

Enhanced  
Version of  
Delta



### What is New

- 4 + 4 Digit Display
- Extended Input Types & Resolution
- 8 LEDs for Status Indications
- Factory Set Relay / SSR Outputs for Auxiliary Setpoints
- No Jumper Settings for Input / Output Configuration
- Plug-in Terminals for Easy Installation
- Reduced Enclosure Depth (94 mm with Terminals)

### Features

- Two Independent Control Loops in One Compact Enclosure
- Independent Programmable Input Types : RTD Pt100 & J / K / T / R / S / B / N Thermocouples
- Selectable Control - Self-Tune PID or On-Off
- Overshoot Inhibit Feature for PID Control
- SSR Control Outputs
- Independent Auxiliary Control for Blower / Alarm
- Factory Set Relay / SSR for Auxiliary Control Outputs
- RS485 Serial Communication Port (MODBUS RTU)
- Universal Supply Voltage : 85~264 VAC, 50/60 Hz
- DIN Standard Dimensions : 48(H) X 48(W) X 94(D), mm

### Specifications

Display	
Digital Readouts	2 Rows of 4 digits, 0.36" Bright Green LED, 7 Segment
Status Indicators	8 Red LEDs
Keys	
Type	4 Tactile Push-button Switches
Functions	PAGE, DOWN, UP, ENTER
Sensor Input (Applicable to both Loops)	
Input Type (Independently Settable for Each Loop)	RTD Pt100, 3 wire Thermocouple : J, K, T, R, S, B, N
Accuracy	<b>RTD Pt100</b> ± 0.25% of reading ± 1 LSD  <b>Thermocouples</b> Measurement : ± 0.25% of reading ± 1 LSD Cold Junction : ± 2.5°C (Specified over 18 to 37°C Ambient)

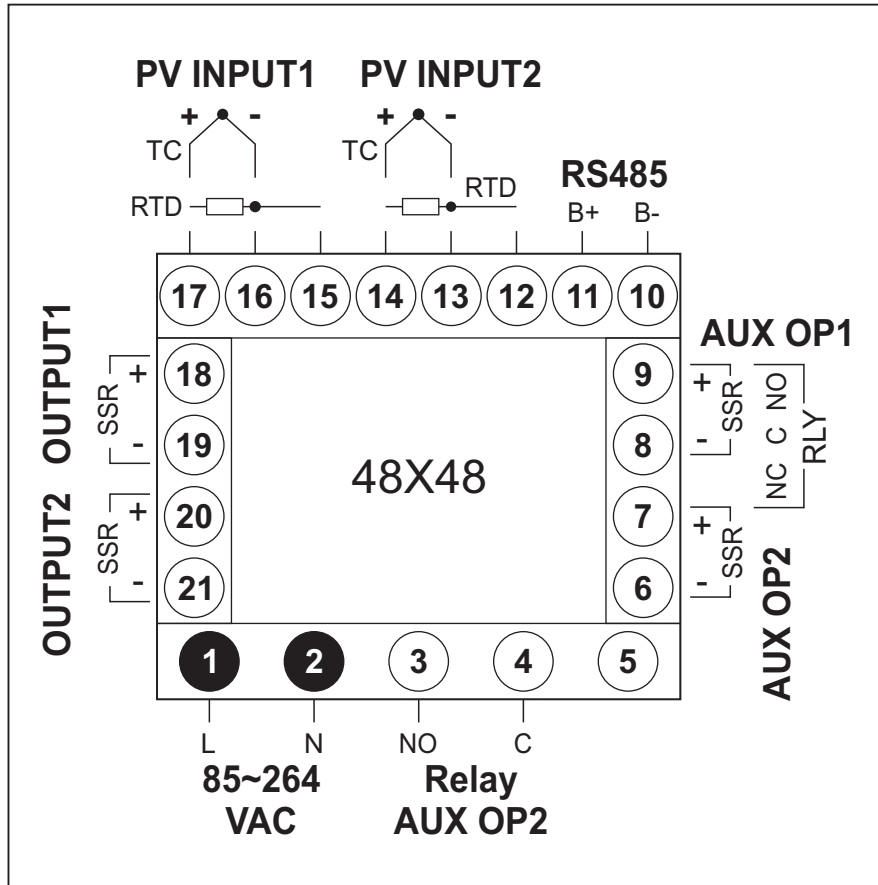
Display Range	Refer Table 1
Display Resolution	RTD Pt100 : 0.1 / 1°C (User Programmable) Thermocouples : 1°C Fixed
Zero Offset	User Adjustable over Full Range
ADC	16 Bit ( $\pm 32,768$ Counts), Sigma-Delta ( $\Sigma\Delta$ )
Input Resistance	> 8 M $\Omega$
Common Mode Rejection	> 100dB at 50/60 Hz
Signal Conditioning	First Order Analog R-C Low-Pass Filter
Input Protection	ESD : 8KV    EFT : 2KV    Surge : 1KV
<b>Main Control (Applicable to both Loops)</b>	
Type	Independently Selectable : ON-OFF Or Self Tune PID
Mode	Heat Control
Control Parameters	<ul style="list-style-type: none"> <li>• ON-OFF : Hysteresis</li> <li>• Self Tune PID : Proportional Band, Integral Time, Derivative Time, Cycle Time, Overshoot Inhibit</li> </ul>
Output	SSR Drive
<b>Auxiliary Output (Applicable to both Loops)</b>	
Auxiliary Function	Independently Selectable : Alarm, Control, Blower
Control Parameters	Setpoint, Hysteresis, Control Logic
Alarm Parameters	Type : Process Low, Process High, Deviation, Window Logic : Normal, Reverse Inhibit : No, Yes
Output	Factory Set Relay / SSR Drive <b>Note : Both outputs can be either Relay or SSR</b>
<b>Outputs</b>	
Relay	Contact Type : Potential-free Change-over Contacts Contact Rating : 5A Resistive @ 250 Vac Contact Life : > 5,00,000 Operations at Rated Voltage / Current
SSR Drive	12 VDC @ 30 mA
<b>Serial Communication</b>	
Port	RS485, 2-wire, Half Duplex, Start-Stop Synchronized
Protocol	MODBUS RTU
ID	Settable : 1 to 127
Baud Rate	Settable : 4800, 9600, 19200
Parity	Settable : None, Even, Odd
Max. Distance	1200 Metres

<b>Power Supply</b>	
Type	Switch Mode (SMPS)
Line Voltage	85~264VAC, 50/60Hz
Consumption	7VA Max
<b>Physical</b>	
Mounting	Plug-in with Panel Mounting Clamps
Overall Dimensions	48(H) X 48(W) X 94(D), mm
Panel Cutout	45(H) X 45(W), mm
Terminals	Screw Type, Plug-in Male / Female
Weight	200 gm, max
<b>Environmental</b>	
Operating Ambient	0~55°C & 5~90%RH Non-condensing
Storage Temperature	-10 to +70 °C
EMC Standards	EN50081-2 & EN 50082-2 Generic Stds for Industrial Environment
Safety Standards	Meets EN61010, Installation Catagory II
Atmospheres	Not Suitable for use in Corrosive or Explosive Atmospheres. The Panel in which the Instrument is Mounted must be free of Electrically Conductive Pollution.

**Table 1 : Temperature Ranges for Thermocouples & RTD**

<b>Input Type</b>	<b>Range (Min. to Max.)</b>
Type J Thermocouple (Fe-K)	0 to +960°C
Type K Thermocouple (Cr-Al)	-200 to +1376°C
Type T Thermocouple (Cu-Con)	-200 to +385°C
Type R Thermocouple (Pt/Pt-Rh13%)	0 to +1770°C
Type S Thermocouple (Pt/Pt-Rh10%)	0 to +1765°C
Type B Thermocouple	0 to +1825°C
Type N Thermocouple	0 to +1300°C
3-wire, RTD Pt100	-199 to +600°C <b>or</b> -199.9 to 600.0°C

# Back Panel Terminations



## Ordering Code

Model		Auxiliary Output-1 & Auxiliary Output-2	
DLP	Delta Pro	R	Relay (Standard)
		S	SSR Drive

### Example Codes

#### DLP - R

Delta Pro, Auxiliary Output-1 & Auxiliary Output-2 Relay

#### DLP - S

Delta Pro, Auxiliary Output-1 & Auxiliary Output-2 SSR