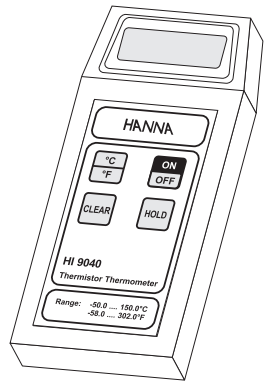


Instruction Manual

HI 9040

Portable Microprocessor Thermistor Thermometer



HANNA
instruments®
www.hannainst.com

WARRANTY

All Hanna Instruments meters are warranted for two years against defects in workmanship and materials when used for their intended purpose and maintained according to instructions. Sensors and probes are warranted for a period of six months.

This warranty is limited to repair or replacement free of charge.

Damages due to accidents, misuse, tampering or lack of prescribed maintenance are not covered.

If service is required, contact the dealer from whom you purchased the instrument. If under warranty, report the model number, date of purchase, serial number and the nature of the failure.

First obtain a Returned Goods Authorization number from the Customer Service department, then return the instrument with the Authorization # included along with shipment costs prepaid. If the repair is not covered by the warranty, you will be notified of the charges.

When shipping any instrument, make sure it is properly packaged for complete protection.

Dear Customer,
Thank you for choosing a Hanna product.
This manual will provide you with the necessary information for correct operation. Please read it carefully before using the meter.

If you need additional technical information, do not hesitate to e-mail us at tech@hannainst.com.

This instrument is in compliance with the CE directives.

PRELIMINARY EXAMINATION

Remove the instrument from the packing material and examine it carefully to make sure that no damage has occurred during shipping. If there is any noticeable damage, notify your dealer or the nearest Hanna Office.

Note: Save all packing materials until you are sure that the instrument functions correctly. Any defective item must be returned in the original packaging together with the supplied accessories.

GENERAL DESCRIPTION

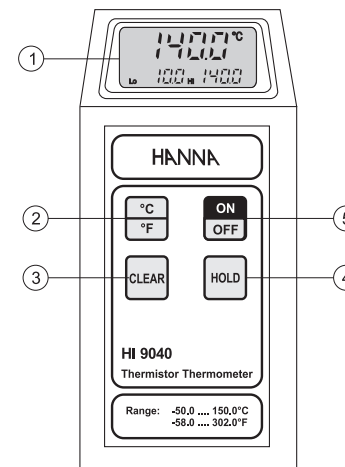
HI 9040 is a hand-held microprocessor-based thermometer which allows fast and accurate temperature measurements, using a calibrated thermistor probe. The temperature probe is linearized by the microprocessor.

The meter is also provided with low battery detection and BEPS (Battery Error Preventing System), which turns the unit off when battery is discharged avoiding erroneous readings caused by low battery level.

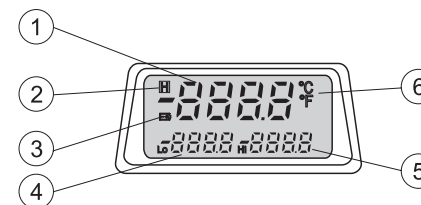
HI 9040 features include a dual-level LCD for simultaneously displaying of maximum and minimum measured temperatures, °C/°F selection button and HOLD function.

Each meter is supplied complete with a HI 765BL thermistor probe, a 9V battery and instruction manual.

FUNCTIONAL DESCRIPTION



1. Liquid Crystal Display
2. Measuring unit selection key
3. HI/LO values reset key
4. HOLD key
5. ON/OFF key



- 1) Current temperature value
- 2) HOLD indicator
- 3) Low battery indicator
- 4) Minimum temperature value
- 5) Maximum temperature value
- 6) Measuring unit, °C or °F

SPECIFICATIONS

Range	-50.0 to 150.0°C / -58.0 to 302.0°F
Resolution	0.1°C / 0.1°F
Accuracy	±0.4°C / ±0.8°F for 1 year, excluding probe error
Typical EMC Deviation	±0.5°C / ±1°F, with HI 765BL probe
Battery Type Life	1 x 9V (IEC 6LR61) battery approx. 700 hours of continuous use
Probe (included)	HI 765BL with 1 m (3.3') cable
Environment	-10 to 50°C (14 to 122°F); RH max 95% non-condensing
Dimensions	180 x 83 x 40 mm (7.1x3.3x1.6")
Weight	226 g (8 oz.)

CE DECLARATION OF CONFORMITY

HANNA
instruments

CE

DECLARATION OF CONFORMITY

We

Hanna Instruments Italia Srl
via E. Fermi, 10
35039 Sarmeola di Rubano - PD
ITALY

herewith certify that the thermometer:

HI 9040

has been tested and found to be in compliance with EMC Directive 89/336/EEC and Low Voltage Directive 73/23/EEC according to the following applicable normative:

EN 50082-1: Electromagnetic Compatibility - Generic Immunity Standard
IEC 61000-4-2 Electrostatic Discharge
IEC 61000-4-3 RF Radiated

EN 50081-1: Electromagnetic Compatibility - Generic Emission Standard
EN 55022 Radiated, Class B

EN 61010-1: Safety requirements for electrical equipment for measurement, control and laboratory use

Date of Issue: 28/10/2002

A. Marsilio
A. Marsilio - Technical Director
On behalf of
Hanna Instruments S.r.l.

OPERATIONAL GUIDE

INITIAL PREPARATION

Remove the battery cover on the back of the thermometer. Unwrap the supplied 9V battery, connect it to the clip and reattach the cover.

Connect the temperature probe to the connector on the top of the meter.

To switch ON, press the ON/OFF key on the front of the meter.



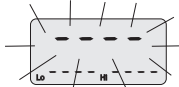
The thermometer will carry out a self diagnostic test routine, the LCD will show all segments for a few seconds (or as long as ON/OFF is held), followed by the percentage indication of the remaining battery life.



The thermometer then enters normal measurement mode.

If a temperature probe is plugged in, the meter displays the measured temperature.

If no probe is plugged in, or if reading is over-range, the display shows flashing dashes.



If a measurement is slightly over the range of the meter specifications, the display flashes the closest full-scale value.

To switch the thermometer OFF, press the ON/OFF key.

MEASURING SCALE (°C/°F)

The instrument is factory set to the °C scale, but measurements can be performed in either the Celsius or Fahrenheit scale.

Press the °C/°F button to select the desired scale.



HOLD MODE

The HOLD function is activated by pressing the HOLD key.

The measured temperature is held on the display until HOLD is pressed again.

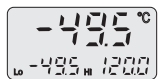
The "H" tag blinks on the display to indicate the HOLD mode.



Note: Although the display is frozen, internally the meter continues measuring and updating Hi and Lo values.

HIGH/LOW TEMPERATURES

The maximum and minimum temperatures are continuously monitored and displayed in the lower portion of the LCD.



Note: When reading goes over-range, the Hi and Lo values display dashes until cleared.

CLEAR FUNCTION

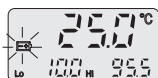
Upon pressing the CLEAR key, the current reading is assigned to the highest and lowest temperature values. The High/Low values may be cleared at any time during measurement.



BATTERY REPLACEMENT

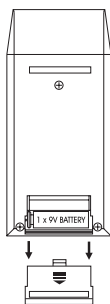
The instrument is powered by a 9 V battery and is provided with the Battery Error Prevention System (BEPS), which turns the unit off when a low battery signal is detected.

When the remaining battery level is less than 10%, a warning symbol blinks on the display to indicate a low battery condition.



It is recommended to replace the battery as soon as the low battery condition is detected.

Remove the cover on the meter's back by applying pressure in the indicated direction. Unplug the rundown battery and replace it with a new one.



Battery replacement must only take place in a non-hazardous area using a 9V alkaline battery.

FACTORY RECALIBRATION

All Hanna thermometers have been accurately pre-calibrated at the factory.

It is recommended to have all thermometers recalibrated at least once a year. For an accurate annual recalibration, contact your nearest Hanna Service Center.

Hanna Accuracy Test Plugs provide a quick and easy way to test the meter's accuracy by simply connecting these Test Plugs to the probe connector of the meter. If the reading differs by more than $\pm 0.4^{\circ}\text{C}$ ($\pm 0.8^{\circ}\text{F}$) from the Test Plug value, the meter is due for recalibration. Choose the Test Plug closest to your measurement range to best suit your needs:

- HI 765-18C Calibration test key, -18.0°C
- HI 765000C Calibration test key, 0.0°C
- HI 765070C Calibration test key, 70.0°C
- HI 765-004F Calibration test key, -0.4°F
- HI 765032F Calibration test key, 32.0°F
- HI 765158F Calibration test key, 158.0°F



Recommendations for Users

Before using these products, make sure that they are entirely suitable for the environment in which they are used.

Operation of these instruments in residential areas could cause unacceptable interference to radio and TV equipment, requiring the operator to take all necessary steps to correct interference.

Any variation introduced by the user to the supplied equipment may degrade the instruments' EMC performance.

To avoid electrical shock, do not use these instruments when voltage at the measurement surface exceeds 24VAC or 60VDC.

To avoid damage or burns, do not perform any measurement in microwave ovens.

TEMPERATURE PROBES & ACCESSORIES

Hanna offers a wide range of probes to meet your needs with air, liquid, penetration and surface measurements.

All Hanna temperature probes are pre-calibrated at the factory and ready-to-use. These interchangeable probes make it possible to switch from one probe to another without requiring recalibration.

Hanna probes are also available in different handle colors to avoid cross contamination during testing.

PROBES WITH 1 m (3.3') CABLE

- HI 765A Air probe, white handle
- HI 765BL Liquid probe, black handle
- HI 765L Liquid probe, white handle
- HI 765PBL Penetration probe, blue handle
- HI 765PG Penetration probe, green handle
- HI 765PR Penetration probe, red handle
- HI 765PW Penetration probe, white handle
- HI 765PWL Long penetration probe, white handle
- HI 765W Wire probe without handle for hard-to-reach places

PROBES WITH 10 m (33') CABLE

- HI 765A/10 Air probe with white handle
- HI 765L/10 Liquid probe, white handle
- HI 765PBL/10 Penetration probe, blue handle
- HI 765PG/10 Penetration probe, green handle
- HI 765PR/10 Penetration probe, red handle
- HI 765PW/10 Penetration probe, white handle
- HI 765W/10 Wire probe without handle for hard-to-reach places

OTHER ACCESSORIES

- HI 710009 Blue rubber boot
- HI 710010 Orange rubber boot
- HI 710020 Spare protective case
- HI 721316 Rugged carrying case