2 in 1
THERMOMETER

Infrared thermometer+Type K/J/T/E/R

Model : TM-929

1. FEATURES

* 2 in 1, Infrared thermometer + Thermocouple (Type K/J/T/E/R) thermometer.
* Microcomputer circuit with high performance.
* Wide temperature measuring range.
* Build in ℃ & ℉ select button on the front panel.
* Data hold function for stored the desired value on display.
* Memory function to record the maximum & minimum reading with recall.
* Build the REL button, useful for relative measurement.
* Sensor select button on the front panel, easy to change different type probe.
* Infrared thermometer, non-contact temperature measurement, -20 ℃ to 400 ℃ (-4 ℉ to 752 ℉), precision for none contact temperature measurement.
* Emissivity adjustment for IR thermometer.
* Laser guide for IR thermometer.
* Thermocouple probe accepts 5 different types : type K, type J, type T, type E, type R.
* RS 232 data output, easy cooperate with computer.
* Optional data acquisition software for data record.
* Auto power shut off saves battery life.
* Built-in low battery indicator.
* Heavy duty & compact housing case with stand.

* Operates from 006P DC 9V battery.

2. SPECIFICATIONS

2-1 General Specifications

Display	*Dual display with annunciator :* * Main display : 10 mm (0.4") LCD, 5 digit. * Small display : To show the emissivity value.
Sensor Type	*1. Infrared thermometer* (Non contact temperature measurement)
	2. Thermocouple probe type K type J type T type E type R
Functions	℃, ℉, Data hold, Memory (Max., Min.), Relative measurement, Emissivity adjustment (IR thermometer).
Resolution	1 degree or 0.1 degree.
Circuit	Exclusive microcomputer circuit, the software build in linearity correction instead the traditional hardware circuit.
Emissivity Adjustment	Range : 0.20 to 1.00. Adjustment by pushing button on front panel.
Laser Guide	Red laser light, less than 1 mW, *Meet EN60825*
Probe Input Socket	*Thermocouple probe :* Standard 2 pin thermocouple socket.
Sampling Time	Approx. 1 second.
Hold Function	To freeze the display reading value.
Memory Recall	Memorize the Maximum, Minimum reading with recall.
Offset Adjustment	Availabl for thermocouple thermometer offset adjustment by pushing button on front panel.
Over Indication	Show " - - - - ".
Data Output	RS232 PC serial interface.
Power Supply	Alkaline or heavy duty type, DC 9V battery, 006P, MN1604 (PP3) or equivalent.
Power Consumption	Approx. DC 11 mA (w/o laser light on). Approx. DC 16 mA (with laser light on). * *Above consumption value is caculated under the function of IR thermometer.*
Operating Temperature	0 to 50 ℃ (32 to 122 ℉).
Operating Humidity	Less than 80% RH.
Weight	265 g/0.6 LB.
Dimension	195 x 120 x 58 mm. (7.7 x 4.7 x 2.3 inch).
Standard Accessory	Operational manual..... 1 PC.
Optional & accessories	Hard carrying case Model : CA-06
	RS232 cable Model : UPCB-02
(Refer page 18)	*Application software, windows version.* Model : SW-U101-WIN

2-2 Electrical Specifications

A. Infrared Thermometer

Resolution/ ranges	1℃	- 20 ℃ to 400 ℃
	1℉	-4 ℉ to 752 ℉
Accuracy	± 3 % of reading or 3℃ (5 ℉), which ever is greater. * Accuracy test under the measurement range of less than 300 ℃ (572 ℉). * *Meter operating temp. within 23 ± 5 ℃ and the emissivity value of measurement target set to 0.95.* * *Spec. tested under the 20 cm dia. black body, the measuring distance from the probe sensing Head is 30 cm.* * *Spec. tested environment : RF Field Strength less than 3 V/M and frequency less than the 30 MHz.*	
Temp. Sensor	Thermocouple pie.	
Emissivity Setting	* *By push button.* *Setting range : 0.20 to 1.00.* * *Factory preset emissivity value to 0.95, which will cover 90% of a typical application.*	
Measurement Wave length Region	6 to 12 micro meter.	
Distance Factor	D/S : Approx. 7:1. D - Distance, S - Spot.	

B. Thermocouple (type K/J/T/E/R) Thermometer

Sensor Type	**Reso-lution**	**Range**	**Accuracy**
Type K	0.1 ℃	-100.0 to 1300.0 ℃	± (1 % + 1 ℃)
	0.1 ℉	-148.0 to 2372.0 ℉	± (1 % + 2 ℉)
Type J	0.1 ℃	-100.0 to 1150.0 ℃	± (1 % + 1 ℃)
	0.1 ℉	-148.0 to 2102.0 ℉	± (1 % + 2 ℉)
Type T	0.1 ℃	-100.0 to 400.0 ℃	± (1 % + 1 ℃)
	0.1 ℉	-148.0 to 752.0 ℉	± (1 % + 2 ℉)
Type E	0.1 ℃	-100.0 to 900.0 ℃	± (1 % + 1 ℃)
	0.1 ℉	-148.0 to 1652.0 ℉	± (1 % + 2 ℉)
Type R	1 ℃	0 to 600 ℃	± (1 % + 5 ℃)
		601 to 1700 ℃	± (1.5 % + 5 ℃)
	1 ℉	32 to 1112 ℉	± (1 % + 10 ℉)
		1113 to 3092 ℉	± (1.5 % + 10 ℉)

Remark :

a. *Accuracy value is specified for the meter only.*

b. *Accuracy test is based on the environment temperature of 23 ± 5℃.*

c. *Linearity Correction :*
Memorize the thermocouple's curve into the CPU circuit.

3. OPTIONAL ACCESSORIES

Thermocouple Probe (Type K)	Model : TP-01 * Measure Rage : -40 ℃ to 250 ℃, -40 ℉ to 482 ℉. * Ultra fast response naked-bead thermocouple, general purpose application.
Thermocouple Probe (Type K)	Model : TP-02A * Measure Range : -50 ℃ to 900 ℃, -50 ℉ to 1650 ℉. * Dimension: 10 cm tube, 3.2 mm Dia.
Thermocouple Probe (Type K) Surface Probe	Model : TP-04 * Measure Range : -50 ℃ to 400 ℃, -50 ℉ to 752 ℉. * Dimension: 10 cm tube, 8 mm Dia.
Thermocouple Probe (Type K)	Model : TP-03 * Measure Range : -50 ℃ to 1200 ℃, -50℉ to 2200 ℉. * Size : Temp. sensing head - 15 mm Dia. Probe length : 120 mm.
RS232 cable	Model : UPCB-02 * RS232 cable for connecting between the meter & the computer.
Software	Model : SW-U101-WIN, Windows version. * Software apply as the performance of data logging system & data recorder...
Carrying Case	Model : CA-06, Hard carrying case.