TC-330AWP DIGITAL THERMOMETER

Thank you for purchasing our Digital Thermometer.
Please read this instruction manual carefully before using to ensure the correct usage of this device.
Please keep this instruction manual for future reference.

WARNING Misuse of this device may lead to injury to the user or damage to the device.

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Safety Precautions

For safe usage of this device, please observe all statements regarding precautions and warnings in this instruction manual.

⚠ ATTENTION

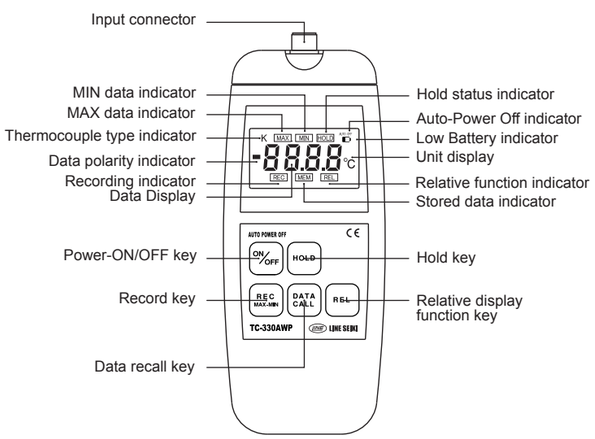
Operation

- Do not use this device near machines that emits strong electromagnetic field or object that store static electricity.
- Do not drop or subject this instrument into strong impact.
- Do not attempt to disassemble or modify this instrument.
- To ensure stable measurement, do not apply rapid temperature change to the instrument.
- Do not immerse the instrument in water. If it is immersed in water accidentally, immediately pull it out and then check and ensure that there is no water penetration.

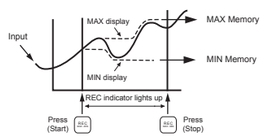
Thermocouple Probe

- Do not drop the probe or strike into hard surface.
- Do not bend the probe connector by applying strong force from the upper and lower side.
- Do not measure beyond temperature limits of the thermocouple probe being used.
- Do not use the thermocouple probe in places where electric shock is is suspected.
- Avoid using the thermocouple probe in measuring materials which can cause corrosion.
- Take a long time when measuring non-metallic surface temperatures due to poor thermal conductivity.

I. Panel System



● Functions

ON / OFF Key ON/OFF	Pressing this key will turn ON and OFF the instrument • Since this instrument has the Auto-Power Off function, the power automatically turns OFF in approximately 10 minutes after the last key is pressed. • Turning ON the instrument while pressing the HOLD key disables the Auto-Power Off function and the "AUTO OFF" indicator will disappear • In addition, Auto-Power Off is disabled even during recording. • In any case, it is advisable to manually turning OFF the power after finishing the measurement.
Burn Out (- - - - - -)	When the probe is not properly connected to the instrument, or the probe itself is broken, the unit will be in Burn Out state and will have a burn out display (------). • If the instrument is in Burn Out state, just connect the probe, then turn the power OFF then ON to return the instrument to the normal operating condition.
HOLD Key HOLD	To hold the measured value temporarily, press this key once. HOLD indicator will appear on the display. And press again to unhold the measured value and returns the instrument to the original measuring state.
Relative Function Key REL	Pressing this key will display the difference (relative value) between the measured value (D1) just before the key is pressed (reference value) and the succeeding measured value (Dx). REL indicator appears on the display. Relative Display = Dx - D1 Pressing this again returns the instrument to normal measured value display.
MAX/MIN Record Key REC MAX - MIN	Pressing this key will start the instrument to record the Max / Min value until such time that it is pressed again. REC indicator appears while recording.  • Recorded Max/Min value is stored in the internal memory after the recording (The data can be read later). However, if Recording is started again, the previously stored Max/Min data will be replaced with new recorded values. • When this key is pressed during Relative function, the Max/Min values recorded are the actual measured values (Dx) instead of relative values. • Even if the power is turned OFF, the Max/Min values stored will not be deleted and can still be read after the power is turned ON. • During Recording, Auto-Power Off function is disabled and enabled again after the Recording.
Memory In Function HOLD → REC REL	There are two ways to store measured value on memory. • First, put the measurement on HOLD then press the Recording key. Simultaneously, the HOLD state is released and return to measuring mode. • Second, is by shifting the measurement mode to Relative function. The reference value D1 will be stored in the memory. • The data stored can only be changed by the above two ways. • Also, the data stored will not be erased even the instrument is turned OFF.
Data Recall Key DATA CALL	Press this key to recall the recorded and stored values. The manner of rotation is shown below. Measured value → MAX value → MIN value → Memory value • The MAX and MIN value are the data recorded during recording. • The MEM value is the data stored during the Memory In Function. • The DATA CALL function can also be done during Recording and Relative function. • Indicators "MAX", "MIN" and "MEM" will appear on the display based on the recalled value shown on display.

II. Operation Procedure

1.) Connect the probe to the instrument through the Input Connector
- Probe can be checked if properly connected with the Burn Out feature of this instrument.

2.) Turn the power ON.
- Upon turning ON the instrument, all the display and indicators will light up for several seconds. This is to check if all segments of the display are working properly. Afterwards, it will shift to its normal operating mode with the following default items and features.
  > Set at measuring mode.
  > Unit set at °C.
  > Thermocouple type indicator is displayed.
  > Auto-Power Off indicator is displayed.
  > Other indicators are not displayed.
- Auto-Power Off function is automatically enabled upon turning ON the instrument (Please see Function list on how to disable).
- If the burnout display (----) is shown, the probe is not inserted properly. In this case, check the probe side.

3.) Attach the sensor part of the thermocouple probe to the object you want to measure.
- Wait until the measured value becomes stable.
- For long time measurement, use Recording function to avoid the sudden turned Off of the instrument due to Auto-Power Off function.

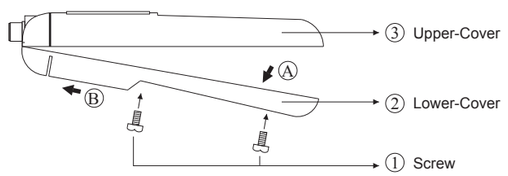
4.) Turn OFF the instrument after using.
- After every use, always turn OFF the instrument.

⚠ ATTENTION

The keys of this instrument can be switched with only a slight pressure. Make sure that the instrument is not mistakenly set to a state other than that intended.

III. Battery Replacement

If the " ▭ " indicator is displayed, it indicates a Low Battery condition and the battery needs to be replaced. Please follow carefully the procedure below for replacing battery.



1. Unscrew Screw ①, and then open the unit by pulling the Lower-Cover ② in arrow Ⓐ direction.
2. Remove the battery on the printed circuit board.
3. Replace the battery with new one. Make sure the battery is properly connected to the terminals.
4. Place back the Lower-Cover ② by inserting its front end first on arrow Ⓑ direction and then push it closely to the Upper-Cover ③ until it snaps.
5. Make sure the rubber gasket is properly located when the unit is closed.
6. Lock the unit with the Screw ①.

- Use only suitable battery written on the specification.
- Do not dispose battery on household waste, fire or water.
- Remove the battery when the device will not be used for long period of time.
- The instrument cannot measure accurately after low battery indicator is displayed. Please replace the battery immediately.

IV. Storage and Cleaning

- Storage Temperature: -10 - +50°C
- Storage Humidity: Less than 85% RH.
- When storing the instrument, avoid the following locations where:
  1. Humidity is high.
  2. The instrument is exposed to direct sunlight.
  3. The instrument is exposed to a extreme temperature.
  4. Large vibration exist.
  5. Dust, salt, and/or corrosive gas exist.
- Keep the instrument clean at all times.
- Wipe off stains using a moist and soft cloth. Do not use any cleaning agents or solvents.

V. General Specifications

● Main Unit	
MODEL	**TC-330AWP**
NO. OF INPUT	1
SENSOR TYPE	Thermocouple Probe Type K
MEASURING RANGE	K: -160°C - +1,372°C
RESOLUTION	199.9°C and below : 0.1°C 200°C and above : 1°C
ACCURACY 25°C ±5°C	0 - 199.9°C : ±(0.1% of reading + 0.7°C) -0.1°C or less : ±(0.2% of reading + 1°C) 200°C above : ±(0.2% of reading + 1°C)
TEMPERATURE COEFFICIENT	±(0.015% of reading + 0.06°C) / °C
SAMPLING TIME	Approx. 0.5 sec.
LINEARIZE METHOD	Digital Linearize
FUNCTIONS	°C, Auto-Power Off, Data Hold, Data Record (Max/Min/Memory), Relative Measurement
DISPLAY	K Thermocouple Type ---- Burn-out ▭ Low Battery AUTO OFF Auto-Power Off HOLD Data Hold REL Relative Measurement REC Max / Min Data Recording MAX MIN Max / Min Data Memory MEM Recorded Memory Data
OPERATING TEMP./HUMIDITY	0 - 50°C 0 - 90%RH (Non-condensing)
POWER SUPPLY	006P (9V) Battery
BATTERY LIFE	Approx. 500 Hours (Manganese Battery use)
SIZE / WEIGHT	Approx. 166(H) X 68(W) X 35(D)mm Approx. 210g
SENSOR CONNECTOR	Waterproof Connector
COMPLIANCE	CE and RoHS
IP PROTECTION	IP65 (Adjust to No. 1, 2 of IEC60529)

VI. Accessories (Sold Separately)

- Carrying Case (HM-818)
- Thermocouple Probes (See catalog for probes)

This manual was last revised May. 23, 2017. 4TC020C
*Specifications Subject to Change Without Prior Notice.