

Photoelectric Sensor Cylindrical · Thru-beam type

AC supply · Light-ON type

AC supply · Dark-ON type

DC supply · NPN output type

DC supply · PNP output type

CY-11A

CY-11B

CY-21

CY-21-PN

BME-CY11C No.0038-34V

Thank you very much for purchasing Panasonic products. Please read this Instruction Manual carefully and thoroughly for the correct and optimum use of this product. Kindly keep this manual in a convenient place for quick reference.

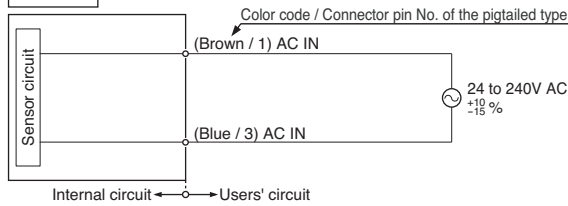


- Never use this product as a sensing device for personnel protection.
- In case of using sensing devices for personnel protection, use products which meet standards, such as OSHA, ANSI or IEC etc., for personnel protection applicable in each region or country.

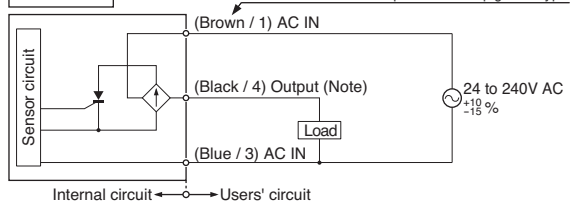
1 I/O CIRCUIT DIAGRAMS

● AC supply type / CY-11A, CY-11B

Emitter



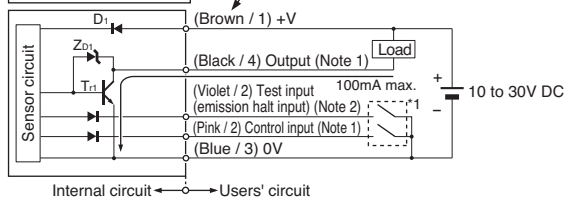
Receiver



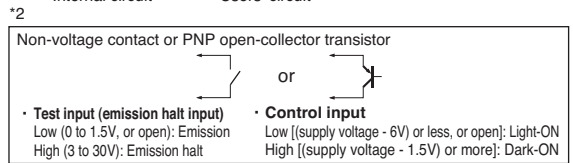
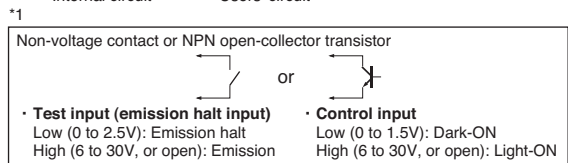
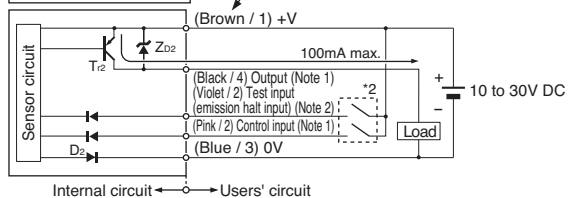
Note: The output does not incorporate a short-circuit protection circuit. Do not connect it directly to a power supply or a capacitive load.

● DC supply type / CY-21, CY-21-PN

NPN output type



PNP output type

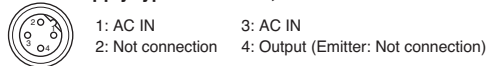


Notes: 1) The emitter of the thru-beam type sensor does not incorporate the output and the control input. When the mating cable is connected to the pigtailed type, the color of the control input wire is white.
2) Test input (emission halt input) is incorporated only on the emitter of the thru-beam sensor. When the mating cable is connected to the pigtailed type, its color is white.

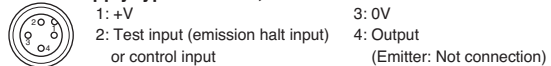
Symbols... D₁, D₂: Reverse supply polarity protection diode
Z_{D1}, Z_{D2}: Surge absorption zener diode
T_{r1}: NPN output transistor
T_{r2}: PNP output transistor

<Connector pin position (Pigtailed type)>

● AC supply type / CY-11A-J, CY-11B-J



● DC supply type / CY-21-J, CY-21-PN-J



2 SPECIFICATIONS

Item	Type	AC supply type	DC supply type
	Model No. (Note)	CY-11□	CY-21□
Sensing range	12m		
Sensing object	φ8mm or more opaque object		
Power supply	24 to 240V AC $\pm 15\%$		10 to 30V DC
Power / Current consumption	Emitter: 1.5VA or less Receiver: 2.5VA or less		Emitter: 20mA or less Receiver: 25mA or less
Response time	20ms or less		2ms or less
Operation indicator	Red LED (lights up when the output is ON)		
Power indicator	Red LED (lights up when the power is ON)		—————
Emission indicator	—————		Red LED (lights up during beam emission)
Protection	IP67 (IEC)		
Ambient temperature	-25 to +55°C (No dew condensation or icing allowed) Storage: -30 to +70°C		
Ambient humidity	35 to 85% RH, Storage: 35 to 85% RH		
Emitting element	Infrared LED (modulated)		
Weight	Emitter: 90g approx., Receiver: 100g approx.		
Accessories	Nut: 4 pcs.		

Note: The model No. with suffix 'P' shown on the label affixed to the sensor is the emitter, 'D' shown on the label is the receiver.
(e.g.) Emitter: **CY-11P**, Receiver: **CY-11AD**

3 CAUTIONS

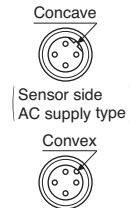
- This product has been developed / produced for industrial use only.
- Make sure that the power supply is off while wiring.
- Take care that wrong wiring will damage the sensor.
- Verify that the supply voltage variation is within the rating.
- If power is supplied from a commercial switching regulator, ensure that the frame ground (F.G.) terminal of the power supply is connected to an actual ground.
- Do not run the wires together with high-voltage lines or power lines or put them in the same raceway.
This can cause malfunction due to induction.
- In case noise generating equipment (switching regulator, inverter motor, etc.) is used in the vicinity of this product, connect the frame ground (F.G.) terminal of the equipment to an actual ground.
- Do not use during the initial transient time (50ms) after the power supply is switched on.
- Extension up to total 100m, or less, is possible with 0.34mm², or more, cable. However, in order to reduce noise, make the wiring as short as possible.
- Make sure that stress by forcible bend or pulling is not applied directly to the sensor cable joint.
- Take care that the sensor is not directly exposed to fluorescent light from a rapid-starter lamp or a high frequency lighting device, as it may affect the sensing performance.
- This sensor is suitable for indoor use only.
- The tightening torque should be 2N·m or less.
- The following items are required, as conditions for use in order to conform to CE.
 - The output applied voltage should be the same as the supply voltage of the sensor.
 - Be sure to add a short-circuit protection (a fuse or a breaker) to the power supply input and the output.

4 CONNECTION

- When using the pigtailed type, purchase the mating cable (optional).

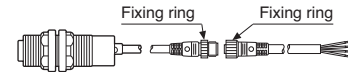
Connecting

- ① Put female and male connectors together as the convex and the concave meet.
- ② Hold one ring not to rotate and turn the other ring clockwise until they become tight.



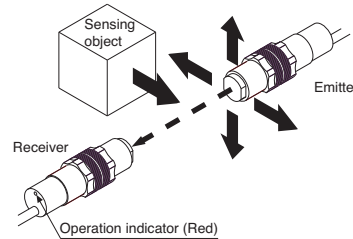
Disconnecting

- ① Turn the ring counterclockwise and separate them.



5 BEAM ALIGNMENT

- ① Placing the emitter and the receiver face to face along a straight line, move the emitter in the up, down, left and right directions, in order to determine the range of the light received condition with the help of the operation indicator (red). Then, set the emitter at the center of this range.
- ② Similarly, adjust for up, down, left and right angular movement of the emitter.
- ③ Further, perform the angular adjustment for the receiver also.



6 INTENDED PRODUCTS FOR CE MARKING

- The models listed under '2 SPECIFICATIONS' come with CE Marking.
As for all other models, please contact our office.



- **Contact for CE**
<Until June 30, 2013>
Panasonic Electric Works Europe AG
Rudolf-Diesel-Ring 2, D-83607 Holzkirchen, Germany
<From July 1, 2013>
Panasonic Marketing Europe GmbH Panasonic Testing Center
Winsbergring 15, 22525 Hamburg, Germany

Panasonic Industrial Devices SUNX Co., Ltd.

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