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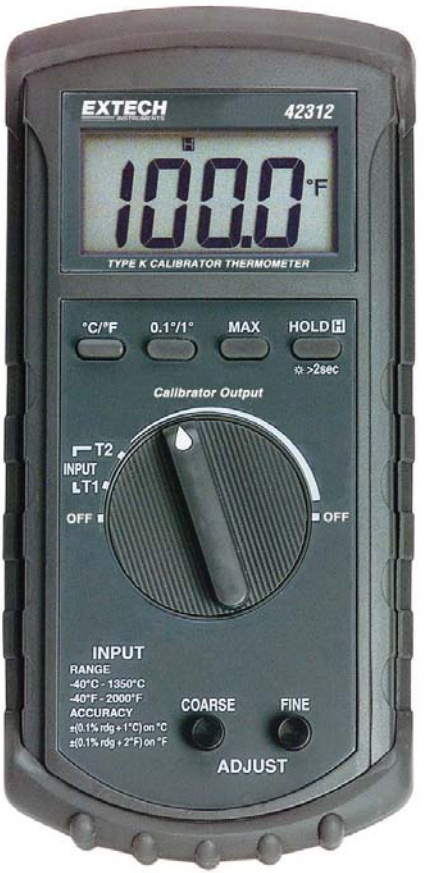
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Find the *Extech Instruments 42312 K* at our website: *Click HERE*

EXTECH INSTRUMENTS

User's Guide

Digital Thermocouple Calibrator & Thermometer



Models:

42311 Type J
42312 Type K

Introduction

Congratulations on your purchase of Extech model 42311 or 42312 Digital Thermometer and Calibrator. Properly used, this meter will provide many years of reliable service.

WARRANTY

EXTECH INSTRUMENTS CORPORATION warrants this instrument to be free of defects in parts and workmanship for one year from date of shipment (a six month limited warranty applies on sensors and cables). If it should become necessary to return the instrument for service during or beyond the warranty period, contact the Customer Service Department at (781) 890-7440 ext. 210 for authorization. **A Return Authorization (RA) number must be issued before any product is returned to Extech.** The sender is responsible for shipping charges, freight, insurance and proper packaging to prevent damage in transit. This warranty does not apply to defects resulting from action of the user such as misuse, improper wiring, operation outside of specification, improper maintenance or repair, or unauthorized modification. Extech specifically disclaims any implied warranties or merchantability or fitness for a specific purpose and will not be liable for any direct, indirect, incidental or consequential damages. Extech's total liability is limited to repair or replacement of the product. The warranty set forth above is inclusive and no other warranty, whether written or oral, is expressed or implied.

Safety Precautions

1. Make sure any covers or battery doors are properly closed and secured.
2. Remove the battery from the meter if the meter is to be stored for long periods.
3. Touching the thermocouple to a device which is powered electrically can cause damage to the meter and may pose a shock hazard.
4. To avoid damage do not make temperature measurements in microwave ovens.

Specifications

Display	3 ½ digit (1999 Count) LCD (Liquid Crystal Display)
Temperature Scale	ºC or ºF (user-selectable)
Thermocouple type	Model 42311: type J; Model 42312: type K
Measurement and Source Ranges	Model 42312: -40º to 2000ºF (-40º to 1350ºC) Model 42311: -40º to 1400ºF (-40º to 760ºC)
Resolution	1ºC/F or 0.1ºC/F (< 200ºF/C)
Accuracy	±(0.1% rdg + 2ºF) or ±(0.1% rdg + 1ºC)
Temp. Coefficient	0.1 times the applicable accuracy spec per ºC or ºF from 32º to 64ºF and 82º to 122ºF (0º to 18ºC and 28º to 50ºC)
Input Protection	24VDC or 24VAC RMS maximum input voltage
Display Update	2.5 times per second
Input Connector	Accepts standard subminiature thermocouple connectors
Battery	9V battery (200 hour typical battery life)
Dimensions/Weight	7.5x3.54x2.1 inches (190x90x53 mm) / 1 lb (440g)

Meter Front Panel Description

1. Display
2. C/F Selector Key
3. Low/High Resolution Key
4. Max Hold Key
5. Hold/Backlight Key
6. Function Switch
7. Course Adjustment Knob
8. Fine Adjustment Knob



Features

Selecting the Temperature Scale

Readings can be displayed in Celsius or Fahrenheit by pressing the ºC/ºF key. The ºC or ºF annunciator will illuminate on the display depending on which scale you have selected.

Adjustable Resolution

The resolution of the meter can be switched from 0.1º (up to 199.9) to 1º by pressing the 0.1º/1º key.

Max Hold

Max hold will freeze the highest recorded reading on the display. When the **MAX** key is pressed the **MAX** icon will appear in the upper portion of the display. The display will update every time there is a new maximum reading. Pressing MAX again will disengage Max hold.

Backlit display

Press the **Hold** key for 2 seconds to toggle the Backlight ON and OFF. The backlight will stay on until you press the **Hold** key for 2 seconds again, or turn the meter off.

Data Hold

The hold function freezes the displayed reading for later viewing. Press the **HOLD** key momentarily to activate the Data Hold feature. Press again to exit the Hold mode.

Operation

WARNING: To avoid electrical shock, do not use this instrument when voltages at the measurement surface exceed 24VAC or DC.

Temperature Measurement

1. Plug a thermocouple into the T1 or T2 input jack.
2. Turn the function switch to the T1 or T2 position depending upon where the thermocouple is physically connected per step 1 above.
3. Touch the temperature probe to the surface, liquid or gas being measured and observe the reading on the display.

NOTE: Both T1 and T2 inputs can be used simultaneously, but only one reading can be displayed at a time. Always move the rotary function switch to the OFF position when the meter is not in use.

Temperature Calibration (Source)

NOTE: When calibrating temperatures over 199.9º you must change the resolution to the 1º scale or the meter will display "**OL**"

1. Connect a thermocouple cable (Type J for Model 43211 or Type K for Model 43212) to output 1 or 2 at the top of the meter. These jacks have the same signal available on both output 1 and output 2 terminals.
2. Connect the other end of the thermocouple cable to the instrument(s) to be calibrated.
3. Using the range switch, coarse and fine adjustment knobs set the meter to the desired output. See explanation below.

How to use the Range Switch and Coarse/Fine Adjustments

In addition to the T1, T2, and OFF positions, the Rotary switch has 7 output range positions that move low to high (left to right) underneath the words Calibrator Output on the front panel (also designated by the white strip over the Rotary switch).

1. Use the Rotary switch to find the closest range of the desired temperature output
2. Note that the meter outputs a mV signal corresponding to the temperature display which can be routed to a panel meter, recorder, datalogger, controller, another calibrator, etc.
3. Adjust the Coarse knob to dial in even closer to the desired output temperature
4. Finally, adjust the Fine knob for the exact temperature output

Maintenance

Cleaning and Storage

Periodically wipe the case with a damp cloth and mild detergent; do not use abrasives or solvents. If the meter is not to be used for periods of longer than 60 days, remove the battery and store it separately

Battery and Fuse replacement

1. Remove the protective rubber holster from the meter
2. The battery cover is held in place by two Philips head screws, both screws must be removed in order to remove battery cover.
3. Remove and replace the 9V battery.
4. Replace compartment cover, screws and rubber holster.

Repair and Calibration Services

Extech offers complete repair and calibration services for all of the products we sell. For periodic calibration, NIST certification or repair of any Extech product, call customer service for details on services available. Extech recommends that calibration be performed on an annual basis to ensure calibration integrity.

☎
Tech Support Hotlines
781-890-7440 ext. 200
extech@extech.com
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