

# Milliamp Calibrator

CL28MA



- ✓ NIST Traceable
- ✓ Simulates and Measures 0 to 21 mA
- ✓  $\pm 0.05\%$  of Range
- ✓ Ramp/Step Function
- ✓ Simulates 2-Wire Transmitters
- ✓ Reads mA or Percent

Combination milliamp simulator and meter has numerous pre-programmed operating modes making this a versatile and time-saving instrument. It has user-programmable setups backed up with non-volatile memory for repeated special tests. Both the simulation and measurement modes operate with external loop power supplies or with an internal 24 V power source. The CL28MA can be programmed with either mA or percent-of-scale data. When operating, the unit can toggle between mA or percent modes with the touch of one button. Instead of fuses, the CL28MA is protected with PTC resistors. These devices automatically reset when a fault condition is corrected. Protection is provided between any combination of terminations in the input and output connectors.

Shown smaller than actual size, scaling the Model DP24-E Process Indicator.



## Specifications

**Simulator Output and Measure Input Connectors:** Female SMP

**Simulator Output and Measure Input Current:** 0.00 to 21.00 mA

**Accuracy (64°F to 82°F ambient, 1 year):**  $\pm 0.05\%$  of range

**Temp. Coefficient:** 64 to 82°F; included in accuracy specifications; from 14 to 64°F and 82 to 122°F;  $\pm 0.0015\%$  of range per °F

### SIMULATOR SELECTIONS

**Range:** 0.00 to 21.00 mA/0.0% to 105.0%; 4.00 to 21.00 mA/0.0% to 106.3%

**Loop Power Source:** External: (56 Vdc max); Internal: (24 Vdc nom.)

**Fixed Outputs:** Keypad entered and memory recalled value/power source (5 locations)

### Pre-Set Ramp/Step Outputs

**4:1 Linear Steps:** 4, 8, 12, 16, 20 mA (4 to 20 mA); 0, 5, 10, 15, 20 mA (0 to 20 mA)

**4.2 Square Root Steps:** 4, 5, 8, 12, 20 mA (4 to 20 mA); 0, 12.5, 5, 11.25, 20 mA (0 to 20 mA)

**User-Programmed Ramp/Step Outputs (5 memory locations):** Step size, start point, high limit, low limit, dwell time

**Ramp Stepping:** Manual and automatic

### MEASURE SELECTIONS

**Range:**

0.00 to 21.00 mA/0.0% to 105.0%; 4.00 to 21.00 mA/0.0% to 106.3%

**Loop Power Source:** External (56 Vdc); internal (24 Vdc nom.)

**Store/Recall Measurements:** 5 memory locations

### Run/Hold

**Simulator Drive Capability:** 900  $\Omega$  max

**Measure Input Resistance:** 10  $\Omega$  shunt in series with 1 $\Omega$  (nom.) PTC resistor for overload protection

**Power:** 9V alkaline battery (supplied), lithium, or NiCd (rechargeable) battery

### Battery Life, Continuous:

**Alkaline:** External loop: 30 hrs typical; internal loop: (12 mA) 7 hrs typical; (20 mA) 4 hrs typical

**Lithium:** Approximately twice life of alkaline battery

**NiCd:** Approximately 1/4 life of alkaline battery

**Error Messages:** LO (under range current), HI (over range current), -POL (input current reversed), and OL (output loop overload)

### Operating Temperature Range:

-10 to 50°C (14 to 122°F), <90% RH; reduce RH by 1.7%/°F from 95 to 122°F

### Storage Temperature Range:

-22 to 60°C (-30 to 140°F), <95% RH up to 95°F, reduce RH limit by 1.7%/°F from 95 to 140°F

### Dimensions:

17.8 H x 7.4 W x 2.8 cm D (7.0 x 2.9 x 1.1")

**Weight:** 284 g (10 oz)



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. OMEGACARE<sup>SM</sup> covers parts, labor and equivalent loaners.

## To Order

Model No.	Description
CL28MA	0 to 21 mA simulator/meter

Supplied with calibration cable, 9V battery, carrying case, NIST certificate, protective rubber boot and complete operator's manual.

**Ordering Example:** CL28MA simulator, meter. OCW-1 OMEGACARE<sup>SM</sup> extends standard 3-year warranty to a total of 4 years.