

Operating instruction



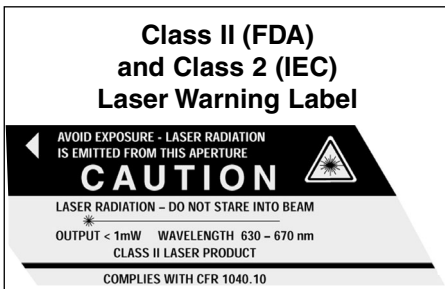
Infrared Temperature Measuring Instrument **AMiR 7805**

version 11/2003

Introduction

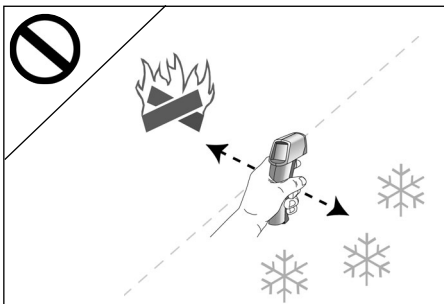
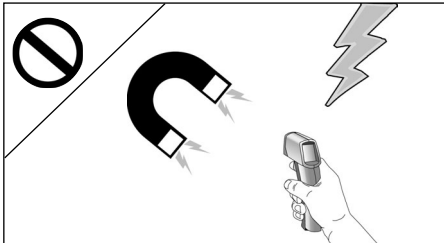
We are confident you will find many uses for your handheld noncontact thermometer. Compact, rugged, and easy to use—just aim, pull the trigger, and read current surface temperatures in less than a second. You can safely measure surface temperatures of hot, hazardous, or hard-to-reach objects without contact.

Before you start measuring, it is essential that you should read the warning and cautions on this page! In this way, you will avoid damage to your instrument and errors during operation.



Warning

Do not point laser directly at eye or indirectly off reflective surfaces.

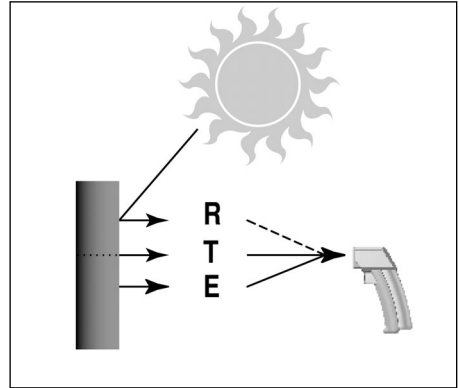


Cautions

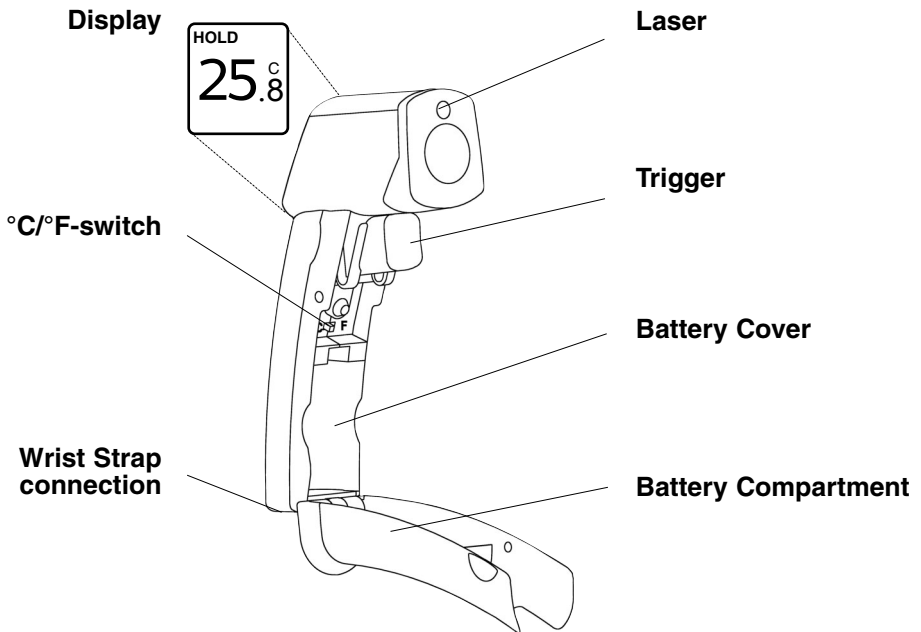
- Do NOT use the instrument near strong electromagnetic fields eg. of arc welders, induction heaters
 - Do NOT let the instrument get in contact to static electricity.
 - Allow 30 minutes for unit to stabilize in the measurement surrounding before use. This will avoid thermal shock by large or abrupt ambient temperature changes.
 - Do not leave the unit on or near objects of high temperature.
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How it Works

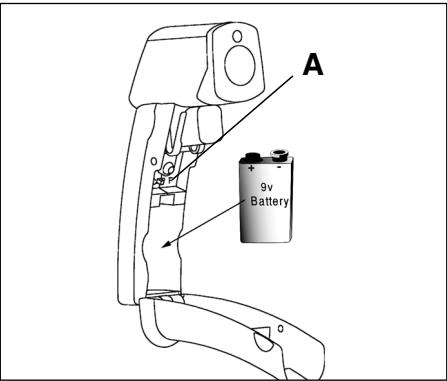
Infrared thermometers measure the surface temperature of an object. The unit's optics sense emitted (E), reflected (R), and transmitted (T) energy, which is collected and focused onto a detector. The unit's electronics translate the information into a temperature reading which is displayed on the unit. In units with a laser, the laser is used for aiming purposes only.



Operating controls

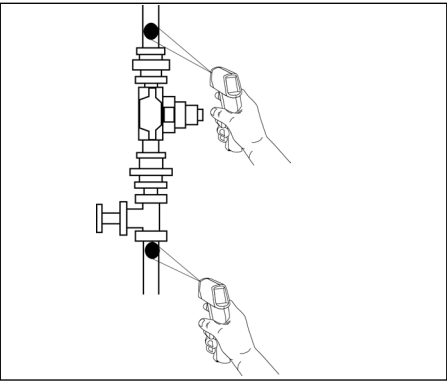


How to Operate the Unit



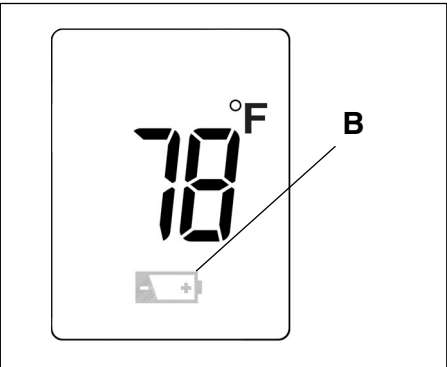
°C/°F and battery

Pull open the unit's handle using the finger indents near the trigger to access the C/F switch or to insert/remove the battery. To toggle between °C and °F, push the switch (A). Insert the 9v battery positive side first into the battery compartment. NOTE: The battery door is detachable.



Operating the Unit

To measure a temperature, point unit at object and pull the trigger. Be sure to consider distance-to-spot size ratio and field of view. If the unit is equipped with a laser, use the laser only for aiming. See How to Accurately Measure Temperatures.



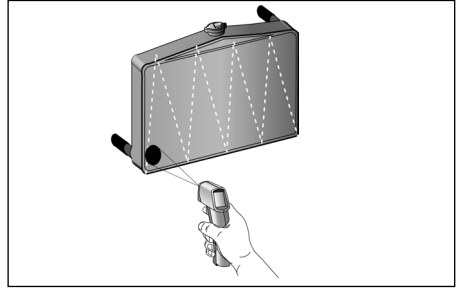
Display

The backlit LCD displays the current temperature in Celsius or Fahrenheit. The unit will hold the reading for 7 seconds after trigger is released; the word HOLD appears. The presence of the battery icon indicates a low battery (B).

How to Accurately Measure Temperature

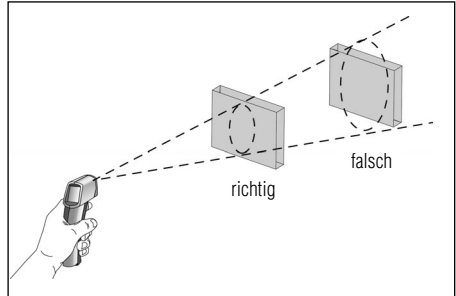
Locating a Hot Spot

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 the hot spot.



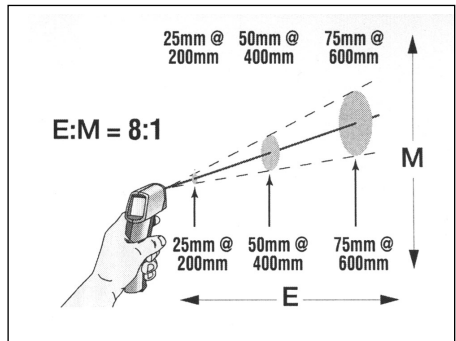
Field of View

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



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

Most 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. To compensate, cover the surface to be measured with masking tape or flat black paint. Allow time for the tape to reach the same temperature as the the material underneath it. Measure the temperature of the tape or painted surface.

Maintenance

Lens Cleaning:
Blow off loose particles using clean compressed air. Gently brush remaining debris away with a camel's hair brush. Carefully wipe the surface with a moist cotton swab. The swab may be moistened with water.
NOTE: DO NOT use solvents to clean the plastic lens.
Case Cleaning: Use soap and water on a damp sponge or soft cloth.
NOTE: DO NOT submerge the unit in water.

Troubleshooting

Code	Problem	Action
- - - (on display)	Target temperature is over or under range	Select target within specifications
Battery icon appears	Possible low battery	Check and/or replace battery
Blank display	Possible dead battery	Check and/or replace battery
Laser doesn't work	Low or dead battery	Replace battery

Technical data

Display:	Digital LCD-display with Hold-function (7 s long) and background lighting, switchable from °C to °F
Measure range:	-18 bis 275°C
Optical resolution:	8 : 1
Emission factor:	pre-adjusted 0,95 bei einer Umgebungstemperatur von 23°C ±5K
Accuracy:	±2% of meas. value or ±2°C, at -1 to 260°C, the higher value of each is valid at an ambient temperature of 23°C, ± 3°C, at -18 to -1°C
Reproducibility:	2° of meas.value or 2°C (the higher value of each is valid)
Response time:	(95%) 500 ms
Resolution of display:	0,5°C
Nominal temperature:	23°C ±5°C
Power supply:	9 V alcali-manganese-battery (IEC 6 LR 61) operating time 50 h or 9 V NiCd-accu with mains adapter
Working-/storage temperature:	0 to 50°C / -25 to 70°C (without batteries)
Relative humidity:	10 to 95%, not condensating at 30°C
Dimensions:	L101 x W38 x H152 mm
Weight	227 gr

Version:

favorable infrared-temperature measuring instrument for control
measurements of surface temperatures with laser sighting order no. MR 7805

Accessories:

Carrying case	order no. ZR 7805 BT
9 V battery	order no. ZB 2000 B9
Plug-in-charger with 9 V accu	order no. ZB 2000 LS
9 V accu single	order no. ZB 2000 A9



CE-Certification

This instrument conforms to the following standards:

- EN50081-1:1992, Electromagnetic Emissions
- EN50082-1:1992, Electromagnetic Susceptibility

Tests were conducted using a frequency range of 27-500 MHz with the instrument in three orientations. The average error for the three orientations is $\pm 4.8^{\circ}\text{C}$ ($\pm 8.6^{\circ}\text{F}$) at 3 V/m throughout the spectrum. However, between 190 MHz and 500 MHz at 3 V/m, the instrument may not meet its stated accuracy.

Warranty

We warrant this product to be free from defects in material and workmanship under normal use and service for a period of one year from date of purchase, except as hereinafter provided. This warranty extends only to the original purchaser. This warranty shall not apply to batteries. The warranty shall not apply to any product which has been subject to misuse, neglect, accident, or abnormal conditions of operation or storage. In the event of failure under warranty, return this product to the distributor or retailer from whom it was purchased for replacement or repair. Purchaser's exclusive remedy under warranty shall be replacement, repair, or refund of the purchase price.

The foregoing warranty is in lieu of all other warranties, expressed or implied, including but not limited to any implied warranty of merchantability, fitness, or adequacy for any particular purpose or use. We shall not be liable for any special, incidental, or consequential damages, whether in contract, tort, or otherwise.

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