

## Features

### 4 to 20 mA Loop Functions

Source and Read 0.000-24.000 mA

Simulate 2-Wire Transmitters 0.000-24.000mA

Power 2-Wire Transmitters and Read 0.000-24.000 mA

Display current in mA or -25.00-125.00 % of 4-20 mA

### Read Voltage Function

Read 0.00 to  $\pm 30.00$  VDC with 4X over range ability

### Full 5 Digit Display

True  $\pm 0.012\%$  of reading accuracy

Bar graph for quick reference of input and output levels

High contrast graphic display viewable in all lighting conditions and angles

### EZ-Dial Knob

Easily adjust output by 0.001 mA (0.01 %) or 0.100 mA (1.00 %)

### EZ-Check Switch with EZ-Step Button

3-position tactile switch with push button for true one-handed calibrations

Push button for stepping through calibration points

6 different step sizes

Hands-free auto step and auto ramp modes

### Uses a standard 9V Alkaline Battery

Superior battery life up to 40 hours under typical continuous usage

Easy access to battery compartment

### 240 VAC Tolerant

Fuse-less protection from accidental misuse

### Lightweight and rugged with a solid feel

Convenient Velcro® hand strap allows for a firm confident grip or attachment to pipes and ladders.

### HART® protocol compatibility mode

User selectable 250 $\Omega$  resistor in series with the output for compatibility with HART® protocol enabled devices.



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## Description

The Practical Instrument Electronics Model 530 is the result of 30+ years of experience manufacturing and designing calibrators for the process control industry. Almost all of the Fortune 500 manufacturers use calibrators designed by our engineers. The Model 530 calibrator incorporates all of this knowledge and experience and combines it into one superior product. It has simple, easy to use controls featuring a large high contrast display with easy visibility without the need for contrast adjustments. The Model 530 is designed to be a tool with all the practical functions required to get the job done easily without the confusing extras or reading through a complicated manual. The Model 530 can source and read current in the process loop and simulate, power and measure 2-wire transmitters. It can read voltage to 30.00 VDC with over 4X over range ability.



# Model 530 Datasheet

## 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	7.00 X 3.30 X 2.21 inches (177.8 x 83.8 x 56.1mm)
Weight	12.0 oz (340 grams)
Battery	9V Alkaline <b>Optional 120 VAC 50/60 Hz AC adaptor available</b>
Miscellaneous	Low battery indication with nominal 1 hour of operation left Over-voltage protection to 120 Vrms (rated for 30 seconds) or 240 Vrms (rated for 15 seconds) Bar graph display with 1% resolution of 4-20 mA signal scale High contrast graphic liquid crystal display with 0.45" (11.4 mm) high digits

### Common Specifications for all current modes

Ranges	0.000 to 24.000 mA, -25.00 to 125.00% of 4-20 mA
Accuracy	≤ ± (0.012 % of Reading + 0.004 mA)
Temperature effect	≤ ± 50 ppm/°C of Range
Resolution(s)	0.001 mA and 0.01 %

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

Loop compliance voltage	≥ 24 Volts
Loop drive capability	1200 Ω at 20 mA for entire battery life
Miscellaneous	Open loop or out of compliance conditions are indicated by appropriate error display Battery life in: Source mode ≥ 18 hrs at 12mA typical (HART® disabled) Power measure ≥ 10 hrs at 12mA typical HART® protocol mode is a selectable option at turn on. HART® protocol mode places a 250Ω resistor in series with the output Selectable EZ-Step(s) for Source Mode/2-Wire Transmitter Simulation: In mA mode: 0.001, 0.010, 0.100, 1.000, 4.000(default), 8.000 mA % of 4-20 mA mode: 0.01, 0.10, 1.00, 10.00, 25.00(default), 50.00 %

### Read mA Specifications:

Voltage burden	≤ 2V at 20 mA
Overload/Current limit protection	24 mA nominal
Battery life	Typical ≥ 40 Hours



# Model 530 Datasheet

## 2-Wire Transmitter Simulation Specifications:

Voltage burden	≤ 2V at 20 mA
Overload/Current limit protection	24 mA nominal
Loop voltage limits	2-60 VDC
Miscellaneous	Open loop or out of compliance conditions are indicated by appropriate error display Battery life ≥ 40 hour typical Selectable EZ-Step(s) for Source Mode/2-Wire Transmitter Simulation: In mA mode: 0.001, 0.010, 0.100, 1.000, 4.000(default), 8.000 mA % of 4-20 mA mode: 0.01, 0.10, 1.00, 10.00, 25.00(default), 50.00 %

## Voltage Read Specifications:

Range	0.00 to 30.00 VDC (with 4X over range)
Accuracy	≤ ± (0.1 % of Reading ±0.1 V)
Temperature effect	≤ ± 200 ppm/°C of Reading
Resolution	0.01 V
Input resistance	≥ 1 MΩ
	Battery life > 40 hour typical Flashing indicator for over range

## Available Options:

Option:	Part Number:
AC adaptor	020-0100
Carrying Case	020-0200

## Other Products Available:

RTD Source (Single Type/1° resolution)	Model 510
RTD Source (7 Types, Ω/0.1° resolution) Pt100: α=1.3850, 1.3902, 1.3916, 1.3926 Cu10: α=1.427, Ni110: α=1.530, Ni120: α=1.672	Model 511
RTD Calibrator (Source/Read 7 Types, Ω /0.1° resolution)	Model 512
RTD Calibrator (Source/Read 7 Types, Ω /0.1° resolution) With Auto Stepping	Model 512S
T/C Source (Single Type/1° resolution)	Model 520
T/C Source (8 Types, mV/0.1° resolution) B, E, J, K, N, R, S, T, mV	Model 521
T/C Calibrator (Source/Read 8 Types, mV/0.1° resolution) B, E, J, K, N, R, S, T, mV	Model 522
Dual RTD- T/C Source and Read Calibrator W/Auto Stepping	Model 525
4-20mPocket-Mate Milliamp Calibrator	Model 531
4-20 Milliamp Loop Calibrator with Loop Diagnostic	Model 532
4-20/10-50 Dual Range Loop Calibrator	Model 535
Frequency Read & Source W/Totalizer	Model 541



## Model 530 Datasheet

### Warranty

*Our equipment is guaranteed against defective material and workmanship (excluding batteries) for a period of three years from the date of shipment. Claims under guarantee 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 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.*

### Your Local PIE Representative

A large, empty rectangular box with a thin black border, intended for the user to provide the name and contact information of their local PIE representative.