

HRRS 5kV and 10kV Series

High-voltage, high-performance, high-resistance decade substituter for all laboratory, test, and calibration needs.

Features:

- High accuracy - to .01%
- High stability - to 10 ppm/yr
- Excellent TC - as low as 5 ppm/°C
- Low current solid silver alloy contact switches
- Resistance from 10 Ω to 1 TΩ
- Low voltage coefficient - as low as 0.2 ppm/V
- Rack mounting available
- It is recommended that all units with 100 GΩ and 1 TΩ decades come in **-WT Watertight** case to minimize effects of humidity
- Special and custom configurations available

NEW



HRRS -WT Watertight Case (Recommended for all humid environments)

SPECIFICATIONS

Resistance per step	Total decade resistance	Accuracy at calibrated voltages** 18-28°C; <50% RH		HRRS-5kV		HRRS-10kV		Temperature coefficient (±ppm/°C)	Voltage coefficient (±ppm/V)	Stability (±ppm/yr)†	Resistor type
		Q	B	Max voltage per step (V)	Maximum voltage (V)	Max voltage per step (V)	Maximum voltage (V)				
10 Ω	100 Ω	±(0.01%+2 mΩ)	±(0.03%+2 mΩ)	2.5	25	2.5	25	15	-	10	Wirewound, non-inductive
100 Ω	1 kΩ	±(0.01%+2 mΩ)	±(0.03%+2 mΩ)	8	80	8	80	5	-	10	
1 kΩ	10 kΩ	±0.01%	±0.03%	23	230	23	230	5	-	10	
10 kΩ	100 kΩ	±0.01%	±0.03%	70	700	70	700	5	-	10	
100 kΩ	1 MΩ	±0.01%	±0.03%	230	2300	230	2300	5	-	10	
1 MΩ	10 MΩ	±0.01%	±0.03%	1000	5000	1000	10,000	15	<1	25	High-voltage film
10 MΩ	100 MΩ	±0.03%	±0.10%	5000	5000	5000 (*10,000)	10,000	25	<1	50	
100 MΩ	1 GΩ	±0.10%	±0.20%	5000	5000	10,000	10,000	25	1	100	
1 GΩ	10 GΩ	±0.20%	±0.50%	5000	5000	10,000	10,000	25	1	500	
10 GΩ	100 GΩ	±1%	±2%	5000	5000	10,000	10,000	25	2	500	
100 GΩ	1 TΩ	±1%	±4%	5000	5000	10,000	10,000	100	5	500	
1 TΩ	10 TΩ	±7%	±10%	5000	5000	10,000	10,000	100	<20 (10 ppm typical)	500	

*To apply up to 10 kV at 10 MΩ, set the 1 MΩ decade to its "10" position.

** 10 Ω - 10 MΩ tested at low voltages ≤ 20 Vdc (Fluke 8508A normal mode)

10 MΩ - 100 MΩ tested at ≤ 200 Vdc (Fluke 8508A HiV mode),

100 MΩ - 10 TΩ tested at 1000 Vdc (For an optional premium we can test at 5 kVdc or 10 kVdc)

> 10 MΩ measurements are performed after a 60 second dwell, Auto-reversing polarity cannot be used.

Use of Auto-reversing polarity or < 60 second dwell will result in low resistance values



HRRS 5-Decade High-Voltage Substituter non-WT



HRRS 8-Decade High-Voltage Substituter non-WT



IET LABS, INC. in the **GenRad** Tradition

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High-Resistance High-Voltage Decade Substituter

HRRS 5kV and 10kV Series

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SPECIFICATIONS (CONTINUED)

Mechanical

Model	Dimensions (behind panel)	Weight (nominal)
3-4 Decade Benchtop	43.2 cm W x 13.33 cm H x 13.46 cm D (17" x 5.25" x 5.3")	3.4 kg (7.5 lbs)
5-6-7 Decade Benchtop	48.3 cm W x 22.2 cm H x 16.38 cm D (19" x 8.75" x 6.45")	7.7 kg (17 lbs)
8-9 Decade Benchtop	43.2 cm W x 31 cm H x 16.38 cm D (17" x 12.25" x 6.45")	7.7 kg (17 lbs)
3-4 Decade Rack mount	48.3 cm W x 13.33 cm H x 13.46 cm D (19" x 5.25" x 5.3")	3.4 kg (7.5 lbs)
5 to 9 Decade Rack mount	48.3 cm W x 31 cm H x 16.38 cm D (19" x 12.25" x 6.45")	7.7 kg (17 lbs)
-WT Case	50.2 cm W x 40 D x 18.8 H (19.78" x 15.77" x 7.41")	9.1 kg (20 lbs)

Zero resistance

<10 mΩ per decade

Environmental conditions

Operating Conditions: 10°C to 40°C; <50% RH

Storage conditions: -40°C to 70°C

Terminals

3 five-way binding posts on a low-leakage Kel-F plate, and one metal ground binding post electrically connected to the case or front panel for -WT



HRRS 4-Decade High-Voltage Substituter with -RM Rack Mount

ORDERING INFORMATION

Model	Total resistance	Number of decades	Resolution
HRRS-*3-10k-**	11.1 MΩ	3	10 kΩ
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**-WT	1.11 TΩ	3	1 GΩ
HRRS-*3-10G**-WT	11.1 TΩ	3	10 GΩ
HRRS-*4-1k-**	11.11 MΩ	4	1 kΩ
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**-WT	1.111 TΩ	4	100 MΩ
HRRS-*4-1G**-WT	11.11 TΩ	4	1 GΩ
HRRS-*5-100-**	11.111 MΩ	5	100 Ω
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**-WT	1.111 1 TΩ	5	10 MΩ
HRRS-*5-100M**-WT	11.111 TΩ	5	100 MΩ
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**-WT	1.111 11 TΩ	6	1 MΩ
HRRS-*6-10M**-WT	11.111 1 TΩ	6	10 MΩ

Model	Total resistance	Number of decades	Resolution
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**-WT	1.111 111 TΩ	7	100 kΩ
HRRS-*7-1M**-WT	11.111 11 TΩ	7	1 MΩ
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-*8-10k**-WT	1.111 111 1 TΩ	8	10 kΩ
HRRS-*8-100k**-WT	11.111 111 1 TΩ	8	100 kΩ
HRRS-*9-10-**	11.111 111 1 GΩ	9	10 Ω
HRRS-*9-100-**	111.111 111 GΩ	9	100 Ω
HRRS-*9-1k**-WT	1.111 111 11 TΩ	9	1 kΩ
HRRS-*9-10k**-WT	11.111 111 1 TΩ	9	10 kΩ

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

**To specify voltage, replace ** with either "5kV" or "10kV."

Remove -WT to specify metal housing. (not recommended for humid environments)

Options

-WT Watertight case

-RM: Rack mountable case for standard 19" rack

Note -WT and -RM are mutually exclusive



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