

TRACEABLE® DUAL-CHANNEL THERMOMETER WITH RS-232 OUTPUT INSTRUCTIONS

SPECIFICATIONS

Display:	0.6"-high LCD
Temperature—	Range: -58 to 1999°F (-50 to 1230°C)
Resolution:	selectable 0.1°/1°
Accuracy:	±(0.75% + 1°C) ±(0.75% + 2°C)
Sampling time:	0.8 to 1.0 sec
Data output:	RS 232 PC serial interface
Case:	ABS plastic
Size/Weight:	7½ x 2½ x 1⅞ inches/9¼ ounces

QUICK REFERENCE

On	Turns unit on.
Off	Turns unit off.
Data Hold	"Freezes" the display at the current temperature reading.
Memory Record	Activates the Record mode to enable the minimum and maximum temperature readings to be recorded and stored for recall.
Memory Recall	Displays the stored minimum and maximum temperature readings while in Record mode.
°F/°C	Permits switching between Fahrenheit and Celsius temperature scales.
Function	Permits viewing both temperature channel readings and the differential temperature reading.
1.0°/0.1°	Switches between two temperature resolutions—1.0° and 0.1°.

TEMPERATURE MEASUREMENT

Single Probe measurement

1. Press ON button to power unit.
2. Determine temperature scale (°F or °C) by pressing the °F/°C button.
3. Determine temperature resolution (0.1° or 1.0°) by pressing the 1°/0.1° button.
4. Insert temperature probe into T1 socket. It may be necessary to press the FUNCTION button until "T1" is displayed, indicating the unit is sampling from the probe in the T1 socket.

Note: The cable and connectors are keyed, do NOT insert cable incorrectly and force it.

Dual probe and differential measurement

1. Press ON button to power unit.
2. Determine temperature scale (°F or °C) by pressing the °F/°C button.
3. Determine temperature resolution (0.1° or 1.0°) by pressing the 1°/0.1° button.
4. Insert temperature probe into T1 socket and another temperature probe into T2 socket.

Note: The cables and connectors are keyed, do NOT insert the cables incorrectly and force them.

5. Press the FUNCTION button to alternate between viewing temperature readings from probe T1, probe T2, and the differential temperature. The FUNCTION button alternates between the following settings:

When "T1" is displayed, the upper display indicates temperature reading from T1 probe. The T2 probe temperature reading appears on lower display.

When "T2" is displayed, the upper display indicates temperature reading from T2 probe. The T1 probe temperature reading appears on lower display.

When "T1 - T2" is displayed, the upper display indicates differential temperature of T1 and T2 probes. The T1 probe temperature reading appears on lower display.

DATA HOLD FUNCTION

1. To "freeze" the display at the current temperature reading(s), press the DATA HOLD button ("D.H" will appear along the top of the display).

Note: While in the Hold mode, pressing the °C/°F, FUNCTION, 1°/0.1°, MEMORY RECORD, or MEMORY RECALL button will have no effect and will not change the "frozen" display.

2. Push the DATA HOLD button a second time to return to normal temperature sampling ("D.H will no longer appear on the display).

MEMORY RECORD

Press MEMORY RECORD button to activate the Record mode. Once the Record mode, the unit will begin recording minimum and maximum temperature readings achieved for the probe indicated on the main display ("T1" or "T2") ("REC" will appear along the bottom of the display).

Warning: The Automatic Shutoff feature is disabled while in Record mode so that long-term monitoring may be performed.

MEMORY RECALL

1. While in the Record mode, press the MEMORY RECALL button to recall the minimum and maximum temperature recordings for the probe appearing on the upper display ("T1" or "T2").
2. The maximum temperature recording appears on the first press of the MEMORY RECALL button ("Max") and the minimum temperature recording appears on the second press ("Min"). A third press of the MEMORY RECALL button returns the display to the current temperature reading.
3. Exit the Record mode by pressing the MEMORY RECORD button.

Warning: The minimum and maximum temperature recordings are automatically cleared once the Record mode has been exited.

AUTOMATIC SHUTOFF

After 10 minutes, if no button has been pressed, the unit will automatically shut off to preserve battery life. The automatic shutoff can be overridden by entering the Record mode (see "Memory Record" section).

RS-232 PC INTERFACE

The unit features an RS-232 output via 3-pole 3.5 mm plug. The output is a 16-digit data stream that may be utilized for user-specific applications.

Available as an accessory is an RS-232 lead with a 3-pole 3.5 mm jack on one end (plugs into unit) and a 9-pin female D-Subminiature connector on the other end (plugs into computer COM port). It is required to link the instrument with a PC.

(Pin 2 = Center Pin, Pin 5 = Ground/Shield)



The 16-digit data stream will appear in the following format: D15, D14, D13, D12, D11, D10, D9, D8, D7, D6, D5, D4, D3, D2, D1, D0.

Each digit indicates a particular status as shown below:

D0 = End word

D1 to D4 = Upper display reading (D1 = LSD, D4 =MSD)

D5 to D8 = Lower display reading (D5 = LSD, D8 =MSD)

D9 = Decimal point (DP) for upper display (0 = No DP, 1 = 1 DP, 2 = 2 DP, 3 = 3 DP)

D11 and D12 = Annunciator for upper display (00 = No symbol, 01 = °C, 02 = °F, 03 = %, 04 = %RH, 05 = pH, 06 = %O₂, 07 = mg/l, 08 = m/s, 09 = knots, 10 = km/h, 11 = ft/min, 12 = mile/h, 13 = μS, 14 = mS, 15 = Lux, 16 = ft-cd, 17 = dB, 18 = mV)

D13 = Annunciator for lower display (0 = No symbol, 1 = °C, 2 = °F)

D14 = Polarity (±) for the display (0 = Upper and lower display are "+"; 1 = Upper "-", lower "+"; 2 = Upper "+", lower "-"; 3 - Both upper and lower are "-")

D15 = Start word

DISPLAY MESSAGES

An "LBT" message indicates that the battery is low and needs replacement (see "Battery Replacement" section)

A "--" message indicates that the reading is outside the range of the unit.

ALL OPERATIONAL DIFFICULTIES

If this temperature meter does not function properly for any reason, please replace the battery with a new, high-quality battery (see "Battery Replacement" section). Low battery power can occasionally cause any number of "apparent" operational difficulties. Replacing the battery with a new fresh battery will solve most difficulties.

BATTERY REPLACEMENT

An erratic display, faint display, no display, or "LBT" appearing on the display are all indicators that the battery needs replacement. Remove the battery cover. Remove the exhausted battery and replace it with a new 9-volt alkaline battery. Replace the battery cover.

ACCESSORIES

Cat. No. 4136 Data Acquisition System — Complete DAS-3™ Data Acquisition System captures, displays, and stores readings on any IBM-compatible PC. Information can be imported into databases. Diskette (3.5 inches) and 5-foot serial cable with D9F plug.

Cat. No. 4325 Data Logger — Complete DAS-4™ System captures and stores up to 8000 bytes (over 1000 readings). Readings may be taken at intervals from 1 second to 99 hours. Stored readings may be downloaded to any PC and viewed. Can be read as-is or imported to spreadsheets, databases, and statistical programs. Supplied complete with 36-inch serial cable with D9F computer plug, 3.5-inch diskette (Windows®, DOS), and four AA alkaline batteries. Size is 5 x 3 x 1 inches. Weight is 7 ounces. For use with Traceable® meters featuring RS-232 output.

Cat. No. 4008 Surface Probe — Stainless-steel with handle, triple purpose. Temperature range is -73 to 760°C. Dimensions: 5-inch probe length; 0.5-inch tip diameter; 8½-inch overall length. Supplied with 36-inch cable.

Cat. No. 4014 Stainless Steel Probe — Stainless-steel with handle, triple purpose (liquids, air/gas, and semi-solids), Type K (NiCr/NiAl) probe. Temperature range is -50 to 700°C. Dimensions: 0.13-inch diameter; 6¼-inch stem length; 9¾-inch overall length. Supplied with 40-inch cable.

Cat. No. 4028 Beaded Probe — Fast-Response, Type K thermocouple, beaded probe. Teflon cable can withstand temperatures of -40 to 250°C continuous or 300°C short-term use. Dimensions: 0.06-inch diameter probe with cable length of 4 feet for use with all Type K thermometers in liquids, air/gas, and semi solids.

Cat. No. 4138 Easy-Use Adaptor — 115 VAC

Cat. No. 8039 Low-Temperature Probe — Stainless-steel with handle; triple purpose (liquids, air/gas, and semi-solids), Type K (NiCr/NiAl) probe. Temperature range is -240 to 220°C. Dimensions: diameter 0.17 inch; stem length 12 inches; overall length 17 inches. Supplied with 8-foot expandable cable.

Cat. No. 8613 High-Temperature Probe — Ten-foot-long 0.19-inch diameter braided metal wire cable with smooth tip measures -73 to 982°C continuous or 1093°C short-term use. For use with all Type K thermometers in liquids, air/gas, and semi-solids.

WARRANTY, SERVICE, OR RECALIBRATION

For warranty, service, or recalibration, contact:

CONTROL COMPANY

4455 Rex Road
Friendswood, Texas 77546 USA
Ph. 281-482-1714 Fax 281-482-9448
E-mail sales@control3.com
www.control3.com

Control Company is ISO 9001 Quality-Certified by DNV and ISO 17025 accredited as a Calibration Laboratory by A2LA.