

# PLATINUM™ Series Digital Panel Meters

Industry Leading Performance...and Easy to Use



PTDP16 Series shown actual size.



PTDP8 Series shown actual size.

PTDP32, PTDP16,  
and PTDP8 Series



- ✓ High Performance, Extremely Versatile
- ✓ Easy and Intuitive to Use
- ✓ Bright 3-Color (RED, GREEN, and AMBER) 9 Segment LED Display with Wide Viewing Angle
- ✓ High Accuracy Universal Inputs for Thermocouples, RTD's, Thermistors, and Process Voltage/Current
- ✓ No Jumpers to Set, Totally Firmware Configurable
- ✓ Automated Configuration Recognition, "Smart" Menu Flow
- ✓ Up to 20 Samples per Second with 24-Bit ADC
- ✓ Standard USB, Optional Ethernet and RS232/RS485 with MODBUS® Serial Communications
- ✓ Built-In Excitation Firmware Selectable at 5V, 10V, 12V, and 24V
- ✓ Full Scale Positive and Negative Readings
- ✓ NEMA 4 (IP65) Front Bezel (1/32 and 1/16 DIN) or NEMA 1 (1/8 DIN)

- ✓ Flexible Alarm Programming
- ✓ Remote Latch Reset
- ✓ Available with 2 Optional Mechanical Relays for Alarms
- ✓ Offered in 1/32, 1/16, and 1/8 DIN Sizes

The PLATINUM Series family of microprocessor-based digital panel meters offer unparalleled flexibility in process measurement. While extremely powerful and versatile, great care has gone into designing a product that is very easy to set-up and use. The automatic hardware configuration recognition eliminates the need for jumpers and allows the firmware to automatically simplify itself, eliminating all menu options that do not apply to a specific configuration.

Each unit allows the user to select the input type from 9 thermocouple types (J, K, T, E, R, S, B, C, and N), Pt RTDs (100, 500, or 1000 Ω, with either 385, 392, or 3916 curve), thermistors (2250 Ω, 5K Ω, and 10K Ω), DC voltage, or DC current. The bipolar voltage or current inputs are fully scalable to virtually all engineering units, with a selectable decimal point that is perfect for use with pressure, flow, or other process input.

Two alarms can be configured for above, below, hi/lo, and band triggering using either absolute or deviation alarm trigger points. In addition, high-high/low-low



PTDP32 Series shown actual size.

indication is available. The two optional single pole double throw mechanical relays can be assigned to either or both alarm triggers. Two annunciators and three display colors can also be assigned to the alarm triggers.

The PLATINUM Series device features a large, 3-color, 9 segment programmable LED display with the capability to change color and/or change the state of designated outputs every time an alarm is triggered. The universal power supply accepts 90 to 240 Vac. The low voltage power option accepts 24 Vac or 12 to 36 Vdc.

## Embedded Ethernet and Serial Communications

Optional embedded ethernet on the 1/16 and 1/8 DIN models allow the units to connect directly to an ethernet network and transmit data in standard TCP/IP packets, or serve web pages over a LAN or the internet. Optional serial communications are also available configurable as RS232 or RS485, with straightforward ASCII commands or MODBUS®. All three types of communications interfaces (USB, ethernet, and serial) can be installed and active simultaneously.



## Specifications

### INPUTS

**Input Types:** Thermocouple, RTD, thermistor, analog voltage, analog current

**Current Input:** 4 to 20 mA, 0 to 24 mA scalable

**Voltage Input:** -100 to 100 mV, -1 to 1 V, -10 to 10 Vdc scalable

**Thermocouple Input (ITS 90):** K, J, T, E, R, S, B, C, N

**RTD Input (ITS 90):** 100/500/1000 Ω Pt sensor, 2-, 3- or 4-wire; 0.00385, 0.00392 (100 Ω only), or 0.003916 (100 Ω only) curves

**Thermistor Input:** 2252 Ω, 5K Ω, 10K Ω

**Configuration:** Differential

**Polarity:** Bipolar

**Resolution:** 0.1° temperature; 10 μV process

**Input Impedances:**

**Process Voltage:** 10M Ω for ±100 mV, 1M Ω for other voltage ranges

**Process Current:** 5 Ω

**Thermocouple:** 10K Ω max

**Temperature Stability:**

**RTD:** 0.04°C/°C

**Thermocouple @ 25°C (77°F):** 0.05°C/°C (cold junction compensation)

**Process:** 50 ppm/°C

**A/D Conversion:** 24-bit sigma delta

**Reading Rate:** 20 samples per second

**Digital Filter:** Programmable from 0.05 seconds (filter = 1) to 6.4 seconds (filter = 128)

**CMRR:** 120 dB

**Excitation:** Firmware selectable (no jumpers to set) to 5, 10, 12, and 24 Vdc @ 25 mA

**Setpoint Adjustment:** -9999 to +9999 counts

**Warm-Up to Rated Accuracy:** 30 mins

### ALARM OUTPUTS (OPTIONAL)

**SPDT Relay:** Single pole, double throw mechanical relay, 250 Vac or 30 Vdc at 3 A (resistive load)

### COMMUNICATIONS (USB STANDARD, OPTIONAL SERIAL AND ETHERNET)

**Connection:**

**USB:** Female micro-USB

**Ethernet:** Standard RJ45

**Serial:** Screw terminals

**USB:** USB 2.0 host or device

**Ethernet Standards Compliance:** IEEE 802.3 10/100 Base-T auto-switching, TCP/IP, ARP, HTTPGET

**Serial:** Software selectable RS232 or RS485; programmable 1200 to 115.2 K baud

**Protocols:** OMEGA ASCII, MODBUS® ASCII/RTU

### ISOLATION

**Approvals:** UL, cUL, CE

**Power to Input/Output:** 2300 Vac per 1 min test; 1500 Vac per 1 min test (low voltage/power option)

**Power to Relays/SSR Outputs:** 2300 Vac per 1 min test

**Relays/SSR to Relay/SSR Outputs:** 2300 Vac per 1 min test

**RS232/RS485 to Inputs/Outputs:** 500 Vac per 1 min test

### GENERAL

**Display:** 4-digit, 9 segment LED

**PTDP32, PTDP16:** 10.2 mm (0.40")

**PTDP8:** 21 mm (0.83")

**Dimensions:**

**PTDP8 Series:** 48 H x 96 W x 127 mm D (1.89 x 3.78 x 5")

**PTDP16 Series:** 48 H x 48 W x 127 mm D (1.89 x 1.89 x 5")

**PTDP32 Series:**

25.4 H x 48 W x 127 mm D (1.0 x 1.89 x 5")

**Panel Cutout:**

**PTDP8 Series:** 45 H x 92 mm W (1.772 x 3.622"), 1/8 DIN

**PTDP16 Series:** 45 mm (1.772") square, 1/16 DIN

**PTDP32 Series:** 22.5 H x 45 mm W (0.886 x 1.772"), 1/32 DIN

**Environmental Conditions:**

0 to 50°C (32 to 122°F), 90% RH non-condensing

**External Fuse Required:**

**Time-Delay, UL 248-14 Listed:**

100 mA/250 V; 400 mA/250 V (low voltage option)

**Time-Lag, IEC 127-3 Recognized:**

100 mA/250 V; 400 mA/250 V (low voltage option)

**Line Voltage/Power:** 90 to 240 Vac ±10%, 50 to 400 Hz\*, 110 to 375 Vdc, equivalent voltage

\*No CE compliance above 60 Hz.

**Max Power Consumption:**

4 W power

### Ranges and Accuracies for Supported Inputs

Thermocouple Input Type	Description	Range	Accuracy
<b>Process</b>	Process Voltage	±100 mV, ±1, ±10 Vdc	0.03% FS
<b>Process</b>	Process Current	Scalable within 0 to 24 mA	0.03% FS
<b>J</b>	Iron-Constantan	-210 to 1200°C (-346 to 2192°F)	0.4°C (0.7°F)
<b>K</b>	CHROME <sup>®</sup> ALOMEGA <sup>®</sup>	-270 to -160°C (-454 to -256°F) -160 to 1372°C (-256 to 2502°F)	1.0°C (1.8°F) 0.4°C (0.7°F)
<b>T</b>	Copper-Constantan	-270 to -190°C (-454 to -310°F) -190 to 400°C (-310 to 752°F)	1.0°C (1.8°F) 0.4°C (0.7°F)
<b>E</b>	CHROME <sup>®</sup> Constantan	-270 to -220°C (-454 to -364°F) -220 to 1000°C (-364 to 1832°F)	1.0°C (1.8°F) 0.4°C (0.7°F)
<b>R</b>	Pt/13%Rh-Pt	-50 to 40°C (-58 to 104°F) 40 to 1788°C (104 to 3250°F)	1.0°C (1.8°F) 0.5°C (0.9°F)
<b>S</b>	Pt/10%Rh-Pt	-50 to 100°C (-58 to 212°F) 100 to 1768°C (212 to 3214°F)	1.0°C (1.8°F) 0.5°C (0.9°F)
<b>B</b>	30%Rh-Pt/6%Rh-Pt	100 to 640°C (212 to 1184°F) 640 to 1820°C (1184 to 3308°F)	1.0°C (1.8°F) 0.5°C (0.9°F)
<b>C</b>	5%Re-W/26%Re-W	0 to 2320°C (32 to 4208°F)	0.4°C (0.7°F)
<b>N</b>	Nicrosil-Nisil	-250 to -100°C (-418 to -148°F) -100 to 1300°C (-148 to 2372°F)	1.0°C (1.8°F) 0.4°C (0.7°F)
<b>RTD</b>	Pt, 0.00385, 100 Ω, 500 Ω, 1000 Ω	-200 to 850°C (-328 to 1562°F)	0.3°C (0.7°F)
<b>RTD</b>	Pt, 0.003916, 100 Ω	-200 to 660°C (-328 to 1220°F)	0.3°C (0.7°F)
<b>RTD</b>	Pt, 0.00392, 100 Ω	-200 to 660°C (-328 to 1220°F)	0.3°C (0.7°F)
<b>Thermistor</b>	2252 Ω	-40 to 120°C (-40 to 248°F)	0.2°C (0.35°F)
<b>Thermistor</b>	5K Ω	-30 to 140°C (-22 to 284°F)	0.2°C (0.35°F)
<b>Thermistor</b>	10K Ω	-20 to 150°C (-4 to 302°F)	0.2°C (0.35°F)

**Low Voltage/Power Option:**

External power source must meet Safety Agency Approvals; units can be powered safely with 24 Vac power, but no certification for CE/UL is claimed for this case

**PTDP8, PTDP16, PTDP32**

**Models:** 12 to 36 Vdc, 3 W power

**Protection:**

**PTDP32, PTDP16 Models:**

NEMA 4X (IP65) front bezel

**PTDP8 Models:** NEMA 1 front bezel

**Weight:**

**PTDP8 Series:** 295 g (0.65 lb)

**PTDP16 Series:** 159 g (0.35 lb)

**PTDP32 Series:** 127 g (0.28 lb)

<b>To Order</b>					
<b>Model No.</b>	<b>Size/Cutout</b>	<b>Input Types</b>	<b>Alarm Outputs</b>	<b>Communications</b>	<b>Power</b>
PTDP32	1/32 DIN	T/C, RTD, thermistor, process	None	USB	AC
PTDP32-DC	1/32 DIN	T/C, RTD, thermistor, process	None	USB	DC
PTDP32-330	1/32 DIN	T/C, RTD, thermistor, process	2 Relays	USB	AC
PTDP32-330-DC	1/32 DIN	T/C, RTD, thermistor, process	2 Relays	USB	DC
PTDP32-C24	1/32 DIN	T/C, RTD, thermistor, process	None	USB, Serial	AC
PTDP32-C24-DC	1/32 DIN	T/C, RTD, thermistor, process	None	USB, Serial	DC
PTDP32-330-C24	1/32 DIN	T/C, RTD, thermistor, process	2 Relays	USB, Serial	AC
PTDP32-330-C24-DC	1/32 DIN	T/C, RTD, thermistor, process	2 Relays	USB, Serial	DC
PTDP16	1/16 DIN	T/C, RTD, thermistor, process	None	USB	AC
PTDP16-DC	1/16 DIN	T/C, RTD, thermistor, process	None	USB	DC
PTDP16-330	1/16 DIN	T/C, RTD, thermistor, process	2 Relays	USB	AC
PTDP16-330-DC	1/16 DIN	T/C, RTD, thermistor, process	2 Relays	USB	DC
PTDP16-C24	1/16 DIN	T/C, RTD, thermistor, process	None	USB, Serial	AC
PTDP16-C24-DC	1/16 DIN	T/C, RTD, thermistor, process	None	USB, Serial	DC
PTDP16-330-C24	1/16 DIN	T/C, RTD, thermistor, process	2 Relays	USB, Serial	AC
PTDP16-330-C24-DC	1/16 DIN	T/C, RTD, thermistor, process	2 Relays	USB, Serial	DC
PTDP16-EIP	1/16 DIN	T/C, RTD, thermistor, process	None	USB, Ethernet	AC
PTDP16-EIP-DC	1/16 DIN	T/C, RTD, thermistor, process	None	USB, Ethernet	DC
PTDP16-330-EIP	1/16 DIN	T/C, RTD, thermistor, process	2 Relays	USB, Ethernet	AC
PTDP16-330-EIP-DC	1/16 DIN	T/C, RTD, thermistor, process	2 Relays	USB, Ethernet	DC
PTDP16-C24-EIP	1/16 DIN	T/C, RTD, thermistor, process	None	USB, Serial, Ethernet	AC
PTDP16-C24-EIP-DC	1/16 DIN	T/C, RTD, thermistor, process	None	USB, Serial, Ethernet	DC
PTDP16-330-C24-EIP	1/16 DIN	T/C, RTD, thermistor, process	2 Relays	USB, Serial, Ethernet	AC
PTDP16-330-C24-EIP-DC	1/16 DIN	T/C, RTD, thermistor, process	2 Relays	USB, Serial, Ethernet	DC
PTDP8	1/8 DIN	T/C, RTD, thermistor, process	None	USB	AC
PTDP8-DC	1/8 DIN	T/C, RTD, thermistor, process	None	USB	DC
PTDP8-330	1/8 DIN	T/C, RTD, thermistor, process	2 Relays	USB	AC
PTDP8-330-DC	1/8 DIN	T/C, RTD, thermistor, process	2 Relays	USB	DC
PTDP8-C24	1/8 DIN	T/C, RTD, thermistor, process	None	USB, Serial	AC
PTDP8-C24-DC	1/8 DIN	T/C, RTD, thermistor, process	None	USB, Serial	DC
PTDP8-330-C24	1/8 DIN	T/C, RTD, thermistor, process	2 Relays	USB, Serial	AC
PTDP8-330-C24-DC	1/8 DIN	T/C, RTD, thermistor, process	2 Relays	USB, Serial	DC
PTDP8-EIP	1/8 DIN	T/C, RTD, thermistor, process	None	USB, Ethernet	AC
PTDP8-EIP-DC	1/8 DIN	T/C, RTD, thermistor, process	None	USB, Ethernet	DC
PTDP8-330-EIP	1/8 DIN	T/C, RTD, thermistor, process	2 Relays	USB, Ethernet	AC
PTDP8-330-EIP-DC	1/8 DIN	T/C, RTD, thermistor, process	2 Relays	USB, Ethernet	DC
PTDP8-C24-EIP	1/8 DIN	T/C, RTD, thermistor, process	None	USB, Serial, Ethernet	AC
PTDP8-C24-EIP-DC	1/8 DIN	T/C, RTD, thermistor, process	None	USB, Serial, Ethernet	DC
PTDP8-330-C24-EIP	1/8 DIN	T/C, RTD, thermistor, process	2 Relays	USB, Serial, Ethernet	AC
PTDP8-330-C24-EIP-DC	1/8 DIN	T/C, RTD, thermistor, process	2 Relays	USB, Serial, Ethernet	DC

Comes complete with quickstart manual with downloadable operator's manual.

**Note:** Ethernet options not available on 1/32 DIN models.