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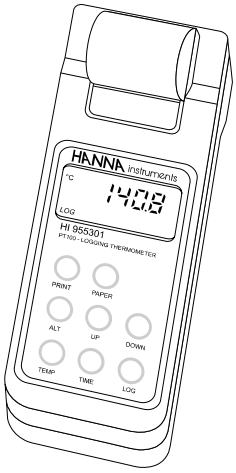
Instruction Manual

HI 955201 - HI 955202
HI 955301 - HI 955302

Portable Microprocessor Printing and Logging PT-100 Thermometers



This Instrument is in Compliance with the CE Directives

HANNA instruments
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CE

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Dear Customer,

Thank you for choosing a Hanna Instruments Product.

Please read this instruction manual carefully before using the instrument.

This manual will provide you with all the necessary information for the correct use of the instrument, as well as a precise idea of its versatility in a wide range of applications.

These instruments are in compliance with CE directives EN 50081-1 and EN 50082-1.

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HANNA instruments *ISO 9000 Certified Company since 1992*

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 damage, notify your Dealer.

Each printing thermometer is supplied complete with:

- Paper Rolls (5 pcs)
- 1.5V AA size Batteries (4 pcs)
- Rugged Carrying Case

Note: Save all packing material until you are sure that the instrument functions correctly. All defective items must be returned in its original packaging together with the supplied accessories.

GENERAL DESCRIPTION

The Hanna Instruments portable PT-100 thermometers with built-in printers are microprocessor-based and enable you to accurately measure temperature and record data.

The instrument housing is made of rugged and lightweight material.

Equipped with a large, easy-to-read LCD, they feature an extended battery life and a special design that enables results to be obtained even in humid, wet or dusty conditions.

Measurements can be performed with lab-grade precision in the field as well as in the laboratory without compromising accuracy. A 12VDC car battery or a battery charger can also be used to power the unit for extended use.

HI 955301 and **HI 955302** have a memory capacity of 16,000 individual temperature readings with recording intervals selected by the user.

Using the **HI 9200** infrared transmitter, all the recorded data can be transferred to a PC for easy reproduction, storage or elaboration without the interference of cables and cords between the meter and the receiver.

Other features include: on-board clock and date (**HI 955301** and **HI 955302** only), user-selectable printing/logging intervals, automatic memorization of measured values (**HI 955301** and **HI 955302** only), use of interchangeable PT 100 probes, printing on plain paper, automatic shut-off capability, low battery warning and 2 year warranty.

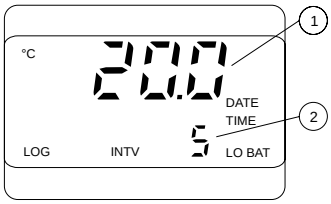
Two versions are available:

HI 955201 (printing) and **HI 955301** (logging) are single channel thermometers;

HI 955202 (printing) and **HI 955302** (logging) are dual channel thermometers.

LCD DISPLAY FUNCTIONAL DESCRIPTION

1) Primary Display
2) Secondary Display



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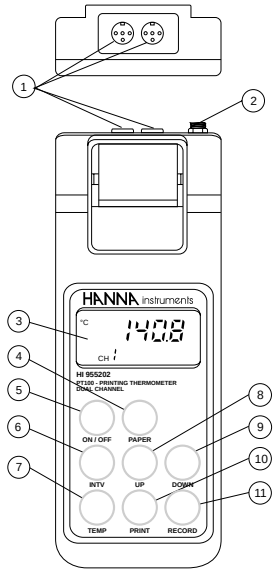
FUNCTIONAL DESCRIPTION
HI 955201 AND HI 955202



1. PT-100 Probe Connector/s
2. Power adapter plug
3. LCD Display
4. **PAPER** key to feed the paper
5. **ON/OFF** key, to turn the meter on or off
6. **INTV** key to select the printing interval
7. **TEMP** key, to select the resolution
8. **UP** key to set up or to select the channel number (HI 955202 only)
9. **DOWN** key to set up or to select the channel number (HI 955202 only)
10. **PRINT** key to obtain a printout (printing present time and temperature/s)
11. **RECORD** key to enter the recording mode

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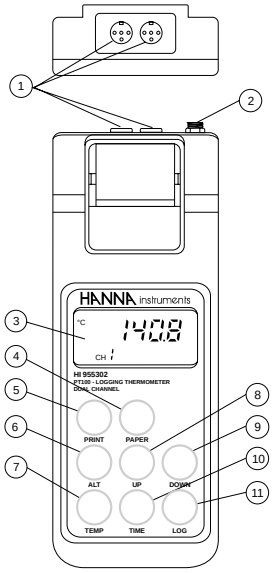
FUNCTIONAL DESCRIPTION
HI 955301 AND HI 955302



1. PT-100 Probe Connector/s
2. Power adapter plug
3. LCD Display
4. **PAPER** key to feed the paper
5. **PRINT** key to obtain a printout (printing present time and temperature/s)
6. **ALT** key, alternate function key
7. **TEMP** key, to read temperature and to reactivate the meter when is "sleeping"
8. **UP** key to scan data or to set up
9. **DOWN** key to scan data or to set up
10. **TIME** key to display present time and printing interval
11. **LOG** key to enter and exit the logging mode

SPECIFICATIONS
HI 955201 AND HI 955202

	HI 955201	HI 955202
Range	-200.0 to 850.0°C	
Resolution	0.1/1°C selectable	
Accuracy (@25°C/77°F)	±(0.1°C +0.1% of the actual reading) for one year, excluding probe error	
Typical EMC Deviation	±0.5°C	
Power	4x1.5V AA size, life of 500 hours with 60' printing interval Socket for 12VDC adapter	
Auto Shut-off	After 5 minutes of non-use	
Channels	1	2
Sensor Type	Platinum RTD (alpha = 0.00385) 4 wires	
Printer	Low-power impact belt type, 14 characters per line using 38 mm plain paper	
Printing Intervals	1, 2, 5, 10, 15, 30, 60, 120 and 180 minutes	
Environment	0 to 50 °C (32 to 122°F) Max. 95% RH	
Dimensions	220x82x66mm (8.7x3.2x2.6")	
Shipping Weight	Instrument: 500g (18 oz.) Kit: 1.4 kg (3.1 lb.)	

SPECIFICATIONS
HI 955301 AND HI 955302

	HI 955301	HI 955302
Range	-200.0 to 850.0°C	
Resolution	0.1/1°C selectable	
Accuracy (@25°C/77°F)	±(0.1°C +0.1% of the actual reading) for one year, excluding probe error	
Typical EMC Deviation	±0.5°C	
Power	4x1.5V AA size, life of 500 hours with 60' printing interval Socket for 12VDC adapter	
Auto Shut-off	After 5 minutes of non-use	
Channels	1	2
Sensor Type	Platinum RTD (alpha = 0.00385) 4 wires	
Printer	Low-power impact belt type, 14 characters per line using 38 mm plain paper	
Logging Intervals	1, 2, 5, 10, 15, 30, 60, 120 and 180 minutes	
Environment	0 to 50 °C (32 to 122°F) Max. 95% RH	
Dimensions	220x82x66mm (8.7x3.2x2.6")	
Shipping Weight	Instrument: 500g (18 oz.) Kit: 1.4 kg (3.1 lb.)	

INITIAL PREPARATION

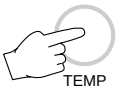
Each meter is supplied complete with batteries.

Remove the back cover, unwrap the batteries and install them while paying attention to the polarity.

To prepare the instrument for use, connect a PT-100 temperature probe to the connector located on the top of the instrument.

To switch the **HI 955201** and the **HI 955202** on, press the ON/OFF key.

To switch the **HI 955301** and the **HI 955302** on, press the TEMP key.

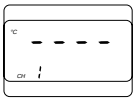


HI 955201 and **HI 955301** have a single probe connection.

HI 955202 and **HI 955302** have two probe connectors.

With the meter facing you, channel #1 is the first connector on the top left hand side.

If the PT-100 temperature probe is not connected to the instrument, the meter will display and print "----" to alert the user.

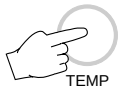


This also indicates the possibility of a broken probe cable. The channel is displayed with "CH" and the number of channel (dual channel versions only).

Note: To ensure accurate readings it is recommended that the temperature probes be connected to consecutive channels beginning with channel #1. If only one probe is used, it must be connected to channel #1.

To maximize battery life, the display is automatically switched off after 5 minutes of non-use. However, the meter will continue to monitor (if in the logging/recording mode) temperature.

To revive the display, press the ON/OFF key (**HI 955201** and **HI 955202** only) or the TEMP key (**HI 955301** and **HI 955302** only).

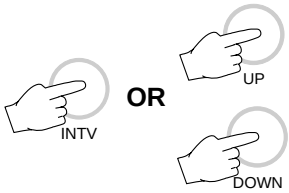


OPERATIONAL GUIDE

SETTING THE PRINTING INTERVAL (for HI 955201 and HI 955202 only)

Turn the instrument on by pressing the ON/OFF key.

Press the INTV and the UP or DOWN keys simultaneously.

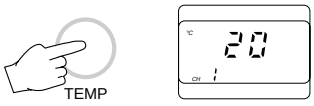


The display will show the log number. At the bottom of the display the printing interval will be flashing.

Keep the INTV key pressed and set the printing interval by pressing the UP or DOWN key.

SETTING THE MEASUREMENT RESOLUTION

Press the TEMP key to select the 0.1° or 1° resolution.

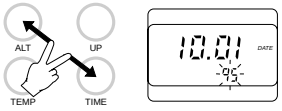


With the dual channels versions, both channel readings automatically change by pressing this key.
To return the reading to its original resolution, simply press the TEMP key again.

SETTING DATE / TIME / PRINTING INTERVAL (for HI955301 and HI955302 only)

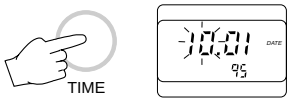
Turn the instrument on by pressing the TEMP key.

Press the ALT and the TIME keys simultaneously. The display will show the date setting. At the bottom of the display the year will be blinking.



Use the UP or the DOWN keys to select the year.

Press the TIME key once and the month will start flashing.



Select the month by using the UP or DOWN keys.

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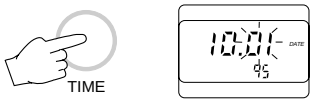
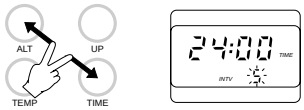
Press the TIME key and the day will be flashing.



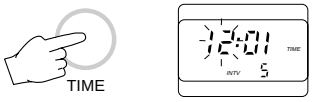
Use the UP or DOWN key to select the correct day.

Press the ALT and the TIME keys simultaneously and the display will now show the clock time with the printing interval flashing.



Any interval can be selected from 1, 2, 5, 10, 15, 30, 60, 120 or 180 minutes by using the UP and the DOWN keys.

Press the TIME key and the hour will start flashing.



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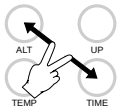
To select the hour, press the UP or DOWN keys (24 hour clock).

Press the TIME key and the minutes will start flashing.

Use the UP or the DOWN keys to select the minutes.

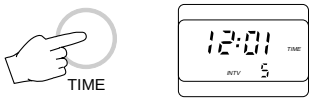
Press the ALT and the TIME keys to leave this mode.



The time, date and printing interval are now set and stored in the memory even when the display is switched off.

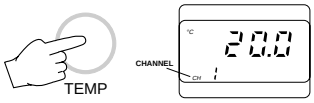
TO VIEW DATE / TIME / TEMPERATURE (for HI 955301 and HI 955302 only)

To view the time press the TIME key. This also displays the selected interval time on the secondary LCD.



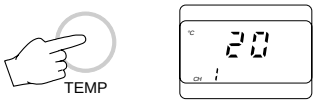
To view the date, press the UP key when the LCD is displaying the time.

To view temperature press TEMP key.



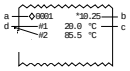
Using UP or DOWN keys select channel #1 or #2 to monitor (**HI 955302** only). The channel is displayed with "CH" and the number of channel.

If the TEMP key is pressed again, the resolution can be selected between 0.1°C and 1°C. The chosen resolution will be printed but the logged data will always be with 0.1°C resolution.



PRINTING / RECORDING WITH HI 955201 AND HI 955202

To print the measured values press the PRINT key. The printout provides the following information:

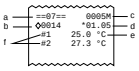


a - Running sample number
b - Accumulative time
c - Temperature value
d - Channel # (**HI 955202** only)

RECORDING MODE (PROGRAMMED PRINTOUTS)

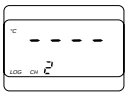
Press the RECORD key to enter the recording mode. The log number will appear for a few seconds on the display to indicate the correct operational mode. The meter will write the first measurement/s taken in that moment, and will print at the interval selected thereafter until the ON/OFF key is pressed.

The printout provides the following information:



a - A running log number
b - A running sample number (in that particular log)
c - Printing interval indicator in minutes
d - The accumulated time since printing started (HH.MM)
e - Temperature value/s
f - Channel number (**HI 955202** only).

In **HI 955202**, if only one probe is plugged in during recording mode, the meter will print only the value of the connected probe.



If the second probe is not connected during the recording mode, the data from the second probe will not be printed.

Data from the second channel can only be added if the recording mode is exited and a new log number is entered.

A blinking "CH" will appear on the display next to the channel number not utilized and/or recorded.

When the meter is in recording mode "LOG" is displayed on the bottom left corner of the LCD with the temperature value on the primary display.

If no keys are pressed, the meter goes to standby mode to prolong battery life.

To reactivate the display press the ON/OFF key

Notes:

- It is recommended to use the power supply (**HI 710005** or **HI 710006**) during recording mode, especially when many printouts are going to be taken.
- Before proceeding with recording, make sure there is enough paper for your measurements. When the paper is finished the meter will not advise the operator and the printouts could be lost.
- It is possible to insert a new paper roll during recording session (see page 31).
- If the PRINT key is pressed while still in recording mode, a printout is produced without affecting the running number.

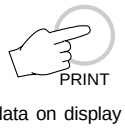
- Once in recording mode, the printing interval cannot be changed. Exit the recording mode first (pressing the ON/OFF key) before setting the new interval.

TO STOP RECORDING

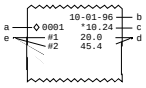
In order to quit the recording mode, press the ON/OFF key.

PRINTING / LOGGING WITH HI 955301 AND HI 955302

To print the measured values shown on the display, press the PRINT key. This function can be activated in normal operation mode as well as during logging and scanning data on display (see above). When in measurement mode, the printout provides the following information:



a - Running sample number
b - Date
c - Time
d - Temperature value/s
e - Channel number (**HI 955302** only)

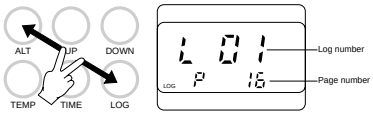


LOGGING MODE

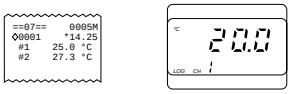
This function is suggested when remote measurements have to be taken automatically without the necessity of an operator and for a long period of time. In this mode data will be stored directly into memory.

Set the appropriate logging interval (see Operational Guide section on page 9).

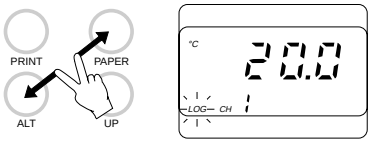
Press the ALT and the LOG keys simultaneously to enter the logging mode. The log number and page number will appear for a few seconds on the display to indicate the correct operational mode.



The printer will print a complete set of data and the "LOG" symbol will appear on the bottom left corner of the LCD.



To continue logging without printing, press now the ALT and the PAPER keys at the same time and the "LOG" symbol on display will start to blink.

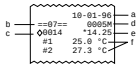


After approximately 5 minutes the display will switch off but the logging function remains active.

To reactivate the display press the TEMP key.

If you wish to restart printing press the ALT and PAPER keys simultaneously again.

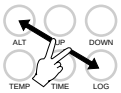
The printout provides the following information:



a - Date (DD-MM-YY)
b - A running log number
c - Running sample number (in that particular lot)
d - Printing interval indicator in minutes
e - Time (HH-MM)
f - Temperature value/s

Notes:

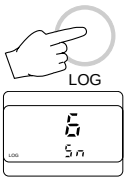
- Once in the logging mode, the interval cannot be changed. Exit the logging mode first (pressing the ALT and the LOG keys) before setting the new interval.



- If the PRINT key is pressed while in logging mode, a printout is produced without affecting the running sample number.

SAMPLE NUMBER

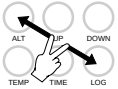
During logging it is possible to know the running sample number. Press the LOG key twice and the display will show the number of values that have been taken in the current log.

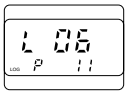


LOGGING MODE WITH PRINTING

This function is suggested when an immediate report of the measurement is required in addition to the recording of the data into memory.

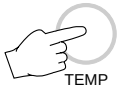
Press the ALT and LOG keys simultaneously to enter the logging mode. The log number and page number will appear for a few seconds on the display to indicate the correct operational mode. The printer will print a complete set of data and the "LOG" symbol will appear on the bottom left corner of the display.



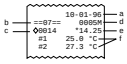


If no key is pressed, the display goes blank after about 5 minutes. During printing, the display shows the time, interval and the “LOG” symbol.

To reactivate the display press the TEMP key.

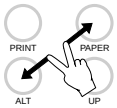


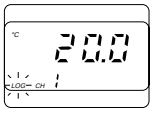
The printout provides the following information:



a - Date (DD-MM-YY)
b - A running log number
c - A running sample number (in that particular log)
d - Printing interval indicator in minutes
e - Time (HH-MM)
f - Temperature value/s
g - Channel # (**HI 955302** only)

It is always possible to switch from the logging with printing function to the logging only function. Press the ALT and the PAPER keys at the same time and the "LOG" symbol will start to blink to indicate that the data are now stored only into memory.

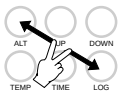




Notes:

- It is recommended to use the adapter during logging with printing mode, especially when many printouts are going to be taken.

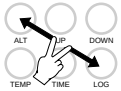
- Before proceeding with logging and printing, make sure there is enough paper for your measurements. When the paper is finished the meter will not advise the operator and the printouts could be lost. If this happens, data will continue to be stored into memory, and it is always possible to print them at different time (see above).
- It is possible to insert a new paper roll during logging session (see page 31)
- Once in the logging mode, the interval cannot be changed. Exit the logging mode first (pressing the ALT and the LOG keys) before setting the new interval.

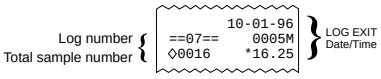


- If the PRINT key is pressed while in logging mode, a printout is produced without affecting the running sample number.

TO STOP LOGGING

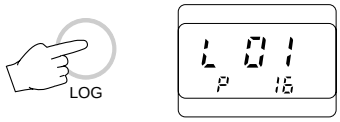
Press ALT and LOG keys simultaneously, this will generate a log exit status printout.



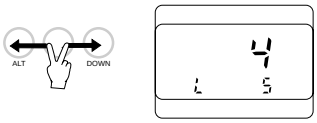


TO SCAN STORED DATA ON DISPLAY

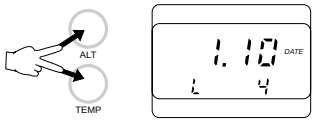
Press the LOG key. The display will show the log number and the page number of the next logging.



While pressing the ALT key, press DOWN until the log number to scan appears on the secondary display. The primary display will show the number of samples of that particular log.

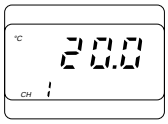


Press ALT and TEMP simultaneously. This now shows the date on which the log started.



Press UP and the time will be displayed.

Press UP and the temperature will be displayed.



Continue pressing UP to display all the memorized data of the same log one by one in the above sequence i.e. time, temperature value/s.

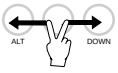
Press the DOWN key to revert back to sampling time and move back through samples.

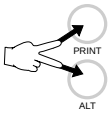
To exit from the recall mode press LOG.

Note: this mode will not alter data into memory

TO PRINT STORED DATA

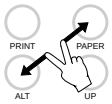
Once a log number is selected by using the ALT and DOWN, as detailed in the chapter "TO SCAN STORED DATA ON DISPLAY" you can print all or part of that log section by using the ALT and PRINT keys. The printer will start to print the logged section beginning with the selected sample number without altering the content of the memory.





Note: It is always possible to print only the sample shown on the display by pressing PRINT.

Note: Before proceeding with printing, make sure there is enough paper for the data to be printed. When the paper is finished the meter will not advise the operator and printouts could be lost. If this happens, stop the printer by pressing ALT and PAPER simultaneously. Data will be kept in memory.



Insert a new paper roll and repeat the instruction above starting from the last printed sample number (see chapter "PRINTER MAINTENANCE" on page 31 for changing paper roll).

WORKING SAMPLE (HI 955301 and HI 955302 only)

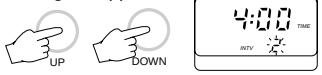
The following is a step by step procedure of a typical monitoring situation where we have assumed that you have already inserted the batteries and set the date and time correctly. It is an example of a meter used to monitor and store every 2 minutes. The meter will log 10 samples but print only 3, display the data contained in sample number 1 and print samples 5 through 10.

Example:

Step One - Setting the printing/logging interval at 2 minutes:

Press ALT and TIME keys twice. The time will appear on the primary display with a number representing the printing/logging interval blinking.

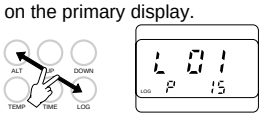
Press either the UP or DOWN keys until a blinking "2" appears.



Press ALT and TIME keys to exit. The display will now show the current time together with the selected interval of 2 minutes.

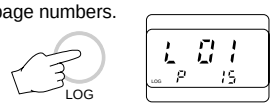
Step Two - Entering the log mode:

Press ALT and LOG keys. Initially, "**L 01**" will appear on the primary display.

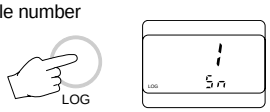


The meter is now in the printing/logging mode utilizing log number **1**, page **16**. "LOG" and **P 15** shown in the secondary display indicate that the meter has entered the log mode, and has **15** pages of available memory remaining. After the initial printout, the time and printing/ logging interval will reappear.

Press the LOG key to view the running log and page numbers.



Press the LOG key again to view the running sample number



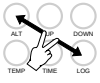
Step Three - Stopping the printer during the log mode:

After the third printout is complete, press the ALT and PAPER keys. At this point the meter will continue to log data every 2 minutes but will no longer print any information. "LOG" will keep blinking on the secondary display for the remainder of "L 01" (log number 1).

Note: If the display has shut off press TEMP to reactivate it.

Step Four - Leaving the log mode:

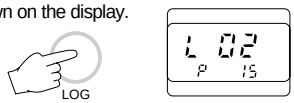
Once the number of samples stored in memory has reached 10, press the ALT and LOG keys. The meter will exit the log mode after generating a log exit status printout.



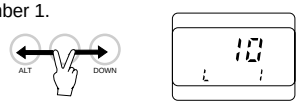

```
          10-01-96
==01==      0002M
◊0010      *00.18
```

Step Five - Reviewing the stored data in sample number 1:

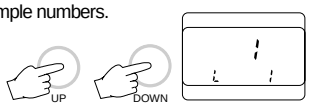
Press LOG key to enter the memory recall mode. The next available log and page number will be shown on the display.



Press the ALT and DOWN keys until the number 10 and "L1" appear, indicating that a total of 10 samples were recorded in log number 1.



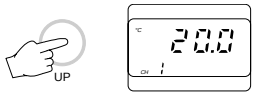
To view the data stored in sample number 1 first use the UP and DOWN keys to scroll through the sample numbers.



Once the number is displayed, press the ALT and TEMP keys. The date during which that sample was taken will appear first.

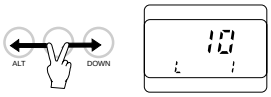
Press UP to view the time.

Press UP again to view the temperature.

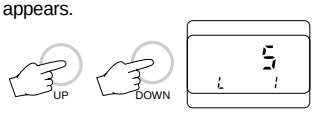


With **HI955302** when both probes have been connected, press the UP key to view the other channel value.

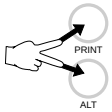
Step Six - Printing the stored data (samples 5 through 10):
Press and hold ALT and press DOWN until the total number of samples recorded in log number 1 is displayed.



Scroll through the sample numbers by using either the UP or DOWN keys until number 5 appears.



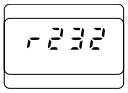
Press ALT and PRINT. The meter will print out samples number 5, 6, 7, 8, 9 and 10 consecutively.

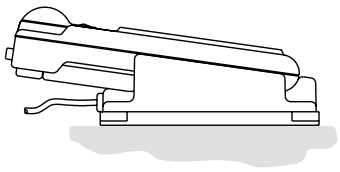


DATA TRANSFER TO PC

HI955301 and **HI955302** provide infrared emitting circuitry. Set the meter to the TIME mode and place your datalogger on a **HI 9200** Infrared Transmitter (ensuring that the two infrared LEDs are placed on top of each other). The memory can be downloaded to your PC through the **HI 9200**'s RS 232 port.

During the data transfer the instrument displays the message "r 232".





Using the **HI 9200** Infrared Transmitter, all recorded data can be fed to your Personal Computer for easy reproduction, storage or elaboration without the interference of cables or cords between the meter and the transmitter.

Data transmission from the instrument to the PC is now much easier with the new **HI 92000** Windows® compatible application software offered by Hanna Instruments.

User friendly, **HI 92000** offers a variety of features to help you in all situations.

Windows® is registered Trademark of "Microsoft Co."

HI92000 allows you to use the powerful means of the most diffused spread sheet programs (e.g. Excel©, Lotus 1-2-3©). Simply run your favorite spread sheet and open the file downloaded by **HI92000**. It is then possible to make any elaboration available with your software (e.g. graphics, statistic analysis).

To install **HI 92000** you need a 3.5" drive and a few minutes to follow the instructions conveniently printed on the disk's label.

FAULT FUNCTIONS

HI955201, **HI955202**, **HI955301** and **HI955302** are factory programmed to automatically diagnose a fault. This is displayed with error codes on the LCD.

Error codes:

PEr 0, PEr 1, PEr 2 = Short circuit on the system, the meter should be returned for repair (see Warranty section).

PEr 3 = Printer mechanism fault - repair needed (see Warranty section).

PEr 4 = Printer clutch jammed - reset the printer (see page 32).

PEr 9 = Printer jammed - reset the printer (see page 32).

MEMORY ORGANIZATION

Capacity: 16,000 data samples, divided into 16 pages.

Data capacity per page:
1000 data samples with 1 channel monitored;
500 data samples with 2 channels monitored (**HI955302** only).

Each time a new logging period starts, it automatically starts from a new page.

If “LOGGING” is still on, and the available page is “0” the meter will overwrite the first LOT DATA in the existing meter memory. During logging the meter automatically returns to the oldest page in the memory and if it contains data, will overwrite. In this case the first log will not correspond to the oldest set of data.

It is recommended to periodically “clean” the memory. Save the data in a PC if you need to keep a record and then disconnect the batteries for about 1 minute. If you do this, remember to set the date and time, once the batteries have been connected again.

ATTENTION

Data are stored into memory until batteries are removed.

If replacement of the batteries is needed and data are not to be lost, plug the adapter in and proceed with battery replacement as described below. Only once batteries have been replaced is it possible to unplug the adapter without losing the stored data.

PRINTER MAINTENANCE

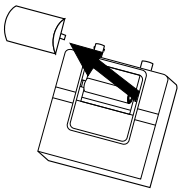
TO CHANGE THE INK CARTRIDGE

When printouts become faint, it might be necessary to change the ink cartridge. Contact your Hanna authorized center.

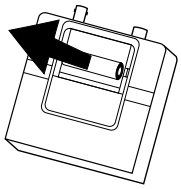
TO INSERT THE PAPER ROLL

The **HI 955201**, **HI955202**, **HI 955301** and **HI 955302** use plain paper rolls 38 mm width. To insert a new roll is very easy.

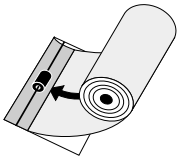
Open the paper cover pulling it gently.



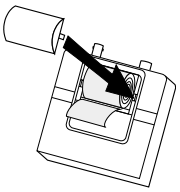
Take the carton cylinder away.



Insert the paper edge in the printer slot and feed the printer by pressing the PAPER key.



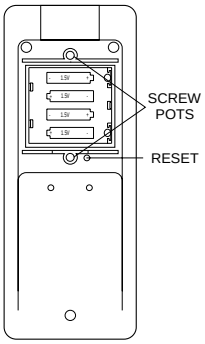
Allow approximately 5 cm (2") to exit from the printer and replace the paper cover.



TO RESET PRINTER

Press PAPER to reset the printer when jammed.

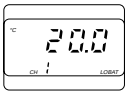
If the printer is still jammed, take the battery cover off by removing the screws. Using a pencil press the black button. This will reset the printing mechanism.



Before replacing the battery cover investigate the cause of the printer jam (e.g. the paper caught under the cover and prevented printer from advancing paper feed).

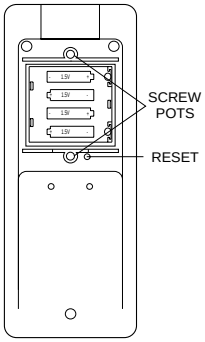
Replace the battery cover and secure screws.

BATTERY REPLACEMENT



If "LO BAT" appears on the display, it is an indication that the batteries are running down. If it appears during printing, it means that 200 printouts can be made before the batteries are exhausted. When there is only sufficient power for 100 printouts, the "LO BAT" sign is displayed continuously on the LCD.

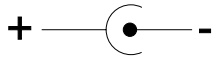
Battery replacement must only take place in a non hazardous area using the battery types specified in this instruction manual (see page 35).



In order to replace run down batteries, simply remove the two screws on the rear cover of the instrument and replace the four 1.5V AA batteries with new ones, paying attention to the correct polarity.

A 12VDC power source can also be used to power the unit (see the Accessories section page 35).

Note: The instrument uses the following configuration.



It is recommendable to purchase Hanna Instruments **HI 710005** and **HI 710006** voltage adapters that use the proper polarity configuration.
HI 955201, **HI 955202**, **HI 955301** and **HI 955302** can also be used with other adapters. In this case, remember to check the correct polarity of your adapter before connecting it to the meter.

WARNING: In **HI 955301** and **HI 955302**, if the external power supply or batteries are disconnected, all stored data will be erased. Always apply external power to the instrument when changing low batteries to prevent data from being lost.

CALIBRATION

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

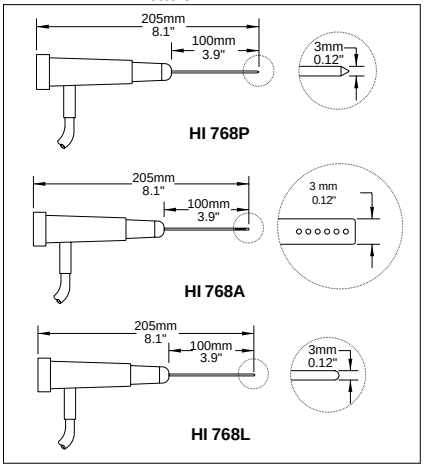
However, as a general rule, it is recommended to have all thermometers recalibrated at least once a year.

For an accurate annual recalibration, contact your nearest Hanna Service Center that is available to quickly service your meter.

ACCESSORIES

PT-100 Temperature Probes

HI 768A **Air** probe, with 1 m (3.3') cable
HI 768L General purpose **liquid** probe, with 1 m (3.3') cable
HI 768P **Penetration** probe with 1 m (3.3') cable



OTHER ACCESSORIES

HI 710005 115VAC to 12VDC voltage adapter
HI 710006 230VAC to 12VDC voltage adapter
HI 710031 Rugged carrying case
HI 710034 Plain Paper Rolls (10 pcs)
HI 710035 Spare Ink Cartridge (1 pc)
HI 721308 1.5V AA alkaline battery (10 pcs)
HI 9200 Infrared Transmitter
HI 92000 Windows® software for data transfer to PC
MANPTPRNR1 Instruction manual

Windows® is registered Trademark of "Microsoft Co."

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.

The probes are warranted for a period of six months.

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

Damages due to accident, 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. If the repair is not covered by the warranty, you will be notified of the charges incurred.

If the instrument is to be returned to Hanna Instruments, first obtain a Returned Goods Authorization Number from the Customer Service department and then send it with shipment costs prepaid. When shipping any instrument, make sure it is properly packaged for complete protection.

To validate your warranty, fill out and return the enclosed warranty card within 14 days from the date of purchase.

Hanna Instruments reserves the right to modify the design, construction and appearance of its products without advance notice.

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CE DECLARATION OF CONFORMITY

HANNA instruments

CE

DECLARATION OF CONFORMITY

We

Hanna Instruments Srl
V.le delle industrie 12
35010 Ronchi di Villafranca (PD)
ITALY

herewith certify that the thermometers

HI 955201 HI 955202 HI 955301 HI 955302

have been tested and found to be in compliance with the following regulations:

IEC 801-2	Electrostatic Discharge
IEC 801-3	RF Radiated
IEC 801-4	Fast Transient
EN 55022	Radiated, Class B

Date of Issue: 16-05-1996

D.Volpato - Engineering Manager
On behalf of
Hanna Instruments S.r.l.

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 area could cause unacceptable interferences to radio and TV equipments, requiring the operator to take all necessary steps to correct interferences.

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

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

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

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http://www.hannainst.com