



# Digital Panel Meters

## For Temperature, Process, Voltage and Current

DP63000  
Starts at  
**£81**



DP63000B-E, £90,  
shown smaller than  
actual size.

DP63000A-E, £84,  
shown smaller than  
actual size.

DP6-COM1, £20, shown  
smaller than actual size.

DP6-RLY0, £27,  
shown smaller 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, 2 V, 20 V, 200 V
- ✓ 4 Selectable DC Current Ranges
- ✓ 200 µA, 2 mA, 20 mA, 200 mA
- ✓ LCD, Reflective or LCD with Green/Red LED Backlight
- ✓ 12.2 mm H 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 Colour Change Capability at Setpoint Output

- ✓ 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 Fahrenheit. 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 digits. The LCD model is available in 2 versions, reflective and red/green backlight. The backlight version is user-selectable for the desired colour 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 high digits

**DP63000A:** Reflective LCD with full viewing angle

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

**Response Time:** 500 ms

**Memory:** Non-volatile E2PROM memory retains all programming parameters and max/min 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 Colour	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 max with respect to common

Input Type	Range	Accuracy @ 23°C ±°C*	Accuracy @ -35 to 75°C ±°C*
T	-200 to 400°C	2.3	5.8
E	-200 to 871°C	2.7	4.9
J	-200 to 760°C	1.9	4.3
K	-200 to 1372°C	2.3	5.8
R	-50 to 1768°C	4.5	15.0
S	-50 to 1768°C	4.5	15.0
B	100 to 300°C	9.1 <540°C 4.5 >540°C	42.6 <540°C 15.0 >540°C
N	-200 to 1300°C	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

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

**Storage Temperature:**

-35 to 85°C

**Operating and Storage Humidity:**

0 to 85% max relative humidity (non-condensing)

**Altitude:** Up to 2000 metres

**Construction:** This unit is rated for 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

	Intensity Level	Temperature
Red Display	1 and 2	-35 to 75°C
	3	-35 to 70°C
	4	-35 to 60°C
	5	-35 to 50°C
Green Display	1 and 2	-35 to 75°C
	3	-35 to 65°C
	4	-35 to 50°C
	5	-35 to 35°C

## 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 /lead max

10 Ω Range: 3 /lead max

**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 Pt alpha = 0.00385	-200 to 850°C	0.4°C	1.6°C
100 Pt alpha = 0.00392	-200 to 850°C	0.4°C	1.6°C
120 Nickel alpha = 0.00672	-80 to 260°C	0.2°C	0.5°C
10 Copper alpha = 0.00427	-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 linearisation 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.



### 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

### 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 max

Turn Off Time: 4 ms max

### Dual Sinking Output Card

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

Current Rating: 100 mA max

VDS "ON": 0.7 V @ 100 mA

VDS MAX: 30 Vdc

Offstate Leakage Current: 0.5 mA max

### 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)

### 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	30 V	1 mV	70 ppm/°C

### DC Voltage Inputs (Jumper Selectable)

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

### 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	111Ω	50 mA	.1 μA	70 ppm/°C
20 mA	0.1% of span	11Ω	150 mA	1 μA	70 ppm/°C
200 mA	0.1% of span	1Ω	500 mA	10 μA	70 ppm/°C

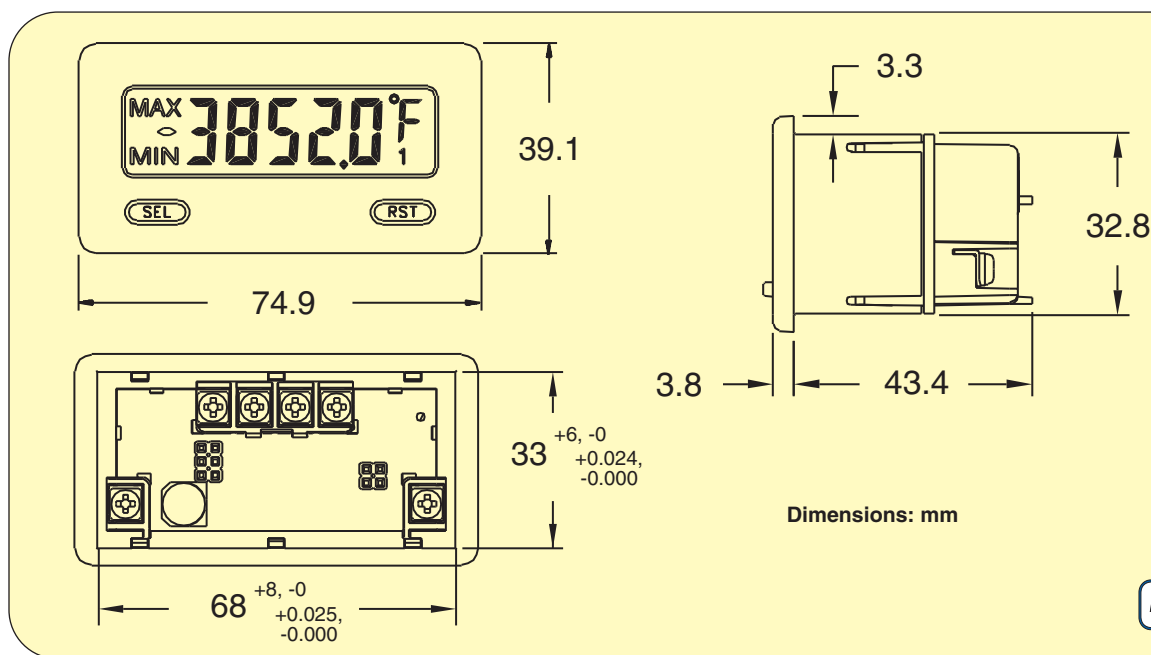


DP63000B-V, £90, shown smaller than actual size.

DP63000B-E, £90, shown smaller than actual size.

DP63000B-I, £90, shown smaller than actual size.





**MOST POPULAR MODELS HIGHLIGHTED!**

<b>To Order (Specify Model Number)</b>		
Model No.	Price	Description (Display Meter Only, No Outputs)
DP63000A-T	£81	Thermocouple input, reflective display, 9 to 28 Vdc
DP63000B-T	88	Thermocouple input, backlight display, 9 to 28 Vdc
DP63000A-RTD	84	RTD input, reflective display, 9 to 28 Vdc
DP63000B-RTD	90	RTD input, backlight display, 9 to 28 Vdc
DP63000A-E	84	Process input, reflective display, 9 to 28 Vdc
DP63000B-E	90	Process input, backlight display, 9 to 28 Vdc
DP63000A-V	84	DC volt input, reflective display, 9 to 28 Vdc
DP63000B-V	90	DC volt input, backlight display, 9 to 28 Vdc
DP63000A-I	84	DC current input, reflective display, 9 to 28 Vdc
DP63000B-I	90	DC current input, backlight display, 9 to 28 Vdc

**Optional Plug-in Output Cards (Field Installable)**

Model No.	Price	Description
<b>Setpoint Alarms (Only 1 Alarm Card Can Be Installed Into Base Meter)</b>		
DP6-RLY0	£27.00	Single relay output card
DP6-SNK0	13.50	Dual sinking output card
<b>Communications (Only 1 Communications Card Can Be Installed Into Base Meter)*</b>		
DP6-COM1	£20.00	RS485 serial communications output card
DP6-COM2	20.00	RS232 serial communications output card

Comes with complete 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; download from [omega.co.uk](http://omega.co.uk)

**Ordering Example:** DP63000A-T, thermocouple input, reflective display, 9 to 28 Vdc, DP6-COM1 RS485 serial communications output card, £81 + 20 = £101.

**Accessories (Field Installable)**

Model No.	Price	Description
DP6-MLPS1	£21.50	Micro-line power supply, 85 to 250 Vac
DP6-232-CABLE	27.50	RS232 programming cable (DB9-RJ11)
DP6-485-CABLE	66.00	RS485 programming cable (DB9-RJ11)
EE-1319	47.00	Reference Book: Grounding and Shielding Techniques

**METERS**



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1-800-TC-OMEGA

Stamford, CT.

#### CANADA

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Laval(Quebec)

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[www.omega.de](http://www.omega.de)

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0800-8266342

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