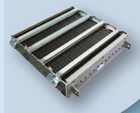
Vishay Intertechnology, Inc.

Industrial Power Wirewound Resistors

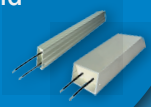
FOLDED METAL AND GRID
Dedicated Solutions for High-Power and High-Energy Metal Resistors



EDGU SERIES
High Active Mass with Good Thermal Dissipation

WCR
Power up to 2500 W, Possibility to Have Up to Eight Resistors on the Same Support

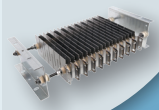
VACR
Panel-Mountable, Aluminum-Housed Wirewound Resistors



ULDCR
Customized, Compact, Low-Ohmic Stainless Crowbar Resistors

NGR
Neutral Grounding and High-Current Grid Resistor Up to 1000 A and 13.8 kV System Voltage

GRE SERIES
High Current Capability with All-Welded Construction for Customizable Package Up to 100 kW



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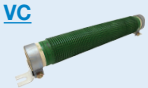
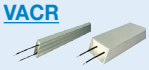
INDUSTRIAL POWER WIREWOUND RESISTORS

Focus Products

Wirewound							
Series	**Resistance Range**	**Power Rating**	**Tolerances (± %)**	**Temperature Limits**	**TCR**	**Sizes**	**Limiting Element Voltage**
RWM 	0.1 Ω to 100 kΩ	3 W to 30 W	1, 2, 5	-55 °C to +350 °C	+75 ppm/K	0410, 0422, 0526, 0622, 0826, 0634, 0834, 0845, 1045, 1064, 1065	120 V to 800 V
	Conformal vitreous enamel and high power rating up to 30 W						
RWST 	2.7 Ω to 430 kΩ	95 W to 700 W	5, 10	-55 °C to +450 °C	+75 ppm/K	25138, 25168, 30250, 40370, 50373	up to 5000 V
	Rugged construction for use in severe environmental conditions and power from 95 W to 800 W						
RSO 	0.068 Ω to 68 Ω	160 W to 1000 W	10	-55 °C to +450 °C	+100 ppm/K	25138, 25168, 30250, 40370, 50373	up to 4500 V
	High power rating from 160 W to 1 kW						
RSSD 	0.12 Ω to 560 Ω	16 W to 600 W	5, 10, 20	-55 °C to +450 °C	+100 ppm/K	0834, 1050, 1370, 1694, 20117, 25138, 25168, 30250, 40370, 50373	up to 3500 V
	High power rating from 16 W to 600 W						
RT 	1 Ω to 33 kΩ	-	10	-55 °C to +320 °C	+100 ppm/K	Diam. 22.5 to 143	300 V to 1500 V
	Vitreous-style wirewound rheostats from 25 W to 500 W						
CT 	0.33 Ω to 270 kΩ	270 W to 900 W	5, 10	-55 °C to +450 °C	+75 ppm/K	40168, 44250, 54362	1900 V to 4200 V
	High energy pulse capability up to 16 kJ						
VN 	1 Ω to 470 kΩ	22 W to 600 W	5	-55 °C to +450 °C	+75 ppm/K	1052, 1370, 1694, 20117, 2584, 25110, 25138, 25168, 30153, 30250, 42362	450 V to 4500 V
	Complete vitreous range for use in most severe applications; non-inductive available						
VC 	0.068 Ω to 68 Ω	90 W to 1000 W	5, 10	-55 °C to +450 °C	+180 ppm/K	2584, 25110, 25138, 25168, 30153, 30250, 42362, 50370	-
	Vitreous corrugated power rating from 90 W to 1000 W						
G200 	0.1 Ω to 120 kΩ	4 W to 17 W	2, 5, 10	-55 °C to +350 °C	+100 ppm/K to +180 ppm/K	0414, 0719, 0933, 0947	200 V to 650 V
	Axial vitreous wirewound resistor						
VACR 	2.7 Ω to 1.8 kΩ	50 W to 500 W	10	-25 °C to +200 °C	+50 ppm/K to +150 ppm/K	Refer to VACR datasheet	600 V to 1000 V
	Panel-mountable; aluminum-housed wirewound resistors						
GWK 	1.8 Ω to 330 kΩ	10 W to 260 W	2, 5, 10	-55 °C to +350 °C	+100 ppm/K to +180 ppm/K	Refer to GWK datasheet	280 V to 4000 V
	Easy to change when mounted with spring clips; non-inductive version available						
GBS 	0.1 Ω to 75 Ω	50 W to 1000 W	5, 10	-55 °C to +350 °C	-10 ppm/K to +750 ppm/K	Refer to GBS datasheet	250 V to 3000 V
	Complete vitreous coating for perfect humidity protection						
GWS 	3.3 Ω to 300 kΩ	10 W to 500 W	2, 3, 5, 10	-55 °C to +350 °C	+100 ppm/K to +180 ppm/K	Refer to GWS datasheet	250 V to 2300 V
	Vitreous wirewound resistor with lugs						
RW 	0.39 Ω to 390 kΩ	11 W to 480 W	5, 10	-55 °C to +350 °C	-10 ppm/K to +180 ppm/K	13114 to 36305	120 V to 6000 V
	Vitreous wirewound resistor up to 480 W and up to 6000 V according to MIL-PRF-26; non-inductive type available						

Wirewound Water Cooled							
Series	**Resistance Range**	**Power Rating**	**Tolerances ± %**	**Temperature Limits**	**TCR**	**Sizes**	**Limiting Element Voltage**
WCR 	4.7 Ω to 56 kΩ	1500 W to 2500 W	5	-55 °C to +120 °C	+100 ppm	30250, 38250, 38300	up to 3500 V
	High-power; water-cooled; with power ratings from 1500 W to 2500 W						

INDUSTRIAL POWER WIREWOUND RESISTORS

Focus Products

High Power Grid and Wirewound Resistors

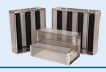
Series	Power Min. (W)	Power Max. (W)	Resistance Min. (Ω)	Resistance Max. (Ω)	Tolerance (%)	Operating Temperature	Temperature Rise
EDGU 	400	1600	0.053	5.44	± 10	-55 °C to +350 °C	375 K above an ambient of 40 °C
	Open coil construction allows efficient heat dissipation and easily accommodates reasonable overloads and surges						
GRE 	1300	24000	0.02	110	± 10	-55 °C to +415 °C	375 K above an ambient of 40 °C
	Robust all-welded grid resistors allow for high current capability in a customizable package up to 100 kW and within IP00-IP20-or IP23-rated enclosures						
RBEF, RBSF 	40	2000	0.01	391	± 10	-55 °C to +415 °C	375 K above an ambient of 40 °C
	High-temperature, enamel-coated resistor designed with maximum active mass for excellent pulse handling abilities in a wide range of sizes						
RDEF, RDSF	8	1150	0.12	227 K	± 5	-55 °C to +350 °C	325 K above an ambient of 25 °C
	High-temperature, enamel-coated resistor available with non-inductive windings and a wide resistance range						
ULDCR 	Up to 6.7 MW for 0.25		0.075 to 0.5		± 10	-55 °C to +375 °C	Below 350 K for single pulse
	Customized compact; low-ohmic stainless crowbar resistors for inverters; energy absorption capability up to 3.46 MJ						
VSGR 	5K to 20K		0.1 to 75		± 10	-25 °C to +250 °C	210 K above ambient of 40 °C
	High power capability up to 20 kW at 40 °C						

Neutral Grounding and High-Current Grid Resistors

Series	System Voltage (kV)	Line-Neutral-Voltage (kV)	Current (A)	Resistance Range (Ω)	Tolerance (± %)
NGR 	2.4 to 13.8	1.39 to 8.0	100 to 1000	1.39 to 80	10
	Stainless steel resistive elements, high thermal capacity to absorb high currents, custom design on demand				

Custom Load Banks and Resistors

Series	Resistance Range	Power Rating	Tolerance	Operating Temperature	TCR
GBS Array 	On demand	On demand	± 5 %; ± 10 %	-55 °C to +375 °C	100 ppm/K to 180 ppm/K
	Custom resistor bank based on GBS series				
Folded Metal and Grid Resistors 	< 10 Ω	5 kW up to 5 MW	± 5 %; ± 10 %	-55 °C to +450 °C	On request
	Custom braking resistors with power capability up to 5 MW				

Series	Description
	Resistors with Mounting Hardware
	Many standard hardware options allow resistors to be purchased fully assembled, allowing easy integration into the final assembly.
	Resistor Assemblies
	Assemblies with one or more different types of resistors on frames are available for use as specialty load banks.
	Resistors with Leads
	Value-added wiring and connectors allow for a “plug-and-play” solution that easily integrates into the final assembly.
	Special Resistors
	Custom resistors are designed-to-order by our engineers and can be customized to fit unique electrical and mechanical constraints.
	Resistors in Enclosures
	Available in indoor or outdoor enclosures (IP00, IP20, or IP23), resistors can be pre-wired and assembled for power ratings between 300 W and 100 kW.
	Pre-Wired Resistor Assemblies
	Assemblies are wired in parallel or series to meet the needs of the application. Terminal blocks and thermal switches are also available.

For further information, please contact us at:

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HIGH-POWER WIREWOUND RESISTORS FOR A **BROAD RANGE** OF **INDUSTRIAL APPLICATIONS**

Advantages of Vishay Wirewound Resistors

- High-power resistors up to 5 MW
- Energy absorption without forced cooling up to 3.46 MJ
- Broad range of high-power resistor types - wirewound, corrugated ribbon, steel grid
- Custom tailored resistors and resistor banks for high-power projects

For the Following **Applications**

- HVDC snubbers, harmonic filters, snubber discharge filters
- High-power inverters and drives
- High-power dynamic braking resistors
- Renewable energy - chopper, braking, and crowbar resistor for DFIG

Vishay resistors offers high pulse energy capabilities for a stable power grid

Vishay resistors are providing overvoltage protection in a variety of applications

Vishay resistors are removing harmful electrical signals

CONTACT US

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Useful **Links**

- For our metal plate / grid technology overview please visit www.vishay.com/resistors-linear/metal-plate-grid/
- Pulse energy calculator www.vishay.com/resistors/pulse-energy-calculator/
- Selector guide industrial power wirewound resistors www.vishay.com/doc?49438

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