PRECISION CURRENT SHUNTS

INTRODUCTION

NMI Precision Current Shunts have been designed for use at national metrology institutes as standards for ac-dc transfer, ac current and as part of ac power standards. Each shunt is a coaxial two-port 4 terminal resistor comprising a parallel combination of precision thick film resistive elements.

SPECIFICATIONS

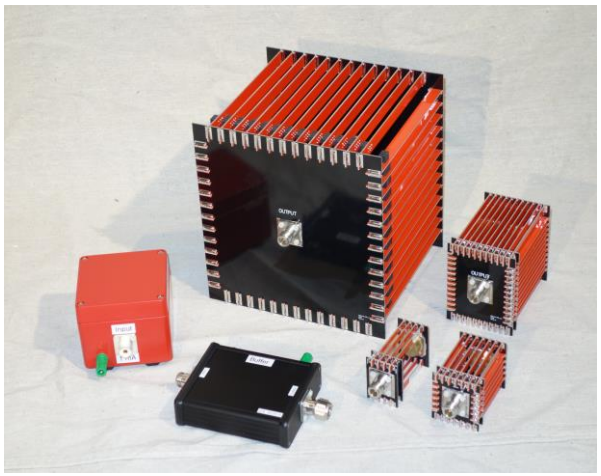
Nominal Output voltage: 1 V
Input connector: UHF female or N-male
Output Connector: N-female

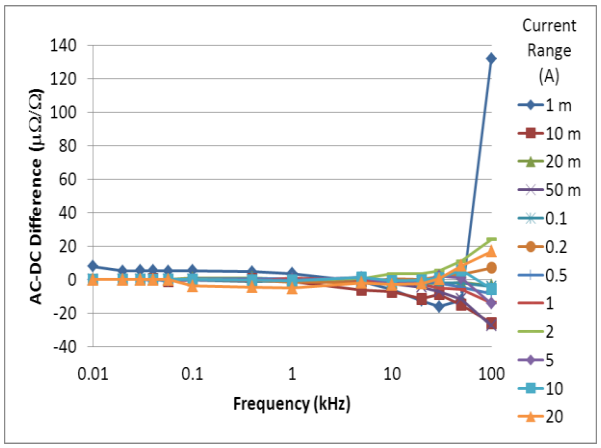
Typical AC-DC Difference (μΩ/Ω)

Range	1kHz	100 kHz	1 MHz
1 mA	<3	<100	
10 mA	<3	<50	
20 mA	<3	<20	
50 mA	<3	<10	<200
100 mA	<3	<5	<200
200 mA	<3	<5	<200
500 mA	<3	<10	<200
1A	<3	<20	<200
2 A	<3	<50	<200
5 A	<3	<100	<1000
10 A	<3	<100	<1000
20 A	<3	<500	

Typical Uncertainty of AC-DC Difference (μΩ/Ω)

	1kHz	100 kHz	1 MHz
1 mA	10	100	
10 mA	8	50	
20 mA	5	20	
50 mA	5	15	100
100 mA	5	15	100
200 mA	5	15	100
500 mA	5	15	100
1A	5	15	100
2 A	5	20	100
5 A	10	100	150
10 A	20	100	200
20 A	25	200	





Measured Values of AC-DC Difference

Typical life-time stability of ac-dc difference: less than 10% of calibration uncertainty
Change of resistance due to self heating: less than 10 μΩ/Ω/W for ranges up to 2 A,
less than 1 μΩ/Ω/W for ranges from 5 A to 20 A
Typical phase error: less than 3 μrad at 1 kHz, less than 10 μrad at 10 kHz

The 1 mA shunt is supplied with a buffer amplifier.
Other ranges and nominal voltages are available upon request.

ENQUIRIES

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