

OPERATION

**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 **STP 1** 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 **STP 2** message and advances to **ENFG** Configuration Menu.

**Step 7. Enter the Reading Config Menu**  
Press **⏏** to enter **Rdg** Reading Config Menu.

**Step 8. Enter the submenu items of Rdg Config Menu**  
Press **⏏** to display **SENSOR** Sensor submenu: Sensor selection for Autotune, Loop, or Ramp and Soak **F °C** is for temperature and **°R H** is for Humidity

**Step 9. Enter the submenu items of Rdg Config Menu**  
Press **⏏** to display Temp Unit submenu:

**Step 10 Scroll thru selection for Temp Unit submenu**  
Press **⏏** to Scroll though the available selections of the Temperature Unit of your choice: **F** or **C**.

**Step 11. Store the Temperature Unit**  
Press **⏏**, display momentarily shows **STP 1** the Unit has been stored and the instrument will go automatically to the next menu item.

**Step 12. Enter the Filter Constant Submenu**  
Display shows **FLTR** Filter Constant Submenu.

**Step 13. Display the Filter Constant Value Submenu**  
Press **⏏** to display the flashing, previously selected Filter Constant.

**Step 14. Scroll through available Filter Constants**  
Press **⏏** to sequence thru Filter Constants **0001**, **0002**, **0004**, **0008**, **0016**, **0032**, **0064** and **0128**.

**Step 15. Store the Filter Constant**  
Press **⏏** momentarily to store **0004** Filter Constant and the instrument will automatically go to the next menu item.

**Step 16. Enter Alarm 1 Menu**  
The display will show **ALR 1** 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.

- Note ⓘ
- If Analog Output Option is installed and enabled, the controller will skip Alarm 1 Menu item to Analog Output.
  - Alarm must be DISABLED if Ramp is ENABLED.
  - Alarm1 will only work for Humidity, not Temperature.

**Step 17. Enter Alarm 1 Enable/Disable Submenu**  
Press **⏏** to display flashing **DSBL / ENBL**.

**Step 18. 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.

**Step 19. 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 20. Select the Latched Type Submenu**  
Press **⏏**. If flashing **UNL** Unlatched is displayed press **⏏**, otherwise press **▲** until **UNL** is displayed. Press **⏏** to store and advance to next menu item

**Step 21. 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 22. Select the Above Type of Active Submenu**  
Press **⏏**. If flashing **ABOV** Above is displayed, press **⏏**, otherwise press **▲** until **ABOV** is displayed. Press **⏏** to store and advance to next menu item.

**Step 23. Enable Alarm 1 at Power On (A.P.ON)**  
Press **⏏**. If flashing **ENBL** is displayed, press **⏏**, otherwise press **▲** until **ENBL** is displayed. Press **⏏** to store and advance to next menu item.

**Step 24. 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 25. Set the Alarm 1 High value (ALR.H)**  
Press **⏏**. Press **▲** or **▼** until value to set the display to **002.0**. Press **⏏** to save.

**Step 26. Enter the Alarm 2 Menu**  
The display will show **ALR 2** the top menu for Alarm 2. Repeat steps from 17 to 25 to set for Alarm 2 the same conditions as for Alarm 1.

**Step 27. Skip the Loop Break Time Menu (LOOP)**  
Press **⏏** to go to the **OUT 1** Output 1 Menu item.

**Step 28. Configuration the Output 1 Menu**

Note ⓘ

Set Alarm 1 Disabled (Step 18) to be able to Enable Output 1.

Configure Out 1 as **CTRL / PID, ACTN / R4RS, AUTO / DSBL, ANEL / ENBL, PRoP / 005.0, RESL / 0180, RATE / 018.0, CYCL / 0010** and **OPNG / 0003**. Please refer to the operator's manual if needed. Press **⏏** to save and go to the next menu item.

**Step 29. Configuration of Display Color Selection**  
Press **⏏** until the **COLOR** Display Color Selection Menu appears on the Display. Configure **COLOR** as **NCLR / GRN** (green), **ICLR / RED** (red), **ELCL / AMBR** (amber). Please refer to the operator's manual if needed.

Note ⓘ

For color change on Setpoints refer to Owners Manual Section 2.

SPECIFICATION

<b>SENSOR SPECIFICATIONS</b>	
<b>Relative Humidity Accuracy/Range:</b>	<b>Output 1:</b>
±2% for 10 to 90%	Relay 250 Vac @ 3 A Resistive Load, SSR, Pulse, Analog Voltage and Current
±3% for 5 to 10% and 90 to 95%	
±4% for 0 to 5% and 95 to 100%	<b>Output 2:</b>
<b>Non-linearity:</b> ±3%	Relay 250 Vac @ 3 A Resistive Load, SSR, Pulse
<b>Hysteresis:</b> ±1% RH	<b>Options: Communication</b>
<b>Response Time:</b>	RS-232 / RS-485 or 10BaseT or Excitation: 24 Vdc @ 25 mA
8 sec, tau 63%	<i>Exc. not available for Low Power Option</i>
<b>Repeatability:</b> ±0.1%	<b>Line Voltage/Power:</b>
<b>Resolution:</b> 0.1%, 12bit	90 - 240 Vac ±10%, 50 - 400 Hz*, or 110 - 300 Vdc, <b>5 W</b>
	<i>* No CE compliance above 60 Hz</i>
<b>Temperature Accuracy/Range*:</b>	<b>Low Voltage Power Option:</b>
±0.5°C for 5 to 45°C (±1°F for 41 to 113°F); up to ±1.5°C for -40 to 5°C and 45 to 124°C (up to ±2.7°F for -40 to 41°F and 113 to 257°F)	20 - 36 Vdc or 24 Vac** ±10%, <b>4 W</b>
<b>*NOTE:</b> extended temp range is for Probe only, the Controller's operating temp is 0-50°C	<i>** Units can be powered safely with 24 Vac but No Certification for CE/UL are claimed.</i>
<b>Response Time:</b>	<b>Dimensions:</b>
5 to 30 sec, tau 63%	48H x 48W x 127D mm
<b>Repeatability:</b> ±0.1°C	(1.89 x 1.89 x 5")
<b>Resolution:</b> 0.1°C, 14 bit	<b>Weight:</b>
<b>METER SPECIFICATIONS</b>	159 g (0.35 lb)
<b>Display:</b>	<b>Approvals:</b>
4-digit, 9-segment LED,	UL, C-UL, UKCA, CE per 2014/35/EU
• 10.2 mm (0.40")	(Low Voltage Directive)
Red, green, and amber programmable colors for setpoint and temperature units.	

**WARNING:** These products are not designed for use in, and should not be used for, patient-connected applications.

 This device is marked with the international caution symbol. It is important to read the Setup Guide before installing or commissioning this device, as the guide contains important information relating to safety and EMC.

It is the policy of OMEGA to comply with all worldwide safety and EMC/EMI regulations that apply. OEMGA is constantly pursuing certification of its products to the European New Approach Directives. OMEGA will add the CE mark to every appropriate device upon certification.

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

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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.

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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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**Humidity + Temp**  
**Controller**
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- 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.
- Alarm 1 is designed to monitor the humidity value around Setpoint 1 and Alarm 2 is designed to monitor the temperature value around Setpoint 2.
- MQS4004/0822





This Quick Start Reference provides information on setting up your instrument for basic operation. The latest complete Communication and Operational Manual as well as free Software and ActiveX Controls are available at [www.omega.com/specs/iseries](http://www.omega.com/specs/iseries).

SAFETY CONSIDERATION



This device is marked with the international Caution symbol.

The instrument is a panel mount device protected in accordance with 2014/35/EU (Low Voltage Directive). 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.

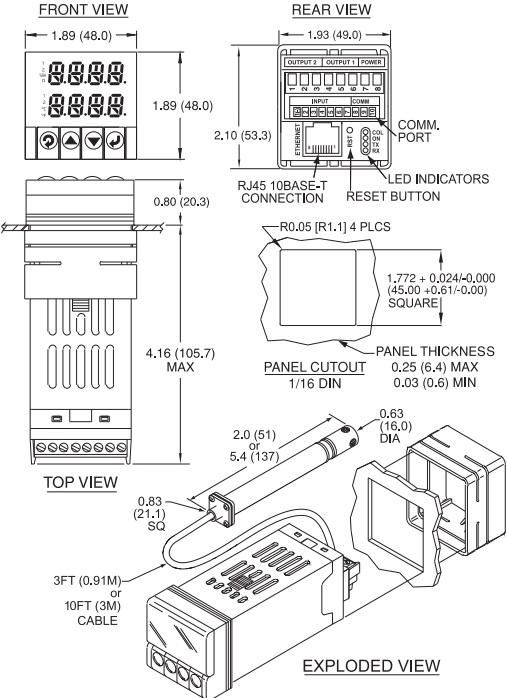
EMC:

- 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.

MOUNTING

Panel Mounting Instruction:

- Using the dimensions from the panel cutout shown in exploded views, cut an opening in the panel. 45mm +.61/- .00 square with R 1.5, 4 places (1.772" +.024/- .000 square with R 0.06", 4 places) Panel thickness: 6.4mm (0.25") max / 0.8mm (0.03") min.
- 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.
- Slide the retainer over the rear of the case and tighten against the backside of the mounting panel.



Disassembly Instruction:

If necessary, the unit may be removed from the panel and opened.



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

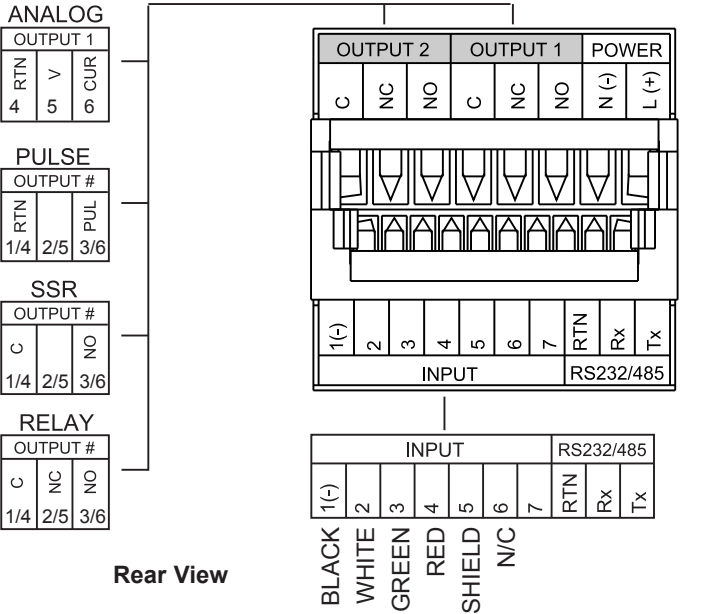
- Make sure the AC power is disconnected.
- Remove all wiring connections from the rear of the meter. To remove power and input connectors squeeze top and bottom of the case near the connector site for release, then pull connectors from the case.
- To remove meter from the case, squeeze top and bottom of the bezel to release, then pull from case.

WIRING

Wire the instrument according to the figure shown below.

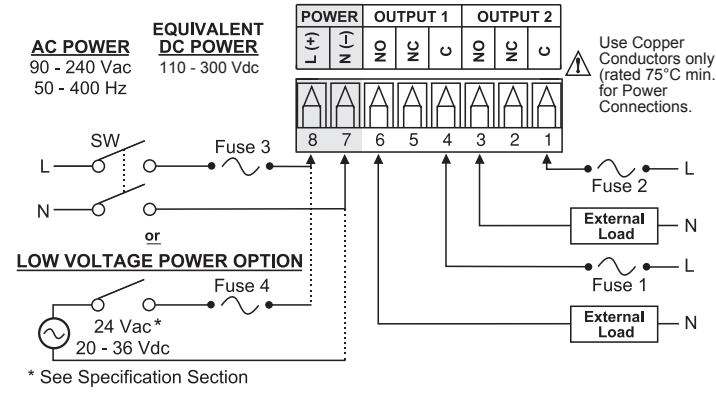


Warning: Do not connect ac power to your device until you have completed all input and output connections. This device must only be installed by a specially trained electrician with corresponding qualifications. Failure to follow all instructions and warnings may result in injury!



Refer to Operator's Manual for important Input Probe Shield wiring notes

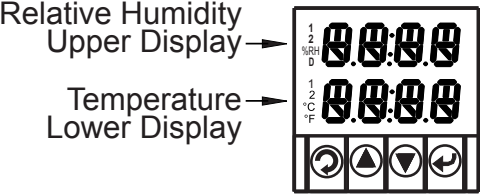
Connect the main power connections as shown in the figure below.



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)

DESCRIPTION OF FRONT PANEL

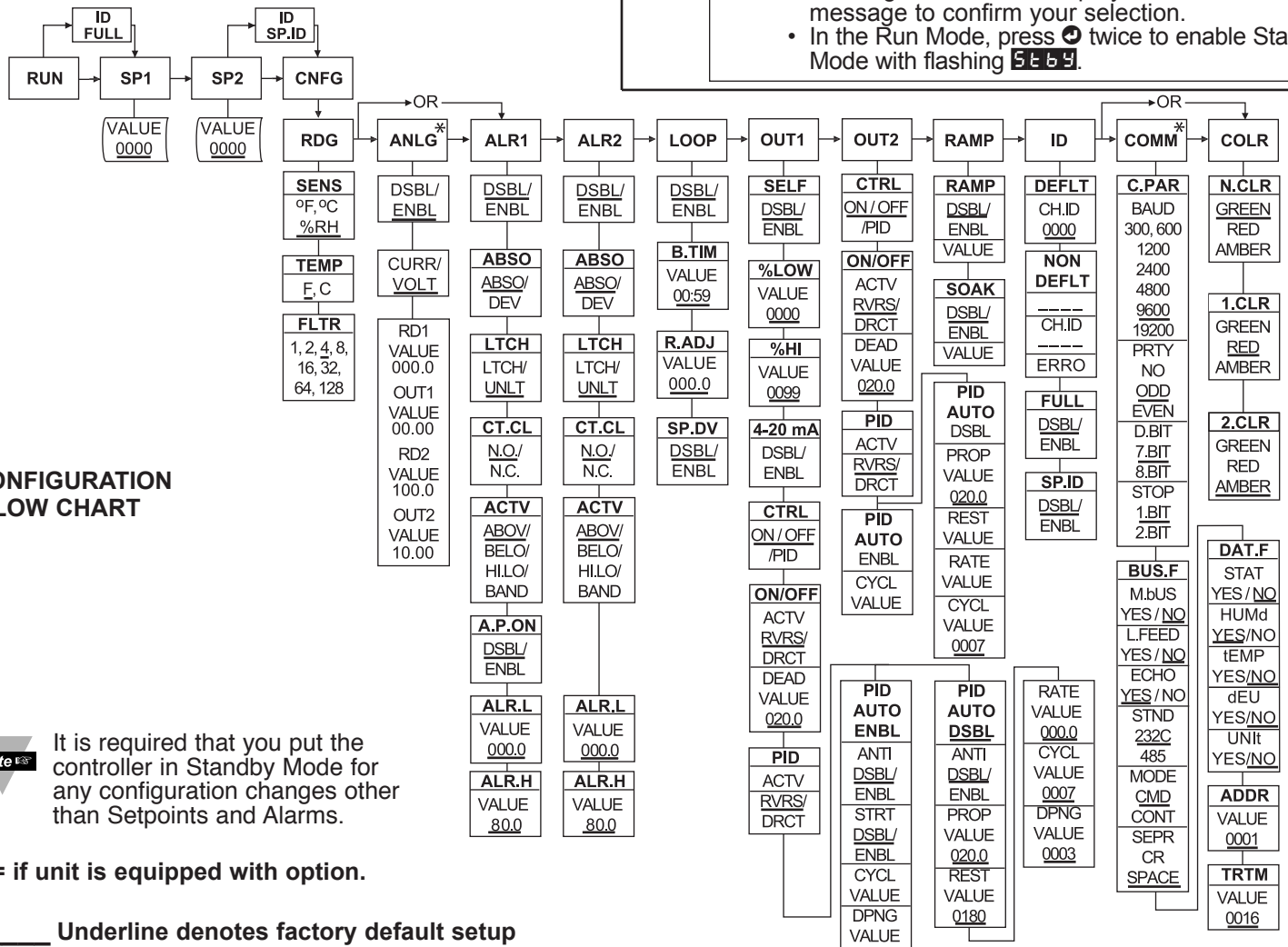
The upper display may be RH, Temperature or Dewpoint readings depending on your Reading Configuration selections. Factory defaults are shown. The Dual Display allows the user to observe the Relative Humidity or Dewpoint (upper display) and Temperature Value (lower display), at the same time.



1	Output 1/Setpoint 1/ Alarm 1 indicator
2	Output 2/Setpoint 2/ Alarm 2 indicator
°C	°C unit indicator for Temperature or Dewpoint
°F	°F unit indicator for Temperature or Dewpoint
%RH	Display shows the Percent Relative Humidity
D	Display shows the Dewpoint
⌂	Changes display to Configuration Mode and advances through menu items*
⬅	Used in Program Mode:
➡	Used in Program Mode:
⌂	Accesses submenus in Configuration Mode and stores selected values*

CONFIGURATION

The instrument has two different modes of operation. Run Mode: used to display Temperature and Relative Humidity. Menu Configuration Mode: used to navigate through the menu options and configure the controller.



It is required that you put the controller in Standby Mode for any configuration changes other than Setpoints and Alarms.

\* = if unit is equipped with option.

Underline denotes factory default setup

Button Function in Configuration Mode

- MENU** (⌂): To enter the Menu, the user must first press ⌂ button.
- (UP)** (➡): Use this button to advance/navigate to the next menu item. The user can navigate through all the top level menus by pressing ⌂.
- (DOWN)** (⬅): While a parameter is being modified, press ⌂ to escape without saving the parameter.
- (DOWN)** (⬅): Press the down ⬅ button to go back to a previous Top Level Menu item.
- (DOWN)** (⬅): Press this button twice to reset the controller to the Run Mode.
- (DOWN)** (⬅): When a numerical value is flashing (except set point value) press ⬅ to scroll digits from left to right allowing the user to select the desired digit to modify.
- (DOWN)** (⬅): When a setpoint value is displayed press ⬅ to decrease value of a setpoint that is currently being modified. Pressing the ⬅ button for approximately 3 seconds will speed up the rate at which the setpoint value is decremented.
- (DOWN)** (⬅): In the Run Mode, pressing the ⬅ button changes display from RH readings to Temperature readings.
- ENTER** (⌂): Press the enter ⌂ button to access the submenus from a Top Level Menu item.
- ENTER** (⌂): Press ⌂ to store a submenu selection or after entering a value - the display will flash a **STd** message to confirm your selection.
- ENTER** (⌂): In the Run Mode, press ⌂ twice to enable Standby Mode with flashing **STBY**.