NEW! P32 Process Signal Pocket Calibrator

Measurement and Generation
Rugged IP54 Construction for On Site Use
Quick Connect Terminals

Simple and robust, this instrument is designed to simplify maintenance operations and commissioning of sensors and transmitters using process signals such as 4-20 mA or 0-10V. Able to measure and generate currents and voltages.

FEATURES

• User selectable ranges and Scaling provide versatility for all your process measurement tasks
• High precision: 150 ppm of reading Low Temperature Coefficients:
     15 ppm rdg/°C for voltage
     20 ppm rdg/°C for current
• Accuracy is maintained even in difficult operating conditions
• Measurement up to 50V
• Simulation up to 15V
• Measurement and emission up to 25mA

GRAPHIC INTERFACE FOR PROGRAMMING

The P32 offers a graphic interface - making programming and reading easier

Operating Mode Screen	Function Screen	Reading Screen
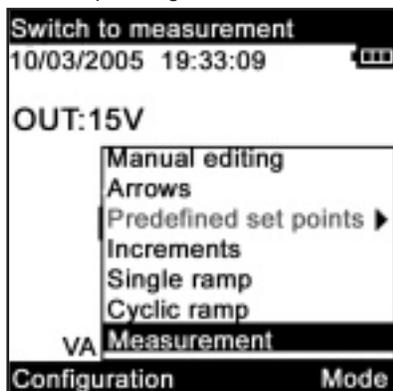
TRACEABLE TO NIST

ONE YEAR
1
WARRANTY
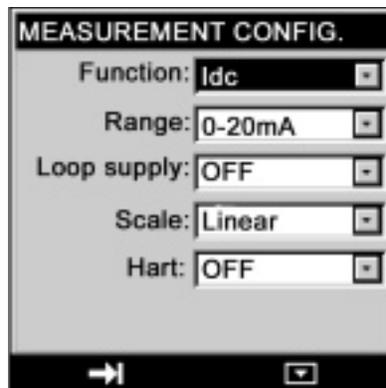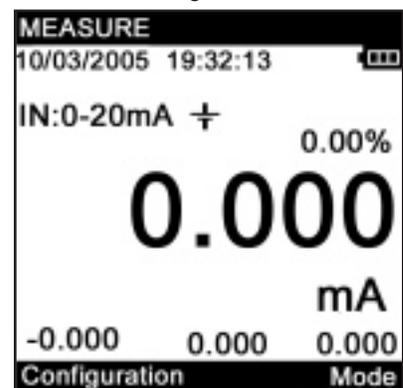
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03/07 Rev B

PALMER Wahl
INSTRUMENTATION GROUP

170 Years of Continued Innovation

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P32 Process Signal Pocket Calibrator

SPECIFICATIONS

P32 Specifications @ 23°C±5°C, and between 45% and 75% Relative Humidity

The Wahl P32 has been designed with increased performance in order to meet the demands of today's higher accuracy transmitters and process sensors. Accuracy of 0.015% of reading allows the P32 to be used as a standard for on site operations.

The P32 features adjustable display resolution to simplify measurements with maximum resolutions of 1µA and 1mV.

MEASUREMENT

DC VOLTAGE

Range	Resolution	Accuracy/1 year	Measurement Range	Remarks	
0/10V	1mV	0.015%R + 2mV	-2V / +12V		Temperature coefficient < 15 ppm R /°C from 0°C to 18°C and from 28°C to 50°C. Serial rejection mode: ≥60 dB at 50 and 60Hz. Common rejection mode: ≥120 dB at 50 and 60Hz.
25V	1mV	0.015%R + 2mV	-2 / +25V	NA	
50V	1mV	0.015%R + 4mV	-5V / +50V		

DC CURRENT

Range	Resolution	Accuracy/1 year (CI: 95%)	Measurement Range	Remarks	
0/20mA	1µA	0.015% R + 2µA	-6 mA/24mA		Temperature coefficient: <20ppm R/°C from 0°C to 18°C and from 28°C to 50°C Possibility of loop supply: 24V ±10% Rin < 30 Ω HART compatibility: R = 250 ±5% Common rejection mode: ≥120dB at 50 and 60Hz
4/20mA	1µA	0.015% R + 2µA	3.2 mA/24mA	NA	
25mA	1µA	0.015% R + 2µA	-6 mA/25mA		

EMISSION

DC VOLTAGE

Range	Resolution	Accuracy/1 year	Measurement Range	Remarks	
0/10V	1mV	0.015%R + 2mV	0V /+12V	I out max=5mA (for 10V)	Temperature coefficient: <15ppm/°C from 0°C to 18°C and from 28°C to 50°C Rising time <1ms (0V to 15V on 1M Ω load) R internal <1 Ω Noise VLF<1mV (at F<100Hz)
15V	1mV	0.015%R + 2mV	0V /+15V	I out max=8mA (for 15V)	

DC CURRENT

Range	Resolution	Accuracy/1 year	Measurement Range	Remarks	
0/20mA	1µA	0.015%R + 2µA	100µA / 24mA		Temperature coefficient: <20 ppm/°C from 0°C to 18°C and from 28°C to 50°C Rising time <500µs (0V to 20mA – on 20 Ω load) Noise VLF < 1µA (at F <1 00Hz)
4/20mA	1µA	0.015%R + 2µA	3.2mA / 24mA	NA	
25mA	1µA	0.015%R + 2µA	100µA / 25mA		

CONTINUITY TEST: Allows the measurement loop closing to be checked

TRACEABLE TO NIST

ONE YEAR 1 WARRANTY

P32 Process Signal Pocket Calibrator

SPECIFICATIONS

EMISSION FUNCTIONS:

Simple or Cyclic Ramps Emission - The P32 can generate simple or cyclic ramps with the adjustment of the high and low levels, the rising and decreasing times, and the stabilization time.

A starting delay can also be adjusted (from 1 to 3600 sec.) so that a single user is able to reach the control room in time.

Pre-Set Step Emission - Steps or increments can be configured to allow emissions of successive fixed values with adjustable frequency.

Special emissions: Linearity test with 4-20mA; 0-20mA on linear or quadratic signals

Selecting the Linearity test, the P32 generates the values shown in the table at the right. Emitted value validation is done by the user.

Cyclic ramp setting screen

Pre-Set Step Emission Values					
	0%	25%	50%	75%	100%
4-20mA linear	4	8	12	16	20
0-20mA linear	0	5	10	15	20
4-20mA quad	4	5	8	13	20
0-20mA quad	0	1.25	5	11.25	20

VALVE TEST

Scaling - P32 offers 2 modes of scaling.

Scaling ON / OFF presets scales to 0 - 100% of full scale for selected range.

Define mode allows user to customize the scaling parameters such as having a 4-20mA signal displayed as 0 - 100bar.

Valve Test: Scaling			
	0%	50%	100%
4-20mA valves	3.8 - 4 - 4.2	12	19 - 20 - 21

MEASUREMENT FUNCTIONS

HART compatibility: It is compatible with HART transmitters by inserting a 250 ohms resistance, without disturbing digital data transfer.

Scaling: 2 scaling modes are available:
1. Scaling ON / OFF Unit displays 0-100% for selected range.
2. Define - allows user to customize scaling values.

Fully configurable scaling with units: User can also program scaling in accordance with the sensor or transmitter with unit changing: 4-20mA output signal from a 0-100 bar transmitter will be measured by P32 with bar display and reading between 0 and 100 bar.

P32 Process Signal Pocket Calibrator

OTHER FUNCTIONS

Language Setting: P32 has 5 user selectable languages: English, French, German, Italian and Spanish.

Display Contrast Setting / Backlight: Depending on lighting conditions in work zone, user can modify display contrast and turn on/off the backlight. Backlighting time is also adjustable.

Display Resolution Setting: User adjustable Display Resolution lets user optimize the reading for the users specific measurement.

Date and Time Displaying: P32 continuously displays the date and time.

Square Root: In current measurement and simulation, this function allows a quadratic signal from a transmitter ∆P type to be taken into account.

Statistical Calculation of Measurements: Maximum, minimum and average of the measured signal are always displayed, as is the number of measurements. Reset button allows calculations reset.

Hold: This function allows user to "freeze" the display measurement.

Filter: Filter can be applied to minimize the least significant digit fluctuation.

Software Updating: Wahl offers you possibility to upgrade the embedded software using USB connection, as updates become available.

Delay Function: A starting delay is programmable when ramps, steps or values are emitted to allow user to reach the control post in time.

MECHANICAL CHARACTERISTICS AND STANDARDS

Dimensions: (without protection boot)**:** 157 x 85 x 45mm

Weight: 10.79 ounces (306 g)

Tightness: IP 54 according to EN 60529

Ambient Conditions of Use:

Reference Conditions: 23°C ± 5°C, relative humidity: 45% to 75%.

Nominal Operating Conditions: -10°C up to + 50°C, relative humidity: 20% up to 80% without condensation.

Maximum Operating Conditions: - 10°C up to + 55°C, relative humidity: 10% up to 80% (70% at 55°C).

Maximum Storage Temperature: - 30°C up to + 60°C (without battery).

Electrical Security according to EN 61010

Electromagnetic compatibility of electrical equipment according to EN61326

Power Supply: P32 delivered standard with 4 AA batteries. Optional Rechargeable Battery pack with charger is available.

Battery Life		
Mode	**Measurement V and I**	**Simulation (20mA / 24V)**
Approx Life	40 hours	10 hours

Included with P32: Protective Boot, 4 AA Batteries, User Manual on CD Rom, Wrist Strap, 2 Measurement Leads, and Carrying Case.

Optional Rechargeable Battery Pack/Charger - **#12436-01**

TRACEABLE TO NIST

ONE YEAR **1** WARRANTY

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