4-Digit Economic Universal Process Indicator

PPI
The Perfection Experts

UPI - 4D

Universal Input with inbuilt 24 VDC Transmitter Supply
2 x Alarm Outputs & Retransmission Analog Output
RS485 MODBUS RTU Serial Port
1/8 DIN (48x96) Size

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7-SEG LED | RETRANS | ALARM | MODBUS | ISOLATION | EXCITATION

Salient Features

- 4 Digits, 0.56" Height, Bright Red LED Display
- Jumper-less Universal Input (Thermocouples, RTD Pt100, mA/mV/V)
- Programmable Range / Resolution for mA/mV/V Inputs
- Programmable Digital Filter & Zero Offset
- 2 Programmable Alarms with Relay Outputs
- Optional, Isolated Retransmission Output (mA/V)
- 24 VDC @ 30 mA Transmitter Excitation Supply
- RS485 Serial Port (MODBUS RTU) as Standard
- Universal Supply Voltage : 85~264 VAC
- Dimensions (mm) : 48(H) X 96(W) X 82(D)

General Information

Product Type	4-Digit Universal Process Indicator

Ordering Code

UPI-4D- □

PV Retransmission Output
0 : None **1** : mA **2** : V

Example Code : UPI-4D-1
PV Retransmission Output : mA

Quantity	1 Unit
Accessories	(Optional) USB to RS485 Convertor

Operator Interface

Display	4 Digits, 0.56” Bright Red, 7 Segment LED
Status Indicators	2 Red LEDs (3mm Round) for Alarm Status
Keys	4 Tactile Switches PAGE, DOWN, UP, ENTER/ACK

PV Input

Sensor/Signal (User Configurable)	**Thermocouple** : J, K, T, R, S, B, N **RTD** : Pt100, 2 / 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
Accuracy	**Thermocouples** : ± 0.2% of reading for J, K, T (Excluding CJC) ± 0.4% of reading for R, S, B, N (Excluding CJC) CJC : ± 1.5 °C (Specified over 18 to 37 °C) **RTD Pt100** : ± 0.2% of reading Lead Resistance Compensation : Max. 5Ω per Lead for 3-wire RTD **DC mV/V/mA** : ± 0.1% of reading
Display Resolution	**Thermocouples** : 1°C Fixed **RTD Pt100** : 0.1 / 1°C (Selectable) **DC mV/V/mA** : 0.001 / 0.01 / 0.1 / 1 Counts (Selectable)
Range	Refer Table-1 for Thermocouples & RTD Inputs Adjustable from -1999 to 9999 Counts for DC mA/mV/V
Zero Offset	User Adjustable over Full Range
ADC	16 Bit (± 32,768 Counts), Sigma-Delta (ΣΔ)
Sampling Time	200mS (5 Samples per Second)
Input Resistance	> 8 MΩ for Thermocouples, RTD Pt100 & mV Inputs > 47 KΩ for Voltage Input 249 Ω Precision Shunt for mA Input
Common Mode Rejection	> 100dB at 50/60 Hz
Input Protection	ESD : 8KV EFT : 2KV Surge : 1KV
Input Conditioning	First Order Analog R-C Low-Pass Filter & Settable Digital Low-Pass Filter

Excitation Power

Ratings	24 V (±10%) @ 30 mA (Standard)

Alarms

Numbers	2, Independent
Programmable Parameters	**Type** : Process Low, Process High **Hysteresis** : 1 to 3000 Unit Counts **Inhibit** : No, Yes **Logic** : Normal, Reverse **Latch** : No, Yes
Outputs	Independent SPDT (Form C) Relays for Alarm-1 & Alarm-2

PV Retransmission

Signal Type	DC Current (0/4-20 mA) **or** DC Volts (0-5/10 V)
PV Range	User Settable Through 'Range Low' and 'Range High' Parameters

Electrical Specifications for Outputs

Relay	Contact Type : Potential-free Change-over Contacts Contact Rating : 5A Resistive @ 250 VAC Contact Life : > 5,00,000 Operations at Rated Voltage / Current
DC Linear	Current : 0-20mA, 4-20mA (into 500Ω Maximum) Voltage : 0-5V, 0-10V (into 1KΩ Minimum)
Isolation	All Outputs are Isolated from Power, Analog Inputs & RS485 Port Rating : 1500VAC for 1 second or 250VAC continuous Isolation.

Serial Communication

Port	RS485, 2-wire, Half Duplex, Start-Stop Synchronized
Protocol	MODBUS RTU
Baud Rate	Settable : 4800, 9600, 19200 bps
ID	1 to 127
Parity	Settable : None, Even, Odd
Max. Units per Loop	31
Max. Distance	1200 Meters

Power Supply

Type	Switch Mode (SMPS)
Line Voltage	85~264 VAC, 50/60Hz
Consumption	5 VA 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	Screw Type, Pluggable
Weight	220 gm, Approx.

Environmental

Operating Ambient	0 to 55°C & 5 to 90%RH Non-condensing
Storage Temperature	-10 to +70°C
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.

Terminations

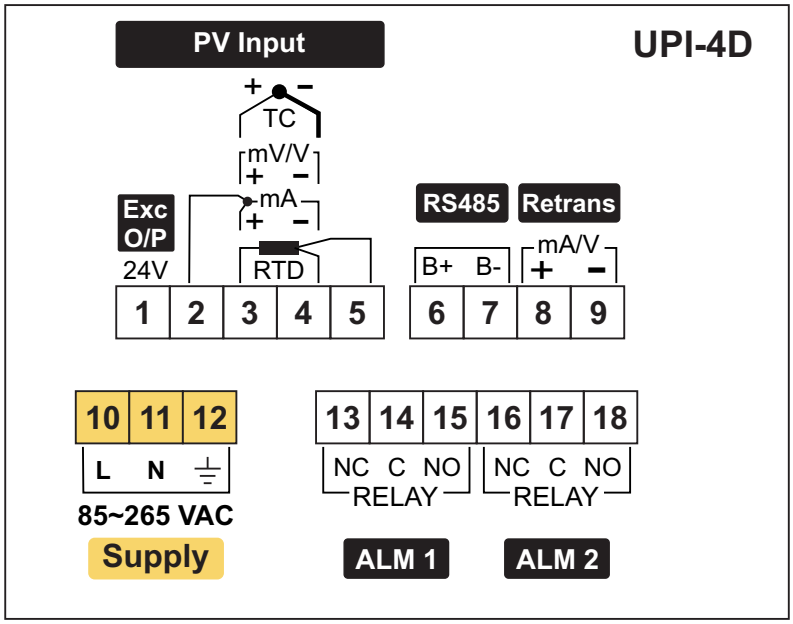

Table-1 : Thermocouple & RTD Input Ranges	
Input Type	**Range (Min. to Max.)**
2 / 3-wire, RTD Pt100	-199.9 to +850.0 °C / -328.0 to +1562.0 °F
Type J Thermocouple (Fe-K)	0.0 to +960.0°C / +32.0 to +1760.0°F
Type K Thermocouple (Cr-Al)	-200.0 to +1376.0°C / -328.0 to +2508.0°F
Type T Thermocouple (Cu-Con)	-200.0 to +387.0°C / -328.0 to +728.0°F
Type R Thermocouple (Pt / Pt-Rh13%)	0.0 to +1771.0°C / +32.0 to +3219.0°F
Type S Thermocouple (Pt / Pt-Rh10%)	0.0 to +1768.0°C / +32.0 to +3214.0°F
Type B Thermocouple (Pt-Rh6% / Pt-Rh30%)	0.0 to +1826.0°C / +32.0 to +3318.0°F
Type N Thermocouple (NiCrSi / NiSi)	0.0 to +1314.0°C / +32.0 to +2397.0°F

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