User Manual

TRIPLETT

IRT500

20:1 IR Thermometer with High Temp/Circular Laser and Alarms

CE

Introduction

Congratulations on your purchase of the Triplett IRT500 IR Thermometer with High Temp/Circular Laser and Alarms. This thermometer makes non-contact (infrared) temperature measurements at the touch of a button. The built-in circular pointer increases target accuracy while the backlit LCD and handy multi-switch combine for convenient, ergonomic operation.

Features

- Measures non-contact surface temperature up to 1832°F (1000°C)
- 20:1 Distance to Spot Ratio (Field of View)
- Precise non-contact measurements
- Multipoint laser sighting (Circular)
- Unique flat surface, modern housing design
- Automatic Data Hold
- "MAX/MIN/AVG/DIFF" function
- Emissivity Digitally adjustable from 0.10 to 1.0
- Adjustable High and Low Alarms
- Backlight LCD display.
- Automatic selection range and Display Resolution 0.1°C(0.1°F).
- Adjustable high and low alarms with Red Backlight
- Type-K Input

Safety

International Safety Symbols

This symbol, adjacent to another symbol or terminal, indicates the user must refer to the manual for further information

Warnings

- Do not directly or indirectly point the laser at the eyes

of a person or an animal
Inspect for damage or for any shortage of parts or accessories before use

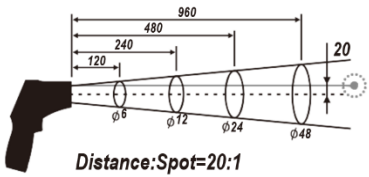
- Replace the batteries immediately after the battery indicator flashes ○ Do not use the thermometer near explosive gases, steam, or dust
- Note that an object with high reflectivity will normally cause the measured temperature value to read much lower than the actual temperature
- Use the device only as described in this User Guide

Cautions

- To avoid thermometer damage, please avoid the following hazards: EMF from welding equipment or electro-induction heaters ○ Static electricity
- Thermal shock caused by large or abrupt environmental temperature changes; wait 30 minutes to allow the thermometer to stabilize to new environmental conditions
- Do not use this device in excessively high temperature environments

Distance & Spot Size

- As the distance(D) from the object increases, the spot size (S) of the area measured by the unit becomes larger.
- The relationship between distance and spot size for each unit is listed below.
- The focal point for each unit is 254mm (10”).



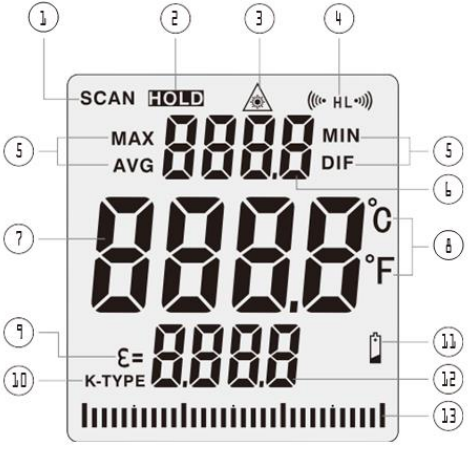
- The spot sizes indicate 90% encircled energy.

METER DESCRIPTION

1. Laser
2. IR Sensor
3. Type K Input
4. Measurement Trigger
5. Battery Compartment
6. LCD Display
7. UP Button (For EMS, LAL and HAL)
8. Laser/Backlight Button
9. Down Button (For EMS, LAL and HAL)
10. MODE Button
11. Lanyard Hole

DISPLAY LCD DESCRIPTION

1. Scan Icon
1. DATA HOLD
2. Laser ON Indicator
3. HI and Low Alarm Symbol
4. MAX/ /AVG/ Mode Indicator
5. MIN/DIF Mode Indicator
6. Min/Max/Avg/Diff Measurement Data
7. Measurement Data
8. °C/°F Icon
9. Emissivity
10. Type K Symbol
11. Battery Status
12. Emissivity Value and Type K Data
13. Temperature Change Indication



Operation

NOTES:

1. In HOLD MODE, Use the MODE Button to change MAX/MIN/DIF/AVG.

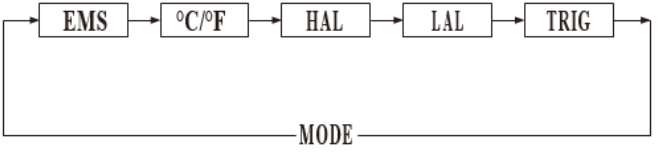
2.In Measurement Mode, if the TYPE-K thermocouple is connected, the Type-K data will displays in the lower left quarter automatically,during this this time, it cannot display EMS.

3.To set values for the High Alarm (HAL), Low Alarm (LAL) and Emissivity (EMS), press and hold the MODE Button until the appropriate code appears in the display, press the Up and Down Buttons to adjust the desired values.

4-You can turn ON/OFF the Backlight/Laser by pressing Laser/Backlight Button at any state.

MODE Button Function

- Press the MODE Button also allows you to access the set state, Emissivity (EMS), °C/°F, HAL adjustment, LOW adjustment, Each time you press set you advance through the mode cycle.
- The diagram shows the sequence of functions in the mode cycle.



EMS Adjustment

- The Emissivity (EMS) digitally adjustable from 0.10 to 1.0.

Changing Units (°C/°F)

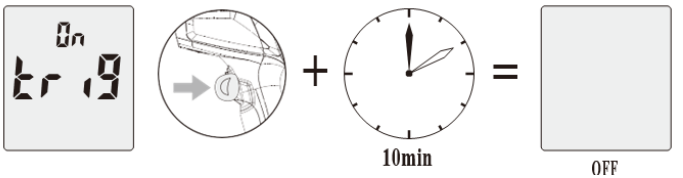
- Pressing Up/Down Button to change the temperature unit (°C or °F).

Alarms ON/OFF (High and Low)

- Press the Laser/Backlight Button to turn ON/OFF
- Press the measurement trigger to confirm the High (Low) alarm mode Hal (Low) adjustment.
- The High (Low) alarm adjustable form -50 to 1000°C (-58 to 1832°F)

TRIG

- The function of TRIG means that when the TRIG is turn on ,press and hold the trigger for more than 10 minutes ,the device will turn off.



MAX MIN DIF AVG Display

MAX MIN DIF AVG indicate the MAX MIN DIF AVG record that displays between the pressing and releasing the “ON/OFF” Button each time.

MAX=Maximum; Maximum value of measurement. MIN=Minimum; Minimum value of measurement. DIF=Difference; Difference value of measurement. AVG=Average; Average value of measurement.

Measurement Operation

- Hold the meter by its handle grip and point it toward the surface to be measured.
- Pull and hold the Trigger to turn the meter on and begin testing, the display will light if the battery is good, replace the battery if the display does not light.
- The meter will automatically power down after approximately 8 seconds after the trigger is released.

****NOTES:**

- Holding the meter by its handle, point the IR Sensor toward the object whose temperature is to be measured.
- The meter automatically compensates for temperature deviations from ambient temperature.
- Keep in mind that it will take up to 30 minutes to adjust to wide ambient temperatures are to be measured followed by high temperature measurements, some time (several minutes) is required after the low (and before the high) temperature measurements are made, this is a result of the cooling process, which must take place for the IR sensor.

Battery Replacement

- If the battery power is not sufficient, LCD will display "" Replace with a new 9V battery.
- Open the battery cover, then take out the battery from instrument and replace with new battery and place the battery cover back.

**Notes

How it Works

- Infrared thermometers measure the surface temperature of an object.
- The unit's optics sense emitted, reflected and transmitted energy, which is collected and focused onto a detector.
- The unit's electronics translate the information into a temperature reading, which is display on the unit.
- In units with a laser, the laser is used for aiming purposes only.

Field of View

- Make sure that the target is larger than the unit's spot size.
- The smaller the target, the closer you should be to it.
- When accuracy is critical, make sure the target is at least twice as large as the spot size.

Distance & Spot Size

As the distance (D) from the object increases, the spot size (S) of the area measured by the unit becomes larger.

Locating a Hot Spot

To find a hot spot aim the thermometer outside the area of interest, then scan across with an up and down motion until you locate hot spot.

Reminders

- Not recommended for use in measuring shiny or polished metal surfaces (stainless steel, aluminum, etc.), see Emissivity.
- The unit cannot measure through transparent surfaces such as glass, it will measure the surface temperature of the glass instead.

- Steam, dust, smoke, etc., can prevent accurate measurement by obstructing the unit's optics.

Emissivity

- Emissivity is a term used to describe the energy-emitting characteristics of materials.
- Most (90% of typical applications) organic materials and painted or oxidized surfaces have an emissivity of 0.95 (Pre-set in the unit).
- Inaccurate readings will result from measuring shiny or polished metal surfaces.

Maintenance

- Repairs or service are not covered in this manual and should only be carried out by qualified trained technician.
- Periodically, wipe the body with a dry cloth.
- Do not use abrasives or solvents on this instrument.
- For service, use only manufacturer's specified parts.

Specifications

IR Range / Resolution	-58~1832ºF (-50~1000ºC)
Accuracy	Assumes ambient operating temperature of 23 to 25°C (73 to 77°F) ±3.5°C (6.3°F) at -50 to 20°C (-58 to 68°F) ±1.0% ±1.0°C (1.8°F) at 20 to 300°C (68 to 572°F) ±1.5% at 300 to 1000°C (572 to 1832°F) 0.1°C (0.1°F) <1000; 1°C
Type K Range / Resolution/Accuracy	50 to 1370°C (-58 to 2498°F) ±2°C (3.6°C) at -50 to 0°C (-58 to 32°F) ±0.5% of reading ±1.5°C (3°F) at 0 to 1370°C (32 to 2498°F) 0.1°C (0.1°F) <1000; 1°C (1°F)>1000
Response Time	150ms (95% of reading)
Repeatability (% of reading)	±1.8°C (3.2°F) at -50 to 20°C (-31 to 68°F) ±0.5% or ±0.5°C (0.9°F) at 20 to 1000°C (68 to 1832°F)
Emissivity	Adjustable from 0.10 to 1.00
Temp. Coefficient	0.1°C/°C or ±0.1%/°C of reading (whichever is greater)
Field of View	D/S = Approx. 20:1 ratio (D = distance, S = spot)
Laser power	Less than 1mW
Spectral response	8 to 14 microns

General Specifications

Display	Backlit LCD display with function indicators
Display resolution	0.1°C (0.1°F)
Operating Temperature	0°C to 50°C (32°F to 122°F)
Operating Humidity	10 to 90% RH non condensing @ 30°C (86°F)
Storage Temperature	-10 to 60°C (14 to 140°F)
Operating Altitude	6000m (19,685 ft.) above sea level
Storage Altitude	12,000m (40,000 ft.) above sea level
Drop Proof	1.2m (4 ft.)
Power Supply	2 x1.5V AA IEC LR06 batteries
Weight	318g (11.2 oz.)
Dimensions	7.3 x 4.3 x 2.2" (186 x 110 x 57mm)
Vibration and Shock	IEC 60068-2-6 2,5g, 10Hz to 200Hz IEC 60068-2-27 50g, 11ms
EMC	EN61326-1:2006 EN61326-2:2006
Compliance	EN/IEC 61010-1

Warranty

Triplett / Jewell Instruments extends the following warranty to the original purchaser of these goods for use. Triplett warrants to the original purchaser for use that the products sold by it will be free from defects in workmanship and material for a period of (1) one year from the date of purchase. This warranty does not apply to any of our products which have been repaired or altered by unauthorized persons in any way or purchased from unauthorized distributors so as, in our sole judgment, to injure their stability or reliability, or which have been subject to misuse, abuse, misapplication, negligence, accident or which have had the serial numbers altered, defaced, or removed. Accessories, including batteries are not covered by this warranty