

## 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	<p><i>Measurement:</i> 0.1 % of Span <math>\pm</math> 1 LSD  <i>Linearization for T/C &amp; RTD:</i>            Better than <math>\pm</math> 0.2 °C for decimal range; Better than <math>\pm</math> 0.5 °C for integer range  <i>Cold junction compensation (T/C only):</i> Better than <math>\pm</math> 0.7 °C</p>
Temperature Stability	0.01 % of span per °C
Input Signal Failure	<p>For Thermocouple and RTDs : Upscale burnout            For linear input: Downscale burnout (only applicable to 4-20mA)</p>
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	<p>Common mode rejection: &gt;120dB at 50/60Hz with negligible effect at 264V            Serial mode rejection: &gt;500% of span at 50/60Hz with negligible effect</p>
Approvals	UL and CE approved
Environmental	<p>EMI immunity: Complies with EN61326            Safety considerations: comply with EN61010-1 &amp; UL3121</p>
Front Panel Sealing	IP66 / NEMA3
Power consumption	<p>100 to 240Vac, 50/60z : 7.5VA            20 to 48Vac, 50/60Hz : 7.5VA            22 to 65Vdc : 5W</p>
Physical	<p>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)</p>
Alarms	<p>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</p>
Output type	<p>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</p> <p><b>Linear DC output :</b>            Accuracy: <math>\pm</math> 0.25% (mA @ 250Ohms, V @ 2Kohms)            Resolution: 8 bits in 250ms (10 bits in 1 second typical, &gt;10 bits in &gt;1 second)</p> <p><b>Electromechanical relay :</b>            SPDT contact with 2 A at 120 V or 240 V (resistive load)            Life time: &gt; 500 000 operations at rated voltage/current.</p> <p><b>Dual electromechanical relays :</b>            Single pole single throw (SPST) with 2 A at 120 V or 240 V (resistive load)            Life time: &gt; 200 000 operations at rated voltage/current.</p> <p><b>Transmitter power supply :</b>            Voltage output: 20-28 Vdc with 24Vdc nominal            Minimum load impedance: 910 ohms (22 mA and 20 Vdc)</p>
Remote Reset Input	<p>Voltage free or TTL compatible (External relay contact or TTL logic signal)            To reset the latched alarm output 1</p>
Communication Interface	<p>RS485: ASCII or Modbus, selectable.            Baud Rate: 1200, 2400, 4800, 9600, 19.2K Baud            Link Characteristics: 32 drops maximum, ASCII protocol, two wires</p>

## Input Actuations

		°F	°C
<b>Thermocouple types</b> (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	
<b>RTD : (3 wires connection)</b> 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
<b>DC linear :</b>		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
<b>Ambient temperature</b>	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)
<b>Relative Humidity</b>	60-70%	20-95% non condensing	
<b>Voltage</b>	90-264Vac ±1%	90-264Vac 20-50Vac or 22-65Vdc	
<b>Frequency</b>	50Hz	50-60Hz	
<b>Source resistance</b>	<10 ohms for thermocouple	1000 ohms max for thermocouple	
<b>Lead resistance for RTD</b>	<0.1 ohm/lead (PT100)	50 ohms per lead maximum balanced (PT100)	

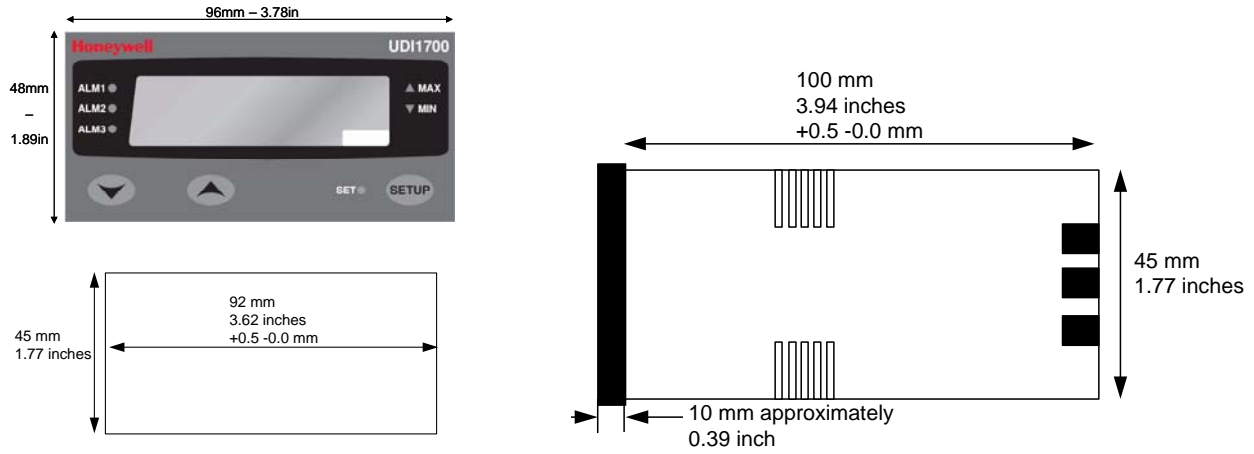
## Model Selection Guide

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

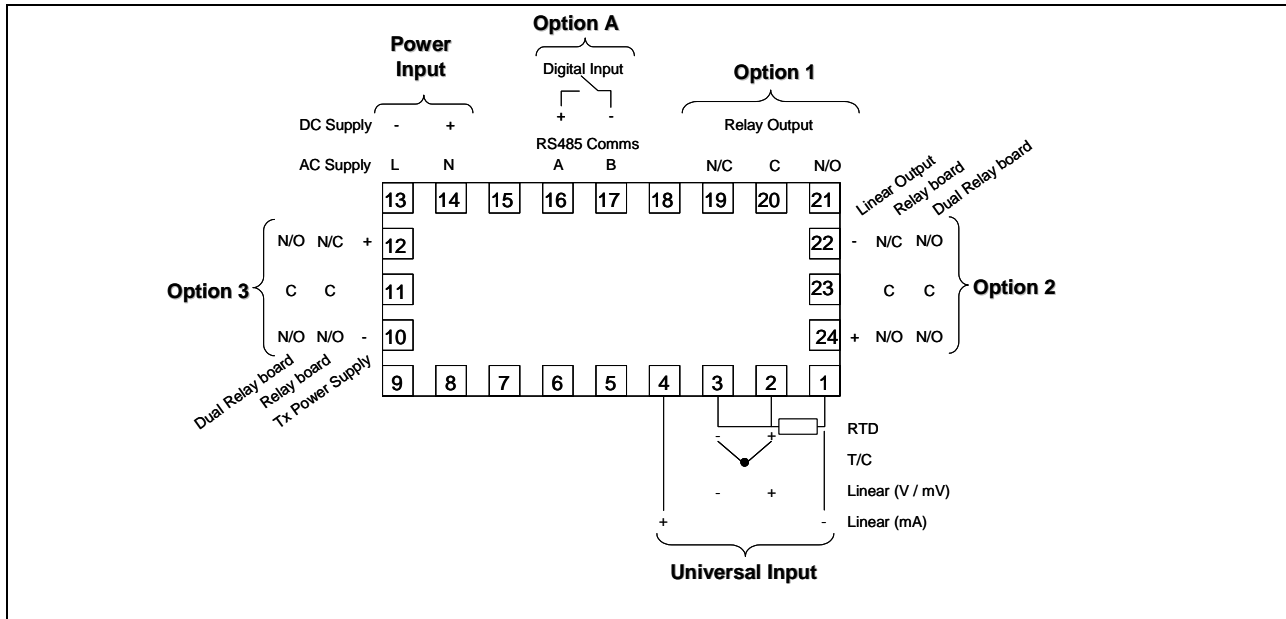
Display : 0=Red LEDs, 1=Green LEDs, 4=Colour change display  
 Power Supply : 1 = 90 to 264Vac, 2 = 24 to 48Vac/dc  
 Digital input : 0 = None, 1 = RS485, 2 = Digital Input  
 Output 3 : 0 = None, 1 = Relay, 8 = Tx PS, 9 = Dual Relay Board  
 Output 2 : 0 = None, 1 = Relay, 3 = Linear 0-10Volts, 4 = 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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