MARTEL 308
ELECTRONICS

TYPE K THERMOMETER

$C\mathcal{E}$

T 2   T 1

MARTEL *308 TYPE K*
ELECTRONICS *THERMOMETER*

MAX

T1 **308** ℃

T2 **100.0** ℃

⊙

MAX MIN

HOLD

△ REL

℃ / ℉
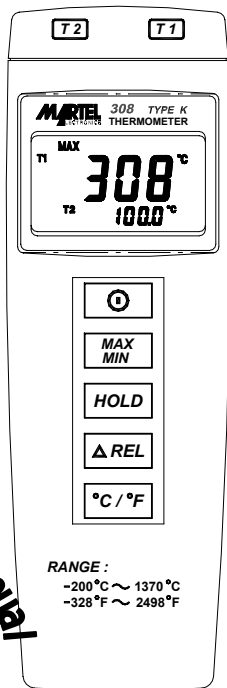
Instruction Manual

MARTEL ELECTRONICS

RANGE :
-200℃ ～ 1370℃
-328℉ ～ 2498℉

C O N T E N T S

I. Introduction:

This instrument is a digital thermometer for use with any K-type thermocouple as temperature sensor.
Temperature indication follows National Bureau of Standards and IEC584 temperature/voltage table for K-type thermocouples.

II. Specifications:

Numerical Display:
4 digital liquid crystal display
Measurement Range:
-200°C ~ 1370°C   -328°F ~ 2498°F
Resolution:
-200°C~ 200°C: 0.1°C; 200°C ~1370°C: 1°C
-200°F~ 200°F: 0.1°F; 200°F ~2498°F: 1°F
Maximum Voltage at Thermocouple Input:
60V DC, or 24Vrms AC
Environmental:
❏ Operating Temperature and Humidity:
   0°C ~50°C (32°F ~ 122°F) ; 0 ~ 80% RH
❏ Storage Temperature and Humidity:
   -10°C to 60°C (14°F ~ 140°F); 0 ~ 80% RH
❏ Altitude up to 2000 meters.

Sample Rate: 0.6 times per second
Dimension (LxWxH): 2.51"x2.12"x1.33" (64x54x34 mm)
Weight: 6.3 oz. (180g); approximate
Accessories:
K-Type Bead Probe, Battery, Instruction Manual
Power Requirement:
9 Volt Battery, NEDA 1604, JIS 006P, or IEC6F22
Battery Life:
Approx. 150 hrs with alkaline battery

Accuracy: at (23 ± 5°C)

| Range	Accuracy
-200°C ~ 200°C	±(0.3% reading + 1°C)
200°C ~ 400°C	±(0.5% reading + 1°C)
400°C~1370°C	±(0.3% reading + 1°C)
-328°F ~ -200°F	±(0.5% reading + 2°F)
-200°F ~ 200°F	±(0.3% reading + 2°F)
200°F ~ 400°F	±(0.5% reading + 2°F)
400°F ~ 2498°F	±(0.3% reading + 2°F)

Temperature Coefficient:

For ambient temperatures from 0°C ~ 18°C and 28°C ~ 50°C, for each °C ambient below 18°C or above 28°C add the following tolerance into the accuracy spec.
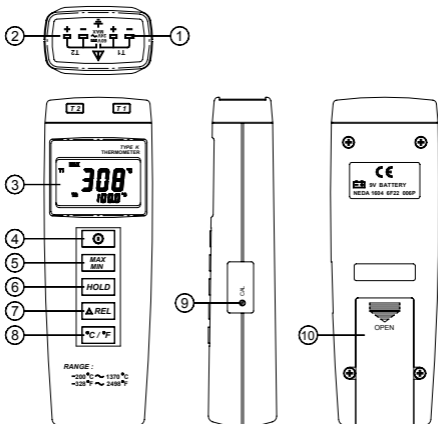
   0.01% of reading + 0.03°C
   (0.01% of reading + 0.06°F)

⚠ **Note:**

The basic accuracy specification does not include the error of the probe. Please refer to the probe accuracy specification for additional details.

III. Symbol Definition and Button Location:

2
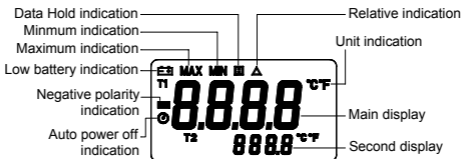
① T1 K type temperature sensor connector
② T2 K type temperature sensor connector
③ LCD display
④ ON/OFF button
⑤ MAX MIN Average control button
⑥ HOLD button
⑦ Relative readout button
⑧ °C, °F control button
⑨ Offset calibration screw
⑩ Battery cabinet cover

3

IV. Operating Instructions:

4.1 Power-Up
Press the ① key to turn the thermometer On or OFF.

4.2 Connecting the Thermocouples
Plug the thermocouples into the input connectors.

4.3 Selecting the Temperature Unit
When the meter is powered on, the default unit is Celsius (°C). Press the "**°C/°F**" button to change it to Fahrenheit (°F). Press it again to revert to Celsius.

4.4 Data-Hold Operation
The present reading may be held and kept on the display by pressing the "**HOLD**" button. When the held data is no longer needed, release the data-hold operation by pressing the "**HOLD**" button again.
When the meter is in the Data Hold operating mode, the **"△REL"**, **MAX/MIN**, and "**°C/°F**" buttons are disabled.

4.5 Relative Operation:
Pressing the "△**REL**" button causes the meter to memorize the present reading. The difference between the new reading and the memorized data will be shown on the display. Press the "△**REL**" button again to exit the Relative operation.

4.6 MAX/MIN Operation:
Pressing the **MAX/MIN** button causes the meter to enter the MAX/MIN mode. Under this mode, the maximum and minimum values are stored in memory simultaneously and updated with every new data reading.
When the MAX symbol is displayed, the Maximum is shown on the display.
Pressing **MAX/MIN** again will display both the MIN symbol and the minimum reading.
Pressing **MAX/MIN** again causes the MAX and MIN indicators to blink together. This means that all data is updated in the memory and the reading is the present

4

temperature.

Repeatedly pressing **MAX/MIN** circulates the display mode among these options.

When the meter is under **MAX/MIN** operation, "$\triangle$ **REL**" and **"°C/°F "** are disabled.

To exit the MAX/MIN mode, press and hold **MAX/MIN** for two seconds.

4.7 Auto Power Off:

By default, when the meter is powered on, it is under auto power off mode. The meter will power itself off after 30 minutes if no key operation is performed. To disable the auto power off function, press and hold the "**HOLD**" button while powering on the meter. The auto power off symbol will disappear to indicate that auto power off is disabled.

4.8 Low Battery Condition

When the battery voltage is below that for proper operation, the 🔋 symbol will show on the LCD. Replace the battery.

4.9 Calibration Point:

Room Temperature 23 ± 3°**C**

input	Adjust VR	tolerance
0 °C	VR3	± 0.1 °C
190 °C	VR2	± 0.1 °C
1000 °C	VR1	± 1 °C
190 °F	VR4	± 0.1 °F

Normally, performing offset Calibration with thermally stable ice water through VR3 will give a very good calibration result.

5