

# Process-Calibrator

Model 4409

Code:	4409 E
Manufacturer:	burster
Delivery:	ex stock
Warranty:	24months
Issue:	1.1.2005



**NEW:**  
 - 50,000 count multimeter  
 - %-Scale for mA readout

- Constant voltage/current source
- Square wave generator
- Memory generation output
- Generate and measure simultaneously
- Multi-display multimeter
- Auto Scan/Ramp

4409-E

## Application

This device can be used not only for instrument system maintenance, but also for maintaining and servicing industrial meters and for testing electronic circuits and electronic equipment. Even the sensor can be measured for automotive or automatic control system. In addition to generating high accuracy DC voltage and current sources, this device can generate square wave with PWM features. That is a free-for-all application function, including a strong multimeter function. It can generate and measure signals simultaneously.

## Description

The process-calibrator with meter is a hand-held, battery-operated instrument. The device is operated via rotary switch and 7 push buttons. Indication of the primary and secondary display is 50,000 counts. The constant voltage outputs are bipolar 1.5 V and 15 V, also the constant current output is a bipolar 25 mA and up to 500  $\Omega$ . The square wave output has 28 models of frequency, adjustable duty cycle, pulse width and adjustable amplitude. Memory generation scan output can set the level and interval of staying time. Sixteen steps for each range can be defined.

**Technical Data**

**Constant Voltage Output:**

**Specification of Calibrator**

Range:  $\pm 1.5\text{ V}, \pm 15\text{ V}$ , approx. 25 mA  
 Accuracy:  $\pm (0.03\% \text{ rdg.} + 3 \text{ dig.})$   
 Resolution: 0.1 mV, 1 mV  
 Maximum input voltage: 30 VDC

**Constant Current Output:**

Range:  $\pm 25\text{ mA}$ , approx. 12 V (500  $\Omega$ )  
 Accuracy:  $\pm (0.03\% \text{ rdg.} + 5 \text{ dig.})$   
 Resolution: 1  $\mu\text{A}$   
 Maximum input voltage: 30 VDC

**Square wave output:**

Output	Range	Resolution	Accuracy
Frequency	0.5 Hz to 4800 Hz (28 fixed values)	0.01 Hz	$\pm (0.005\% \text{ rdg.} + 0.01 \text{ Hz})$
Duty cycle	0.39 % ~ 99,60 %	0.390625 %	$\pm (0.01\% \text{ rdg.} + 0.02\%)$
Pulse width	1/frequence	ranges/256	$\pm (0.01\% \text{ rdg.} + 0.3 \text{ ms})$
Amplitude	5 V, $\pm 5\text{ V}$ , 12 V, $\pm 12\text{V}$	0.1 V	$\pm (2\% \text{ rdg.} + 0.2 \text{ V})$

**Two-Wire Transmitter**

-Supply of a transmitter and simultaneously measure current  
 -Current loop 4 ... 20 mA or 0 to 25 mA  
 voltage from 15 to 30 VDC

**Measuring function**

True RMS: AC + DC

**Scan output**

16 steps adjustable level and time interval

**Ramp output**

999 steps of each slope (LO ~ HI or HI ~ LO)

**Specification of Meter**

Display counts	50,000 counts	
	Ranges	Basis accuracy
DC voltage	50mV, 500mV, 5V, 50V, 300V	$\pm (0.05\% \text{ rdg.} + 5 \text{ dgt})$ $\pm (0.06\% \text{ rdg.} + 3 \text{ dgt})$
AC voltage	50mV, 500mV, 5V, 50V, 300V	$\pm (0.7\% \text{ rdg.} + 40 \text{ dgt})$ $\pm (0.7\% \text{ rdg.} + 20 \text{ dgt})$
DC current	50mA, 500mA,	$\pm (0.3\% \text{ rdg.} + 3 \text{ dgt})$
AC current	50mA, 500mA,	$\pm (0.6\% \text{ rdg.} + 20 \text{ dgt.})$
Resistance	500, 5k, 50k, 500k, 5M, 50 M $\Omega$	$\pm (0.15\% \text{ rdg.} + 3 \text{ dgt})$ $\pm (1\% \text{ rdg.} + 5 \text{ dgt})$
Temperature (K model)	-40 °C to 1000 °C	$\pm (0.3\% \text{ rdg.} + 3^\circ\text{C})$
Frequenz	100, 1k, 10k, 100k 200kHz	$\pm (0.02\% \text{ rdg.} + 1 \text{ dgt})$
1ms Peak Hold	Current/voltage	$\pm (2\% \text{ rdg.} + 400 \text{ dgt})$
% - Scale for mA read out	0...20 or 4...20 mA	

**Calibration/Meter:**

Output is fully isolated from the input. simultaneously

Measuring rate: 3 times per second (AC+DC: 1 time per second)  
 (approx.) 1 time per second for frequency or duty cycle  
 measurement. (>1 Hz)  
 0.25 ~ 1 time per second for pulse width  
 measurements. (>1 Hz)

Battery control: Battery symbol, if the voltage falls under 9 V.

Work temperature range: 0 °C to 40 °C,  
 ( 32 °F to 104 °F)

Storage temperature: - 20 °C to 60 °C,  
 (- 4 °F to 140 °F)  
 (Battery removed)

Relative humidity (R.H.): max. 80 % R.H.

Battery life: 20 hours above for meter only  
 5 hours for meter/source

Temperature coefficient: for 0 ... 18 °C and 28 ... 40 °C  
 Meter: 0.15. x /specified accuracy) / °C  
 Calibrator:  $\pm (50 \text{ ppm rdg.} + 0.5 \text{ dgt}) / ^\circ\text{C}$

Power supply: 8 Ni-MH accus, power supply to charge the accus

Dimension (LxWxH): 192 x 90 x 54 mm  
 (7.56 x 3.54 x 2.1 inches)

Weight: approx. 1.71 kg

**Order information**

Process-Calibrator including test leads, alligator clips, leads of alligator clip, soft carrying case, 8 x Ni-MH accus, power supply **Model 4409-V001**

**Accessories**

K type thermocouple adapter **Model 4409-Z003**  
 Data cable and software (USB) **Model 4409-Z006**

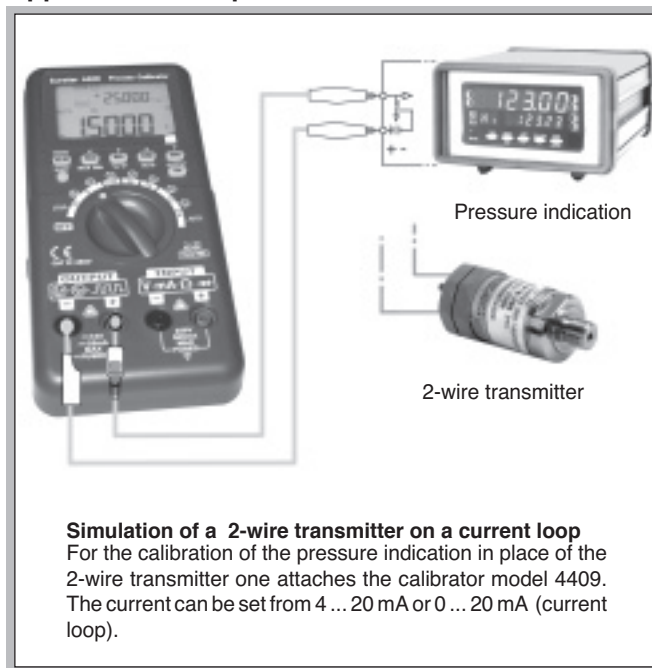
**DKD Calibration Certificate for Process-Calibrator Model 4409**

with 9 DC current simulating points and 12 DC voltage simulation points **Model 44DKD-4409G**

**Proprietary Calibration Certificate for Process-Calibrator Model 4409**

with 21 DC simulating points **Model 44WKS-4409G**  
 with 26 measuring/simulating points at the function DC **Model 44WKS-4409GM**

**Application Example**



**Simulation of a 2-wire transmitter on a current loop**  
 For the calibration of the pressure indication in place of the 2-wire transmitter one attaches the calibrator model 4409. The current can be set from 4 ... 20 mA or 0 ... 20 mA (current loop).