



# PIECAL 134

## Pocket-Mate mA Loop Calibrator

- **Easy to use**

With the PIECAL 134 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 134 to simultaneously power your 2 Wire Transmitter and measure its output.

- **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.

- **Monitor changes with bar graph**

The Quick Reference Bar Graph indicates the input and output level to the PIECAL 134 in % of 4-20 mA with 1.0% resolution. The Quick Reference Bar Graph flashes when signals outside the normal operating range is detected.

- **Power saving output**

Choose High Power 24V output to drive loops with up to 1200 Ohm loads or extend battery life by selecting Low Power 15V output which drives loops with up to 600 Ohm loads.

- **Calibrate using loop power**

Check loop wiring and receivers by using the PIECAL 134 in place of a 2 Wire transmitter. Uses any loop power from 2 to 42 V DC.

- **Read loop current**

Check controller outputs or measure the milliamp signal anywhere in the loop. The PIECAL 134 measures 0.00 to 24.00 mA (-25.0 to 125.0%) signals with greater accuracy than a typical multimeter.

- **Power & measure 2 wire transmitters**

The PIECAL 134 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.

- **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 134 improves upon other brands by including a larger display with larger digits and bar graph, rugged switches, belt clip 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

82 E. Main Street Suite 3.14 • Webster, NY 14580 Tel: 585.872.9350 • Fax: 585.872.2638 • sales@piecal.com • www.piecal.com

## PIECAL 134 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
Ranges and Resolution	0.00 to 24.00 mA or -25.0 to 125.0% of 4-20 mA
Accuracy	≤ ± (0.05 % of Reading +0.01 mA)
Noise	≤ ± ½ Least Significant Digit
Temperature effect	≤ ± 0.005 %/°C of FS
Size	4.75 x 2.6 x 1.50 in, 120 x 66 x 38 mm (LxVxH)
Weight	8 ounces, 0.23 kg (including batteries)
Batteries	Two "AA" Alkaline 1.5V (LR6)
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)
Display	High contrast graphic liquid crystal display with 0.45" (11.4 mm) high digits. Bar graph with 1% resolution of 4-20 mA signal scale.

Source/Power & Measure Two Wire Transmitters	
Loop compliance voltage	High Power ≥ 24 DCV @ 20.00mA Low Power ≥ 15 DCV @ 20.00mA
Loop drive capability & Battery Life	1200 Ω at 20 mA for 8 hours nominal; 950 Ω with Hart Resistor enabled
High Power	
Low Power	600 Ω at 20 mA for 11 hours nominal; 350 Ω with Hart Resistor enabled

2-Wire Transmitter Simulation	
Voltage burden	≤ 2V at 20 mA
Overload/Current limit protection	24 mA nominal
Loop voltage limits	2 to 42 VDC (fuse-less protected from reverse polarity connections)
Battery life	≥ 220 hours nominal

Read mA	
Voltage burden	≤ 1V at 20 mA
Overload/Current limit protection	25 mA nominal
Battery life	≥ 220 Hours nominal

### 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.

### Accessories

#### INCLUDED:

Two "AA" Alkaline batteries, Attached Test Leads, Certificate of Calibration

#### OPTIONAL:

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

### 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.



**Available From:**

## Practical Instrument Electronics

82 East Main Street Suite 3.14 • Webster, NY 14580 USA  
Tel: 585.872.9350 • Fax: 585.872.2638  
sales@piecal.com • www.piecal.com

Copyright © 2011 All rights reserved 134-9001 - Rev C 14 July 2011