

TW2 Thermometer – Operating Instructions

The thermometer is a non-contact infrared thermometer. Simply aim the thermometer at the target and press the SCAN button to display the surface temperature.

Laser Information:

By partially pressing the SCAN button, the device will begin to measure the temperature of the target. When the SCAN button is completely depressed, the laser will operate.



CAUTION!

1. WHEN DEVICE IS IN USE, DO NOT LOOK DIRECTLY INTO THE LASER BEAM. PERMANENT EYE DAMAGE MAY RESULT.
2. USE EXTREME CAUTION WHEN OPERATING THE LASER.
3. NEVER POINT THE DEVICE TOWARDS ANYONE'S EYES.
4. KEEP OUT OF REACH OF ALL CHILDREN.

°C OR °F MODE

To change the thermometer from °C to °F or from °F to °C, firstly turn the instrument on by pressing the SCAN button, then press the MODE button four times, the °C or °F symbol will flash, press the SCAN button to change to scale.

MINIMUM OR MAXIMUM MODE

To utilize the thermometer's minimum or maximum mode, firstly turn the instrument on by pressing the SCAN button, then press the MODE button once for minimum or twice for maximum function. The 'MIN' or 'MAX' icon will flash, then press the SCAN button to confirm the minimum or maximum mode. The thermometer will display the minimum or maximum reading only.

LOCK MODE

The lock mode is particularly useful for continuous monitoring of temperatures.

To utilize the thermometer's LOCK mode, firstly turn the instrument on by pressing the SCAN button, then press the MODE button three times for the lock mode function. The lock icon will flash, then press the SCAN button to confirm the lock mode. The thermometer will continuously display the temperature for up to 60 minutes or until the SCAN button is pressed again.

EMISSIVITY RANGE

The infrared thermometer is supplied with a default emissivity of 0.95. The emissivity of the thermometer can be changed from 0.05 (5E) to 1.00 (100E). Changes should only be carried out by experienced personnel. To change the emissivity, turn the instrument on by pressing the SCAN button, then press the MODE button five times for emissivity function. '95E' will flash on the LCD screen, then press the SCAN button to adjust the emissivity value, press the MODE button again to exit the set up screen. For information relating to the emissivity of specific materials, please refer to our website at www.thermoworks.com.

Note: Non-contact infrared thermometers are not recommended for use in measuring the temperature of shiny or polished metals.

Usage In Cold Temperatures

Most infrared thermometers, like the TW2, use a lens to focus the infrared energy on a sensor before converting to a displayed temperature. Temperature errors can occur when changing ambient conditions abruptly without adequate equilibration time. When taking low temperature readings in a walk-in cooler it is recommended to allow at least 20 minutes for the lens to stabilize in the new ambient temperature before readings are taken.

LCD ERROR MESSAGES

The thermometer incorporates visual diagnostic messages as follows:

Hi
Lo

'Hi' or 'Lo' is displayed when the temperature being measured is outside of the range of the instrument, 'Hi' when higher than +250°C (482°F) and 'Lo' when lower than 55°C (-67°F).

Er-2
Er-3

'Er2' is displayed when the thermometer is exposed to rapid changes in the ambient temperature. 'Er3' is displayed when the ambient temperature of the thermometer EXCEEDS 0°C (32°F) OR +50°C (122°F). In both cases you should allow plenty of time (minimum 20 minutes) for the thermometer to stabilize to the working/room temperature.

Er

For all other error messages it is necessary to reset the thermometer. To reset it, turn the instrument off, remove the battery and wait for a minimum of one minute, reinsert the battery and turn on. If the error message remains please contact the Service Department for further assistance.

BATTERIES

The thermometer has two separate batteries. The battery closer to the side of the laser beam output is for laser operation only. The other battery is designated for temperature measurements. The thermometer can still measure temperature properly without the laser battery.

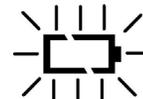
The thermometer incorporates visual low battery indication for the temperature measurement battery as follows:



'Battery OK': measurements are possible



'Battery Low': battery needs to be replaced, measurements are possible



'Battery Exhausted': measurements are not possible

BATTERY REPLACEMENT

When the 'Low Battery' icon indicates the battery is low, the battery should be replaced immediately with a CR2032 lithium cell. The battery is located under the twist cover at the rear of the thermometer. Please note: It is important to turn the instrument off before replacing the battery otherwise the thermometer may malfunction.

Dispose of used battery properly and keep away from children.

STORAGE & CLEANING

The sensor lens is the most delicate part of the thermometer. The lens should be kept clean at all times, care should be taken when cleaning the lens using only a soft cloth or cotton swab with water or medical alcohol, allowing the lens to fully dry before using it, do not submerge any part of the thermometer.

SPECIFICATIONS

Measurement Range	-55 to +250°C (-67~482°F)
Operating Range	0~50°C (32~122°F)
Accuracy (Tobj=15-35°C, Tamb=25°C)	+/-1.0°C (1.8°F)
Accuracy (Tobj=-33~250°C, Tamb=23±3°C)	±2% of reading or 2°C (4°F) whichever is greater
Resolution (-9.9~199.9°C)	0.1°C / 0.1°F (switchable)
Response Time (90%)	1 second
Distance:Spot	6:1 optics ratio
Emissivity Range	0.95 default adjustable 0.05 to 1.00 emissivity
Battery Life	Typ. 40hr, min 30hr (auto power off after 15 seconds)
Battery	CR2032 (for Laser, 2pcs required)
Dimensions	22.5 x 50 x 103mm
Weight	65 grams including batteries

EMC/RFI

Readings may be affected if the unit is operated within radio frequency electromagnetic field strength of approximately 3 volts per meter, but the performance of the instrument will not be permanently affected.

GUARANTEE

The thermometer is guaranteed for a period of one year from the date of purchase against mechanical and electrical manufacturing defects. There are no user serviceable parts inside the instrument. Any attempted repair by unauthorized persons voids the warranty.



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