Portable Multifunction Calibrator

CL427

1 YEAR WARRANTY

- Sources Milliamps, Millivolts, Volts, Sine Wave, Square Wave, Triangular Wave, and 11 Thermocouple Types
- 13-Point Calibration Certificate
- Measures Current (mA), Voltage (mV, V) and Temperature (°C or °F)
- Short Circuit Protection
- Audio Frequency Synthesizer
- Auto-Step and Auto-Ramp Functions
- Simulation of PLC
- Rechargeable Lithium Battery (Included)
- Data Logging Software and Data Storage for Field Calibrations
- Function Generation for Vibration Testing

Applications

- **Calibration of:**
  - **Panel Meters or Instruments for 11 Types of Thermocouples (Temperature)**
  - **4 to 20 mA Transmitters and Panel Meters**
  - **Valve Opening by Changing Duty Cycle of a PWM Signal**
  - **Chart Recorder with Different Waveforms (Sine, Square, or Triangular Wave)**
- **Generation of Selected Test Frequency and Waveform for Electronic Device**

A highly accurate and powerful system for testing, measuring and calibrating built into a single compact portable instrument. The OMEGA® CL427 indicator-simulator is a multifunction instrument designed to meet, in a modern and practical way, the needs of instrumentation engineers, both in laboratory and field work. Accurate, compact, rugged and easy to use, it is the ideal solution for measuring and simulating: millivolts, volts, milliamperes, frequency, sine, square and triangular waveforms, and thermocouples.

The CL427 has been developed using the most advanced microprocessor technology to provide high accuracy on extended ranges and a powerful operating flexibility.

A unique internal automatic RJ compensation system allows the CL427 to provide accurate input and output readings in operating conditions with a temperature range of 0 to 50°C (32 to 122°F). Further, external compensation is available that allows users to fine tune temperature output and measurement.

CL427 shown smaller than actual size.

Free Thermocouple Included!

This model includes a free 1 m (40") Type K insulated beaded wire thermocouple with subminiature connector and wire spool caddy (1 per channel). Order a Spare!
Model No. SC-GG-K-30-36

The model CL427 has been designed for use in industrial environments such as factory floors, process plants, service departments and maintenance workshops. Millivolts, Volts, milliamps, and frequency can be measured or generated. Both accuracy performance and stability allow you to calibrate field and control room instrumentation. Square wave pulses can be generated with frequencies from 0.3 Hz to 20 kHz. Pulse height is adjustable between 100 mV and 20 Volts. With this powerful function, the user can even test electro mechanical devices such as counters and relays.

Simulating non-linearized temperature transmitters (Tx) allows the user to check and calibrate 4 to 20 mA system input hardware and software quickly and easily. User can set or manipulate temperatures in °C or °F related to any available sensor and send the appropriate milliamps to the system input. Milliamps can be monitored simultaneously on calibrator display.

Electrical Specifications
(23 ±5°C, 10 minutes after turning on the power)

mA (Source) (Vopen > 15V); mA (Measure)		
Range	**Resolution**	**Accuracy of Reading**
-4 to -0.005 mA	1 uA	±0.03% ±5 dgts
0.005 to 4 mA	1 uA	±0.03% ±5 dgts
4 to 20 mA	1 uA	±0.03% ±3 dgts
20 to 24 mA	1 uA	±0.03% ±5 dgts

V (Source) (Maximum Load 1 mA, Short Circuit Protection < 100 mA); V (Measure)		
Range	**Resolution**	**Accuracy of Reading**
-3V to -0.005V	0.001V	±0.03% ±5 dgts
0.005 to 10V	0.001V	±0.03% ±5 dgts
10 to 15V [10 to 24V for V (measure)]	0.001V	±0.03% ±5 dgts

Frequency (Source, 10 Vpp, 0V Offset, Square Wave, Duty Cycle = 50%)		
Range (Hz)	**Input Resolution**	**Accuracy**
0.3 to 99.999	0.1 Hz	0.002Hz
10.00 to 999.99	0.1 Hz	0.02Hz
1000.0 to 9999.9	0.1 Hz	0.2Hz
10000 to 20000	1 Hz	2Hz

Voltage Peak to Peak for Sine Wave (Vpp, 0.3 to 20 KHz, 50% Duty Cycle, Sine Wave, 0V Offset)		
Range (V)	**Resolution**	**Accuracy of Reading**
0.1 to 20V	0.001V	5% ±0.3V

Voltage Peak to Peak for Non-Sine Wave (Vpp, 0.3 to 20 KHz, 0V Offset)		
Range (V)	**Resolution**	**Accuracy of Reading**
0.1 to 20V	0.001V	6% ±0.4V

Voltage Peak to Peak (Vpp, 0.3 to 20 KHz, 50% Duty Cycle, Square Wave, 0V Offset)		
Range (V)	**Resolution**	**Accuracy of Reading**
1 to 20V	0.001V	6% ±0.4V

Voltage of Offset (Maximum Vpp < 20V)		
Range (V)	**Resolution**	**Accuracy of Reading**
-5 to 5V	0.001V	5% ±0.5V ±5% x Vpp

Duty Cycle (%, Square Wave, 10 Vpp, 0.3 to 20 KHz)			
Range	**Resolution**	**Rise Time of Vpp**	**Fall Time of Vpp**
0 to 100%	1%	10µS max, 5µS max typical	15µS, 7.5µS typical

Temperature, Thermocouples (source and measure, 0.1°C & 0.1°F resolution, internal cold junction compensation, thermocouple accuracy not included, 3 minutes after plugging in thermocouples).

Thermocouple Type	°C		°F	
	Range	Accuracy	Range	Accuracy
K	-200 to -150 -150 to 0 0 to 1000 1000 to 1370	2.0 1.2 0.8 1.2	-382 to -238 -238 to 32 32 to 1832 1832 to 2498	3.6 2.1 1.4 2.1
J	-200 to -150 -150 to 0 0 to 1050	2.0 1.0 0.7	-382 to -238 -238 to 32 32 to 1922	3.6 1.8 1.2
E	-200 to -150 -150 to 0 0 to 850	1.5 0.9 0.7	-382 to -238 -238 to 32 32 to 1562	2.7 1.6 1.2
T	-200 to -150 -150 to 0 0 to 400	1.5 1.2 0.8	-382 to -238 -238 to 32 32 to 752	2.7 2.1 1.4
R/S	0 to 500 500 to 1760	1.8 1.5	32 to 932 932 to 3200	3.2 2.7
N	-200 to 0 0 to 1300	1.5 0.9	-328 to 32 32 to 2372	2.7 1.6
L	-200 to 0 0 to 900	0.9 0.7	-328 to 32 32 to 1652	1.6 1.2
U	-200 to 0 0 to 600	1.1 0.7	-328 to 32 32 to 1112	1.9 1.2
B	600 to 800 800 to 1000 1000 to 1820	2.2 1.8 1.4	1112 to 1472 1472 to 1832 1832 to 3308	3.9 3.2 2.5
C	0 to 1800 1800 to 2310	1.0 1.5	32 to 3272 3272 to 4190	1.8 2.7
mV	-10 to 70 mV	0.05 mV	-10 to 70 mV	0.05 mV

Specifications

AC Adaptor: AC 110V, 60 Hz input; or AC 220V, 50/60 Hz input; DC 15V/0.5 A output
Operation Environment: 0 to 50°C (32 to 122°F), 85% RH
Storage Environment: -20 to 60°C (-4 to 140°F), 75% RH
Dimensions: 214 L x 98.7 W x 56 mm H (8.4 x 3.9 x 2.2")
Weight: 650 g (22.9 oz) (batteries included)

OMEGA CARE℠ Extended Warranty Program

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

To Order *Visit omega.com/cl427 for Pricing and Details*	
Model No.	**Description**
CL427	Multifunction calibrator

Comes complete with operator's manual, carrying case, AC adaptor, certificate of calibration, USB cable, software CD, Type K thermocouple, alligator clips, test leads, and rechargeable lithium battery (11.1 V/1600 mAh).
***Ordering Example: CL427,** multifunction calibrator.*