

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.

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 Ω max

Measure Input Resistance: 10 Ω shunt in series with 1 Ω (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 $\frac{1}{4}$ 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)



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.