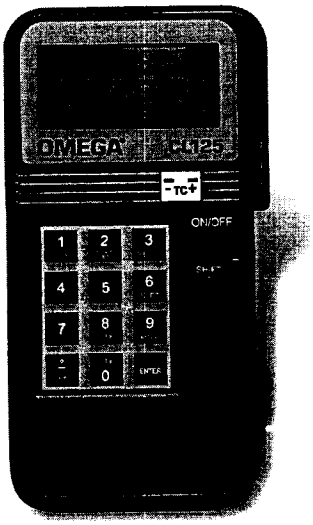
1 YEAR WARRANTY

CE

User's Guide



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CL125
Calibrator

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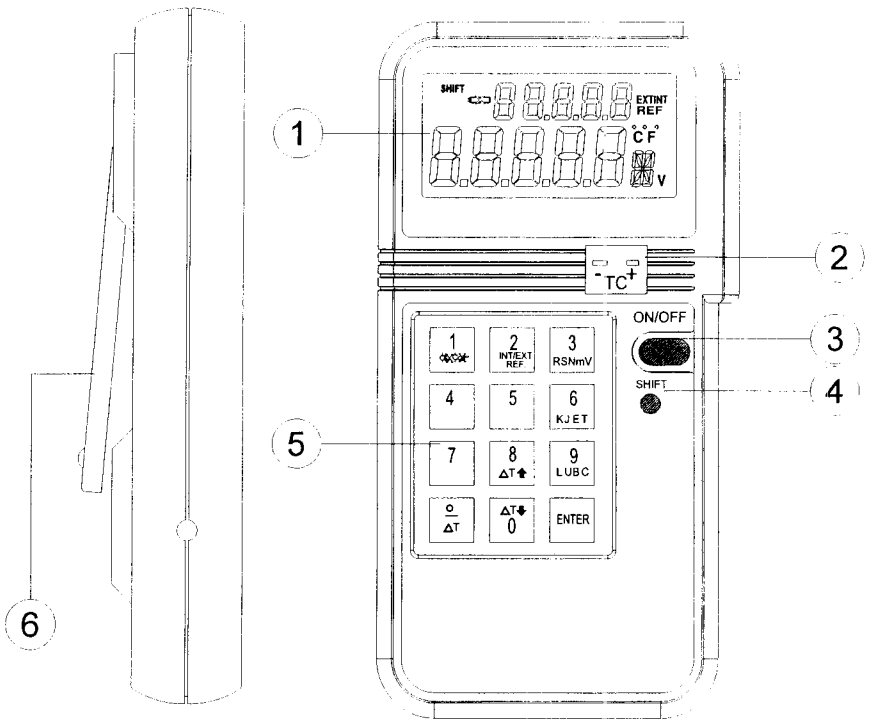
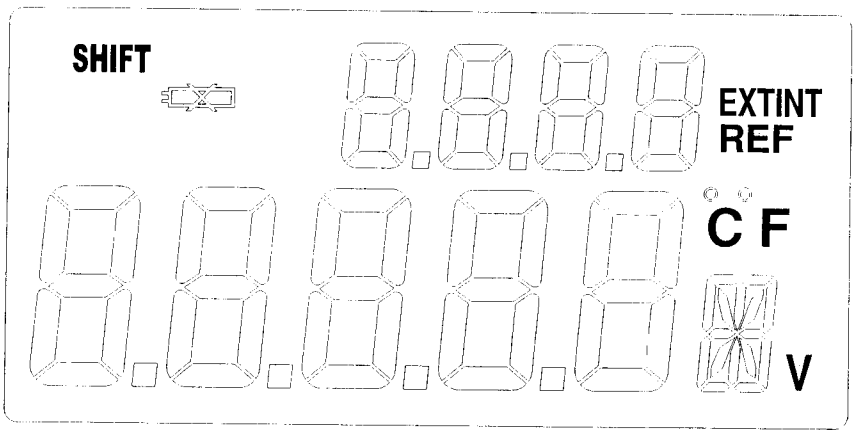
I. Panel Description



1. LCD DISPLAY
2. THERMOCOUPLE SOCKET
3. ON/OFF BUTTON
4. SHIFT BUTTON
5. NUMERICAL & FUNCTION KEYPAD
6. STAND



1. EXT/INT REF: Internal or External Temperature Reference for Cold Junction.
2. : Display of Thermocouple Type (K, J, E, T...)
3. SHIFT: Select SHIFT functions
4. Battery low

Press SHIFT button, and then press this button to select ° C or ° F.

2.

Press SHIFT button, then press this button to select internal or external temperature reference for cold junction comppensation.

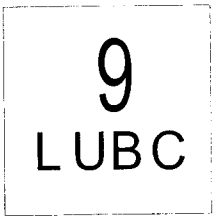
3.

Press SHIFT button, then press this button to select R, S, N type of thermocouple or mV output.

4.

Press SHIFT button, then press this button to select K, J, E, or T type thermocouple.

5.

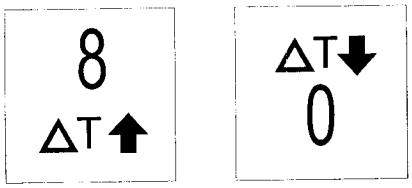


Press SHIFT button, then press this button to select L, U, B, or C type thermocouple.

6.

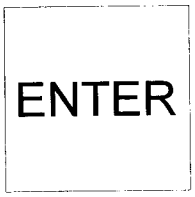
Press this button to enter negative temperature or to enter decimal point. Press SHIFT button, then press this button first to enter value of ΔT.

7.



While the calibrator is in the SHIFT mode, press this button to increment or decrement temperature by ΔT .

8.

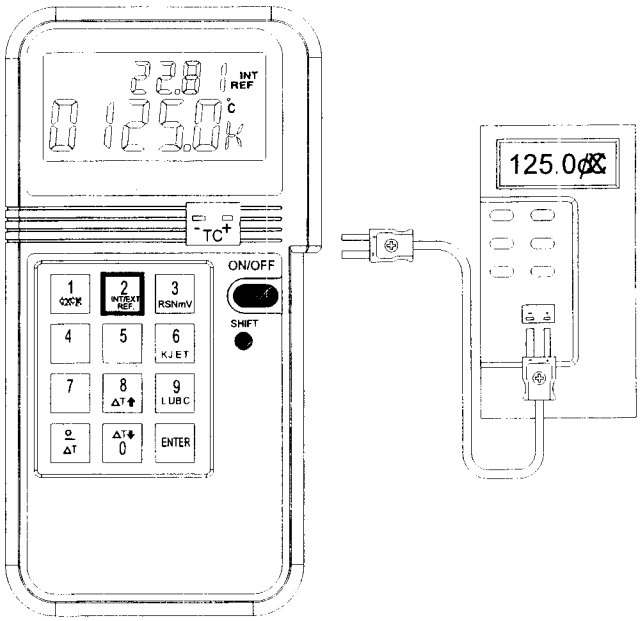


Always press this button to complete the entry of numbers.

II. Operating Instruction

1. Temperature Output
   1 Press the ON/OFF button to turn the power on.
   2 Press the SHIFT button, then press NUMBER 3, 6, or 9 button to select desired type of thermocouple or mV.
   3 Press the NUMBER 1 button to select ° C or ° F.
   4 Press the keypad to enter the value of temperature.

5 Insert one end of the corresponding type of thermocouple connector into the socket. Then insert or connect the other end of the thermocouple connector to the thermometer or panel meter to be calibrated.



Note: Maximum 5 digits can be entered. If users enter less than 5 digits (1 to 4 digits), users must press ENTER button to indicate the end of entry. If users enter 5 or more digits, calibrator will automatically end the entry and output specified value of signal.

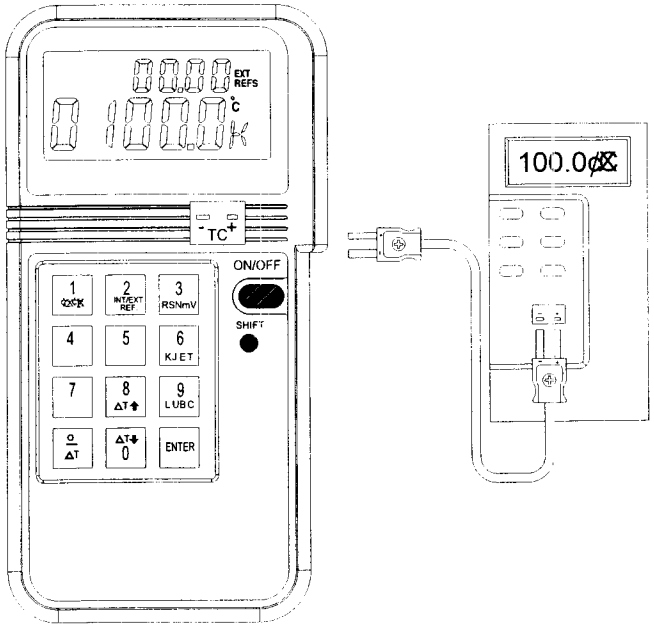
2. Select Internal or External Temperature

The default setting is internal temperature reference. That means the cold junction temperature at the socket is measured and compensated by the calibrator. The cold junction temperature measured is displayed in the upper row of LCD.

Some calibration uses ice bath method that means the reference temperature is 0 ° C (32 ° F). One part of the thermocouple wire is submerged in the ice water.

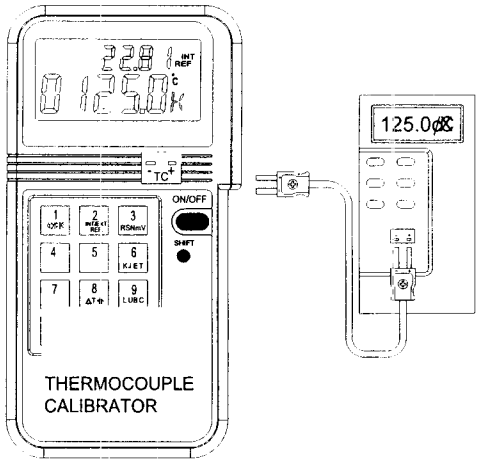
To select external temperature reference:

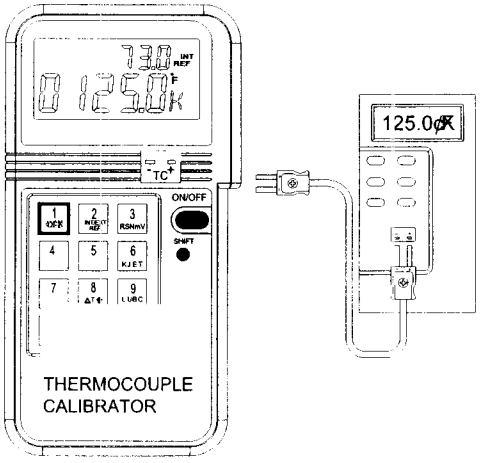
1. Press the SHIFT button.
2. Press the NUMBER 2 button.
3. Press the SHIFT button to exit SHIFT function.



3. Select °C, or °F

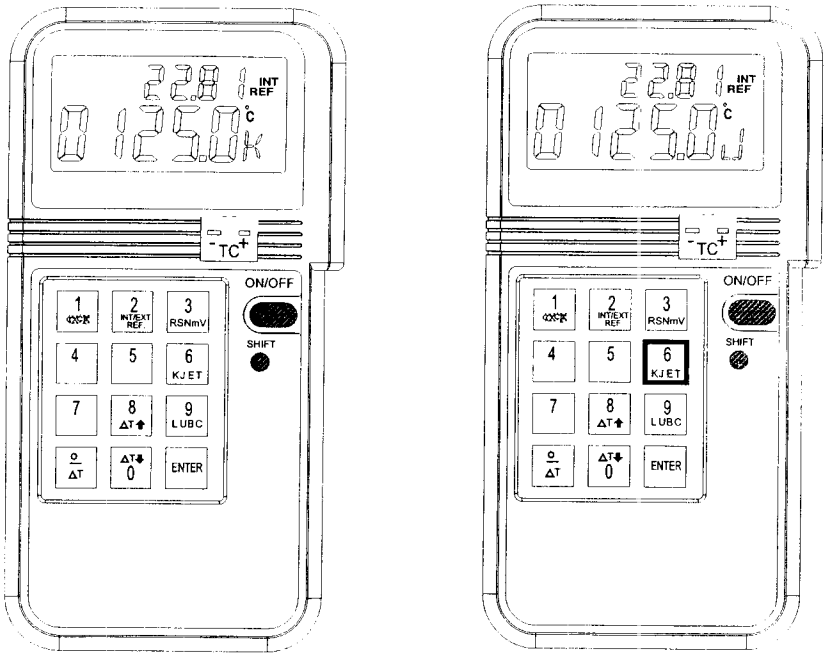
Users can select °C or °F by pressing the shift button to enter SHIFT mode. Then press the NUMBER 1 button repeatedly to select desired temperature unit. After desired unit is selected, press the SHIFT button again to exit the SHIFT mode. Corresponding voltage °C or °F symbol will be displayed in the LCD.

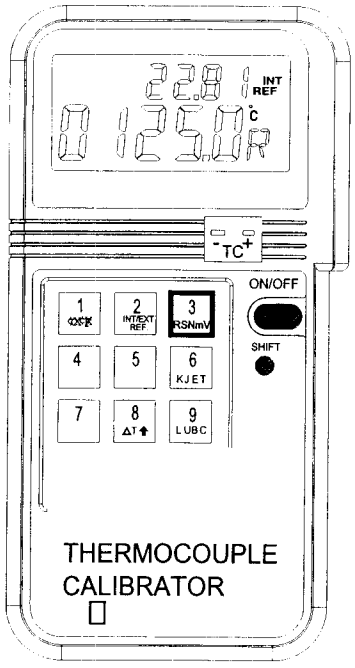


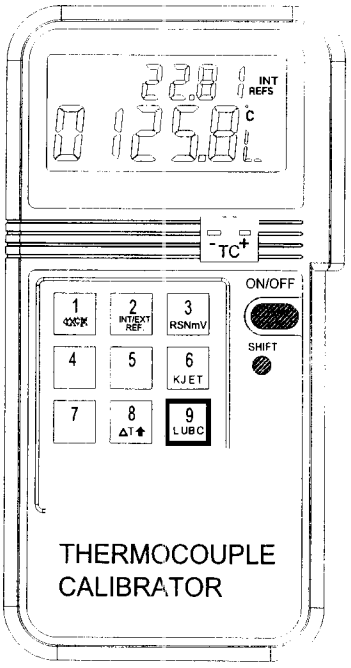


4. Select the Desired type of Thermocouple

Users can select K, J, E, T, R, S, N, L, U, B, C type of thermocouple by pressing the shift button to enter SHIFT mode. Then press the NUMBER 3(R, S, N, mV), 6(K, J, E, T), or 9(L, U, B, C) button repeatedly to select desired type of thermocouple. After desired type is selected, press the shift button again to exit the SHIFT mode. Corresponding thermocouple type symbol will be displayed in the LCD.

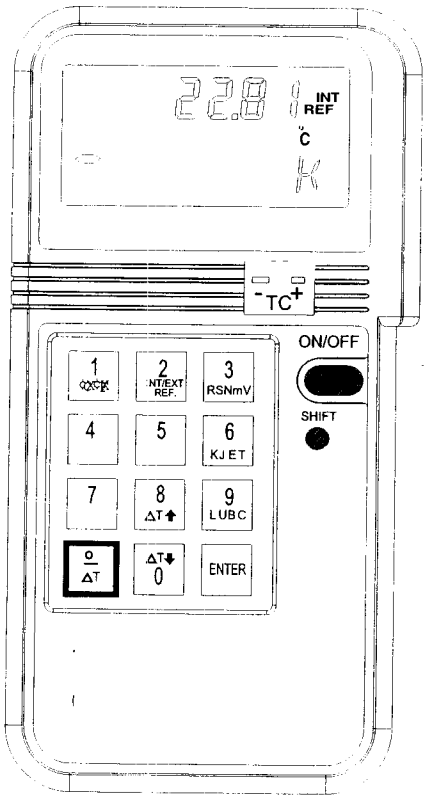



INT
REF
°C
-TC+
ON/OFF
SHIFT
1
2
INT/EXT REF
3
RSNmV
4
5
6
KJET
7
8
ΔT
9
LUBC
THERMOCOUPLE
CALIBRATOR


INT
REFS
°C
-TC+
ON/OFF
SHIFT
1
2
INT/EXT REF
3
RSNmV
4
5
6
KJET
7
8
ΔT
9
LUBC
THERMOCOUPLE
CALIBRATOR

5. Enter a Negative Temperature

To enter a negative temperature, press the "-" button first. If "-" is pressed after any other number is entered, it is regarded as "decimal point".



6. Input Value of ΔT

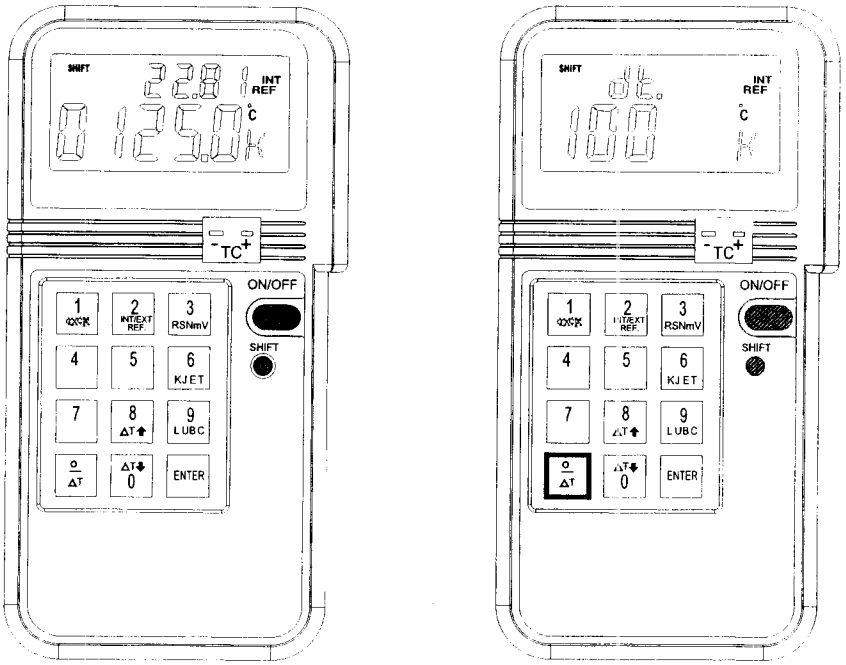
The calibrator allows users to enter ΔT, then increment or decrement by pressing the NUMBER 8 or 0 button. To enter the ΔT,

1. Users press the SHIFT button first, then SHIFT symbol will be displayed in the LCD.
2. Press the button ΔT, then symbol "dt" will be displayed in the upper row.
3. Enter the desired ΔT value.

4. The allowed ΔT value is 0.0 to 1000.0 degree for temperature. 0.0 to 10.000mV for mV output.

ΔT (° C, ° F):	0.0 to 1000.0 degree
ΔmV:	0.000 to 10.000mV

5. To exit the ΔT input mode, press the SHIFT button again.
5. After the SHIFT button is pressed, the upper LCD will displayed the cold junction temperature again.



The default ΔT is 10.0 for ° C and ° F, and 0.1mV for ΔmV. The value of ΔT

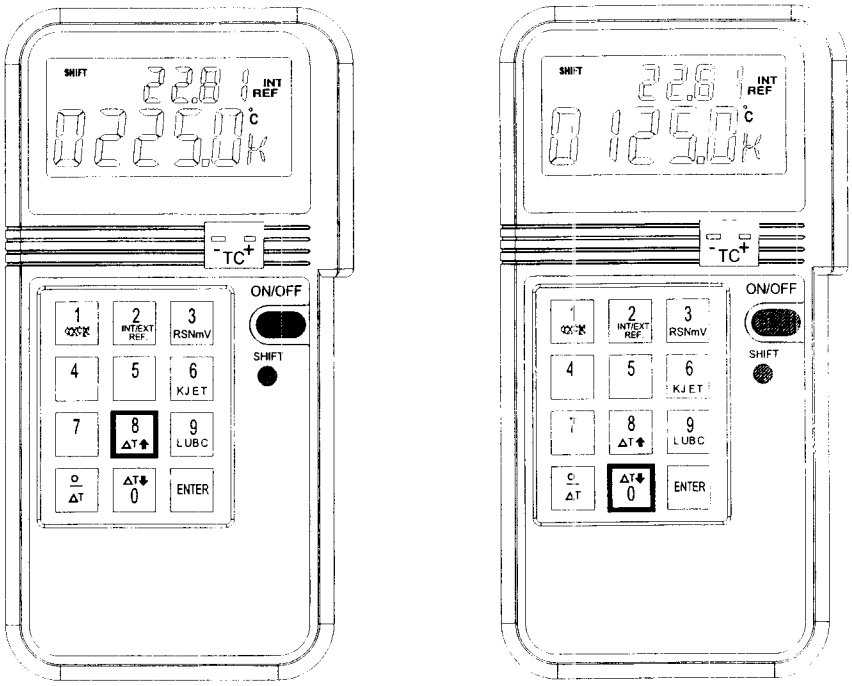
or ΔmV is always positive (+).

7. Increment or Decrement of ΔT

After the ΔT is entered and calibrator is still in the SHIFT mode, users can increment or decrement the temperature by ΔT by press the NUMBER 8 or 0 button. The maximum ΔT value is 1000 while the minimum percentage is 0. If the increment or decrement exceeds the maximum or minimum percentage, the temperature will stay in the previous value.

Example 1: Increment by 100 degree (ΔT =100):
0 -> 100 -> 200 -> 300 -> 400 -> 500 -> 600 -> 700 -> 800 ...

Example 2: Decrement by 100:
800 -> 700 -> 600 -> 500 -> 400 -> 300 -> 200 -> 100 -> 0 -> -100



III. Electrical Specification
(23°C ± 5°C, 3 minutes after power is on)

Internal Temperature Reference

(0.1°C, 0.1°F Resolution, 100Ω Output Impedance.)

TYPE	°C		°F	
	RANGE	ACCURACY	RANGE	ACCURACY
K	-200 ~ -100 -100 ~ -25 -25 ~ 120 120 ~ 1000 1000 ~ 1370	±0.5 ±0.4 ±0.4 ±0.4 ±0.5	-328 ~ -148 -148 ~ -13 -13 ~ 248 248 ~ 1832 1832 ~ 2498	±0.9 ±0.7 ±0.7 ±0.8 ±1.0
J	-200 ~ -100 -100 ~ -30 -30 ~ 150 150 ~ 760 760 ~1050	±0.4 ±0.4 ±0.4 ±0.4 ±0.4	-328 ~ -148 -148 ~ -22 -22 ~ 302 302 ~ 1400 1400 ~ 1922	±0.8 ±0.7 ±0.7 ±0.7 ±0.8
E	-150 ~ -100 -100 ~ -25 -25 ~ 350 350 ~ 650 650 ~ 800	±0.6 ±0.4 ±0.4 ±0.4 ±0.4	-238 ~ -148 -148 ~ -13 -13 ~ 662 662 ~ 1202 1202 ~ 1472	±1.1 ±0.7 ±0.7 ±0.7 ±0.7
T	-200 ~ -150 -150 ~ 0 0 ~ 120 120 ~400	±0.7 ±0.4 ±0.4 ±0.4	-328 ~ -238 -238 ~ 32 32 ~ 248 248 ~ 752	±1.3 ±0.8 ±0.7 ±0.7
R	0 ~ 250 250 ~ 400 400 ~ 1000 1000 ~ 1760	±0.7 ±0.5 ±0.5 ±0.5	32 ~ 482 482 ~ 752 752 ~ 1832 1832 ~ 3200	±1.3 ±1.0 ±0.9 ±1.0

S	0 ~ 250 250 ~ 1000 1000 ~ 1400 1400 ~ 1760	±0.7 ±0.5 ±0.5 ±0.6	32 ~ 482 482 ~ 1832 1832 ~ 2552 2552 ~ 3200	±1.3 ±1.0 ±1.0 ±1.1
N	-200 ~ -100 -100 ~ -25 -25 ~ 120 120 ~ 410 410 ~ 1300	±0.5 ±0.4 ±0.4 ±0.4 ±0.5	-328 ~ -148 -148 ~ -13 -13 ~ 248 248 ~ 770 770 ~ 2372	±1.0 ±0.8 ±0.7 ±0.7 ±0.8
L	-200 ~ -100 -100 ~ 900	±0.5 ±0.4	-328 ~ -148 -148 ~ 1652	±0.9 ±0.7
U	-200 ~ 0 0 ~ 600	±0.4 ±0.4	-328 ~ 32 32 ~ 1112	±0.7 ±0.7
B	600 ~ 800 800 ~ 1000 1000 ~ 1550 1550 ~ 1820	±0.7 ±0.6 ±0.5 ±0.5	1112 ~ 1472 1472 ~ 1832 1832 ~ 2822 2822 ~ 3308	±1.2 ±1.1 ±1.0 ±0.9
C	0 ~ 150 150 ~650 650 ~ 1000 1000 ~ 1800 1800 ~ 2310	±0.5 ±0.4 ±0.5 ±0.6 ±0.9	32 ~ 302 302 ~ 1202 1202 ~ 1832 1832 ~ 3272 3272 ~ 4190	±0.9 ±0.8 ±0.9 ±1.1 ±1.6
MV	-9.999 ~ 60	10 μV	-9.999 ~ 60	10 μV

External Temperature Reference
(0.1°C, 0.1°F Resolution, 100Ω Output Impedance.)

TYPE	°C		°F	
	RANGE	ACCURACY	RANG E	ACCURACY
K	-200 ~ -100 -100 ~ -25 -25 ~ 120 120 ~ 1000 1000 ~ 1370	±0.3 ±0.2 ±0.2 ±0.2 ±0.3	-328 ~ -148 -148 ~ -13 -13 ~ 248 248 ~ 1832 1832 ~ 2498	±0.5 ±0.3 ±0.3 ±0.4 ±0.6
J	-200 ~ -100 -100 ~ -30 -30 ~ 150 150 ~ 760 760 ~1050	±0.2 ±0.2 ±0.2 ±0.2 ±0.2	-328 ~ -148 -148 ~ -22 -22 ~ 302 302 ~ 1400 1400 ~ 1922	±0.4 ±0.3 ±0.3 ±0.3 ±0.4
E	-150 ~ -100 -100 ~ -25 -25 ~ 350 350 ~ 650 650 ~ 800	±0.4 ±0.2 ±0.2 ±0.2 ±0.2	-238 ~ -148 -148 ~ -13 -13 ~ 662 662 ~ 1202 1202 ~ 1472	±0.7 ±0.3 ±0.3 ±0.3 ±0.3
T	-200 ~ -150 -150 ~ 0 0 ~ 120 120 ~400	±0.5 ±0.2 ±0.2 ±0.2	-328 ~ -238 -238 ~ 32 32 ~ 248 248 ~ 752	±0.9 ±0.4 ±0.3 ±0.3
R	0 ~ 250 250 ~ 400 400 ~ 1000 1000 ~ 1760	±0.5 ±0.3 ±0.3 ±0.3	32 ~ 482 482 ~ 752 752 ~ 1832 1832 ~ 3200	±0.9 ±0.6 ±0.5 ±0.6
S	0 ~ 250 250 ~ 1000 1000 ~ 1400 1400 ~	±0.5 ±0.3 ±0.3 ±0.4	32 ~ 482 482 ~ 1832 1832 ~ 2552 2552 ~	±0.9 ±0.6 ±0.6 ±0.7

	1760		3200	
N	-200 ~ -100	±0.3	-328 ~ -148	±0.6
	-100 ~ -25	±0.2	-148 ~ -13	±0.4
	-25 ~ 120	±0.2	-13 ~ 248	±0.3
	120 ~ 410	±0.2	248 ~ 770	±0.3
	410 ~ 1300	±0.3	770 ~ 2372	±0.4
L	-200 ~ -100	±0.3	-328 ~ -148	±0.5
	-100 ~ 900	±0.2	-148 ~ 1652	±0.3
U	-200 ~ 0	±0.2	-328 ~ 32	±0.3
	0 ~ 600	±0.2	32 ~ 1112	±0.3
B	600 ~ 800	±0.5	1112 ~	±0.8
	800 ~ 1000	±0.4	1472	±0.7
	1000 ~	±0.3	1472 ~	±0.6
	1550	±0.3	1832	±0.5
	1550 ~		1832 ~	
	1820		2822	
			2822 ~	
			3308	
C	0 ~ 150	±0.3	32 ~ 302	±0.5
	150 ~650	±0.2	302 ~ 1202	±0.4
	650 ~ 1000	±0.3	1202 ~	±0.5
	1000 ~	±0.4	1832	±0.7
	1800	±0.7	1832 ~	±1.2
	1800 ~		3272	
	2310		3272 ~	
			4190	
MV	-9.999 ~ 60	10 µV	-9.999 ~ 60	10 µV

General Specification:

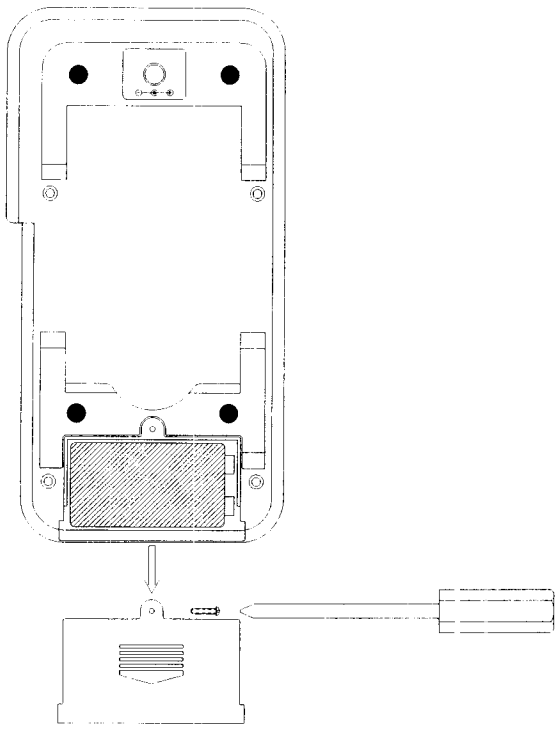
Battery Type:	9V Alkaline Battery
Power Consumption:	5mA
Display:	4 + 5 Digits
Operating Temperature:	0 to 50°C (32 to 122 °F)
Operating Humidity:	Less than 85% relative
Storage Temperature:	-20 to 60° C (-4 to 140 °F)
Storage Humidity:	Less than 85% relative
Dimension:	88 x 168 x 26 mm (3.46" x 6.61" x 1.03')

Weight:	330 g / 11.63 oz
Accessories:	Carrying case x 1
	Users Manual x 1
	K type thermocouple connector
	9 V battery x 1

IV. Battery Replacement

When the low battery symbol is displayed on LCD, follow the following procedures to replace the battery.

1 Turn off the calibrator by pushing the On/Off button.
2 Remove any thermocouple connector from the socket.
3 Remove the screw of the battery compartment cover and remove the battery compartment cover.
4 Replace the old 9V battery with a new alkaline 9V battery.
5 Replace the battery compartment cover and fasten the screw.



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If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components which wear are not warranted, including but not limited to contact points, fuses, and triacs.

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RETURN REQUESTS/INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

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