

# 1/8 DIN Strain, Process, and Temperature Meters

## With Optional Relays and Analog Output

Panel Punches Available, Visit [omega.com/panelpunches](http://omega.com/panelpunches)

**MONOGRAM<sup>®</sup> SERIES**

### DP25B Series



#### Inputs

- Thermocouple
- RTD
- Process (DC Voltage and Current)
- Strain Gage

#### Options

- Relay Output with Adjustable Deadband
- Isolated or Non-Isolated Analog Output
- Patented Programmable Color Display
- Low-Voltage Power Options
- NEMA 4 Front Bezel

#### Panel Meters

The OMEGA DP25B Series features the biggest, brightest display of any 1/8 DIN panel meter. The user can select the display color: **RED**, **AMBER**, or **GREEN**.

Unparalleled accuracy in signal conditioning is available in this economical series of panel meters/controllers. The series has a 4-digit, 9-segment display plus optional dual 5 A, SPDT relays (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.

#### 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/second

**Step Response:** 2 seconds

**Relay Outputs (Optional):** 2 From "C" on/off relays. Configurable for latched and unlatched by software.

Max Current: 5 AMPS, **Resistive Load\***

Max Voltage: 250 V AC or 28 V DC

**\*Important Note:** For inductive loads not to exceed maximum voltage/current relay specifications, a proper TVS protection diode needs to be used externally across Wiper and NC/NO contacts of relays.

**Analog Output (Optional):** 0 to 10V, 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 W max (DP25B-TC or -RTD), 11 W max (DP25B-E or -S); 240 Vrms overvoltage protection



DP25B, shown actual size.

**BEZEL DESIGN IS A REGISTERED TRADEMARK**

#### Thermocouple and RTD Models

The DP25B Series for thermocouple and RTD inputs is a versatile panel meter and limit alarm-in-one that is easily programmable. The DP25B-TC is selectable for J, K, T, or J DIN thermocouples. The DP25B-RTD accepts 100  $\Omega$  Pt (0.00385 curve) RTDs.

#### 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 2500V transient per 3 mm spacing based on EN 61010 for 260 Vrms or Vdc

**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 H x 92 mm W (1.772 x 3.622")

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

#### Specifications (Thermocouple Meter)

**Input:** Thermocouple 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 $\Omega$

### 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 4 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-TC-GN, programmed for optional green display (no additional charge), shown actual size.

### 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)

### Specifications (RTD Temperature Meter)

**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 to 100 mV, ±50 mV, 0 to 10 V±5 V, 0 to 20 mA, 4 to 20 mA	0.02% R <sub>dg</sub>

### Specifications (Process and Strain Meters)

**Input Ranges:** 0 to 100 mV, ±50 mV, 0 to 10V, ±5V, 0 to 20 mA, 4 to 20 mA  
**Protection:** 240 Vrms max for voltage input ranges; 200 mA for current ranges  
**Input Impedance:** 100 MΩ for 100 mV or ±50 mV range; 1 MΩ for 10V or ±5V 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 Temperature Coefficient:** ±50 ppm/°C  
**Warm-Up to Rated Accuracy:** 30 min  
**Excitation Voltage:** 24V @ 25 mA or 12V @ 50 mA; 10V @ 120 mA or 5V @ 60 mA



Select Your  
Color!

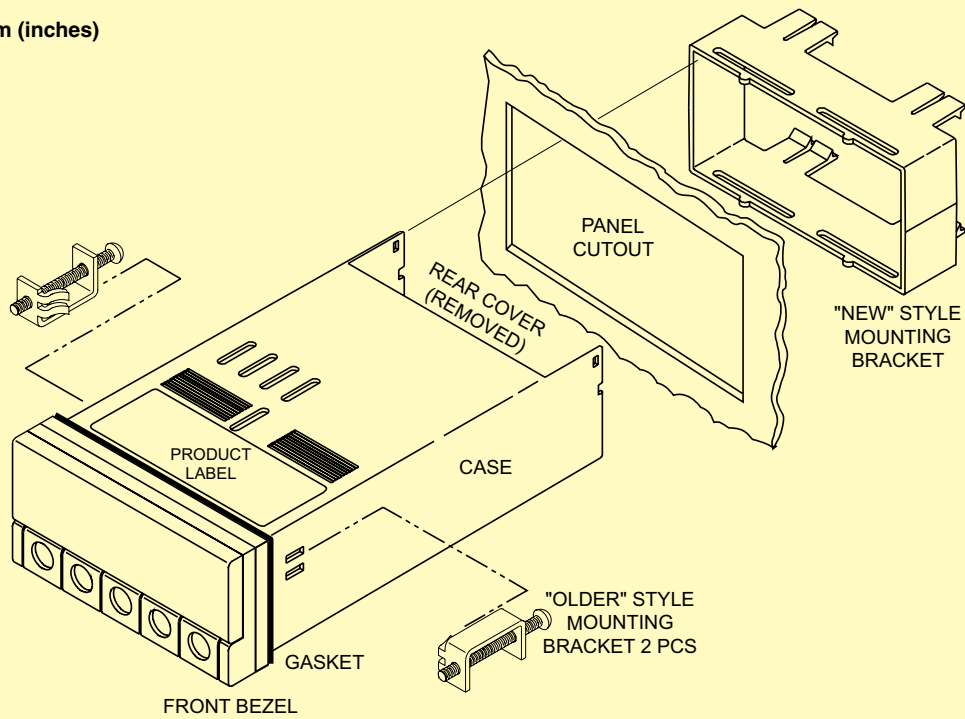
Program to display in RED,  
AMBER, or GREEN.

### Totally Programmable Color Displays

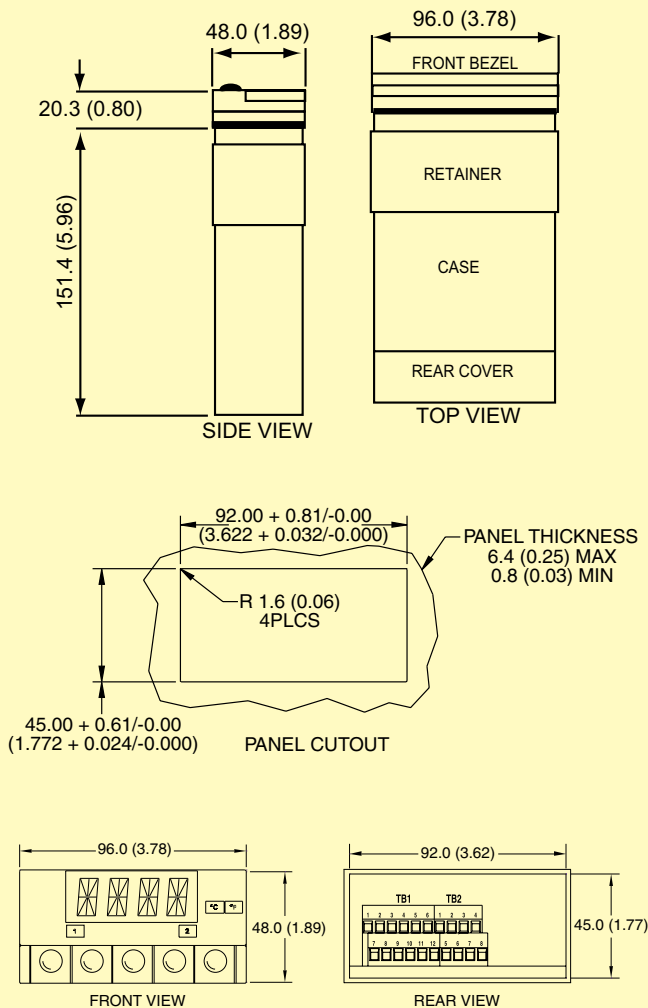
The OMEGA® DP25B Series meters and controllers have totally programmable color displays—for RED, AMBER, or GREEN.



Dimensions: mm (inches)



Dimensions: mm (inches)



**To Order** Visit [omega.com/dp25b\\_tc](http://omega.com/dp25b_tc) for Pricing and Details

MODEL NO.	DESCRIPTION
DP25B-TC	Thermocouple
DP25B-RTD	RTD
DP25B-E	Process (DC voltage and current)
DP25B-S	Strain input

**POWER OPTIONS\***

ORDER SUFFIX	POWER
-230	230 Vac
-DC10/32	10 to 32 Vdc
-DC26/56	26 to 56 Vdc

**OUTPUT OPTIONS\***

ORDER SUFFIX	POWER
-A	Analog output
-AI-R	Isolated analog output
-R	Dual 5 A relays
-AR	Analog and relay options

**ACCESSORY**

MODEL NO.	DESCRIPTION
DPP-5	1/8 DIN panel punch

\* Not field installable. For "-AI" option, the "-R" option is required. Comes complete with operator's manual.

**Ordering Examples:** DP25B-TC-DC10/32-AR, thermocouple indicator for J, K, T or J DIN input, low-voltage power, analog output and dual 5 A relays.

DP25B-E, process meter.