

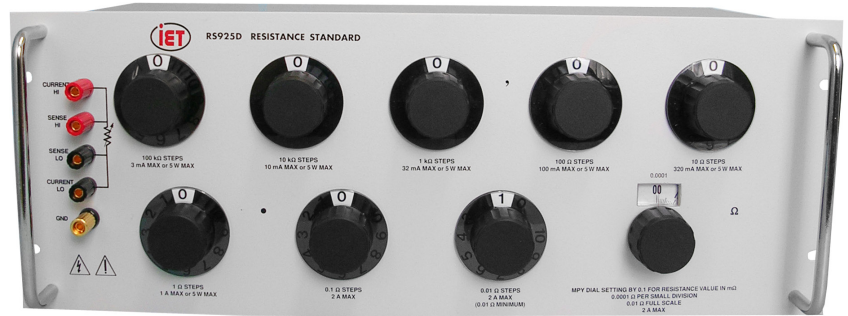
(esi) Decade Resistance Substituter

RS925D

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Features:

- High accuracy - 20 ppm
- High stability - 5 ppm/yr
- Low temperature coefficient - as low as 3 ppm/°C
- High-performance, solid silver contact switches
- Resistance from 10 mΩ to over 1.21 MΩ
- 20 μΩ resolution rheostat
- Hermetically sealed, low inductance resistors
- Precise fixed minimum resistance



The IET (esi) RS925D is a four-terminal, continuously variable decade resistor for the most exacting calibration and test applications.

SPECIFICATIONS

Resistance per step	Total decade resistance	Max current	Max power	Temperature coefficient (±ppm/°C)	Power coefficient (±ppm/mW)	Stability (±ppm/yr)	Decade positions	Resistor type
		whichever applies first						
100 μΩ division 20 μΩ resolution	10 mΩ	2 A	NA	20	1	20 ppm+0.5 mΩ	Continuous	Rheostat
10 mΩ	100 mΩ	2 A	NA	20	1		10 positions "1"- "10" (10 mΩ minimum reading)	Resistance wire
100 mΩ	1 Ω	2 A	NA	20	1		11 positions "0"- "10"	Wirewound hermetically sealed low-inductance
1 Ω	10 Ω	1 A	5 W	20	0.4			
10 Ω	100 Ω	0.33 A	5 W	10	0.3			
100 Ω	1 kΩ	0.1 A	5 W	3	0.1			
1 kΩ	10 kΩ	33 mA	5 W	3	0.1	10 ppm (<5 ppm typical)		
10 kΩ	100 kΩ	10 mA	5 W	3	0.1			
100 kΩ	1 MΩ	3 mA	2,000 V peak	3	0.1		12 positions "0"- "11"	
Wiring and switch resistance		NA		50 μΩ/°C	0.2 μΩ/W	NA		

Accuracy:

±(20 ppm+0.5 mΩ)
At 23°C "true ohm" measurement,
30-70% RH, absolute reading, SI traceable
No zero subtraction required

Minimum resistance:

10 mΩ ± 0.5 mΩ; determined by the lowest
settable position, "1", of the 10 mΩ/step
decade

Resistance repeatability:

Better than 100 μΩ, short-term, average
value

Leakage Resistance:

>10 GΩ

Environmental Conditions:

Operating Temperature: 0°C to 55°C
Storage Temperature: -40°C to 70°C

Switch Type:

Multiple solid silver contacts; dust-tight
diallyl-phthalate body.
To allow continuous rotation, a blank position
is added on most decades.

Terminals:

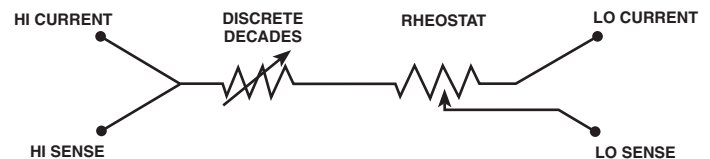
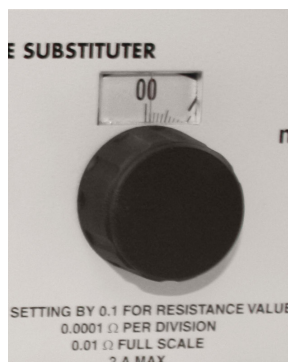
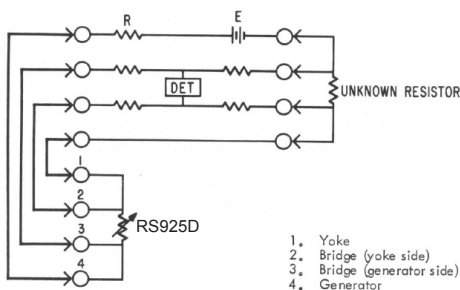
Four, 5-way, gold-plated, tellurium-copper
binding posts with low thermal emf and
low resistance, for four-terminal Kelvin
measurements, plus one binding post
connected to case for shielding. Rear
outputs are available as an option.

Mechanical Information:

Dimensions: 48.3 cm W x 17.8 cm H x
19.7 cm D (19" W x 7" H x 7.8" D)
Weight: 5.1 kg (11 lb)

KELVIN BRIDGE MEASUREMENT

RHEOSTAT



For high-resolution applications, a 10 mΩ rheostat is used for the lowest step. It is a 20 μΩ resolution "decade". In order to eliminate contact resistance and thermal emf, the **RD925D** integrates the rheostat as shown. In this way, the wiper is in the low potential circuit, which is the high impedance lead. As a result, voltage and contact resistance effects are removed by being effectively added to the input impedance of the measuring instrument.

RS925D data sheet/12-27-12