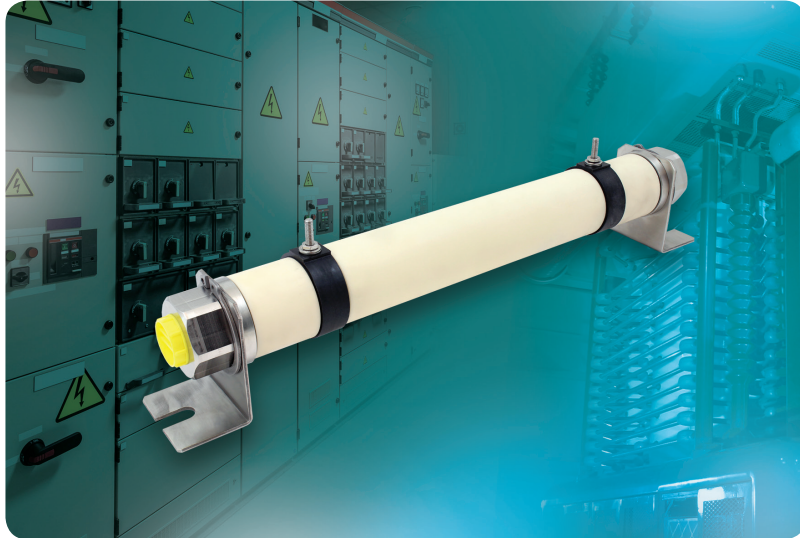


Direct Water Cooled Wirewound Resistor



KEY BENEFITS

- Direct cooling without heatsink
- Power rating: 1500 W to 9000 W (water inlet temperature of 65 °C with 40 % monoethylene glycol, flow rate 8.33 l/min)
- Overload: $2 \times P_n$ 60 s
- Ohmic range: 0.56 Ω to 27 Ω (depending on the size)
- Ohmic values: E24
- Temperature coefficient: 100 ppm/°C (typical)
- Maximum working voltage: 3600 V
- Dielectric strength: 8000 V_{RMS} (50 Hz, 1 min)
- Operating temperature range: -55 °C to +120 °C
- Operating pressure: 1 bar to 6 bars

APPLICATIONS

- Large drives: load, snubber, filter, and fast discharge resistor
- HVDC SVC: snubber resistor

RESOURCES

- Datasheet: DCRF - www.vishay.com/doc?32548
- For technical questions contact sfer@vishay.com
- Material categorization: for definitions please see www.vishay.com/doc?99912



RoHS
COMPLIANT



Direct Water Cooled Wirewound Resistor



FEATURES

- Direct cooling without heatsink
- Excellent power / volume ratio
- Multi resistive element option
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT

APPLICATIONS

- Filter resistor
- Snubber resistor
- Discharge resistor

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	POWER RATING P_n ⁽¹⁾ W	RESISTANCE RANGE Ω	TOLERANCE \pm %
DCRF 38 x 178	1500	0.56 to 4.7	5, 10 ⁽²⁾
DCRF 38 x 224	3000	1 to 9.1	5
DCRF 38 x 270	4500	1.5 to 15	5
DCRF 38 x 316	6000	2 to 20	5
DCRF 38 x 362	7500	2.4 to 24	5
DCRF 38 x 410	9000	3 to 27	5

Notes

- ⁽¹⁾ Water inlet temperature 65 °C with 40 % mono ethylene glycol, flow rate 8.33 l/min
⁽²⁾ 5 for value $\geq 1 \Omega$, 10 for value $< 1 \Omega$

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	RESISTOR CHARACTERISTICS
Temperature coefficient	ppm/°C	100 ppm/°C (typical)
Maximum working voltage	V	Up to 3600 V
Operating temperature range	°C	-55 to +120
Water conductivity	μ S/cm	< 2

GENERAL CHARACTERISTICS

Core	Ceramic, stainless steel
Winding	NiCr alloy (direct in water)
Hydraulic plugs	Stainless steel
Coating	None: ceramic nude
Ohmic values	E24 (for other values consult us)
Inductance	Refer to Inductance curves (see Fig. 3)
Cooling	Deionized water ⁽¹⁾ ; coolant mixtures up to 60 % mono ethylene glycol
Operating pressure	1 bar to 6 bars
Test pressure	15 bars
Flow	8.33 l/min to 16 l/min (see Fig. 2)
CTI index	> 600
Creeping distance	On request
Clearance distance	On request
Dielectric strength V_{RMS} (50 Hz / 1 min)	8000 V ⁽²⁾
Partial discharge	For free partial discharge version please consult us
Electrical connections	M4 rod (tightening 2 Nm max.)
Mounting	Minimum 5° angle from horizontal (see "Mounting Recommendation")
Overload	$2 \times P_n$ 60 s (θ_{65} °C at 8.33 l/min)
Endurance	1200 h; P_n 30 s / 30 s; variation < 5 % (MCB laboratory condition)
Pressure drop	Refer to "Pressure Drop" curves (see Fig. 4)

Notes

- ⁽¹⁾ Water conductivity must be permanently controlled to remain under 2 μ S/cm.
 The cooling mixture must remain homogeneous without any liquid or solid foreign element.
 Use appropriate filter with regenerating mixed bed resin device
⁽²⁾ Resistor filled with deionized water (conductivity $< 2 \mu$ S/cm)

Revision 24-Jan-17