

METRATHERM IR BASE

Temperature Sensor

3-447-091-03

2/12.20

1 Safety Precautions

Observe this documentation, in particular all included safety information, in order to protect yourself and others from injury, and to prevent damage to the instrument.

- Carefully and completely read and adhere to these operating instructions.
The document can be found at <http://www.gossenmetrawatt.com>. Retain this document for future reference.
- Carefully and completely read and adhere to the product documentation for the utilized measuring instrument.
- The instrument is an accessory and may only be used with instruments that specify it as accessory.
- The instrument may only be used for the tests/measurements described in the associated instrument's documentation.
- Tests/measurements may only be performed by a qualified electrician, or under the supervision and direction of a qualified electrician. The user must be instructed by a qualified electrician concerning performance and evaluation of the tests/measurements.
- Wear suitable and appropriate personal protective equipment (PPE) whenever working with the instrument.
- The instrument may only be used as long as it's in good working order.
Inspect the instrument before use. Pay particular attention to damage, broken insulation or kinked cables.
- If the instrument doesn't function flawlessly, remove it from operation and secure it against inadvertent use.
- If the instrument is damaged during use, e.g. through falling, remove it from operation and secure it against inadvertent use.
- Do not use the instrument after long periods of storage under unfavorable conditions (e.g. humidity, dust or extreme temperature).
- Do not use the instrument after extraordinary stressing due to transport.
- The instrument must not be exposed to direct sunlight.
- Only use the instrument in compliance with the specified technical data and under the specified conditions (ambient conditions, IP protection class, measuring category, etc.).
- Do not use the instrument if the battery compartment cover has been removed.
Otherwise you risk touching dangerous voltages.
- The instrument is a class 2 laser product that emits laser radiation which can cause of eye or optic damage.
Avoid direct eye exposure. Avoid eye exposure through reflection off surfaces.

2 Applications

Please read this important information!

2.1 Intended Use / Use for Intended Purpose

The METRATHERM IR BASE is a non contact temperature measurement accessory instrument. It may only be used with instruments that specify it as accessory.

The temperature is measured by pointing the METRATHERM IR BASE at the surface to be measured, and reading the temperature on the display of the instrument it is connected with. It automatically compensates for temperature deviations from ambient temperature.

Safety of the operator, as well as that of the instrument, is only assured when it's used for its intended purpose.

2.2 Use for Other than Intended Purpose

Using the instrument for any purposes other than those described in these instrument operating instructions is contrary to use for intended purpose.

2.3 Liability and Guarantee

Gossen Metrawatt GmbH assumes no liability for property damage, personal injury or consequential damage resulting from improper or incorrect use of the product, in particular due to failure to observe the product documentation. Furthermore, all guarantee claims are rendered null and void in such cases.

Nor does Gossen Metrawatt GmbH assume any liability for data loss.

2.4 Opening the Instrument / Repairs

The instrument may only be opened by authorized, trained personnel in order to ensure flawless, safe operation and to assure that the guarantee isn't rendered null and void. Even original replacement parts may only be installed by authorized, trained personnel.

Unauthorized modifications to the instrument are prohibited.

If it can be ascertained that the instrument has been opened by unauthorized personnel, no guarantee claims can be honored by the manufacturer with regard to personal safety, measuring accuracy, compliance with applicable safety measures or any consequential damages.

3 The Instrument

3.1 Scope of Delivery

Please check for completeness.

- | | |
|---|---|
| 1 | METRATHERM IR BASE temperature sensor (Z680A) |
| 1 | 9 V battery |
| 1 | Operating instructions (this document) |

3.2 Symbols on the Instrument



Warning concerning a point of danger (attention, observe documentation!)



Warning! Laser radiation



European conformity marking



The instrument and the battery may not be disposed of with household trash.

Current and further information is available on our website at <http://www.gossenmetrawatt.com> under the search terms "WEEE" and "environmental protection".

4 Technical Data

Power

Power supply:	9 V battery, type NEDA 1604 / IEC 6F22
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Ambient Conditions

Operating temperature:	0 ... +50 °C
Storage temperature:	-20 ... +60 °C
Relative humidity:	max. 80 %, no condensation allowed
Elevation:	max. 2000 m

Electrical Safety

Measuring category:	Cat 0
Pollution degree:	2
Protection class:	0 per IEC 61140

Electromagnetic Compatibility (EMC)

Interference emission:	EN 61326-1 class A
Interference immunity:	EN 61326-1 EN 61326-2-1

Mechanical Design

Protection:	Housing: IP40 per DIN VDE 0470-1/EN 60529
Housing :	164 × 50 × 40 cm (W × H × D)
Weight:	182 g

Measurements

Temperature range	-30 ... +550 °C
Output	1 °C or 1 °F (per 1 mV)
Accuracy	±2 % of reading or ± 2 °C (4 °F), whichever is greater. Accuracy is specified for ambient temperature range of +18 ... +28 °C.
Emissivity	0.95 fixed value

Field of View	Distance/spot size = approx. 8:1 ratio Object under test must be at least 2.54 cm. (Calculated at 90 % energy on the focal point.)	
Laser	power	Less than 1 mW
	wavelength	630... 670 nm
Spectral response	6 ... 14 µm (wavelength)	

5 Preparation

The METRATHERM IR BASE is powered by a 9 V battery. One battery is included in delivery; replacements must be provided. You have to install the battery before first use and replace it later if depleted. If the battery runs low, the low battery LED on the instruments lights up.

The measurement unit can be °C or °F. The unit is set by an internal switch located in the battery compartment. If you want to change the unit later on, also follow the steps below but without replacing the battery

Required tools: Philips screwdriver.

✓ The instrument is switched off.

1. Place the instrument face down on a stable surface.
 2. Loosen and remove the screw from the battery compartment cover.
 3. Unlock and remove the battery compartment cover.
 4. Set the internal °C/°F switch to the desired unit.
 5. Connect the 9 V battery to the battery snap.
 6. Insert the 9 V battery into the battery compartment, making sure that the wires are not damaged (e.g. squished).
 7. Place the battery compartment cover onto the battery compartment and press it back into place.
 8. Secure the battery compartment cover with the screw.
- ↳ The instrument is provided with power and ready for operation.

6 Operation

The METRATHERM IR BASE is an accessory. It's operation is described in the documentation of the instruments it may be used with.

General Information for Using the Instrument

When using the instrument, make sure that the target is larger than the instrument'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. Refer to the chart printed on the back of the instrument for more information.

The instrument automatically compensates for temperature deviations from ambient temperature. However, the IR sensor needs time (up to 30 minutes) to adjust to temperature changes.

7 CE Declaration

The instrument fulfills all requirements of applicable EU directives and national regulations. We confirm this with the CE mark. The CE Declaration of Conformity is available upon request.