Fixed Wirewound High Power Vitreous Resistors with Terminal Collars or Bands

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.

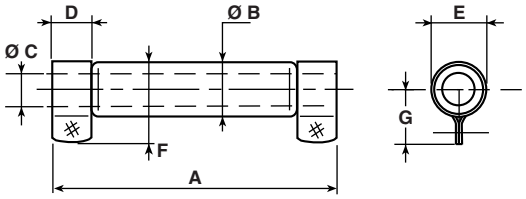
FEATURES

- 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)
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

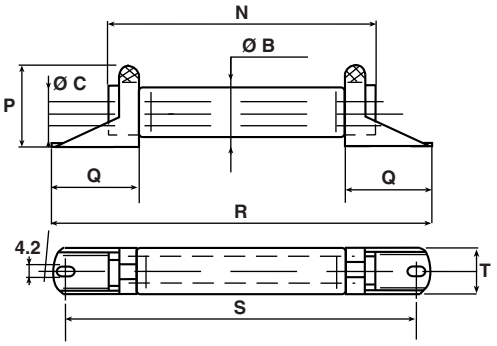
RoHS COMPLIANT

DIMENSIONS in millimeters

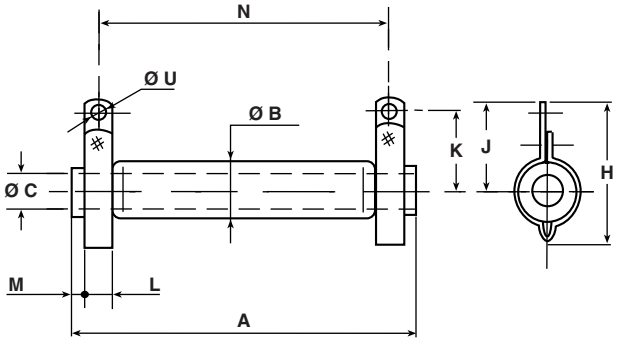
WELDED STAINLESS STEEL 304 L BAND "B"



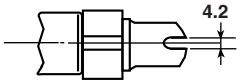
WELDED STAINLESS STEEL 304 L COLLARS "CR"



WELDED STAINLESS STEEL 304 L COLLARS "AN"



WELDED STAINLESS STEEL 304L COLLARS "CS"



SERIES	CONNECTIONS				A ± 2	Ø B MAX.	Ø C MIN.	D + 0.5 + 0	E	F MAX.	G	H	J	K
	COLLAR	COLLAR	COLLAR	BAND										
RW 8 x 34	AN	-	-	-	34	11.5	4.1	-	-	-	-	28 ± 1.0	19.5 ± 0.5	16 ± 0.5
RW 10 x 50	AN	CR	-	B	50	13	5	8	11 ± 0.5	21	14 ± 0.5	31 ± 1.0	22 ± 0.5	18 ± 0.5
RW 13 x 70	AN	CR	CS	B	70	16	5	10.5	14 ± 0.5	24.5	16 ± 0.5	34 ± 1.0	24 ± 0.5	20 ± 0.5
RW 16 x 94	AN	-	-	B	94	19.5	9	12	17 ± 0.5	28	18 ± 0.5	38 ± 1.0	25 ± 0.5	21 ± 0.5
RW 20 x 117	AN	-	-	B	117	23	9	14	21 ± 0.7	33	21 ± 0.7	42 ± 1.5	28 ± 0.7	24 ± 0.7

DIMENSIONS in millimeters

SERIES	CONNECTIONS				L + 0.5 + 0	M ± 1.5	N ± 2	P ± 1	Q ± 0.5	R ± 2	S ± 2	T	Ø U
	COLLAR	COLLAR	COLLAR	BAND									
RW 8 x 34	AN	-	-	-	5	1	27	-	-	-	-	-	3.2
RW 10 x 50	AN	CR	-	B	6.35	1.5	40	19.5	19.5	72	62	12	4.2
RW 13 x 70	AN	CR	CS	B	0.6	3.5	56	22.5	20.5	91	81	15	4.2
RW 16 x 94	AN	-	-	B	0.6	4	78	-	-	-	-	-	4.2
RW 20 x 117	AN	-	-	B	0.8	6	98	-	-	-	-	-	4.2

STANDARD ELECTRICAL SPECIFICATIONS

MODEL	SIZE	RESISTANCE RANGE Ω	RATED POWER $P_{25\,°C}$ W	TOLERANCE ± %
RW 8 x 34	0834	1 to 10K	10	5
RW 10 x 50	1050	1 to 27K	17	5
RW 13 x 70	1370	2.2 to 56K	28	5
RW 16 x 94	1694	2.2 to 56K	44	5
RW 20 x 117	20117	2.7 to 68K	72	5

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

TECHNICAL SPECIFICATIONS

Resistance Range	1 Ω to 68 kΩ (E12 preferred series value)
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)

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 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 % P_r 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 P_r 25 °C	5 %	1000 h	1.5 %
			5000 h	2.5 %

SPECIAL FEATURES

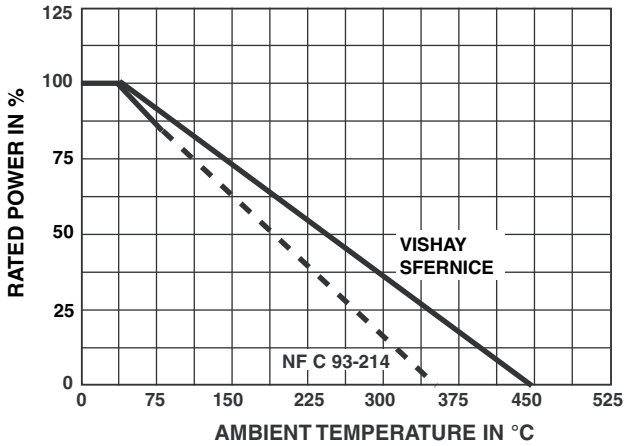
RW STYLE	8 x 34	10 x 50	13 x 70	16 x 94	20 x 117
Designation NF C 93-214	-	-	RB 13 x 70	-	RB 20 x 117
Maximum Power Rating at 25 °C	13 W	20 W	32 W	50 W	80 W
Ohmic Range (E12, E24 series)	1 Ω to10 kΩ	1 Ω to27 kΩ	2.2 Ω to 56 kΩ	2.2 Ω to 56 kΩ	2.7 Ω to 68 kΩ
Limiting Element Voltage	300 V	450 V	650 V	900 V	1100 V
Critical Resistance	6.9 kΩ	10 kΩ	13.2 kΩ	16 kΩ	15.1 kΩ

NON INDUCTIVE WINDING

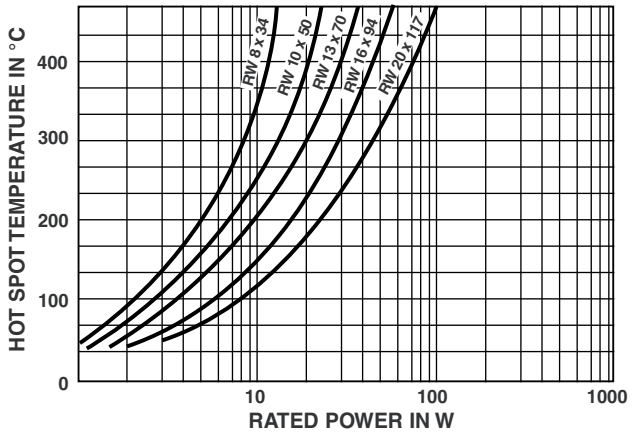
For high frequencies, low self induction resistors are available with special windings. RWNI designation.

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



TEMPERATURE RISE



MARKING

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

ORDERING INFORMATION

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

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	**8 x 34** **10 x 50** **13 x 70** **16 x 94** **20 x 117**	**A** = AN **B** = B **C** = CS **D** = CR	**N** = Non inductive winding	The first two digits are significant figures and the last digit specifies the number of zeros to follow. R designates decimal point. **203** = 20 kΩ **471** = 470 Ω **48R** = 48.7 Ω **R01** = 0.01 Ω	**J** = 5.0 %	**Box:** BBOxxNA (variable qty.) = **B00** BAxxNA (variable qty.) = **S00** BA25 = **S06** BO20 = **B15** B040 = **B23** BO50 = **B25**	As applicable. Example: **BC1**

RELATED DOCUMENTS

APPLICATION NOTES	
Potentiometers and Trimmers	www.vishay.com/doc?51001
Guidelines for Vishay Sfernice Resistive and Inductive Components	www.vishay.com/doc?52029

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