



Process Multimeter

Loop Power, 4 to 20 mA Digital Multimeter Output Function

CA450

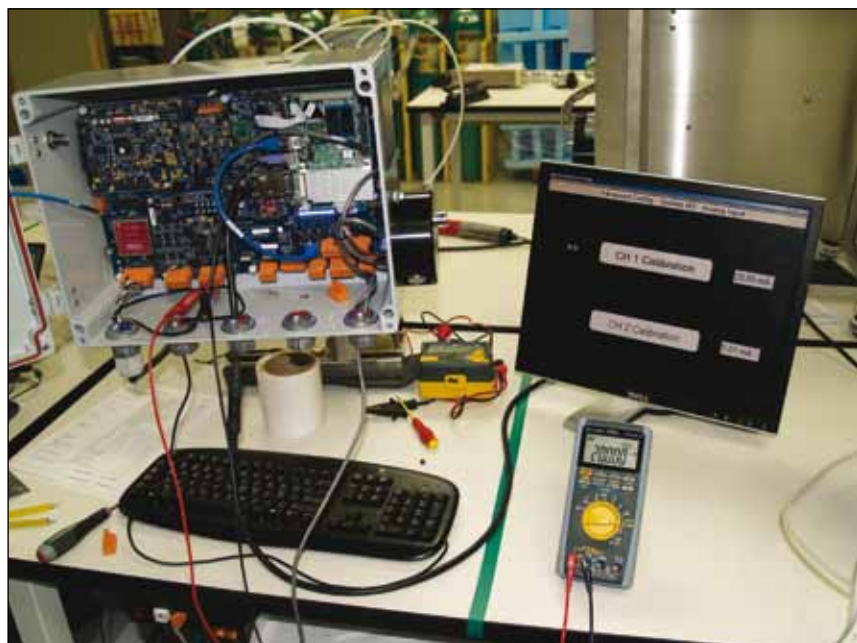


- ✓ 4 to 20 mA Step, 0 to 100% Toggle, Auto Step, Sweep Output
- ✓ Transmitter Simulate by SINK Function
- ✓ HART® Mode Setting with Loop Power (Adds 250Ω Resistor)
- ✓ 24V Loop Power Supply and mA Measurement Available Simultaneously
- ✓ High Accuracy Measurement of DC mA 0.05%, 30.000 mA
- ✓ DCS Power Supply Crest Value Measurement by Peak Hold Function
- ✓ Direct Reading (ACA/DCA) of Various Signals by Sensor Mode
- ✓ Data Transmission by PC Communication with IR-USB*



CA450 shown smaller than actual size.

The OMEGA® CA450 Process Multimeter is a portable test instrument to combine a digital RMS multimeter and a loop calibrator to give process technicians the same functionality in one tool. The model CA450 provides 24V loop power, reducing the need for carrying a separate power supply when performing transmitter testing. And with its built-in, selectable 250Ω HART resistor, it also eliminates the need for a separate resistor. Process technicians can now do the same job while carrying less equipment.



CA450 shown calibrating a tunable diode laser during a final inspection test.

* For details visit omega.com/ir-usb



OMEGACARESM extended warranty program is available for models shown on this page. Ask your sales representative for full details when placing an order. OMEGACARESM covers parts, labor and equivalent loaners.

Input	Range	Accuracy
DCV	0.1 to 600.0 mV	0.09% +2
	0.001 to 6.000V	0.09% +1
	0.01 to 60.00V	0.09% +1
	0.1 to 600.0V	0.09% +1
	0 to 1000V	0.1% +1
DCA	0.001 to 30.000 mA	0.05% +2
	0.01 to 100.00 mA	0.05% +2
	Clamp 0.1 to 180A	1.2% +0.4 mV
ACV	—	50/60 Hz
	0.1 to 600.0 mV	0.5% +5
	0.001 to 6.000V	0.5% +5
	0.01 to 60.00V	0.5% +5
	0.1 to 600.0V	0.5% +5
	0 to 1000V	0.5% +5
	50/60 Hz	0.5% +5
	500 Hz	1.0% +5
	1 kHz	1.5% +5
ACA with Clamp Probe		
ACA	Clamp 1 0.1 to 130.0A	0.5% +DCV accuracy
	Clamp 2 0.1 to 500.0A	1.0% +DCV accuracy
	Clamp 3 0.1 to 3000A	1.2% +0.4 mV @ 50/60 Hz
	Clamp 1	0.5% +DCV accuracy
	Clamp 2	1.0% +DCV accuracy
	Clamp 3	1.2% +0.4 mV @ 50/60 Hz
Resistance	0.1 to 600.0Ω	0.2% +2
	0.001 to 6.000 kΩ	0.2% +1
	0.01 to 60.00 kΩ	0.2% +1
	0.1 to 600.0 kΩ	0.2% +1
	0.001 to 6.000 MΩ	0.35% +3
	0.01 to 60.00 MΩ	1% +2
Frequency	0.01 to 199.99 Hz	0.005% +1
	0.1 to 1999.9 Hz	0.005% +1
	0.001 to 19.999 KHz	0.005% +1
Diode Test	0.001 to 2V	1% +2
Peak Hold DCV	±100 digit	>6 ms
DC mA SOURCE	0.001 to 25.000 mA	0.05% of range
20 mA SINK	0.001 to 25.000 mA	0.05% of range
24V LOOP POWER	24V	20 mA @ 24V



Specifications

Measurement Functions: DC voltage, AC voltage, DC current, resistance, frequency, continuity check, diode test; data hold (D•H), auto hold (A•H), peak hold (P•H), auto range (Auto), range hold (range hold), maximum, minimum, and average value recording and measurement, zero adjustment (q), relative measured value display (REL, REL %), 24V loop power supply, internal resistor on/off for HART communication

Output Functions: 20 am DC current for current output SOURCE and current output SIMULATE (SINK); current span switching and current sweep output

Measurement Operation Method: Modulation

Output: Multiplicative DA

Display: 5-digit LCD (7 segment)

Numeric Display, DC Current:

Measurement: 33000

Output: 25000

Frequency: 19999

Other: 6600

Sub Display: Displays supplemental information for various functions

Polarity Indicator: Automatic display; only the minus sign “-” appears

Over Range Indicator: “OL”

Low-Battery Indicator: Appears when the battery voltage is below the operating voltage

Measurement Cycle:

2.5 to 5 times a second (however, frequency measurement takes place once a second)

Operating Temperature and Humidity:

Humidity: -20 to 55°C (-4 to 131°F) (80% RH or less) with no condensation; within the range of 40 to 55°C (104 to 131°F), the humidity must be 70% RH or less

Storage Temperature and Humidity:

-40 to 70°C (-40 to 158°F) (70% RH or less) with no condensation

Temperature Coefficient (Typical):

In the ranges of -20 to 18°C (-4 to 64.4°F) and 28 to 55°C (82.4 to 131°F), add the accuracy of $23^{\circ}\text{C} \pm 5^{\circ}\text{C} \times 0.1/^{\circ}\text{C}$

Power Supply: 4 “AA” alkaline batteries (1.5 V LR6) included

Battery Life: When using alkaline batteries

DC Voltage Measurement:

Approximately 140 hours

DC Current Output (SIMULATE):

Approximately 140 hours

DC Current Output (SOURCE)

12 mA (500 q load): Approximately 10 hours

Insulation Resistance: 100 MΩ or greater at 1000 Vdc

Withstand Voltage: 6.88 kVac for five seconds (between the input terminals and the case)

External Dimensions: Approximately 90 W x 192 H x 49 mm D (3.5 x 7.5 x 1.9")

Weight: Approximately 600 g (1.3 lb) (including the batteries)

Safety Compliant Standards: EN61010-1 and EN61010-031

Measurement Categories: 1000V CATIII, 600V CATIV

For Current Measurement and Output: 48 V maximum, 100 mA maximum CAT I

Lead Cables (98064): 70 Vdc, 100 mA CAT I; pollution degree 2, indoor use

Vibration: Sweep vibration frequencies 10 to 5 Hz to 10 Hz; amplitude 0.15 mm (peak value); duration 30 minutes

Shock: 1 m (3.3') drop test as defined by safety standards

Altitude: 2000 m (6562') or less

EMC Standards: EN61326-1 Class B, EN61326-2-2; EN55011 Class B Group 1; influence of radiated immunity: In RF electromagnetic fields of 3 V/m

EN61326-1:
AC Voltage Measurement, 600 mV Range: 1.5% of range
DC Voltage Measurement, 600 mV Range: 1% of range
DC Current Measurement, All Ranges: 1.5% of range
DC current Output: 1.5% of range

EN61326-2-2:

AC/DC Voltage Measurement, 6V Range or Higher:

Within 5 times the accuracy

To Order Visit omega.com/ca450 for Pricing and Details

Model No.	Description
CA450	Process Multimeter with loop power and 4 to 20 mA output function

Accessories

Model No.	Description
HHM450-93029	For carrying the CA450, the test leads, and the lead cables
HHM450-93043	Large carrying case with hanger strap
HHM450-99032	Magnet hook (maximum weight 1.5 kg)
HHM450-99014	1000V CAT III, 600 V CAT IV red black 1 set

Comes complete with 4 “AA” alkaline batteries, test leads, lead cables, fuses (inside the CA450), blank cover and operator’s manual.

Ordering Example: CA450, process multimeter with loop power and 4 to 20 mA output function.

OCW-2, OMEGACARESM extends standard warranty to an additional two years.