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DUAL INPUT K/J DIGITAL THERMOMETER

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WARNING: These products are not designed for use in, and should not be used for, human applications.

FEATURES:

Data Storage for 125 samples
Highly accurate single input thermometer with 0.1% basic accuracy
Large display for easy to read
Robust protective Holster
Thermocouple offset adjustment
°C/°F selection
MIN/MAX/HOLD functions
Display backlight
Auto-Power Off (APO)
Auto-Range: 0.1/1°
Wide measuring ranges suitable for numerous applications

INTRODUCTION

This instrument is a portable 3½ digit, compact-sized digital thermometer designed to use external K type and J type thermocouples. It also has the feature that sensor offset can be adjusted for in the field. There are 2 inputs for miniature thermocouple connectors at the top of the instrument marked T1 and T2.

SAFETY INFORMATION

It is recommended that you read the safety and operation instructions before using the thermometer.

WARNING

To avoid electrical shock, do not use this instrument when working voltages at the measurement surface over 24V AC or DC.

WARNING

To avoid damage or burns, do not make temperature measurement in microwave ovens.

CAUTION

Repeated sharp flexing can break the thermocouple leads. To prolong lead life, avoid sharp bends in the leads, especially near the connector.

SPECIFICATIONS

ELECTRICAL

Temperature Scale:

Celsius or Fahrenheit user-selectable.

Measurement Range:

K-Type -100°C to 1372°C, (-150°F to 1999°F)

J-Type -100°C to 1200°C, (-150°F to 1999°F)

Resolution:

1 degree or 0.1 degree from -59.9 to 199.9 degree °C or °F (auto ranging).

Accuracy:

Accuracy is specified for operating temperatures over the range of 18°C to 28°C (64°F to 82°F), for 1 year, not including thermocouple error.

±(0.1% rdg + 1°C) on °C, ±(0.1% rdg + 2°F) on °F

Temperature Coefficient:

0.1 times the applicable accuracy specification per °C from 0°C to 18°C and 28°C to 50°C (32°F to 64°F and 82°F to 122°F).

Input Protection:

24V dc or 24V ac rms maximum input voltage on any combination of input pins.

Reading Rate: 1 time per second.

Input Connector:

Accepts standard miniature thermocouple connectors (flat blades spaced 7.9mm, center to center).

ENVIRONMENTAL

Ambient Operating Ranges:

0°C to 50°C (32°F to 122°F) <80% R.H.

Storage Temperature:

-20°C to 60°C (-4°F to 140°F) <70% R.H.

GENERAL

Display:

3½ digit liquid crystal display (LCD) with maximum reading of 1999.

Overload: “-OL” is displayed.

Battery:

1.5Vx4pcs AAA size.

Battery Life:

150 hours typical with carbon zinc battery.

Auto Power Off:

Approximately 20 minutes.

Dimensions:

160mm(H) x 83mm(W) x 38mm(D).

Weight:

230g.

Supplied Thermocouples (2 per input):

1 meter (40”) type K insulated beaded wire thermocouple. Maximum insulation temperature is 482°C (900°F). Thermocouple accuracy is ±1.1°C or 0.4% of reading (whichever is greater) from 0°C to 1250°C.

OPERATING INSTRUCTIONS

1. “⏻” Power Button

Press the “⏻” button to turn on or off thermometer.

2. “▼/°C/°F” Button

Readings are displayed in either degrees Celsius(°C) or degrees Fahrenheit(°F). When the thermometer is turned on, it is set to the temperature scale that was in use when the thermometer was last turned off. To change the temperature scale, press the “▼/°C/°F” button.

3. “▲/☀” Button

Press the “☀” button to turn on the backlight. Press the “☀” button again to make the backlight brighter and press “☀” button once more to turn off the backlight. Backlight on Brighter Backlight off.

4. “ADJ/HOLD” Button

Press the “HOLD” button to enter the Data Hold mode, the “HOLD” annunciator is displayed at the top of the display.

When HOLD mode is selected, the thermometer holds the present readings and stops all further measurements. Pressing the “HOLD” button again cancels HOLD mode, causing the thermometer to resume measurement.

5. “APO/TYPE” Button

Press “TYPE” button to select the type of thermocouple “K” or “J”. Make sure the proper type has been selected. Pressing and holding down “APO” button for 2 seconds will turn on or off the APO(Automatic Power Off) mode, and the APO annunciator will appear or disappear on the display. Power is automatically turned off if no button is pressed for a period of time.

6. “MAX MIN” Button

Press “MAX MIN” button to enter the MAX MIN recording mode. Press “MAX MIN” button to cycle through the MAX, MIN, MAX-MIN readings. In this mode, press “HOLD” button to stop recording, all values are held, press again to resume measurement. In this mode, the APO function and other buttons are disabled, excluding “HOLD” and “☀” buttons.

To prevent accidental loss of MAX, MIN and MAX-MIN, this mode can only be cancelled by pressing and holding down the “MAX MIN” button for 2 seconds to exit and clear readings.

7. “CLR/READ” Button

Press “READ” button to enter READ Mode, the “READ” annunciator is displayed in the upper right corner. Press “ ” or “ ” button to review the recorded data. The LCD automatically alternates between the data and index. Press the “CLR” button and hold down for 2 seconds to clear the memory data.

8. “REC” Button

Up to 125 data points can be recorded into memory. Press “REC” button once to record each data point. When the data is recorded, “REC” is displayed in the upper right corner. If the memory is full, data will not be recorded into the memory and “REC” will not be displayed. Data can be recorded again after the memory is cleared.

9. “T1 T2/T1-T2/↔” Button

Press “T1”, “T2”, “T1-T2” button to select input mode T1, T2 or T1-T2. The input selection indicates which input is selected for display, T1 thermocouple, T2 thermocouple or the differential between the two thermocouples (T1-T2).

ADJUST THERMOCOUPLE OFFSET


1. Insert the thermocouple into a known temperature (T) until the display stabilizes near the known temperature (T).
example: ice point at 0°C or boiling water at 100°C
2. Press and hold the “ADJ/HOLD” button for 2 seconds until the display starts to blink.
3. Press “▲” or “▼” to adjust the displayed value.
4. It can be adjusted $\pm 6^{\circ}\text{F}$ ($\pm 3^{\circ}\text{C}$) from default. If you can not adjust your reading to match the known temperature (T), please check your T/C type. The meter may require calibration.
5. Press “ENTER” button to confirm.

OPERATOR MAINTENANCE

WARNING

To avoid possible electrical shock, disconnect the thermocouple connectors from the thermometer before removing the cover.

Battery Replacement

1. Power is supplied by 4pcs 1.5V (AAA SIZE) UM-4 R03.
2. The “” appears on the LCD display when replacement is needed. To replace battery remove screw from back of meter and lift off the battery cover.
3. Remove the battery from battery contacts and replace.
4. When not in use for long periods remove battery.
5. Do not store in locations with high temperatures, or high humidity.

Cleaning

Periodically wipe the case with a damp cloth and detergent, do not use abrasives or solvents.

WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **12 months** from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

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Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence. The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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