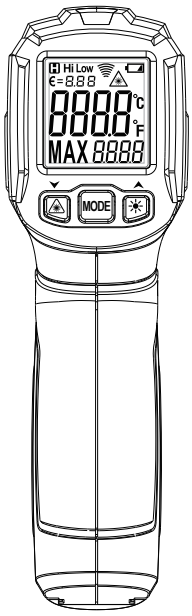
DAC

USERS MANUAL

NON-CONTACT INFRARED THERMOMETER



RoHS

CE

Y01-04-0161 A0

Before using the instrument,please read this manual carefully,and save it well for future using.

size:125x85mm

1. Safety notices

- Before using the thermodetector, please read the manual carefully.
- Do not use any solvent to clean the thermodetector.
- Safety symbols:

  ⚠ Important information prompt for danger

  CE Complies with European CE safety specification

  The instrument complies with the following standards:

  - EN61326-1
  - EN60825-1

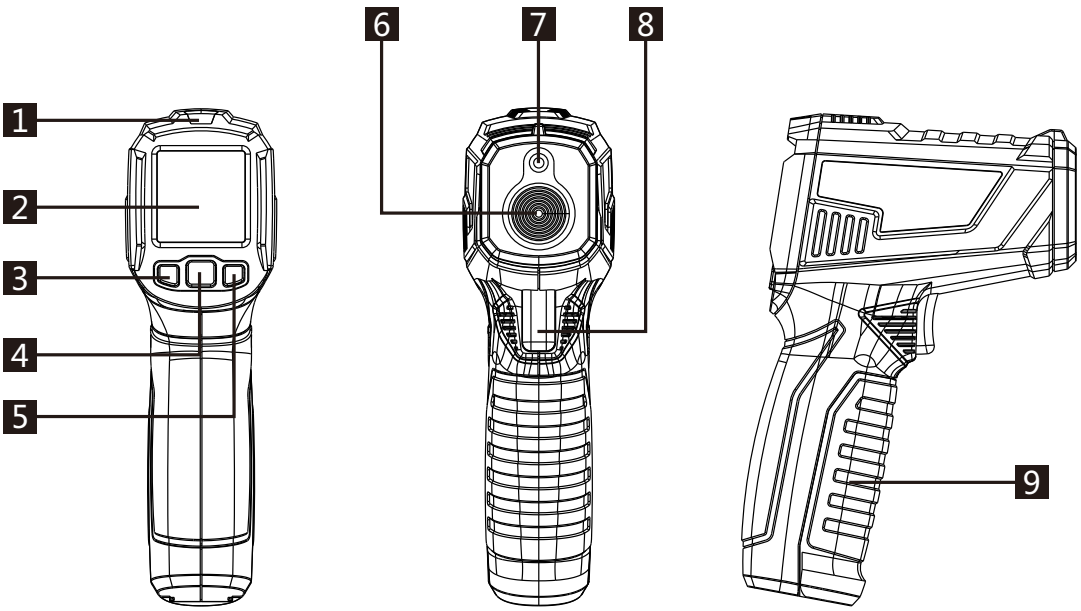
Warning! ⚠

Do not align the laser to human eyes or reflective surface

2. Notes

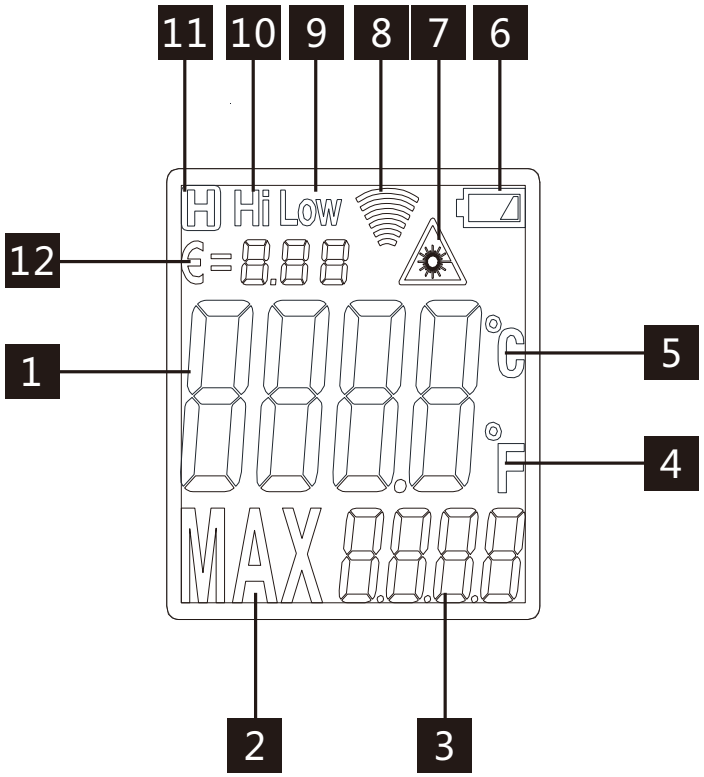
- When the ambient temperature changes in a sudden, it is required to place the thermodetector in the environment for 30 minutes, and measure when internal and external temperatures of the thermodetector coincide.
- Try to avoid any electromagnetic field caused by electric welding and induction heating.
- Do not place the thermodetector close to or on a high temperature object.
- Keep the thermodetector clean, and avoid dust from entering the tube.

3. Appearance description



1. Alarm indicator
2. Liquid crystal display
3. Laser control key/digital turn down key ▼
4. Mode key
5. Back-light/digital turn up key ▲
6. Infrared sensor induction zone
7. Laser indicator
8. Measurement trigger
9. Battery cover

4. Liquid crystal display description



1: Primary display: Displays measured temperature.
2: Function indication: MAX (Maximum value)
3: Displays the maximum value
4: Fahrenheit degree
5: Centigrade degree
6: Low voltage indication
7: Laser indication
8: Measurement indication
9: Low alarming
10: High alarming
11: Data hold
12: Radiance indication

5. Measurement methods

1. Set the upper limit of the instrument alarm:

Press and hold the Mode key for 2 seconds, to enter instrument setting, and press MODE key to shift to alarm upper limit setting, in this case, Hi is displayed in the instrument function indication zone, and the alarm upper limit is displayed in the zone. Press ▲/▼ key to increase or decrease the alarm value, and long press ▲/▼ key to accelerate the increase or decrease of the set value.

2: Set the low alarm value of the instrument

Press and hold the Mode key for 2 seconds, to enter instrument setting, and press MODE key to shift to alarm lower limit setting, in this case, Low is displayed in the instrument function indication zone, and the alarm lower limit is displayed in the zone. Press ▲/▼ key to increase or decrease the alarm value, and long press ▲/▼ key to accelerate the increase or decrease of the set value.

3: Set the instrument radiance

Press and hold the Mode key for 2 seconds, to enter the instrument setting, and press the MODE key to shift to the instrument radiance setting, in this case, the instrument radiance indication zone flashes. Press the ▲/▼ key to increase or decrease the radiation value, and long press the ▲/▼ key to accelerate the increase or decrease of the set value.

4: Set the instrument temperature unit

Press and hold the MODE key for 2 seconds, to enter the instrument setting, and press the MODE key to shift to the instrument temperature measurement unit, the unit symbol on the display flashes, and press the ▲/▼ key to change the unit symbol.

5: Exit the setting

Press the trigger or long press the MODE key, to exit the instrument setting.

6: Turn on/off laser

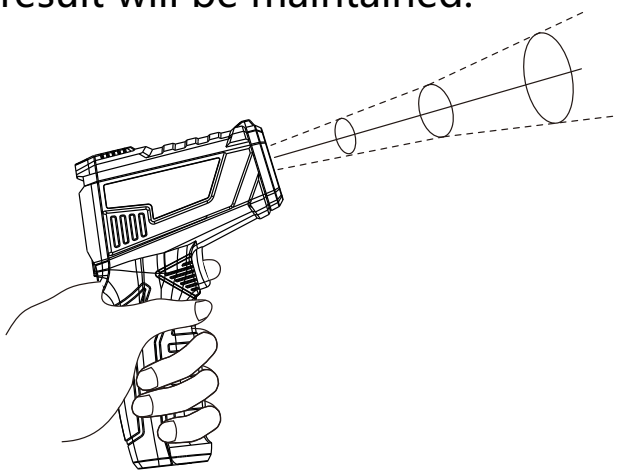
Press the key to turn on or off laser, and the instrument will display the laser symbol

7:Turn on or off back-light

Press the key to turn on or off back-light.

8: Non-contact temperature measurement

Aim the thermodetector at the object, and hold the trigger, to conduct continuous measurement of temperature. After displaying stably, release the trigger, and the measurement result will be maintained.

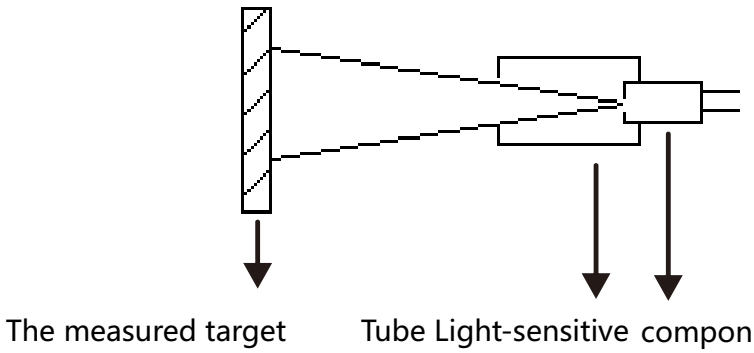


When holding the trigger, the secondary display of the instrument will display the maximum value of the measured temperature.

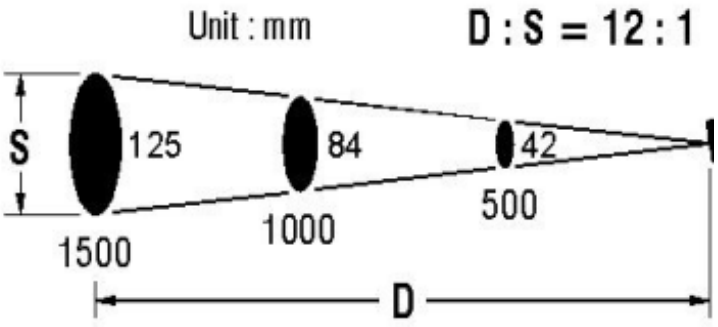
When the measured value is greater than the upper limit of high alarm or the measured value is less than the lower limit of low alarm, the red alarm indicator will turn on to alarm.

6. Target distance ratio (D:S ratio)

The thermodetector has a certain visual angle and visual field, as shown in the following figure.



In order to guarantee the measured object fills in the visual field of the thermodetector, which means the thermodetector only "sees" the measured object rather than other objects. Larger objects may cause larger temperature measurement distances; for smaller objects, the measurement distances must be close. The ratio of measurement distance to the measured target (D:S) is 12:1, as shown in the following figure:



7. Radiance

The radiance characterizes the ability of an object to radiate infrared ray. Larger radiance will lead to stronger radiation ability on the object surface.

Radiance of the majority of organic matters or metal oxidized surfaces ranges between 0.85 and 0.98. The radiance of the thermodetector is 0.95 by default. During measurement, set the radiance of the instrument the same with the radiance of the measured object. During measurement, please pay attention to the impact of emissivity on measurement results. The following table is the radiance reference table.

Measured surface		Radiance
Aluminum	Oxidized	0.2~0.4
	A3003 alloy (oxidized)	0.3
	A3003 alloy (coarse)	0.1~0.3

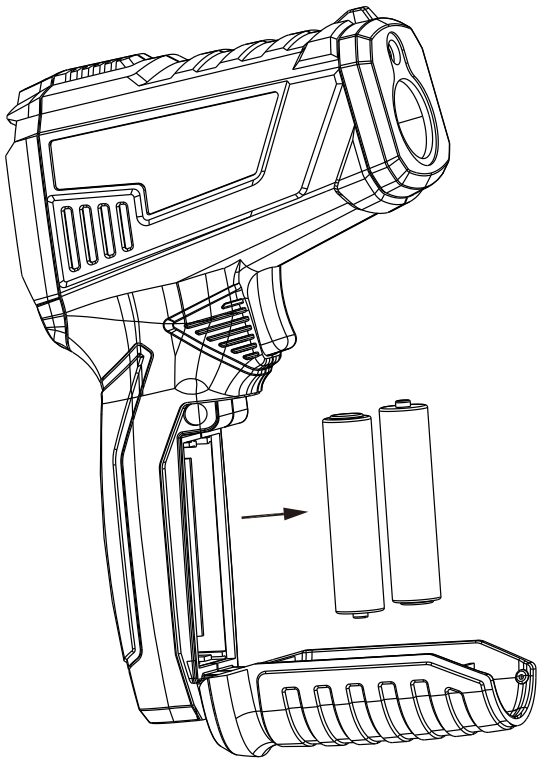
Brass	Polishing	0.3
	Oxidized	0.5
Copper	Oxidized	0.4~0.8
	Electrical terminal board	0.6
Hastelloy		0.3~0.8
Ferro-nickel	Oxidized	0.7~0.95
	Abrasive blasting	0.3~0.6
	Electropolishing	0.15
Iron	Oxidized	0.5~0.9
	Rust	0.5~0.7
Iron (casting)	Oxidized	0.6~0.95
	Unoxidized	0.2
	Fusion cast	0.2~0.3
Iron (casting)	passivation	0.9
Lead	Coarse	0.4
	Oxidized	0.2~0.6
Molybdenum oxidation		0.2~0.6

Nickel oxidation		0.2~0.5
Platinum black		0.9
Steel	Cold rolling	0.7~0.9
	Grinding steel plate	0.4~0.6
	Polished steel plate	0.1
Zinc	Oxidized	0.1
Asbestos		0.95
Asphalt		0.95
Basalt		0.7
Carbon (unoxidized)		0.8~0.9
Graphite		0.7~0.8
Silicon carbide		0.9
Ceramics		0.95
Clay		0.95
Concrete		0.95
Cloth		0.95
Glass plate		0.85
Gravel		0.95

Plaster	0.8~0.95
Ice	0.98
Limestone	0.98
Paper	0.95
Plastics	0.95
Soil	0.9~0.98
Water	0.93
Timber	0.9~0.95

8. Replacement of battery

When battery is low, the battery symbol will light up, in this case, it is required to replace the battery. Open the battery cover with your hands, and replace with a new 1.5Vx2AAA battery. Refer to the following figure:



9.Technical indexes

LCD display	Color LCD display
D:S	12 : 1

Radiance	0.10~1.00
Response spectrum	8~14um
Laser	<1mW /630-670nm Level 2
Response time	<0.5S
Automatic shutdown	30 seconds
Service temperature	0~40 degrees
Storage temperature	-10℃~60℃
Power supply	1.5Vx2AAAbattery
A: Measurement range (non-contact temperature measurement)	-50℃~0℃ ±3℃ 0~380℃ ±(1.5% +2℃) (-58℉~716℉)

B: Measurement range (non-contact temperature measurement)	-50℃~0℃ ±3℃ 0~550℃ ±(1.5% +2℃/4℉) (-58℉~1022℉)
Precision (non-contact temperature measurement)	-50℃~0℃ ±3℃ 0~550℃ ±(1.5% reading + 2℃/4℉)