

High-Resistance Decade Substituter

HRRS Series p. 1 of 2

Economical, high-performance, high-resistance decade resistor for all laboratory, test, and calibration needs

- Resistance from 10 Ω to 1 TΩ +
- High-accuracy: up to .01%
- High-stability: up to 10 ppm/yr
- Excellent TC: as low as 5 ppm/°C
- Low voltage coefficient: as low as 0.2 ppm/V
- High-performance solid silver-alloy switches
- High-voltage versions available
- Rack mounting available
- Special and custom configurations available



6 Decade **HRRS** High-Resistance Substituter

See also:

- For higher power see **HPRS Series**
- For higher accuracy see **HARS-X** and **HARS-LX Series**
- For higher voltage the **HRRS-5kV** and **HRRS-10kV Series**
- For RTD simulators see **RTD Series**
- For programmable models see **PRS Series**

SPECIFICATIONS

Resistance per step	Total decade resistance	Accuracy			Max voltage per step (V)	Maximum Voltage (V)	Temperature coefficient (±ppm/°C)	Voltage coefficient (±ppm/V)	Stability (±ppm/yr)	Resistor Type
		Q	B	F						
10 Ω	100 Ω	0.01%	0.03%	0.1%	2.5	25	15	0	10	Wirewound, non-inductive
100 Ω	1 kΩ	0.01%	0.03%	0.1%	8	80	5	0	10	Wirewound, non-inductive
1 kΩ	10 kΩ	0.01%	0.03%	0.1%	23	230	5	0	10	Wirewound, non-inductive
10 kΩ	100 kΩ	0.01%	0.03%	0.1%	70	700	5	0	10	Wirewound, non-inductive
100 kΩ	1 MΩ	0.01%	0.03%	0.1%	230*	2000	5	0	10	Wirewound, non-inductive
1 MΩ	10 MΩ	0.01%	0.03%	0.1%	1000*	2000	15	0.2	25	Metal-oxide film
10 MΩ	100 MΩ	0.03%	0.1%	1%	1000*	2000	15	0.2	50	Metal-oxide film
100 MΩ	1 GΩ	0.1%	0.2%	1%	1000*	2000	15	1.5	100	Metal-oxide film
1 GΩ	10 GΩ	0.2%	0.5%	1%	1000*	2000	50	5	500	High-voltage film
10 GΩ	100 GΩ	0.5%	1%	1%	1000*	2000	50	5	500	High-voltage film
100 GΩ	1 TΩ	0.5%	1%	1%	1000*	2000	200	5	500	High-voltage film

* Subject to maximum of 2000 V (dc + ac peak)

Zero Resistance

<3 mΩ per decade

Environmental Conditions

Operating Conditions: 10°C to 23°C; <50% RH

Storage Conditions: -40°C to 70°C

Terminals

Two five-way binding posts on 2 special, low-leakage, Kel-F insulating sockets, and one metal ground binding post electrically connected to the case

Mechanical:

Model	Dimensions	Weight
3 Decade	31.2 cm W x 8.9 cm H x 10.2 cm D (12.3" x 3.5" x 4.0")	1.4 kg (3.0 lb)
4 Decade	37.5 cm W x 8.9 cm H x 10.2 cm D (14.8" x 3.5" x 4.0")	1.6 kg (3.5 lb)
5 Decade	37.5 cm W x 8.9 cm H x 10.2 cm D (14.8" x 3.5" x 4.0")	1.9 kg (4 lb)
6-7 Decade	43.9 cm W x 8.9 cm H x 10.2 cm D (17.3" x 3.5" x 4.0")	2 kg (4.5 lb)



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ORDERING INFORMATION

Model	Total Resistance	Number of Decades	Resolution
HRRS-* 3-100k	111 MΩ	3	100 kΩ
HRRS-* 3-1M	1.11 GΩ	3	1 MΩ
HRRS-* 3-10M	11.1 GΩ	3	10 MΩ
HRRS-* 3-100M	111 GΩ	3	100 MΩ
HRRS-* 3-1G	1.11 TΩ	3	1 GΩ
HRRS-* 4-10k	111.1 MΩ	4	10 kΩ
HRRS-* 4-100k	1.111 GΩ	4	100 kΩ
HRRS-* 4-1M	11.11 GΩ	4	1 MΩ
HRRS-* 4-10M	111.1 GΩ	4	10 MΩ
HRRS-* 4-100M	1.111 TΩ	4	100 MΩ
HRRS-* 5-1k	111.11 MΩ	5	1 kΩ
HRRS-* 5-10k	1.111 1 GΩ	5	10 kΩ
HRRS-* 5-100k	11.111 GΩ	5	100 kΩ
HRRS-* 5-1M	111.11 GΩ	5	1 MΩ
HRRS-* 5-10M	1.111 1 TΩ	5	10 MΩ

Model	Total Resistance	Number of Decades	Resolution
HRRS-* 6-10	11.111 1 MΩ	6	10 Ω
HRRS-* 6-100	111.111 MΩ	6	100 Ω
HRRS-* 6-1k	1.111 11 GΩ	6	1 kΩ
HRRS-* 6-10k	11.111 1 GΩ	6	10 kΩ
HRRS-* 6-100k	111.111 GΩ	6	100 kΩ
HRRS-* 6-1M	1.111 11 TΩ	6	1 MΩ
HRRS-* 7-10	111.111 1 MΩ	7	10 Ω
HRRS-* 7-100	1.111 111 GΩ	7	100 Ω
HRRS-* 7-1k	11.111 11 GΩ	7	1 kΩ
HRRS-* 7-10k	111.111 1 GΩ	7	10 kΩ
HRRS-* 7-100k	1.111 111 TΩ	7	100 kΩ

**To specify accuracy, replace * with "Q," "B," or "F" as required.*

Options

- RM: Rack mountable case for standard 19" rack
- K: Kelvin-type 4-terminal posts
- RO: Rear output

