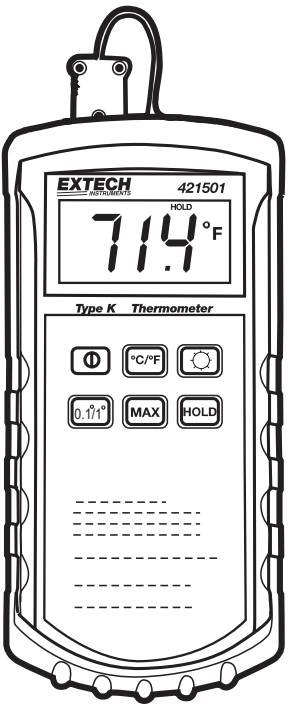
User's Guide

EXTECH INSTRUMENTS

Type K Digital Thermometer

Model 421501



Introduction

Congratulations on your purchase of the Extech 421501 Type K Digital Thermometer. This water resistant meter measures temperature with a Type K thermocouple. The thermocouple attaches to the meter with a sub-miniature plug. The meter's display is backlit and includes a Data Hold feature. Other features include Max Temperature and selectable units/resolution. This meter is shipped fully tested and calibrated and, with proper use, will provide 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 to 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 or visit our website www.extech.com for contact information. 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.

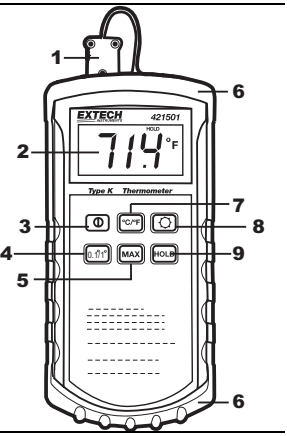
Specifications

Display	3-1/2 digit LCD (2000 counts)
Battery Power Supply	9V DC battery.
Battery life	200 hours typical
Dimensions / Weight	7.5 x 3.6 x 2.1" (192 x 91 x 52.5mm); 11.7oz. (365g)
Range / Resolution	-58 to 2000°F (-50 to 1300°C); 1° or 0.1°F/°C
	Important Note: The supplied thermocouple can only be used to measure temperature up to 500 °F (260 °C). To measure higher temperatures, a high temperature Type K thermocouple must be used.
Temperature units	Selectable °C or °F temperature units
Accuracy of meter	±(0.3% of reading + 1°C) from -50°C to 1000°C
	±(0.5% of reading + 1°C) from 1000°C to 1300°C
	±(0.3% of reading + 2°F) from -58°F to 2000°F
Temperature Coefficient	0.1 times the applicable accuracy specifications 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)
Water resistant housing	Gasket protected front panel
Input Protection	24VAC/DC max. input on any combination of inputs
Reading rate	2.5 times per second
Thermocouple connection	Meter accepts standard subminiature connector
Supplied thermocouple	Teflon insulated Type K thermocouple (4' length)
	Max temperature: 500°F (260°C); For higher temperatures, a high temp thermocouple must be used.
	Accuracy: ±4°F (±2.2°C) or ±0.75% of rdg
	(whichever is greater) from 32 to 1472°F (0 to 800°C)
Operating conditions	32 to 122°F (0 to 50°C); less than 80% RH
Storage conditions	-4 to 140°F (-20 to 60°C); less than 70% RH

Meter Description

1. Thermocouple plug
2. LCD Display
3. Power ON/OFF button
4. Resolution select button
5. Maximum reading mode button
6. Rubber protective jacket
7. Unit of measure ° C/ ° F select key
8. Backlight activation key
9. Data Hold key

Note: Battery compartment and Tilt Stand on rear of meter



Operation

Powering the Meter

Turn the meter on by pressing the **POWER** button. If the meter's display does not switch ON, check that the 9V battery is installed and is fresh. Press the **POWER** button to turn the meter OFF.

Connecting a Type K thermocouple

1. Plug a Type K thermocouple into the meter's input jack (top of meter). This meter accepts Type K thermocouples with spade plugs (sub-miniature type).
2. If a thermocouple is not inserted to the meter or the probe is malfunctioning, all dashes "------" will appear on the display. If dashes appear, ensure that the probe is properly connected. If dashes appear with the probe connected, try another probe.

Taking measurements

With the thermocouple connected and the meter ON, place the thermocouple in air, touching an object, or in a liquid solution. Read the temperature measurement on the LCD.

Important Note: The supplied thermocouple can only be used to measure temperature up to 500 °F (260 °C). To measure higher temperatures, a high temperature Type K thermocouple must be used.

Selecting °C/°F units of measure

Press the **°C/°F** key to select the desired temperature unit of measure.

Selecting the Resolution

Use the **0.1° / 1°** button to select the desired resolution. The decimal point location will reflect each press of the resolution button.

Display Backlight

Press the backlight button (sun symbol) to turn the LCD backlight ON. Press again to turn it OFF. Backlighting comes in handy in dimly lit areas and for nighttime use.

Data Hold

To freeze the LCD display, momentarily press the **HOLD** button. The 'H' icon will appear on the LCD when the Data Hold mode is accessed. Momentarily press the **HOLD** button again to return to normal operation (the 'H' hold icon will switch off).

MAX Temperature Mode

Press the **MAX** button to enter the Max mode (the MAX indicator will appear on the LCD). The meter then displays only the highest reading. Each time the temperature reading exceeds the currently displayed value, the displayed value changes and updates to the new MAX temperature. Press the **MAX** button again to exit the MAX mode.

Maintenance

Battery Replacement

When the low battery symbol appears on the display, replace the 9V battery. Follow the steps below:

1. Remove the rubber protective jacket that encases the meter. If this jacket is not removed, the battery compartment cannot be accessed.
2. Remove the two rear screws that secure the battery compartment.
3. Open the compartment and replace the 9V battery.
4. Secure the meter's battery compartment and rubber jacket before using the meter.

WARNING! To avoid possible electrical shock, disconnect the thermocouple before removing the battery cover.

Cleaning

Use a damp cloth with a mild detergent to periodically wipe the meter housing and display area. Do not use abrasives or solvents to clean the meter.

Calibration and Repair Services

Extech offers repair and calibration services for the products we sell. Extech also provides NIST certification for most products. Call the Customer Service Department for information on calibration services available for this product. Extech recommends that annual calibrations be performed to verify meter performance and accuracy.

Support line (781) 890-7440

Technical support: Extension 200; E-mail: support@extech.com

Repair & Returns: Extension 210; E-mail: repair@extech.com

Product specifications subject to change without notice

For the latest version of this User's Guide, Software updates, and other up-to-the-minute product information, visit our website: www.extech.com

Extech Instruments Corporation, 285 Bear Hill Rd., Waltham, MA 02451

Copyright © 2006 Extech Instruments Corporation

All rights reserved including the right of reproduction in whole or in part in any form.