



# mA / V CALIBRATOR TYPE CAL-2

## Features

- Source milliamps and volts
- Simulate two-wire transmitters
- Fast selection between full-scale, zero and dial setting
- Dial setting stored when switched off
- Two speed dial setting
- 0.1% resolution
- Direct reading display mA / Volts
- Battery powered (universal mains power supply option)

The CAL-2 mA / Volt Calibrator is a portable, battery operated signal source for the calibration of instruments in process control loops. By connecting the calibrator into the loop in place of the signal transmitter or transducer, instruments such as signal converters, recorders, panel meters, trip amplifiers, etc. can be checked for accuracy under controlled conditions.



### Output mode selection

- A three-way slide switch sets the output mode:
- mA Source - sources current (0 to 20mA) to the loop
  - mA Sink - (0 to 20mA) simulates a two-wire transmitter in systems incorporating a loop power supply
  - Voltage output - 0 to 10V.

### Fast output level selection

- A three-way slide switch provides rapid selection of three test signal levels:
- Full-scale (10V or 20mA)
  - Zero (NB the dial position may be used to provide a raised zero signal, e.g. 4mA)
  - Dial setting

### Dual-speed dial

In the *Dial* position the output is continuously variable across the range and set by the dual speed dial. To facilitate rapid transition across the output range, dial speed is increased 10-fold when the dial is pressed whilst turning. The last dialled output value is retained in memory when the calibrator is turned off.

### Display

The LCD display provides a four-digit direct reading of the output signal and a low-battery warning.

### Power

The Calibrator is powered by four AA batteries which are housed in an externally accessible compartment. An optional universal mains power supply, 96 to 264VAC, supplied with interchangeable plug heads for UK, European, USA and Australian mains sockets is available.

The CAL-2 is supplied with a set of test leads and a synthetic rubber protective boot which has a flip out stand.

## SPECIFICATIONS

### OUTPUT MODES

Current source,  
Two-wire transmitter simulator (current sink),  
Voltage

### DC mA OUTPUT

Switched output (Zero / Full-scale) 0 / 20mA  
Dial Range: 0 - 20.44mA  
Dial Resolution: 0.02mA per step (x10 Fast Dial Mode)  
24 steps per dial revolution.

### Source Mode

Loop impedance maximum: 500 ohms at 20mA

### Sink Mode (transmitter simulator):

External loop voltage requirement: 12V minimum,  
30V maximum

Overload protection: current limited to 50mA

### VOLTAGE OUTPUT

Switched output (Zero / Full-scale) 0 / 10V  
Dial Range: 0 - 10.22V  
Dial Resolution: 0.01V per step (x10 in Fast Dial Mode)  
24 steps per dial revolution.

### DISPLAY

10mm four digit LCD giving direct readout of output  
in mA / Volts  
Low Battery Indication.

### CALIBRATED ACCURACY

Set at 0% and 100% to be within 0.1% FSD  $\pm$  1 digit

### TEMPERATURE COEFFICIENT

150 ppm / °C

### BATTERIES

4 x 1.5V (AA, LR6, MN1500, HP7) alkaline dry cell  
Battery life based on a nominal capacity of 2600mA/h  
and an ambient temperature of 20°C:

mA output: 25 hours at 20mA continuous

Voltage output: 35 hours with load 1 K ohm

### ENVIRONMENTAL

Temperature range:

operating 0 to +60 °C;

storage -20 to +70 °C

Humidity: 0-95% RH non-condensing

### SAFETY & EMC

CE certified

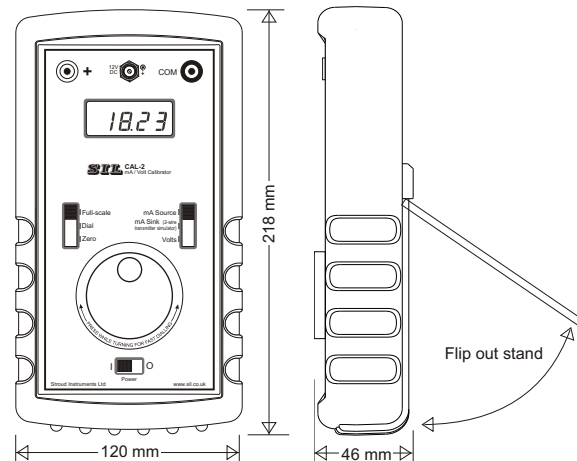
### MECHANICAL

Weight: 610g - instrument with batteries and protective boot

Connections: 4mm terminal sockets, 100cm test leads with 4mm plugs and terminated in shrouded crocodile clips

Instrument case size: 191mm x 101mm x 33mm

Dimensions with protective boot fitted:



### OPTIONAL ACCESSORIES

Universal Mains Power Supply:

Size (excl. plug pins): approx.

40mm W x 73mm H x 40mm D

Carton size (complete kit): 100mm x 95mm x 68mm

Weight: 210g

Supplied with interchangeable plug pin-outs for UK,  
European, USA and Australian mains sockets.

### ORDER CODES

Calibrator: type no. **CAL-2**

Universal Power Unit: part no. **3144-0012**

Continuous development may necessitate changes in these details without notice E&OE

# SIL

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