

# 1/8 DIN Universal Process Panel Meter with Built-In USB



DP63100



- ✓ Built-In USB Programming Port
- ✓ Modular Output Modules
- ✓ Universal Process, Voltage, Current, Resistance and Temperature Inputs
- ✓ Universal AC/DC Power Supply
- ✓ 6/9 Digit Dual Line/Tri-Color Display with 18 mm (0.71") and 8.9 mm (0.35")
- ✓ Programmable Units Display
- ✓ Variable Contrast and Intensity Display
- ✓ Up to 160 Samples Per Second Conversion Rate
- ✓ NEMA 4X (IP65) Sealed Front Bezel



DP63100

The DP63100 analog process panel meter offers many features and performance capabilities to suit a wide range of industrial applications. The DP63100 has a universal input to handle various input signals including DC voltage/current, process, resistance and temperature. The optional plug-in output cards allow the opportunity to configure the meter for present applications, while providing easy upgrades for future needs. The DP63100 employs a dual line, tri-color display with a large 18 mm (0.71"), tri-color 6 digit top display line and a 8.9 mm (0.35"), 9 digit green bottom display line. The meter provides a MAX and MIN reading memory with programmable capture time. The capture time is used to prevent detection of false max or min readings which may occur during start-up or unusual

process events. The signal totalizer (integrator) can be used to compute a time-input product. This can be used to provide a readout of totalized flow or calculate service intervals of motors, pumps, etc. The meter has up to four setpoint outputs, implemented on plug-in option cards. The plug-in cards provide dual FORM-C relays, quad FORM-A, or either quad sinking or quad sourcing open collector logic outputs. The setpoint alarms can be configured to suit a variety of control and alarm requirements. Communication and bus capabilities are also available as option cards. These include RS232 and RS485. The DP63100 can be programmed to utilize MODBUS® protocol. With MODBUS, the user has access to most configuration parameters. Readout values and setpoint alarm values can be controlled through

the bus. Additionally, the meter has a feature that allows a remote computer to directly control the outputs of the meter. The DP63100 includes a built-in USB programming port. With a Windows® based program, configuration data can be downloaded to the unit without the need of any additional option cards. A linear DC output signal is available as an optional plug-in card. The card provides either 20 mA or 10V signals. The output can be scaled independent of the input range and can track either the input, totalizer, max or min readings. The meter has been specifically designed for harsh industrial environments. With NEMA 4X (IP65) sealed bezel and extensive testing of noise effects and CE requirements, the meter provides a tough reliable application solution.



## SPECIFICATIONS

**Display:** Negative image LCD

**Top Line:** 6 digit, 18 mm (0.71"), with tri-color backlight (red, green or orange)

**Display Range:** -199999 to 999999;  
**Bottom Line:** 9 digit, 8.9 mm (0.35"), with green backlight

**Display Range:** -199,999,999 to 999,999,999

### Power

**AC Power:** 50 to 250 Vac, 50/60 Hz, 14 VA

**DC Power:** 21.6 to 250 Vdc, 8 W  
**Isolation:** 2300 Vrms for 1 min to all inputs and outputs. KEYPAD: 3 programmable function keys, 5 keys total

**A/D Converter:** 24 bit resolution

**Update Rates:** A/D conversion rate; programmable 5 to 160 readings/sec

### Thermocouple Inputs

**Readout:**

**Scale:** °F or °C

**Offset Range:** -199,999 to 999,999 display units

**Input Impedance:** 20 M $\Omega$

**Lead Resistance Effect:** 0.03  $\mu$ V/ $\Omega$

**Max Continuous Overvoltage:** 30V

### RTD Inputs

**Type:** 3 or 4 wire, 2 wire can be compensated for lead wire resistance

**Excitation Current:** 100  $\Omega$

**Range:** 136.5  $\mu$ A  $\pm$ 10%

**10  $\Omega$  Range:** 2.05 mA  $\pm$ 10%

**Lead Resistance:** 100  $\Omega$

**Range:** 10  $\Omega$ /lead maximum

**10  $\Omega$  Range:** 3  $\Omega$ /lead maximum

**Max Continuous Overload:** 30V

**Excitation Power:** Jumper selectable

**Transmitter Power:**  $\pm$ 18 Vdc @ 50 mA

**Reference Voltage:**  $\pm$ 2 Vdc,  $\pm$ 2%

### User Inputs

**Two Programmable User Inputs**

**Max Continuous Input:** 30 Vdc

**Isolation to Sensor Input Common:** Not isolated

**Response Time:** 12 msec maximum

### Totalizer

**Time Base:** Second, minute, hour, or day

**Batch:** Can accumulate (gate) input display from a user input

**Time Accuracy:** 0.01% typical

**Decimal Point:** 0 to 0.0000

**Scale Factor:** 0.001 to 65.000

**Low Signal Cut-Out:**

-199,999 to 999,999

**Total:** 6 digits on line 1; 9 digits on line 2

### Custom Linearization

**Data Point Pairs:** Selectable from 2 to 16

**Display Range:** -199,999 to 999,999

**Decimal Point:** 0 to 0.0000

**Memory:** Nonvolatile FRAM memory retains all programmable parameters and display values

### Environmental Conditions

**Operating Temperature Range:**

0 to 50°C (32 to 122°F) 0 to 45°C (32 to 113°F) with all three plug-in cards installed

**Storage Temperature Range:** -40 to 60°C (-40 to 140°F)

**Operating and Storage Humidity:**

0 to 85% max RH non-condensing

**Altitude:** Up to 2000 m (6561')

**Connections:** High compression age-clamp terminal block

**Construction:** This unit is rated for NEMA 4X (IP65) outdoor use IP20 touch safe. Installation Category II, pollution degree 2. One piece bezel/case. Flame resistant. Synthetic rubber keypad. Panel gasket and mounting clip included.

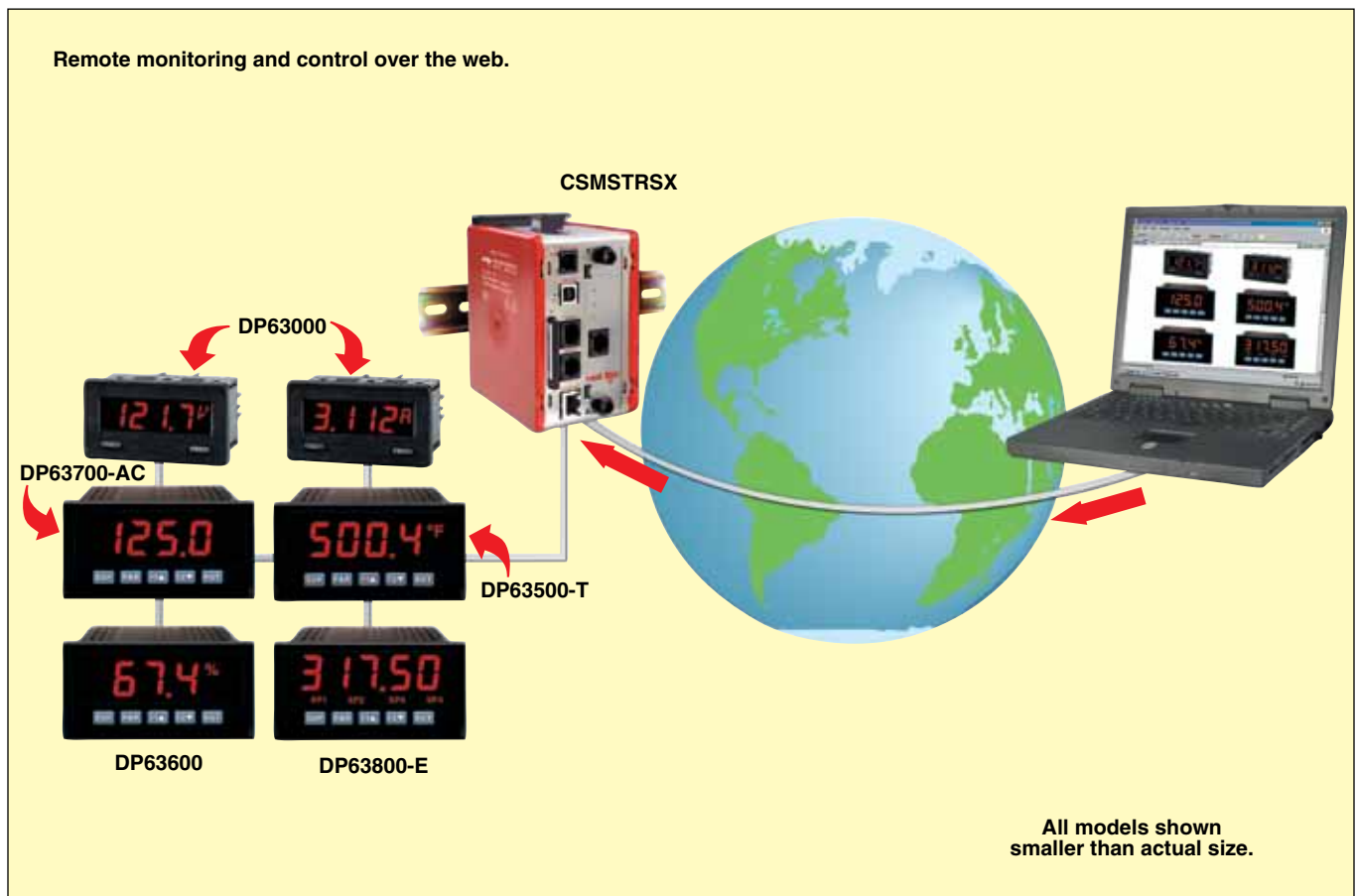
### Dimensions

**Case:** 44.45 H x 91.44 W x 105 mm D (1.75 x 3.6 x 4.14")

**Bezel:** 49.53 x 96.52 mm (1.95 x 3.8")

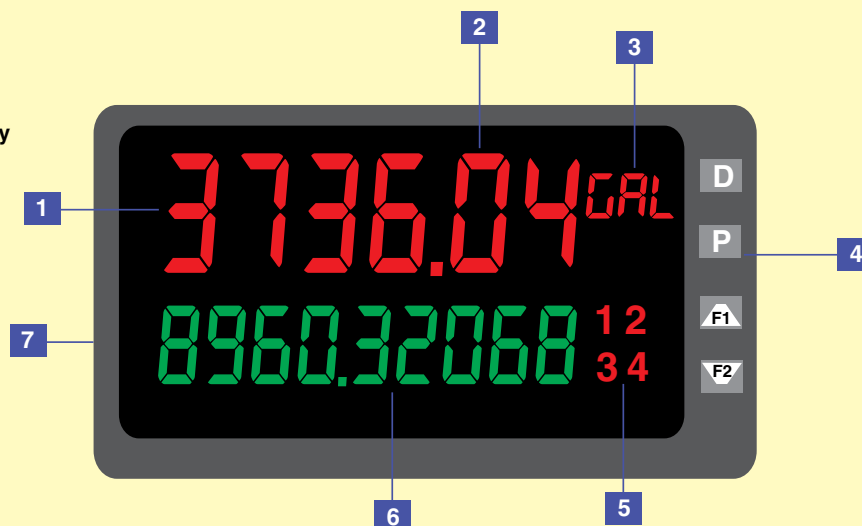
**Panel Cutout:** 1/8 DIN, 45 x 92 mm (1.77 x 3.62")

**Weight:** 226.8 g (8 oz)





- 1** Top Line: 6-Digit 18 mm (0.7") Display
- 2** Programmable for Red, Orange or Green
- 3** Custom Unit Indicator
- 4** Tactile Feel Buttons
- 5** Setpoint Annunciators
- 6** Bottom Line: 9-Digit 9 mm (0.35") Green Display
- 7** Built-In USB Port on side of meter



### RTD Inputs

Input Type	Range	Accuracy* 18 to 28°C	Accuracy* 0 to 50°C
100 Ω Pt alpha = 0.00385	-200 to 850°C (-328 to 1562°F)	0.4°C	1.6°C
100 Ω Pt alpha = 0.003919	-200 to 850°C (-328 to 1562°F)	0.4°C	1.6°C
120 Ω Nickel alpha = 0.00672	-80 to 259°C (-112 to 498°F)	0.2°C	0.5°C
10 Ω Copper alpha = 0.00427	-100 to 260°C (-148 to 500°F)	0.4°C	0.9°C

### Current Inputs

Input Range	Accuracy* 18 to 28°C	Accuracy* 0 to 50°C	Impedance	Resolution†
±250 μADC	0.03% of reading +0.3 μA	0.12% of reading +0.04 μA	1.11 kΩ	10 nA
±2 mADC	0.03% of reading +0.3 μA	0.12% of reading +0.4 μA	111 Ω	0.1 μA
±20 mADC	0.03% of reading +3 μA	0.12% of reading +4 μA	11.1 Ω	1 μA
±200 mADC	0.05% of reading +30 μA	0.15% of reading +40 μA	1.1 Ω	10 μA
±2 ADC	0.5% of reading +0.3 mA	0.7% of reading +0.4 mA	0.1 Ω	0.1 mA

### Voltage Inputs

Input Range	Accuracy* 18 to 28°C	Accuracy* 0 to 50°C	Impedance	Resolution†
±250 mVdc	0.03% of reading +30 μV	0.12% of reading +40 μV	451 kΩ	10 μV
±2.0 Vdc	0.03% of reading +0.3 mV	0.12% of reading +0.4 mV	451 kΩ	0.1 mV
±10 Vdc	0.03% of reading +3 mV	0.12% of reading +4 mV	451 kΩ	1 mV
±25 Vdc	0.03% of reading +3 mV	0.12% of reading +4 mV	451 kΩ	1 mV
±100 Vdc	0.3% of reading +30 mV	0.12% of reading +40 mV	451 kΩ	10 mV
±200 Vdc	0.3% of reading +30 mV	0.12% of reading +40 mV	451 kΩ	10 mV

† Higher resolution can be achieved via input scaling.

\* After 20 min warm-up, at 5 sample per second input rate. Accuracy is specified in two ways: accuracy over an 18 to 28°C and 15 to 75% RH environment; and accuracy over a 0 to 50°C (32 to 122°F) and 0 to 85% RH (non condensing) environment. Accuracy specified over the 0 to 50°C of operating range includes meter tempco and ice point tracking effects. The specification includes the A/D conversion errors, linearization conformity, and thermocouple ice point compensation. Total system accuracy is the sum of meter and probe errors. Accuracy may be improved by field calibrating the meter readout at the temperature of interest.



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. OMEGACARE<sup>SM</sup> covers parts, labor and equivalent loaners.

### Thermocouple Inputs

Input Type	Range	Accuracy* (18 to 28°C)	Accuracy* (0 to 60°C)
T	-200 to 400°C (-328 to 752°F)	1.2°C	2.1°C
E	-200 to 750°C (-328 to 1382°F)	1.0°C	2.4°C
J	-200 to 760°C (-328 to 1400°F)	1.1°C	2.3°C
K	-200 to 1250°C (-328 to 2282°F)	1.3°C	3.4°C
R	0 to 1768°C (32 to 3214°F)	1.9°C	4.0°C
S	0 to 1768°C (32 to 3214°F)	1.9°C	4.0°C
B	150 to 300°C (100 to 572°F) 300 to 1820°C (572 to 3308°F)	3.9°C 2.8°C	5.7°C 4.4°C
N	-200 to 1300°C (-328 to 2372°F)	1.3°C	3.1°C
C (W5/W26)	0 to 2315°C (32 to 4199°F)	1.9°C	6.1°C

### Resistance Inputs

Input Range	Accuracy* 18 to 28°C	Accuracy* 0 to 50°C	Compliance	Max Continuous Overload	Resolution†
100 Ω	0.05% of reading +0.03 Ω	0.2% of reading +0.04 Ω	0.175V	30V	0.01 Ω
1000 Ω	0.05% of reading +0.3 Ω	0.2% of reading +0.4 Ω	1.75V	30V	0.1 Ω
10 kΩ	0.05% of reading +1 Ω	0.2% of reading +1.5 Ω	17.5V	30V	1 Ω

† Higher resolution can be achieved via input scaling.

\* After 20 min warm-up, at 5 sample per second input rate. Accuracy is specified in two ways: accuracy over an 18 to 28°C and 15 to 75% RH environment; and accuracy over a 0 to 50°C (32 to 122°F) and 0 to 85% RH (non condensing) environment. Accuracy specified over the 0 to 50°C of operating range includes meter tempco and ice point tracking effects. The specification includes the A/D conversion errors, linearization conformity, and thermocouple ice point compensation. Total system accuracy is the sum of meter and probe errors. Accuracy may be improved by field calibrating the meter readout at the temperature of interest.

### To Order

Model No.	Description (Display Meter Only, No Outputs)
DP63100	1/8 DIN universal process panel meter

### Optional Plug-In Output Cards (Field Installable)

Model No.	Description (Display Meter Only, No Outputs)
<b>Setpoint Alarms (Only One Alarm Card Can Be Installed Into Base Meter)</b>	
LDP6-CDS10	Dual setpoint relay output card
LDP6-CDS20	Quad setpoint relay output card
LDP6-CDS30	Quad setpoint sinking open collector output card
LDP6-CDS40	Quad setpoint sourcing open collector output card
<b>Analog Output</b>	
LDP6-CDL10	Analog output card
<b>Communications (Only One Communications Card Can Be Installed Into Base Meter)</b>	
LDP6-CDC10	RS485 serial communications output card with terminal block
LDP6-CDC1C	Extended RS485 serial communications output card with dual RJ11 connector
LDP6-CDC20	RS232 serial communications output card with terminal block
LDP6-CDC2C	Extended RS232 serial communications output card with 9 pin D connector

Comes complete with operator's manual.

**Note:** Adding option cards to meters can be fitted with up to three optional plug-in cards. However, only one card from each function type can be installed at a time. The function types include Setpoint Alarms, Communications, and Analog Output. The cards can be installed initially or at a later date. Each optional plug-in card is shipped with installation and programming instructions.

**Ordering Example:** DP63100, universal process panel meter, LDP6-CDL10 analog output card.

OCW-3 OMEGACARE<sup>SM</sup> extends standard 2-year warranty to a total of 5 years.