



# Thermocouple/Process DIN Digital Indicator



Shown Actual Size

DP1610 Series  
**\$205**  
Basic Unit

- ✓ Large Four-Digit Red or Green LED Display
- ✓ Universal Sensor Input: Thermocouple, 3-Wire RTD, DC Voltage or Current
- ✓ One Latching or Non-Latching Relay
- ✓ Max Hold, Min Hold and Time Elapse
- ✓ Universal Power Supply
- ✓ IP65/NEMA-4 Front Panel
- ✓ Engineering Unit Labels Supplied for Faceplate

### Optional Features

- ✓ 2nd and 3rd Alarm Relays
- ✓ Remote Reset for Alarms
- ✓ Analog Output
- ✓ Transmitter Power Supply
- ✓ RS-485 Communications
- ✓ Low Voltage Power
- ✓ Fully Configurable with Laptop or PC

The DP1610 digital indicator is an easy-to-operate microprocessor-based instrument, incorporating the latest in surface mount and CMOS technology.

The instrument is a high visibility, full range digital indicator with the flexibility to accommodate thermocouple, RTD and dc inputs. These inputs can be scaled and ranged from the front panel without calibration. Excellent accuracy combined with small size and useful output options make the DP1610 a highly attractive, low cost solution to industrial measurement and indication.

Using the maximum and minimum hold feature, the DP1610 allows maximum and minimum measured variables to be stored and subsequently viewed, even after power down.

The units are supplied with a face plate that has a clear window to display the engineering units being measured. Engineering unit labels are supplied for: %, °F, °C, mV, V, mA, A, kW, W, lb, rpm, atmos, ppm, ft., %RH, inHg, psi, GAL, GPS, GPM, GPH, GPD, and MGD.

### Specifications Input

**Thermocouple:** R, S, J, T, K, L, B and N  
**RTD:** 100 Ω (.00385 ohm/ohm/°C)  
**Volts:** 0 to 5 Vdc, 1 to 5 Vdc, 0 to 10 Vdc and 2 to 10 Vdc  
**Millivolts:** 0 to 50 mV dc and 10 to 50 mV dc

### Milliamps:

0 to 20 mA dc and 4 to 20 mA dc

### Sensor Fault Detection:

Displays "LL" or "HH" for thermocouple or RTD inputs and sensor break

SnSr. Alarms operate as if the process variable has gone

over-range (TC & RTD) and under-range (V, mV, mA)

### Remote Reset:

Voltage free or TTL compatible

### Alarm Outputs

#### Output 1 Relay Only:

SPDT, 2 A resistive @ 120/240 Vac

#### Output 2 Relay:

SPDT 2 A, resistive @ 120/240 Vac

### Analog Outputs

#### Current Output

#### (retransmission only):

0 to 20 mA dc into 500 ohm max  
4 to 20 mA dc into 500 ohm max.

#### Volts DC Output:

#### (retransmission only):

0 to 10 Vdc 500 ohm minimum  
0 to 5 Vdc 500 ohm minimum

#### Output 3 Relay:

SPDT, 2 A resistive @ 120/240 Vac

### Transmitter Power Supply:

20 to 28 Vdc (24 Vdc nominal)  
910 ohm (22 mA @ 20 Vdc)

### Display

#### Digital Display:

Four 7-segment LED's, 9.9 mm (.39") high

### Alarm Adjustment

Process Alarm: ± Input Span

### Performance

#### Measurement Accuracy (T/C & RTD):

±0.25% of span,  
±1 LSD @ 20°C (68°F)

**Note:** Reduced performance with Type "B" thermocouple from 100 to 600°C (212 to 1112°F)

**Measurement Accuracy (dc linear):**  
±0.05% of span, ±1 digit  
**Ambient Temperature Error:**  
0.01% of span/°C  
change in ambient  
**Linearization Accuracy (TC and RTD):**  
Better than: ±0.2°C any point, any 0.1°C range (±0.05°C typical).  
Better than: ±0.5°C any point, any 1°C range  
**Cold Junction Compensation:**  
Better than ±0.7°C  
**Noise Rejection**  
**Common Mode:** >120 dB at 50/60 Hz, giving negligible effect at up to 264 V, 50/60 Hz  
**Series Mode:** >500% of span (at 50/60 Hz) causes negligible effect  
**Line Voltage:** 90-264 Vac, 50/60 Hz (standard) 20-50 Vac 50/60 Hz or 22-65 Vdc (optional)  
**Operating Temperature:** 0 to 55°C (32 to 131°F)  
**Storage Temperature:** -20 to 80°C (-4 to 176°F)  
**Humidity:** 20 to 95% non-condensing  
**Source Resistance:** 1000 Ω max. (thermocouple)  
**Lead Resistance:** 50 Ω per lead max balanced (Pt100)  
**EMI Susceptibility:** Meets EN50082 Part 2 and EN50081 Part 2

**Dimensions**  
**Front panel:** 48 x 96 x 100 mm deep (1.89 x 3.78 x 3.94")  
**Weight:** .48 kg (1.06 lb) max  
**Front Panel Sealing:** IP65

½ DIN DP1610  
 Shown Actual Size  
 ½ DIN DP1632



**Input Types and Ranges**

Input Type	Range	
<b>J</b> Iron-Constantan	0 to 450°C 0 to 761°C 0.0 to 205.4°C	32 to 1471°F 32 to 571°F 32.0 to 401.7°F
<b>K</b> CHROMEGA®-ALOMEGA®	-200 to 760°C -200 to 1399°C	-328 to 1399°F -328 to 2503°F
<b>T</b> Copper Constantan	-200 to 262°C 0.0 to 260.6°C	-328 to 503°F 32.0 to 501.0°F
<b>L</b> Iron-Constantan (J DIN)	0 to 450°C 0 to 762°C 0.0 to 205.7°C	32 to 841°F 32 to 1403°F 32.0 to 402.2°F
<b>N</b> OMEGALLOY®	0 to 1399°C	32 to 2550°F
<b>R</b> Pt/13% Rh-Pt	0 to 1650°C	32 to 3002°F
<b>S</b> Pt/10% Rh-Pt	0 to 1649°C	32 to 3000°F
<b>B</b> Pt/30%Rh-Pt6%Rh	100 to 1824°C	211 to 3315°F
<b>RTD</b> Pt, 385 100 Ω	-101.0 to 300.5°C	-149.8 to 572.9°F
<b>Process Voltage</b>	0 to 50 mV dc, 10 to 50 mV dc, 0 to 5 Vdc, 1 to 5 Vdc, 0 to 10 Vdc, 1 to 10 Vdc, 2 to 10 Vdc	
<b>Process Current</b>	0 to 20 mA, 4 to 20 mA	

**IN STOCK FOR FAST DELIVERY!**

**To Order (Specify Model Number)**

Model Number	Price	Description
DP1610-R1	\$205	½ DIN digital indicator with red display
DP1610-GN-R1	205	½ DIN digital indicator with green display

**Note:** Basic unit comes with 1 relay output built-in. Up to 2 more outputs and 1 add' option can be added.

OMEGACARE<sup>SM</sup> extended warranty program is available for models shown on this page.

Ask your sales representative for full details when placing an order.

**Ordering Example:** DP1610-R1-R2-C4-24LV, ½ DIN meter with dual relay outputs,

RS-485 communications and 24V power supply, \$205 + 26 + 62 + 15 = \$308

OCW-1 OMEGACARE<sup>SM</sup> extends standard 3-year warranty to a total of 4 years (\$30),

\$308+ 30 = \$338

**Output Options:**

Output 2 Suffix	Price	Description
-R2	\$26	Alarm Relay
-F2	47	Analog Retransmission
Output 3 Suffix	Price	Description
-R3	\$26	Alarm Relay
-TPS3	60	20-28 Vdc Trans. Power Supply

**Note:** only 1 option can be selected from each output ordering box above.

**Optional Power Supply**

Ordering Suffix	Add'l Price	Description
-24LV	\$15	20 to 50 Vac or 22 to 65 Vdc

**Optional Plug-in Boards**

Model No.	Price	Description
BD1600-R	\$26	2 A relay
BD1600-F	47	Analog
BD1600-TPS	60	Trans. power supply
BD1600-C4	62	RS-485 comm.

Option "R" above is for output slots 2 & 3 only.

Option "F" above is for output slot 2 only.

Option "TPS" above is for output slot 3 only.

**Additional Options:**

Ordering Suffix	Add'l Price	Description
-C4	\$62	RS-485 communications
-RR	26	Remote reset

**Companion Products:**

PTC1632 series 1/32 DIN  
 Timer/Controllers also available.  
 See page M-129



Shown actual size



CN1632 and DP1632 controllers and meters available. See pages P-19 and M-43  
 Shown actual size





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