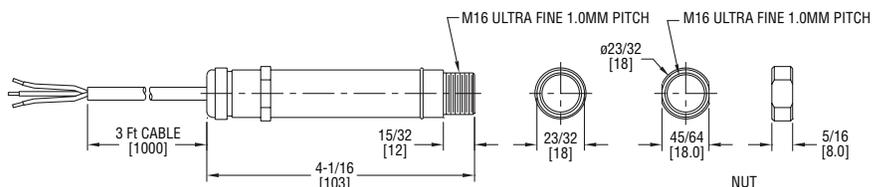




Series ILA In-Line IR Sensor

Specifications - Installation and Operating Instructions



Dwyer Series ILA non-contact sensors, measure temperatures from 32 to 932°F (0 to 500°C) and provide a linear 4 to 20 mA, 0 to 50 mVDC or thermocouple output. The 2-wire signal is compatible with almost any indicator, controller, recorder, data logger, etc., without the need for special interfacing or signal conditioning. They are suitable for most materials such as food, paper, textiles, plastics, leather, tobacco, pharmaceuticals, chemicals, rubber, coal, and asphalt.

The Optical Chart

The optical chart indicates the nominal target spot diameter at any given distance from the sensing head and assumes 90% energy. (See Figure 1).

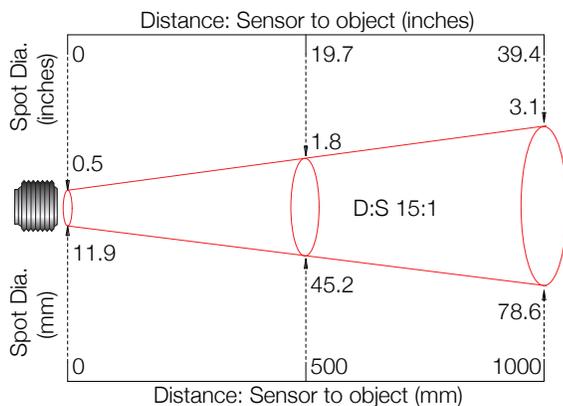


FIGURE 1

PREPARATION STAGE

Ensure that the sensor is focused on the target only.

Distance and Spot Size

The size of the area (spot size) to be measured determines the distance between the sensor and the target. The spot size must not be larger than the target. The sensor should be mounted so that the measured spot size is smaller than the target. (See Figure 2).

SPECIFICATIONS

Temperature Range: 32 to 932°F (0 to 500°C).

Accuracy: 1% of reading or 1°C whichever is greater.

Emissivity: 0.95 (Fixed).

Distance to Target Size Ratio: 15:1.

Response Time: 240 ms.

Ambient Operating Temperature: 32 to 158°F (0 to 70°C).

Power Requirement: 24 VDC.

Repeatability: 0.5% of reading or 0.5°C whichever is greater.

Outputs: 4 to 20 mA, 0 to 50 mVDC, J type thermocouples.

Cable Length: 3.3 ft (1 m).

Spectral Response: 8 to 14 microns.

Housing: Stainless steel.

Weight: 3.35 oz (95 g).

Agency Approval: CE.

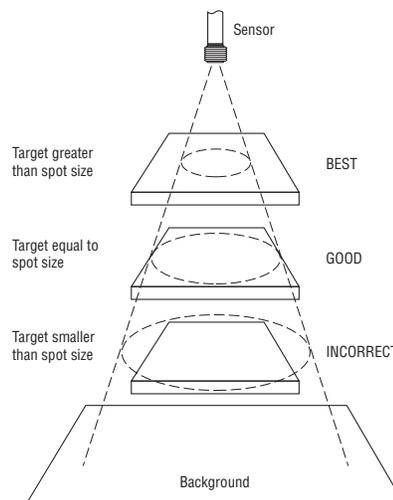


FIGURE 2

Atmospheric Quality

Smoke fumes or dust can contaminate the lens and cause errors in temperature measurement.

Electrical Interference

To minimize electromagnetic interference or "noise" the sensor should be mounted away from motors and generators.

MECHANICAL STAGE

All sensors come with a 3.3 ft (1 m) cable and a mounting nut. The sensor can be mounted on brackets or cut outs of your own design, or you can use the fixed and adjustable mounting bracket accessories, which are shown below. (See Figure 3).

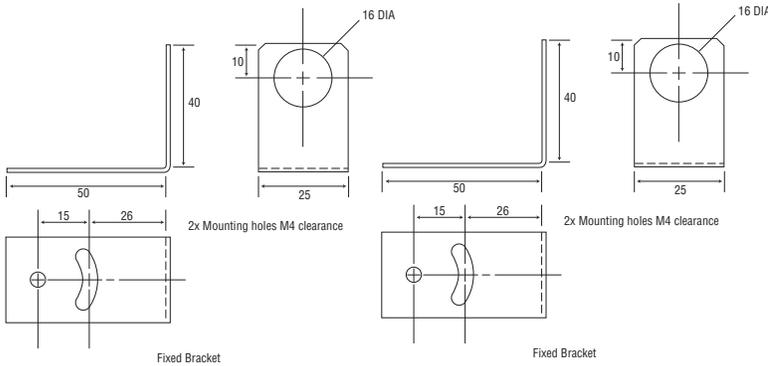
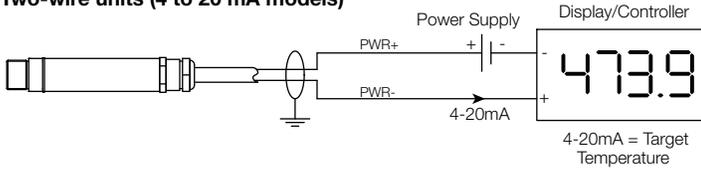


FIGURE 3

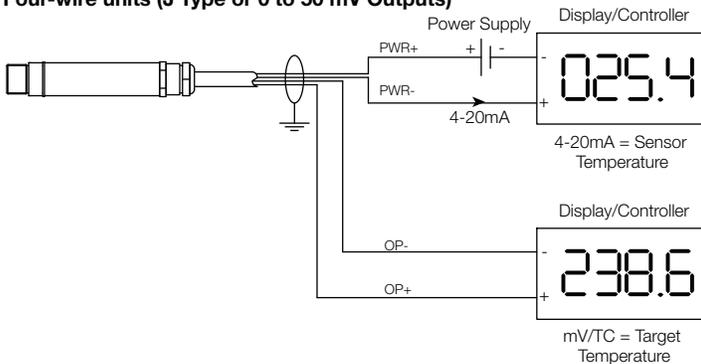
ELECTRICAL STAGE - WIRING:

Series ILA sensors are available as either two-wire or four-wire units. J-type and 0 to 50 mV output models transmit the target temperature as a 0-50 mV or J-Type thermocouple outputs plus the internal sensor temperature as a 4-20 mA output. This second 4 to 20 mA output can be used to ensure that the sensor is being operated within the correct ambient temperature limits and prevent damage caused by overheating or overcooling. It can also be used to give an approximate indication of the air temperature surrounding the sensor.

Two-wire units (4 to 20 mA models)



Four-wire units (J Type or 0 to 50 mV Outputs)



Note: The cable shield must be grounded at only one point, which is usually at the controller/indicator. However, it can be done at a junction box or other suitable location in the field area.

Operation

Once the sensor is in position and the appropriate power, air, water and cable connections are secure the system is ready for continuous operation by completing the following simple steps:

1. Turn on the power supply.
2. Turn on the meter, chart recorder or controller.
3. Read/monitor the temperature.

Important

Be aware of the following when using the sensor:

- If the sensor is exposed to significant changes in ambient temperature (hot to cold or cold to hot) allow 20 minutes for the temperature to stabilize before taking or recording measurements.
- Do not operate the sensor near large electromagnetic fields (e.g. around arc welders or induction heaters).
- Wire must be connected only to the appropriate terminals.

MAINTENANCE

Our customer service representatives are available for application assistance, calibration repair, and solutions to specific problems. Contact our customer service representatives before returning any equipment, in many cases, problems can be solved over the telephone. If the sensor is not performing, as it should, try to match the symptom to the problem below. If the table does not help, call Dwyer for further advice.

TROUBLE SHOOTING		
Symptom	Probable Cause	Solution
No Output	No power to sensor	Check power supply
Erroneous Temperature	Incorrect wire connection	Check wire color codes
Erroneous Temperature	Faulty sensor	Verify cable continuity
Erroneous Temperature	Field of view obstruction	Remove obstruction