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 Features

- Wide range 0.0001Ω to 1MΩ
- 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

Ideal For

- Calibration houses
- Laboratories/workshops

SEAWARD

Technical 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. DC Current in Air	Max. DC Current in Oil	Part Number
RS3/0001	0.0001Ω	0.02%	±200ppm	30ppm/°C	0.0025%	1	4	100A	200A	930018
RS3/001	0.001Ω	0.01%	±50ppm	25ppm/°C	0.0025%	1	4	30A	60A	930019
RS3/01	0.01Ω	0.01%	±25ppm	10ppm/°C	0.001%	1	4	10A	20A	930020
RS3/05	0.05Ω	0.01%	±50ppm	10ppm/°C	0.001%	1	4	4.5A	9A	930022
RS3/0.1	0.1Ω	0.003%	±25ppm	10ppm/°C	0.001%	1	4	3A	6A	930023
RS3/1	1Ω	0.003%	±25ppm	10ppm/°C	0.001%	2	10	1.4A	3A	930024
RS3/10	10Ω	0.003%	±25ppm	10ppm/°C	0.001%	2	10	450mA	1A	930026
RS3/25	25Ω	0.005%	±25ppm	10ppm/°C	0.001%	1	10	200mA	600mA	930027
RS3/50	50Ω	0.005%	±25ppm	3ppm/°C	0.001%	1	10	140mA	450mA	930028
RS3/100	100Ω	0.003%	±25ppm	3ppm/°C	0.001%	1	10	100mA	300mA	930029
RS3/250	250Ω	0.005%	±25ppm	3ppm/°C	0.001%	1	10	60mA	200mA	930032
RS3/1k	1kΩ	0.003%	±25ppm	3ppm/°C	0.001%	1	5	30mA	70mA	930034
RS3/10k	10kΩ	0.003%	±25ppm	3ppm/°C	0.001%	0.5	0.5	7mA	7mA	930035
RS3/100k	100kΩ	0.003%	±25ppm	3ppm/°C	0.001%	0.05	0.05	700µA	700µA	930036
RS3/1M	MΩ	0.01%	±25ppm	3ppm/°C	0.002%	0.005	0.005	70µA	70µA	930037

Special values may be possible, contact Seaward to discuss

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

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

Maximum Operating Voltage
70VDC, 33Vrms

Terminals
Potential — Gold plated copper 4mm
Current — Nickel

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

General Specifications

Dimensions
160mm (h) x 90mm (diameter) / 6.3 x 3.5” approx

Mass
0.9kg approx / 2lbs

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

Top Panel
Bakelite marked with the value, class designation and serial number

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

Services
1 year warranty (subject to product registration with Seaward. Visit **www.seaward.co.uk/register-product**)

Service and calibration by Calibrationhouse.
Go to **www.calibrationhouse.com** for more information