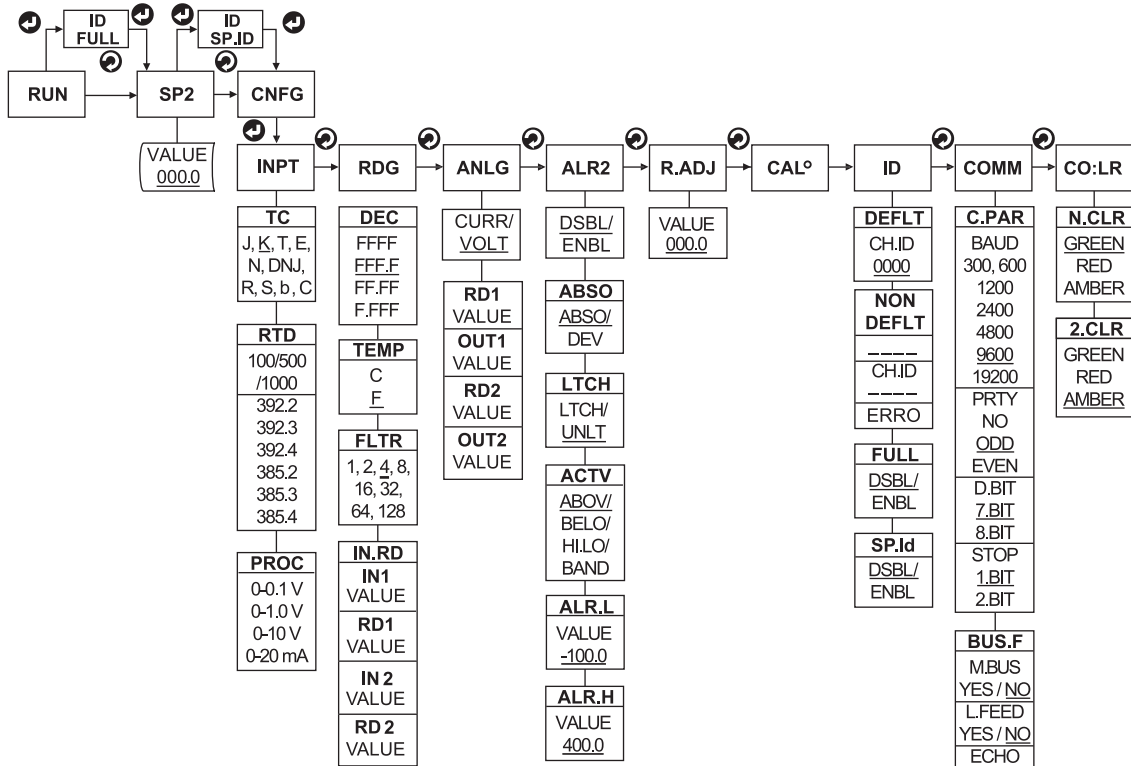


**FLOW CHART**

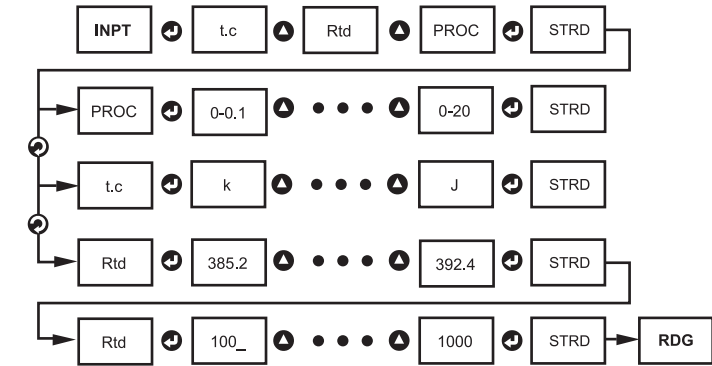
To the right is a flowchart showing how to navigate through all top level menus by pressing the **↶** and **↷** buttons.



Underline denotes factory default setup

**INPUT MENU SETUP (operation example)**

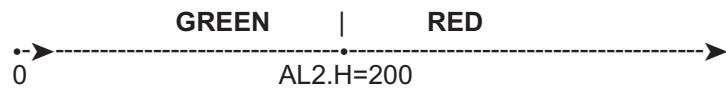
Below is a flowchart showing how to navigate through the submenus of Input menu item by pressing the front buttons.



**DISPLAY COLOR SETUP (examples)**

**Example 1:**  
**Alarm 2 setup:** Absolute, Above, Alarm 2 HI Value "ALR.H" =200  
**Color Display setup:** Normal Color "N.CLR"=Green, Alarm 2 Color "2.CLR"=Red

Display color change sequence:



**Example 2:**  
**Alarm 2 setup:** Deviation, Hi/Low, "ALR.H = 10", "ALR.L = 5"  
**Color Display setup:** "N.CLR"=Green, "2.CLR"=Amber

Display color change sequence:



**SPECIFICATION**

**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,  
 10.2 mm (0.40") 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

**Input Impedance:**  
 10 MΩ for 100 mV  
 1 MΩ for 1 or 10 Vdc

**Voltage:**  
 0 to 100 mV (±50 mV), 0 to 1 V,  
 0 to 10 Vdc

**Current:**  
 0 to 20 mA (5 Ω load)

**Output 1:**  
 not available

**Output 2:**  
 Relay: 250 Vac @ 3 A Resistive Load (SPDT type can be configured as Alarm 2 output); SSR: 20-265 Vac @ 0.05-0.5A (resistive load), continuous;  
 DC Pulse: non-isolated 10Vdc @ 20mA  
 † Only with -AL Limit Alarm option

**Analog Output 3:**  
 (Retransmission) Isolated Analog Voltage and Current  
 Current: 10 V max @ 20 mA output  
 Voltage: 20 mA max for 0 - 10 V output

**Options: Communication**  
 RS-232 / RS-485 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, equivalent 5 W  
 \* No CE compliance above 60 Hz

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

**Dimensions:**  
 48 H x 48 W x 127 mm D (1.89 x 1.89 x 5")

**Weight:**  
 159 g (0.35 lb)

**Approvals:**  
 FM, UL, C-UL, CE per EN61010-1:2001

**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. OMEGA 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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OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of one (1) year from the date of purchase. In addition to OMEGA's standard warranty period, OMEGA Engineering will extend the warranty period for four (4) additional years if the warranty card enclosed with each instrument is returned to OMEGA.

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 application; 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 product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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**iSeries Temperature & Process Monitor DPI16A Limit Alarm CNI16A-AL with Isolated Analog Output Board**

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This Quick Start Reference provides information on setting up your instrument for basic operation. The latest complete Communication and Operational Manual as well as as free Software 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 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.

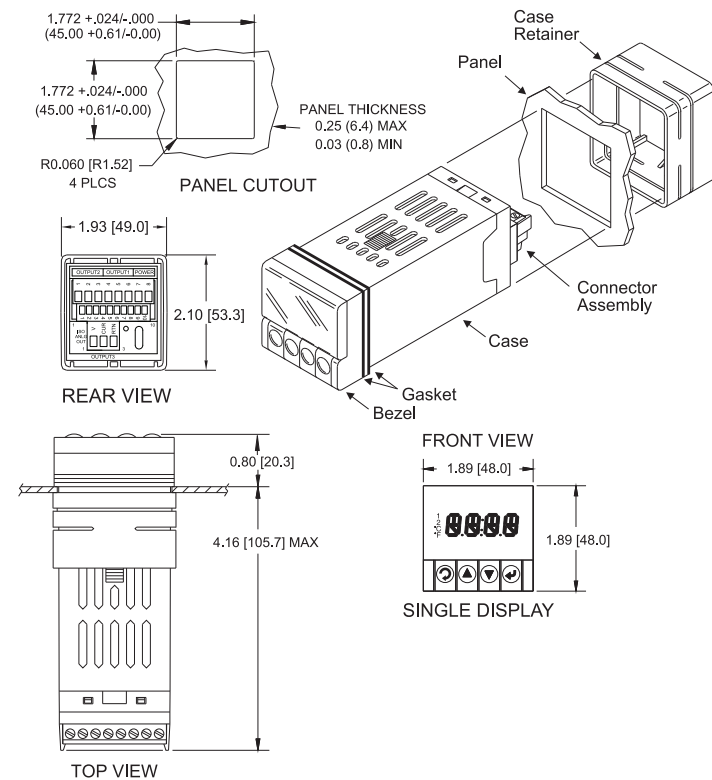
## SAFETY:

- 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.

## MOUNTING



## Panel Mounting Instruction:

- Using the dimensions from the panel cutout diagram shown above, cut an opening in the panel.
- 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.

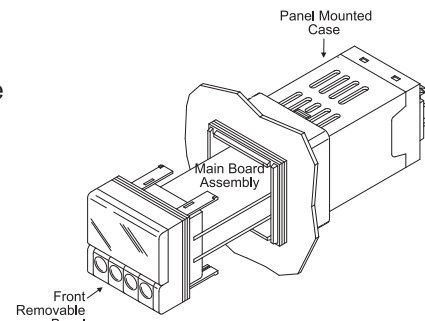
## Disassembly Instruction:

If necessary, the board assembly may be removed from 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

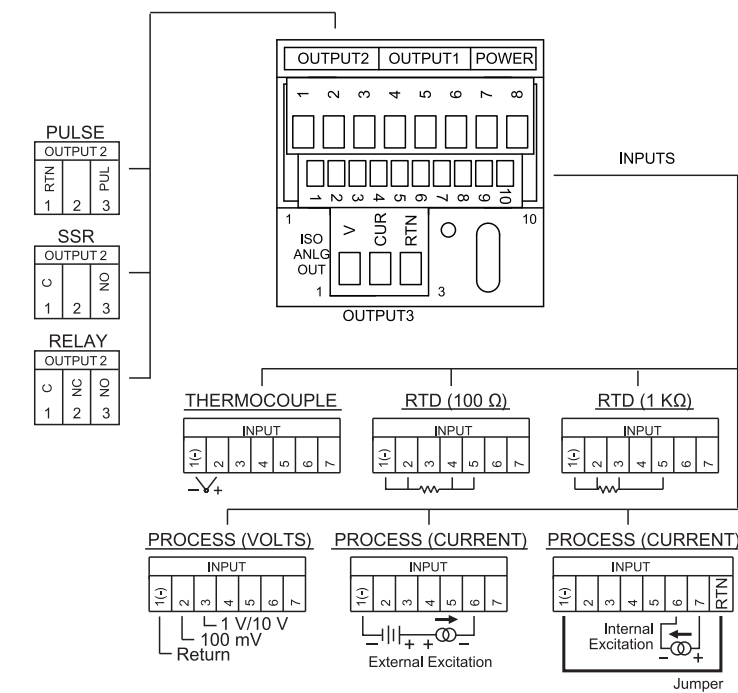
Wire the instrument according to the figure shown below.



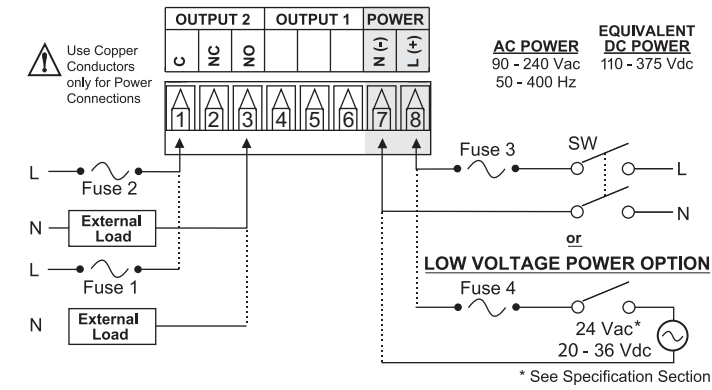
**Warning: Do not connect ac power to your device until you have completed all input and output connections. This device must only be installed by a specially trained electrician with corresponding qualifications. Failure to follow all instructions and warnings may result in injury!**



**Note:** Output 2 is for -AL Limit Alarm Option only.



Connect the main power connections in the figure shown below.



FUSE	Connector	Output Type	For 115Vac	For 230Vac	DC
FUSE 1	Output 2	SSR	0.5 A(T)	0.5 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:** Output 2 is for -AL Limit Alarm Option only.

## CONFIGURATION

Button Functions in Configuration Mode

	<ul style="list-style-type: none"> <li>To enter the Menu, the user must first press  button.</li> <li>Use this button to advance/navigate to the next menu item. The user can navigate through all the top level menus by pressing .</li> <li>While a parameter is being modified, press this button to escape without saving the parameter.</li> </ul>
	<ul style="list-style-type: none"> <li>Press the up  button to scroll through "flashing" selections. When a numerical value is displayed press this key to increase value of a parameter that is currently being modified.</li> <li>Holding the  button down for approximately 3 seconds will speed up the rate at which the set point value is incremented.</li> <li>In the Run Mode pressing  causes the display to flash the PEAK value – press again to return to the Run Mode.</li> </ul>
	<ul style="list-style-type: none"> <li>Press the down  button to go back to a previous Top Level Menu item.</li> <li>Press this button <b>twice</b> to reset the monitor to the Run Mode.</li> <li>When a numerical value is flashing (except set point value) press this button to scroll digits from left to right allowing the user to select the desired digit to modify.</li> <li>When a set point value is displayed press this button to decrease value of a set point that is currently being modified. Holding the  button down for approximately 3 seconds will speed up the rate at which the setpoint value is decremented.</li> <li>In the Run Mode pressing  causes the display to flash the Valley value - press again to return to the Run Mode.</li> </ul>
	<ul style="list-style-type: none"> <li>Press this button to access the submenus from a Top Level Menu item.</li> <li>Press this button to store a submenu selection or after entering a value — the display will flash a <b>StRd</b> message to confirm your selection.</li> <li>Press this button to reset flashing PEAK or VALLEY value.</li> </ul>



**Note:** Reset: Except for Alarms, modifying any settings of the menu configuration will reset the controller prior to resuming Run Mode.

## DISPLAY ABBREVIATIONS

SP2	Set Point 2 Value	CNFG	Configuration Menu
INPt	Input Type Menu	t.c	Thermocouple Input
k. . . J	Thermocouple Type	Rtd	RTD Input
385.2	RTD Curve and Connection Type (2, 3, 4-Wire)	100	100_/500_/1000_ RTD Sensor
392.4		1000	
PROC	Process Input		
0 - 0.1	100 mV Input Voltage	0 - 1.0	1 V Input Voltage
0 - 20	20 mA Input Current	0 - 10	10 V Input Voltage
RdG	Reading Configuration	dEC	Decimal Point
F.FFF	Decimal Point Position	FLtR	Filter Constant
..FFFF			
TEMP	Unit of Temperature	C	Celcius
F	Fahrenheit		
0001..	Filter Constant Value	IN.Rd	Input/Reading Scale and Offset Menu
..0128			
IN 1	Input 1	IN 2	Input 2
Rd 1	Reading 1	Rd 2	Reading 2
ANLG	Analog Output		
VoLt	Voltage Output	CURR	Current Output
Out.1	Output 1	Rd 1	Reading 1
Out.2	Output 2	Rd 2	Reading 2
ALR2	Alarm 2 Menu	AbSo	Absolute Mode
dEV	Deviation Mode	Ltch	Latched Mode
UNLt	Unlatched Mode		
N.o.	Normally Open	N.c.	Normally Closed
ActV	Active Type	AboV	Active Above
bELo	Active Below	Hi.Lo	Above High/Below Low
bANd	Above or Below Band		
ALR.L	Alarm Low Value	ALR.H	Alarm High Value
Id	ID Code Menu	CH.Id	Change ID Code
FULL	Full ID	SP.Id	Set Point ID
COMM	Communication Option*	NONE	Communication is Not Installed
C.PAR	Communication Parameters	bAUd	Baud Rate
PRtY	Parity	odd	Odd
EVEN	Even	No	No
dAtA	Data Bit	7.bit	7 Data Bit
8.bit	8 Data Bit	StOP	Stop Bit
1.bit	1 Data Bit	2.bit	2 Stop Bit
bus.F	Bus Format	M.bus	Modbus Protocol
LF	Line Feed	ECHO	Echo
StNd	Communication Standard	232C	RS-232
485	RS-485	ModE	Data Flow Mode
CMd	Command Mode	CoNt	Continuous Mode
SEPR	Data Separation Character	SPCE	Space
cR	Carriage Return	dAt.F	Data Format
stAt	Alarm Status	RdNG	Transmit Reading Value
PEAk	Transmit Peak Value	GROS	Transmit Gross Value
UNit	Units of Measurement	AddR	Multipoint Address
tR.tM	Transmit Time Interval		
COLR	Display Color Selection	N.CLR	Normal Color Display
2.CLR	Alarm 2 Color Display	REd	Display Color is Red
AMbR	Display Color is Amber	GRN	Display Color is Green
ENbL	Enable	dSbL	Disable
ERRo	Error	+ OL	Input (+) Overload

\*For abbreviations of Communication Option see Communication Manual