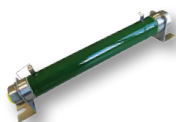




Vishay Intertechnology, Inc.

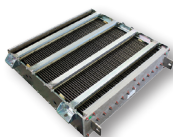
INDUSTRIAL POWER WIREWOUND RESISTORS

WCR



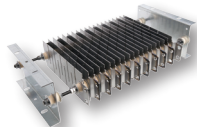
Power up to 2500 W, Possibility to Have up to Eight Resistors on the Same Support

FOLDED METAL AND GRID



Dedicated Solutions for High-Power and High-Energy Metal Resistors

GRE1 SERIES



High Current Capability with All Welded Construction

EDGU SERIES



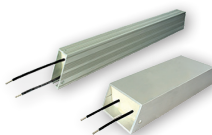
High Active Mass with Good Thermal Dissipation

ULDCR



Customized, Compact, Low-Ohmic Stainless Crowbar Resistors

VACR







Panel-Mountable, Aluminum-Housed Wirewound Resistors



INDUSTRIAL POWER WIREWOUND RESISTORS

Focus Products

Wirewound							
Series	Resistance Range	Power Rating	Tolerances \pm %	Temperature Limits	TCR	Sizes	Limiting Element Voltage
 RWM	0.1 Ω to 100 k Ω	3 W to 30 W	1, 2, 5	-55 $^{\circ}$ C to +350 $^{\circ}$ C	+75 ppm	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 k Ω	95 W to 700 W	5.1	-55 $^{\circ}$ C to +450 $^{\circ}$ C	+75 ppm	25138, 25168, 30250, 40370, 50373	Up to 4000 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 $^{\circ}$ C to +450 $^{\circ}$ C	+100 ppm	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 $^{\circ}$ C to +450 $^{\circ}$ C	+100 ppm	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 22 k Ω	-	10	-55 $^{\circ}$ C to +320 $^{\circ}$ C	+100 ppm	Diam. 22.5 to 143	300 V to 1500 V
Vitreous-style wirewound rheostats from 25 W to 500 W							
 CT	0.1 Ω to 270 k Ω	270 W to 900 W	5, 10	-55 $^{\circ}$ C to +450 $^{\circ}$ C	+75 ppm	38168, 42250, 52362	1900 V to 4500 V
High energy pulse capability up to 16 kJ							
 VN	1 Ω to 470 k Ω	22 W to 600 W	5, 10	-55 $^{\circ}$ C to +450 $^{\circ}$ C	+75 ppm	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 $^{\circ}$ C to +450 $^{\circ}$ C	+180 ppm	2584, 25110, 25138, 25168, 30153, 30250, 42362, 50370	Up to 4500 V
Vitreous corrugated power rating from 90 W to 1000 W							
 G200	0.1 Ω to 120 k Ω	4 W to 17 W	2, 5, 10	-55 $^{\circ}$ C to +350 $^{\circ}$ 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 k Ω	50 W to 500 W	10	-25 $^{\circ}$ C to +200 $^{\circ}$ 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 k Ω	10 W to 260 W	2, 5, 10	-55 $^{\circ}$ C to +375 $^{\circ}$ 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 $^{\circ}$ C to +375 $^{\circ}$ C	-10 ppm/K to 750 ppm/K	Refer to GBS datasheet	-
Complete vitreous coating for perfect humidity protection							
 GWS	3.3 Ω to 300 k Ω	10 W to 500 W	2, 3, 5, 10	-55 $^{\circ}$ C to +350 $^{\circ}$ C	100 ppm/K to 180 ppm/K	Refer to GWS datasheet	250 V to 2300 V
Vitreous wirewound resistor with lugs							









Wirewound Water Cooled							
Series	Resistance Range	Power Rating	Tolerances \pm %	Temperature Limits	TCR	Sizes	Limiting Element Voltage
 WCR	4.7 Ω to 56 k Ω	1500 W to 2500 W	5, 10	-55 $^{\circ}$ C to +120 $^{\circ}$ 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 °C above an ambient of 40 °C
	Open coil construction allows efficient heat dissipation and easily accommodates reasonable overloads and surges						
GRE1 	1K	6.5K	0.1	24	10	-55 °C to 400 °C	360 °C 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 	40	550	0.01	242	10	-55 °C to 415 °C	375 °C 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						
RBSF 	40	2000	0.01	391	10	-55 °C to 415 °C	375 °C above an ambient of 40 °C
	High-temperature, silicone-coated resistor designed with maximum active mass for excellent pulse handling abilities in a wide range of sizes						
RDEF 	8	240	0.12	227K	5	-55 °C to 350 °C	325 °C above an ambient of 25 °C
	High-temperature, enamel-coated resistor available with non-inductive windings and a wide resistance range						
RDSF 	8	1150	0.12	227K	5	-55 °C to 350 °C	325 °C above an ambient of 25 °C
	High-temperature, silicone-coated resistor available with non-inductive windings and a wide resistance range						
ULDCR 	Up to 12K		0.005 to 0.120		10	-55 °C to 375 °C	Below 450 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	250 ppm/K
	High power capability up to 20 kW at 40 °C						

Custom Load Banks and Resistors

Series	Resistance Range	Power Rating	Tolerances	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					

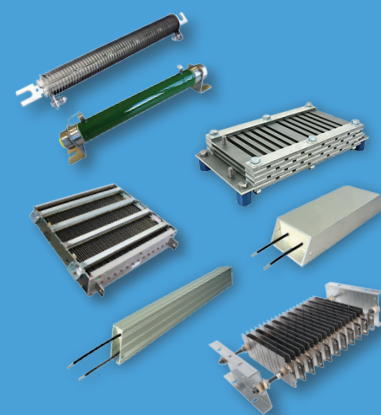
Series	Description
	Resistors with Mounting Hardware Many standard hardware options allow resistors to be purchased fully assembled, allowing easy integration into the final assembly.
	Resistor Assemblies Assemblies with one or more different types of resistors on frames are available for use as specialty 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.

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

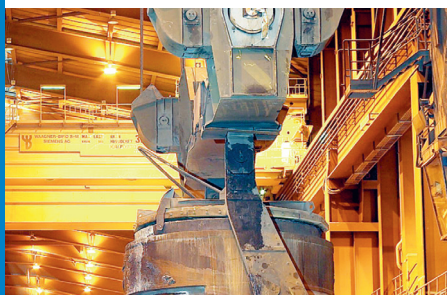


For the Following Applications

- 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 are providing overvoltage protection in a variety of applications



Vishay resistors are removing harmful electrical signals



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



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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