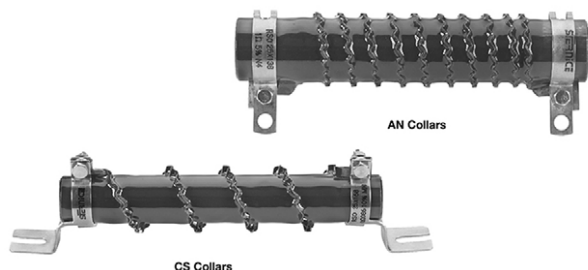


# Wirewound Resistor, Industrial High Power, Enamelled Corrugated Tape, Tubular

## FEATURES

- 160 W to 1 kW at 25 °C
- Material categorization:  
for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT


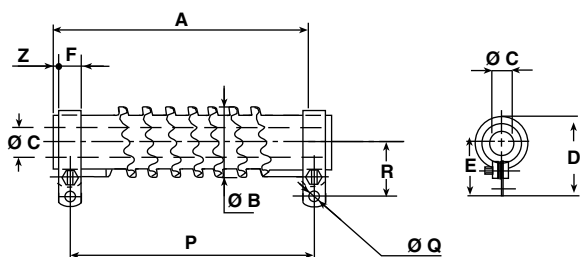
The remarkable dissipation power of this series is the result of an original winding method using corrugated edge-wound tape, thus forming a very active radiator. The enameling follows the contour of the resistive element and provides effective insulation and support for the winding.

The tubular core is of special ceramic, capable of withstanding high thermal shock and overload of short duration.

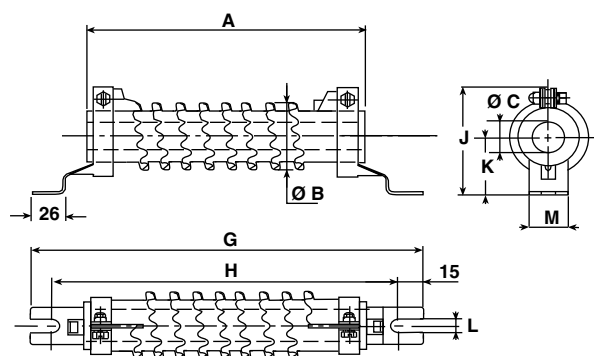
NF F 16101, 10/1988 and 16102, 04/1992: Not applicable (our parts are made of metallic and refractory materials).

## DIMENSIONS in millimeters

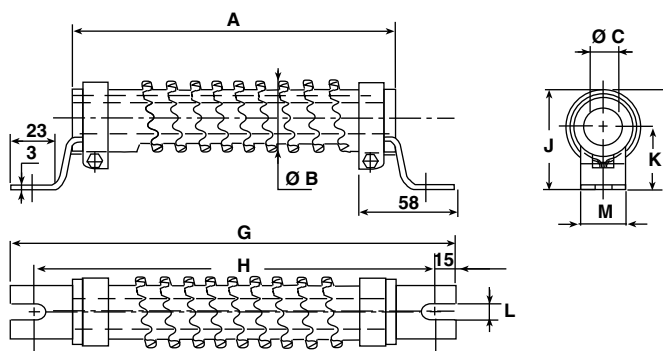
### SCREWED STAINLESS STEEL 304 I "AN" TYPE 1



### SCREWED STAINLESS STEEL 304 I "CS" TYPE 1



### SCREWED STAINLESS STEEL 304 I "CS" TYPE 2



**DIMENSIONS** in millimeters

| RSO SERIES | CONNECTIONS |           | A ± 2    | Ø B MAX. | Ø C MIN. | D MAX.    | E        | F + 0.5 + 0 | G - 4 / + 0 | H - 4 / + 0              | J        |
|------------|-------------|-----------|----------|----------|----------|-----------|----------|-------------|-------------|--------------------------|----------|
| 25 x 138   | AN type 1   | CS type 1 | 138      | 39       | 12.6     | 54        | 33.5 ± 1 | 9           | 199         | 169                      | 50 ± 1.5 |
| 25 x 168   | AN type 1   | CS type 1 | 168      | 39       | 12.6     | 54        | 33.5 ± 1 | 9           | 229         | 199                      | 50 ± 1.5 |
| 30 x 250   | AN type 1   | CS type 1 | 250      | 44       | 17.4     | 62        | 36 ± 1   | 13          | 317         | 287                      | 60 ± 1.5 |
| 40 x 370   | AN type 2   | CS type 2 | 370      | 54.5     | 22.3     | 85.5      | 57 ± 1.5 | 18          | 432         | 405                      | 73.8     |
| 50 x 373   | AN type 2   | CS type 2 | 373      | 65       | 27.1     | 97        | 63 ± 1.5 | 18          | 432         | 405                      | 79       |
| RSO SERIES | CONNECTIONS |           | K        | L + 0.5  | M ± 0.5  | P         | Q        | R           | Z           | AVERAGE UNIT WEIGHT IN g |          |
|            |             |           |          |          |          |           |          |             |             | AN                       | CS       |
| 25 x 138   | AN type 1   | CS type 1 | 27 ± 1   | 6.5      | 24       | 117 ± 2   | 5.7      | 28.5 ± 1    | 6           | 160                      | 205      |
| 25 x 168   | AN type 1   | CS type 1 | 27 ± 1   | 6.5      | 24       | 147 ± 2   | 5.7      | 28.5 ± 1    | 6           | 190                      | 235      |
| 30 x 250   | AN type 1   | CS type 1 | 30 ± 1   | 9        | 25       | 227 ± 2.5 | 5.7      | 31 ± 1      | 5           | 350                      | 400      |
| 40 x 370   | AN type 2   | CS type 2 | 45 ± 1.5 | 9        | 30       | 332 ± 3   | 9.2      | 45 ± 1.5    | 10          | 960                      | 1040     |
| 50 x 373   | AN type 2   | CS type 2 | 45 ± 1.5 | 9        | 30       | 332 ± 3   | 9.2      | 51 ± 1.5    | 11.5        | 1375                     | 1455     |

**STANDARD ELECTRICAL SPECIFICATIONS**

| MODEL        | SIZE  | RESISTANCE RANGE $\Omega$ | RATED POWER $P_{25^\circ\text{C}}$ W | TOLERANCE $\pm \%$ |
|--------------|-------|---------------------------|--------------------------------------|--------------------|
| RSO 25 x 138 | 25138 | 0.068 to 12               | 160                                  | 10                 |
| RSO 25 x 168 | 25168 | 0.10 to 18                | 200                                  | 10                 |
| RSO 30 x 250 | 30250 | 0.22 to 33                | 350                                  | 10                 |
| RSO 40 x 370 | 40370 | 0.33 to 56                | 700                                  | 10                 |
| RSO 50 x 373 | 50373 | 0.39 to 68                | 1000                                 | 10                 |

**MECHANICAL SPECIFICATIONS**

|                       |                          |
|-----------------------|--------------------------|
| Mechanical Protection | Enamel                   |
| Resistive Element     | Ni-Cr wire               |
| Connections           | AN CS supporting collars |
| Average Unit Weight   | 160 g to 1455 g          |

**TECHNICAL SPECIFICATIONS**

|                               |                                                            |
|-------------------------------|------------------------------------------------------------|
| Resistance Range              | 0.068 $\Omega$ to 68 $\Omega$<br>(E12 preferred series)    |
| Standard Resistance Tolerance | $R_n \geq 1 \Omega \pm 5 \%$<br>$R_n < 1 \Omega \pm 10 \%$ |
| Power Rating                  | 160 W to 1 kW at 25 °C                                     |

**ENVIRONMENTAL SPECIFICATIONS**

|                   |                            |
|-------------------|----------------------------|
| Temperature Range | -55 °C, +450 °C            |
| Climatic Category | -55 °C / +200 °C / 56 days |

**PERFORMANCE**

| TESTS               | CONDITIONS                                                     | REQUIREMENTS         | TYPICAL VALUES AND DRIFTS |
|---------------------|----------------------------------------------------------------|----------------------|---------------------------|
| Short Time Overload | 10 $P_r$ during 5 s                                            | 2 % or 0.05 $\Omega$ | 1 %                       |
| Thermal Shock       | Load at $P_r$ followed by cold temp. exposure at -55 °C / 15 s | 2 % or 0.05 $\Omega$ | 1 %                       |
| Climatic Sequence   | Phase A: +200°<br>Phase C: -55°<br>Phase D: 5 cycles           | 3 % or 0.05 $\Omega$ | 1 %                       |
| Load Life           | 90' / 30' cycle<br>1000 h at $P_r$ 25 °C                       | 5 %                  | 2 %                       |

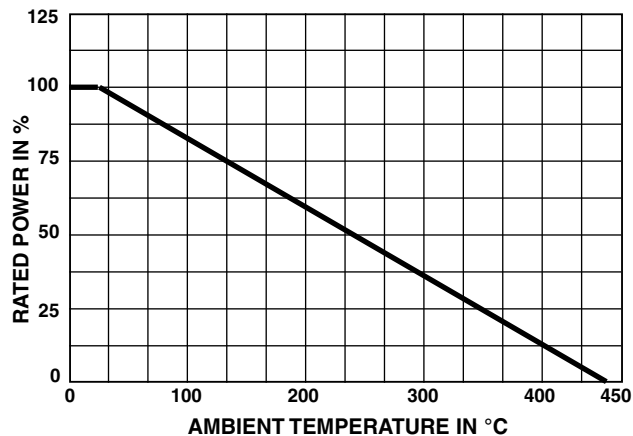
**RECOMMENDATIONS FOR USE****OVERLOAD:**

The RSO resistors are capable of withstanding overloads of about 10  $P_r$  for a maximum period of 5 s; they can resist momentarily even greater overloads.

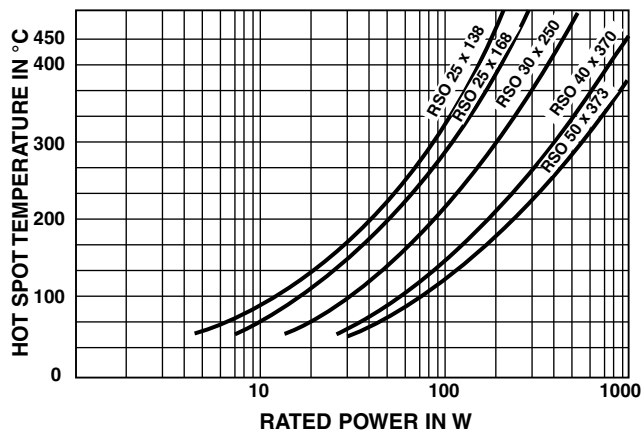
Particular requirements should be submitted to Vishay Sfernice.



## POWER RATING



## TEMPERATURE RISE



## MARKING

Vishay Sfernice trademark, model, style, nominal resistance (in  $\Omega$ ), tolerance (in %), manufacturing date.

## PACKAGING

Box: Fixed quantity depending on size and collars

## ORDERING INFORMATION

| RSO   | 25 x 168 | XXX                | CS          | U82                                                                             | $\pm 10\%$ | B02NA     | e              |
|-------|----------|--------------------|-------------|---------------------------------------------------------------------------------|------------|-----------|----------------|
| MODEL | STYLE    | SPECIAL DESIGN     | CONNECTIONS | OHMIC VALUE                                                                     | TOLERANCE  | PACKAGING | LEAD (Pb)-FREE |
|       |          | Method N° Optional |             | Custom items are subject to extra-charge and min. order. Please see price list. |            |           |                |

## SAP PART NUMBERING GUIDELINES

| RSO   | 25168 | C           | R820        | K         | N         |
|-------|-------|-------------|-------------|-----------|-----------|
| MODEL | STYLE | CONNECTIONS | OHMIC VALUE | TOLERANCE | PACKAGING |

## RELATED DOCUMENTS

### APPLICATION NOTES

|                       |                                                                        |
|-----------------------|------------------------------------------------------------------------|
| Packaging Information | <a href="http://www.vishay.com/doc?50033">www.vishay.com/doc?50033</a> |
| Accessories           | <a href="http://www.vishay.com/doc?50021">www.vishay.com/doc?50021</a> |



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