Digital Panel Meters

For Temperature, Process, Voltage and Current

DP63000

2 YEAR WARRANTY

DP63000B-E shown slighty smaller than actual size.

DP63000A-E shown actual size.

DP6-COM1, DP6-RLY0 shown larger than actual size.

- Thermocouple Inputs
- RTD Inputs
- Programmable Temperature Offset
- Selectable °F or °C with 1 or 0.1 Degree Resolution
- 3 Selectable Process Ranges
- 0 to 10 Vdc, 0 to 20 mA, 0 to 50 mA
- 4 Selectable DC Voltage Ranges
- 0 to 200 mV, 2V, 20V, 200V
- 4 Selectable DC Current Ranges
- 200 mA, 2 mA, 20 mA, 200 mA
- LCD, Reflective or LCD with Green/Red LED Backlight
- 12.2 mm H (0.48") Digits
- Optional Alarm Output Modules
- Optional Serial Communication Modules (RS232 or RS485)
- Operates from 9 to 28 Vdc Power Source (85 to 250 Vac Optional Supply)
- Display Color Change Capability at Setpoint Output
- NEMA 4X (IP65) Sealed Front Bezel
- Minimum and Maximum Display Capture

The DP63000 Series provides the user the ultimate in flexibility, from its complete user programming to the optional setpoint control and communication capability. The DP63000-TC accepts a thermocouple input. The DP63000-RTD accepts an RTD input and both provide a temperature display in Celcius or Farenheit. The meter also features minimum and maximum display capture, display offset, °F or °C indicator, and programmable user input. The display can be toggled either manually or automatically between the selected displays. Other models include process, DC voltage or current input signal and provides a display in the desired unit of measure.

The DP63000 Series display has 12.2 mm H (0.48") digits. The LCD model is available in 2 versions, reflective and red/green backlight. The backlight version is user-selectable for the desired color and also has variable display intensity. The capability of the DP63000 can be easily expanded with the addition of option modules. Setpoint capability is field-installable with the addition of the setpoint output modules. Serial communications capability for RS232 or RS485 is added with a serial option module.

The DP63000 can be powered from an optional power supply that attaches directly to the back of a DP63000. The power supply is powered from 85 to 250 Vac and provides up to 400 mA to drive the unit and sensors.

Common Specifications

Display: 5-digit LCD, 12.2 mm (0.48") high digits

DP63000A: Reflective LCD with full viewing angle

DP63000B: Transmissive LCD with selectable red or green LED backlight, viewing angle optimized; display color change capability with output state when using an output module

Response Time: 500 ms

Memory: Non-volatile EEPROM memory retains all programming parameters and maximum/minimum values when power is removed

Power: Input voltage range is 9 to 28 Vdc with short circuit and input polarity protection (for 85 to 250 Vac power operation, must use a model DP6-MLPS1 or a Class 2 or SELV-rated power supply)

Normal Mode Rejection: 60 dB 50/60 Hz

Model No.	Display Color	Input Current @ 9 Vdc Without DP6-RLY0	Input Current @ 9 Vdc With DP6-RLY0
DP63000A	—	10 mA	40 mA
DP63000B	Red (max intensity)	85 mA	115 mA
DP63000B	Green (max intensity)	95 mA	125 mA

Thermocouple Inputs

Readout: Thermocouple input

Resolution: 1 or 0.1°

Scale: °F or °C

Offset Range: -999 to 9999 display units

Isolation: TC+ and TC- terminals are not electrically isolated from the power supply or optional comms cards

Maximum Input Voltage: 30 Vdc, TC+ to TC

Maximum Input Voltage TC-: 3 Vdc maximum with respect to common

Input Type	Range	Accuracy @ 23°C ±°C*	Accuracy @ -35 to 75°C ±°C*
T	-200 to 400°C (-328 to 752°F)	2.3	5.8
E	-200 to 871°C (-328 to 1600°F)	2.7	4.9
J	-200 to 760°C (-328 to 1400°F)	1.9	4.3
K	-200 to 1372°C (-328 to 2502°F)	2.3	5.8
R	-50 to 1768°C (-58 to 3214°F)	4.5	15.0
S	-50 to 1768°C (-58 to 3214°F)	4.5	15.0
B	100 to 300°C (392 to 3308°F)	9.1 <540°C 4.5 >540°C	42.6 <540°C 15.0 >540°C
N	-200 to 1300°C (-328 to 2372°F)	2.8	8.1
mV	-10.00 to 65.00	0.02 mV	0.08 mV

** After 20 minute warm-up. Accuracy is specified in 2 ways: accuracy @ 23°C and 15 to 75% RH environment, and accuracy over a -35 to 75°C and 0 to 85% RH (non condensing) environment. Accuracy specified over the -35 to 75°C operating range includes meter tempco and cold junction tracking effects.*

Environmental Conditions

Operating Temperature Range for DP63000A-I:
-35 to 75°C (-31 to 167°F)

Operating temperature range depends on display color and intensity level as per below:

Storage Temperature:
-35 to 85°C (-31 to 185°F)

Operating and Storage Humidity: 0 to 85% maximum relative humidity (non-condensing)

Altitude: Up to 2000 meters

Construction: This unit is rated for NEMA 4X (IP65) requirements for indoor use, Installation Category I, Pollution Degree 2; high-impact plastic case with clear viewing window; panel gasket and mounting clip included

Weight: 100 g (3.2 oz)

Display	Intensity Level	Temperature
Red	1 and 2	-35 to 75°C (-31 to 167°F)
	3	-35 to 70°C (-31 to 158°F)
	4	-35 to 60°C (-31 to 140°F)
	5	-35 to 50°C (-31 to 122°F)
Green	1 and 2	-35 to 75°C (-31 to 167°F)
	3	-35 to 65°C (-31 to 149°F)
	4	-35 to 50°C (-31 to 122°F)
	5	-35 to 35°C (-31 to 95°F)

RTD Inputs

Readout: RTD input

Resolution: 1 or 0.1°

Scale: °F or °C

Offset Range: -19999 to 19999 display units

Isolation: Input and EXC terminals are not electrically isolated from the power supply or optional communications cards

Maximum Input Voltage: 30 Vdc

Type: 2-, 3- or 4-wire

Excitation Current:
100 Ω Range: 165 µA
10 Ω Range: 2.5 mA

Lead Resistance:
100 Ω Range: 10 Ω/lead maximum
10 Ω Range: 3 Ω/lead maximum

Balanced Lead Resistance: Automatically compensated up to maximum per lead

Unbalanced Lead Resistance: Uncompensated

Input Type	Range	Accuracy* (18 to 28°C)	Accuracy* (0 to 50°C)
100 Ω Pt alpha = .00385	-200 to 850°C	0.4°C	1.6°C
100 Ω Pt alpha = .00392	-200 to 850°C	0.4°C	1.6°C
120 Ω Nickel alpha = .00672	-80 to 260°C	0.2°C	0.5°C
10 Ω Copper alpha = .00427	-100 to 260°C	0.4°C	0.9°C

** After 20 minute warm-up. Accuracy is specified in 2 ways: accuracy at 23°C and 15 to 75% RH environment, and accuracy over a -35 to 75°C and 0 to 85% RH (non condensing) environment. Accuracy specified over the -35 to 75°C operating range includes meter tempco effects. The specification includes the A/D conversion errors and linearization conformity. 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.*

Option Boards Specifications

Single Relay Card

Type: Single form "C" relay

Isolation-To-Sensor and User Input Commons: 1400 Vrms for 1 minute

Working Voltage: 150 Vrms

Contact Rating: 1 A @ 30 Vdc resistive; 0.3 A @ 125 Vac resistive

Life Expectancy: 100,000 minimum operations

Response Time:

Turn On Time: 4 ms maximum

Turn Off Time: 4 ms maximum

Dual Sinking Output Card

Type: Non-isolated switched DC, N channel open drain MOSFET

Current Rating: 100 mA maximum

VDS "ON": 0.7V @ 100 mA

VDS MAX: 30 Vdc

Offstate Leakage Current: 0.5 mA maximum

RS485 Serial Communications Card

Type: RS485 multi-point balanced interface (non-isolated)

Note: *Non-grounded (isolated) thermocouple probes must be used when multiple units are connected in an RS485 network, or measurement errors will occur.*

Baud Rate: 300 to 38.4 K

Data Format: 7/8 bits; odd, even, or no parity

Bus Address: 0 to 99; max 32 meters per line

Transmit Delay: Selectable (refer to DP6-COM1 manual)

RS232 Serial Communications Card

Type: RS232 half duplex (non-isolated)

Baud Rate: 300 to 38.4 K

Data Format: 7/8 bits; odd, even, or no parity

Process Inputs (Jumper Selectable):

Inputs: 0 to 10 V, 0(4) to 20 mA, 0 to 50 mA

Sensor Inputs:

Input Range	Accuracy @ 23°C <85%RH	Input Impedance	Max Input Signal	Resolution	Temperature Coefficient
20/50 mA	0.1% of span	10 Ω	150 mA	1 µA	70 ppm/°C
10 Vdc	0.1% of span	538 kΩ	30V	1 mV	70 ppm/°C

DC Voltage Inputs (Jumper Selectable)

DC Voltages: 200 mV, 2V, 20V, 200V

Signal Inputs:

Input Range	Accuracy @ 23°C <85%RH	Input Impedance	Max Input Signal	Resolution	Temperature Coefficient
200 mVdc	0.1% of span	1.027 MΩ	75 Vdc	10 µV	70 ppm/°C
2 Vdc	0.1% of span	1.027 MΩ	75 Vdc	0.1 mV	70 ppm/°C
20 Vdc	0.1% of span	1.027 MΩ	250 Vdc	1 mV	70 ppm/°C
200 Vdc	0.1% of span	1.027 MΩ	250 Vdc	10 mV	70 ppm/°C

DC Current Inputs (Jumper Selectable)

DC Currents: 200 µA, 2 mA, 20 mA, or 200 mA

Signal Inputs:

Input Range	Accuracy @ 23°C <85%RH	Input Impedance	Max Input Signal	Resolution	Temperature Coefficient
200 µA	0.1% of span	1.111 kΩ	15 mA	10 nA	70 ppm/°C
2 mA	0.1% of span	111 Ω	50 mA	0.1 µA	70 ppm/°C
20 mA	0.1% of span	11 Ω	150 mA	1 µA	70 ppm/°C
200 mA	0.1% of span	1 Ω	500 mA	10 µA	70 ppm/°C

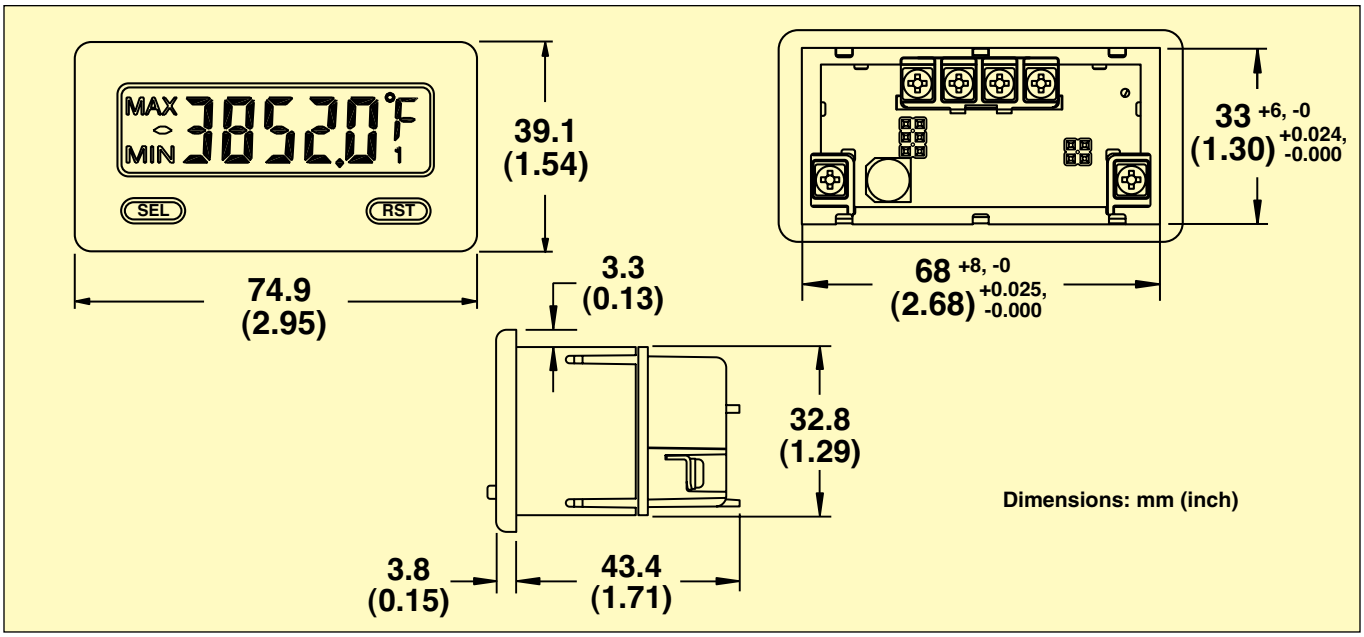
OMEGACARE℠ Extended Warranty Program

OMEGACARE℠ extended warranty program is available for models shown on this page. Ask your sales representative for full details when placing an order. OMEGACARE℠ covers parts, labor and equivalent loaners.

DP63000B-E shown actual size.

DP63000B-V shown actual size.

DP63000B-I shown actual size.



To Order

Model No.	Description (Display Meter Only, No Outputs)
DP63000A-T	Thermocouple input, reflective display, 9 to 28 Vdc
DP63000B-T	Thermocouple input, backlight display, 9 to 28 Vdc
DP63000A-RTD	RTD input, reflective display, 9 to 28 Vdc
DP63000B-RTD	RTD input, backlight display, 9 to 28 Vdc
DP63000A-E	Process input, reflective display, 9 to 28 Vdc
DP63000B-E	Process input, backlight display, 9 to 28 Vdc
DP63000A-V	DC volt input, reflective display, 9 to 28 Vdc
DP63000B-V	DC volt input, backlight display, 9 to 28 Vdc
DP63000A-I	DC current input, reflective display, 9 to 28 Vdc
DP63000B-I	DC current input, backlight display, 9 to 28 Vdc

Optional Plug-in Output Cards (Field Installable)

Model No.	Description
Setpoint Alarms (Only 1 Alarm Card Can Be Installed Into Base Meter)	
DP6-RLY0	Single relay output card
DP6-SNK0	Dual sinking output card
Communications (Only 1 Communications Card Can Be Installed Into Base Meter) *	
DP6-COM1	RS485 serial communications output card
DP6-COM2	RS232 serial communications output card

Comes complete with operator's manual.

Note: *Adding option cards—meters can be fitted with up to 2 optional plug-in card, however, only 1 card from each function type can be installed at a time. The function types include setpoint alarms and communications. The cards can be installed initially or at a later date. Each optional plug-in card is shipped with installation and programming instructions.*

***** *Software is a free; available online*

Ordering Example: DP63000A-T, *thermocouple input, reflective display, 9 to 28 Vdc.*

OCW-3, *OMEGACARE℠ extends standard 2-year warranty to a total of 5 years*

Accessories (Field Installable)

Model No.	Description
DP6-MLPS1	Micro-line Power Supply, 85 to 250 Vac
DP6-232-CABLE	RS232 Programming cable (DB9-RJ11)
DP6-485-CABLE	RS485 Programming cable (DB9-RJ11)