

SECTION 6

Mounting and Wiring

This section provides installation procedures and precautions.

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6-1 Mounting

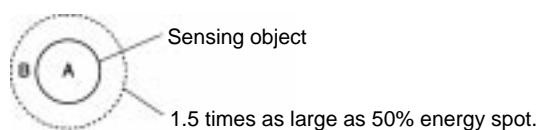
6-1-1 Precautions

- Make sure that the radiation rate of the sensing object is as close as possible to 0.9. If the radiation rate is low, use black spray or black tape.
- The tip of the ES1A must be as close as possible to the sensing object.
- Make sure that the temperature of the ES1A itself does not exceed the ambient operating temperature range specified.
- Make sure that the temperature of the ES1A-C itself is within the range specified for the ES1A-C in operation without air-cooling, regardless of whether the ES1A-C in actual operation is provided with air-cooling or not. If necessary, connect an air hose and perform an air purge. To change the direction of the air hose joint, loosen the set screw of the air hose joint. If the ES1A-C is used at higher temperature, use the ES1A-J Cooling Jacket.
- The air hose withstands a maximum temperature of 75°C. If the ambient temperature exceeds 75°C, always provide air-cooling.
- Make sure that the filter is clear and free of dirt or dust. When using the ES1A-C, perform an air purge if necessary.
- Secure the ES1A-A with the lock nuts provided. Make sure that each nut is tightened to a maximum torque of 0.5 N • m.
- Secure the ES1A-B and ES1A-C with the panel nuts provided.

6-1-2 Field-of-vision Range

The field-of-vision spot detects 50% of the energy emitted from the sensing object. The actual sensing object must be 1.5 times larger than the spot in order to suppress the influence of an external temperature disturbance that may exist around the sensing object. If the sensing object is, however, not 1.5 times larger than the spot, the Temperature Controller with a proper input shift setting will still eliminate this temperature influence as long as there is a correlation between the temperature of the sensing object and ambient temperature.

If part B as shown below is always 70°C when the temperature of part A of the sensing object is 100°C, perform an input shift setting for 100°C to cancel the temperature influence of part B.



6-2 Connections

Connect the yellow lead wire to the positive side and the red lead wire to the negative side.

These lead wire colors conform to ANSI standards.

If the lead wires need to be extended, connect them to compensating cables for the K-type thermocouple.

Be sure to ground the shield.

Do not bend the lead wires repeatedly.

Two-point Grounding (ES1A-B and ES1A-C Only)

Be sure to ground the shield in order to prevent the ES1A from destruction that may be caused by static electricity. If the output of the ES1A fluctuates, the shield and the stainless steel housing of the ES1A is probably grounded at two points and current feedback may be resulting. If that happens, insulate the stainless steel housing.



6-3 Adjustments

Refer to *Section 5 Input Shift for Temperature Controller* and perform proper adjustments of the Temperature Controller.

6-4 Cleaning

Do not use any organic solvent, such as paint thinner, to clean the Sensor. Apply alcohol.

6-5 Mounting the ES1A-J

- 1, 2, 3... 1. Loosen the set screw of the air hose joint of the ES1A-C and disconnect the air hose joint. Use a cutter knife and remove the heat-shrink tube on the lead wires (part A in the illustration below).
2. Loosen the screws on the ES1A-J and insert the lead wires into the spring. Then insert the lead wires with the spring into the ES1A-J.
3. Attach the male connector, 1/4-inch pipe, T-type bifurcated connector, and male connector with a nylon insert to the ES1A-J in this order so that the lead wires will pass through the center of each of these components.
4. Use the set screw to adjust the direction in which the air blows.

