

## Highlights

- 32 Point User Defined Linearization for DC Linear Inputs
- Facility to View & Store Min/Max Process Values
- Square Root Extraction for Flow Rate Indication
- 0.1 °C/°F Resolution for Thermocouple Inputs
- Isolated 0/4-20 mA Retransmission Output (0-5/10 VDC Optional)



## Features

- 5 Digits, 7 Segment, 0.56" Height, Bright Red LED Display
- Universal Input (Thermocouples, RTD Pt100, DC Linear mA/mV/V)
- Programmable 1/0.1/0.01/0.001 Count Resolution with Programmable Scaling for DC Linear Inputs. °C/°F Units for Thermocouples / RTD Pt100 Inputs.
- Programmable Digital Filter Between 0.5 to 60.0 Seconds
- 2 Programmable Alarms with Front Panel 'ACK' Key & Independent Relay Outputs
- MODBUS RTU RS485 Serial Communication Port
- 24 VDC @ 40 mA Excitation Voltage for Transmitter Supply
- DIN Standard Dimensions (mm) : 48(H) X 96(W) X 82(D)



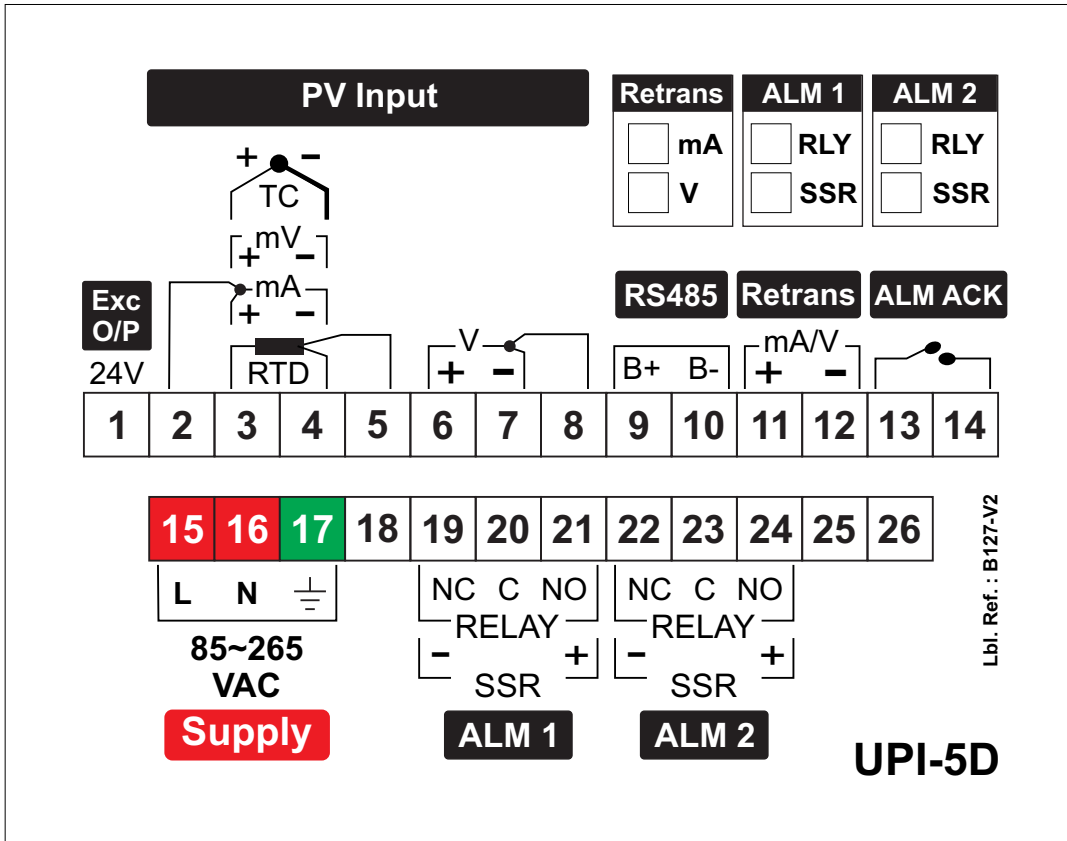
## Specifications

Display	
Digital Readout	5 Digits, 0.56" Bright Red LED, 7 Segment
Status Indicators	2 Red LEDs (3mm Round) for Alarm Status
Keys	
Type	4 Tactile Switches
Functions	PAGE, DOWN, UP, ENTER/ACK
Sensor / Signal Input	
Type (User Programmable)	Thermocouple : J, K, T, R, S, B, N RTD Pt100, 3 wire DC Linear : 0-20 mA, 4-20 mA 0-80 mV 0-1.25 V, 0-5 V, 0-10 V, 1-5 V
Corrections	<ul style="list-style-type: none"> <li>• In-built Cold-Junction Compensation for Thermocouples (Accuracy Better than <math>\pm 1.5^{\circ}\text{C}</math>)</li> <li>• In-built Lead Resistance Compensation for RTD (Up to <math>2.5\Omega</math> in each lead)</li> </ul>
Accuracy	mA, mV, V : $\pm 0.25\%$ of reading $\pm 1$ LSD Thermocouple : $\pm 0.25\%$ of reading $\pm 1.5^{\circ}\text{C}$ RTD : $\pm 0.25\%$ of reading $\pm 0.5^{\circ}\text{C}$
Display Range	Thermocouples & RTD : Refer Table 1 DC Linear Volts / Current : Adjustable from -19999 to +30000 Counts
Display Resolution (User Programmable)	For Thermocouples & RTD : 0.1 / 1 °C / °F For DC Linear Volts / Current : 0.001 / 0.01 / 0.1 / 1 Counts

Zero Offset	User Adjustable over Full Range
ADC	16 Bit ( $\pm 32,768$ Counts), Sigma-Delta ( $\Sigma\Delta$ )
Sampling Time	200mS (5 Samples per Second)
Input Impedance	Greater than 8 M $\Omega$ for RTD, Thermocouple & 0 to 80 mV Input 200 K $\Omega$ for 0-1.25 V, 0-5 V, 0-10 V, 1-5 V Input 3.9 $\Omega$ Precision Shunt Resistor for 0-20 mA & 4-20 mA Input
Normal Mode Rejection	> 40dB at 50/60 Hz
Signal Conditioning	Analog Filter : First Order Low-Pass RC Filter. Cutoff Frequency at 6Hz (3dB at 6Hz with roll-off rate of 20dB/decade) Digital Filter : Programmable Digital Filter Between 0.5 to 60.0 Seconds
Input Protection	ESD : 8KV      EFT : 2KV      Surge : 1KV
<b>Excitation Voltage</b>	
Rating	24 VDC @ 40 mA
<b>Alarms</b>	
Numbers	2, Independent
Programmable Parameters	Type : Process Low, Process High Logic : Normal, Reverse Hysteresis : 1 to 3000 Units / Counts Inhibit : No, Yes Latch : No, Yes
Outputs	Dual SPDT (Form C) 5A Relays (SSR Drive 12V @ 40 mA, on Request) Output-1 (OP-1) for Alarm-1    Output-2 (OP-2) for Alarm-2
<b>Retransmission</b>	
Signal Type	Isolated Current : 0-20 mA, 4-20 mA (into 550 Ohm Maximum) <b>OR</b> Isolated Voltage : 0-5 V, 0-10 V (into 5K Ohm Minimum)
Isolation	<ul style="list-style-type: none"> <li>Isolated from Analog Input, Supply Voltage, Relays, RS485 &amp; 24 V Excitation</li> <li>1500 VAC for 1 second or 250 VAC continuous</li> </ul>
PV Range	User Settable Through 'Range Low' and 'Range High' Parameters
<b>Outputs</b>	
Relay	2 SPDT (Form C) Relays; 5A for 250 VAC / 5A for 30 VDC (Resistive Load)
SSR Drive (Optional)	@12 VDC @ 40 mA
<b>Serial Communication</b>	
Port	RS485, 2-wire, Half Duplex, Start-Stop Synchronized
Protocol	Modbus RTU
Baud Rate	Settable : 4800, 9600, 19200, 38400, 57600
Parity	Settable : None (1 or 2 Stop Bits), Even, Odd
Max. Units per Loop	31
Max. Distance	1200 Metres
<b>Power Supply</b>	
Type	Switch Mode (SMPS)
Line Voltage	Standard : 85~264 VAC, 50/60Hz    Optional : 20~32 VDC
Consumption	7VA Max

Physical	
Mounting	Plug-in with Panel Mounting Clamps
Overall Dimensions	48(H) X 96(W) X 82(D), mm
Panel Cutout	45(H) X 92(W), mm
Terminals	5.08 mm Pitch, Pluggable Terminal Blocks
Weight	220 gm, Appx.
Environmental	
Operating Ambient	0~55°C & 5~90%RH Non-condensing
Storage Temperature	-10 to +70 °C

### Back Panel Terminations



## Table 1 : Temperature Ranges for Thermocouples & RTD

Input Type	Range (Min. to Max.)
Type J Thermocouple (Fe-K)	0.0 to +960.0°C / +32.0 to +1760.0°F
Type K Thermocouple (Cr-Al)	-200.0 to +1376.0°C / -328.0 to +2508.0°F
Type T Thermocouple (Cu-Con)	-200.0 to +385.0°C / -328.0 to +725.0°F
Type R Thermocouple (Pt/Pt-Rh13%)	0.0 to +1770.0°C / +32.0 to +3218.0°F
Type S Thermocouple (Pt/Pt-Rh10%)	0.0 to +1765.0°C / +32.0 to +3209.0°F
Type B Thermocouple	0.0 to +1825.0°C / +32.0 to +3092.0°F
Type N Thermocouple	0.0 to +1300.0°C / +32.0 to +2372.0°F
3-wire, RTD Pt100	-199.0 to +600.0°C / -328.0 to +1112.0°F

### Ordering Code

<table border="1" style="width: 100%; text-align: center;"> <tr><th colspan="2">Alarm-1 Output*</th></tr> <tr><td>R</td><td>Relay</td></tr> <tr><td>S</td><td>SSR</td></tr> </table>	Alarm-1 Output*		R	Relay	S	SSR	—	<table border="1" style="width: 100%; text-align: center;"> <tr><th colspan="2">Alarm-2 Output*</th></tr> <tr><td>R</td><td>Relay</td></tr> <tr><td>S</td><td>SSR</td></tr> </table>	Alarm-2 Output*		R	Relay	S	SSR	—	<table border="1" style="width: 100%; text-align: center;"> <tr><th colspan="2">Retransmission Output**</th></tr> <tr><td>C</td><td>0/4-20 mA</td></tr> <tr><td>V</td><td>0-5/10 V</td></tr> </table>	Retransmission Output**		C	0/4-20 mA	V	0-5/10 V	—	<table border="1" style="width: 100%; text-align: center;"> <tr><th colspan="2">Power Supply***</th></tr> <tr><td>AC</td><td>85~265 VAC</td></tr> <tr><td>DC</td><td>20~32 VDC</td></tr> </table>	Power Supply***		AC	85~265 VAC	DC	20~32 VDC
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\* Relays are provided as standard alarm outputs. SSR outputs are available on request.

\*\* DC Current (0/4-20 mA) is standard. DC Voltage (0-5/10 V) is available on request

\*\*\* 85~265 VAC Power Input is standard. 20~32 VDC Power Input is available on request

#### Example Code

#### **R - R - C - AC**

Alarm-1 Output Relay, Alarm-2 Output Relay, 0/4-20 mA Retransmission Output, 85~265 VAC Power Input