

### Collimated Beam Sensor

## Amplifier-separated / LED Beam Sensor Heads LA-305

CMJEC-LA305(08) No.0055-27V

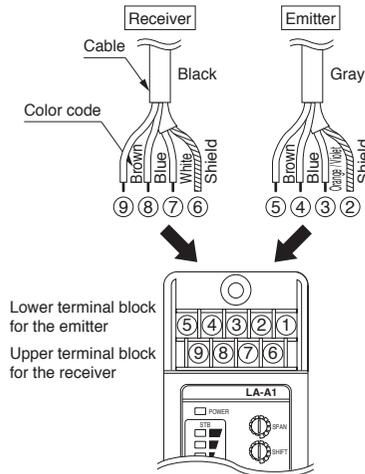
Thank you very much for using our products. Please read this Instruction Manual carefully and thoroughly for the correct and optimum use of this product. Kindly keep this manual in a convenient place for quick reference.

### ⚠ WARNING

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

## 1 CONNECTION

### ● Wiring diagram



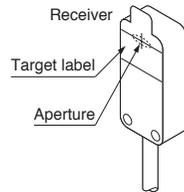
Connect color-coded wires in accordance with the table below. The receiver wires should be connected on the upper terminal block and the emitter wires on the lower terminal block.

Emitter		Receiver	
Terminal No.	Color code	Terminal No.	Color code
②	Shield	⑥	Shield
③	Orange / Violet	⑦	White
④	Blue	⑧	Blue
⑤	Brown	⑨	Brown

Note: Do not connect any wire to the terminal ①.

## 2 BEAM ALIGNMENT

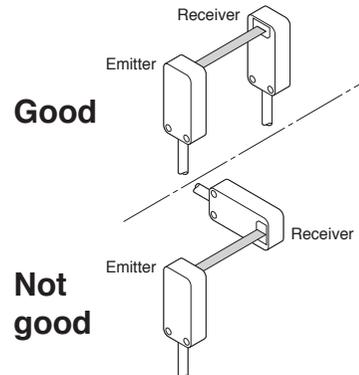
- Make sure that at least one stability indicator lights up when you supply power to **LA-A1, LA-A1P** amplifier connected with **LA-305** sensor heads. While aligning sensor heads, if more stability indicators light up, more reliable detection can be obtained.
- Beam alignment should be performed prior to any adjustments on the amplifier.
- If the front faces of the emitter and the receiver are kept parallel and their top face and side face are mounted on the same plane surfaces, beam alignment need not be done.
- If mounting is not possible on the same plane surfaces, affix the target label (accessory) on the front surface of the receiver and adjust so that the emitted beam is incident at the center of the crosshair. After the alignment, peel off the target label.
- If either sensor head moves out of position, do all adjustments, including beam alignment and the amplifier adjustments, from the beginning.



\* To obtain optimum beam alignment, use a voltmeter and find the peak analog output signal of the **LA-A1, LA-A1P** amplifier.

## 3 MOUNTING

- The plane of projection must be maintained. Any distortion degrades the detectability.



- The tightening torque should be 0.5N·m or less.

## 4 MAJOR SPECIFICATIONS

Designation	Amplifier-separated collimated beam sensor / LED beam sensor heads
Item	Model No. <b>LA-305</b>
Applicable amplifier	<b>LA-A1, LA-A1P</b> (Note)
Beam width	5mm
Sensing range	300mm
Min. sensed object	Opaque object of $\phi$ 0.05mm
Ambient temperature	0 to +40°C (No dew condensation) Storage: -20 to +70°C
Ambient humidity	35 to 85% RH, Storage: 35 to 85% RH
Temperature characteristics	0.2%F.S./°C or less
Emitting element	Red LED (modulated)
Material	Enclosure: Heat-resistant ABS Cover: Heat-resistant ABS, Front cover: Glass
Cable	0.18mm <sup>2</sup> 3-core composite cable, 2m long
Accessories	<b>MS-LA3-2</b> (Sensor head mounting bracket): 2 pcs. Target label: 2 pcs.

Note: Refer to instruction manual of **LA-A1, LA-A1P** for more details.

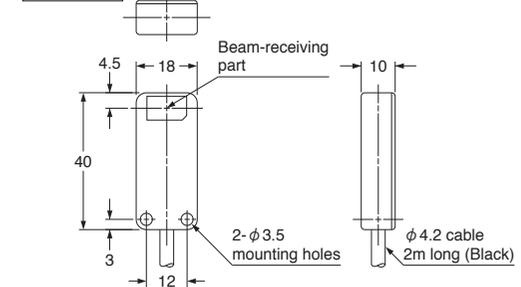
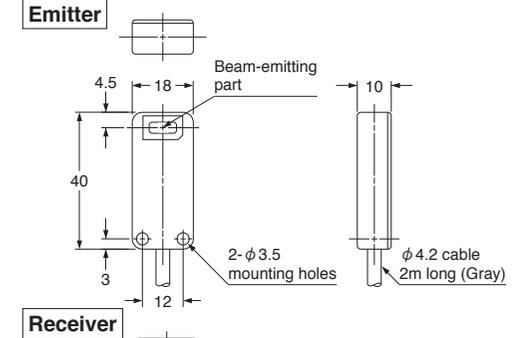
## 5 CAUTIONS

Make sure to use the exclusive amplifier **LA-A1, LA-A1P** only along with this sensor head.

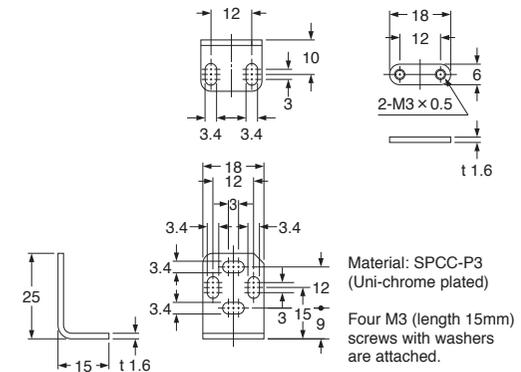
- This product has been developed / produced for industrial use only.
- Contact the company for any repair of this product.
- Do not carry out any disassembly, repair or modification of the product, since it is dangerous.
- Make sure that the power supply is off while wiring.
- Take care that wrong wiring will damage the sensor.
- 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 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.
- For stable operation, use the sensor 10 min., or more, after switching on the power supply.
- Take care that the sensor is not directly exposed to fluorescent lamp from a rapid-starter lamp, a high frequency lighting device or sunlight etc., as it may affect the sensing performance.
- Extension up to total 10m is possible, for both emitter and receiver, with 0.18mm<sup>2</sup>, or more, cable. Shield wire must be extended with shield wire.
- Make sure that stress by forcible bend or pulling is not applied directly to the sensor cable joint.
- This sensor is suitable for indoor use only.
- Take care that the sensor does not come in direct contact with water, oil, grease, or organic solvents, such as, thinner, etc.
- The sensor's output is proportional to the amount of the LED light received. Since there is some variation in the light intensity at the center and the periphery of the sensing area, take care that 'output = dimension' may not hold.
- Keep the front faces of the sensor heads free of dust, dirt, metal powder, etc.. Should the faces be covered with it, deteriorating its performance, wipe them clean with a soft cloth or blown air.

## 6 DIMENSIONS (Unit: mm)

### ● LED type sensor heads / LA-305



### ● Sensor head mounting bracket / MS-LA3-2



## 7 INTENDED PRODUCTS FOR CE MARKING

- The models listed under "4 SPECIFICATIONS" come with CE Marking. As for all other models, please contact our office.
- Contact for CE  
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Winsbergring 15, 22525 Hamburg, Germany

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