Mini Infrared Thermometer

Model: KC-180D

Manual

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Overview

KC-180D mini infrared thermometer is a non-contact temperature measuring instrument using infrared technology and laser pointer. You can use this product to measure the surface temperature, which is not suitable for traditional measuring (such as moving objects, charged objects, toxic objects or hard-to-reach objects).

The instrument features a low consumption design. It has a LCD with backlight, a laser pointer for accurate aiming and capable of auto holding the readings. It has the advantages of rapid measuring, easy operation and portability. It is widely used for applications such as finding the hot spot of electric connection and bearing, measuring the hot and high-frequency induction heated objects, monitoring food processing and storage, inspecting temperature for heating & refrigeration system, inspecting temperature for technics control of metallurgy industry, inspecting temperature during laying asphalt and fire-control work, or any other temperature measuring without compromising the temperature field. It is a good measuring tool for the metallurgy, the electric power plant, the chemical industry, the rubber industry, the spinning and weaving, the plastic, the papermaking and the food processing.

KC-180D mini infrared thermometer is a Class II laser product and in compliance with EN60825-1 safety standard.

Safety Instructions

Failure to follow the instructions listed below may cause personal injury.

●Read and understand all instructions prior to any operation.

●Do not remove any labels from the tool.

●Do not operate the tool with the presence of flammable/explosive gases.

●Do not operate the laser tool around children or allow children to operate the laser tool, failure to do so will injure children's eyes.

●Do not stare into the laser beam.

●Do not project the laser beam directly into eyes of others.

●Do not set up the tool at eye level or operate the tool on or near a reflective surface, as the laser could be projected into people's eyes.

●Do not observe the laser beam by using optical tools such as binoculars, magnifying glass.

●To avoid burning danger, remember that the reflected objects make the measuring temperature lower than the real one.

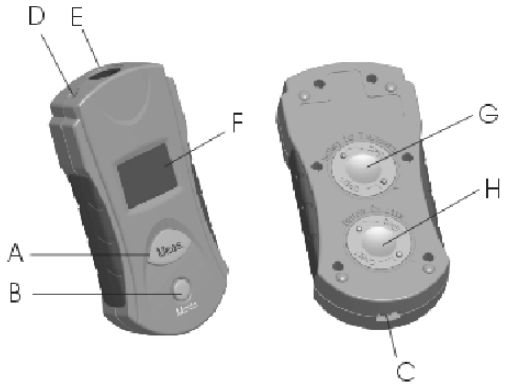
● Warning

DANGER
Class II Laser Product
Maximum Power Output< 1mW
Wavelength: 630-660nm
Do not stare into the beam!
Avoid direct eye exposure!
This tool emits a laser radiation!

Battery Safety Instructions

●Please remove the batteries when clean the product.
●Remove the batteries before long term storage
●Please install the batteries properly as the instructions of the positive and negative charges
●Please dispose the batteries properly. High temperature will cause explosions and do not burn the batteries. Strap insulated tape around the battery charges to avoid unsafe contacts with other objects.Many countries have regulations regarding battery disposal.Please follow the local regulations of battery disposing.

Instrument components



A．MEAS. key ——On/Measure

B．MODE key

C．Sling holder

D．Laser pointer

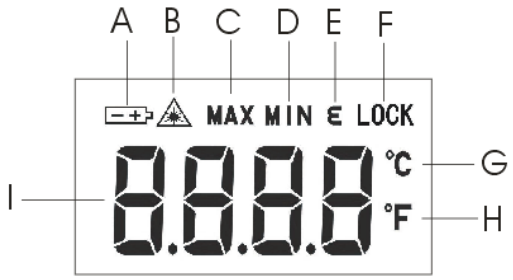
E．Infrared sensor window

F．LCD——display readings and other information

G．Thermometer battery compartment

H：Laser battery compartment

Illustration of display



A：Low battery indicator
B：Laser on
C：Display highest reading
D：Display lowest reading
E：Adjust emissivity indicator
F：Lock reading indicator
G：Centigrade
H：Fahrenheit
I：Reading

Functions and Operation Instructions

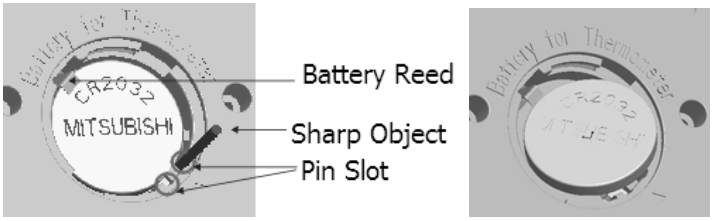
1. MEAS is the on/measure key. To guarantee an accurate reading, press and hold the MEAS key for at least 0.5 seconds. The reading will be held when release the MEAS key. The unit turns off itself when inactive for 15 seconds.
2. When the unit is on, press “MODE” key to change measuring method, emissivity, measure unit and reading locking.
3. MAX mode and MIN mode: press “MODE” key once or twice, then press “MEAS” key to choose the measuring method when “MAX” or “MIN” is flashing on display, once chosen “MAX” or “MIN” will stop flashing. Press “MODE” again to switch back to real time measuring mode.
4. Lock mode: press “MODE” three times, “LOCK” will flash on display, then confirm the lock mode by pressing “MEAS”. The thermometer will continuously display the temperature. Press “MODE” again to exit lock mode.
5. Measuring unit switch: press “MODE” four times, current unit symbol “℃” or “℉” will flash on display, then press “MEAS” again to switch to “℉” or “℃”.
6. Emissivity adjustment: firstly press “MODE” five times and the emissivity symbol “E” will flash, then press “MEAS” to display current emissivity. Increase the emissivity value by 0.01 each time press “MEAS”. Press “MODE” to confirm the setting value and exit adjustment mode. The emissivity range is 0.1 to 1.0.
7. Laser on/off: turn on the thermometer by directly pressing “MEAS”, the laser will be on; hold “MODE” and then press “MEAS” to turn on the unit with laser off.
8. When thermometer battery is low, the low power indicator “” will be shown on the upper part of the LCD screen. Change the laser battery when laser beam become weak, dim or simply off.
9. Hold “MODE” for two seconds to power off the thermometer.

Operation Instructions

● Battery replacement

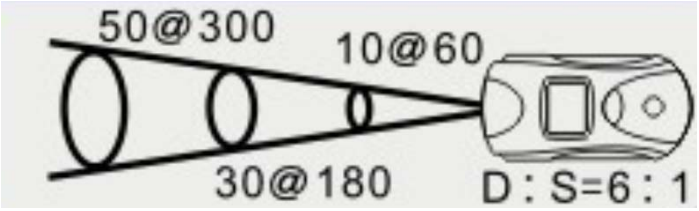
1. Install: two CR2032 cell is needed, one to power the measuring module and the other to power the laser module. Keep pressure on the raised spot located on the battery lid and turn it clockwise to open the battery compartment, place the cells and close the lid.

2. As shown in pictures below, insert a pin shape object into the pin slot to pry the cell.



● Temperature measuring

1. Point the thermometer to the target object and press MEAS to get temperature readings.
2. Measuring distance and measuring spot: referring to illustration below, for highest accuracy, the distance and diameter of measuring spot ratio D:S should be equal to or less than 6 to 1. The target surface should be larger than the field of view, as the distance increases, the measuring spot will increase as well.



3. Measuring radius: make sure the surface to be measured is larger than measuring spot. If the target is small, place the thermometer closer to the target. For an accurate reading, make sure the target surface is two times larger than measuring spot.

● Operation notes

1. No glass, plastic or water vapor .etc should be placed between the thermometer and target object.
2. Keep the device away from the following places to avoid damages:
   a. Environment with vapor and dust;
   b. EFM places（Electro-magnetic fields: such as arc welders, induction heaters）;
   c. Static environment;
   d. Heat shock (by abrupt and massive temperature changes, allow 30 minutes for unit to stabilize before use.);
   e. High temperature objects;

● Trouble shooting

Problems	Possible causes	Solutions
No display	Dead battery	Check and replace battery
Display "  "	Low battery	Replace measuring battery
Display "LO"	Target temperature is lower than range	Choose target of temperature within the measuring range
Display "HI"	Target temperature is higher than range	Choose target of temperature within the measuring range
Extremely low accuracy	①Target surface is smaller than measuring spot.	①According to D:S ratio, make sure target surface is larger than measuring spot.
	②Emissivity of target is far different from thermometer's.	

● Maintenance

1. Lens protection: abrupt temperature changes will cause condensing, do not wipe the lens if it happens, clean the lens with care after natural evaporation. Blow off loose particles using clean compressed air. Gently brush remaining debris away with camel hair brush. Carefully wipe the surface with a moist cotton cloth.
2. Keep clean, avoid dropping and shaking, use only mild soap and damp cloth to clean the tool. Never let any liquid get inside the tool or immerse any part of the tool into liquid.

C a u t i o n s

- Don't drop and use the tool by force.
- Don't disassemble the tool, (avoid to cause trouble).
- Keep the tool dry and clean.
- Don't place the tool with corrosive gas or objects.
- Avoid dust and water, which may stain the lens.
- Don't clean the lens by any solvent.
- Don't immerse the tool into water to avoid damage.
- In case of damage of tool by deterioration of battery.
- Remove the battery when not in use for an extended period of time.

Technical Specification

Product name	Mini Infrared Thermometer
Model	KC-180D
Measuring range	-30℃～250℃(-22℉～482℉)
Response wavelength	8～14μm
Measuring precision	±2℃(±3.6℉) or ±2%（When T>0℃）
	±3℃(±5.4℉) or ±2% whichever is greater（When T≤0℃）
Repetition	1% of reading or 1℃
Response time	500mSec，95% response
Optical ratio（D：S）	6:1
Emissivity	0.10-1 adjustable
Display resolution	±0.1℃
Laser wavelength	630～660nm
Laser power	<1mW
Laser class	Class II
Data hold	√
Temperature units exchange	√
Low battery indication	√
Auto turn off	No action in 15s
Power supply	Two CR2032 batteries
Max. power	<5 mA（laser off）
Working temperature	0℃～40℃(32℉～104℉)
Working humidity	0～75%RH non-condensing
Storage	-20℃～60℃(-4℉～140℉)，≤85%（w/o battery）
Dimension（length*width*height）	108 mm×52 mm×25mm
Weight（w/o battery）	About 60g（w/o battery）

Warranty

The product is warranted to be free from defects in materials and workmanship for a period of one year from the date of purchase on the basis of providing relevant card.

Notice: The warranty does not apply to the following conditions:

●Disassembling the laser tool will void the warranty.

●We are not responsible for any damage resulting from abrasion, water, dropping or disassembling.

Tips： Most parts of the product could be recycled, please refer to your local regulations for disposing of them instead of throwing into the dustbin.