

Fixed Wirewound High Power Vitreous Resistors with Terminal Collars or Bands



FEATURES

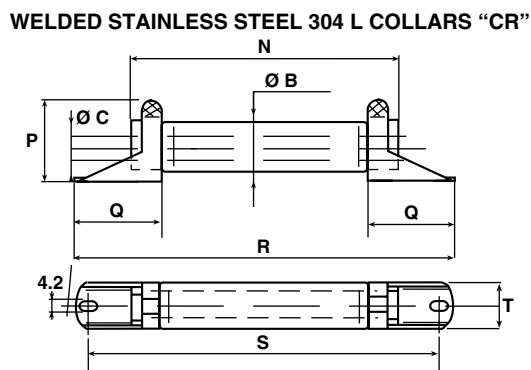
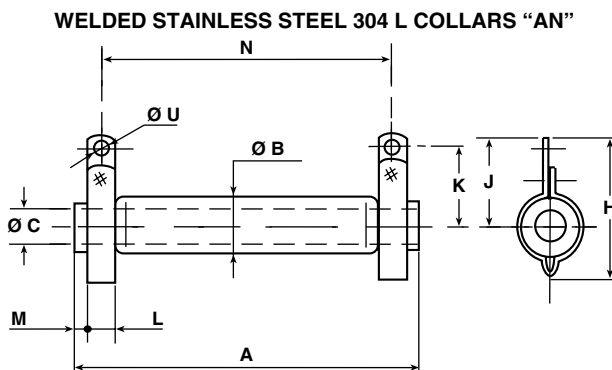
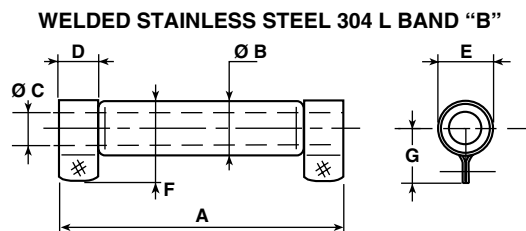
- 10 W to 80 W at 25 °C
- NF C 93-214
- RB 13 x 70 RB 20 x 117
- High power up to 80 W at 25 °C
- High long term stability drift < 2.5 % after 5000 h
- Great mechanical strength
- Fire proof
- Environmental performance
- Thermal shock strength 0.5 % (100 % h at - 25 °C)
- Compliant to RoHS directive 2002/95/EC



The RW wirewound power resistors are extremely well suited to professional applications, where high power and excellent endurance are required. They meet all requirements of NF C 93-214 specifications and five sizes cover the power range from 10 W to 80 W. Non inductive types are available, by using the special RWNI winding. For higher power or extremely severe conditions of use, see the RWST series.

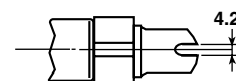
NF F 16101, 10/1988 and 16102, 04/1992: Not applicable (our parts are made of metallic and refractory materials).
NF C 93-214. Performances according to NF C 93-214.

DIMENSIONS in millimeters



| RW STYLE | | 8 x 34 | 10 x 50 | 13 x 70 | 16 x 94 | 20 x 117 |
|--------------|--------|------------|----------|----------|------------|----------|
| CONNECTIONS | Collar | AN | AN | AN | AN | AN |
| | Collar | - | CR | CR | - | - |
| | Collar | - | - | CS | - | - |
| | Band | - | B | B | B | B |
| A ±2 | | 34 | 50 | 70 | 94 | 117 |
| Ø B max. | | 11.5 | 13 | 16 | 19.5 | 23 |
| Ø C min. | | 4.1 | 5 | 5 | 9 | 9 |
| D +0.5 +0 | | - | 8 | 10.5 | 12 | 14 |
| E | | - | 11 ± 0.5 | 14 ± 0.5 | 17.5 ± 0.5 | 21 ± 0.7 |
| F max. | | - | 21 | 24.5 | 28 | 33 |
| G | | - | 14 ± 0.5 | 16 ± 0.5 | 18 ± 0.5 | 21 ± 0.7 |
| H | | 28 ± 1.0 | 31 ± 1.0 | 34 ± 1.0 | 38 ± 1.0 | 42 ± 1.5 |
| J | | 19.5 ± 0.5 | 22 ± 0.5 | 24 ± 0.5 | 25 ± 0.5 | 28 ± 0.7 |
| K | | 16 ± 0.5 | 18 ± 0.5 | 20 ± 0.5 | 21 ± 0.5 | 24 ± 0.7 |
| L +0.5 +0 | | 5 | 6.35 | 0.6 | 0.6 | 0.8 |
| M ± 1.5 | | 1 | 1.5 | 3.5 | 4 | 6 |
| N ± 2 | | 27 | 40 | 56 | 78 | 98 |
| P ± 1 | | - | 19.5 | 22.5 | - | - |
| Q ± 0.5 | | - | 19.5 | 20.5 | - | - |
| R ± 2 | | - | 72 | 91 | - | - |
| S ± 2 | | - | 62 | 81 | - | - |
| T | | - | 12 | 15 | - | - |
| Ø U | | 3.2 | 4.2 | 4.2 | 4.2 | 4.2 |

WELDED STAINLESS STEEL 304L COLLARS "CS"





**Fixed Wirewound High Power Vitreous Resistors
with Terminal Collars or Bands**

Vishay Sfernice

MECHANICAL SPECIFICATIONS

| | |
|------------------------------|----------------------|
| Mechanical Protection | Enamel |
| Resistive Element | Ni-Cr wire |
| Connections | B band |
| | AN - CR - CS collars |
| Average Unit Weight | 10 g to 100 g |

ENVIRONMENTAL SPECIFICATIONS

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

ELECTRICAL SPECIFICATIONS

| | |
|--|--|
| Resistance Range | 1 Ω to 68 kΩ (E12 preferred series value) |
| Resistance Tolerances Standard | ± 5 % |
| Power Rating | 10 W to 80 W at 25 °C |
| Temperature Coefficient | 75 ppm/°C (typical) |
| Dielectric Strength | 1000 V _{RMS} (AN collars) |
| Insulation Resistance | 100 MΩ (500 V _{DC}) AN collars |
| Shelf Life | 0.1 % year (typical) |

PERFORMANCE

| TESTS | CONDITIONS | REQUIREMENTS | TYPICAL VALUES AND DRIFTS |
|--------------------------------|---|---|---------------------------|
| Short Time Overload | 10 Pr during 5 s Voltage limited at < 5000 V current limited at 5 A | 2 % or 0.05 Ω | 0.5 % |
| Climatic Sequence | - 55 °C + 200 °C 5 cycles | 3 % or 0.05 Ω Insulation resistance > 100 MΩ | 0.5 % |
| Humidity (Steady State) | 56 days 95 % relative humidity | 2 % or 0.05 Ω Insulation resistance > 100 MΩ | 0.5 % |
| Thermal Shock | Load at 100 % Pr followed by cold temp. exposure at - 55 °C | 2 % or 0.05 Ω | 0.5 % |
| Shock | Severity 50 9 shocks/each side | 1 % or 0.05 Ω | 0.25 % |
| Vibration | Severity 55B | 1 % or 0.05 Ω | 0.25 % |
| Terminal Strength | Collar AN Traction 40 N Band B Torque 60 Ncm | 1 % or 0.05 Ω | 0.5 % |
| Load Life | 90'/30' cycle 1000 h at Pr 25 °C | 5 % | 1000 h 1.5 % |
| | | | 5000 h 2.5 % |

SPECIAL FEATURES

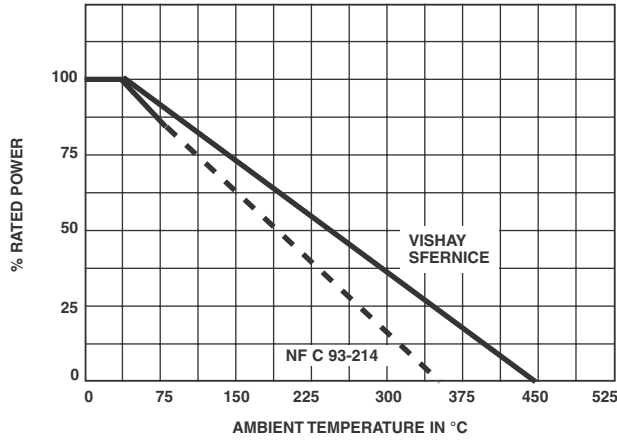
| RW STYLE | 8 x 34 | 10 x 50 | 13 x 70 | 16 x 94 | 20 x 117 |
|--------------------------------------|-----------|-----------|-------------|-------------|-------------|
| Designation NF C 93-214 | - | - | RB 13 x 70 | - | RB 20 x 117 |
| Power Rating at 25 °C | 10 W | 17 W | 28 W | 44 W | 72 W |
| Maximum Power Rating at 25 °C | 13 W | 20 W | 32 W | 50 W | 80 W |
| Ohmic Range (E12, E24 series) | 1 Ω 10 kΩ | 1 Ω 27 kΩ | 2.2 Ω 56 kΩ | 2.2 Ω 56 kΩ | 2.7 Ω 68 kΩ |
| Limiting Element Voltage | 300 V | 450 V | 650 V | 900 V | 1100 V |
| Critical Resistance | 6.9 kΩ | 10 kΩ | 13.2 kΩ | 16 kΩ | 15.1 kΩ |

NON INDUCTIVE WINDING

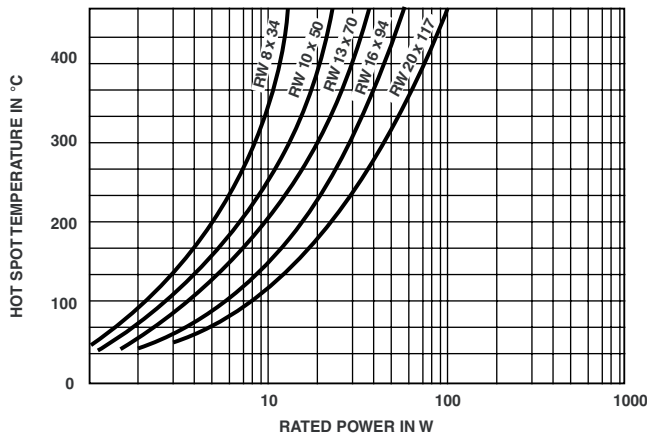
For high frequencies, low self induction resistors are available with special windings. RWNI designation.

| MODEL AND STYLE | RWNI 8 x 34 | RWNI 10 x 50 | RWNI 13 x 70 | RWNI 16 x 94 | RWNI 20 x 117 |
|-----------------|----------------|----------------|----------------|----------------|----------------|
| Ohmic Range | 4.7 Ω 100 Ω | 4.7 Ω 220 Ω | 4.7 Ω 620 Ω | 10 Ω 1.2 kΩ | 10 Ω 2.2 kΩ |

POWER RATING CHART



TEMPERATURE RISE



MARKING

SFERNICE trademark, model, style, NF style (if applicable) nominal resistance (in Ω), tolerance (in %), manufacturing date.

| ORDERING INFORMATION | | | | | | | | |
|----------------------|-----------------|-----------------------|----------------|-------------|---|-----------------------------|-------------|----------------|
| RW | 20 x 117 | NI | | AN | 68 Ω | $\pm 5\%$ | B020 | e |
| MODEL | STYLE | NON-INDUCTIVE WINDING | SPECIAL DESIGN | CONNECTIONS | OHMIC VALUE | TOLERANCE | PACKAGING | LEAD (Pb)-FREE |
| | | Optional | Optional | | Custom items are subject to extra-charge and min. order. Please see price list. | | | |



| GLOBAL PART NUMBER INFORMATION | | | | | | | | | | | | | | | | | | |
|--------------------------------|--|-------------------------------------|---------------------------|---|---|---|---|-----------|--|---------------------------------------|---|---|---|---|---|--|--|--|
| R | W | 1 | 6 | X | 9 | 4 | A | | 2 | 0 | 3 | J | B | 0 | 0 | | | |
| GLOBAL MODEL | SIZE | LEADS | OPTION | OHMIC VALUE | | | | TOLERANCE | PACKAGING | SPECIAL | | | | | | | | |
| RW | 8X34 10X50 13X70 16X94 20117 | A = AN B = B C = CS D = CR | N = Non inductive winding | <p>The first two digits are significant figures and the last digit specifies the number of zeros to follow. R designates decimal point.</p> <p>203 = 20 kΩ 471 = 470 Ω 48R = 48.7 Ω R01 = 0.01 Ω</p> | | | | J = 5.0 % | <p>Box: BA25 BA25NA BO20 BO20NA BO30 BO30NA BO40 BO40NA BO50 BO50NA</p> | As applicable. Example: BC1 | | | | | | | | |



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