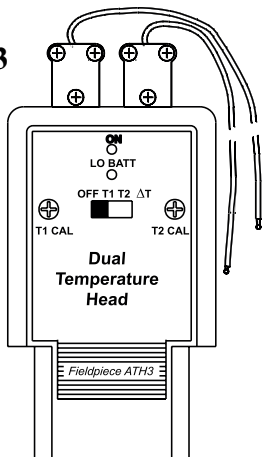


DUAL TEMPERATURE HEAD Model ATH3



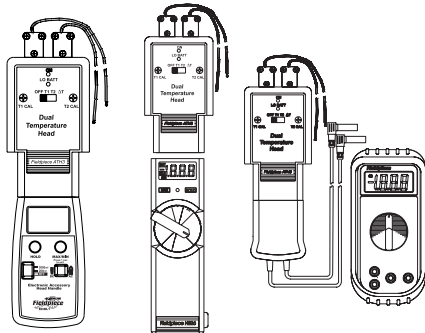
OPERATOR'S MANUAL



Description

Converts the voltages from two K-type thermocouples to display temperature on any digital multimeter with industry standard jacks and input impedance of 9 or 10 MOhms. For 0.1°F resolution, use a DMM that displays 0.1mVDC (such as a Fieldpiece HS26 or HB74).

The ATH3 converts any Fieldpiece "Stick" series meter and EHD1 electronic handle to a one-piece dual-input temperature meter. Use the optional Fieldpiece ADL2 deluxe test leads with the ATH3 for use with DMMs with industry standard jacks, including the Fieldpiece HB70 series meters.



Operation

Insure the temperature being measured is stable. Maintain good contact between the thermocouple and what's being measured. Set the meter on 200mV or 2000mV range for 0.1°F or 1°F resolution respectively. Slide the switch to "T1" to measure display T1, to "T2" to display T2, and to "T1-T2" to measure the difference between T1 and T2.

To display °C instead of °F, open the case and use a jumper to connect the pins located beneath the right side of the T2 calibration pot.

Optional K-type thermocouples

ATP1 for piercing semi solids (4" piercing probe, tip to 1500°F), ATF1 for fluids (6" sealed, tip to 1500°F), ATG1 for air/gas (6" stainless, tip to 1500°F), ATE1 spring loaded exposed junction to take pipe temperatures (tip to 1500°F), ATV1 with velcro strap to attach around pipes (teflon to 400°F, tip to 1500°F), ATS1 for flat surface temperature (teflon to 400°F, disk to 1500°F), ATBF1 has fiberglass insulation for oven temperatures to 900°F, and ATEXT10, 10' extension.

Field calibration

To calibrate the system (ATH3 converter, thermocouple, meter), adjust the calibration pots on the face of the converter while measuring a known temperature. Ice water is very close to 32°F and is readily available. This eliminates the accuracy stack-up which results from calibrating each component separately. Accuracies of one degree or better are easily obtained.

1. Stabilize a large cup of ice water. Stir or shake while it is stabilizing. Pure distilled water will be the most accurate, but tap water is nearly as good. A stabilized mixture of ice and water is very close to 32°F, even after considering altitude and contaminant variations.
2. Select mVDC range.
3. Immerse one probe in ice water and let it stabilize.
4. Slide the switch to "T1" and adjust the "T1" calibration pot on the face of the converter to display 32.0 on the DMM.
5. Remove T1 from the water and repeat the previous steps 3 and 4 for "T2".

Specifications

Mechanical

Inputs: Two K-type thermocouples
Outputs: Switchable: T1, T2, T1-T2, standard male banana plugs
Calibration: Two externally adjustable calibration pots
Case: Valox

Electrical

Conversion rate: 1mVDC per 1°F
Range: -50°F to 1800°F
Resolution: 0.0°F for meters with 0.1mVDC resolution; 1.0°F for meters with 1.0mVDC resolution
Battery: Standard 9V
Battery life: 200 hours continuous
Auto-off: After 45 minutes
LED indication: green for "On", red for low battery
Max voltage at input: 60 VDC, 24 VAC
Strong RF fields can adversely affect the converter performance.

Accuracy* (at 75°F ± 5°F ambient T1 and T2. T1-T2 is for indication only.)

System (after ice bucket calibration):
±1°F, -50°F to 165°F
±2°F, 165°F to 350°F
±3°F, 350°F to 1700°F

Converter : ±0.5%+3.6°F, -50°F to 1800°F
Thermocouples: ±4°F or ±.75%, whichever is greater, -30°F to 1500°F

Environmental

Operating temp: -30°F to 120°F
Storage temp: -40°F to 140°F
Probe insulation: Teflon, to 500°F

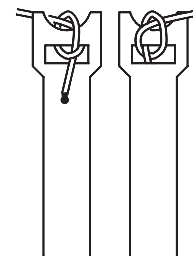
* To calculate system accuracy from components, add up the accuracy specifications for the meter, the thermocouples, and the converter. For example, at 100°F, add the accuracies for a DMM(±1°F), a thermocouple (±4°F), and the converter (±4°F). The system accuracy for these individually calibrated components is ±9°F. If the actual temperature was 100°F, the meter could read as high as 109 and as low as 91. By contrast, after a simple "ice bucket" system calibration, the meter would read between 101.0 and 99.0.

Service

Any defective ATH3 should be returned to Fieldpiece Instruments for warranty service along with proof of purchase. Call Fieldpiece for a return material authorization (RMA). For out of warrantee service, send the ATH3 along with a check or money order for \$40.00 to Fieldpiece. Your ATH3 will be repaired or replaced at Fieldpiece's option.

Velcro Tie-wrap Instructions

Two Velcro straps have been included with the ATH3 to make it easier to measure pipe temperatures. Use the Velcro strap to hold the bead of the model ATB1 thermocouple against the pipe.



Soft side Hard side

Warranty

The product is warranted to the original purchaser against defects in material or workmanship for a period of one (1) year from the date of purchase. During the warranty period, Fieldpiece Instruments will, at its option, replace or repair the defective unit.

This warranty does not apply to defects resulting from abuse, neglect, accident, unauthorized repair, alteration, or unreasonable use of the instrument. Any implied warranty arising out of the sale of Fieldpiece's products including but not limited to implied warranties of merchantability, and fitness for purpose, are limited to the above. Fieldpiece shall not be liable for incidental or consequential damages.



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