BSI®

BT-66
IR THERMOMETER WITH EXTERNAL PROBE AND CARD STORAGE FUNCTION

OPERATION MANUAL

1. SAFETY RULES

- To ensure the device is used safely, follow the operation manual's safety and operating instructions. If the device is not used as described in this operation manual, the safety features of this device might be impaired.
- Do not look directly into the laser beam when the device is in use–permanent eye damage may result.
- Use extreme caution when operating the laser.
- Never point the device towards anyone's eyes.
- Keep out of reach of children.

2. INTERNATIONAL SYMBOLS
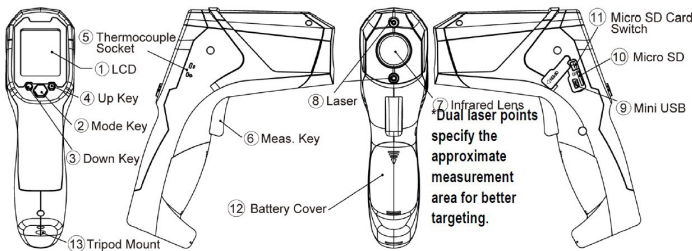
⚠ Important information see manual

☢ Laser device. Avoid towards anyone's eyes

3. SPECIFICATIONS

Item	Non-contact Infrared Scan Function	Thermocouple Probe Scan function (K type; probe not included.)
Measurement Range	100 to 2000°C (212 to 3632°F)	-64 to +1400°C (-83.2 to +2552°F)
Operating Range	0 to +50°C (32 to 122°F)	
Accuracy (Tamb. = 23±3°C)	±2% of reading	±1% of reading or 1°C (1.8°F), whichever is greater (Test under Tamb.=23±6°C)
Emissivity Range	0.95 default – adjustable 0.1 to 1 step .01	
Resolution	0.1°C/0.1°F at -83.2 to +999.9(°C/°F), otherwise 1°C/1°F	
Spectral Range	2.3µm	
Response Time (90%)	1sec	
Distance: Spot	75:1 (90% energy covered)	
Internal Memory	Detailed 24 Memories with Temperature & Emissivity	
External Memory Type	Support Micro SD card (Recommend to use the attached Micro SD card). If the SD card data logger is failed, please reset switch (11)	
USB Function	Please download the program from CD. (CD & USB cable are enclosed with the package)	
Output Interface	SPI, USB, SD card	
Battery Life (Alkaline)	Typical 14 hours, minimum 10 hours continuous use (with laser and backlight) Typical 20 hours, minimum 16 hours continuous use (with backlight only) *Backlight is default set fixed ON/ Laser is selectable ON/OFF	
Auto Power Off	12mins	
Laser	Class II Laser	
Dimensions	203 x 176 x 58.3 mm (8 x 7 x 2.3 inch)	
Weight	~400 g (14.1 oz.) including batteries (AA*2pcs)	

Note: Under the electromagnetic field of 3V/m from 180 to 600 MHz, the maximum error is 10°C (18°F).
Not recommend using an external K-type thermocouple for long time measurements above 1000°C (1832°F).
Max. support 128GB SDHC Card. If using an SDHC memory card other than supplied, recommended testing it before use.

4. THERMOMETER DESCRIPTIONS

⑤ Thermocouple Socket
① LCD
④ Up Key
② Mode Key
③ Down Key
⑥ Meas. Key
⑧ Laser
⑦ Infrared Lens
⑫ Battery Cover
⑬ Tripod Mount
⑪ Micro SD Card Switch
⑩ Micro SD
⑨ Mini USB

*Dual laser points specify the approximate measurement area for better targeting.

A. Body and Function Keys
B. Default Screen

5. OPERATION

⚠ WARNING

1) The measurement range is for thermometers only. Users should choose proper probe types for different kinds of applications. Please ensure the target to be measured will not exceed the temperature range of the probe to avoid permanent damage to the thermocouple probe.

2) Caution: To avoid electric shock and thermometer damage, do not measure the live circuit with the thermocouple probe voltage exceeding 24V AC RMS or 60V DC.

3) EMC/RFI: Readings may be affected if the unit is operated within radiofrequency electromagnetic field strength of approximately 3 volts per meter, but the instrument's performance will not be permanently affected.

5.1 Function Selection

1. Press Mode Key (2) for scrolling display functions as follows:

Display	Function
E	Here will show the emissivity data. (The default emissivity is 0.95.)
↑E↓	Press Mode key (2), then press Up key (4) or Down key (3) to **set the emissivity**, then press Mode key (2) to confirm it. The emissivity can be changed from 0.10 (10E) to 1 (100E).
MAX MIN dIF AVG	Press Mode key (2) for the **Maximum (MAX), Minimum (MIN). Differences between MAX & MIN (DIF) and Average (AVG) modes. The special modes reading will be displayed beside the mode icon during the measurement.**
HAL LAL	Press Up key (4) or Down key (3) to change the **High Alarm (HAL)** or **Lo Alarm (LAL)**, then press Meas. Key (6) to confirm it. For example: When reading 26.9 °C < LAL 27 °C, the Low icon will flash, and you will hear a beep sound.
PRB	Connect the thermocouple with the thermocouple socket (5) and put the probe in/on the target. The Thermometer will display the temperature automatically without pressing any button. To see the minimum or maximum data during the probe measurement, please hold down the Up key (4) or Down key (3). ⚠ After measuring high temp, the probe may remain HOT for a while.
M00	After taking the temperature, press Mode key (2) for the **Memory (M00)**, then press Meas. key (6) to save the measurement. Under the **Memory (M00)**, press the Up key (4) or Down key (3) to display the record.

** The Thermometer will automatically shut off if left idle for more than 60sec. unless in PRB mode. (In PRB mode, it will shut off if left idle for more than 12 minutes.)

5.2 Other Function Selection

In E, MAX, MIN, DIF, AVG mode:	Press Up key (4) for LOCK mode ON/OFF. The lock mode is particularly useful for continuously monitoring temperatures for up to 60 minutes.
	Press Down key (3) for **°C** or **°F transferred.**
In MAX, MIN mode: Hold the Meas. key (6)	It shows **RED** colour when the reading is close to the maximum value and **BLUE** when close to the minimum. While the temperature is between the maximum and minimum, the bar will display **YELLOW**.
In all modes: First, hold the Meas. key (6)	A.LCD Backlight: always on. 🔅
	B.Press Down key (3) for laser pointer function ON/OFF. ☢

5.3 Temperature Measurement

1. Aim the Thermometer at the measured target with Lens (7) and press Meas. key (6) to display the surface temperature. The Distance: Spot is 75:1. Please make sure the target area is within the field of view.

** Data logger function (SD Card, USB): Recommend clamping "Micro SD Card Switch" (11) with tweezers and pulling it up to enable the function. Do not push the switch too hard.

5.4 LCD Error Messages

The Thermometer incorporates visual diagnostic messages as follows:

(((HI/LOW)))	'Hi' or 'Lo' is displayed when the temperature is measured outside the HAL and LAL settings.
Er2 Er3	'Er2' is displayed when the Thermometer is exposed to rapid changes in the ambient temperature. 'Er3' is displayed when the ambient temperature exceeds the range of 0°C (32°F) ~ 50°C (122°F). The Thermometer should be allowed plenty of time (minimum 30 minutes) to stabilize to the working/room temperature.
Er	Error 5~9 is necessary to reset the Thermometer for all other error messages. To reset it, turn the instrument off, remove the battery and wait for a minimum of one minute, reinsert the battery and turn it on. If the error message remains, please contact the Service Department for further assistance.
Hi Lo	'Hi' or 'Lo' is displayed when the temperature being measured is outside of the measurement range.

6. MAINTENANCE

⚠ **CAUTION**

BEFORE ATTEMPTING BATTERY REMOVAL OR REPLACEMENT, DISCONNECT EXTERNAL PROBES FROM AN ARTICLE UNDER TEST AND TURN THE THERMOMETER OFF

6.1 Fitting and replacing the battery

The Thermometer incorporates visual low battery indication as follows:

▭	'Battery OK': Thermometer function normal
▭	'Battery Low': battery needs to be replaced. The Thermometer still functions normally
▭	'Battery Exhausted': Thermometer does not function

1. When the 'Low Battery' icon indicates the battery is low, the battery should be replaced immediately with AA, 1.5V batteries. Please note: It is essential to turn the instrument off before replacing the battery; otherwise, the Thermometer may malfunction.
2. Dispose of used battery promptly and keep away from children.
3. If the device is not used for a long time, turn the power off, remove and store the batteries in a cool, dry place.

6.2 Storage & Cleaning

The Thermometer should be stored at room temperature between -20 to +65°C (-4 to +149°F) and 85% of relative humidity with no condensation or less. The sensor lens is the most delicate part of the Thermometer. The lens should be kept clean at all times. Take care when cleaning the lens using only a soft cloth or cotton swab with distilled water or medical alcohol, allowing the lens to entirely dry before using the Thermometer. Do not submerge any part of the Thermometer.

7. ACCESSORIES

The accessories contained inside the packaging are the following:

• English instruction manual	• 1.5V AA battery x 2
• Toolbox	• Application CD
• Mini USB Cable	• Micro SDHC Memory CARD

8. SERVICE

8.1 Limited Warranty Conditions

This Thermometer is guaranteed against any material fault or manufacturer's defect under the general conditions of sale. During the warranty period (12 months from shipment date), faulty parts may be replaced, with the manufacturer reserving the right to repair or replace the product.

The customer pays the inward outward transporter when returning the Thermometer to the after-sales Service or a regional branch. The delivery must be agreed upon in advance with the consignee.

For delivery, indicate the reasons for returning it through an enclosed note as simple as possible. Use only the original packing.

Any damage caused by shipment using NOT the original packaging will be charged in any case to the consignor.

The manufacturer will not be responsible for any damage to persons/ things.

The warranty does not apply to the following cases:
- Accessories and batteries are not included in the warranty.
- Unsuitable use of the Thermometer or combining the latter with incompatible Thermometer or accessories.
- Repairs resulting from incorrect shipping.
- Repairs resulting from servicing carried out by a person not approved by the company.
- Modifications to the Thermometer without explicit authorization from our technical department.
- Inappropriate applications are not provided for by the definition of the Thermometer or by the instruction manual.

The contents of this manual may not be reproduced in any form whatsoever without the manufacturer's authorization.

8.2 Before calling Service

If the Thermometer should not work correctly, before contacting the DEALER OR THE SERVICE CENTRE, check the battery condition, etc. Change them if necessary.

If the Thermometer still does not work, check if your operating procedure agrees with the description in this manual.

FOR TECHNICAL ASSISTANCE,
PLEASE CONTACT:

Remarks: Due to our policy of continual product development, we reserve the right to amend the specifications of the mentioned products without notice.

⚠ CE UK CA ⌧ 🗑 ♻

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REV1.0/MAY22