

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



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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.

The 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 $\pm 0.25\%$) dial up any signal value in the field without a digital meter for indication. For more accurate bench work (to within $\pm 0.1\%$), test points are provided for multimeter connection.

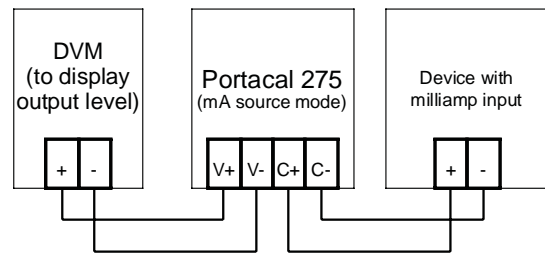
If you often need a display of the output signal level, you should consider using the Portacal 1000.



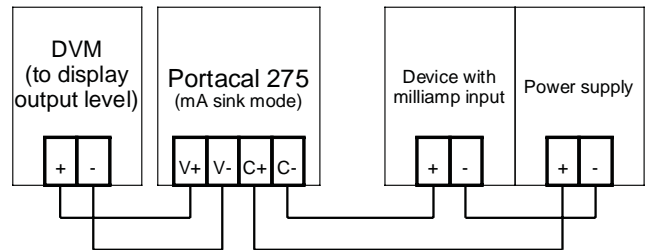
Technical Data

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	$(V_{supply} - 4) / 0.02 \Omega$ (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 μ A
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 $^{\circ}$ C
Dial accuracy	Typically 0.25% of span anywhere on dial
Environmental Conditions	
Operating temperature	0 to 60 $^{\circ}$ C
Storage temperature	-25 to +70 $^{\circ}$ C
Pollution Degree	2
Relative humidity	10-90% (non-condensing)
Housing	
Type	Double Insulated Polycarbonate
Dimensions	112 x 62 x 31 mm
Approvals	
Portacal 275	 E256486  LV Directive EMC
	Standard CAN/CSA C22.2 No. 1010.1:92 UL61010-1: 2004 EN50178:1998 BS EN 61326:1998 + A2

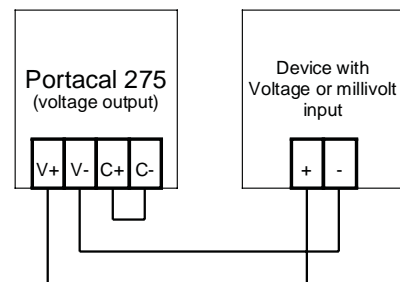
Connection diagrams



Simulating a 4-wire transmitter with current outputs



Simulating 2-wire transmitter operation



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	Cat. No.
Portacal 275	7940010202