## Vishay Sfernice



## **Enamelled Wirewound Power Resistors Axial Leads**



As a result of more than 50 years of experience and continuous improvements the RWM Series of resistors features proven reliability in AC or DC applications.

The high quality of the RWM resides mainly in the use of a proprietary Vishay Sfernice enamel fired at high temperature and free from any compound liable to corrode the resistive

#### **FEATURES**

High dissipation up to 30 W (25 °C)



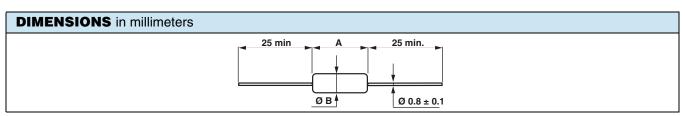
• Fire proof

- Excellent endurance typical drift ± 1.5 % after COMPLIANT 1000 h

- · Conformal vitreous enamel
- · All welded construction
- Low ohmic values 0.1  $\Omega$  available
- Termination: Sn/Ag/Cu
- Compliant to RoHS Directive 2002/95/EC

The performance of this series of professional resistors fully meets the requirements of the following specifications:

- NF C 83-210-001
- CECC 40201-001
- BS CECC 40201-002



TECHNICAL SPECIFICATIONS												
VISHAY SFERNICE SERIES AND STYLE		RWM 4 x 10	RWM 4 x 22	RWM 5 x 26	RWM 6 x 22	RWM 8 x 26	RWM 6 x 34	RWM 8 x 34	RWM 8 x 45	RWM 10 x 45	RWM 10 x 64	RWM 10 x 65
Designations	CECC 40201-001	RB59	RB61	RB57	RB57	RB60	RB60	RB58	RB58	-	-	-
	CECC 40201-002	JB	НВ	-	KB	-	LB	-	MB	-	-	-
Power Rating	at + 70 °C	2.6 W	4.5 W	6 W	6 W	7 W	7 W	9.5 W	9.5 W	21 W	21 W	25.8 W
	at + 25 °C	3 W	5 W	7 W	7 W	8 W	8 W	11 W	11 W	25 W	25 W	30 W
	With Surface Temp. ≤ + 450 °C	5.5 W	7 W	10 W	10 W	10 W	12 W	14 W	20 W	25 W	25 W	30 W
Ohmic Range in Relation to Tolerance ± 5 % E24 Series		0.1 Ω 10 kΩ	0.1 Ω 16 kΩ	0.1 Ω 27 kΩ	0.1 Ω 39 kΩ	0.1 Ω 27 kΩ	0.33 Ω 36 kΩ	0.33 Ω 36 kΩ	0.47 Ω 62 kΩ	0.47 Ω 62 kΩ	0.68 Ω 100 kΩ	0.68 Ω 100 kΩ
Qualified Ohmic Range NF C 83-210		0.1 Ω 10 kΩ	0.1 Ω 6.8 kΩ	0.15 Ω 10 kΩ	0.15 Ω 39 kΩ	-	0.33 Ω 15 kΩ	-	0.47 Ω 33 kΩ	-	-	-
Limiting Element Voltage		120 V	300 V	350 V	350 V	500 V	500 V	650 V	650 V	800 V	800 V	800 V
Critical Resistance		4.8 kΩ	-	18.8 kΩ	17.5 kΩ	-	31 kΩ	-	38 kΩ	25.6 kΩ	25.6 kΩ	21.3 kΩ
Dimensions in mm	Α	12 ± 1	22.1 ± 1	24.7 ± 1	18 ± 1	24.7 ± 1	33.7 ± 1	33.7 ± 1	45.8 ± 2	45.8 ± 2	63.8 ± 1	63.8 ± 1
	ØВ	5.5 ± 1	5.5 ± 1	7.4 ± 1.5	6.5 ± 1	7.4 ± 1.5	7.4 ± 1.5	7.4 ± 1.5	9.4 ± 1.5	9.4 ± 1.5	9.4 ± 1.5	9.4 ± 1.5
Weight in g		1	2	3	2.2	3	4	4	8	8	14	14

• E Undergoes European Quality Insurance System (CECC)



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PERFORMANCE							
	TYPICAL DRIFTS						
TESTS	CONDITIONS	REQUIREMENTS	TYPICAL DRIFTS				
Short Time Overload	10 P <sub>r</sub> during 10 s 25 °C ambient	± (2 % + 0.1 Ω)	± (0.5 % + 0.05 Ω)				
Temperature Cycling (5 cycles)	- 55 °C + 200 °C	± (1 % + 0.05 Ω)	± (0.5 % + 0.05 Ω)				
Humidity (Steady State)	56 days 40 °C ambient - R.H. 95 %	± (5 % + 0.1 Ω)	± (0.5 % + 0.05 Ω)				
Terminal Strength	Tensile test: 20 N 2 successive bending 2 full rotations of 180°	± (1 % + 0.05 Ω)	± (0.1 % + 0.05 Ω)				
Load Life	1000 h at <i>P</i> <sub>r</sub> 90'/30' cycle 25 °C ambient	± (5 % + 0.1 Ω)	± (1.5 % + 0.05 Ω)				

#### **OVERLOAD**

Heavy overloads can be endured in the form of short pulses < 0.1 s. Particular requirements should be submitted to Vishay Sfernice, specifying peak voltage, cycle and environmental conditions.

#### **RECOMMENDATIONS FOR USE**

Since these components are high dissipation power resistors, customers are advised to use a high melting point solder.

For low ohmic values, the measurement becomes critical and the connecting wires resistance is to be included. The value is measured at 5 mm from the resistor body.

### **Group Mounting**

In a still atmosphere, a distance between axes equal to five times the resistor's diameter is recommended.

#### **Cabinet Mounting**

- Unventilated box: Dissipation should be reduced (see dimensional drawing).
- Forced ventilation: If conditions are appropriate, dissipation may be doubled or even trebled.
- In any case: The surface temperature at the hottest point should not exceed 450 °C.

These aspects should be considered by the end user.

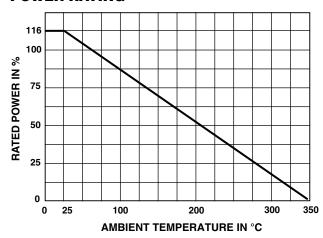
ELECTRICAL SPECIFICATIONS					
Tolerance	Standard	± 5 %			
	On request	± 1 % and ± 2 %			
Temperature Coefficient + 75 ppm/°C typi	cal				
Dielectric Withstanding Voltage NF EN140	0000	500 V <sub>RMS</sub> - 1 min - 10 mA			
Inductance		Non inductive (Ayrton-Perry) winding available			

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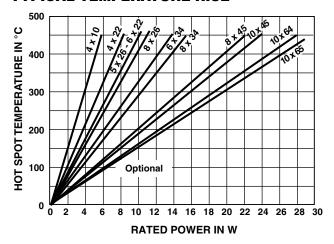
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### **POWER RATING**



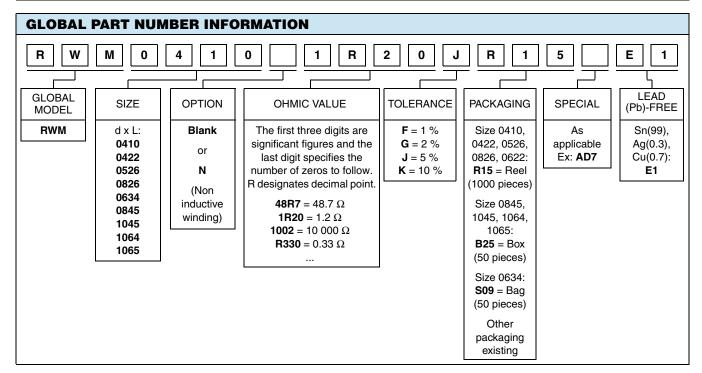
#### **TYPICAL TEMPERATURE RISE**



#### **MARKING**

Vishay Sfernice trademark, model and style, CECC style, if applicable (except for the smallest model due to lack of space: (4 x 10 or RB 59), ohmic value, resistance tolerance, manufacturing date (year - month).

ORDERING	INFORMA	TION					
RWM	4 x 10		XXX	1U2	± 5 %	AM500	e1
MODEL	STYLE	NI OPTIONAL	SPECIAL DESIGN	OHMIC VALUE	TOLERANCE	PACKAGING	LEAD (Pb)-FREE
		Non Inductive Winding	Method N° Optional	Custom items are subject to extra charge and minimum order. Please see price list.			



Document Number: 50008



## **Legal Disclaimer Notice**

Vishay

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Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.

Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.