



4-20 mA Loop Calibrator

PIECAL 334



• **Easy to use**

With the PIECAL 334 you can check, calibrate and measure all your current signal instruments in a 4 to 20 milliamp DC loop. It can be used at any access point in your loop. Source & Read 0.00 to 24.00 mA, Simulate a 2 Wire Transmitter or use the PIECAL 334 to simultaneously power your 2 Wire Transmitter and measure its output.

• **Easy to read**

Always on backlight & easily see the display in dark areas of the plant.

• **Source milliamps**

Calibrate recorders, digital indicators, stroke valves or any instruments that get their input from a 4 to 20 mA loop. Easily set any value quickly to within 0.01 mA with the adjustable digital potentiometer "DIAL" or use preset **4.00 mA (0.0%)** and **20.00 mA (100.0%)** EZ-CHECK™ settings.

• **Calibrate using loop power**

Check loop wiring and receivers by using the PIECAL 334 in place of a 2 Wire transmitter. Uses any loop power from 2 to 100 V DC.

• **Read loop current**

Check controller outputs or measure the milliamp signal anywhere in the loop. The PIECAL 334 measures 0.00 to 52.00 mA (-25.0 to 300.0%) signals with greater accuracy than a typical multimeter.

• **Power & measure 2 wire transmitters**

The PIECAL 334 can simultaneously output 24V DC to power any and all devices in a process loop using the internal batteries and internal switching power supply, while measuring the output of a 2 Wire Transmitter and any other loop devices.

• **Read DC volts**

The PIECAL 334 can measure from -99.99 to +99.99 VDC with 0.01 Volt resolution. Use it to check loop power supplies, I/V converters, 1 to 5 Volt signals, and other voltages making it unnecessary to carry a multimeter.

• **Evolutionary design**

PIECAL Calibrators are designed and built by members of the same team that designed and built the calibrators manufactured by Fluke* under the Altek* label. The PIECAL 334 improves upon other brands by including a rubber boot, tilt stand, backlit display with larger digits, rugged switches and a battery compartment for fast battery changes.



Actual Size

* PIECAL Calibrators are not manufactured or distributed by Fluke Corp or Altek Industries Inc, manufacturers of Altek Calibrators.



PIECAL 334 Specifications

(Unless otherwise indicated all specifications are rated from a nominal 23°C, 70% RH for 1 year from calibration)

General	
Operating Temperature Range	-20 to 60 °C (-5 to 140 °F)
Storage Temperature Range	-30 to 60 °C (-22 to 140 °F)
Relative Humidity Range	10 % ≤RH ≤90 % (0 to 35 °C), Non-condensing
	10 % ≤RH ≤ 70 % (35 to 60 °C), Non-condensing
Size	5.63 x 3.00 x 1.60 in, 143 x 76 x 41mm (LxWxH)
Weight	12.1 ounces, 0.34 kg (including boot & batteries)
Batteries	Four "AA" Alkaline 1.5V (LR6)
Optional AC Adaptors	120 VAC 50/60 Hz [Part # 020-0100] 240 VAC 50/60 Hz [Part # 020-0101]
Optional NiMh Rechargeable battery kit	120 VAC for North America Only; charger, four NiMh batteries, AC & DC cords [Part # 020-0103]
Low Battery	Low battery indication with nominal 1 hour of operation left
Protection against misconnection	Over-voltage protection to 135 vrms (rated for 30 seconds) or 240 vrms (rated for 15 seconds)
Display	High contrast graphic liquid crystal display with 0.315" (8.0 mm) high digits.

Read mA	
Ranges and Resolution	0.00 to 52.00 mA or -25.0 to 300.0% of 4-20 mA
Accuracy	Below 24.010 mA
	Above 24.010 mA
Voltage burden	≤ 2V at 50 mA
Overload/Current limit protection	54 mA nominal
Battery life	≥ 125 Hours nominal

Source/Power & Measure Two Wire Transmitters	
Ranges and Resolution	0.00 to 24.00 mA or -25.0 to 125.0% of 4-20 mA
Accuracy	EZ-Checks at 4 & 20 mA ¹
	0.000 to 24.000 mA
Noise	≤ ± ½ Least Significant Digit
Temperature effect	≤ ± 0.005 %/°C of FS
Loop compliance voltage	≥ 24 DCV @ 20.00mA
Loop drive capability	1200 Ω at 20 mA for 15 hours nominal
Battery life	≥ 30 hrs at 12 mA nominal

¹These are internal calibrated cardinal reference points and accuracy is not defined or limited by display resolution

2-Wire Transmitter Simulation	
Accuracy	Same as Source/Power & Measure
Voltage burden	≤ 2V at 20 mA
Overload/Current limit protection	24 mA nominal
Loop voltage limits	2 to 100 VDC (fuse-less protected from reverse polarity connections)
Battery life	≥ 125 hours nominal

Voltage Read	
Range and Resolution	-99.99 to +99.99 VDC Full Span (FS)
Accuracy	≤ ± 0.05 % of FS
Temperature effect	≤ ± 100 ppm/°C of FS
Input resistance	≥ 2 MΩ
Battery life	≥ 125 hours nominal

Accessories

INCLUDED:

Rubber Boot, Four "AA" Alkaline batteries, Certificate of Calibration, Attached Test Leads with Alligator Clips

OPTIONAL:

Small Carrying Case with PIE Logo	Part No. 020-0205
AC ADAPTOR (200 to 240 VAC)	Part No. 020-0100
AC ADAPTOR (100 to 120 VAC)	Part No. 020-0101
Ni-MH 1 Hour Charger with 4 Ni-MH AA Batteries (100-120 V AC input for North America Only)	Part No. 020-0103

Additional Information

PIE Calibrators are manufactured in the USA. This product is calibrated on equipment traceable to NIST and includes a Certificate of Calibration. Test Data is available for an additional charge.

Practical Instrument Electronics recommends a calibration interval of one year. Contact your local representative for recalibration and repair services.

Warranty

Our equipment is warranted against defective material and workmanship (excluding batteries) for a period of three years from the date of shipment. Claims under warranty can be made by returning the equipment prepaid to our factory. The equipment will be repaired, replaced or adjusted at our option. The liability of Practical Instrument Electronics (PIE) is restricted to that given under our warranty. No responsibility is accepted for damage, loss or other expense incurred through sale or use of our equipment. Under no condition shall Practical Instrument Electronics, Inc. be liable for any special, incidental or consequential damage.



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