TH082
4 Channel USB Handy K Data Logger

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User Guide
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Please take a few minutes to browse through the user manual before you begin to operate the unit to ensure that you are fully familiarised with how best to operate the data logger thermometer as accurately and safely as possible.

The model 101 single channel and model 104 4 channel microprocessor based digital thermometers can be used with a variety of different thermocouple types. These consist of types J, K, T, R, S, E and N thermocouples.

The data loggers include RS232 communications for downloading stored data and come complete with a Windows ™ program suitable for use with standard PC type computers.

Features

- Maximum display of 4 temperature values
- Resolution 0.1ºC/0.1ºF and 1ºC/1ºF
- Quick response
- Setting of alert temperature
- Auto power off function
- Low battery indication
- Real time clock
- Count function
- Back light for easy reading.
- T1 – T2 and T3 – T4 for 4 channel unit
- Additional features include, HOLD, CHAN, MAX, MIN, AVG, ºC/ºF/ºK selection

General Specification

1. Display Mode: 4 digit LCD display
2. Polarity Indicator Positive reading = none
   Negative reading= "-"
3. Overload Indicator: "OL" or "-OL"
4. Low battery Indicator: "B"
5. Power Source: 4 x 1.5V AAA alkaline cells
6. Auto Power Off: Set to turn off after 20 minutes if no keys are pressed and not in RS232 or logging mode. Press the SHIFT key for 3 seconds to cancel Auto Power Off function.
7. Sample Rate: 1 reading per second
8. Battery life: Approx. 550 hours
9. Operating Conditions: 0-50°C and 0-80% RH
10. Storage: -20° to 60°C & 0-80% RH
11. Dimensions: 164mm x 76mm x 32mm (L x W x D)
12. Weight:: 415gm. Including batteries

Electrical Specifications:

Range

K	Type	-100°C to +1300°C
J	Type	-100°C to +1000°C
E	Type	-50°C to +800°C
T	Type	-100°C to +400°C
R/S	Type	0 °C to +1700°C
N	Type	-100°C to +1300°C

Accuracy

K/J/E/T Types:	±(0.1% rdg. +0.7°C)	-100°C to 1300°C
R/S Types:	+(0.1% rdg. +2C)	0°C to 1700°C
N Type	+(0.1% rdg. +1.5°C)	-100°C to +1300°C

Resolution

Type	1°C	0.1°C
K	-100°C to +1300°C	-100°C to +200°C
J	-100°C to +1000°C	-100°C to +150°C
E	-50°C to +800°C	-50°C to +100°C
T	-100°C to +400°C	-100°C to +150°C
R/S	0 °C to +1700°C	------
N	-100°C to +1300°C	-100°C to +150°C

Controls:-

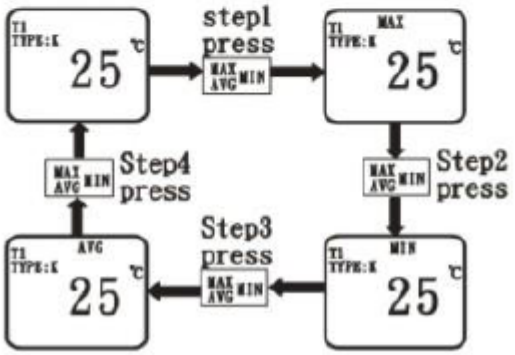
1. LCD display
2. Function control key
3. Thermocouple input socket
4. Battery cover
5. Rs232 communications socket
6. Shift key
7. Power button

Power ON/OFF key.
Press the power button to turn the power ON or OFF

°C/°F/°K: The temp. UNIT selection key.
Press the key to sequentially rotate between
The 3 temp. units.

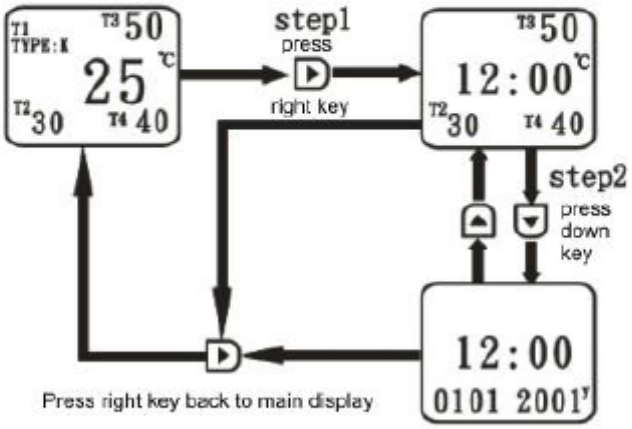
HOLD: The readout hold key.
Press the "HOLD" key, a "HOLD" icon will display
On the LCD and the readout is held. Press the
"HOLD" key once more to cancel the function.

MAX/MIN/AVG: The maximum/ minimum/ average readout
Key function.



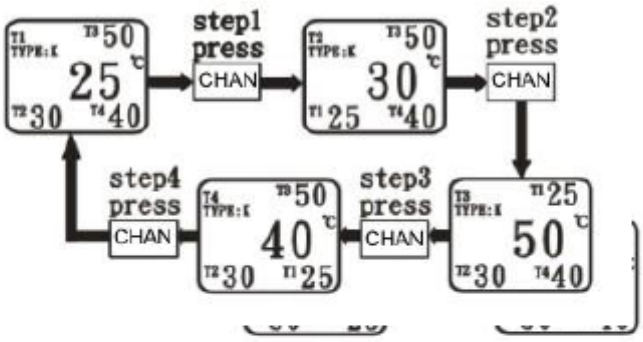
REL: The tare relative readout function key.
Pres the "REL" key, and the "REL" icon will display
On the LCD and the value of the temp. will become
0,and save the original temp. to make the new value.
When ever the input temp. changes, the LCD shows
The input value minus the tare value.

1° 1° or 0.1° unit selection function key.



Press the "1°" key, the whole resolution will become
1° C / 1°F and no decimal places. Press the key once
More, the display will restore the normal state.
(the resolution will become 0.1°C / 0.1°F)

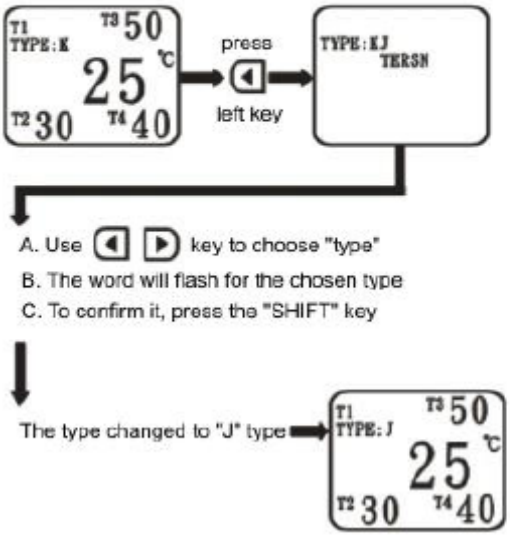
CHAN: Every time this function key is press the next Input temp. value is displayed as the main (large) Reading on the LCD.



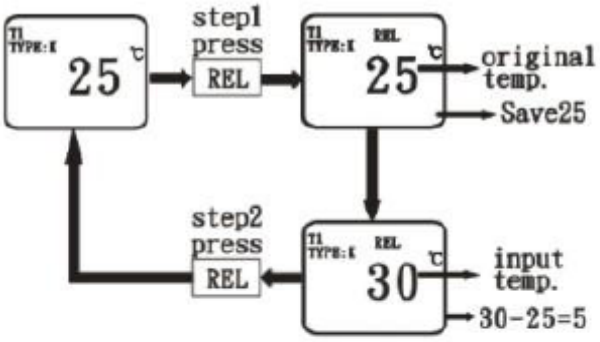
Set Logging Time Interval

The Logging time interval is initially set to 1 second on delivery. To set the logging time interval first press the yellow shift key, the word "Shift" will be shown near the top left hand corner of the LCD. Then press the blue RS232 key, remember that once the yellow shift key is pressed all key functions change to that of the WHITE legend above them i.e. INTV short for INTERVAL. The LCD display will then show the currently set logging interval in minutes and seconds (e.g. 00:01 showing 1 second). Use the 4 blue arrow keys to set the required logging interval within the range 00:01 up to 99:00. Once set, press the yellow shift key again to return to normal mode of operations

TYPE: Select the thermocouple type function key.
To select one of the seven types of thermocouple
Follow the method below:-

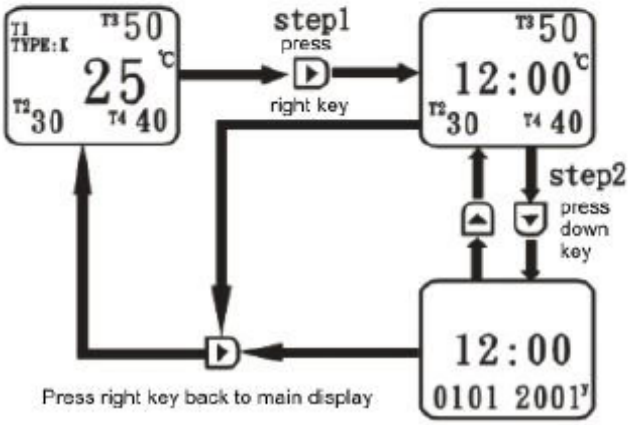


Count: The count time setting function key.
The maximum count time is 99 hours and

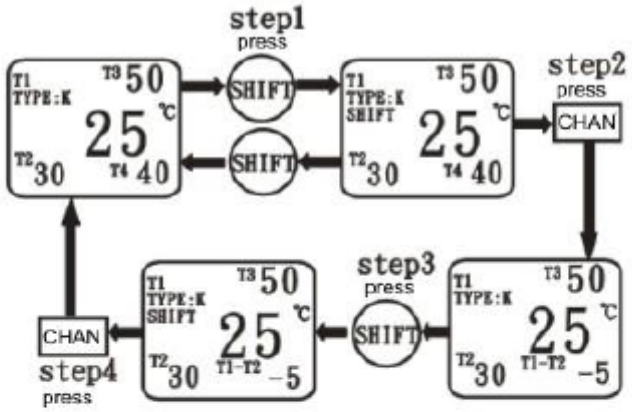


59 minutes.

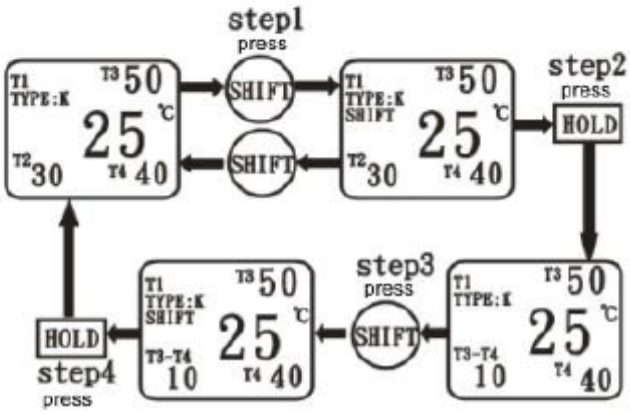
TIME: To see the present time function key.



T1-T2: for four channel modes



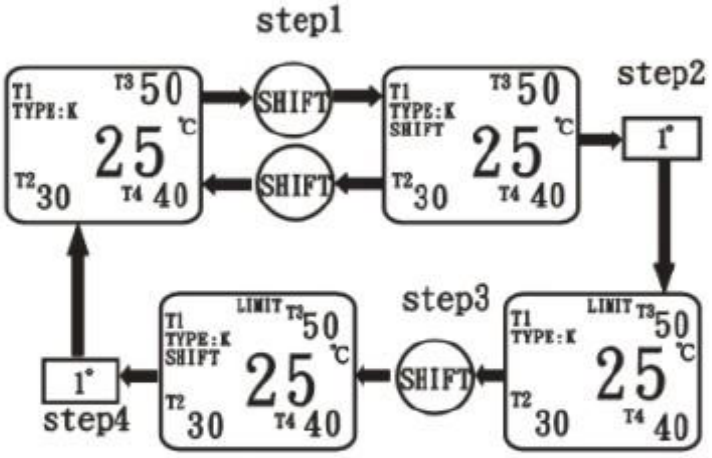
T3-T4: for four channel modes



LIMIT: To set the alarm function key:-

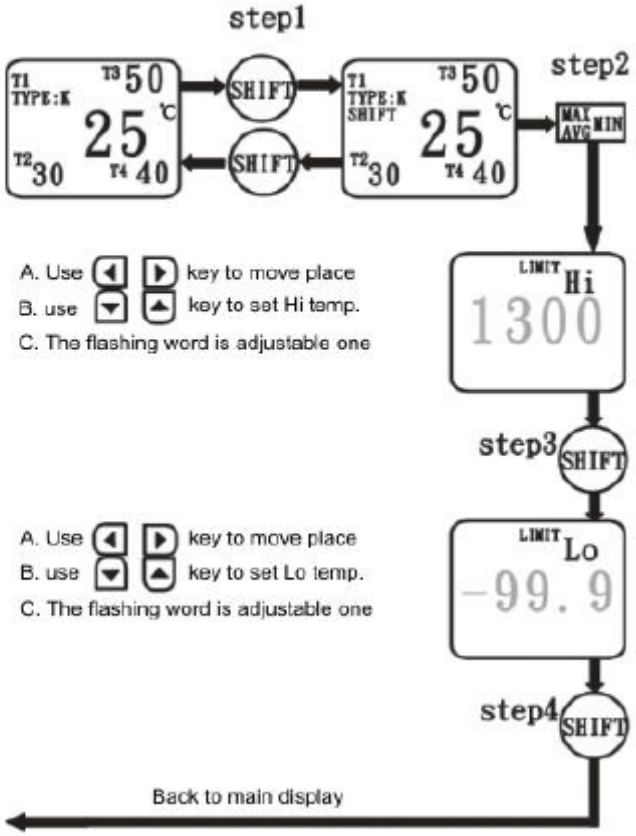
Notes:

1. When the main display temp. value is higher than the alarm setting of the Hi temp value or lower than the alarm Lo setting temp. value, the alarm will continue to sound.
2. The Hi/Lo setting temp. value of the different thermocouple types are as follows:-



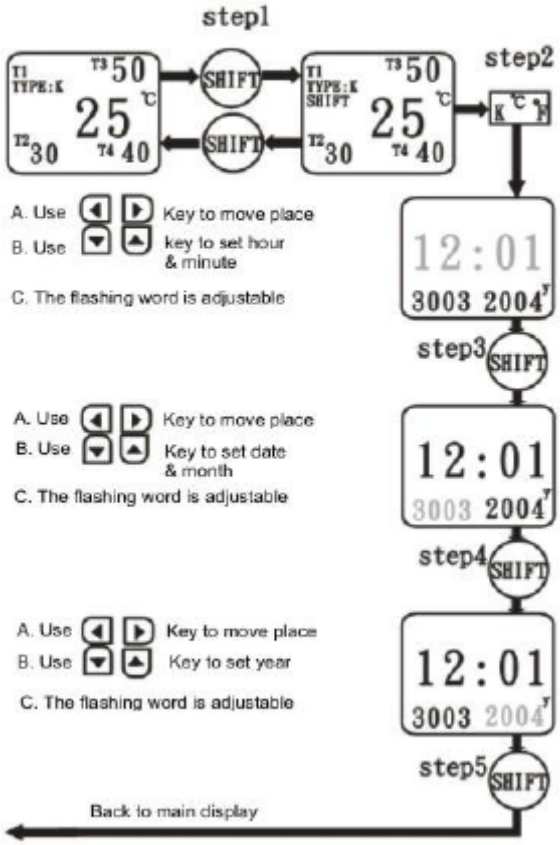
Type	Hi value	Lo. value
K	1300	-99.9
J	1000	-99.9
T	400	-99.9
E	800	-50
R	1700	0
S	1700	0
N	1300	-99.9

Hi/Lo: The alarm Hi/Lo temp. value setting:-

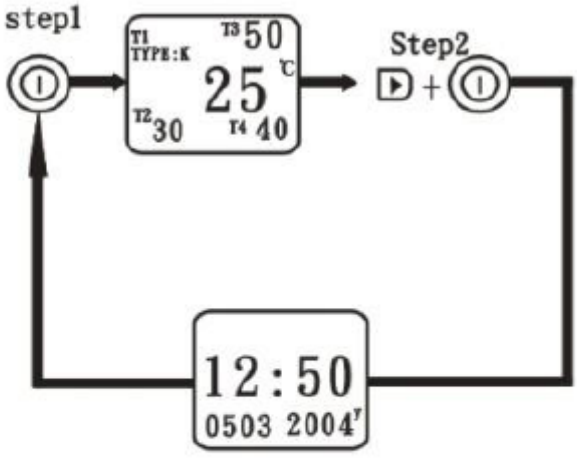


CLOCK

To set the date



Perpetual Calendar



Backlight Button: Press once to turn on and again to turn off. The backlight will automatically turn off after 1 minute to save power.

Battery Replacement

1. The symbol "B" that appears in the upper left of the LCD display indicates that the unit's battery is running low. These should be replaced with 1.5V "AAA" size alkaline types to ensure best performance.

2. Remove the battery cover with a small screwdriver.

3. Replace the old batteries with 4 new ones.

4. Prior to replacing the batteries please ensure all thermocouples are removed as a safety precaution.

5. When not in use for extended periods, please remove the batteries and store in a dry and cool environment.

6. Ensure the batteries are correctly disposed of and recycled where possible.

7. Ensure the batteries are inserted with the correct polarity.

CAUTION

- Input protection: The temperature socket input voltage must not exceed a maximum of 24 volts AC or DC.

- The temperature sockets a designed for use with the standard 2 pin miniature plugs.

- Before taking any temperature measurements ensure the thermometer has been set to the correct type.

- DO NOT use the thermometer in or around sites where explosive gases, vapour or dust particles are present.

- In the unlikely event of the thermometer locks up or freezes, please remove one battery for approximately one minute. Then replaced and re-start the unit. No logged data will be lost however, the time and date will need to be set again.