

Temperature & Process Meters with Optional Relays and Analog Output

For More Information
omega.com/specs/dp25



DP25 Series



\$245
 Basic Unit

Inputs

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

Options

- ✓ Relay Output with Adjustable Deadband
- ✓ Isolated or Non-Isolated Analog Output
- ✓ Red or Green Display
- ✓ Low Voltage Power Options

Panel Meters/Controllers

The unparalleled accuracy of the OMEGA® DP25 signal conditioner is available in an economical series of panel meters/controllers. The OMEGA® DP25 series of meter/controllers feature a four-digit, 14-segment display plus optional dual 6 amp SPDT relays (Single Pole Double Throw; Form C) and a choice of isolated or non-isolated analog output. The scalable 0-10 Vdc, 0-20 mA, or 4-20 mA analog output can be used for retransmission of the display value or as a proportional control output, as required.

The microprocessor-based DP25 series includes instruments for process (dc voltage and current) strain gage, thermocouple, RTD, dual/differential thermocouple, dual/differential RTD, pH, orp, ac voltage and current.

Common Specifications

- Display:** 4-digit, 14-segment, 13.8 mm (0.54") Red or Green LED
- Analog-to-Digital Technique:** Dual slope
- Internal Resolution:** 15-bit
- Polarity:** Automatic
- Read Rate:** 3/sec
- Step Response:** 2 seconds
- Power:** 115 Vac, 230 Vac, 10-32 Vdc, 26-56 Vdc; 6 Watts
- Operating Temperature:** 0 to 60°C (32 to 140°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") x 7.0 for DP25
- Panel Cutout:** 45 x 92 mm (1.772 x 3.622")
- Weight:** 36 g (1.27 lb)



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Thermocouple and RTD Models

The DP25 Series for thermocouple and RTD inputs is a versatile panel meter, controller, and limit alarm in one easily programmable instrument. The DP25 is selectable for J, K, T, or J DIN thermocouples. The DP25 accepts 100 Ω PT (0.00385 curve) RTD's.

DP25-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	

Thermocouple Meter/Controller Specifications

- Input:** Thermocouples types, J, K, T, and J DIN
- Outputs:** 2 Form C (SPDT) relays, rated 6 Amp 250 Vac; programmable for active high/low alarms with latching/non-latching relays.
- Relay Hysteresis:** Programmable from 0 to 9999
- Accuracy:** ±0.50°C (0.9°F) after 30 min. warm-up
- Temperature Coefficient:** ±50 PPM/°C
- Read Rate:** 3/sec
- Step Response:** 2 seconds
- Power:** 115 Vac, 230 Vac, 10-32 Vdc, 26-56 Vdc; 6 Watts; 240 V RMS overvoltage protection
- Isolation:** 1500 V peak per Hv test; 354 V peak per IEC spacing
- NMR:** 60 dB
- CMR:** 120 dB
- Input Resistance:** 100 MΩ
- Operating Temperature:** 0 to 60°C (32 to 140°F)
- Storage Temperature:** -40 to 85°C (-40 to 185°F)
- Analog Output:** Scalable



DP25-T-GN: Optional Green Display (No Charge)

DP25-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

Outputs: 2 Form C (SPDT) relays, rated 6 Amp 250 Vac; programmable for active high/low alarms with latching/non-latching relays.

Relay Hysteresis:

Programmable from 0 to 9999.

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

Temperature Coefficient: ±50 PPM/°C

Read Rate: 3/sec

Step Response: 2 seconds

Power: 115 Vac, 230 Vac, 10-32 Vdc, 26-56 Vdc; 6 Watts; 240 V RMS overvoltage protection

Isolation: 1500 V peak per Hv test; 354 V peak per IEC spacing

NMR: 60 dB

CMR: 120 dB

Input Resistance: 100 MΩ

Operating Temperature: 0 to 60°C (32 to 140°F)

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

Analog Output: Scalable 0-10 Vdc or 4-20 mA; optional

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")

DP25-TH (Thermistor)

Input Type	Range	Accuracy
400/700 Series 2252 Ω 3 k, 5 k, 10 k, 30 kΩ	-80 to 150°C (-112 to 302°F)	0.2°C (0.4°F)
400 Series 30 k	-40 to 150°C (-40 to 302°F)	
700 Series 2252 Ω	-30 to 100°C (-22 to 212°F)	

Thermistor Temperature Meter/Controller Specifications

The DP25-TH accepts most popular Thermistors including series 400 and 700 sensors. Standard features include accuracy of +0.1°C (.2°F), resolution of 0.1 or 1.0°, °F or °C indication. Factory default setup is 2252 Ω @ 25°C input type, in °F.

Process and Strain Models

The DP25-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.

DP25-E (Process) / DP25-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% R _{dg}

Process & Strain Meters / Controllers Specifications

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

Isolation: 354 V peak per IEC spacing

NMR: 60 dB

CMR: 120 dB

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

Display: 4-digit, 14-segment, 13.8 mm (0.54") height

Analog-to-digital technique: Dual slope

Internal resolution: 15-bit

Read rate: 3/sec

Polarity: Automatic

Max error strain/process: ±0.03% rdg

Span tempco: ±50 ppm/°C

Step response: 1-2 sec

Warmup to rated accuracy: 30 min

Analog output (optional):

0-10 V, 4-20 mA or 0-20 mA; can be assigned to a display range or proportional control output with setpoint #1 when used as a control output

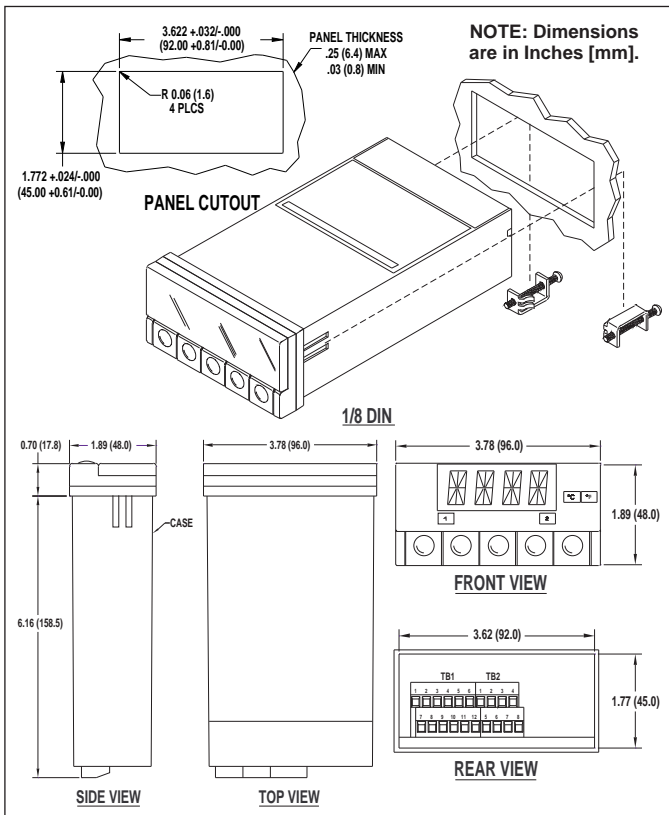
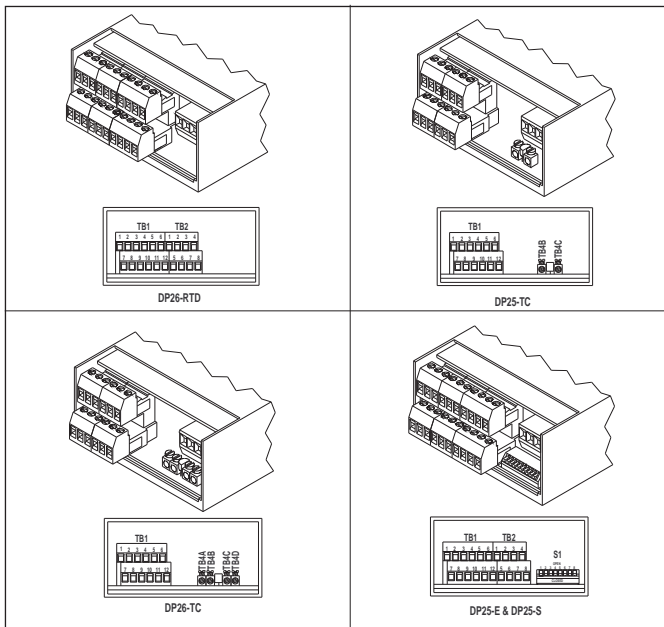
Excitation voltage: 24 V @ 25 mA or 12 V @ 50 mA; 10 V @ 120 mA or 5 V @ 60 mA

The DP25 displays feature 14-segment LED characters, which greatly improves alphanumeric representations. The 7-segment LED characters found on most instruments are adequate for presenting numbers, but not letters. Words are easier to read with the 14-segment LED characters on the DP25, which makes operating and programming simpler and easier

14 segment display

7 segment display

14-segment LED



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® OEM GROUP**



DP26 Series Dual/Differential Thermocouple and RTD

The DP26-TC and DP26-RTD are dual input meter/controllers. The display and control outputs can be linked to T1, T2 or T1-T2. Refer to DP26 Specifications

To Order (Specify Model No.)

Basic Model	Description	Price
DP25-TC	Thermocouple	\$245
DP25-RTD	RTD	245
DP25-TH	Thermistor	245
DP26-TC	Dual/differential thermocouple	345
DP26-RTD	Dual/differential RTD	345
DP25-E	Process (dc voltage and current)	245
DP25-S	Strain input	245
PHCN-37	pH with dual 6 A relays	395
ORCN-37	ORP with Dual 6 A relays	395
OPCN-37	pH or ORP with Dual 6 A relays	495

Display and Output Options*

Order Suffix	Add'l Price	Power
-GN	N/C	Green display
-A	\$80	Analog output
-AI	90	Isolated analog output
-R	70	Dual 6 A relays

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

*Not field installable

All units come complete with an operator's manual.

Ordering Example: **DP25-TC-GN-DC10/32-AR**, thermocouple indicator for J, K, T or J DIN input, green display, low voltage power, analog output and dual 6 A relays, \$245 + 0 + 95 + 80 + 70 = **\$490**

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



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1-800-TC-OMEGA
Stamford, CT.

CANADA

www.omega.ca
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GERMANY

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• pH and Conductivity

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• Heaters

Band Heaters, Cartridge Heaters, Circulation Heaters, Comfort Heaters, Controllers, Meters and Switching Devices, Flexible Heaters, General Test and Measurement Instruments, Heater Hook-up Wire, Heating Cable Systems, Immersion Heaters, Process Air and Duct, Heaters, Radiant Heaters, Strip Heaters, Tubular Heaters