



# PIECAL 334 Plus

## Automated Milliamp Loop Calibrator

- **Easy to use**

With the PIECAL 334Plus 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 0.000 to 24.000 mA, Simulate a 2 Wire Transmitter or use the PIECAL 334Plus to simultaneously power your 2 Wire Transmitter and measure its output.

- **Easy to read**

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

- **Troubleshoot loop problems**

Quickly diagnose ground fault and current leakage with the patented loop diagnostic technology (US Patent# 7,248,058).

- **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 0.001 mA with the adjustable digital potentiometer "DIAL" or use preset **4.000 mA (0.00%)** and **20.000 mA (100.00%)** EZ-CHECK™ settings.

- **Automatic output stepping & ramping**

Press & hold the dial to automatically step from 4 to 20 in 2, 3 or 5 steps or choose a continuous ramp.

- **Calibrate using loop power**

Check loop wiring and receivers by using the PIECAL 334Plus 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 334Plus measures 0.000 to 52.000 mA (-25.00 to 300.00%) signals with greater accuracy than a typical multimeter.

- **Power & measure 2 wire transmitters**

The PIECAL 334Plus 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. Powers HART™ transmitters with built-in 250 ohm resistor simplifying hookups with HART communicators.

- **Read DC volts**

The PIECAL 334Plus 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 334Plus 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.

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



Actual Size



Practical Instrument Electronics

Tel: 585.872.9350 • Fax: 585.872.2638 • sales@piecal.com • www.piecal.com



# PIECAL 334Plus 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. LED backlighting for use in low lit areas.

Read mA	
Ranges and Resolution	0.000 to 52.000 mA or -25.00 to 300.00% of 4-20 mA
Accuracy	
Below 24.010 mA	≤ ± (0.05 % of 24.000mA) (+0.012 mA)
Above 24.010 mA	≤ ± (0.05 % of 52.000mA) (+0.026 mA)
Voltage burden	≤ 2V at 50 mA
Overload/Current limit protection	54 mA nominal
Battery life	≥ 125 Hours nominal ≥ 100 hrs with backlight on

## Accessories

### INCLUDED:

Rubber boot, 2 Pocket hands free carrying case, Four "AA" Alkaline batteries, Certificate of Calibration, Attached Test Leads with Alligator Clips

### OPTIONAL:

MAGNET STRAP	Part No. 020-0236
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) (100-120 V AC input for North America Only)	Part No. 020-0103

Source/Power & Measure Two Wire Transmitters	
Ranges and Resolution	0.000 to 24.000 mA or -25.00 to 125.00% of 4-20 mA
Accuracy	EZ-Checks at 4 & 20 mA <sup>1</sup> 0.000 to 24.000 mA
	≤ ± (0.025 % of Span at 4 mA & 20 mA) (±0.005mA) ≤ ± (0.05 % of 24 mA Span) (±0.012mA)
Noise	≤ ± ½ Least Significant Digit
Temperature effect	≤ ± 0.005 %/°C of FS
Loop compliance voltage	≥ 24 DCV @ 20.00mA
Loop drive capability - Leak Detection Off	1200 Ω at 20 mA for 15 hours nominal; 950 Ω with Hart Resistor enabled
Loop drive capability - Leak Detection On	1000 Ω at 20 mA for 15 hours nominal; 750 Ω with Hart Resistor enabled
Battery life	≥ 30 hrs at 12 mA nominal; ≥ 25 hrs with backlight on

<sup>1</sup>These 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; ≥ 100 hrs with backlight on

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; ≥ 100 hrs with backlight on

## 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.



Available From:

Practical Instrument Electronics

Tel: 585.872.9350 • Fax: 585.872.2638  
sales@piecal.com • www.piecal.com

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