TES RTD DATA LOGGER THERMOMETER

TES-1317R

INSTRUCTION MANUAL

TES ELECTRICAL ELECTRONIC CORP.

CONTENTS

2-2 General Specifications

Power Supply : 6 pcs size AAA battery.

Battery life : approx. 55 hours (carbon zinc battery).

Auto Power off : 30 minutes. (If no key is pressed).

Low Battery Indication : The (BT) is displayed when the battery voltage drops below the operating voltage.

Measurement Rate : One time per 1.5 sec.

Weight : 235 gm (8.29 oz)

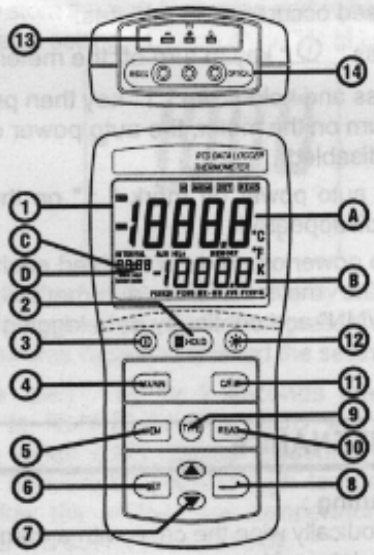
Dimension : 5.91"Lx 2.83"Wx 1.38"H (150x72x35mm)

Operating Temperature and Humidity : 0 to 50℃ (32 to 122°F) below 80% RH

Storage Temperature and Humidity : -10 to 60℃ , 14 to 140°F below 70% RH

Accessories : 6 pcs Battery, Instruction Manual CD Software, Optical RS-232 Interface Cable.

3. FRONT PANEL DESCRIPTION



1. INTRODUCTION

This instrument is a digital thermometer for working with Pt3916 / 3926 / 385 platinum RTD (Resistance Temperature Detector) 100 ohm as temperature sensor.

Temperature indication follows the international temperature scale of 1990. (ITS-90)

- Read the following safety 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

Environment conditions

① Altitude up to 2000 meters
② Relatively humidity 80% max.
③ Operation Ambient 0~50℃(32℉~122℉)

U.S. Pat. No. Des. 446,135

Safety symbols

When servicing, use only specified replacement parts.

CE Comply with EMC

2. SPECIFICATIONS

2-1 Electronical Specifications

Probe Type : Pt3916, Pt3926 or Pt385 100ohm RTD 3-wires style probe.

Measurement Range :

Pt385	-190℃ ~ 790℃	(-310℉ ~ 1454℉)
Pt3916	-190℃ ~ 615℃	(-310℉ ~ 1139℉)
Pt3926	-190℃ ~ 615℃	(-310℉ ~ 1139℉)

Display Effect Resolution : 0.1℃ / ℉ / K

Measurement Accuracy :
±[0.05% of reading +0.5℃ (0.9℉)]

NOTE
This basic accuracy specification does not include the error of the temperature probe. Please refer to the temperature probe accuracy specification for additional details.

Temperature Coefficient :
0.01% of reading +0.03℃ per ℃ (0.06℉ per ℉) outside the specified +18℃ to 28℃ (+64℉ to 82℉) range.

Manual Data Memory capacity : 4200 sets.

(1). LCD Display :
A. Main display : Temperature reading.
B. Secondary display : MAX, MIN, AVG reading.
C. Time display : Time display (100-hour clock), shows elapsed time when MAX, MIN or AVG is on.
D. Auto power off mark (:).

(2). [H] HOLD key : Press [H] HOLD key to freeze or unfreeze the display reading.

(3). ⏻ Power key : Press ⏻ key to turn the meter on or off.

(4). MX/MN key :
① Press "MX/MN" key to step through the maximum, minimum, and average readings.
② Press "MX/MN" key for 2 seconds to exit MX/MN mode.

(5). MEM key :
① Press "MEM" key each time, stores a single set of logged reading in memory.
② Press "MEM" key for 2 seconds to enter to the continuity data logging mode, press again to exit this mode.

(6). SET key :
① Press "SET" key to enter to the interval time setting of continuity data logging mode.
② Press "↵ " key to enter to the Alarm High Limit value setting mode.
③ Press "↵ " key to enter to the Alarm Low Limit value setting mode.

(7). ▲▼ Key :
① Press ▲ or ▼ key to increase or decrease the data logging interval time setting and Alarm High / Low limit value setting.
② Press ▲ or ▼ key to increase or decrease the READ mode memory location.

(8). ↵ key :
① Press "↵ " key to store interval time setting and Alarm High / Low limit value setting.
② Press and hold down "↵ " key for 2 seconds to toggle showing the "hour : min" and " min : sec" elapsed time in the MX/MN mode.

(9). TYPE key : Press "TYPE" key to select the RTD type (Pt3916, Pt3926 , Pt385).

(10). READ key : Press "READ" key to show manual memory logged reading, press again to exit this mode.

(11). C/F/K key : Press C/F/K key to select Celsius (℃), Fahrenheit (℉) or Kelvin (K) temperature scale.

(12). ✳ key : Press backlight key to turn the backlight on and off. The backlight turns off after 13 seconds.

(13). RTD input.

(14). RS-232 optical interface jack.

4. OPERATION INSTRUCTIONS

4-1 Temperature Measurement

① Press " ⏻ " key to turn on the thermometer.

② Plug the RTD probe into the thermocouple input. If no RTD probe is plugged into the selected input or the RTD probe is "open", the display will show "- - - -.-".

③ Press "C/F/K" key to desired temperature scale.

④ Press "TYPE" key to select the RTD Type you want.

⑤ Perform measurements by contacting the object being measured with the probe sensor.

⑥ Read the temperature on the display. The display will show "OL" (overload) when the temperature being measured is outside the meter valid range.

4-2 MAX, MIN and AVG Function Operations

① Press "MX/MN" key to enter to MX/MN mode, to step through the maximum (MAX), minimum (MIN) or the true average (AVG-true 9.7 hours recording average) readings, and disable auto power off function.

② Press and hold down "↵ " key for 2 seconds to toggle showing the elapsed time "hour : min" and "min : sec" on LCD.
The elapsed time since entering reading mode, or the time at which the MAX, MIN or AVG occurred, appears on the time display.

③ Press "MX/MN" key for 2 seconds to exit MX/MN mode. In MX/MN mode, the "C/F/K" and "TYPE" key are not active.

④ Press "MEM" key for 2 seconds to start logging, LCD will show " MEM " mark, and disable auto power off function. The "MEM" flicker one time means store one set data to memory.
When memory is full (4200 data sets), "FULL" symbol will appear on the display and the meter will stop datalogging.

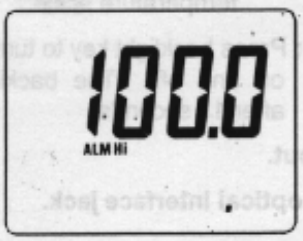
⑤ In this mode, the MAX, MIN and AVG function can be used.

⑥ Press "MEM" again to stop logging, the continuity logging data only download to PC use, can not use "READ" function to show on display.

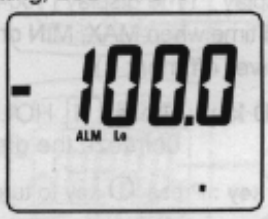
4-6 Alarm Function Operations

The ALARM function only perform on the main display temperature value, the resolution of setting value is one degree and regardless the temperature units.

① Press "SET" key one time, then press "↵ " key one time enter to Alarm High limit value setting mode, LCD will show "ALM Hi" mark.



② Press "▲" or "▼" key until the display shows the alarm High limit values you want, and then press "↵ " key to store the high limit value and enter to Alarm Low limit value setting, LCD will show "ALM Lo" mark.



③ Press "▲" or "▼" key until the display shows the alarm Low limit values you want, then press "↵" key to store the Low limit value and finished the setting mode.

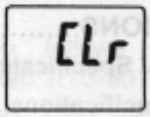
④ Press "SET" key for 2 seconds then release it, enter to ALARM function, LCD will show "ALM" mark. When main display measured temperature value exceeds the setting high temperature value or below the setting Low temperature value, the beeper will sound continuously.

⑤ Press "SET" key for 2 seconds then release it to exit the ALARM function.

4-3 To Erase the Memory of Datalogger

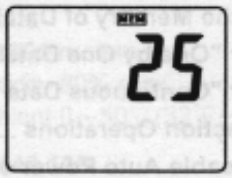
① Press " ⏻ " key to turn off the meter.

② Press and hold down "MEN" key then press " ⏻ " key to turn on the meter, LCD will show "CLr" mark, all memory will be cleared.

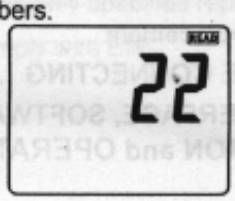


4-4 To Trigger "One by One Datalogging"

① Press "MEM" key each time, stores one set logged reading in memory, LCD will show " MEM " and memory location numbers (01 to 97).

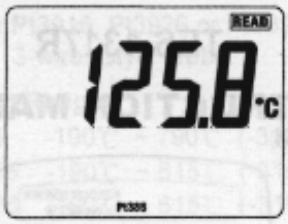


② Press "READ" key to enter the manual memory data mode. LCD will show " READ " and memory location numbers.

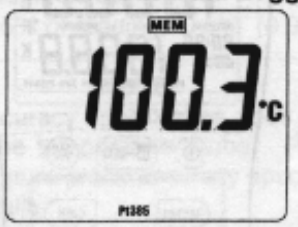


③ Press "▲" or "▼" key to scroll through the logged readings.

④ Press "READ" key again to exit READ mode.



4-5 To Trigger "Continuous Data Logging"



① Press "SET" key enter to logging interval time setting, LCD will show "INTERVAL", " MEM " marks, and interval time.

② Press "▲" or "▼" key until the display shows the logging interval (3 to 255 seconds) you want, and then press "↵" key to select.

③ Press "↵" key two times to exit interval time setting mode.

4-7 How to Disable Auto Power off Function

The meter will enter to the sleep mode if no key pressed occurs for 30 minutes.

① Press " ⏻ " key to turn off the meter.

② Press and hold down "↵" key then press " ⏻ " key to turn on the meter, the auto power off function will be disabled.

The auto power off mark " : " on the time display will disappeared.

Auto power off mode is enabled each time you turn on the meter and is automatically disabled in "MX/MN" and continuity data logging modes.

5. MAINTENANCE

5-1 Cleaning :

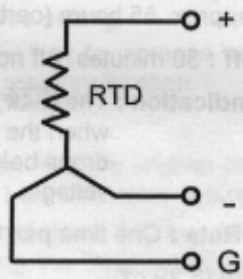
Periodically wipe the case with a damp cloth and mild detergent.

Do not use abrasives or solvents. Clean and dry as required.

5-2 Battery Replacement :

When LCD display shows " BT ", the battery has had insufficient power to support an accurate test. At this moment, replace it with new battery from the battery compartment.

6. RTD PROBE CONNECTING



7. RS-232 INTERFACE, SOFTWARE INSTALLATION and OPERATION

For the detailed instruction, please refer to the content of attached CD disk, which has the complete instruction of RS-232 interface, software operation and relevant information.

RS-232 protocol : are enclosed within the content of CD-ROM, please open the CD-ROM for details.

TES ELECTRICAL ELECTRONIC CORP.
TES 7F, No. 31, Lane 513, Rui Guang Road, Neihu Dist. Taipei. Taiwan, R. O. C.
Tel : (02) 2799-3660 Fax : 886-2-2799-5099
E-Mail : tes@ms9.hinet.net http://www.tes.com.tw

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