

Model 9211A

Current Shunt

A High Stability Multiple Value DC Current Shunt



Guildline Model 9211A is a four-terminal bench top or rack mount instrument designed for convenient measurement of current in nine ranges from 10 microamperes to 300 amperes. Voltage output at full rated current on all ranges is 0.1 volt. Accuracy is calibrated at 23 °C, and referred to the unit of resistance as maintained by the National Research Council of Canada or the National Institute of Standards and Technology. A report of calibration giving the measured values is furnished.

All connections and adjustments are accessible on the front panel. Separate current and potential terminals are provided. Range selection is made by means of two brass plugs inserted in pairs of ports on the panel. A sturdy Formica case for bench mounting is supplied with the standard configuration. Alternately, the 9211A can be supplied with rack mounting brackets. The rack mounted configuration occupies 222 mm (8.75 in) of vertical space.

The 9211A is a convenient choice for high accuracy DC current calibration up to 300A.

9211A FEATURES

- > Accuracy to $\pm 0.01\%$
- > DC Current measurement from 10 microamperes to 300 amperes full scale
- > For rack or bench mounting
- > Compact design
- > Temperature Coefficient $< 10\text{ppm}/^\circ\text{C}$

The shunt resistors are mounted in air for minimum size and weight while minimizing self-heating effects.

The range resistors up to 10A are made of selected zeranin wire and are non-inductively wound up to the 1A range. These elements may be subjected to 140% of rated current without damage.

The 100A and 300A resistors are made of manganin plate and may be subjected to 110% of rated current without damage.

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9211A Specifications

Selected Resistance (Ohms)	Rated Current (Amperes)	Accuracy (Note 1, 2)	Manufacturer's Calibration Uncertainty (\pm ppm)	Temperature Coefficient (ppm/ $^{\circ}$ C)	Power Dissipation at Rated Current (mW)
10,000	0.00001	$\pm 0.01\%$	5	5	0.001
1,000	0.0001	$\pm 0.01\%$	5	5	0.01
100	0.001	$\pm 0.01\%$	5	5	0.1
10	0.01	$\pm 0.01\%$	5	5	1
1	0.1	$\pm 0.01\%$	5	5	10
0.1	1	$\pm 0.01\%$	10	10	100
0.01	10	$\pm 0.01\%$	10	10	1000
0.001 _	100	$\pm 0.05\%$	30	30	10 W
0.0003333	300	$\pm 0.1\%$	30	30	30 W

Note 1: Calibrated in air at $23 \pm 1^{\circ}\text{C}$ referred to the unit of resistance as maintained by the National Research Council of Canada or the National Institute of Standards and Technology, and expressed as a deviation from nominal with a total uncertainty and coverage factor of $k = 2$.

Note 2: A traceable report of calibration stating the measured values and uncertainty is provided with each unit at test currents of 1/10 of rated current and full rated current to a maximum of 100A and a minimum of 0.1 mA,

9211A Ordering Information

9211A DC Current Shunt
TM9211A Technical Manual (included)
Certificate of Calibration (included)
Report of Calibration (included)

Accessories:

9211A DC Current Shunt Rack Mount
92301 20A, 1m Lead Set
92302 100A, 1m Lead Set
92303 300A, 1m Lead Set

General Specifications

Environment
Operating 5 $^{\circ}\text{C}$ to 38 $^{\circ}\text{C}$, < 70% RH non-condensing
Storage -20 $^{\circ}\text{C}$ to 55 $^{\circ}\text{C}$, < 90% RH non-condensing

Exterior Dimensions
(Bench Top) H 222 mm (8.75 in.)
W 254 mm (10 in.)
D 513 mm (20.2 in.)
(Rack Mount) H 222 mm (8.75 in.)
W 482 mm (19 in.)
D 183 mm (7.2 in.)

Weight 13.6 kg (30 lbs)

GUILDLINE IS DISTRIBUTED BY:

Guildline Instruments Limited
P.O. Box 99
21 Gilroy Street
Smiths Falls, Ontario Canada K7A 4S9
Phone: (613) 283-3000
FAX: (613) 283-6082
Web: www.guildline.ca