1	
Spot Size	φ1100mm / 20m	φ270mm / 4m	φ240mm / 3.5m	φ8mm / 11cm	φ20mm / 40cm	φ30mm / 80cm	φ12mm / 25cm	
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.				35mA max.	
Hysteresis	-						10% max. *1	5% max. *1
Response Time	0.5ms max.							1ms 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.							4 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 <sup>2</sup> (50G) X, Y, Z each 3 times							
Operating / Storage Temperature	Operating temperature -25 ~ +55°C (no freezing) / Storage temperature : -30 ~ +70°C / -40 ~ +70°C (BGS type)							
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 : B5BM, 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

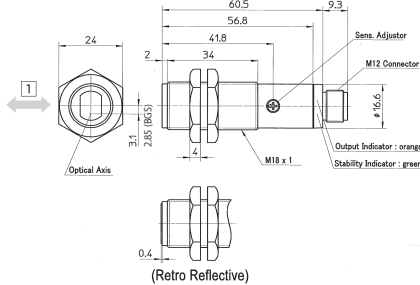
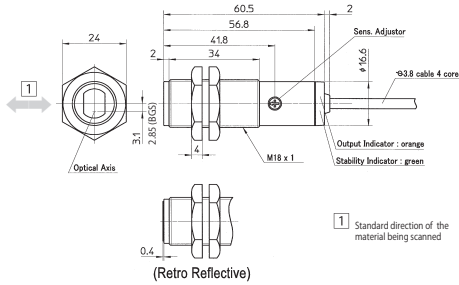


## Operating Chart

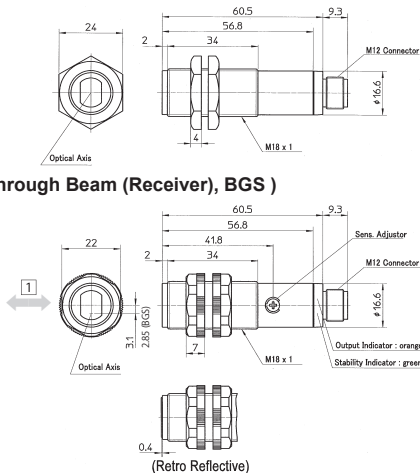
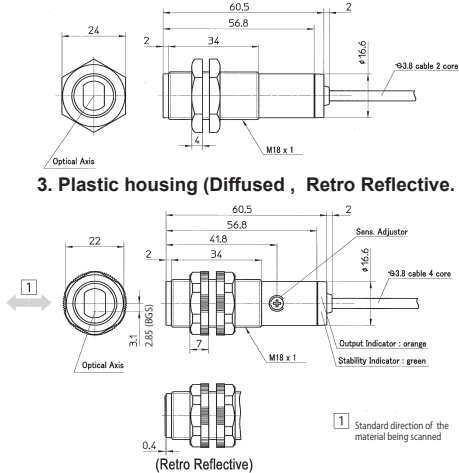
Mode	Light ON (ON at Incident)	Dark ON (ON at interruption)
Operation	incident	interrupted
Operation Status	Interrupted	Interrupted
Operation indicator (Orange LED)	ON	OFF
Stability indicator (Green LED)	ON	OFF
Output Transistor	ON	OFF

## Dimensions

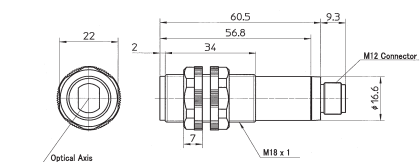
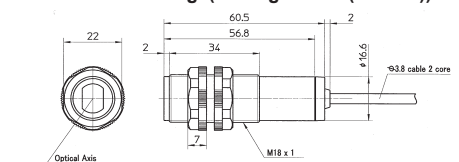
### 1. Metal housing (Diffused, Retro Reflective, Through Beam(Receiver), BGS)



### 2. Metal housing (Through Beam (Emitter))



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



### 4. Plastic housing (Through Beam (Emitter))

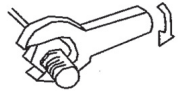


## CAUTION

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

## Set Up Torque

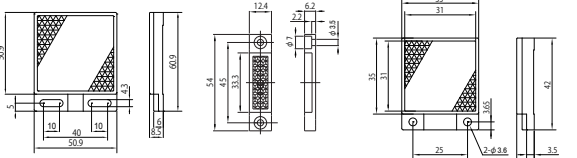
- Plastic housing models  
Tightening torque needs to be under 1.5N·m(15kgf·cm).
- Metal housing models  
Tightening torque needs to be under 20N·m(200kgf·cm).



## Reflectors

- Type V-61 Standard for Retro type
- Type P45A Optional Reflector
- Type V-42 Optional Reflector

Sensing distance : 4m      Sensing distance : 1.4m      Sensing distance : 2.5m



### UL Satisfaction Ratings Listed Models

Input: Class 2, 10...30V DC, 100mA.  
Output: Class 2, 30V DC, 100mA Resistive.  
Maximum Ambient Temperature: 55°C  
Enclosed Type Rating: type 1

### Emitter type

Input: Class 2, 10...30V DC, 20mA.  
Maximum Ambient Temperature: 55°C  
Enclosed Type Rating: type 1

### UL Satisfaction Ratings Recognition Models

Input: Class 2, 10...30V DC, 100mA.  
Output: Class 2, 30V DC, 100mA Resistive.  
Maximum Surround air Temperature: 55°C

### Emitter type

Input: Class 2, 10...30V DC, 20mA.  
Maximum Surround air Temperature: 55°C

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

http://www.optex-fa.com/rohs-cn/

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