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Step 11. Enter to the Thermocouple Type Input Submenu
Press **⬇** to display flashing, previously selected Thermocouple type.

Step 12. Scroll through available selection of TC types
Press **⬇** to sequence thru flashing Thermocouple types, (select k -for type "K" CHROMEGA®/ALOMEGA®)

J K T E N DIN J R S B C - TC types
J k t E N dN J R S b C - Display

Step 13. Store TC type
After you have selected the Thermocouple type press **⬇** to store your selection, the instrument automatically advances to the next menu item.

Step 14. Enter to Reading Configuration Menu
The display shows **RdC** Reading Configuration, which is the top menu for 4 submenus: Decimal Point, Degree Units, Filter Constant and Input/Reading Submenus.

Step 15. Enter to Decimal Point Submenu
Press **⬇** to show **dE.C** Decimal Point.

Step 16. Display the Decimal Point position
Press **⬇** again to display the flashing Decimal Point position.

Step 17. Select the Decimal Point position
Press **⬆** to select **FFF.F** Decimal Point position.

Step 18. Store selected Decimal Point position
By pressing **⬇** momentarily the Decimal Point position will be stored and the instrument will go to the next menu item.

Step 19. Enter to Temperature Unit Submenu
Display shows **EEMP** Temperature Unit.

Step 20. Display available Temperature Units
Press **⬇** to display the flashing Degree **°F** or **°C**.

Step 21. Scroll through Temperature Units selection
Press **⬆** to select **°F** Degree.

Step 22. Store the Temperature Unit
Press **⬇** to display momentarily that the Degree Unit has been stored and the instrument will go automatically to the next menu item.

Step 23. Enter the Filter Constant Submenu
Display shows **FLtR** Filter Constant Submenu.

Step 24. Display the Filter Constant Value Submenu
Press **⬇** to display the flashing, previously selected Filter Constant.

Step 25. Scroll through available Filter Constants
Press **⬆** to sequence thru Filter Constants **0001**, **0002**, **0004**, **0008**, **0016**, **0032**, **0064** and **0128**.

Step 26. Store the Filter Constant
Press **⬇** momentarily to store **0004** Filter Constant and the instrument will automatically go to the next menu item.

Step 27. Enter Alarm 1 Menu
The display will show **ALR1** the top menu for Alarm 1. In the following steps we are going to enable Alarm 1, Deviation, Unlatch, Normally Open, Active Above, Enable at power on and +2°F High Alarm i.e. Process Value > Setpoint 1 Value +2°F will activate Alarm 1.

Step 28. Enter Alarm 1 Enable/Disable Submenu
Press **⬇** to display flashing **dSbL** / **ENbL**.

Step 29. Enable Alarm 1 Submenu
If flashing **ENbL** is displayed, press **⬇**, if **dSbL** is displayed, press **⬆** until **ENbL** is displayed, then press **⬇** to store and go to the next menu item.

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Step 30. Select the Deviation Control Type Submenu
Press **⬇**. If flashing **dEV** Deviation is displayed press **⬇**, otherwise press **⬆** until flashing **dEV** is shown. Now press **⬇** to store and go to next menu item.

Step 31. Select the Latched Type Submenu
Press **⬇**. If flashing **UNLE** Unlatched is displayed press **⬇**, otherwise press **⬆** until **UNLE** is displayed. Press **⬇** to store and advance to next menu item.

Step 32. Select the Normally Open Type of Contact Closure Submenu
Press **⬇**. If flashing **N.O** Normally Open is displayed, press **⬇**, otherwise press **⬆** until **N.O** is displayed. Press **⬇** to store and advance to next menu item.

Step 33. Select the Above Type of Active Submenu
Press **⬇**. If flashing **AbO** Above is displayed, press **⬇**, otherwise press **⬆** until **AbO** is displayed. Press **⬇** to store and advance to next menu item.

Step 34. Enable Alarm 1 at Power On (A.P.O.N)
Press **⬇**. If flashing **ENbL** is displayed, press **⬇**, otherwise press **⬆** until **ENbL** is displayed. Press **⬇** to store and advance to next menu item.

Step 35. Enter Alarm 1 High Submenu
Press **⬇** twice to skip **ALR.L** Alarm 1 Low value. **ALR.L** is for below & **ALR.H** for above.

Step 36. Set the Alarm 1 High value (ALR.H)
Press **⬇**. Press **⬆** or **⬇** until value to set the display to **002.0**. Press **⬇** to save.

Step 37. Enter the Alarm 2 Menu
The display will show **ALR2** the top menu for Alarm 2. Repeat steps from 28 to 36 to set for Alarm 2 the same conditions as for Alarm 1.

Step 38. Configuration of Display Color Selection
Press **⬇** until the **COLR** Display Color Selection Menu appears on the Display. Configure **COLR** as **NCLR** / **GRN** (green), **LCLR** / **RED** (red), **2CLR** / **AMBR** (amber). Please refer to the operator's manual if needed.

Step 39. Run a Test
Press **⬇** until reset the controller and return to **RUN** Mode to display **075.0** (Ambient Temperature). Now you are ready to observe temperature as it rises 10°F higher than displayed. Touch the tip of the Thermocouple to raise the temperature above the Alarm 2 High value **082.0**, and AL2 will turn on, and Display Color will change from Green to Amber. Continue touching the tip to raise the temperature above the Alarm 1 High value **087.0** and Display Color will change from Amber to Red.

Specifications

Accuracy:
+0.5°C temp; 0.03% rdg. process typical

Resolution:
1°/0.1°; 10 µV process

Temperature Stability:
0.04°C/°C RTD; 0.05°C/°C TC @ 25°C (77°F); 50 ppm/°C process

Display:
4-digits, 9-segments LED, 21 mm (0.83") with red, green and amber programmable colors

Input Types:
Thermocouple, RTD, Analog Voltage and Current

TC: (ITS 90)
J, K, T, E, R, S, B, C, N, L

RTD: (ITS 68)
100/500/1000 ohm Pt sensor 2-, 3-, or 4-wire; 0.00385 or 0.00392 curve

Voltage:
0 to 100 mV, 0 to 1 V, 0 to 10 Vdc

Specifications (continued)

Current:
0 to 20 mA (4 to 20 mA)

Output 1†:
Relay 250 Vac @ 3 A Resistive Load

Output 2†:
Relay 250 Vac @ 3 A Resistive Load
† Only with -AL Limit Alarm option

Options: Communication
RS-232 / RS-485 or 10BaseT or Excitation: 24 Vdc @ 25 mA
EXC. not available for Low Power Option

Line Voltage/Power:
90 - 240 Vac ±10%, 50 - 400 Hz*, or 110-375 Vdc, 4W for Single Display;
5W for Dual Display
* No CE compliance above 60 Hz

Low Voltage Power Option:
12 - 36 Vdc, 3 W** for Single Display; 20 - 36 Vdc, 4 W** for Dual Display
**Units can be powered safely with 24 Vac but No Certification for CE/UL are claimed.

Dimensions:
i8: 48 H x 96 W x 127 D mm (1.89 x 3.78 x 5")
i16: 48 H x 48 W x 127 D mm (1.89 x 1.89 x 5")
i32: 25.4 H x 48 W x 126.3 D mm (1.0 x 1.89 x 5")

Weight:
i8: 295 g (0.65 lb)
i16: 159 g (0.35 lb)
i32: 127 g (0.28 lb)

Approvals:

UL, C-UL, UKCA, CE per EN 61010-1:2001

WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

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 in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any omissions or errors nor assumes liability for any damages that result from the use of its products in accordance with information provided by OMEGA, either verbal or written. OMEGA warrants only that the parts manufactured by the company will be as specified and free of defects. OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, EXCEPT THAT OF TITLE, AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. LIMITATION OF LIABILITY: The remedies of purchaser set forth herein are exclusive, and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

CONDITIONS: Equipment sold by OMEGA is not intended to be used, nor shall it be used: (1) as a "Basic Component" under 10 CFR 21 (NRC), used in or with any nuclear installation or activity; or (2) in medical applications or used on humans. Should any Product(s) be used in or with any nuclear installation or activity, medical application, used on humans, or misused in any way, OMEGA assumes no responsibility as set forth in our basic WARRANTY / DISCLAIMER language, and, additionally, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the Product(s) in such a manner.

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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MQS5290/0822

QUICK START



All models shown smaller than actual size.

iSeries

DPIx-AL/CNIx-AL
Limit Controller



omega.com info@omega.com

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Toll-Free: 1-800-826-6342 (USA & Canada only)
Customer Service: 1-800-622-2378 (USA & Canada only)
Engineering Service: 1-800-872-9436 (USA & Canada only)
Tel: (203) 359-1660 Fax: (203) 359-7700
e-mail: info@omega.com

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**Omega Engineering,
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Daimlerstrasse 26 75392
Deckenpfronn, Germany

For Other Locations Visit omega.com/worldwide

The information contained in this document is believed to be correct, but OMEGA accepts no liability for any errors it contains, and reserves the right to alter specifications without notice.

START HERE

This Quick Start Reference provides information on setting up your instrument for basic operation. The latest complete Operational Manual as well as free Software and ActiveX Controls are available at www.omega.com.

SAFETY CONSIDERATION

This device is marked with the international Caution symbol.

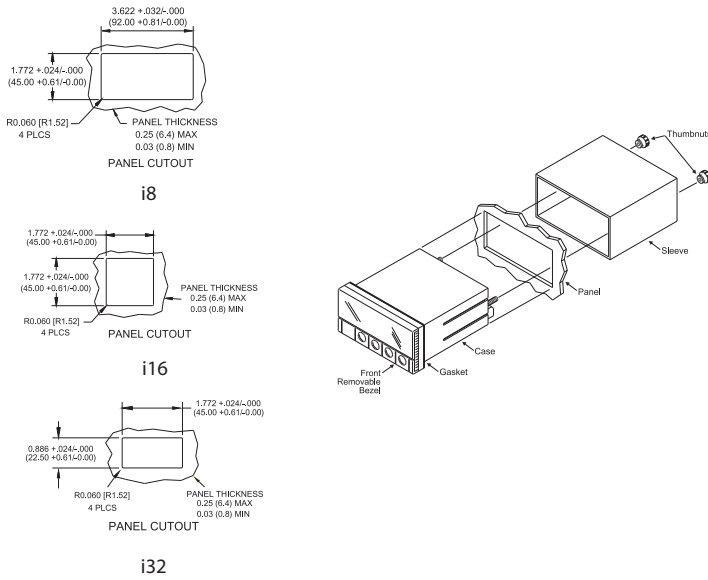
The instrument is a panel mount device protected in accordance with EN 61010-1:2001, electrical safety requirements for electrical equipment for measurement, control and laboratory. Remember that the unit has no power-on switch. Building installation should include a switch or circuit-breaker that must be compliant to IEC 947-1 and 947-3.

SAFETY:

- Do not exceed voltage rating on the label located on the top of the instrument housing.
- Always disconnect power before changing signal and power connections.
- Do not use this instrument on a work bench without its case for safety reasons.
- Do not operate this instrument in flammable or explosive atmospheres.
- Do not expose this instrument to rain or moisture.

EMC:

- Whenever EMC is an issue, always use shielded cables.
- Never run signal and power wires in the same conduit.
- Use signal wire connections with twisted-pair cables.
- Install Ferrite Bead(s) on signal wire close to the instrument if EMC problems persist.



Panel Mounting Instructions:

- Using the dimensions from the panel cutout diagram shown in the **Mounting** section, cut an opening in the panel.
- Remove sleeve from the rear of the case by removing thumbnuts.
- Insert the unit into the opening from the front of the panel, so the gasket seals between the bezel and the front of the panel.
- Slip the sleeve over the rear of the case.

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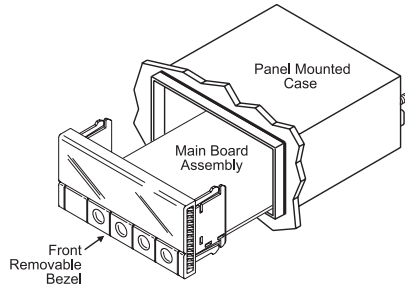
Disassembly Instructions:

If necessary, the board assembly may be removed fro the front of the case housing.

Warning: Disconnect all ac power from the unit before proceeding.

- Remove the board assembly from the case by pulling at the sides of the bezel.

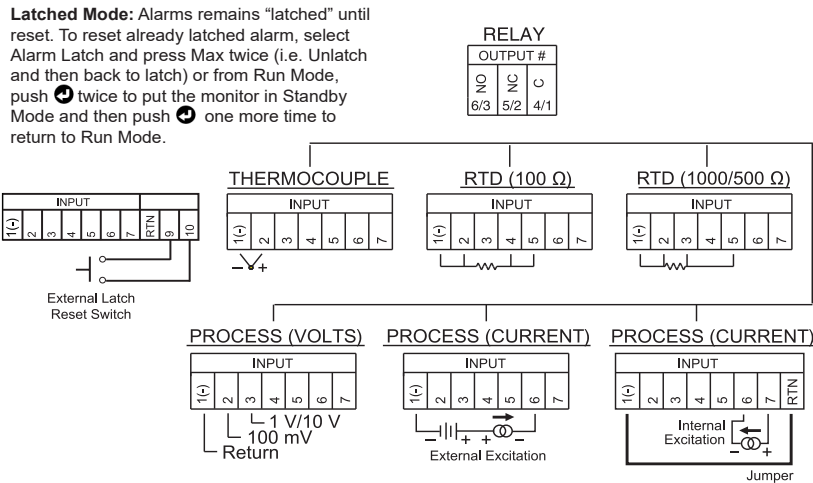
- The bezel along with the board assembly will unlatch from the case housing.



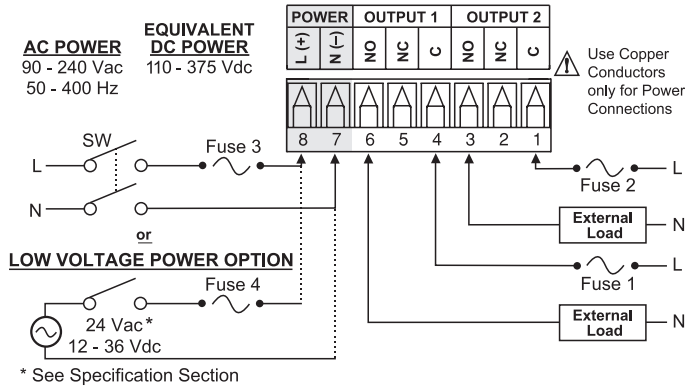
WIRING

Wire the instrument according to the figure shown below.

Warning: Do not connect ac power to your device until you have completed all input and output connections. This device must only be installed by a specially trained electrician with corresponding qualifications. Failure to follow all instructions and warnings may result in injury!



Connect the main power connections as shown in the figure below.



* See Specification Section

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FUSE	Connector	Output Type	For 115Vac	For 230Vac	DC
FUSE 1	Output 1	Relay	3 A(T)	3 A(T)	-
FUSE 2	Output 2	Relay	3 A(T)	3 A(T)	-
FUSE 3	Power	N/A	100 mA(T)	100 mA(T)	100 mA(T)
FUSE 4	Power	N/A	N/A	N/A	400 mA(T)

Note i13: Output 1 and 2 are for -AL Limit Alarm Option only.

CONFIGURATION

MENU Mode:

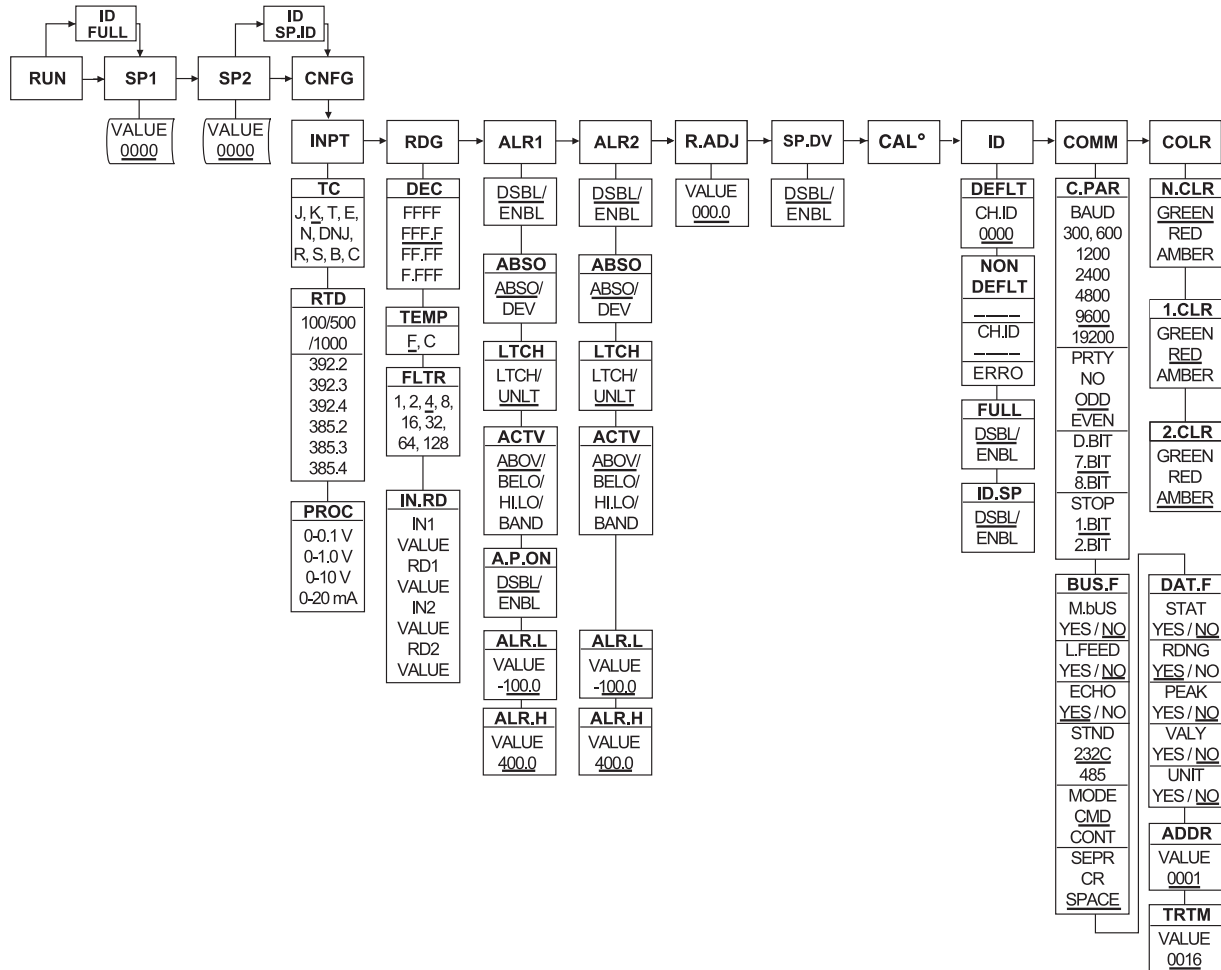
Flashing display in MENU Mode means you can make your selection by pressing **▲** button. If the flashing display is not a four digit value, pressing **▼** button will always direct the instrument one step backward of the top menu item. The second push on the **▼** button will reset the instrument except after the setpoint and the alarms, that will go to the RUN Mode without resetting the instrument. The **▶** button will always sequence the instrument thru the menu items.

The **▶** button has two functions:

- To save a selected flashing display
- To direct the instrument to the next submenu level

RUN Mode:

- ▶** causes the display to flash the PEAK with the corresponding value. Press again to go back to RUN Mode.
- ▼** causes the display to flash VALLEY with the corresponding value. Press again to go back to RUN Mode.
- ▶** causes flashing PEAK or VALLEY to reset corresponding values. Press **▶** one more time to go back to RUN Mode.



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OPERATION - (For Thermocouple Input)

Step 1. Apply Power to the Instrument

When your device is first powered up it will display the ambient temperature (assume 75°F).

Step 2. Enter Setpoint 1 Menu

Press **▶** one time from run mode to get to **SP.1** Setpoint 1.

Step 3. Enter the Setpoint 1 Value Submenu

Press **▶**. Display shows the previous selection of Setpoint 1.

Step 4. Change the Setpoint 1 Value

Press **▲** or **▼** until desired value is displayed.

Step 5. Store the Setpoint 1 Value

Set the Setpoint 1 to 10 degree higher than Process value (SP1 = 85) and press **▶** to store, display flashes **ST.Rd** message and advances to **SP.2** Setpoint 2 Menu.

Step 6. Store the Setpoint 2 Value

Repeat steps 3 and 4. Set the Setpoint 2 to 5 degree higher than Process value (SP2 = 80) and press **▶** to store, display flashes **ST.Rd** message and advances to **CNFG** Configuration Menu.

Step 7. Enter the Input Type Menu

Press **▶** to enter **INPT** Input Type Menu.

Step 8. Enter to the submenu items of Input Menu

Press **▶** to display Input: Process, RTD or Thermocouple. If flashing **TC** is displayed press **▶** and proceed to Step 11.

Step 9. Scroll through available selection of Input Menu

Press **▼** until a flashing **TC** for Thermocouple is displayed.

Step 10. Enter to the Thermocouple Input Submenu

Press **▶** to store Thermocouple Input. The display will stop flashing and show the top menu for Thermocouple types. If you press **▶** controller will step to next menu item (Skip to Step 14).