

UDI 1700 MICRO-PRO SERIES UNIVERSAL DIGITAL INDICATOR

51-52-03-44 05/05

PRODUCT SPECIFICATION SHEET

- ✓ Digital Indicator
- ✓ 1 Universal Input, 0.1% accuracy
- ✓ Up to 5 Alarms and 5 alarm relays.
- ✓ Dual Colour display (Red / Green)
- ✓ 1 Digital Input.
- ✓ RS485 Modbus communication.
- ✓ Nema 3 / IP65 front face protection.
- ✓ 1/8 DIN Horizontal Size.
- ✓ Jumper free configuration.
- ✓ Easily field Upgradable.
- ✓ Downward compatibility with existing UDI1500 applications & wiring.



Overview

A companion for the UDC1200/1700

Based on the same technology as the UDC1200/1700 low price controllers, the UDI1700 is the ideal companion of those controllers for application requiring performance in control and accurate indication.

Moisture resistant front face

Meets NEMA 3/IP65 front face protection against dust and water.

Universal Power supply and input

Can operate on any line voltage from 90Vac to 264Vac at 50/60Hz. A low voltage 24/48Vac/dc solution is also available. All input types like thermocouples, RTDs and linear DC are configurable as standard.

Flexibility & commonality

The option boards (alarm relay output, dual alarm relay and linear output retransmission) are plug-in and autodetected for easy upgrade and low inventory. Furthermore, the unit has no jumpers !

Large visibility

A large 14 mm four digits LED display in red make the UDI1700 easy to read from a distance. A specific digit for °C or °F is provided.

Alarm strategy

Up to five soft alarms are available with or without remote relay action. The alarm types can be set on PV high or low. Alarm 1 can be latched and requires acknowledgment from the operator.

Min. and Max. indication

Maximum and Minimum values attained by the process variable since the last reset are stored for further analysis.

Time elapsed

The UDI1500 can also store the time elapsed since the alarm 1 became active. In combination with the above Max. and Min. features, it provides alarm information for more detailed analysis.

Transmitter Power Supply

Provided as an option on output 3 is 24 Volts DC power for a 2-wire transmitter.

Configuration

Easy and full configuration with straightforward menu via the instrument front face.

PV retransmission

The linear optional output 2 can be used for PV retransmission.

Specifications

Accuracy	<i>Measurement:</i> 0.1 % of Span \pm 1 LSD <i>Linearization for T/C & RTD:</i> Better than \pm 0.2 °C for decimal range; Better than \pm 0.5 °C for integer range <i>Cold junction compensation (T/C only):</i> Better than \pm 0.7 °C
Temperature Stability	0.01 % of span per °C
Input Signal Failure	For Thermocouple and RTDs : Upscale burnout For linear input: Downscale burnout (only applicable to 4-20mA)
Input Sampling Rate	Four samples per second
Input Filter	Digital filter: 0.0 (off), from 0.5 to 100.0 seconds in 0.5s increment
Input Isolation	Universal input isolated at 2500V from all outputs and from power supply
Stray Rejection	Common mode rejection: >120dB at 50/60Hz with negligible effect at 264V Serial mode rejection: >500% of span at 50/60Hz with negligible effect
Approvals	UL and CE approved
Environmental	EMI immunity: Complies with EN61326 Safety considerations: comply with EN61010-1 & UL3121
Front Panel Sealing	IP66 / NEMA3
Power consumption	100 to 240Vac, 50/60z : 7.5VA 20 to 48Vac, 50/60Hz : 7.5VA 22 to 65Vdc : 5W
Physical	Weight: 210 grams max. Width: 96mm/3.78 inches, Height: 48mm/1.89 inches, Depth: 100mm/3.94 inches Wiring connection: Screw terminals on the rear of the case (combination head)
Alarms	Up to five soft alarms with 5 SPDT relay outputs Alarm types: PV high or low with direct or reverse acting Up to five alarm hysteresis : From 1 LSD to 10% of span Combination alarms : Logical "OR" or "AND" Alarm 1 can be latched requiring specific acknowledgment
Output type	Output 1 : - Electromechanical relay output SPDT Output 2 : - Electromechanical relay output SPDT - Linear DC for PV retransmission - Dual electromechanical relays (2 SPST) Output 3 : - Electromechanical relay output SPDT - Dual electromechanical relays (2 SPST) - Transmitter power supply Linear DC output : Accuracy: \pm 0.25% (mA @ 250Ohms, V @ 2Kohms) Resolution: 8 bits in 250ms (10 bits in 1 second typical, >10 bits in >1 second) Electromechanical relay : SPDT contact with 2 A at 120 V or 240 V (resistive load) Life time: > 500 000 operations at rated voltage/current. Dual electromechanical relays : Single pole single throw (SPST) with 2 A at 120 V or 240 V (resistive load) Life time: > 200 000 operations at rated voltage/current. Transmitter power supply : Voltage output: 20-28 Vdc with 24Vdc nominal Minimum load impedance: 910 ohms (22 mA and 20 Vdc)
Remote Reset Input	Voltage free or TTL compatible (External relay contact or TTL logic signal) To reset the latched alarm output 1
Communication Interface	RS485: ASCII or Modbus, selectable. Baud Rate: 1200, 2400, 4800, 9600, 19.2K Baud Link Characteristics: 32 drops maximum, ASCII protocol, two wires

Input Actuations

		°F	°C
Thermocouple types (Fixed decimal)	R	32-3198	0-1759
	S	32-3204	0-1762
	J	-328-2192	-200-1200
	J	-199.9-999.9	-128.8-537.7
	T	-400-752	-240-400
	T	-199.9-752.0	-128.8-400.0
	K	-400-2503	-240-1373
	K	-199.9-999.9	-128.8-537.7
	L	32-999.9	0-537.7
	L	32-1403	0-762
	B	211-3315	100-1824
	N	32-2551	0-1399
	C	32-4208	0-2320
RTD : (3 wires connection) PT100 (IEC) $\alpha = 0.00385$ (Fixed decimal)	PtRh20% vs 40%	32-3362	0-1850
	Pt100	-328-1472	-199-800
	Pt100	-199.9-999.9	-128.8-537.7
DC linear :		0-20mA, 0-50mV, 0-5V, 0-10V	4-20mA, 10-50mV, 1-5V, 2-10V

Operating Conditions

	Reference conditions	Operative limits	Transportation and storage
Ambient temperature	20°C±2°C (68°F±4°F)	0°C to 55°C (32°F to 131°F)	-20°C to 80°C (-4°F to 176°F)
Relative Humidity	60-70%	20-95% non condensing	
Voltage	90-264Vac ±1%	90-264Vac 20-50Vac or 22-65Vdc	
Frequency	50Hz	50-60Hz	
Source resistance	<10 ohms for thermocouple	1000 ohms max for thermocouple	
Lead resistance for RTD	<0.1 ohm/lead (PT100)	50 ohms per lead maximum balanced (PT100)	

Model Selection Guide

Key Number	I	II	III	IV	V	VI	VII	VIII	IX
DI170x	1	X	X	X	X	X	0	0	00

Display : 0=Red LEDs, 1=Green LEDs, 4=Colour change display

Power Supply : 1 = 90 to 264Vac, 2 = 24 to 48Vac/dc

Digital input : 0 = None, 1 = RS485, 2 = Digital Input

Output 3 : 0 = None, 1 = Relay, 8 = Tx PS, 9 = Dual Relay Board

Output 2 : 0 = None, 1 = Relay, 3 = Linear 0-10Volts, 4 = Linear 0-20mA,

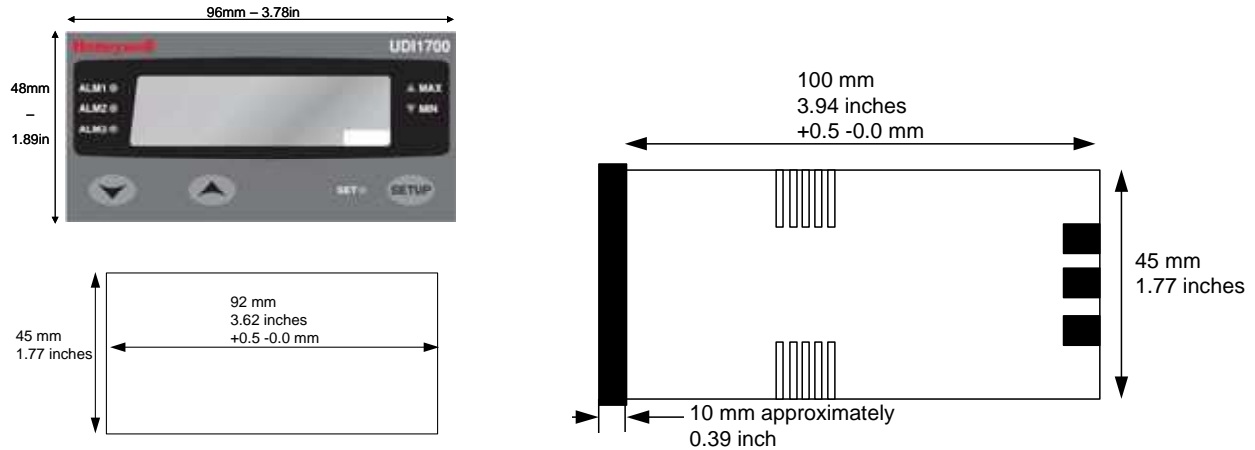
5 = Linear 0-5Volts, 7 = Linear 4-20mA, 9 = Dual Relay board

Output 1 : 1=Relay

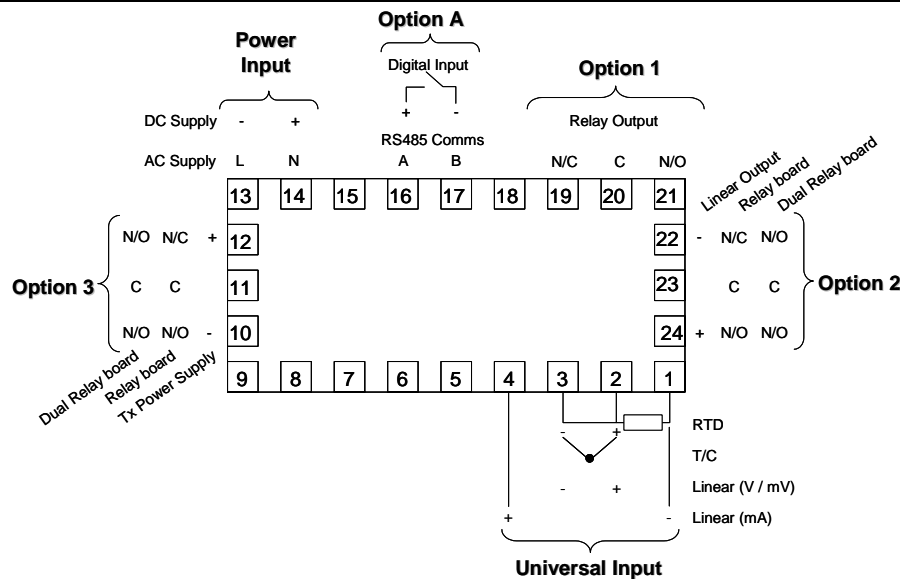
Input type : 1 = RTD or linear mV, 2 = T/C, 3 = Linear mA, 4 = Linear Volts

External Dimensions and Panel Cutout

UDI1700



Wiring Diagram



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