**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 wire.

#### **DIMENSIONS** in millimeters

### FEATURES

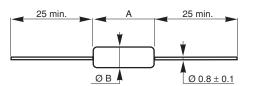
- High dissipation
- High reliability level

- Excellent Endurance

- Fire Proof
- Great Mechanical Strength
- Good Environmental Protection
- Conformal Vitreous Enamel All Welded Construction
- Low ohmic values

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



| TECHNIC                      | AL SP  | ECIFIC                      | ATION                           | IS           |              |                                       |  |                                  |                                |                             |                     |                      |                |
|------------------------------|--|-----------------------------|---------------------------------|--------------|--------------|---------------------------------------|--|----------------------------------|--------------------------------|-----------------------------|---------------------|----------------------|----------------|
| VISHAY<br>SFERNICE<br>STYLES | DESIGNATIONS                                   |                             |                                 | POWER RATING |              |                                       | Ohmic  | Qualified                        |                                |                             | DIMENSIONS<br>IN MM |                      |                |
|                              | CECC<br>40201<br>-001<br>NFC<br>83-210<br>-001 | BS<br>CECC<br>40201<br>-002 | Confor-<br>mity<br>MIL-<br>R-26 | at<br>+ 70°C | at<br>+ 25°C | With<br>Surface<br>Temp.<br>≤ + 450°C | Range in<br>Relation to<br>Tolerance<br>± 5%<br>E24 Series | Ohmic<br>Range<br>NF C<br>83-210 | Limiting<br>Element<br>Voltage | Critical<br>Resis-<br>tance | A                   | ØВ                   | Weight<br>in g |
| <b>E</b> RWM 4 x 10          | RB59   | JB                          | RW69                            | 2.6W         | 3W           | 5.5W                                  | 0.1Ω<br>10kΩ   | 0.1Ω<br>10kΩ                     | 120V                           | 4.8kΩ                       | 12 <sup>±1</sup>    | 5.5 <sup>±1</sup>    | 1              |
| <b>E</b> RWM 4 x 22          | RB61   | НВ                          | -                               | 4.5W         | 5W           | 7W                                    | 0.1Ω<br>16kΩ   | 0.1Ω<br>6.8kΩ                    | 300V                           | _                           | 22.1 <sup>±1</sup>  | 5.5 <sup>±1</sup>    | 2              |
| <b>E</b> RWM 5 x 26          | RB57   | -                           | RW67                            | 6W           | 7W           | 10W                                   | 0.1Ω<br>27kΩ   | 0.15Ω<br>10kΩ                    | 350V                           | 18.8kΩ                      | 24.7 <sup>±1</sup>  | 7.4 <sup>±1.5</sup>  | 3              |
| <b>E</b> RWM 6 x 22          | RB57   | KB                          | -                               | 6W           | 7W           | 10W                                   | 0.1Ω<br>39kΩ   | 0.15Ω<br>39kΩ                    | 350V                           | 17.5kΩ                      | 18 <sup>±1</sup>    | 6.5 <sup>±1</sup>    | 2.2            |
| RWM 8 x 26                   | RB60   | -                           | -                               | 7W           | 8W           | 10W                                   | 0.1Ω<br>27kΩ   | _                                | 500V                           | _                           | 24.7 <sup>±1</sup>  | 7.4 <sup>±1.5</sup>  | 3              |
| <b>E</b> RWM 6 x 34          | RB60   | -                           | -                               | 7W           | 8W           | 12W                                   | 0.33Ω<br>36kΩ  | 0.33Ω<br>15kΩ                    | 500V                           | 31kΩ                        | 33.7 <sup>±1</sup>  | 7.4 <sup>± 1.5</sup> | 4              |
| RWM 8 x 34                   | RB58   | -                           | -                               | 9.5W         | 11W          | 14W                                   | 0.33Ω<br>36kΩ  | -                                | 650V                           | _                           | 33.7 <sup>±1</sup>  | 7.4 <sup>±1.5</sup>  | 4              |
| <b>E</b> RWM 8 x 45          | RB58   | -                           | RW68                            | 9.5W         | 11W          | 20W                                   | 0.47Ω<br>62kΩ  | 0.47Ω<br>33kΩ                    | 650V                           | 38kΩ                        | 45.8 <sup>±2</sup>  | 9.4 <sup>±1.5</sup>  | 8              |
| RWM 10 x 45                  | _  | -                           | -                               | 21W          | 25W          | 25W                                   | 0.47Ω<br>62kΩ  | _                                | 800V                           | 25.6kΩ                      | 45.8 <sup>±2</sup>  | 9.4 <sup>±1.5</sup>  | 8              |
| RWM 10 x 64                  | _  | _                           | -                               | 21W          | 25W          | 25W                                   | 0.68Ω<br>100kΩ   | _                                | 800V                           | 25.6kΩ                      | 63.8 <sup>±1</sup>  | 9.4 <sup>±1.5</sup>  | 14             |
| RWM 10 x 65                  | -  | _                           | -                               | 25.8W        | 30W          | 30W                                   | 0.68Ω<br>100kΩ   | _                                | 800V                           | 21.3kΩ                      | 63.8 <sup>±1</sup>  | 9.4 <sup>±1.5</sup>  | 14             |

Undergoes European Quality Insurance System (CECC)



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

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+ 0.05Ω

+ 0.05Ω

+ 0.05Ω

+ 0.05Ω

+ 0.05Ω

1.5%

#### PERFORMANCE **CECC 40201 TYPICAL DRIFTS** CONDITIONS REQUIREMENTS TESTS 10Pr during 10s. 25°C ambient Short Time Overload 0.5% 2% + 0.1Ω - 55°C + 200°C **Temperature Cycling** 1% + 0.05Ω 0.5% 56 days Humidity (Steady State) 0.5% 5% $+0.1\Omega$ 40°C Ambient - R.H. 95% Tensile test: 20N **Terminal Strength** 2 successive bending 2 full rotations of 180° 1% + 0.05Ω 0.1%

1000h at Pr 90'/30' cycle 25°C ambient

#### **OVERLOAD**

Load Life

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

5%

+ 0.1Ω

#### **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 5mm 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.

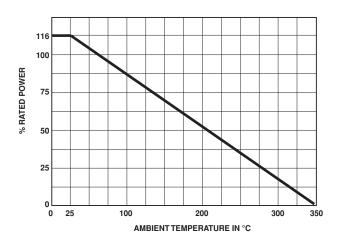
| ELECTRICAL SPECIFICATIONS       |            |   |  |
|---------------------------------|------------|---|--|
| Tolerance                       | Standard   | ± 5%  |  |
|                                 | On request | ± 1% to ± 10%                                 |  |
| Temperature Coefficient         |            | + 75ppm/°C typical                            |  |
| Dielectric Withstanding Voltage |            | 1000VRMS                                      |  |
| Inductance                      |            | non inductive (Ayrton-Perry)winding available |  |

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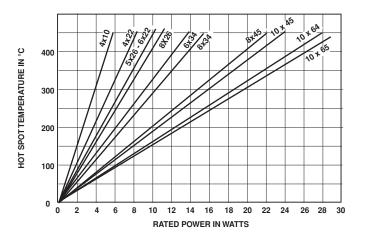
Enamelled Wirewound Power Resistors Axial Leads



# **POWER RATING CHART**



#### **TYPICAL TEMPERATURE RISE**



#### MARKING

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 INFORMATION |        |                          |                       |   |           |           |  |  |
|----------------------|--------|--------------------------|-----------------------|---|-----------|-----------|--|--|
| RWM                  | 8 x 45 | NI                       | XXX                   | 1.6k $\Omega$   | ± 5%      |           |  |  |
| MODEL                | STYLE  | NON INDUCTIVE<br>WINDING | SPECIAL<br>DESIGN     | OHMIC VALUE   | TOLERANCE | PACKAGING |  |  |
|                      |        |                          | Method N°<br>Optional | Custom items are<br>subject to extra<br>charge and min.<br>order.<br>Please see price list. |           | Optional  |  |  |