



## 6311A PRECISION CURRENT DIVIDER



### Featuring

- ▶ 10 A (100:1) and 300 A (1000:1) ranges
- ▶ No stabilization period
- ▶ No power coefficient
- ▶ No temperature coefficient
- ▶ DC and AC operation

### Overview

Measurements International has developed the 6311A Precision Current Divider with the aim to replace/improve the outdated and often inaccurate Current Shunts being used. The 6311A is a 100:1 and 1000:1 Current Divider that works on the principal of the world renowned MI Resistance Bridge and Extenders. Traditional Current Shunts suffer from temperature stabilitys and the power coefficient issues that greatly affect the users ability to make accurate measurements. The current transformer used in the 6311A has no such issues. Simply apply power and measure the divided output.

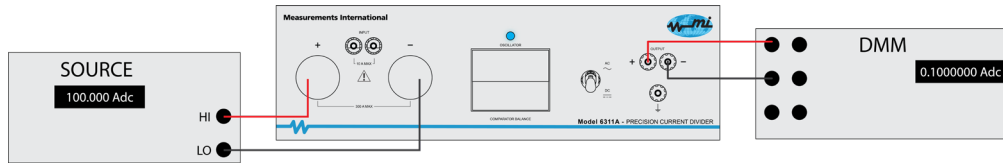
The 6311A uses the ratio of two sets of windings on a DC Current Comparator (DCC) to measure. The 100:1 range has a maximum current of 10 A and the 1000:1 range has a maximum current of 300 A. Both ranges can accept both DC and AC current to 1 kHz with uncertainty of < 5 and < 20 parts in 10<sup>6</sup> respectively. In comparison, a DC Current Shunt will have a calibration uncertainty of 0.01% or larger in most cases.

Since 1993, MI has earned a worldwide reputation for Dependability, Quality, and Performance.

Feature	Benefit
No temperature coefficient	Reduces uncertainty
No stabilization period	Measurements can be made immediately
No power coefficient	No error difference from 5% to 100% of range
AC/DC	Works at DC and AC up to 1 kHz
CT/Current Divider	Current In is divided by either 100 or 1000
< 5 ppm (DC) / < 20 ppm (AC)	~20 times less than a traditional Current Shunt

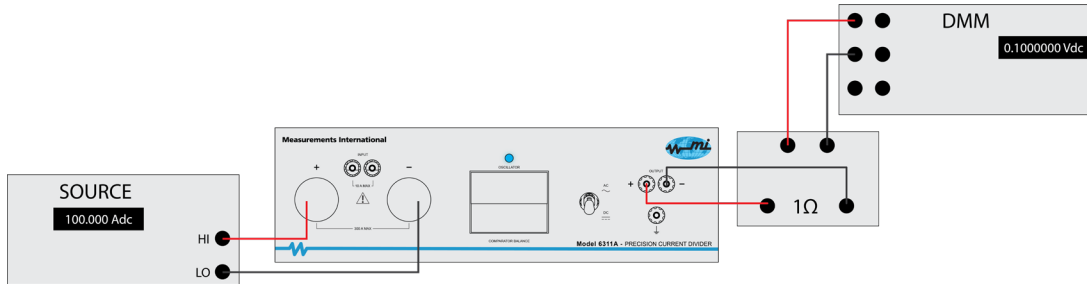


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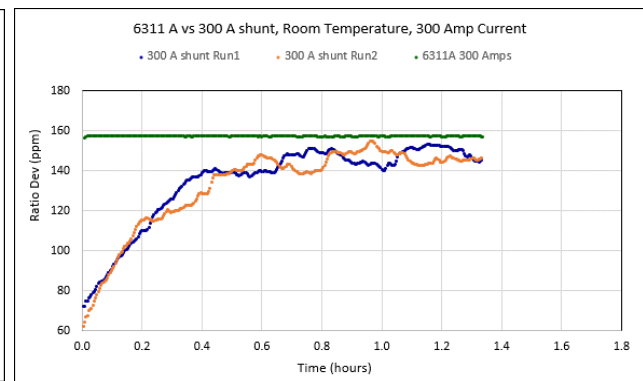
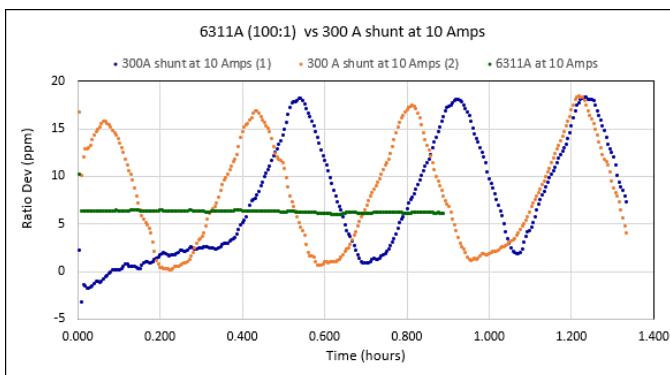
Example 1

The current output of the 6311A can be measured in 2 simple ways. Example 1 above shows current being applied to the Current input terminals. When connected to the 300 A inputs, the 6311A divides the current by 1000 making it easy to measure directly. The output of the 6311A is then connected to the input of a precision 8.5 digit DMM set to measure DC Current.



Example 2

Example 2 illustrates a similar setup. However, the output of the 6311A is connected to a precision standard resistor current terminals. The potential terminals of the standard resistor are then connected to the precision 8.5 digit DMM set to measure DC voltage. This example provides the best measurement uncertainty. Please refer to the 6311A Operators Manual for exact calculation of current using this method.





## 6311A PRECISION CURRENT DIVIDER

Specifications: Rev 2

DC Mode	
Rating (A)	300
Time Constant (s)	< 10
Maximum Input Current (A)	3000
Maximum Output Current (A)	3
Accuracy ( $\mu\text{A}/\text{A}$ )	< 5
Stability 1 year ( $\mu\text{A}/\text{A}$ )	< 0.05
Temperature Coefficient ( $\mu\Omega/^\circ\text{C}$ )	0
Power Coefficient ( $\mu\Omega/\text{W}$ )	0

AC Mode	
Rating (A)	300
Time Constant (s)	< 10
Maximum Input Current (A)	1000
Maximum Output Current (A)	1
Accuracy ( $\mu\text{A}/\text{A}$ ) *	< 50
Stability 1 year ( $\mu\text{A}/\text{A}$ )	< 0.05
Temperature Coefficient ( $\mu\Omega/^\circ\text{C}$ )	0
Power Coefficient ( $\mu\Omega/\text{W}$ )	0

\* with 1  $\Omega$  burden

**Dimensions (L × W × H):**  
660 × 609 × 267 (mm)

**Weight:**  
20.5 kg

**Shipping Weight:**  
30 kg

**Mains Power:**  
100 to 120 V<sub>ac</sub>, 220 to 240 V<sub>ac</sub>  
50/60 Hz

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