

# 5-DIGIT PRECISION STRAIN GAGE INDICATORS WITH EXCITATION SUPPLY

## DP80 Series



See Section F for load cells and  
Section B for pressure transducers

Shown smaller than actual size

DP80  
From  
**\$729**



- ✓ High Accuracy 0.01% Full Scale
- ✓ Precise Digital Scaling Through Front Panel Key Pad
- ✓ Dual Engineering Units Measuring with 3 Character Alphanumeric Labels

- ✓ Plug-in Options Include Alarms, Math, Analog Outputs, RS-232C/20mA, and DC Power
- ✓ Up to 1 $\mu$ V/Count Sensitivity
- ✓ Lock-out Switch Prevents Unauthorized Program Tampering
- ✓ Power Cord Included

The OMEGA DP80 Series digital strain gage indicators demonstrate impressive performance for wide compatibility with lower output, bonded foil type transducers, as well as higher output semiconductor type transducers (up to 1000mV). One of four input ranges are selectable within each instrument to optimize the sensitivity. The front panel membrane keypad facilitates accurate digital scaling, eliminating any dip switches, pot adjustments or reference standards. This also allows for drift free scaling to precise engineering units and decimal location. Three alphanumeric LEDs are included for engineering unit labels (e.g. psi, KG, LBS) or can be assigned as "0" for active display of dead zeros.

# ACCURATELY MEASURE PRESSURE, STRAIN, FORCE, LOAD, THRUST AND TORQUE

An additional feature of the DP80 is the inclusion of a primary and secondary engineering units display, both of which easily be selected at the front panel. The secondary display can be any mathematical equivalent to the primary display. When activated, this feature converts all programming to the secondary units regardless of the units displayed. For example, if alarm points are set up in pounds (lb) in the primary display, the instrument will convert the alarm point to equivalent kilograms (kg) if the secondary display is active. System calibration can be accomplished using 3-point "live" load (actual weight on scale) or by entering the appropriate transducer sensitivity (mV/V). The meter can also convert to a voltmeter at the front keypad to facilitate setup. Auto zero (tare) can be activated at any time via the auto zero menu prompt, or via the key pad. To reduce settling indications on display or outputs, the display can be rounded by 1, 2, 5, 10, or 100 counts via programming menu selection.

A variety of options is available to expand the capabilities of the instrument. These options include Alarms, Math, Analog outputs, RS-232C/20 mA and dc power.

## SPECIFICATIONS

### Excitation Supplies:

**DP87:** 5, 10, and 15 Volts, switch selectable, isolated. Will drive two parallel 350  $\Omega$  strain gages @ 15 Volts (90 mA)

**DP88:** 5, 10, 15, and 20 Volts, switch selectable, isolated. Will drive eight parallel 350  $\Omega$  strain gages at 15 Volts (350 mA)

**Accuracy:** 0.01% of full scale range,  $\pm 1$  digit

**Repeatability:**  $\pm 1$  digit

**Zero Offset:** Entire input range

**Zero Stability:** 0.5  $\mu\text{V}/^\circ\text{C}$   
no measurable drift with time

**Span Stability:** 0.005% of reading/ $^\circ\text{C}$ ;  
0.1% of reading per year

**Normal Mode Noise Rejection:**  
> 60 dB @ 50/60 Hz

### Common Mode Noise Rejection:

> 120 dB @ 50/60 Hz Input Impedance:  
> 10 M $\Omega$  to 500 M $\Omega$  depending on range

**Display:** 8-digit, 14-segment alphanumeric LED's, 14 mm (0.54") high, and one negative (-) LED at left of LED array

**Display Count Rate:**  $\pm 100,000$  active

**Reading Rate:** 2 readings per second

**Overload Protection:** 270 Vdc or ac RMS across inputs and input to ground. Power lead to ground 1500 Vdc or ac RMS

**Ambient Operating Conditions:** 0 to 50 $^\circ\text{C}$  (32 to 122 $^\circ\text{F}$ ); 0 to 90% RH non-condensing

**Storage Temperature:** -40 to 65 $^\circ\text{C}$   
(-40 to 149 $^\circ\text{F}$ )

**Input Connections:** ac power quick connect; dc power and sensors screw terminals; RS-232C DB25 Connector

**Case Construction:** metal, black anodized, extruded aluminum

**Power:** 90 to 132 Vac; 48 to 400 Hz

**Weight:** DP87 1.8 kg (4 lb), DP88/DP89 2.7 kg (6 lb) (without options)

**Dimensions, DP87:** 67 H x 136 W x 250 mm D (2.6 x 5.3 x 9.75")

**Cutout:** 68 H x 138 mm W (2.7 x 5.4")

**Dimensions, DP88/DP89:** 67 H x 272 W x 250 mm D (2.6 x 10.6 x 9.75")

**Cutout:** 68 H x 274 mm W (2.7 x 10.7")

## MOST POPULAR MODELS HIGHLIGHTED

| To Order (Specify Model Number)   |       |                                  |                            |                           |
|-----------------------------------|-------|----------------------------------|----------------------------|---------------------------|
| MODEL NO.                         | PRICE | SELECTABLE INPUT RANGE           | FULL SCALE DISPLAY         |                           |
|                                   |       |                                  | MIN. GAIN                  | MAX. GAIN                 |
| DP87*<br>Single Width             | \$729 | -15 to 100 mV<br>-30 to 200 mV   | 0.01 cts/mV<br>0.05 cts/mV | 1000 cts/mV<br>500 cts/mV |
| DP88*<br>Double Width Panel Mount | 899   | -75 to 500 mV<br>-150 to 1000 mV | 0.02 cts/mV<br>0.01 cts/mV | 200 cts/mV<br>100 cts/mV  |
| DP89<br>Double Width Benchtop     | 899   |                                  |                            |                           |

\*Model DP87 can accommodate one additional option. Model DP88 and DP89 can accommodate up to four additional options.



See OMEGA's Temperature Handbook for Temperature and Process V/I versions of this product

## OPTIONS — FIELD INSTALLABLE

| To Order (Specify Model Number) |       |  |
|---------------------------------|-------|--|
| MODEL NO.                       | PRICE | DESCRIPTION  |
| DP80-ALM                        | \$169 | Alarms, dual limits (up to 2 per unit) selectable hysteresis and alarm delay |
| DP80-AOV                        | 189   | Analog output, 0 to 10 Vdc isolated, linearized and scalable (n/a DP80-AOC)  |
| DP80-AOC                        | 189   | Analog output, 4 to 20 mA isolated linearized and scalable (n/a DP80-AOV)    |
| DP80-MTH                        | 99    | Math, min, max average, rate of change                                       |
| DP80-SER*                       | 189   | RS-232C/20 mA serial output  |
| DP80-488                        | 299   | IEEE 488 Communication   |

\*Selectable baud rate from 300 to 9600. Includes DB-25 mating male connector. OMEGACARE<sup>SM</sup> extended warranty program is available for models shown on this page. Ask your sales representative for full details when placing an order.

**Ordering Example:** DP89, double width benchtop strain gage indicator, + DP80-ALM, alarm capability, + DP80-SER, RS-232C communications output, \$899 + 169 + 189 = \$1257  
OCW-1 OMEGACARE<sup>SM</sup> extends standard 1-year warranty to a total of 2 years (\$125), \$1257 + 125 = \$1382

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