

# Strain, Process & Temperature Meters

## with Optional Relays and Analog Output

**Ω MONOGRAM<sup>®</sup> SERIES**

DP25B Series

**\$245**

Basic Unit



### Inputs

- ✓ Thermocouple
- ✓ RTD
- ✓ Process (dc Voltage and Current)
- ✓ Strain Gage

### Options

- ✓ Relay Output with Adjustable Deadband
- ✓ Isolated or Non-Isolated Analog Output
- ✓ Totally Programmable Color Display
- ✓ Low Voltage Power Options

### Panel Meters/Controllers

OMEGA<sup>®</sup> DP25B Series feature the biggest, brightest display of any 1/2 DIN panel meter. The user can select the display color: **RED**, **AMBER**, or **GREEN**.

The unparalleled accuracy of the OMEGA<sup>®</sup> DP25B signal conditioner is available in an economical series of panel meters/controllers. The OMEGA<sup>®</sup> DP25B series of meter/controllers feature a four-digit 9-segment display plus optional dual 5 amp SPDT relays (Single Pole Double Throw; Form C) and a choice of isolated or non-isolated analog output. The scalable 0 to 10 Vdc, 0 to 20 mA, or 4 to 20 mA analog output can be used for retransmission of the display value or as a proportional control output, as required. The microprocessor-based DP25B series includes instruments for process (dc voltage and current) strain gage, thermocouple, and RTD.

### Common Specifications

**Display:** 4-digit, 9-segment, 21 mm (0.83")  
 Red, Amber or Green LED (programmable)  
**Analog-to-Digital Technique:** Dual slope  
**Internal Resolution:** 15-bit  
**Polarity:** Automatic  
**Read Rate:** 3/sec  
**Step Response:** 2 seconds  
**Relay Outputs (optional):** 2 Form C (SPDT) relays, rated 5 Amp 250 Vac; programmable for active high/low alarms with latching/non-latching relays.  
**Analog output (optional):** 0 to 10 V, 4 to 20 mA or 0 to 20 mA; can be assigned to a display range (scalable) or proportional control output with setpoint #1 when used as a control output  
**Power:** 115 Vac or 230 Vac  $\pm 10\%$ , 10 to 32 Vdc, 26 to 56 Vdc; 8 Watts max (DP25B-TC or -RTD), 11 Watts max (DP25B-E or -S); 240 V RMS overvoltage protection



**PATENTED**

*Covered by U.S and International patents and pending applications*

### Thermocouple and RTD Models

The DP25B Series for thermocouple and RTD inputs is a versatile panel meter and limit alarm in one easily programmable instrument. The DP25B-TC is selectable for J, K, T, or J DIN thermocouples. The DP25B-RTD accepts 100  $\Omega$  PT (0.00385 curve) RTD's.

### DP25B-TC (Thermocouple)

Input Type	Range		Accuracy
J	-210 to 760°C	-346 to 1400°F	0.5°C (0.9°F)
K	-270 to 1372°C	-454 to 2500°F	
T	-210 to 400°C	-346 to 752°F	
J DIN	-200 to 900°C	-328 to 1652°F	

**Isolation:** Dielectric strength to 2500 V transient per 3 mm spacing based on EN 61010 for 260 Vrms or DC.

**NMR:** 60 dB

**CMR:** 120 dB

**Operating Temperature:** 0 to 50°C (32 to 122°F)

**Storage Temperature:** -40 to 85°C (-40 to 185°F)

**Relative Humidity:** 90% @ 40°C (104°F)  
 (non-condensing)

**Dimensions:** 48 H x 96 W x 152 mm D  
 (1.89 x 3.78 x 6.0")

**Panel Cutout:** 45 x 92 mm (1.772 x 3.622")

**Weight:** 36 g (1.27 lb)

### Thermocouple Meter Specifications

**Input:** Thermocouples types, J, K, T, and J DIN

**Relay Hysteresis:** Programmable from 0 to 9999

**Accuracy:**  $\pm 0.50^\circ\text{C}$  (0.9°F) after 30 min. warm-up

**Temperature Coefficient:**  $\pm 50$  PPM/°C

**Input Resistance:** 100 M $\Omega$



DP25B-TC: Programmed for Green Display

## Process and Strain Models

The DP25B-E process and strain meters accept a wide range of dc voltage and current inputs to cover any typical process application. They feature easy front panel scaling to virtually any engineering units, selectable excitation of four voltages to work with most transducers and transmitters, front panel and remote tare function for weighing applications, and a hardware lockout to prevent unauthorized changes in set-up.

## DP25B-RTD (RTD)

Input Type	Range	Accuracy
RTD, 100 Ω Pt, 2, 3, 4-wire	-200 to 850°C (-328 to 1562°F)	0.5°C (0.9°F)

## RTD Temperature Meter/Controller Specifications

**Input:** RTD 100 Ω Pt (0.00385 curves)

2-, 3- and 4-wire selectable

**Accuracy:** ±0.50°C (0.9°F) after 30 min. warm-up

**Temperature Coefficient:** ±50 PPM/°C

**Input Resistance:** 100 MΩ

## DP25B-E (Process) / DP25B-S (Strain)

Input Type	Range	Accuracy
mV, V, mA	0-100 mV, ±50 mV, 0-10 V ±5 V, 0-20 mA, 4-20 mA	0.02% Rdg

## Process & Strain Meters / Controllers Specifications

**Input Ranges:** 0 to 100 mV, ±50 mV, 0 to 10 V, ±5 V, 0 to 20 mA, 4 to 20 mA

**Protection:** 240 V rms max for voltage input ranges; 200 mA for current ranges

**Input Impedance:** 100 MΩ for 100 mV or ±50 mV range; 1 MΩ for 10 V or ±5 V range; 5 Ω for 20 mA current input

**Analog-to-Digital Technique:** Dual slope

**Internal Resolution:** 15-bit

**Polarity:** Automatic

**Max Error Strain/Process:** ±0.03% rdg

**Span Tempco:** ±50 ppm/°C

**Warmup to Rated Accuracy:** 30 min

**Excitation Voltage:** 24 V @ 25 mA or 12 V @ 50 mA; 10 V @ 120 mA or 5 V @ 60 mA



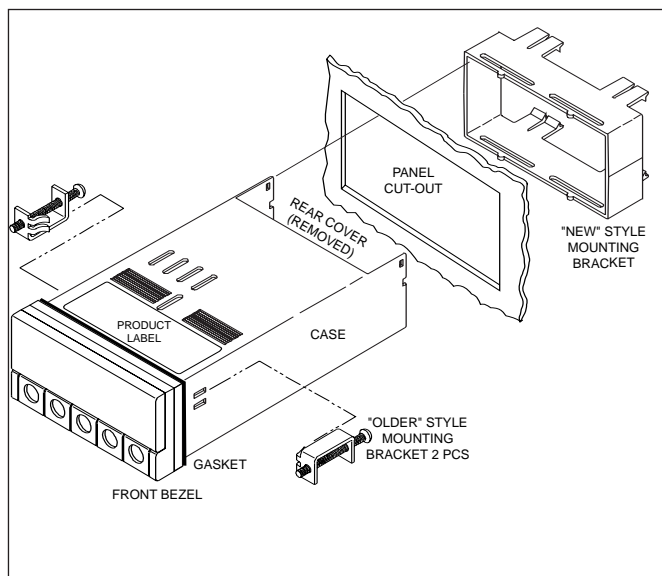
# Select Your Color!

Program to display in **RED**,  
**AMBER**, or **GREEN**.

## Totally Programmable Color Displays

The OMEGA® DP25B Series meters and controllers have totally programmable color displays. The display can be programmed for **RED**, **AMBER**, or **GREEN**.





## CUSTOM CONFIGURATIONS

Custom firmware and hardware available in quantity



Custom color bezels and enclosures are available for Original Equipment Manufacturers.

Enhance the appearance of your equipment design with custom colors.

**Consult the  
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GROUP**



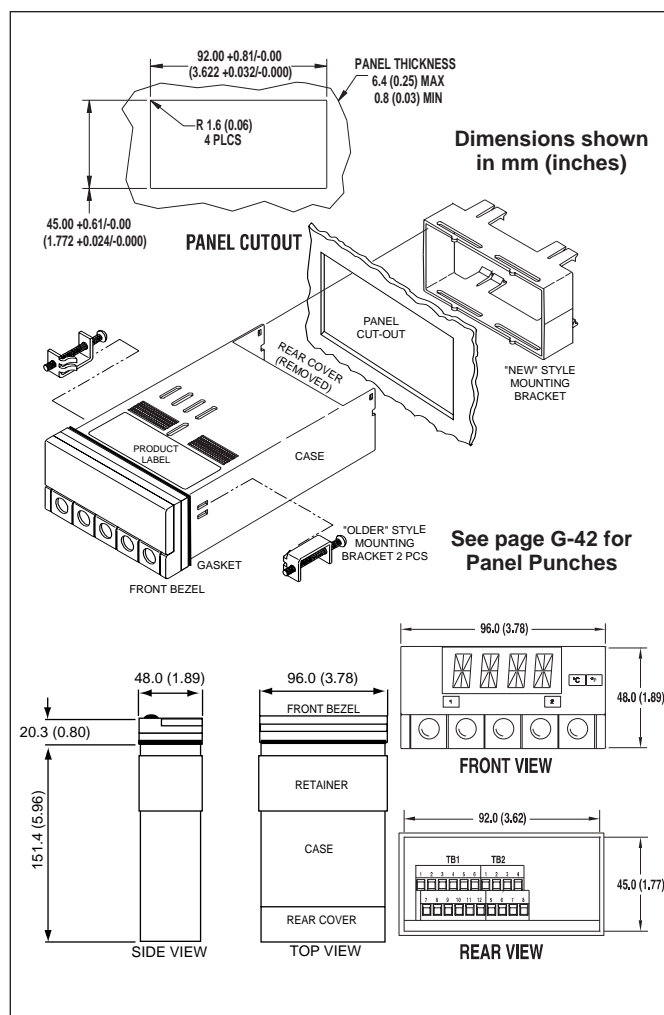
The following LVD (Low Voltage Directive/Safety) requirements have been met to comply with EN 61010-1, 1993 (Electrical equipment for measurement, control and laboratory use)

1. Pollution Degree 2      2. Installation Category II      3. Double Insulation  
DP25/DP26/PHCN-37/ORCN-37/OPCN-37 complies with the following EMC Immunity Standards as tested per EN 50082-2, 1995 (Industrial environment)

Phenomena	Test Specification	Basic Standard
Electrostatic Discharge	+/- 4 kV contact discharge +/- 8 kV air discharge	IEC 1000-4-2 Perf. Criteria B
Radio Frequency electromagnetic field	27 - 1000 MHz 10 V/m 80% AM (1 KHz)	IEC 1000-4-3 Perf. Criteria A
Fast Transients	+/- 2 kV (ac mains) +/- 1 kV (dc, signal I/O) 5/50 ns Tr/Th, 5 KHz repet. Freq.	IEC 1000-4-4 Perf. Criteria B
Radio Frequency conducted	0.15 - 80 MHz 10 V/m 80% AM (1 KHz)	IEC 1000-4-6 Perf. Criteria A
Surges	+/- 2 kV line to earth +/- 1 kV line to line 1.2/50 (8/20) s Tr/Th	IEC 1000-4-5 Perf. Criteria B
Voltage Dips	30% reduction 10 ms 60% reduction 100 ms	IEC 1000-4-11 Perf. Criteria B
Voltage Interruption	>95% reduction 5000 ms Perf. Criteria C	IEC 1000-4-11

DP25/DP26/PHCN-37/ORCN-37/OPCN-37 comply with the following EMC Emission Standards as tested per EN 50081-1, 1997 (Residential, Commercial and Light Industrial)

Phenomena	Frequency Range	Limits	Basic Standard
Radiated Emission	30 - 230 MHz 230 - 1000 MHz	30 dB_V/m at 10 m 37 dB_V/m at 10 m quasi peak	CISPR 22 Class B
Conducted Emission	0.15-0.5 MHz 0.5-5 MHz 5-30 MHz	66-56 dB_V q.peak 56 dB_V quasi peak 60 dB_V quasi peak	CISPR 22 Class B



## To Order (Specify Model No.)

Basic Model	Description	Price
DP25B-TC	Thermocouple	\$245
DP25B-RTD	RTD	245
DP25B-E	Process (dc voltage and current)	245
DP25B-S	Strain input	245

## Power Options\*

Order Suffix	Add'l Price	Power
-230	N/C	230 Vac
-DC10/32	\$95	10 to 32 Vdc
-DC26/56	120	26 to 56 Vdc

## Output Options\*

Order Suffix	Add'l Price	Power
-A	\$80	Analog output
-AI	90	Isolated analog output
-R	70	Dual 5 A relays

\*Not field installable. For -AI option, the -R option is required. All units come complete with a operator's manual.

**Ordering Example: DP25B-TC-DC10/32-AI, thermocouple indicator for J, K, T or J DIN input, low voltage power, analog output and dual 5 A relays, \$245 + 95 + 80 + 70 = \$490**



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