

RS3

4 TERMINAL CONSTRUCTION, HIGH STABILITY RESISTANCE STANDARD WITH WIDE RANGE

The RS3 range of resistance standards are constructed using carefully selected low temperature coefficient Manganin or Zeranin wire, depending on the value, mounted on formers which have a high mechanical stability. The wires are wound in a strain free manner and heat treated to remove any stresses. They are also artificially aged under the strictest control. The result is a standard of high quality with long term stability and permanence of calibration combined with a low temperature coefficient. We offer the widest range of standard values available today. In addition we are able to manufacture for special applications (e.g. Pt100 simulation) special values to customer requirements. The RS3 range also offers a high current carrying capability which makes them ideal for applications where precise current needs to be measured.

KEY FEATURE	RS3
Wide range 0.0001 ohm to 1 Mega ohm	■
Excellent load coefficient	■
Special values made to order	■
4 terminal construction	■
Can be used in air or oil bath	■
Each standard supplied complete with calibration certificate	■



RS3 SPECIFICATIONS

Model	Value	Uncertainty of Adjustment @20°C	Uncertainty of Certification	Temp Coeff Typical 15 to 20°C	Stability Over 1 Year	Dissipation Max in Air Watts	Dissipation Max in Oil Watts	Max. I in Air (Amps)	Max. I in Oil (Amps)
RS3/0001	0.0001Ω	0.02%	±200ppm	20ppm/°C	0.0025%	1	4	100	200
RS3/001	0.001Ω	0.01%	±50ppm	25ppm/°C	0.0025%	1	4	32	60
RS3/01	0.01Ω	0.01%	±25ppm	10ppm/°C	0.001%	1	4	10	20
RS3/02	0.02Ω	0.01%	±50ppm	10ppm/°C	0.001%	1	4	7	14
RS3/05	0.05Ω	0.01%	±50ppm	10ppm/°C	0.001%	1	4	4.5	9
RS3/0.1	0.0.1Ω	0.003%	±25ppm	10ppm/°C	0.001%	1	4	3	6
RS3/1	1Ω	0.003%	±25ppm	10ppm/°C	0.001%	2	10	1.4	3
RS3/10	10Ω	0.003%	±25ppm	10ppm/°C	0.001%	2	10	0.44	1
RS3/25	25Ω	0.005%	±25ppm	10ppm/°C	0.001%	1	10	0.2	1
RS3/50	50Ω	0.005%	±25ppm	3ppm/°C	0.001%	1	10	0.1	0.3
RS3/100	100Ω	0.003%	±25ppm	3ppm/°C	0.001%	1	10	0.1	0.3
RS3/250	250Ω	0.005%	±25ppm	3ppm/°C	0.001%	1	10	0.1	0.1
RS3/1k	1kΩ	0.003%	±25ppm	3ppm/°C	0.001%	1	10	0.03	0.030
RS3/10k	10kΩ	0.003%	±25ppm	3ppm/°C	0.001%	1	10	0.01	0.03
RS3/100k	100kΩ	0.003%	±25ppm	3ppm/°C	0.001%	1	1	0.003	0.003
RS3/1M	MΩ	0.01%	±25ppm	3ppm/°C	0.002%	1	1	0.0002	0.0002

**Special values can be made to order.*

Value in ohms	Typical time constant
1Ω	+ 0.34µH/Ω
10Ω	+ 0.18µH/Ω
100Ω	+ 0.03µH/Ω
1kΩ	+ 0.04µH/Ω
10kΩ	+ 0.6µH/Ω

The resistance standards type RS3 were primarily designed as DC standards, however values above 0.1 ohm are non inductively wound and the adjacent AC characteristics are typical

Dimensions

160mm high x 90mm diameter approx

Mass

0.9kg approx

Resistance Elements

Manganin or Zeranin depending on the value. 100 ohm, 1, 10 and 100 kilo ohm low inductance winding on brass formers with PTFE insulation. 0.1, 1 and 10 ohm bifilar winding on cylindrical brass formers with PTFE insulation. 0.01, 0.001, and 0.0001 ohm resistance material in the form of straight rods or loops supported on 12mm brass conductors

Terminals

Potential — Gold plated copper 4mm
Current — Nickel

Top Panel

Bakelite marked with the value, class designation and serial number

Case

Light alloy, black anodised to give maximum heat radiation
Thermometer Tube: Slotted extending the length of the resistance element

Label

Each standard is fitted with a label that describes its characteristic and operating parameters