

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

DP25B Series



Panel punches available, visit omega.com/panelpunches



DP25B, shown close to actual size.

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

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° | 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: Thermocouple Types J, K, T and J DIN

Relay Hysteresis:

Programmable from 0 to 9999

Accuracy: ±0.5°C (0.9°F) after 30 minutes 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, 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



Select Your Color!

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

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)

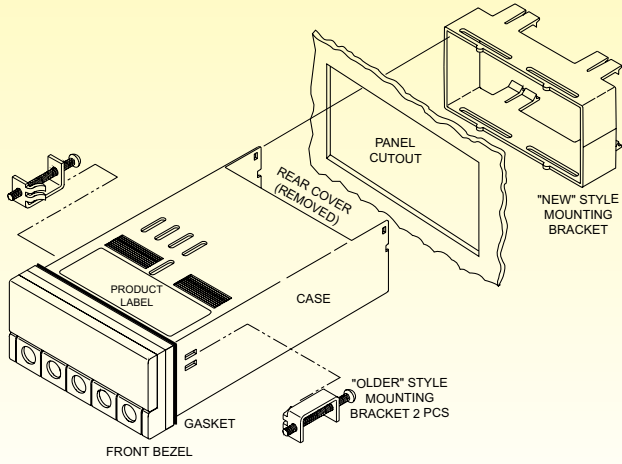
Input Ranges: 0 to 100 mV, ±50 mV, 0 to 10V, ±5V, 0 to 20 mA, 4 to 20 mA
Protection: 240 Vrms max for voltage input ranges; 200 mA for current ranges
Input Impedance: 100 MΩ for 100 mV or ±50 mV range; 1 MΩ for 10V or ±5V range; 5 Ω for 20 mA current input
Analog-to-Digital Technique: Dual slope
Internal 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

Totally Programmable Color Displays

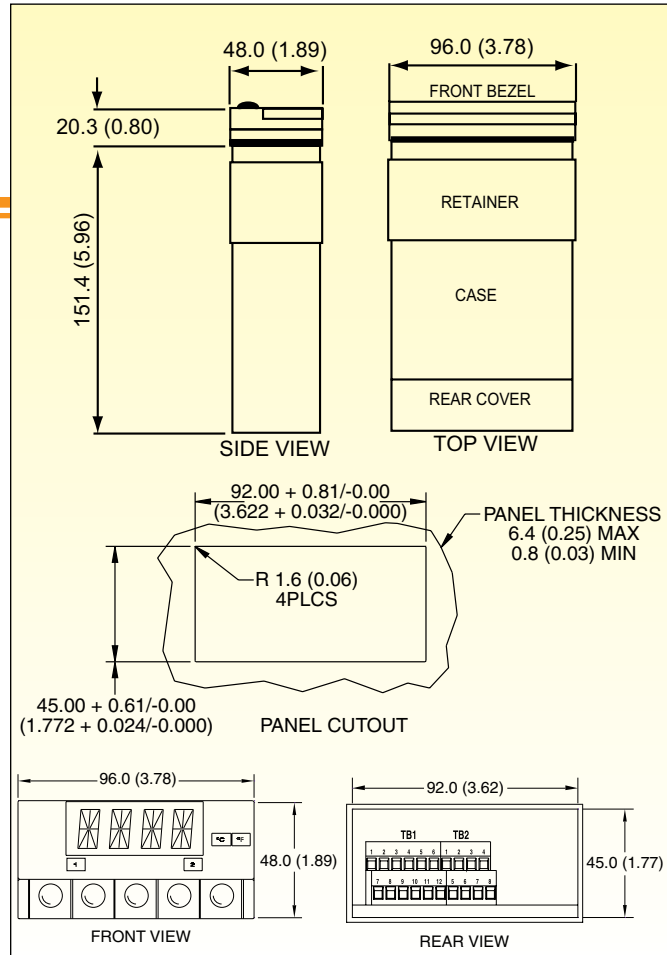
The OMEGA® DP25B Series meters and controllers have totally programmable color displays—for **RED**, **AMBER**, or **GREEN**.



Dimensions: mm (inch)



Visit omega.com/panelpunches.



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 **OMEGA® OEM GROUP** at 1-856-467-4200



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 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

| 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.