

# 1/8 DIN STRAIN, PROCESS, AND TEMPERATURE METERS WITH OPTIONAL RELAYS AND ANALOG OUTPUT

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## DP25B Series

Starts at  
**\$245**



### 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

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

Along with the 4-digit, 9-segment display, these low-cost panel meters/controllers provide unparalleled accuracy in signal conditioning. Additional features include microprocessor-based operation; dual 5 A SPDT relays (optional); and isolated or non-isolated analog output in ranges of 0 to 10 Vdc, 0 to 20 mA, or 4 to 20 mA, which can be used for retransmission of the display value or as a proportional control output. The DP25 Series includes models with inputs for process (DC voltage and current), strain gages, thermocouples, and RTDs.

### Thermocouple and RTD Models

These models combine versatility with ease of programming. The DP25B-TC is selectable for J, K, T, or J DIN thermocouples. The DP25B-RTD accepts Pt 100 Ω (0.00385 curve) RTDs.

### SPECIFICATIONS

**Display:** 4-digit, 9-segment, 21 mm (0.83") high red, amber or green LED (programmable)

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

**Internal Resolution:** 15-bit

**Polarity:** Automatic

**Read Rate:** 3/s

**Step Response:** 2 s

**Relay Outputs (Optional):** 2 form "C" (SPDT) relays rated 5 A 250 Vac, programmable for active high/low alarms with latching/non-latching relays



DP25B, \$245, shown close to actual size.

**MONOGRAM SERIES**

**PATENTED**

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

### 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	

**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 ±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

**Isolation:** Dielectric strength to 2500 V transient per 3 mm spacing based on EN61010 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)

### THERMOCOUPLE METER SPECIFICATIONS

**Input:** T/C types J, K, T and J DIN

**Relay Hysteresis:**

Programmable from 0 to 9999

**Accuracy:** ±0.5°C (0.9°F) after 30 min warm-up

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

**Input Resistance:** 100 MΩ

# STRAIN, PROCESS, AND TEMPERATURE METERS

## Process and Strain Models

Because they accept a wide range of DC voltage and current inputs, the DP25B-E strain meters can handle most process and strain applications. Features include easy front-panel scaling to virtually any engineering units, a remote tare function for weighing applications, and a hardware lockout to prevent unauthorized changes in setup. In addition, the DP25B-E meters feature built-in excitation in 4 user-selectable voltages, which makes them compatible with most transducers and transmitters.



DP25B-TC, \$245, programmed for optional green display, 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/Controller)

**Input:** RTD 100 Ω Pt (0.00385 curves); 2-, 3- and 4-wire selectable

**Accuracy:** ±0.5°C (0.9°F) after 30 min warm-up

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

**Input Resistance:** 100 MΩ

## PROCESS AND STRAIN METERS

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

INPUT TYPE	RANGE	ACCURACY
mV, V, mA	0 to 100 mV, ±50 mV, 0 to 10V ±5V, 0 to 20 mA, 4 to 20 mA	0.02% rdg

## SPECIFICATIONS

### (Process and Strain Meters/Controllers)

**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!

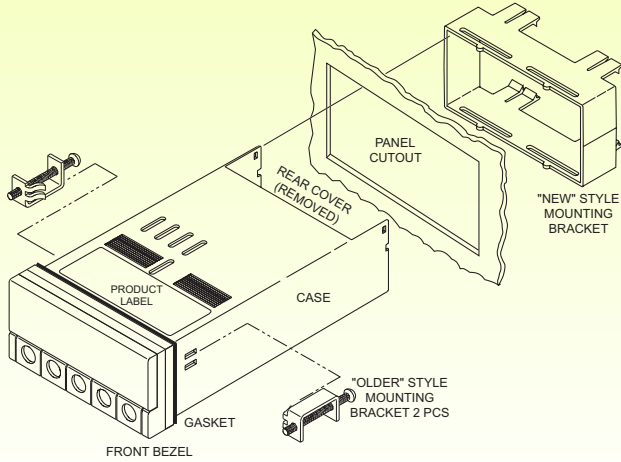
Program to Display in **RED**, **AMBER**, or **GREEN**.

### Totally Programmable Color Displays

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



Dimensions: mm (in)



Visit [omega.com/panelpunches](http://omega.com/panelpunches).

## CUSTOM CONFIGURATIONS

Custom firmware and hardware available in quantity.

### CUSTOM COLORS

Custom-color bezels and enclosures are available for original equipment manufacturers.

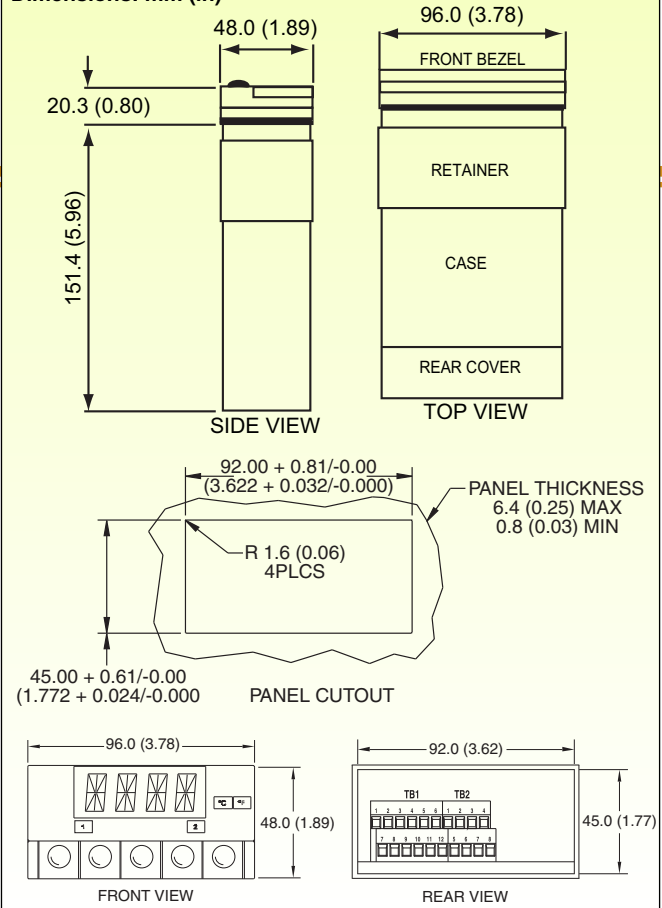
Enhance the appearance of your equipment design with custom colors.

Consult the **OMEGA<sup>®</sup> OEM GROUP**

1-800-82-66342<sup>MC</sup>  
1-800-TC-OMEGA



Dimensions: mm (in)



**MOST POPULAR MODELS HIGHLIGHTED!**

### To Order (Specify Model Number)

MODEL NO.	PRICE	DESCRIPTION
DP25B-TC	\$245	Thermocouple
DP25B-RTD	245	RTD
DP25B-E	245	Process (DC voltage and current)
DP25B-S	245	Strain input

### POWER OPTIONS\*

ORDER SUFFIX	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	PRICE	POWER
-A	\$80	Analog output
-AI-R	160	Isolated analog output
-R	70	Dual 5 A relays
-AR	150	Analog and relay options

### ACCESSORY

MODEL NO.	PRICE	DESCRIPTION
DPP-5	\$525	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, \$245 + 95 + 150 = \$490.

DP25B-E, process meter, \$245.

Recommended Reference Book: Microcontroller Based Temperature Monitoring and Control, **EE-2683, \$42**  
See Section Y For Additional Books



**CE** 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 repit. 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) $\mu$ 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 complies 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 $\mu$ V/m at 10 m 37 dB $\mu$ 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 $\mu$ V q.peak 56 dB $\mu$ V quasi peak 60 db $\mu$ V quasi peak	CISPR 22 Class B



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