

Amplifier-separated Sensor Head SH-2 Series, SH-3 Series

MJEC-SH23 No.0055-57V

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.

WARNING

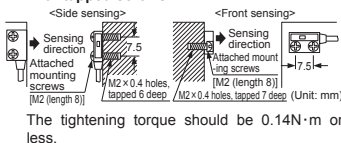
- Never use this product as a sensing device for personnel protection.
- In case of using sensing devices for personnel protection, use products which meet laws and standards, such as OSHA, ANSI or IEC etc., for personnel protection applicable in each region or country.

1 CAUTIONS

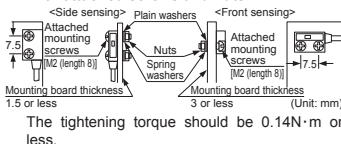
- The CE conformity of the product is declared based on additional EMC countermeasures, which are explained in the manual and shall be realised by the installer.
- Refer to '5 USE CONDITIONS TO COMPLY WITH CE MARKING' regarding intended products for CE marking.
- This product has been developed / produced for industrial use only.
- The thin cable (0.089mm², 0.057mm² for super slit type) is used for this product. Thus, take care that if the cable is pulled with excessive force, it may cause cable break.
- Take care that wrong wiring will damage the sensor.
- 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.

2 MOUNTING

- **SH-2 series**
- With tapped screws

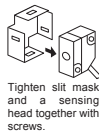


- With attached screws and nuts



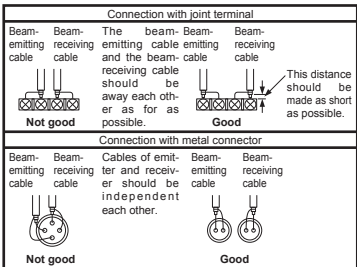
● SH-3 series

- The tightening torque should be 0.29N·m or less when mounting the sensor head with the screws.
- When slit mask, exclusively for SH-31R, SH-31G or SH-33R, is used, screws it together with a sensing head for fixing.



3 CABLE EXTENSION

- If the attached sensor head cables need to be extended, use two single core shielded cables of at least equivalent quality.
- If a joint terminal or connector is used for extension, refer to the figures below.
- The shielded extension cable must be of ϕ 1.45mm outer diameter.



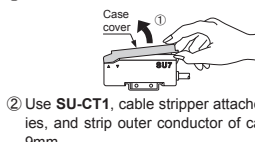
- The cable can be extended up to the length given below.
- SH-2 series: Total 5m
- SH-3 series: Total 10m

4 CONNECTION

Connection with SU-7 series

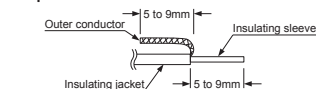
However, for connecting to SS-A5 amplifier, refer to the instruction manual enclosed with SS-A5.

- 1 Remove the cover.



- 2 Use SU-CT1, cable stripper attached to SU-7 series, and strip outer conductor of cables from 5 to 9mm.

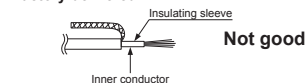
<Required modification>



Caution

- As the insulating sleeve is taken off at the delivery, rectify the edge of cables as the above figure.

<Factory-delivered>

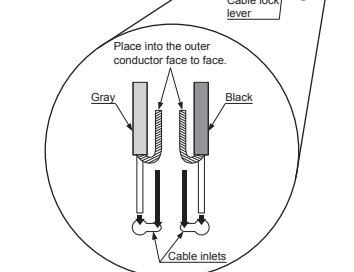


- Do not strip the insulating sleeve off the inner conductor.

- 3 Snap the cable lock lever down.
- 4 Put the cables into the insertion holes of the amplifier with the outer shield wires facing each other.

'▼' Receiver: Black cable

'▲' Emitter: Gray cable

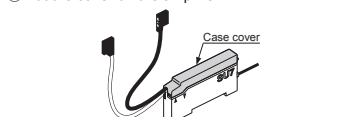


Notes: 1) Place into the outer conductors face to face.

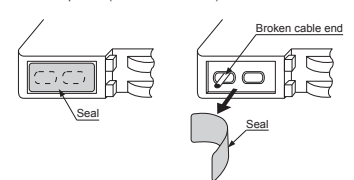
- 5 Pull the cable lock lever back to lock the cables.



- 6 Put the cover on the amplifier.



- Notes: 2) After locking, if the lock is released and the cable is removed, it can be locked again, as it is, only once. If the locking is repeated three times or more, repeat the process from Step 2). If the cables are locked and released repeatedly, note that the cable ends may break, resulting in a bad connection.
- 3) If there is a strand of the cable left inside the cable inlet, remove it before connecting the sensor head cables. Turn the amplifier upside down, and tap it around the holes. If the shield still remains, peel the bottom seal off the amplifier, and drop it out. (The seal is reusable.)



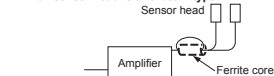
5 USE CONDITIONS TO COMPLY WITH CE MARKING

- Intended products for CE Marking
- Sensor heads
- SH-31R, SH-31G, SH-33R, SH-32R
- Applicable amplifiers
- SU-7(P), SU-75, SU-77, SU-79

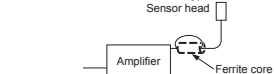
Note: Contact our office regarding other than above models.

- Following work must be done in case of using this product as a CE marking conforming product.

<When sensor head is thru-beam type>



<When sensor head is reflective type>



Place a ferrite core near the amplifier. In that condition, the sensor head cable should be single-winding.

Prepare 1 pc. of the following recommended ferrite core (or an equivalent product.)

<Recommended product>

ESD-SR-110 [NEC TOKIN CO., LTD.]

6 SPECIFICATIONS

	Type	Ultra-slim type			Ultra-small type			
		Thru-beam		Diffuse reflective	Thru-beam			Diffuse reflective
		Front sensing	Side sensing		Red LED	Green LED	Red LED	
Item	Model No.	SH-21	SH-21E	SH-22	SH-31R	SH-31G	SH-33R	SH-32R
Applicable amplifiers		SU-7 series, SS-A5						
Sensing range		300mm		50mm (Note)	1m	100mm	2m	100mm (Note)
Operation indicator		—			Red LED (lights up when the sensing output of the amplifier is ON) incorporated on the emitter of the thru-beam type sensor head			
Protection		IP62 (IEC)			IP66 (IEC)			
Ambient temperature		-10 to +60°C (No dew condensation or icing allowed) Storage: -20 to +70°C			-25 to +60°C (No dew condensation or icing allowed) Storage: -30 to +70°C			
Ambient humidity		35 to 85% RH, Storage: 35 to 85% RH			35 to 85% RH, Storage: 35 to 85% RH			
Emitting element		Infrared LED (modulated)			Red LED (modulated)	Green LED (modulated)	Red LED (modulated)	
Material		Enclosure: Polycarbonate (glass fiber reinforced)			Enclosure: ABS, Lens: Polycarbonate			
Cable		0.089mm ² (ultra-slim type: 0.057mm ²) 1-core (diffuse reflective type: two parallel 1-core wires) shielded cable, 3m long						
Weight		Emitter: 12g approx., Receiver: 12g approx. 24g approx.			Emitter: 10g approx., Receiver: 10g approx. 20g approx.			20g approx.
Accessory		Sensor head mounting screw: 2 sets (SH-22: 1 set)			—			

Note: The sensing range of the diffuse reflective type sensor is specified for white non-glossy paper (50 × 50mm) as the object.

Effective September 22, 2023
Panasonic will discontinue the
SU-7 Series Amplifier and
SH Series Sensing Head

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