7350 Series

Precision AC and DC Current Shunts

High Stability, Wide Range Precision AC/DC Current Calibration Standards

Guildline Instruments 7350 Series of four-terminal AC Current Shunts are designed as higher accuracy and stability replacements of the successful 7320 series. These patent pending shunts have a non-inductive design. With a ruggedized and shielded enclosure, the 7350 series shunts are constructed with very small values of reactance. They are ideal for use over a wide frequency range from DC to 100 kHz with low uncertainty (high accuracy), low temperature coefficients and excellent stability.

To suit a wide range of customers and applications, the 7350 Series shunts provide power dissipation capability of up to 10 Watts and a maximum current capability up to 25A. For best performance, the model 73401 Forced Convection Unit is available for forced air-cooling.

The AC Current Shunts can be used for a variety of AC/DC current measurement applications and have a nominal impedance range of 0.01 Ω to 1000 Ω. Applications include the accurate measurement of AC current, calibration of AC current ranges of multi-function calibrators, high accuracy DVM's and Transconductance amplifiers, as well as providing a traceable current signal from a traceable voltage standard from DC to 100 kHz. These new shunts are designed to be purely resistive with extremely small values of reactance. The 7350 shunts may be used over a wide frequency range from DC to 100 kHz.

7350 Series Features

- Uncertainties Low as ± 35 ppm
- 6 Models from 0.01 Ω to 1 kΩ
- Excellent 1-Year Stabilities <10 ppm/yr
- Ruggedized Shielded Enclosure for Maximum performance
- True Non-Inductive Design
- Widest Available Commercial Frequency Bandwidth, DC-100 kHz
- Low Temperature Coefficients (t/c) <2 ppm/^{0}C
- Four Terminal Design
- Designed for Ease of Use and Complete Operational Safety!
- 10 Watt Power Rating
- Patent Pending

The 7350 Series AC Current Shunts offer Outstanding Stability while providing the Widest Available Frequency Response with Power Dissapation to 10 Watts!

The lower value shunts (below 10 Ω), may also be used as burdens for current transformers. These shunts are also valuable when making AC power and energy measurements using wattmeters or watt hour meters. The very small phase shift of the shunts makes accurate high-frequency power measurements possible to address measurement challenges due to high order harmonics. As a result of the very small phase shift across the shunts, the output voltage of the shunts faithfully reproduces the current waveform even under badly distorted or pulsed current conditions, making the shunts useful for examining complex and distorted current waveforms. Additionally, the shunts are effective in many other classical measurement, standards, or calibration laboratory applications.

UHF Type connectors are provided for currents up to 25 A on the back face of the shunt. The connector on the front face is a BNC type connector for monitoring the voltage readout. The metallic enclosure acts as a shield and is isolated from both the input and output connections. A separate connection is provided for connection to the enclosure of a measuring device.

A special adaptor is available for connecting various shunts in series. Users can easily connect a reference shunt in series with a unit-under-test (UUT) to make a transfer measurement.

7350 Series of Precision AC Current Shunts

7350 Series Specifications

Model Nominal Value (Ω)	Maximum Current (Amps) [1]	Maximum Voltage (V)	Maximum Power (W)	Nominal Initial Tolerance [2] ± ppm	DC Stability 12 Months ± ppm	Temperature Coefficient ± ppm/°C	Power Coefficient [4] ± ppm/watt
7350-0.01Ω	25	0.25	6.3	30	15	4	4.5
7350-0.1Ω	10	1	10	25	15	3	4
7350-1Ω	3.2	3.2	10	25	10	2.5	3.5
7350-10Ω	1	10	10	25	10	2	3
7350-100Ω	0.32	32	10	25	10	2	2
7350-1000Ω	0.1	100	10	25	10	2	2

Model	AC-DC Difference Accuracy [5] In ppm @ 23 °C ± 1 °C				Length		Diameter		Weight		Connectors	
	100 Hz	1 kHz	10 kHz	100 kHz	Inch	mm	Inch	mm	lbs	kg	Input	Output
7350-0.01Ω	±35	±50	0 ~ -100	0 ~ -350	2.8	71.4	6.63	168.4	1.8	0.82	UHF	BNC
7350-0.1Ω	±35	±35	±50	0 ~ -200	2.8	71.4	6.63	168.4	1.8	0.82	UHF	BNC
7350-1Ω	±35	±35	±50	±150	2.8	71.4	6.63	168.4	1.8	0.82	UHF	BNC
7350-10Ω	±35	±35	±50	±150	2.8	71.4	6.63	168.4	1.8	0.82	UHF	BNC
7350-100Ω	±35	±50	150 ~ 0	1600 ~ 0	2.8	71.4	6.63	168.4	1.8	0.82	UHF	BNC
7350-1000Ω	±35	±50	1600 ~ 0	--	2.8	71.4	6.63	168.4	1.8	0.82	UHF	BNC

Note 1 – Current shunts may be used at current levels below the specified range but with reduced output voltages
Note 2 – Initial Tolerance is defined as the maximum variation of resistance mean values as initially adjusted at the point of sale.
Note 3 – Calibrated in air at the minimum and maximum of the current range in air at 23 °C ± 1 °C at DC and 100 Hz, 1 kHz, 10 kHz and 100 kHz frequencies. Calibration of resistance and AC-DC Difference values are referred to the unit of resistance as maintained by the National Research Council of Canada or the National Institute of Standards and Technology and are expressed as a total uncertainty with a coverage factor of k=2.
Note 4 – Power coefficients are specified using the 73401 Forced Convection Unit for currents above 3A.
Note 5 – AC-DC Difference is defined as the difference between a sinusoidal alternating current required for a given output emf and the average of both polarities of direct current required for the same emf, where a positive difference indicates that more alternating current is required to produce the same emf.

Warranty

Over 50 Years of Guildline innovation in engineering and design and now with an industry leading **2-Year Warranty** to show our confidence. All 7350 Series of AC Shunts now come with a 2-year Warranty. This warranty covers both parts and labor.

Environmental	Temperature	Humidity
Operating	18 °C to 28 °C	< 50% RH non-condensing
Storage	-20 °C to 60 °C	15% to 80% RH

Guildline IS DISTRIBUTED BY:

Ordering Information	
7350-Model	Current Shunt (List Ohmic Value For Model)
/TM7350	Technical Manual included at no charge
/cc	Certificate of Calibration (Included)
73401	Forced Air Convection Unit (fits all standard models)
73404	AC Buffer Amplifier
73502	Serial connection adaptor (UHF 30A)
73503	Adaptor Kit

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