

AC Resistor Standard KIT

ARC4T Four-Terminal Pair Standard Resistor Set

Operation and Service Manual



General Information

Introduction

This kit serves as a reference standard for verifying the calibration of LCR meters, impedance meters, capacitance meters, and similar measurement instruments. It is designed in accordance with the Four-Terminal Pair standard, and can also be used with other connection standards through the use of conversion adapters.

Description

The resistor kit includes 10 standard values, together with 2 additional modules (open/short) for extended configurations to compensate for lead lengths.

Each unit is built from high-stability components with low thermal drift, making it suitable for both portable and fixed reference standards.



Table 1

Model	Description	Quantity
ACR-0.001	1 mΩ Standard Resistor	1
ACR-0.01	10 mΩ Standard Resistor	1
ACR-0.1	100 mΩ Standard Resistor	1
ACR-1	1 Ω Standard Resistor	1
ACR-10	10 Ω Standard Resistor	1
ACR-100	100Ω Standard Resistor	1
ACR-1K	1kΩ Standard Resistor	1
ACR-10k	10kΩ Standard Resistor	1
ACR-100k	100kΩ Standard Resistor	1
ACR-1M	1MΩ Standard Resistor	1
Optional	*	*
Open	Open Module	1
Short	Short Module	1
Calibration Certification	Request	1

Specifications

The following specifications are published as the standard conditions for products authorized for factory release.

The standard conditions for measurement are **24 °C ±5 °C with 40% relative humidity.**

DC Resistance

Table 2

Model	DC Resistance
ACR-0.001	$0.001\Omega \pm 0.01\%$
ACR-0.01	$0.01\Omega \pm 0.01\%$
ACR-0.1	$0.1\Omega \pm 0.01\%$
ACR-1	$1\Omega \pm 0.01\%$
ACR-10	$10\Omega \pm 0.01\%$
ACR-100	$100\Omega \pm 0.01\%$
ACR-1K	$1k\Omega \pm 0.01\%$
ACR-10k	$10k\Omega \pm 0.01\%$
ACR-100k	$100k\Omega \pm 0.01\%$
ACR-1M	$1M\Omega \pm 0.01\%$

AC Resistance

ACR-10Ω Resistor AC

Table 3

Frequency	Series Resistance	Reactance
1Khz	$\pm 0.01\%$	$\pm 0.0002\Omega$
10Khz	$\pm 0.01\%$	$\pm 0.0003\Omega$
100Khz	$\pm 0.01\%$	$\pm 0.003\Omega$
1Mhz	$\pm 0.01\%$	$\pm 0.03\Omega$
2Mhz	$\pm 0.01\%$	$\pm 0.06\Omega$
3Mhz	$\pm 0.09\%$	$\pm 0.09\Omega$
4Mhz	$\pm 0.15\%$	$\pm 0.1\Omega$
5Mhz	$\pm 0.23\%$	$\pm 0.1\Omega$

ACR-100Ω Resistor AC

Table 4

Frequency	Series Resistance	Reactance
1Khz	$\pm 0.02\%$	$\pm 0.0002\Omega$
10Khz	$\pm 0.02\%$	$\pm 0.0003\Omega$
100Khz	$\pm 0.02\%$	$\pm 0.003\Omega$
1Mhz	$\pm 0.02\%$	$\pm 0.03\Omega$
2Mhz	$\pm 0.02\%$	$\pm 0.06\Omega$
3Mhz	$\pm 0.05\%$	$\pm 0.09\Omega$
4Mhz	$\pm 0.09\%$	$\pm 0.1\Omega$
5Mhz	$\pm 0.16\%$	$\pm 0.1\Omega$

ACR-1K Ω Resistor AC

Table 5

Frequency	Parallel Resistance	Susceptance
1Khz	$\pm 0.02\%$	$\pm 0.05 \mu\text{S}$
10Khz	$\pm 0.02\%$	$\pm 0.00 \mu\text{S}$
1Khz	$\pm 0.01\%$	$\pm 0.001 \mu\text{S}$
10Khz	$\pm 0.01\%$	$\pm 0.001 \mu\text{S}$
100Khz	$\pm 0.02\%$	$\pm 0.03 \mu\text{S}$
1Mhz	$\pm 0.03\%$	$\pm 0.03 \mu\text{S}$

ACR-100K Ω Resistor AC

Table 7

Frequency	Parallel Resistance	Susceptance
1Khz	$\pm 0.01\%$	$\pm 0.001 \mu\text{S}$
10Khz	$\pm 0.01\%$	$\pm 0.001 \mu\text{S}$
100Khz	$\pm 0.02\%$	$\pm 0.03 \mu\text{S}$
1Mhz	$\pm 0.01\%$	$\pm 0.03 \mu\text{S}$

ACR-1M Ω Resistor AC

Table 8

Frequency	Parallel Resistance	Susceptance
1Khz	$\pm 0.01\%$	$\pm 0.001 \mu\text{S}$
10Khz	$\pm 0.01\%$	$\pm 0.001 \mu\text{S}$
100Khz	$\pm 0.02\%$	$\pm 0.03 \mu\text{S}$
1Mhz	$\pm 0.03\%$	$\pm 0.03 \mu\text{S}$

Calibration Interval

A calibration interval of 1 year is recommended to monitor potential drift.

Repair Service

Authorized repairs: Viewtek Lab only (to maintain compliance with standard specifications).

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