



CALIBRACIÓN E INSTRUMENTACIÓN PROFESIONAL, S.A. DE C.V.

>>Tecnología de punta al alcance de su mano<<

RETORNO 4 DE SUR 16 No 12; COL. AGRICOLA ORIENTAL, MEXICO, D.F. 08500;

www.calibracionip.com.mx; TEL/ FAX 5756 3312/ 5 700 1784; e-mail: cipfhc@prodigy.net.mx

CALIBRADORES DE PROCESO PRACTICAL INSTRUMENTS ELECTRONICS



Calibrador de proceso multifuncional PIE 820

El PIECAL 820 mejora otras marcas en diseño, desempeño incluyendo un protector de hule, un desplegado con dígitos más grandes, mayor exactitud y más intervalos para mayor flexibilidad.

Medición/simulación: Corriente, voltaje, frecuencia, termopares, RTD's, continuidad.

Operación amigable: intuitiva EZ-DIAL

• Calibrador corriente y voltaje:

Fuente: 0 a 24.00 mA, 0 a 10 VCD, 0 a .25 V CD y -10.00 a 80.00 mV

Lee: 24.00 mA, 60.00 V CD y -10.00 a 80.00 mV

Simula transmisores de 2 hilos.

Alimenta transmisores y lazos con la fuente de alimentación integrada de 24 VCD Resistor de 250 Ω integrada para instrumentos con protocolo Hart

• Mide y simula temperatura (°C & °F)

T/C Tipo J, K, T, E, R, S, B, N, G, C, D, L (J DIN), U (T DIN) y P (Platino II)

Pt 100 Ohm (3850, 3902, 3916, 3926) & 1000 Ohm (3850); Cobre 10 & 50 Ohm, Níquel 100 and 120 Ohm

• Verifica sistemas de Flujo y vibración

Lee y simula frecuencia: hasta 2000 CPM (Cuentas-por-Minut0), 999.99 Hz, 9999.9 Hz hasta 20.000 kHz.

• Problemas en lazo o en alambrado

'Beep' out connections with the built-in continuity checker.



Calibrador de lazo de corriente PIE 334

Ideal para verificar, calibrar y medir todas las señales de instrumentos en lazos de 4 a 20 mA CD

Simula y lee: 0.00 a 24.00 mA, Simula transmisores de 2 hilos o alimenta simultáneamente transmisores de 2 hilos y mide su salida.

• Fuente de mili amperes

Calibra registradores, indicadores digitales, válvulas, stroke valves o cualquier instrumento que reciba entrada desde un lazo

4 a 20 mA. Facilmente ajusta cualquier valor dentro de 0.01 mA con el potenciómetro digital ajustable "DIAL" o con valores pre establecidos **4.00 mA (0.0%)** y **20.00 mA (100.0%)** EZ-CHECK™.

• Calibre empleando lazo de potencia.

Verifique alambrado del lazo y receptores con el PIECAL 334 in sitio de un transmisor de 2 hilos. Emplee cualquier alimentación desde 2 a 100 VCD.

• Lea corriente de lazo

Verifique salida de controladores o mida la señal corriente (mA) en cualquier punto del lazo de control.

El PIECAL 334 mide señales de 0.00 a 52.00 mA (-25.0 a 300%) con mayor exactitud que un multímetro típico.

• Alimenta y mide transmisores de 2 hilos

El PIECAL 334 puede simultáneamente alimentar 24 VCD de cualquier y todos los dispositivos en un lazo de proceso empleando las baterías e interruptor internas y al mismo tiempo medir la salida de un transmisor de 2 hilos o cualquier otro dispositivo en el lazo de control.

• Lee VCD

El PIECAL 334 puede medir desde -99.99 a +99.99 VCD con resolución de 0.01 Volt. Empelado para verificar lasos de alimentación, convertidores I/V, señales de voltaje de

1 a 5 Volt, y cualquier otro voltaje hacienda innecesario llevar un multímetro. •

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



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	<p>other brands by including a rubber boot, tilt stand, backlit display with larger digits, rugged switches and a battery compartment for fast battery changes.</p> <p>Calibra instrumentos con salida de corriente PIECAL 434 Fuente: 0.000 a 24.000 mA y -25.00 a 125.00% de 4-20 mA Lee: 0.000 a 24.000 mA y -25.00 a 125.00% de 4-20 mA. Lee -99.99 a 99.99 V Simula transmisores de 2 hilos , alimenta y lee transmisores. Resistor de resistor de 250 Ohm seleccionable por menú para compatibilidad con HART Exactitud: $\pm(0.01\%$ de lectura + 0.002 mA) PIECAL 434 es más exacto que calibradores similares dentro de within ± 0.004 mA at 20 mA output!</p>
	<p>Calibra instrumentos con salida de corriente PIECAL 535 Intervalo dual: 4 a 20 y 10 a 50 mA/voltaje</p> <ul style="list-style-type: none">• Exactitud verdadera de $\pm 0.025\%$ de la lectura• Lee y simula 0.000 a 50.000 mA• Desplegado de corriente o -25.00 a 125.00% de 4-20mA o 10-50mA• Desplegado de barra grafica % de 4-20mA o 10-50 mA• Lee 0.00 a 60.00 volts con 2X de sobre voltaje• Simula transmisores de 2-hilos• Alimenta transmisores de 2-hilos y lee 0.000-50.000mA• Lee 0.00 a ± 30.00 VDC con 4X sobre rango.• Fuente 0.000 to 24.000 VDC con salida de hasta 20mA• Calibración Directa 1.000V a 5.000V• Loop Compliance Voltage ≥ 43 Volts• SALIDA ANALOGICA OPCIONAL para registradores o data logger.• Auto Step or Ramp with HIGH accuracy and repeatability designed in collaboration with Nuclear plants<ul style="list-style-type: none">• Selectable step sizes, time in-between steps & soak time• Stop watch like EZ-Check™ switch• Full 5 Digit Display• Fuseless protection from accidental connection to 240 volts AC/DC• Rugged handheld enclosure with optional lanyard and Velcro® hand strap• Uses 4 AA alkaline batteries• Superior battery life of 40 hours under typical continuous usage• Easy access to battery compartment• AC adaptor, carrying case,



PIE 311 PLUS

PIE 311Plus puedes verificar y calibrar todos los instrumentos con RTD Pt100(alfa 3850, 3902, 3926), Pt10, Pt200, Pt500, Pt1000, Cu50, Ni120; mide RTD's y calibrar todos los instrumentos de 4 a 20 mA con su calibrador de corriente integrado.

Indicación Automática en el despliegado de conexiones a ser realizadas,

Resistente y robusto, protegido con un estuche de goma para ser llevado a todas partes sin preocupación.

Luz de fondo para operar aun en áreas oscuras.

Calibra directamente en temperatura (°C & °F)

Ajuste fácil a cualquier valor con etapa de 0.1°C con potenciómetro digital ajustable "EZ-DIAL" y llamado de tres temperaturas previamente almacenadas con selector EZ-CHECK™ Empleo como década desde 0.00 a 410.00 y de 0.0 a 4001.0 Ohms.

- Checkout all your 4 to 20 mA loops & instruments With the built-in milliamp calibrator 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 PIE 311Plus to simultaneously power your 2 Wire RTD Transmitter and measure its output while simulating the RTD sensor input. Powers HART™ transmitters with built-in 250 ohm resistor simplifying hookups with HART communicators.
- Troubleshoot loop problems Quickly diagnose ground fault and current leakage with the patented loop diagnostic technology (US Patent# 7,248,058).
- Fast calibration with automatic output stepping Choose between 2, 3, 5, 11 and 21 steps to automatically increment the output in 100%, 50%, 25%, 10% or 5% of span. Select the step time to match your system from 5, 6, 7, 8, 9, 10, 15, 20, 25, 30 and 60 seconds.
- Compatible with ALL process instruments No competitor's calibrator is compatible with as many process instruments! Connect directly to the RTD inputs of smart transmitters, PLCs, DCS and multichannel recorders and verify their outputs or displays. Works with older instruments with fixed excitation currents and newer multichannel instruments that switch the excitation current between input channels.
- Measure RTD sensors Trouble shoot sensor connections and find broken wires with patented technology. Connect your two, three or four wire RTDs and the PIE 311Plus



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automatically detects the connections and measures the RTD in degrees C or F. Secondary display shows the resistance value corresponding to the RTD temperature. • Evolutionary design PIE 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 PIE 311Plus 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.

Lectura de mA	
Intervalo y resolución	0.000 a 24.000 mA o -25.00 to 125.00% de 4-20 mA
Exactitud	$\leq \pm (0.02 \% L + 0.003 \text{ mA})$
Voltage burden	$\leq 2V$ at 24 mA
Overload/Current limit protection	25 mA nominal
Fuente de mA alimentación & medición transmisores de 2 hilos & PWRM LEAK	
Intervalo y resolución	0.000 to 24.000 mA or -25.00 to 125.00% of 4-20 mA
Exactitud	$\leq \pm (0.02 \% L + 0.003 \text{ mA})$
Loop compliance voltage	$\geq 24 \text{ DCV @ } 20.00\text{mA}$
Loop drive capability	1200 Ω at 20 mA for 15 hours nominal 950 Ω with Hart Resistor or leak detection runnin



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PIE 422 PLUS

Easy to use With the PIE 422Plus you can check & calibrate all your thermocouple instruments, measure thermocouple Sensors, and calibrate 4 to 20 milliamp instruments. Automatic indication of connections on the display for simple hookups. Calibrate all your 4 to 20 milliamp instruments with the built-in milliamp calibrator. • Take it into the shop, plant or field Carry it without worry - it comes protected with a rubber boot and rugged, low profile switch. Easy to operate even in dark areas with the backlit display. • Calibrate directly in temperature (°C & °F) Stop carrying around a millivolt source and thermocouple tables. The PIECAL 422Plus works with the thermocouples you use including types J, K, T, E, R, S, B, N, G, C, D, L (J-DIN), U (T-DIN) and P (Platinel II).

Easily set any value quickly to within 0.1° with the adjustable digital potentiometer "DIAL" plus store any three temperatures for instant recall with the EZ-CHECK™ switch. Or calibrate from -13.000 to +80.000 mV. • Checkout all your 4 to 20 mA loops & instruments With the built-in milliamp calibrator 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 PIE 422Plus to simultaneously power your 2 Wire RTD Transmitter and measure its output while simulating the RTD sensor input. Powers HART™ transmitters with built-in 250 ohm resistor simplifying hookups with HART communicators. • Troubleshoot loop problems Quickly diagnose ground fault and current leakage with the patented loop diagnostic technology (US Patent# 7,248,058). • Fast calibration with automatic output stepping Choose between 2, 3, 5, 11 and 21 steps to automatically increment the output in 100%, 50%, 25%, 10% or 5% of span.

Select the step time to match your system from 5, 6, 7, 8, 9, 10, 15, 20, 25, 30 and 60 seconds. • Calibration Lab Accurate & Stable The internal cold junction thermistor is accurate to $\pm 0.05^{\circ}\text{C}$ and is traceable to NIST. The sensor is thermally bonded to an isothermal mass which includes brass blocks with screw terminals for connection of bare thermocouple wires along with a miniature thermocouple connector for fast connections. It has an extremely stable voltage reference and low drift components which make it more accurate than most other handheld & benchtop thermocouple calibrators. • Perform Heat Treating Uniformity Surveys and System Accuracy Tests The PIECAL 422



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meets or exceeds the requirement of AMS 2750 as a Field Test Instrument. • Measure thermocouple sensors Connect your thermocouple and the PIE 422Plus measures the probe in degrees C or F. Secondary display shows the millivolt value corresponding to the thermocouple temperature. • Evolutionary design PIE 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 PIE 422Plus 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. 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 Actual Size * PIE Calibrators are not manufactured or distributed by Fluke Corp or Altek Industries Inc, manufacturers of Altek Calibrators.

PIE 820 PM Y PIE 830 PM

Now you can panel mount PIE 820 & 830 Multifunction calibrators. As part of a calibration bench, the PIE 820PM or 830PM provide an accurate multifunction calibrator that is easy to use and may be removed for annual calibration. Panel mounting a multifunction calibrator is useful whether you are putting a calibration bench in your instrument shop, require a manual loading station in a control panel or for use as a built-in process simulator.

General features include: • Rugged 8 3/4" * 4 3/4" aluminum mounting plate(see page 2) • 110/120V AC adapter with easily accessible rear mounting jack • Shielded banana jacks for use with industry standard leads • Easy as PIE operation using our EZ Dial knob, EZ Check switch and simple menu structure





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CALIBRADOR DE LAZO DE CORRIENTE PIE 134

Para verificar, calibrar y medir todos tus instrumentos con señal de corriente en un lazo de 4 a 20 mA CD.

Fuente y lectura de 0.00 a 24.00 mA con exactitud de $\leq \pm (0.05 \% \text{ de lectura} + 0.01 \text{ mA})$

Puede ser empleado en cualquier punto de acceso del lazo de medición.

Simula transmisores de 2 hilos, alimentando y leyendo simultáneamente la señal de salida del transmisor.

- Fuente de mA permite la calibración de registradores, indicadores digitales, carrera de válvulas o cualquier instrumento con entrada de señal analógica de 4 a 20 mA.

Potenciómetro digital DIAL que permite el ajuste fácil y rápido de valores con incrementos de 0.01 mA, o empleando los valores predefinidos de "4.00 mA (0.0%) y 20.00 mA (100.0%) con EZ-CHECK™.

Con su Resistencia integrada de 250 ohm integrada, alimenta Transmisores HART™ y simplificando el enganche a comunicadores HART •