

#### Model 334 Features

##### All milliamp (mA) loop functions

Source 0.00 to 24.00 mA (-25.0% to 125.0%)

Read 0.00 to 52.00 mA (-25% to 300.0%)

Simulate 2-Wire Transmitters 0.00 to 24.00 mA

Power and measure 2-Wire Transmitters 0.00 to 24.00 mA

##### Accuracy to better than 0.025% ( $\pm \frac{1}{2}$ LSD)

Within  $\pm 0.005$  mA from 4.00 and 20.00 mA EZ-Checks

##### Large high contrast graphic display

Viewable in all lighting conditions and angles

##### Read voltage function

Read 0.00 to  $\pm 99.99$  VDC

##### EZ-Dial knob

Easily adjust output by 0.01 mA (0.01%)

##### EZ-Check 3-position slide switch

Instantly output 4.00 OR 20.00 mA calibration values

Adjustable in all three positions for easy valve testing and actuation

Rugged, unbreakable with splash protection

##### Uses 4 standard "AA" alkaline batteries

Battery life up to 70 hours of normal usage

Easily accessible battery compartment

##### Overload protected

135 vrms Protection

Fuse-less Protection from accidental misconnection or misuse

##### Compact, lightweight and rugged

Small in size with heavy protective rubber boot

##### Rechargeable battery option available

1 hour rapid charger with four (4) NiMh Batteries. Kit includes an AC adaptor and a car adaptor for charging on the go.

**Guaranteed functional replacement for existing Altek Models 334 (discontinued) and 334A**



#### Description

The Practical Instrument Electronics (PIE) Model 334 is a state of the art, highly reliable, rugged and easy to use milliamp calibrator. It has the functions necessary to perform all the required maintenance and calibration tasks of virtually any 4-20mA loop. It provides source and read milliamp functions along with power and measure and two wire transmitter simulations. In addition it can measure DC Voltage for troubleshooting power supplies. If the PIE Model 334 looks familiar that's not a coincidence. It's because as previous employees for Altek we comprise key employees and the lead engineer that produced the original Altek Model 334 and Altek Model 334A as well as many other Altek products. We believe with this experience it has put us in a unique position to design a technologically superior but 100% functional replacement for the Altek Model 334 and Altek Model 334A. With an estimated 100,000 users of this continuously popular but aging calibrator, it is clear that loyal users as well as potential new users of this product could benefit from technology updates. As part of these updates, it is PIE's intention to maintain the time proven familiar controls and functionality while reintroducing the product with many of today's newest technologies. These improvements include better long term stability, accuracy, reliability and ruggedness including a significantly improved battery life. The combined improvements allow the PIE Model 334 to meet or exceed all of the expected performance and functions of the Altek Model 334 and Altek Model 334A. We guarantee this as a functional replacement with improvements. Even more important the PIE Model 334 will also exceed the performance of many higher cost calibrators and meet today's most demanding requirements while maintaining the familiar, time proven reliability and ease of use of the original. This is the new standard!

## Specifications

### General Specifications:

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

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	L=5.63 x W=3.00 x H=1.60 inches
Weight	12.1 ounces (including boot & batteries)
Batteries	Four "AA" Alkaline 1.5V (Duracell MN1500 or equivalent)  <b>Optional 120 VAC 50/60 Hz AC adaptor available</b>  <b>NiMh Rechargeable battery kit available</b>
Miscellaneous	Low battery indication with nominal 1 hour of operation left  Over-voltage protection to 135 vrms (rated for 30 seconds) or 240 vrms (rated for 15 seconds)  High contrast graphic liquid crystal display with 0.413" (10.5 mm) high digits

### Source/Power and Measure 2-Wire Transmitter Specifications:

Loop compliance voltage	≥ 24 DCV @ 20.00mA
Loop drive capability	1200 Ω at 20 mA for 15 hours nominal
Battery life	Source and Power measure mode ≥ 30 hrs at 12 mA nominal

### Read mA Specifications:

Ranges	0.00 to 52.00 mA Full Span OR -25.0 to 300.0% of 4-20 mA
Accuracy	
Below 24.01mA	≤ ± 0.05 % of 24.00mA (± 0.01mA)
Above 24.00mA	≤ ± 0.05 % of 52.00mA (± 0.02mA)
Voltage burden	≤ 2V at 50 mA
Overload/Current limit protection	54 mA nominal
Battery life	Typical ≥ 125 Hours nominal

### 2-Wire Transmitter Simulation Specifications:

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 Specifications:

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

### Specifications for source/power and measure two wire

#### transmitters/simulate two wire transmitters

Ranges and Resolution	0.00 to 24.00 mA Full Span OR -25.0 to 125.0% of 4-20 mA
Accuracy	
EZ Check(s) at 4 & 20mA <sup>(1)</sup>	≤ ± 0.025% at 4.00mA and 20.00mA (± 0.005mA)
0.0 to 24.00 mA	≤ ± 0.05% of 24.00mA (± 0.01mA)
Noise	≤ ± 0.005mA of Reading
Temperature effect	≤ ± 0.005 %/°C of FS

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

## Guarantee

The Practical Instrument Electronics Model 334 is guaranteed to be a functional replacement for the Altek Model 334 or Altek Model 334A as described in the product comparison. Claims under this guarantee can be made by returning the equipment prepaid to our factory. The equipment will be repaired, replaced, adjusted or money back at our option. The liability of Practical Instrument Electronics (PIE) is restricted to that given under our guarantee. 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.

## 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 warrantee 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 warrantee. 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.

## Your Local PIE Representative