

## 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



#### Australia

Weidmüller Pty Ltd.  
43 Huntingwood Drive, Huntingwood  
NSW 2148  
Phone +61 (0) 2 9671 9999  
Fax +61 (0) 2 9671 9900  
info@weidmuller.com.au  
www.mannseries.com

#### United Kingdom

Weidmüller Ltd.  
1 Abbey Wood Road, Kings Hill  
West Malling, Kent ME19 4YT  
Phone +44 1732-877032  
Fax +44 1732-873873  
info@weidmuller.co.uk  
www.weidmueller.com

#### Other countries

Weidmüller Interface GmbH & Co.  
Postfach 3030  
32720 Detmold  
Phone +495231-14-0  
Fax +495231-14-2083  
info@weidmueller.com  
www.weidmueller.com

# 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.

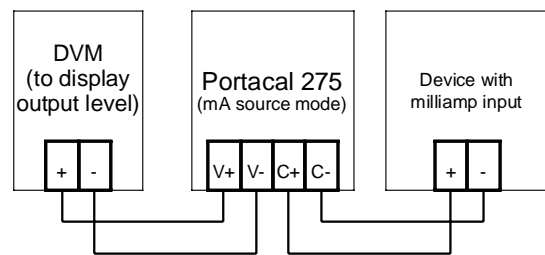
If you often need a display of the output signal level, you should consider using the Portacal 1000.



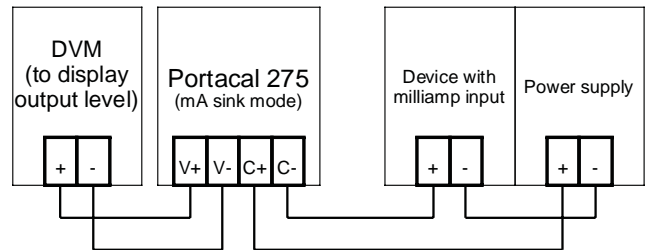
## Technical Data

<b>Voltage output</b>	
Type	Millivolt or voltage source
Voltage ranges	0-5V / 1-5V
Millivolt ranges	0-200 mV / 40-200 mV
Impedance	250 $\Omega$ (voltage source mode) 10 $\Omega$ (millivolt source mode)
Accuracy	Better than 0.2% at 0% and 100% of span
<b>Current output</b>	
Type	mA source or sink modes
Ranges	0-20mA or 4-20 mA
Max load	700 $\Omega$ (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 $\mu$ A
<b>Leads (supplied)</b>	
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
<b>Controls</b>	
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
<b>Power supply</b>	
Type	Battery operated
Batteries	2 x 9V "PP3" Alkaline
Battery life	load dependent
Current drain	6-22mA (source mode) 2 mA (sink mode)
<b>Performance</b>	
Temperature drift	Typically 40 ppm per $^{\circ}$ C
Dial accuracy	Typically 0.25% of span anywhere on dial
<b>Environmental Conditions</b>	
Operating temperature	0 to 60 $^{\circ}$ C
Storage temperature	-25 to +70 $^{\circ}$ C
Pollution Degree	2
Relative humidity	10-90% (non-condensing)
<b>Housing</b>	
Type	Double Insulated Polycarbonate
Dimensions	112 x 62 x 31 mm
<b>Approvals</b>	
Portacal 275	 E256486  LV Directive EMC
<b>Standard</b>	
CAN/CSA C22.2 No. 1010.1:92 UL61010-1: 2004	
EN50178:1998 BS EN 61326:1998 + A2	

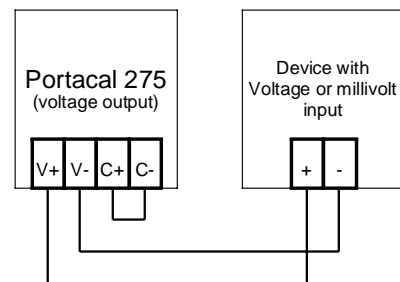
## Connection diagrams



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