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Using This Quick Start Manual
Use this Quick Start Manual with your OS137A Series Miniature Infrared Transmitter for quick installation and basic operation. For detailed information, refer to the User’s Guide (Manual # M4015).

General Information
The OS137A Series is a precision, miniature infrared transmitter. It measures temperature via non-contact, and provides an analog output proportional to the measured temperature. The OS137A Series is offered in three temperature ranges: 0 to 100°C (32 to 212°F), -18 to 260°C (0 to 500°F) and -18 to 538°C (0 to 1000°F). The analog output is offered as 4 to 20 mA, 0 to 5 Vdc, 0 to 10 Vdc, 10 mV/degree C or F, or K type thermocouple.

The unit provides adjustable emissivity from 0.5 to 1.0, 10 to 1 optical field of view, and field adjustable alarm output. The super-compact design, 25.4 mm OD x 127 mm length (1.0" OD x 5.0" L) is ideal to measure temperature in confined and hard to reach places. The Stainless Steel housing is NEMA-4 rated. The unit comes standard with a 1.82 m (6') shielded cable.

Electrical Connection
The shielded cable provides the power and output connections. General Wiring Diagram shows the wiring diagram for different analog outputs. Alarm Output Wiring Diagram shows alarm output connections.

Connect the body of the OS137A to Earth Ground. Leave the shield disconnected and insulated at the end of the cable.

WARNING!
Connecting the Green alarm lead to ground, or to any load exceeding 100mA, will result in damage to the OS137A Miniature Infrared Transmitter. Either the alarm output is not being used, it must be disconnected and insulated.

Operation
Measuring Temperature
Before starting to measure temperature, make sure the following check list is met:

• The power and output connections are made (see General Wiring Diagram)
• The target is larger than the optical field of view of the transmitters (see Optical Field of View)
• Use the Laser Sighting accessory (optional), to align the transmitter to the center of the target area.
• Remove the End Cap to get to the Emissivity Single Turn pot (see Location of Emissivity & Alarm Adjust and Alarm Switch). Set the Emissivity Pot based on the target surface. Then put back the End Cap.
• Make sure the output load is within the product specification

Atmospheric Quality
The transmitter can operate in an ambient temperature of 0 to 70°C (32 to 158°F) without any water cool jacket. It can operate from 0 to 200°C (32 to 392°F) with the water cool jacket accessory, OS137-WC. It can operate up to 110°C (230°F) with air cooling.

There is a warm up period of 1 to 2 minutes after power up. After the warm up period, temperature measurement can be made.

When the ambient temperature around the transmitter changes abruptly, the sensor head goes through a thermal shock. It takes a certain amount of time for the sensor head to get stabilized to the new ambient temperature. For example, it takes about 30 minutes for the sensor head to get stabilize to the 25°C to 50°C (77°F to 122°F) ambient temperature.

Atmospheric Quality
Environments with smoke, dust, and fumes dirty up the optical lens, and cause erroneous temperature readings. To keep the surface of the optical lens clean, the air purge collar accessory is recommended, OS137-AP.

The following figures show the Air Purge Collar (OS137-AP), Stainless Steel Housing and Water/ Air Cool Jacket (OS137-WC), with built-in air purge collar.

Mounting Bracket, OS137-MB