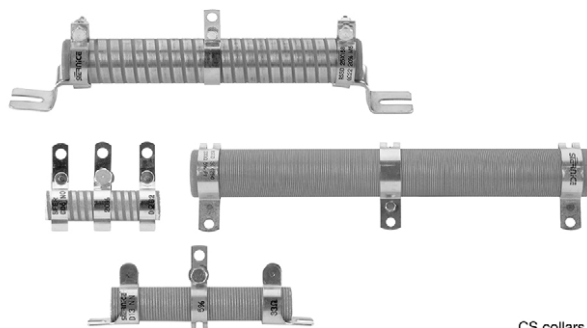


# Wirewound Resistor, Industrial High Power, Vitreous Tubular, Adjustable, Low Values 0.12 $\Omega$ to 560 $\Omega$



CS collars

## FEATURES

- High power rating: 16 W to 600 W at 25 °C
- Heavy overloads 10  $P_n$  5 s  $\leq$  1 %
- Low ohmic values 0.10  $\Omega$  available
- High long term stability drift < 1.5 % after 1000 h
- Excellent withstanding of thermal shock
- Mechanical strength
- Fire proof
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

## LINKS TO ADDITIONAL RESOURCES

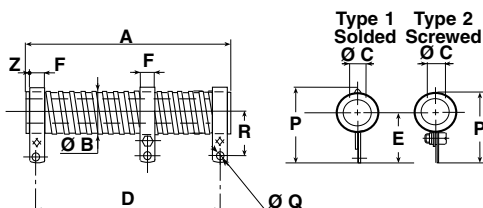


RSSD medium and high power resistors are noted for their ability to withstand heavy transient and severe shock and vibration conditions. They complement the ohmic range of Vishay styles RW, RWST and RA in the low value area, and can be tapped by means of adjustable collars. Standard RSSD resistors have a single adjustable collar.

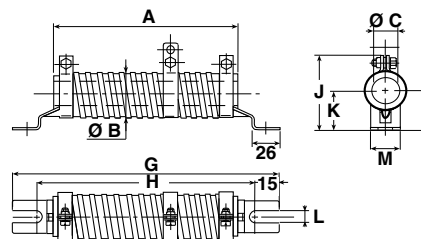
NF F 16101, 10/1988 and 16102, 04/1992: Not applicable (our parts are made of metallic and refractory materials).

## DIMENSIONS in millimeters

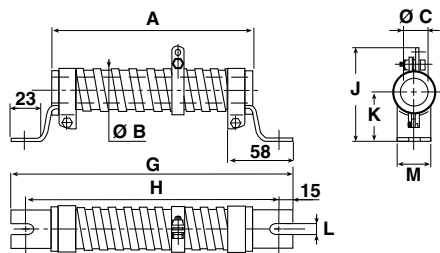
### WELDED STAINLESS STEEL 304 L COLLARS "AN" TYPE 1



### SCREWED STAINLESS STEEL 304 L COLLARS "CS" TYPE 1



### SCREWED STAINLESS STEEL 304 L COLLARS "CS" TYPE 2



| RSSD SERIES | CONNECTION                 | A $\pm$ 2 | $\varnothing$ B MAX. | $\varnothing$ C MIN. | D          | E              | F + 0.5 + 0 | P          | $\varnothing$ Q | R            | Z APPROX. | AVERAGE UNIT WEIGHT IN g |
|-------------|----------------------------|-----------|----------------------|----------------------|------------|----------------|-------------|------------|-----------------|--------------|-----------|--------------------------|
| 8 x 34      | AN type1                   | 34        | 10                   | 4.1                  | 27 $\pm$ 2 | 20 $\pm$ 0.5   | 5           | 28 $\pm$ 1 | 3.2             | 16 $\pm$ 0.5 | 1         | 10                       |
| 10 x 50     | AN type1                   | 50        | 11.5                 | 5                    | 40 $\pm$ 2 | 22 $\pm$ 0.5   | 6.35        | 31 $\pm$ 1 | 4.2             | 18 $\pm$ 0.5 | 1.5       | 22                       |
| 13 x 70     | AN type1 CS <sup>(1)</sup> | 70        | 14.5                 | 6.7                  | 56 $\pm$ 2 | 24 $\pm$ 0.5   | 6.35        | 34 $\pm$ 1 | 4.2             | 20 $\pm$ 0.5 | 3.5       | 38                       |
| 16 x 94     | AN type1                   | 94        | 18                   | 9.2                  | 78 $\pm$ 2 | 26.5 $\pm$ 0.5 | 6.35        | 38 $\pm$ 1 | 4.2             | 21 $\pm$ 0.5 | 4         | 55                       |
| 20 x 117    | AN type1                   | 117       | 22                   | 12.6                 | 98 $\pm$ 2 | 31 $\pm$ 0.7   | 6.35        | 42 $\pm$ 1 | 4.2             | 24 $\pm$ 0.7 | 5         | 80                       |

### Note

<sup>(1)</sup> CS connections on request

**DIMENSIONS** in millimeters

| RSSD SERIES | CONNECTIONS |          | A ± 2    | Ø B MAX. | Ø C MIN. | D         | E        | F + 0.5<br>+ 0 | G - 4<br>- 0 | H - 4<br>- 0             | J        |
|-------------|-------------|----------|----------|----------|----------|-----------|----------|----------------|--------------|--------------------------|----------|
| 25 x 138    | AN type1    | cs type1 | 138      | 27       | 16.4     | 117 ± 2   | 33.5 ± 1 | 9              | 199          | 169                      | 50 ± 1.5 |
| 25 x 168    | AN type1    | cs type1 | 168      | 27       | 16.4     | 147 ± 2   | 33.5 ± 1 | 9              | 229          | 199                      | 50 ± 1.5 |
| 30 x 250    | AN type1    | cs type1 | 250      | 32       | 21.3     | 227 ± 2.5 | 36 ± 1   | 13             | 317          | 287                      | 60 ± 1.5 |
| 40 x 370    | AN type2    | cs type2 | 370      | 43       | 22.3     | 332 ± 3   | 57 ± 1.5 | 18             | 432          | 405                      | 69 max.  |
| 50 x 373    | AN type2    | cs type2 | 373      | 53       | 27.1     | 332 ± 3   | 63 ± 1.5 | 18             | 432          | 405                      | 80 max.  |
| RSSD SERIES | CONNECTIONS |          | K        | L ± 0.5  | M ± 0.5  | P         | Ø Q      | R              | Z APPROX.    | AVERAGE UNIT WEIGHT IN g |          |
|             |             |          |          |          |          |           |          |                |              | AN                       | CS       |
| 25 x 138    | AN type1    | cs type1 | 27 ± 1   | 6.5      | 24       | 51 ± 1.5  | 5.7      | 28.5 ± 1       | 6            | 90                       | 135      |
| 25 x 168    | AN type1    | cs type1 | 27 ± 1   | 6.5      | 24       | 51 ± 1.5  | 5.7      | 28.5 ± 1       | 6            | 115                      | 160      |
| 30 x 250    | AN type1    | cs type1 | 30 ± 1   | 9        | 25       | 55 ± 1.5  | 5.7      | 31 ± 1         | 5            | 240                      | 290      |
| 40 x 370    | AN type2    | cs type2 | 45 ± 1   | 9        | 30       | 81.5 max. | 9.2      | 45 ± 1.5       | 10           | 845                      | 925      |
| 50 x 373    | AN type2    | cs type2 | 51 ± 1.5 | 9        | 30       | 92.5 max. | 9.2      | 51 ± 1.5       | 11.5         | 1270                     | 1350     |

**STANDARD ELECTRICAL SPECIFICATIONS**

| MODEL         | SIZE  | RESISTANCE RANGE<br>Ω | RATED POWER<br>$P_{25^{\circ}\text{C}}$<br>W | TOLERANCE<br>± % |
|---------------|-------|-----------------------|----------------------------------------------|------------------|
| RSSD 8 x 34   | 0834  | 0.12 to 10            | 16                                           | 5, 10, 20        |
| RSSD 10 x 50  | 1050  | 0.12 to 22            | 25                                           | 5, 10, 20        |
| RSSD 13 x 70  | 1370  | 0.12 to 43            | 42                                           | 5, 10, 20        |
| RSSD 16 x 94  | 1694  | 0.33 to 75            | 70                                           | 5, 10, 20        |
| RSSD 20 x 117 | 20117 | 0.22 to 100           | 100                                          | 5, 10, 20        |
| RSSD 25 x 138 | 25138 | 0.10 to 150           | 140                                          | 5, 10, 20        |
| RSSD 25 x 168 | 25168 | 0.12 to 220           | 200                                          | 5, 10, 20        |
| RSSD 30 x 250 | 30250 | 0.22 to 360           | 280                                          | 5, 10, 20        |
| RSSD 40 x 370 | 40370 | 0.47 to 470           | 450                                          | 5, 10, 20        |
| RSSD 50 x 373 | 50373 | 0.68 to 560           | 600                                          | 5, 10, 20        |

**MECHANICAL SPECIFICATIONS**

|                       |                                     |
|-----------------------|-------------------------------------|
| Mechanical Protection | Vishay Sfernice special cement      |
| Resistive Element     | Nickel alloy wire                   |
| Connections           | AN collars<br>CS supporting collars |
| Average Unit Weight   | 10 g to 1350 g                      |

**TECHNICAL SPECIFICATIONS**

|                    |                                                                                                                          |
|--------------------|--------------------------------------------------------------------------------------------------------------------------|
| Resistance Range   | 0.12 Ω to 560 Ω<br>(E12 series)                                                                                          |
| Standard Tolerance | $R \geq 10 \Omega \pm 5 \%^{(1)}$<br>$1 \Omega \leq R < 10 \Omega \pm 10 \%$<br>$0.1 \Omega \leq R < 1 \Omega \pm 20 \%$ |
| Power Rating       | 14 W to 600 W at 25 °C                                                                                                   |

**Note**<sup>(1)</sup> 10 % for RSSD 8 x 34 only**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 %              | 1 %                       |
| Climatic Sequence   | -55 °C, +200 °C<br>5 cycles                         | 3 %              | 1 %                       |
| Thermal Shock       | Load at 100 % $P_r$<br>followed by cold -55 °C / 15 | 2 %<br>or 0.05 Ω | 1 %                       |
| Load Life           | 90 / 30 cycle<br>1000 h at $P_r$ at +25 °C          | 5 %              | 5 %                       |

**SPECIAL FEATURES**

| RSSD TYPE                                               |            | 8 x 34         | 10 x 50        | 13 x 70        | 16 x 94        | 20 x 117        | 25 x 138        | 25 x 168        | 30 x 250        | 40 x 370        | 50 x 373        |
|---------------------------------------------------------|------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Power Rating at 25 °C                                   | Continuous | 16 W           | 25 W           | 42 W           | 70 W           | 100 W           | 140 W           | 200 W           | 280 W           | 450 W           | 600 W           |
|                                                         | Reduced    | 14 W           | 22 W           | 38 W           | 62 W           | 90 W            | 125 W           | 170 W           | 240 W           | 360 W           | 450 W           |
| Resistance Ohmic Range (E12, E24 Series) with 1 Tapping |            | 0.12 Ω<br>10 Ω | 0.12 Ω<br>22 Ω | 0.12 Ω<br>43 Ω | 0.33 Ω<br>75 Ω | 0.22 Ω<br>100 Ω | 0.10 Ω<br>150 Ω | 0.12 Ω<br>220 Ω | 0.22 Ω<br>360 Ω | 0.47 Ω<br>470 Ω | 0.68 Ω<br>560 Ω |
| Maximum Number of Additional Tapping                    |            | 0              | 1              | 1              | 1              | 1               | 1               | 2               | 2               | 4               | 4               |
| Reduction % of Ohmic Value by Tapping                   |            | 23             | 21             | 14             | 11             | 10              | 8               | 6.5             | 6               | 5.7             | 5.7             |

**ADDITIONAL TAPPINGS**

Are supplied with their adjustable collars fastened but not set to any specific value. Please note that, on request, all tapings can be adjusted by Vishay Sfernice. For adjustment purposes we would need to be advised of the ohmic values, and tolerances of the sections in successive order in addition to their sum  $R_n$ .

The permissible maximum value for an adjustment should take into account the possible negative tolerance of  $R_n$ .

Please consult Vishay Sfernice regarding the acceptable tolerance.

**RECOMMENDATIONS FOR USE****Maximum Current Strength:**

The ohmic value and the power decrease as the connections are brought together. To avoid overload, the maximum current strength that is permissible for  $R_n$  should never be exceeded:

$$I_{\max.} = \sqrt{P_r / R_n}$$

**POWER RATING****TEMPERATURE RISE****MARKING**

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

**ORDERING INFORMATION**

| ORDERING INFORMATION |         |                    |             |                                                                                    |           |           |                |
|----------------------|---------|--------------------|-------------|------------------------------------------------------------------------------------|-----------|-----------|----------------|
| RSSD                 | 10 x 50 |                    | AN          | 10U                                                                                | 5 %       | BA25      | 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.<br>Please see price list. |           |           |                |



## GLOBAL PART NUMBER INFORMATION

|                 |   |                                                                                                                  |   |                                         |   |                                                                                                                                                                                                                 |   |   |   |   |                                 |   |                                                                                                                                                 |   |                                |   |   |  |  |  |
|-----------------|---|------------------------------------------------------------------------------------------------------------------|---|-----------------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---------------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------|---|--------------------------------|---|---|--|--|--|
| R               | S | S                                                                                                                | D | 2                                       | 5 | 1                                                                                                                                                                                                               | 3 | 8 | A | 1 | 5                               | R | 0                                                                                                                                               | J | B                              | 1 | 5 |  |  |  |
| GLOBAL<br>MODEL |   | SIZE                                                                                                             |   | LEADS                                   |   | OHMIC VALUE                                                                                                                                                                                                     |   |   |   |   | TOLERANCE                       |   | PACKAGING                                                                                                                                       |   | SPECIAL                        |   |   |  |  |  |
| RSSD            |   | 08 x 34<br>10 x 50<br>13 x 70<br>16 x 94<br>20 x 117<br>25 x 138<br>25 x 168<br>30 x 250<br>40 x 370<br>50 x 373 |   | A = AN<br>B = B<br>C = CS<br>F = faston |   | The three first digits are<br>significant figures and the last<br>digit specifies the number of<br>zeros to follow.<br>R designates decimal point.<br><br>4700 = 470 Ω<br>48R5 = 48.5 Ω<br>R010 = 0.01 Ω<br>... |   |   |   |   | J = 5 %<br>K = 10 %<br>M = 20 % |   | Standard<br>packaging:<br>BXX = box,<br>XXPCS<br>(fixed qty<br>depending on<br>size)<br><br>No standard<br>packaging:<br>B00 = box,<br>qty open |   | As applicable.<br>Example: CB4 |   |   |  |  |  |

## 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> |



## Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Vishay products are not designed for use in life-saving or life-sustaining applications or any application in which the failure of the Vishay product could result in personal injury or death unless specifically qualified in writing by Vishay. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.