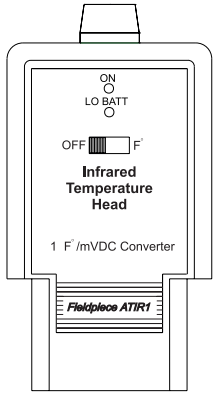
INFRARED TEMPERATURE ACCESSORY HEAD Model ATIR1



OPERATOR'S MANUAL

Description

The ATIR1 infrared temperature accessory head enables most DMMs to measure temperatures without contact. The ATIR1 collects infrared energy and converts it to a millivolt signal that is proportional to the temperature being measured. The temperature measured will be the average of all the temperatures in the cone of viewability. The closer you are to the target, the smaller the area. The further away, the larger the area measured.

Features

- Measures temperature without contact
- Distance from target doesn't affect accuracy
- Fast and easy temperature readings
- Works with any DMM with a mVDC scale and standard style jacks (most professional grade DMMs)
- Narrow angle of viewability (4:1 ratio)

How to use

1. Connect to COM and Volts jacks. To use with any Fieldpiece "stick" meter, slide the head over the meter. For most other meters, use the Fieldpiece ADL2 test leads.

2. Select 2000mVDC range on meter and read the average temperature directly in °F with a resolution of 1°F for everything in the cone of viewability.

Applications

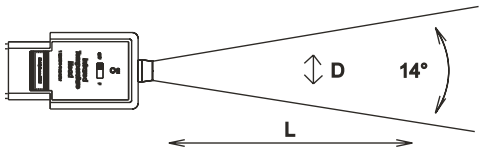
The infrared temperature measurement is fast and easy. It works best for fast readings, relative readings (one to another or the same one at different times), or temperature readings of hard to reach places. The following are some applications:

- Heating and air conditioning where fast and/or easy measurement is most important.
- Motor bearings: high temperature can indicate bearings that might need replacement.
- Circuit breakers: a circuit breaker that is not operating properly can get hot. By scanning a panel, you will be able to find the hot one.
- Poor power line connections: a bad connection can get hot.

Specifications

Temperature Range: 0°F to 300°F
Accuracy: ±3% of reading or±5°F whichever is greater between 65° and 85°F operating temperature.
Operating temperature range: 32° and 122°F
Temperature coeficient: ±0.2% of reading or 0.36°F/1°F, whichever is greater.
Response time: @1s after 60 seconds "ON".
Angle of viewability: 4:1 (14°)
Wavelength: 8 to 14 micron
Emissivity: .95 fixed (95%)
Repeatability: ±1% of reading
Output: 1mVDC/°F
Power: 9V battery
Battery life: 6 hours in "ON" position.
2 Position switch: OFF, °F
Power-on & Low Battery LEDs.

Cone of Viewability



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IR Temperature Measurement

When something is hot, it radiates infrared energy. The hotter it is, the more infrared energy. If there's enough of it, you can feel it. The ATIR1 infrared accessory head collects infrared energy from a cone-shaped viewing area and measures the total amount of energy collected. The ATIR1 converts the total energy measured to a temperature. Distance doesn't matter because the further you go from the target, the increase in area "seen" by the sensor exactly balances the loss of energy collected from a given area.

If you want to get the temperature of something small, such as a pipe, you must get close enough so the pipe takes up the whole viewing area. Otherwise the pipe and the background temperatures will be average.

"Emissivity" of the target surface also affects the temperature reading. For a given temperature, the higher the emissivity, the higher the reading. The lower the emissivity, the lower the reading. Emissivity of a surface indicates how easy it is for the infrared to get out. Emissivity for a dull, black surface is high (nearly 100%) so it's easy for the infrared to get out. Emissivity for a shiny surface can be much lower. If the emissivity is low, the measured temperature will be lower than actual. For relative readings of the same kind of surface, this isn't a problem. For some applications, it may be necessary to spray dull, black paint on the target to insure a more accurate reading.

The accuracy of many infrared temperature measuring systems is adversely affected by ambient temperature.

One Year Limited Warranty

This head is warranted to the original purchaser against defects in material and workmanship for a period of one year from the date of purchase. During the warranty period, Fieldpiece will replace or repair the defective unit, subject to verification of the defect. This warranty does not apply to defects resulting from abuse, neglect, accident, unauthorized repair, alteration, or unreasonable use.

ANY IMPLIED WARRANTIES ARISING OUT OF THE SALE OF A FIELDPIECE INSTRUMENT PRODUCT, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO THE ABOVE. FIELDPIECE SHALL NOT BE LIABLE FOR LOSS OF USE OF THE INSTRUMENT OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES, EXPENSES, OR ECONOMIC LOSS, OR FOR ANY CLAIM OR CLAIMS FOR SUCH DAMAGE, EXPENSES, OR ECONOMIC LOSS.

Obtaining service

Call Fieldpiece (714-992-1239) for an RMA# and send freight prepaid to:

Fieldpiece Instruments
231 East Imperial Highway #250
Fullerton, CA 92835

For warranty service, include proof of purchase date. For out of warranty service , include a check or money order for $60. We will send you a reconditioned and calibrated accessory head.

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