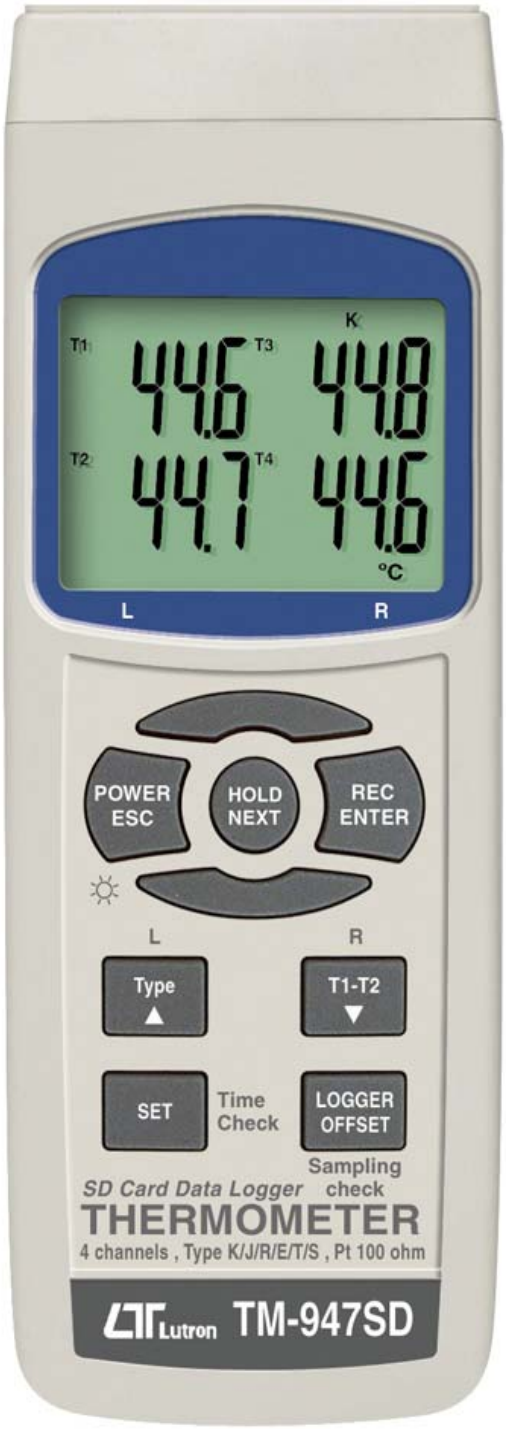
SD Card, real time data logger, Patent

4 channels THERMOMETER

Model : TM-947SD *ISO-9001, CE, IEC1010*





Lutron

LUTRON ELECTRONIC

The Art of Measurement

SD Card real time data logger
4 channels THERMOMETER
Model : TM-947SD

FEATURES

* Type K/J/T/E/R/S, Pt 100 ohm, measurement with 4 display.
* Show 4 channels display on the LCD at the same time.
* Type K : -100 to 1300 ℃.
* Type J : -100 to 1200 ℃.
* Pt 100 ohm : -199.9 to 850.0 ℃.
* ℃/℉, 0.1 degree/1 degree.
* 4 channels (T1, T2, T3, T4), T1-T2.
* Microcomputer circuit provides intelligent function and high accuracy.
* Offset adjustment for the Type K/J/T/E/R/S measurement.
* Offset adjustment for the Pt 100 measurement.
* Measuring unit can select to ℃ or ℉.
* Real time SD memory card Datalogger, it Built-in Clock and Calendar, real time data recorder, sampling time set from 1 second to 3600 seconds.
* Manual datalogger is available (set the sampling time to 0 second), during execute the manual datalogger function, it can set the different position (location) No. (position 1 to position 99).
* Innovation and easy operation, computer is not need to setup extra software, after execute datalogger, just take away the SD card from the meter and plug in the SD card into the computer, it can down load the all the measured value with the time information (year/month/date/ hour/minute/second) to the Excel directly, thenuser can make the further data or graphic analysis by themselves.
* SD card capacity : 1 GB to 16 GB.
* LCD with green light backlight, easy reading.
* Can default auto power off or manual power off.
* Data hold, record max. and min. reading.
* Microcomputer circuit, high accuracy.
* Power by UM3/AA (1.5 V) x 6 batteries or DC 9V adapter.
* RS232/USB PC COMPUTER interface.
* Heavy duty & compact housing case.

GENERAL SPECIFICATIONS

Circuit	Custom one-chip of microprocessor LSI circuit.	
Display	LCD size : 52 mm x 38 mm LCD with green backlight (ON/OFF).	
Channels	T1, T2, T3, T4, T1-T2.	
Sensor type	Type K thermocouple probe. Type J/T/E/R/S thermocouple probe. PT 100 ohm probe ** Cooperate with an 0.00385 alpha coefficient, meet DIN IEC 751.*	
Resolution	0.1℃/1℃, 0.1℉/1 ℉.	
Datalogger Sampling Time Setting range	Auto	1 second to 3600 seconds *@ Sampling time can set to 1 second, but memory data may loss.*
	Manual	Push the data logger button once will save data one time. *@ Set the sampling time to 0 second.* *@ Manual mode, can also select the 1 to 99 position (Location) no.*
Memory Card	SD memory card. 1 GB to 16 GB.	
Advanced setting	* Set clock time (Year/Month/Date, Hour/Minute/ Second) * Decimal point of SD card setting * Auto power OFF management * Set beep Sound ON/OFF * Set temperature unit to ℃ or ℉ * Set sampling time * SD memory card Format	
Temperature Compensation	Automatic temp. compensation for the type K/J/T/E/R/S thermometer.	
Linear Compensation	Linear Compensation for the full range.	
Offset Adjustment	Available for Type K/J/T/E/R/S and Pt 100 ohm.	
Probe Input Socket	Type K/J/T/E/R/S 2 pin thermocouple socket.	
	Pt 100 ohm : Ear phone socket.	
Over Indication	Show " - - - - ".	
Data Hold	Freeze the display reading.	
Memory Recall	Maximum & Minimum value.	
Sampling Time of Display	Approx. 1 second.	
Data Output	RS 232/USB PC computer interface. ** Connect the optional RS232 cable UPCB-02 will get the RS232 plug.* ** Connect the optional USB cable USB-01 will get the USB plug.*	

Power off	Auto shut off saves battery life or manual off by push button.
Operating Temperature	0 to 50 ℃.
Operating Humidity	Less than 85% R.H.
Power Supply	**.*Alkaline or heavy duty DC 1.5 V battery (UM3, AA) x 6 PCs, or equivalent.
	**.*DC 9V adapter input. (AC/DC power adapter is optional).
Power Current	Normal operation (w/o SD card save data and LCD Backlight is OFF) : *Approx. DC 8.5 mA.*
	When SD card save the data but and LCD Backlight is OFF) : *Approx. DC 30 mA.*
	**. If LCD backlight on, the power consumption will increase approx. 14 mA.*
Weight	489 g/1.08 LB.
Dimension	177 x 68 x 45 mm (7.0 x 2.7x 1.9 inch)
Accessories Included	* Instruction manual.....1 PC
Optional Accessories	* Type K thermocouple probe. TP-01, TP-02A. TP-03, TP-04, TP-05. * Pt 100 ohm probe, TP-101. * SD Card (1 GB) * SD Card (2 GB) * USB cable, USB-01. * RS232 cable, UPCB-02. * Data Acquisition software, SW-U801-WIN. SW-E802. * AC to DC 9V adapter. * Hard carrying case, CA-06. * Soft carrying case, CA-05A.

ELECTRICAL SPECIFICATIONS (23± 5 ℃)

PT 100 ohm

Resolution	Range	Accuracy
0.1 ℃	-199.9 to 850.0 ℃	± (0.4 % + 1 ℃)
0.1 ℉	-327.0 to 999.9 ℉	± (0.4 % + 1.8 ℉)
1 ℉	1000 to 1562 ℉	± (0.4 % + 2 ℉)
** Pt 100 ohm probe TP-101 is the optional accessory.*		

Type K/J/T/E/R/S

Sensor Type	Resolution	Range	Accuracy
Type K	0.1 ℃	-50.1 to -100.0 ℃	± (0.4 % + 1 ℃)
		-50.0 to 999.9 ℃	± (0.4 % + 0.5 ℃)
	1 ℃	1000 to 1300 ℃	± (0.4 % + 1 ℃)
	0.1 ℉	-58.1 to -148.0 ℉	± (0.4 % + 1.8 ℉)
		-58.0 to 999.9 ℉	± (0.4 % + 1 ℉)
	1 ℉	1000 to 2372 ℉	± (0.4 % + 2 ℉)
Type J	0.1 ℃	-50.1 to -100.0 ℃	± (0.4 % + 1 ℃)
		-50.0 to 999.9 ℃	± (0.4 % + 0.5 ℃)
	1 ℃	1000 to 1150 ℃	± (0.4 % + 1 ℃)
	0.1 ℉	-58.1 to -148.0 ℉	± (0.4 % + 1.8 ℉)
		-58.0 to 999.9 ℉	± (0.4 % + 1 ℉)
	1 ℉	1000 to 2102 ℉	± (0.4 % + 2 ℉)
Type T	0.1 ℃	-50.1 to -100.0 ℃	± (0.4 % + 1 ℃)
		-50.0 to 400.0 ℃	± (0.4 % + 0.5 ℃)
	0.1 ℉	-58.1 to -148.0 ℉	± (0.4 % + 1.8 ℉)
		-58.0 to 752.0 ℉	± (0.4 % + 1 ℉)
Type E	0.1 ℃	-50.1 to -100.0 ℃	± (0.4 % + 1 ℃)
		-50.0 to 900.0 ℃	± (0.4 % + 0.5 ℃)
	0.1 ℉	-58.1 to -148.0 ℉	± (0.4 % + 1.8 ℉)
		-58.0 to 999.9 ℉	± (0.4 % + 1 ℉)
	1 ℉	1000 to 1652 ℉	± (0.4 % + 2 ℉)
Type R	1 ℃	0 to 1700 ℃	± (0.5 % + 3 ℃)
	1 ℉	32 to 3092 ℉	± (0.5 % + 5 ℉)
Type S	1 ℃	0 to 1500 ℃	± (0.5 % + 3 ℃)
	1 ℉	32 to 2732 ℉	± (0.5 % + 5 ℉)

Remark :

a. Accuracy value is specified for the meter only.

b. Accuracy is tested under the meter's environment temperature within 23 ± 5℃.

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

PATENT	CHINA : ZL 2008 2 0189918.5 ZL 2008 2 0189917.0 TAIWAN : M 358970 M 359043 Germany : Nr. 20 2008 016 337.4 JAPAN : 3151214 U.S.A. : Pending

* Appearance and specifications listed in this brochure are subject to change without notice.