



Printing Humidity/Temperature Meter

1362

INSTRUCTION MANUAL

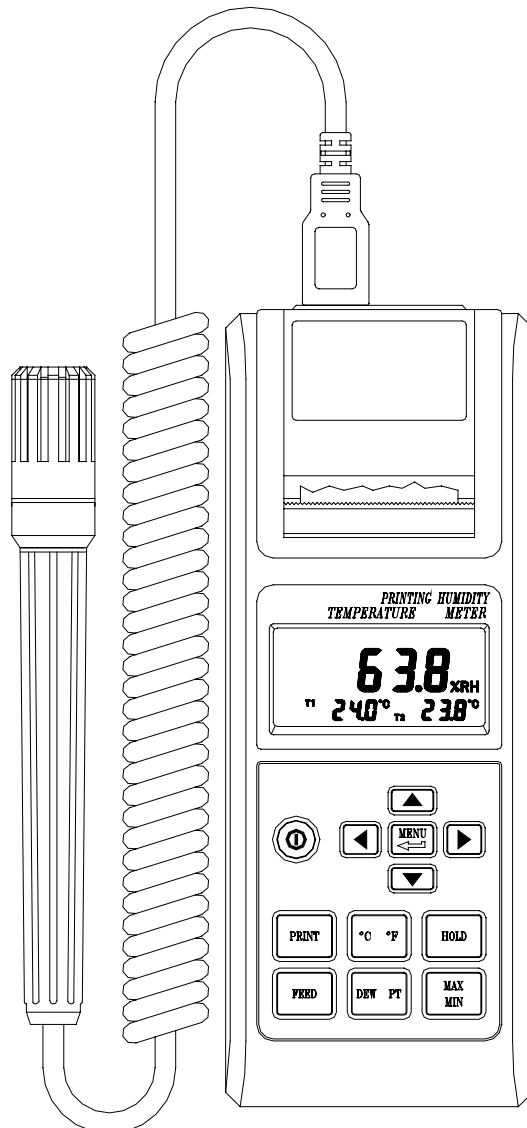


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I. SAFETY INFORMATION

- ❑ Read the following information carefully before attempting to operate or service the meter.
- ❑ Use the meter only as specified in this manual, otherwise the protection provided by the meter may be impaired.

Environmental conditions

- ① Altitude up to 2000 metres
- ② Indoor use only
- ③ Relatively humidity; 95% max.
- ④ Operating temperature; 0 to 50 (32 to 122)

Maintenance & clearing

- ① Repairs or servicing not covered in this manual should only be performed by qualified personnel.
- ② Periodically wipe the case with a dry cloth. Do not use abrasives or solvents.


Compliance symbols

 Complies with EMC Directive 89/336/EEC

II. SPECIFICATIONS

2-1 General information

Display: Triple 4-digit LCD.

Over range indication : -  - appears on the LCD.

Low battery indication: **BT** symbol appears on the LCD when the battery voltage falls below the operating voltage.

Sampling rate: approximately 1 per second

Power requirements: Qty 6, 1.5V size AAA alkaline batteries, or AC adaptor; 9Volts @ 500mA minimum.

Battery life: Approx. 90 hours. (interval printing = 60 minutes, excluding beeper).
100 hours (without printing & beeper).

Printing interval : 6 sec. to 59 min. 59 sec.

Operating temperature and humidity:
0 to 50 (32 to 122) below 95% RH

Storage temperature and humidity:
-10 to 60 (14 to 140) below 70% RH

Dimensions: Meter : 193 (L) × 74 (W) × 37(H) mm
Probe : 160 (L) × 13 (D) mm
Cable length : 1m approx.

Weight: Approx. 430g with batteries & paper roll.

Accessories supplied: Carrying case, instruction manual, batteries, 2 rolls of thermal printer paper, type K thermocouple probe.

Printer : Thermal type with 16 characters per line using 38mm width thermal paper.

2-2 Electrical specifications

Humidity:

Range: 10%RH to 95%RH

Resolution: 0.1%RH

Accuracy: $\pm 3\%$ RH from 30%RH to 95%RH
 $\pm 5\%$ RH from 10%RH to 30%RH

Temperature T1 (Integral sensor):

Range: -20 to +60 (-4 to +140)

Resolution: 0.1 / 0.1

Accuracy: ± 0.8 , ± 1.5

Dew-point:

Range: -44.0 to 58.5 (-47.2 to 137.3)

Accuracy: 1.0 / 1.8

Temperature (T2) (External thermocouple sensor):

Range: -200 to +1333 (-328 to +2431)

Resolution: 0.1 from -200 to 999
0.1 from -328 to 999.9 (1 or 1
outside this range).

Accuracy: -50 to -200 : $\pm(0.2\%rdg + 1.8)$)
-50 to 500 : $\pm(0.1\%rdg + 0.8)$)
500 to 1333 : $\pm(0.2\%rdg + 1.8)$)
-58 to -328 : $\pm(0.2\%rdg + 3)$)
-58 to 1000 : $\pm(0.1\%rdg + 1.6)$)
1000 to 2431 : $\pm(0.2\%rdg + 3)$)

Temperature coefficient:

0.1 times the applicable accuracy specification per
from 0 to 18 and 28 to 50 (32 to 64 and
82 to 122)

III. LOCATION OF PARTS

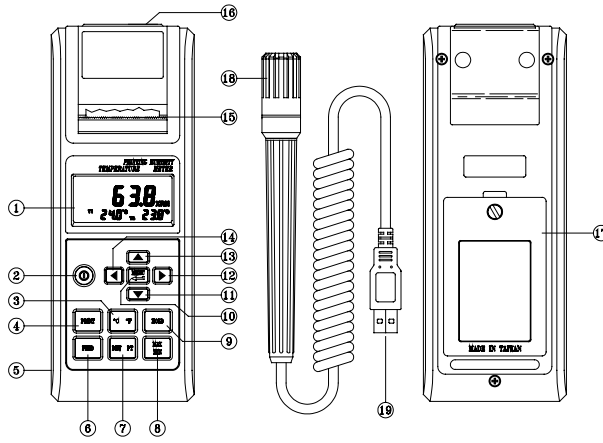





Fig-1

1. LCD: Measured values, units, symbols, and decimal points are displayed on the screen.

2. : Power on/off button

3. : Button for selecting temperature units °C or °F.

4. :
 ① Press this button to start printing the current data.

The data format is as follows:

LINE 1	20 : 12 : 01	02 - 21
LINE 2	58.9	% RH
LINE 3	td	15.7
LINE 4	T1	24.3
LINE 5	T2	24.8

Line 1: Time: hours; minutes; seconds; month-day.


Line 2: Humidity value.

Line 3: Dew-point value.

Line 4: T1 temperature value (integral sensor).

Line 5: T2 temperature value (K-type thermocouple).

- ② Press this button for 2 seconds and the printer will enter interval printing mode. Press this button or the FEED button to cancel interval printing mode and return to normal operation.

5. External 9V dc input socket. 

6. **FEED** PAPER (Fig-2) :

- ① Press the FEED button to advance the printer paper one line.
- ② Force the printer to stop printing and clear any data in the print buffer.










7. **DEW-POINT**: Press this button change the display from humidity to dew-point.

8. **MAX / MIN**:

- ① Press this button once to enter maximum /minimum recording mode and the "REC" symbol is displayed on the LCD.
- ② Press this button repeatedly to display the maximum reading ("MAX REC" symbol is displayed), the minimum reading ("MIN REC" symbol is displayed) and the current reading ("REC" symbol is displayed) in sequence.
- ③ Press this button for 2 seconds to exit this mode.

9. **HOLD**: Press this button to hold the displayed reading. Press it again to return to normal operation.

10.  : Press this button to enter parameter set-up mode.
The following parameters appear in sequence:
ON/OFF (interval printing; enable or disable).
TIME INTV (printing interval ranging from 00m:06s to 59m:59s).
INTV  (Interval printing start time, ranging from 00h:00m to 23h:59m).
INTV  (Interval printing stop time, ranging from 00h:00m to 23h:59m).
TIME (Calendar setting: year, month, day, hours & minutes).
11.  DOWN: Press this button to decrease the value of the selected parameter.
12.  RIGHT: Button for selecting the next desired parameter for setting.
13.  UP: Press this button to increase the value of the selected parameter.
14.  LEFT Button for selecting the previous desired parameter for setting.
15. Exit slot for printer paper.
16. K-type thermocouple socket.
17. Battery cabinet and cover for Qty 6 x1.5V size AAA alkaline batteries.
18. Humidity and temperature sensor probe.
19. Temperature and humidity sensor probe plug.

WARNING
Do not connect the USB style socket or plug to a

Personal Computer or peripheral. Irreparable damage may be caused to the instrument, probe, PC or peripheral.

LCD DISPLAY:

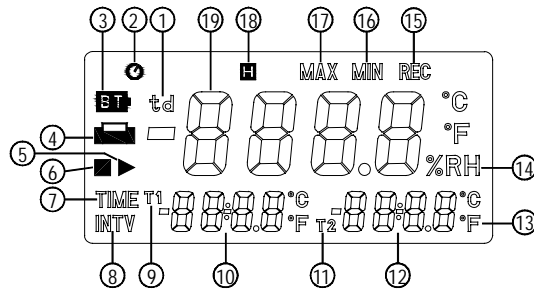


Fig-3

1. Dew point measurement indicator.
2. Preset interval printing function ON indicator.
3. Low battery indicator
4. Printing indicator.
5. Interval printing start time setting indicator.
6. Interval printing stop time setting indicator.
7. Calendar time indicator.
8. Interval printing time indicator.
9. T1 measurement indicator.
10. T1 measured value for integral sensor.
11. T2 measurement indicator.
12. T2 measured value for external Type-K thermocouple.
13. Temperature measurement units.
14. Humidity measurement unit.
15. Recording indicator.

16. Minimum measurement value indicator.
17. Maximum measurement value indicator.
18. Data-hold indicator.
19. Humidity and dew-point temperature measured value.

IV. GENERAL PRECAUTIONS AND PREPARATIONS FOR MEASUREMENT

1. Before operating the instrument, examine it to make sure it is not damaged.
2. Retain all packing materials in case the unit has to be returned for repair or calibration.
3. Ensure the batteries are correctly installed before turning the instrument on. If using an external power adapter, ensure it is suitable, has the correct polarity and is undamaged.
4. Ensure the battery cover is correctly fitted, otherwise measurement errors may occur.
5. If the instrument is to be stored for a long time, remove the batteries to prevent leakage and corrosion.
6. Do not use or store this meter outside the operating or storage environmental conditions quoted in the specifications.

V. OPERATING PROCEDURE

1. Before using the instrument, install the batteries as follows:
Remove the rear cover, and carefully install Qty 6 AAA batteries, observing correct polarity.
Insert the supplied temperature and humidity probe plug into the corresponding meter socket. If required, select a suitable

K-type thermocouple probe and insert the plug into the miniature thermocouple socket.

2. Press the **ⓘ** button to turn the meter on. The current date and time will appear on the display for approximately 3 seconds. If “- - -” appears on the display, it indicates no probe is connected, or the connected probe is open circuit.
3. T1 indicates temperature sensed by the combined temperature/humidity probe, whilst T2 indicates the temperature sensed by the K-type thermocouple (if connected).

4. Printing data:

① Press the **PRINT** button once to print one set of data as shown on the LCD.

② If continuous printing is required, press and hold down the **PRINT** button, until the LCD display shows the “INTV” mark and enter continuous interval printing mode. The printer will print data as follows:

INTV	00 : 06	Interval printing time, minute : second.
10 : 55 : 19	08-16	Printing time, hour:minute:second, month:day
	62.7 %RH	Humidity test value and unit.
td	19.8	Dew point and unit.
T1	27.6	Room temperature test value and unit.
T2	26.5	K-type thermocouple test value and unit.
10 : 55 : 25	08-16	
	62.7 %RH	
td	19.8	
T1	27.6	
T2	26.5	

10 : 55 : 31 08-16

62.7 %RH

td 19.8

T1 27.6

T2 26.5

10 : 55 : 37 08-16

62.7 %RH

td 19.8

T1 27.6


T2 26.5

Press the **PRINT** or **FEED** button to exit continuous printing mode.






- ③ When the meter is on, if the continuous printing function setting is "ON", and the current time is the interval printing start time, the instrument will start continuous interval printing mode and begin printing.

Press the **PRINT** or **FEED** button to exit printing mode.

The interval printing function works only when the start printing time is earlier than the stop printing time. The interval printing duration cannot be set to greater than 24 hours.

Caution: Before printing, ensure the printer paper is not trapped by the printer cover, if the printing process is interrupted by a mechanical fault, the printer, will stop printing and the "  " symbol on the LCD will flicker.

VI. SETTING MODE

Press the “” button to enter function setting mode. Each subsequent press of this button selects setting parameters in sequence (printer on or off, interval printing time, start printing time, stop printing time and calendar setting). When in setting mode, the adjustable parameter will flicker until setting is finished. Press the  or  button to select the required parameter to set, then press the  or  button to increase or decrease the parameter value.

The parameter setting sequence and LCD display appears as follows:

1. Selecting printing function ON or OFF:



fig-4

2. Setting the interval printing “seconds” value.



fig-5

3. Setting the interval printing “minutes” value.



fig-6

4. Setting the interval printing start time "minutes" value.



fig-7

5. Setting the printing start time "hours" value.

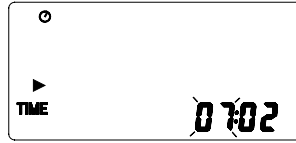


fig-8

6. Setting the printing stop time "minutes" value.

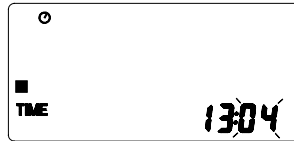


fig-9

7. Setting the printing stop time "hours" value.

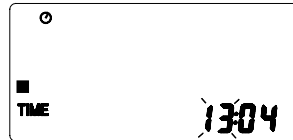


fig-10

8. Setting the current time "minutes".



fig-11

9. Setting the current time "hours".

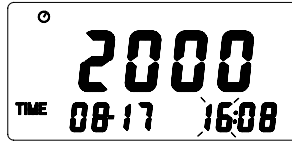


fig -12

10. Setting the calendar "date".



fig -13

11. Setting the calendar "month".



fig -14

12. Setting the last two digits of the calendar year.



fig -15

When all the settings have been entered, press the "MENU" button to return to normal measurement mode.

VII. INTERVAL PRINTING SET-UP

□ To setup interval printing with a 24 hours limitation.

1. Press the "MENU" button to enter setting mode; setting print operation is turned ON.
2. Select the printing interval time setting mode. Set the required "seconds" and "minutes" (from 00:06 to 59:59).
3. Select the required time to start printing. Set the "minutes" and "hours" (from 00:00 to 23:59).
4. Select the required time to stop printing. Set the "minutes" and "hours" (from 00:00 to 23:59).
5. Press the "MENU" button to exit setting mode. The LCD will display a " " mark at the left upper corner.

Note: The start time must be earlier than the stop time, otherwise the buzzer will sound to warn the settings are incorrect. The instrument will not accept the settings when the "MENU" button is pressed.

VIII. BATTERY REPLACEMENT

When the battery power is not sufficient to provide accurate measurements, the **BT** symbol will appear on the LCD. Replace the exhausted batteries with qty. 6 x 1.5V AAA size cells.

1. Turn the instrument off and then disconnect the temperature/humidity probe and any K-type thermocouple. Remove the battery cover.
2. Remove batteries from the holder and replace with qty. 6 new 1.5V size AAA alkaline batteries.
3. Refit the battery cover and check the instrument operates correctly.

IX. RECALIBRATION PROCEDURE

The thermometer should be calibrated once a year to ensure its continued accuracy. Contact RS Components for further details of calibration service. The address is given at the end of these instructions.