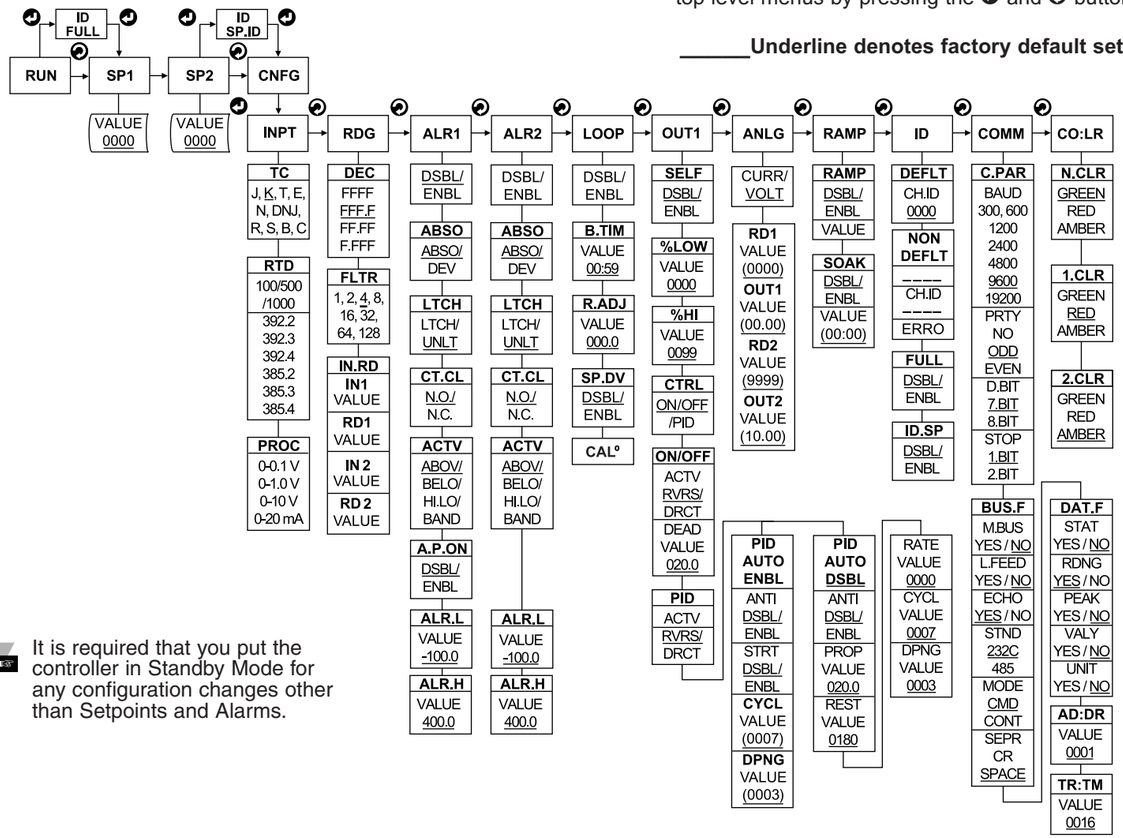
FLOW CHART

Below is a flowchart showing how to navigate through all top level menus by pressing the ↵ and ↵ buttons.

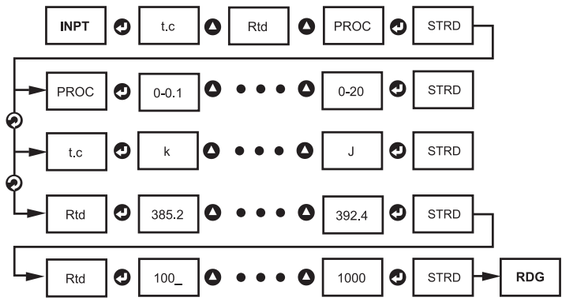
_____Underline denotes factory default setup



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

INPUT MENU SETUP (operation example)

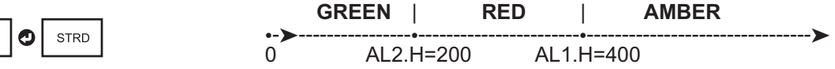
Below is a flowchart showing how to navigate through the submenus of Input menu item by pressing the front buttons.



DISPLAY COLOR SETUP (examples)

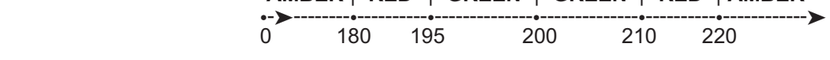
Example 1:
Output 1 & Alarm 2: SSR
Alarm setup: Absolute, Above, Alarm 2 HI Value "ALR.H" =200, Alarm 1 HI Value "ALR.H"=400
Color Display setup: Normal Color "N.CLR"=Green, Alarm 1 Color "1.CLR"=Amber, Alarm 2 Color "2.CLR"=Red

Display color change sequence:



Example 2:
Output 1: Relay, Set Point 1 = 200,
Alarm 2: Relay, Set Point 2 = 200
Alarm 1 setup: Deviation, Band, "ALR.H" = 20
Alarm 2 setup: Deviation, Hi/Low, "ALR.L = 10", "ALR.L = 5"
Color Display setup: "N.CLR"=Green, "1.CLR"=Amber, "2.CLR"=Red

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:
(Control/Alarm Output)
Relay 250 Vac @ 3 A Resistive Load, SSR, Pulse
Output 2:
(Alarm Output)
Relay 250 Vac @ 3 A Resistive Load, SSR, Pulse
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, **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. 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.

QUICK START

CE

iSeries CNi16A Temperature / Process Controller with Isolated Analog Output Board

OMEGA®

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Servicing North America:

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START HERE

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 are available at ***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.

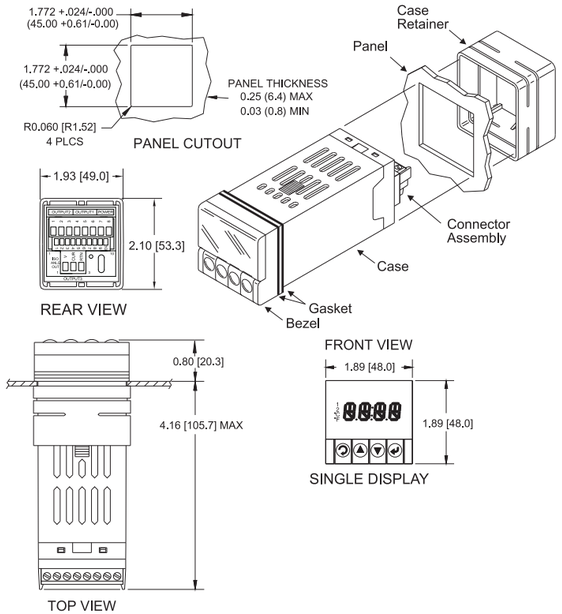
SAFETY:

- Do not exceed voltage rating on the label located on the top of the instrument housing.
- Always disconnect power before changing signal and power connection.
- 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:

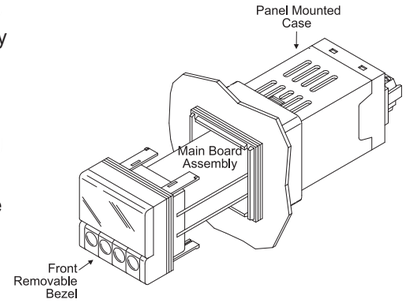
1. Using the dimensions from the panel cutout diagram shown, cut an opening in the panel.
2. Insert the unit into the opening from the front of the panel, so the gasket seals between the bezel and the front of the panel.
3. Slide the retainer over the rear of the case and tighten against the backside 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.

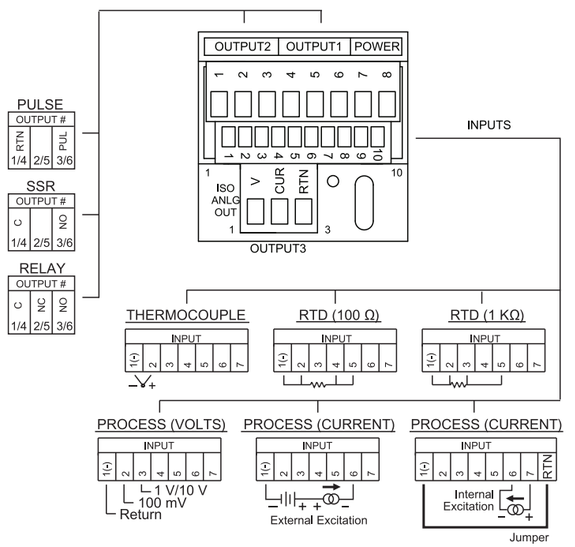
1. Remove the board assembly from the case by pulling at the sides of the bezel.
2. The bezel along with the board assembly will unlatch from the case housing.



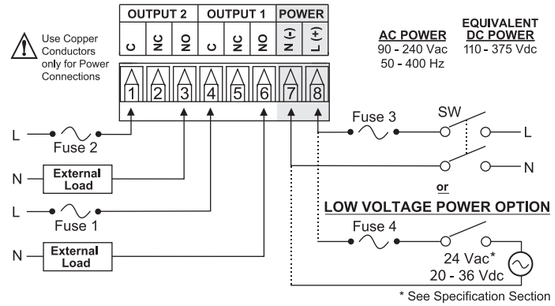
WIRING

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 in the figure shown 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)

CONFIGURATION

Button Functions in Configuration Mode

MENU	• To enter the Menu, the user must first press ⓔ button. • Use this button to advance/navigate to the next menu item. The user can navigate through all the top level menus by pressing ⓔ. • While a parameter is being modified, press this button to escape without saving the parameter.
(UP)	• 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. • Holding the ▲ button down for approximately 3 seconds will speed up the rate at which the set point value is incremented. • In the Run Mode pressing ▲ causes the display to flash the PEAK value – press again to return to the Run Mode.
(DOWN)	• Press the down ▼ button to go back to a previous Top Level Menu item. • Press this button **twice to reset the controller** to the Run Mode. • 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. • 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. • In the Run Mode pressing ▼ causes the display to flash the Valley value - press again to return to the Run Mode.
ENTER	• Press this button to access the submenus from a Top Level Menu item. • Press this button to store a submenu selection or after entering a value — the display will flash a StRd message to confirm your selection. • Press this button to reset flashing PEAK value. • In the Run Mode, press ENTER twice to enable Standby Mode with flashing StbY - press again to return to the Run Mode.

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

DISPLAY ABBREVIATIONS

SP1	Set Point 1 Value	**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 . . . . 392.4	RTD Curve and Connection Type (2, 3, 4-Wire)	**100 _ 1000**	100 _/500 _/1000 _ RTD Sensor
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. ..FFFF	Decimal Point Position	**FLtR**	Filter Constant
0001.. ..0128	Filter Constant Value	**IN.Rd**	Input/Reading Scale and Offset Menu
IN 1	Input 1	**IN 2**	Input 2
Rd 1	Reading 1	**Rd 2**	Reading 2
ALR1	Alarm 1 Menu	**AbSo**	Absolute Mode
_dEV	Deviation Mode	**LtcH**	Latched Mode
UNLt	Unlatched Mode	**Ct.CL**	Contact Closure
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	**A.P.oN**	Alarm Enable/Disable at Power On
ALR.L	Alarm Low Value	**ALR.H**	Alarm High Value
ALR.2	Alarm 2 Menu		
LOOP	Loop Break Menu	**b.tIM**	Loop Break Time
R.AdJ	Reading Adjust	**SP.dN**	Set Point Deviation
OUt1	Output 1 Menu	**SELF**	Manual Control
₀ºLO	Percent Low	**₀ºHI**	Percent High
CtRL	Control Type	**ON.OF**	On/Off Control
4 - 20	Amplitude Control	**PId**	PID Control
ActN	Action Type	**RVRS**	Reverse Action
dRct	Direct Action	**ANt1**	Anti Integral
AUto	Auto PID	**A.tUN**	Auto Tune PID
StRt	Start Auto Tune PID	**PRoP**	Proportional Band
RESt	Reset Setup	**RAtE**	Rate Setup
CYCL	Cycle Time	**dPNG**	Damping Factor
dEAd	Dead Band		
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
RAMP	Ramp Time	**SOAk**	Soak Time
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
COLR	Display Color Selection	**N.CLR**	Normal Color Display
1.CLR	Alarm 1 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
+OPN	Input (+) Open		

*** For abbreviations of Communication Option see Communication Manual.**