HRRS Series

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

*5 Decade **HRRS** High-Resistance Substituter*

Features:

- High accuracy - to .01%
- High stability - to 10 ppm/yr
- Excellent TC - as low as 5 ppm/°C
- Resistance from 10 Ω to 1 TΩ+
- 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

See also:

- Higher accuracy: **HARS-X** or **HARS-LX Series**
- Higher power: **HPRS Series**
- Higher voltage: **HRRS-5kV** and **HRRS-10kV Series**
- RTD simulators: **RTD Series** -- without zero subtraction
- Programmable models: **PRS Series**

Specifications

Resistance per step	Total decade resistance	Accuracy 18-28°C; <50% RH			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%+2 mΩ)	±(0.03%+2 mΩ)	±(0.10%+2 mΩ)	2.5	25	15	-	10	Wirewound, non-inductive
100 Ω	1 kΩ	±(0.01%+2 mΩ	±(0.03%+2 mΩ)	±(0.10%+2 mΩ)	8	80	5	-	10	
1 kΩ	10 kΩ	±0.01%	±0.03%	±0.10%	23	230	5	-	10	
10 kΩ	100 kΩ	±0.01%	±0.03%	±0.10%	70	700	5	-	10	
100 kΩ	1 MΩ	±0.01%	±0.03%	±0.10%	230	2000	5	-	10	
1 MΩ	10 MΩ	±0.01%	±0.03%	±0.10%	1000**	2000	15	<1	25	Metal-oxide film
10 MΩ	100 MΩ	±0.03%	±0.10%	±1%	1000**	2000	15	<1	50	
100 MΩ	1 GΩ	±0.10%	±0.20%	±1%	1000**	2000	15	1	100	
1 GΩ	10 GΩ	±0.20%	±0.50%	±1%	1000**	2000	50	1	500	High-voltage film
10 GΩ	100 GΩ	±0.50%	±1%	±1%	1000**	2000	50	1	500	
100 GΩ	1 TΩ	See HRRS-5kV Series if these values are required.								
1 TΩ	10 TΩ									

***To apply up to 2000 V for the first step, use the preceding decade at its "10" position. e.g. to obtain 1 MΩ with 2000 V max, set 100 kΩ switch to position "10."*

Zero resistance
<3 mΩ per decade

Environmental conditions
Operating Conditions: 10°C to 40°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

Max voltage to case
2000 V peak

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)
4-5 Decade	37.5 cm W x 8.9 cm H x 10.2 cm D (14.8" x 3.5" x 4.0")	1.6 kg (4.0 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)
8-9 Decade	48.3 cm W x 17.8 cm H x 19.7 cm D (19.0" x 7.0" x 7.8")	5.1 kg (11 lb)

Ordering Information

Model	Total resistance	Number of decades	Resolution
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-*-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-*-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-*-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

Model	Total resistance	Number of decades	Resolution
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-*-8-10	1,111.111 1 MΩ	8	10 Ω
HRRS-*-8-100	11.111 111 GΩ	8	100 Ω
HRRS-*-8-1k	111.111 11 GΩ	8	1 kΩ
HRRS-*-9-10	11,111.111 1 MΩ	9	10 Ω
HRRS-*-9-100	111.111 111 GΩ	9	100 Ω

**To specify accuracy grade, replace * with "Q," "B," or "F" as required.*
***To specify voltage, replace ** with either "5kV" or "10kV."*

Options

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