Handheld signal source and loop Calibrator

Portacal 275

The Portacal 275 is an accurate, handheld, signal source and loop tester for milliamp, millivolt and voltage signals.

- Compact, handheld and light
- Simulates loop powered transmitter operation
- LEDs to indicate source/sink operating mode
- 0-20mA / 4-20mA current ranges
- 0-5V / 1-5V / 0-200mV voltage ranges
- 0.1% accurate current source
- Test points for current output monitoring
- Switch select 0%, 100% or variable output
- Precision lockable 10-turn dial for variable signal output
- Powered from two PM3 9V batteries
Handheld signal source and loop calibrator

Description
The Portacal 275 is an accurate handheld signal source and loop tester for milliamp, millivolt and voltage signals. It can be used in four modes:
- voltage source, which simulates auxiliary powered transmitters with proportional voltage outputs;
- millivolt source, which simulates many common plant based signals;
- current source, which simulates auxiliary powered transmitters with proportional current outputs;
- current sink mode, which simulates 2-wire (loop powered) transmitter outputs.

Technical Data

Voltage output
Type: Millivolt or voltage source
- Voltage ranges: 0-5V / 1-5V
- Millivolt ranges: 0-200 mV / 40-200 mV
- Impedance: 250 Ω (voltage source mode)
- 10 Ω (millivolt source mode)
- Accuracy: Better than 0.2% at 0% and 100% of span

Current output
Type: mA source or sink modes
- Ranges: 0-20mA or 4-20 mA
- Max load: 700 Ω (source mode)
- Max Loop loading: (V_supply - 4) / 0.02 Ω (sink mode)
  Note: for current sink mode the supply loop voltage should be 4-45 Vdc, with a maximum of 60V for 1s - a typical 2-wire loop will use a supply of 24Vdc.
- Accuracy: 0.1% at 0% and 100%
- Ripple: less than 1 μA

Leads (supplied)
Type: 2 x 1 m Banana plug to croc clip Silicon 0.5 mm wire (red and black) and 1 x 100mm Banana to Banana current loop shorting lead

Controls
Variable output
- 0-100 % of output range using precision lockable ten-turn dial
- Fixed outputs: 0% and 100% output using toggle switch
- Range selections: 0-20 mA, 4-20 mA, 0-200 mV and 0-5 V by toggle switch
- Output type: mA source, mA sink, 0-200mV source, or 0-5 V/1-5V source, by toggle switches

Power supply
Type: Battery operated
- Batteries: 2 x 9V "PP3" Alkaline
- Battery life: load dependent
- Current drain: 6-22mA (source mode)
- 2 mA (sink mode)

Performance
Temperature drift: Typically 40 ppm per °C
Dial accuracy: Typically 0.25% of span anywhere on dial

Environmental Conditions
Operating temperature: 0 to 60 °C
Storage temperature: -25 to +70 °C
Pollution Degree: 2
Relative humidity: 10–90% (non-condensing)

Housing
Type: Double Insulated Polycarbonate
Dimensions: 112 x 62 x 31 mm

Approvals
Type: Mark: E256486
CE: LV Directive EMC

Portacal 275 has an accurate lockable dial scaled in 0.1% increments from 0 to 100%. By using the dial in combination with the output value switch, you can quickly and accurately (typically within ±0.25%) dial up any signal value in the field without a digital meter for indication. For more accurate bench work (to within ±0.1%), test points are provided for multimeter connection.

If you often need a display of the output signal level, you should consider using the Portacal 1000.

Connection diagrams

Simulating 2-wire transmitter operation

Simulating 4-wire transmitter with current outputs

Simulating a 4-wire transmitter with voltage outputs or a millivolt signal source.
Note: link C+ and C- with the current loop shorting link provided.

Ordering Information

Type: Portacal 275
Cat. No.: 7940010202