



1048 Current - Voltage - Loop Calibrator

Time Electronics
Calibration, Test & Measurement

- Source & Measure - Current & Volts
- 3 Source ranges 0 - 22mA & 0 - 22V
- 3 Measure ranges 0 - 70mA & 0 - 50V
- Transmitter Simulator/Sink
- Output Steps and Ramps
- Fine adjustment (Inching)
- Accuracy 0.02% of span
- 4.5 digit display
- 9V internal battery or mains power
- Hand Held /Rugged
- Easy to use



Introduction

A current, voltage, and process loop calibrator that covers the needs of an R&D lab and process control engineer. Source and measure in three current and voltage ranges plus a transmitter simulator/sink function. It has 4.5 digit (0.005% of span) resolution.

Output functions include step, ramp and inching. There are no key press menus to learn, just switches and buttons. A multi-turn potentiometer controls the output with up/down incrementing buttons for fine control. The output can be reversed (+/-) and zeroed at the flick of a switch. The front panel features a large easy-to-read 4.5 Digit LCD display which auto-ranges. Manual reset of the ramp function is also provided for quick restore.

Specifications

DC CURRENT - Source and Measure

Span: 0 - 22mA, over-range to 70mA for measure only
 Accuracy: 0.02% of span
 Resolution: 1uA (0-19.999mA), 10uA (above 20mA)

Span: 0 - 2.2mA
 Accuracy: 0.02% of span
 Resolution: 0.1uA (0-1.9999mA), 1uA (above 2mA)

Span: 0 - 220uA
 Accuracy: 0.05% of span
 Resolution: 10nA (0-199.99uA), 0.1uA (above 200uA)

Max source load: 1.1Kohms @ 20mA. Max drive: 22V
 Measure load: 1K, 110, 16 ohm for 0.22, 2.2, 22 mA

DC VOLTS - Source and Measure

Span: 0 - 22V, over-range to 50V for measure only
 Accuracy: 0.02% of span
 Resolution: 1mV (0-19.999V), 10mV (above 20V)

Span: 0 - 2.2V
 Accuracy: 0.02% of span
 Resolution: 100uV (0-1.9999V), 1mV (above 2V)

Span: 0 - 220mV
 Accuracy: 0.05% of span
 Resolution: 10uV (0-199.99mV), 0.1mV (above 200mV)

Output resistance: Approx <2 ohms. Max current 50mA
 Measure load: 1Mohm on all ranges

SINK (TX SIM)

2 wire transmitter simulation: External excitation voltage, 3V min, 50V max. The current sink levels are adjustable, with accuracies as in the 3 source ranges shown above.

Note: Accuracies in all measure modes are +/-1 digit

OUTPUT STEPS

5 fixed 4mA steps for current output 4, 8, 12, 16 & 20 mA
 11 fixed 1V steps for voltage output 0, 1, 2...10V
 21 fixed steps 1V/1mA for V & I output 0, 1, 2...20
 Stepping can be done manually or automatically (Autostep)
 Stepping speed is adjustable (1-9 sec/step). Dwell time (top and bottom) is one step period. In step mode the accuracy is limited to 0.05% of span +/-1 digit.

OUTPUT RAMP

Current Ramp 4 to 20, or 0 to 20 on all ranges.
 Voltage Ramp 0 to 10, or 0 to 20 on all ranges.
 Ramp time 7sec. Dwell (top/bottom) 5sec. Manual restart.
 Ramp operation is also available in Sink (TX SIM).

OUTPUT ADJUSTMENT

A ten turn potentiometer is provided for quick positioning with fine adjust using up/down incrementing buttons.

Power: A single internal 9V PP3 size battery or an optional external mains power supply. Battery life: Typically about 15hrs use. Continuous operation in current source mode will shorten the battery life. A 15 min inactivity auto-power down feature is also included to conserve the battery.

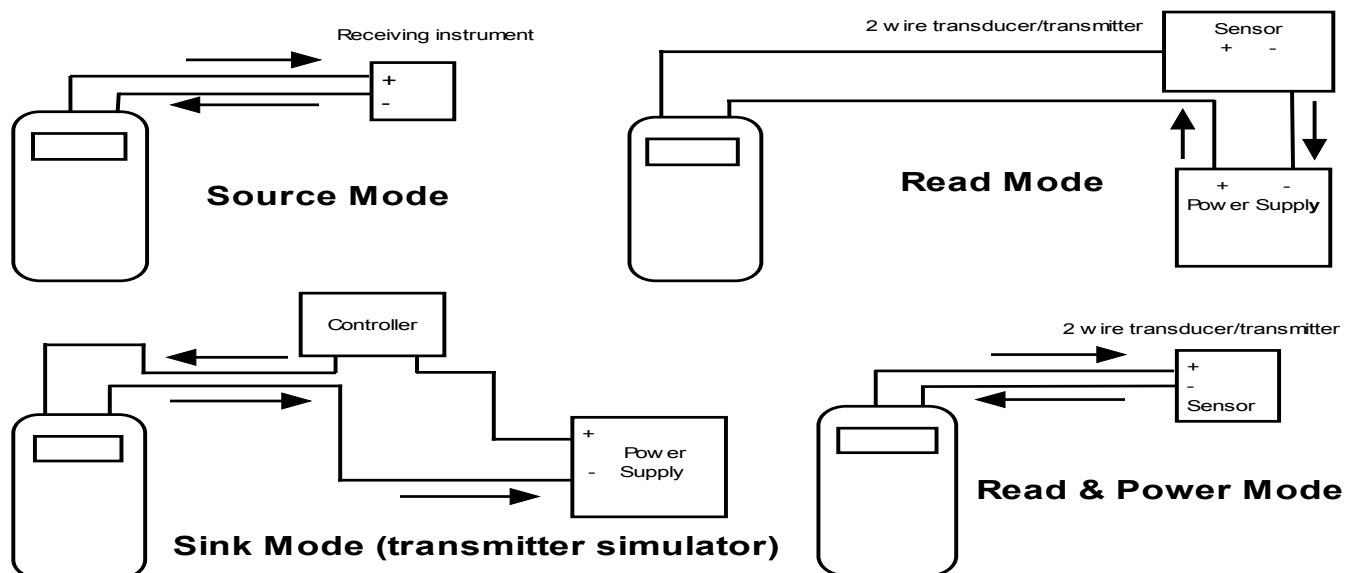
Operating temperature: -10 to 50 degC (14 to 120 degF)

Storage temperature: -30 to 70 degC (-22 to 160 degF)

Operating humidity: 10-90% non-condensing at 25 degC

Dimensions: 14x8x5cm (5.5x3x2in), 280gm (10oz)

Housing: A rugged pocket sized hard ABS case in a leatherette carrying case. Leads can be stored inside of the case.



Order Information:

Description: V - I - Loop Calibrator 0.02%
Code: 1048

Options:

Mains power supply 230V AC
 NPL traceable calibration cert. (1048)
 UKAS calibration certificate (1048)
 Mains power supply 115V AC

Code:

7643
 9176
 9138
 7652