

7330 SERIES

PRECISION AC/DC OIL BASED RESISTANCE STANDARDS

Very Stable Oil Based Primary AC/DC Resistance Standards



FEATURES

- Typical AC/DC Error $<1.0 \mu\Omega/\Omega$ at 1 kHz!
- Stability $<2 \mu\Omega/\Omega$ /Year!
- Temperature Coefficient Low as $<0.2 \text{ ppm}/^\circ\text{C}$ ($<0.0002 \text{ ppm}/^\circ\text{C}$ ambient when used with Guildline 5600 Oil Bath)!
- Perfect for Oil or Air Baths
- Resistance Range 1Ω to $10 \text{ k}\Omega$
- Unique Compact Design
- Nominal Accuracy $<2 \mu\Omega/\Omega$!
- ISO/IEC 17025 DC Calibration Included
- Guard and Shield Compliant
- Special Values Available On Request

GUILDLINE INSTRUMENTS 7330 SERIES of Oil Based Resistance Standards are designed for very accurate, low uncertainty, resistance calibration in oil (Fluid Baths) or in air.

Having developed the most advanced series of Fluid Baths (i.e. Model 5600 Series), Guildline has now designed a new oil based AC/DC Resistance Standard to allow customers to get the highest performance for oil based standards whether in our 5600 Series of Fluid Baths or in your own oil bath.

THE 7330 SERIES PRECISION OIL BASED RESISTANCE STANDARDS ARE TRUE AC/DC STANDARDS WITH ESSENTIALLY NO AC/DC ERROR UP TO 1 KHz, AND ARE AVAILABLE IN A WIDE RANGE OF STANDARD AND CUSTOM VALUES.

If you examine the 7330, you will find Metrology Grade Components for the case, connections, resistors and other components. Strategically placed case holes allow for maximum fluid flow over the internal resistive elements, significantly reducing the effects of temperature.

These resistance standards are suitable for both AC and DC applications. They are extremely useful as references for AC Temperature Bridges, for the calibration of resistance ranges of multi-function calibrators and high accuracy DVMs, as well as being used in more classical standards and calibration resistance measurements.

Connections to these resistance standards are made via gold plated 5-way binding posts. In DC and low frequency measurements, these gold plated binding posts yield the lowest thermal EMF when connected with gold, copper or silver.

With a standard range from 1Ω to $10 \text{ k}\Omega$, or also available in custom values, these resistance standards are designed to work for years to come.

7330 Series AC/DC Precision Resistance Standards

GENERAL SPECIFICATIONS							
Environmental		Temperature			Humidity		
Operating		18 °C to 28 °C			<70 % RH non-condensing		
Storage		-20 °C to 60 °C			15 % to 80 % RH		
Dimensions		Height		Diameter		Weight	
		mm	Inches	mm	Inches	kg	lbs
		109.2	4.3	95.3	3.75	0.545	1.2

Model (Nominal Ω)	Nominal Value (Ω)	Initial ¹ Tolerance $\pm \mu\Omega/\Omega$	Stability 12 Months $\pm \mu\Omega/\Omega$ ²	Typical AC/DC Difference @ 1 kHz $\pm \mu\Omega/\Omega$	Maximum Excitation (mA)	Temperature Coefficient $\pm \mu\Omega/\Omega / ^\circ\text{C}$
7330-1	1	2	2.5	<3.0	320	0.2
7330-2.5	2.5	2	2.5	<3.0	200	0.2
7330-10	10	2	2.5	<1.0	100	0.2
7330-25	25	2	2.5	<1.0	64	0.2
7330-100	100	2	2.5	<1.0	32	0.2
7330-400	400	2	2.5	<1.0	16	0.2
7330-1k	1k	2	2.5	<1.0	10	0.2
7330-10k	10k	2	2	<1.0	3.2	0.2

Special values are available upon request.

Note 1: Nominal initial tolerance is defined as the maximum variation of resistance mean values as initially adjusted at the point of sale.

Note 2: Stability after 2 years is $< 2 \mu\Omega/\Omega$ except for 7330-10K which is $< 1.5 \mu\Omega/\Omega$

Note 3: Calibrated under DC excitation in oil at 25 °C, traceable to the SI unit of electrical resistance. Calibration uncertainties expanded and expressed at the 95 % level of confidence. A calibration certificate and report of calibration stating the calibrated value and estimated uncertainty is provided with each resistor and is ISO/IEC 17025 Accredited for DC only. AC-DC Difference calibration is quoted separately.

ORDERING INFORMATION	
7330-Value	Resistance Standard (List Ohmic Value)
	Includes ISO 17025 Accreditation (DC Only)
/CC	Certificate of Calibration Included
/TM7330	Technical Manual (included)
SCW-30:18AWG	30 Meters SCW 18 Gauge Wire (4 Wire)
SCW-30:22AWG	30 Meters SCW 22 Gauge Wire (4 Wire)
SCW-100:18AWG	100 Meters SCW 18 Gauge Wire (4 Wire)
SCW-100:22AWG	100 Meters SCW 22 Gauge Wire (4 Wire)
5600	Oil / Fluid Bath
Other Accessories, Lead Sets available. Contact Guildline.	

GUILDLINE IS DISTRIBUTED BY:

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