

# MULTIFUNCTION CALIBRATOR

## PORTABLE, HIGH ACCURACY

### PCL1200 Series

**\$1895**



PCL1200, \$1895,  
shown smaller  
than actual size.

- ✓ Measures and Sources T/C (13 Types), RTDs (13 Types), Ohms, Current, Voltage, Frequency
- ✓ Sources Pulse Trains
- ✓ Isolated mA/V Readback Circuit for Complete Transmitter Calibration
- ✓ Pressure Module Communication Port Compatible with OMEGA Pressure Modules
- ✓ Built-In 24 V Supply Can Drive 4 to 20 mA Loops Up to 1000  $\Omega$
- ✓ Direct Entry of Custom RTD Coefficients (R0, A, B, C)
- ✓ All Source Modes Can be Programmed with Dedicated Setpoints to Speed Calibration and Linearity Tests
- ✓ Highest Accuracy in Class—to 0.015% of Reading
- ✓ Meets CE Requirements and is Designed to IEC 1010 Safety Standards
- ✓ Supplied with Full Rubber Boot



Three sets  
of leads  
included!

The PCL1200 multifunction calibrator has a feature set unmatched by other high-accuracy handheld calibrators in its price range. It is portable, provides the functions and accuracy of a laboratory-grade instrument, and has everything needed for virtually any calibration task. It can also measure and source thermocouples, RTDs, current, voltage, and frequency, and it can source pulse trains. It has a communications port for pressure modules and an isolated mA/V readback circuit.

entry, and 3 software-driven function buttons combine with a large, backlit, menu-driven graphics display to provide a highly intuitive yet powerful interface. A built-in 250  $\Omega$  resistor for Hart® compatibility, compatibility with smart transmitters and PLCs, full fuseless protection, and a serial communications port for control using ASCII commands are additional features that make the PCL1200 indispensable for calibration tasks. It comes with a tough rubber boot; an optional carrying case is available.

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**REARBACK DISPLAY**  
The top half of the display is dedicated to readback from the device under test, or a pressure module.

**MAIN DISPLAY**  
The lower half of the display is for all input and output combinations.

**FUNCTION KEYS**  
Three software-controlled function keys; functions displayed over each button at bottom of display.

**POWER ON/OFF**  
Turns power on/off. Auto shut-off button.

**HOME KEY**  
HOME key displays main operating screen.

**CLEAR ENTRY KEY**  
Allows clearing of entry.

**NUMERIC KEYPAD**  
Rapid numeric entry of data values.

**ENTER KEY**  
Accepts entries into memory and updates outputs.

**CURRENT (mA)**  
Input/output for current.

**PRESSURE MODULE COMMUNICATIONS PORT**  
Pressure modules connector; compatible with pressure modules (not shown). Pressure measurements from 1 inH<sub>2</sub>O to 10,000 psi, module dependent.

**ARROW KEYS**  
Arrow keys allow rapid movement of cursor and setting of output values.

**COMPUTER COMMUNICATION CONNECTION**  
Mini-jack (stereo) serial communications connection. Allows full remote control.

**VOLTAGE/Ω/Hz**  
Input/output for voltage/Ω/Hz.

**THERMOCOUPLE**  
Input/output for thermocouple.

**ISOLATED REARBACK JACKS**  
Volts, mA, and mA with loop power.

## Measuring Pressure with the PCL1200

With a PCL-PMA pressure module adaptor, the PCL1200 will work with all OMEGA PCL-PM pressure modules. See Specifications and "To Order" chart.

## SPECIFICATIONS (23 ±5°C Unless Otherwise Noted)

### Voltage Read and Source:

**Source:** 0 to 20 Vdc

**Read:**

**Isolated:** 0 to 30 Vdc

**Non-Isolated:** 0 to 20 Vdc

### Thermocouple mV:

**Read/Source:** -10 to 75 mV

### Current (mA):

**Source:** 0 to 24 mA

**Read:**

**Isolated:** 0 to 24 mA

**Non-Isolated:** 0 to 24 mA

### Frequency (1 to 20 V Selectable Amplitude):

**cpm Source/Read:** 2 to 600 cpm

**Hz Source/Read:** 1 to 1000 Hz

**kHz Source/Read:** 1 to 10 kHz

**Pulse (Source Only; 1 to 20 V Selectable Amplitude):** 1 to 30,000 pulses; 2 cpm to 10 kHz

### Ohms:

**Source:** 5 to 4000 Ω

**Read:** 0 to 4000 Ω

### Thermocouple Read and Source:

**Type J:** -200 to 1200°C (-328 to 2192°F)

**Type K:** -200 to 1370°C (-328 to 2498°F)

**Type T:** -200 to 400°C (-328 to 752°F)

**Type E:** -200 to 950°C (-328 to 1742°F)

**Type R:** -20 to 1750°C (-4 to 3182°F)

**Type S:** -20 to 1750°C (-4 to 3182°F)

**Type B:** 600 to 1800°C (1112 to 3272°F)

**Type C:** 0 to 2316°C (32 to 4201°F)

**Type XK:** -200 to 800°C (-328 to 1472°F)

**Type BP:** 0 to 2500°C (32 to 4532°F)

**Type L:** -200 to 900°C (-328 to 1652°F)

**Type U:** -200 to 400°C (-328 to 752°F)

**Type N:** -200 to 1300°C (-328 to 2372°F)

### RTD Read and Source:

**Ni120 (672):** -80 to 260°C (-112 to 500°F)

**Pt100 (385):** -200 to 800°C (-328 to 1472°F)

**Pt100 (3926):** -200 to 630°C (-328 to 1166°F)

**Pt100 (3916):** -200 to 630°C (-328 to 1166°F)

**Pt200 (385):** -200 to 630°C (-328 to 1166°F)

**Pt500 (385):** -200 to 630°C (-328 to 1166°F)

**Pt1000 (385):** -200 to 630°C (-328 to 1166°F)

**Cu10:** -100 to 260°C (-148 to 500°F)

**YS1400:** 15 to 50°C (59 to 122°F)

**Cu50:** -180 to 200°C (-292 to 392°F)

**Cu100:** -180 to 200°C (-292 to 392°F)

**Pt385-10:** -200 to 800°C (-328 to 1472°F)

**Pt385-50:** -200 to 800°C

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(-328 to 1472°F)

## Environmental

**Operating Temperature:** -10 to 50°C (14 to 122°F)

**Storage Temperature:** -20 to 70°C (-4 to 158°F)

**Stability:** ±0.005% of reading/°C (±5°C outside of 23°C)

**Power Requirement:** 6 Vdc

**Batteries:** 4 "AA" alkaline (included) or optional rechargeable

## Mechanical

### Dimensions:

220.9 H x 106.6 W x 58.4 mm D (8.7 x 4.2 x 2.3")

**Weight:** 863 g (30.5 oz)

**Optional Accessory:** Carrying case (Model No. CC572)

## Accuracy

**Voltage:** ±0.015% of reading, ±2 mV

**Thermocouple:** mV ±0.02% of reading, ±10 µV

**Thermocouple Errors (In °C; Add 0.2 for Cold-Junction Compensation Error)**

### RTD Read/Source:

**Type J:** 0.2°C Ni120 (672) 0.2°C

**Type K:** 0.3°C Pt100 (385) 0.2°C

**Type T:** 0.2°C Pt100 (3926) 0.2°C

**Type E:** 0.2°C Pt100 (3916) 0.2°C

**Type R:** 1.2°C Pt200 (385) 0.8°C

**Type S:** 1.2°C Pt500 (385) 0.4°C

**Type B:** 1.2°C Pt1000 (385) 0.2°C

**Type C:** 0.6°C Cu10 1.4°C

**Type XK:** 0.2°C YSI400 0.1°C

**Type BP:** 0.9°C Cu50 0.4°C

**Type L:** 0.2°C Cu100 0.3°C

**Type U:** 0.25°C Pt385-10 1.4°C

**Type N:** 0.4°C Pt385-50 0.4°C

## Read Source:

**Current (mA):** ±0.015% of reading, ±2 µA

**cpm:** ±0.05% of reading, ±1 LSD

**Hz:** ±0.05% of reading, ±1 LSD

**kHz:** ±0.05% of reading, ±1 LSD

**±0.05% of reading**

**±0.125% of reading**

## Ohms (Works with All Pulsed Transmitters Down to 5 ms):

**400 Ω Range:** ±0.025% of reading, ±0.05 Ω

**±0.025% of reading, ±0.05 Ω**

**±0.05 Ω**

**4000 Ω Range:** ±0.025% of reading, ±0.5 Ω

**±0.025% of reading, ±0.5 Ω**

**MOST POPULAR MODELS HIGHLIGHTED!**

To Order (Specify Model Number)				
MODEL NO.	PRICE	DESCRIPTION		
PCL1200	\$1895	High-accuracy multifunction calibrator	EXTERNAL PRESSURE	
MODULES – MOST POPULAR RANGES*				
MODEL NO.	PRICE	PARAMETER RANGE	GAUGE psig	OVERPRESSURE
PCL-PMA	\$310	Pressure module adaptor (one required)		
PCL-PM030G	795	0 to 30 (0 to 2 bar)	±0.025%	300%
PCL-PM050G	795	0 to 50 (0 to 3.5 bar)	±0.03%	300%
PCL-PM100G	795	0 to 100 (0 to 7 bar)	±0.025%	300%
PCL-PM300G	795	0 to 300 (0 to 20 bar)	±0.025%	200%
PCL-PM1KG	795	0 to 1000 (0 to 70 bar)	±0.05%	200%
PCL-PM3KG	795	0 to 3000 (0 to 200 bar)	±0.1%	200%
PCL-PM5KG	795	0 to 5000 (0 to 340 bar)	±0.1%	200%
PCL-PM015VAC	795	0 to -15 (0 to -1 mbar)	±0.025%, ±0.0025 psi	300%
PCL-PM015A	795	0 to 15 (0 to 1 bar) absolute	±0.025%, ±0.0025 psi	300%
PCL-PM030A	795	0 to 30 (0 to 2 bar) absolute	±0.025%	300%
PCL-PM015C	795	-15 to 15 (-1 to 1 bar)	±0.025%, ±0.0025 psi	300%
PCL-PM030C	795	-15 to 30 (-1 to 2 bar)	±0.025%, ±0.0025 psi	300%
PCL-PM030D	795	0 to 30 (0 to 2 bar) differential	±0.025%	300%

\* See pressure module page A-43 for all ranges.

**Note:** Gauge, absolute and compound types are isolated and accept any media compatible with 316 SS. Vacuum and differential types are compatible with pressure media that are clean, dry, non-corrosive air or gas.

Comes with test leads, protective rubber boot, 4 "AA" alkaline batteries, NIST certificate and complete operator's manual.

**Ordering Example:** PCL1200, high-accuracy multifunction calibrator, \$1895. To add pressure, order one PCL-PMA (required) plus the modules you need. Example: PCL-PMA, pressure module adaptor, PCL-PM030G, 0 to 30 psig pressure module, \$310 + 795 = \$1105.

## ACCESSORIES

MODEL NO.	PRICE	DESCRIPTION
PCL-PMA	\$310	Pressure module adaptor (one required for pressure)
PCL-ACA	45	120 Vac adaptor
ME-1805	131	Reference Book: Instrumentation Fundamentals for Process Control



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