

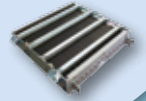


Vishay Intertechnology, Inc.

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



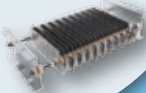
NGR

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

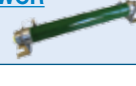




INDUSTRIAL POWER WIREWOUND RESISTORS

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						








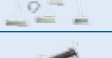


INDUSTRIAL POWER WIREWOUND RESISTORS

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 (\pm %)
 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:

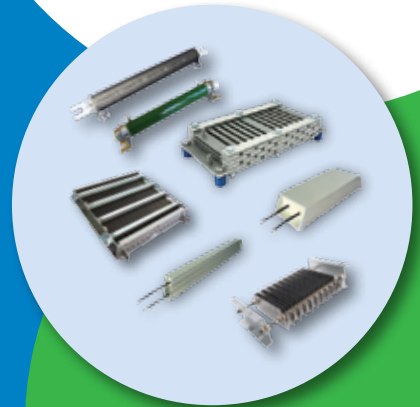
- mcbfixedresistors@vishay.com
- powresistor@vishay.com
- vishaymilwaukeeresistor@vishay.com

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



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



A **WORLD OF**
SOLUTIONS