

Precision AC/DC Active Current Shunt

AC/DC Current Measurements to 100Amps

- AC/DC Current Calibrator
- Standard Resistance Bank
- Built –In Chopper Stabilizer Amplifier
- Working Calibration Standard
- Six Independent Switch Selectable Current Ranges
- Fan-Cooled Shunt for Thermal Stability
- Low Resistance Lab Standard Resistance Bank
- Calibration Traceable to NIST



The 2575A Precision AC-DC Active Current Shunt is truly a hardworking and versatile instrument designed for the calibration laboratory. The unit doubles as a measurement tool for AC and DC current as well as a working standard for low level resistance calibration requirements. In addition, the 2575A now features an improved built-in precision gain 10, chopper stabilizer buffer amplifier.

What's Wrong With Using DC Resistors to Certify AC Current? Plenty! To start with most lab standard resistors are designed to permit close trimming to a nominal DC value. These DC resistors contain inductive components, which even though very small, can result in significant AC voltage error (especially in the lower resistance values). To this end, each range of the 2575A utilizes a specially designed non-inductive resistance element which insures a flat frequency response to 10kHz.

In the current measurement mode, the 2575A offers six independent switch selectable ranges from 1mA full scale to 100A. All but the maximum range feature 100% over-range capability. The 100A, 10A and 1A range shunt resistors are fan cooled to insure minimum heat rise and thereby maximize thermal stability (<0.001% /°C). When used as a lab standard resistance bank, the 2575A provides six decade values of 4-terminal resistors from .001Ω to 100Ω.

The full scale voltage drop across the shunt is 100.00mV at rated current. A precision gain of 10.000 wide-band chopper amplifier is incorporated to provide a higher level output, capable of driving thermal transfer standards. The amplifier is available for use with external inputs and features an input impedance of 10,000 MΩ.

Range Specifications

Range	Shunt Value	Frequency Response	Accuracy (% of Range)			Temperature Coefficient
			DC	AC <i>f</i> < 1kHz	AC <i>f</i> ≥ 1kHz	
100A	0.001Ω	DC to 1kHz	± 0.05%	± 0.1%	± 0.5%	< 0.001%/°C
20A	0.01Ω	DC to 10kHz	± 0.02%	± 0.1%	± 0.5%	< 0.001%/°C
2A	0.1Ω	DC to 10kHz	± 0.02%	± 0.1%	± 0.5%	< 0.001%/°C
200mA	1Ω	DC to 10kHz	± 0.01%	± 0.1%	± 0.5%	< 0.001%/°C
20mA	10Ω	DC to 10kHz	± 0.01%	± 0.1%	± 0.5%	< 0.001%/°C
2mA	100Ω	DC to 10kHz	± 0.01%	± 0.1%	± 0.5%	< 0.001%/°C

Amplifier Characteristics

Amplifier Gain: 10.000
Gain Accuracy: ± 0.01% ± 10μV RTI @ DC
Frequency Response: ± 0.05% to 10kHz
Input Resistance: > 10¹⁰Ω
Output Resistance: < 0.1Ω

Power

Power Requirements: 110VAC/240VAC 50 to 60Hz 12 Watts
 Switching Power Supply

Temperature

Operating Temp. Range: 0°C to 50°C
Storage Temp. Range: -30°C to 70°C
Humidity: 70% RH max @ 40°C (non-condensing)

Physical Specifications

Width: 17" / 43.2cm
Depth: 10" / 25cm
Height: 3.5" / 9cm
Weight: 8lbs / 3.6kg net;

Accessories

HC	100 Amp Cable Set (Spade Lugs)
BBL	Dual Banana to Dual Banana lead set
RX-3	19" Rack Mount Adaptor