SD Card, real time data logger, Patent

4 channels THERMOMETER

Model : TM-947SD

ISO-9001, CE, IEC1010
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 ℃.
* C/F, 0.1 degree/1 degree.
* 4 channels ( T1, T2, T3, T4 ), 1±12.
* 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 ◦C or ◦F.
* Real time SD memory card Datalogger, it Built-in Clock and Calendar, real 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, themuser can make the further data or graphic analysis by themselves.
* SD card capacity - 1 GB to 16 GB.
* LCD with green back light, 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
LCM with green back light ( 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 ◦C/1/1, 0.1°F/1.
Datalogger
Auto
1 second to 3600 seconds
Manual
Push the data logger button once to save data one time.
@ Set the sampling time to 0 second.
@ Manual mode, can also select the 1 to 99 position ( Location ) no.
Sampling Time
Setting range
1 second to 3600 seconds
@ Sampling time can set to 1 second, but memory data may loss.
Memory Card
SD memory card. 1 GB to 16 GB.
Advanced setting
* Decimal point of SD card setting
* Auto power OFF management
* Set beep Sound ON/OFF
* Set temperature unit to ◦C or ◦F
* Set sampling time
* SD memory card Format
Temperature Compensation
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
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.

ELECTRICAL SPECIFICATIONS (23±5 ℃)

<table>
<thead>
<tr>
<th>PT 100 ohm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution</td>
</tr>
<tr>
<td>K, J</td>
</tr>
<tr>
<td>F</td>
</tr>
<tr>
<td>T</td>
</tr>
<tr>
<td>* Pt 100 ohm probe TP-101 is the optional accessory.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sensor Type</th>
<th>Resolution</th>
<th>Range</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type K</td>
<td>50.1 to 100.0 ℃</td>
<td>± (0.4 % +1 ℃)</td>
<td></td>
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<tr>
<td>0.1 ℃</td>
<td>50.0 to 999.9 ℃</td>
<td>± (0.4 % +0.5 ℃)</td>
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<tr>
<td>1 ℃</td>
<td>1000 to 1300 ℃</td>
<td>± (0.4 % +1 ℃)</td>
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<tr>
<td>0.1 ℉</td>
<td>58.1 to 148.0 ℉</td>
<td>± (0.4 % +1.8 ℉)</td>
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<tr>
<td>1 ℉</td>
<td>1000 to 2372 ℉</td>
<td>± (0.4 % +2 ℉)</td>
<td></td>
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<tr>
<td>Type J</td>
<td>50.1 to 100.0 ℃</td>
<td>± (0.4 % +1 ℃)</td>
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<tr>
<td>0.1 ℃</td>
<td>50.0 to 999.9 ℃</td>
<td>± (0.4 % +0.5 ℃)</td>
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<tr>
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<td>± (0.4 % +1 ℃)</td>
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<tr>
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<td>± (0.4 % +1.8 ℉)</td>
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<tr>
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<td>± (0.4 % +2 ℉)</td>
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<td>Type T</td>
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<td>± (0.4 % +1 ℃)</td>
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<tr>
<td>0.1 ℃</td>
<td>50.0 to 999.9 ℃</td>
<td>± (0.4 % +0.5 ℃)</td>
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<tr>
<td>1 ℃</td>
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<tr>
<td>0.1 ℉</td>
<td>58.1 to 148.0 ℉</td>
<td>± (0.4 % +1.8 ℉)</td>
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<tr>
<td>1 ℉</td>
<td>1000 to 2502 ℉</td>
<td>± (0.4 % +2 ℉)</td>
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<td>Type E</td>
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<tr>
<td>0.1 ℃</td>
<td>50.0 to 999.9 ℃</td>
<td>± (0.4 % +0.5 ℃)</td>
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<tr>
<td>1 ℃</td>
<td>1000 to 1500 ℃</td>
<td>± (0.4 % +1 ℃)</td>
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<tr>
<td>0.1 ℉</td>
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<td>± (0.4 % +1.8 ℉)</td>
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<tr>
<td>1 ℉</td>
<td>1000 to 2502 ℉</td>
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<tr>
<td>Type K</td>
<td>0 to 1700 ℃</td>
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<td>Type S</td>
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<tr>
<td>1 ℃</td>
<td>32 to 2732 ℉</td>
<td>± (0.5 % +5 ℃)</td>
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</table>

Remark:
a. Accuracy value is specified for the meter only.
b. Accuracy is tested under the meter's environment temperature within 23 ±5 ℃.
c. Linearly Corrected : Memorize the thermocouple's curve into the intelligent CPU circuit.

PATENT
CHINA : ZL 2008 2 0189915.8 ZL 2008 2 018917.0
Germany : Nr. 20 2008 016 337.4
JAPAN : 3151214
T AIWAN : M 359070 M 359043
U.S.A. : Pending

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