Wirewound Resistor, Industrial High Power, Enamelled Tubular, Adjustable

"B" Ring

FEATURES

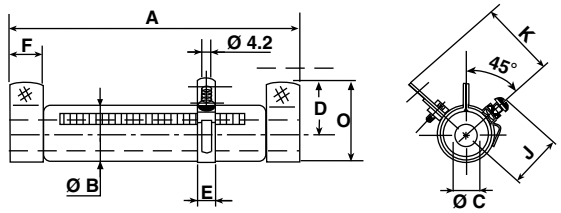
- 21 W to 180 W at 25 °C
- NF C 93-214
  - RBA 13 x 70
  - RBA 20 x 117
  - RBA 25 x 168
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

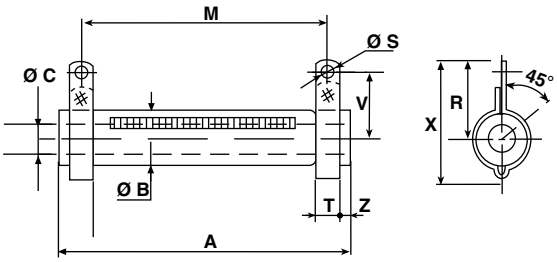
The ceramic tubular core ensures high dissipation capacity and excellent resistance to thermal shock and overload. The resistor winding is evenly coiled on the core and protected by an enamel coating. A longitudinal opening provides for one or more electrical connections by means of sliding collars equipped with a tongued connector.

DIMENSIONS in millimeters

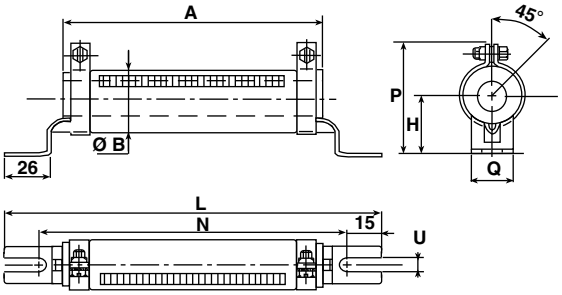
WELDED STAINLESS STEEL 304 L BAND "B"



WELDED STAINLESS STEEL 304 L COLLAR "AN" TYPE 1



SCREWED STAINLESS STEEL 304 L "CS" TYPE 1



RA SERIES	CONNECTION	A ± 2	Ø B MAX.	Ø C MIN.	D	E + 0.5 + 0	F + 0.5 + 0	H ± 1	J MAX.	K MAX.	L - 0 - 4	M	N - 0 - 4
13 x 70	AN-B (1)	70	16	5	16 ± 0.5	7	10.5	-	19.5	24	-	56 ± 2	-
16 x 94	AN-B	94	19.5	9	17.5 ± 0.5	8	12	-	23	29.5	-	78 ± 2	-
20 x 117	AN-B	117	23	9	21 ± 0.7	8	14	-	25	31.5	-	98 ± 2	-
25 x 138	AN-B-CS	138	28	12	23.5 ± 1	8	15	27	27.5	34	199	117 ± 2	169
25 x 168	AN-B-CS	168	28	12	23.5 ± 1	8	15	27	27.5	34	229	147 ± 2	199
30 x 250	AN-B-CS	250	33	17	26 ± 1	8	18	30	30	36.5	317	227 ± 2.5	287

RA SERIES	CONNECTION	O MAX.	P ± 1.5	Q ± 0.5	R	S	T	U	V	X	Z	AVERAGE UNIT WEIGHT IN g
13 x 70	AN-B (1)	24.5	-	-	24 ± 0.5	4.2	6.35	-	20 ± 0.5	34.5 ± 1	3.5	40
16 x 94	AN-B	28	-	-	26.5 ± 0.5	4.2	6.35	-	21 ± 0.5	38 ± 1	5	70
20 x 117	AN-B	33	-	-	31 ± 0.7	4.2	6.35	-	24 ± 0.7	42 ± 1	6	116
25 x 138	AN-B-CS	38.5	50	24	33.5 ± 1	5.7	9	6.5	28 ± 1	51 ± 1.5	6	200
25 x 168	AN-B-CS	38.5	50	24	33.5 ± 1	5.7	9	6.5	28 ± 1	51 ± 1.5	6	225
30 x 250	AN-B-CS	43.5	60	25	36 ± 1	5.7	13	9	33 ± 1	55 ± 1.5	5	415

Note

(1) Also with CS and CR collars; see RW datasheet.

STANDARD ELECTRICAL SPECIFICATIONS

MODEL	SIZE	RESISTANCE RANGE Ω	RATED POWER $P_{25\,°C}$ W	TOLERANCE ± %
RA 13 x 70	1370	33 to 3.9K	21	10
RA 16 x 94	1694	68 to 3.9K	35	10
RA 20 x 117	20117	100 to 4.7K	50	10
RA 25 x 138	25138	150 to 6.8K	75	10
RA 25 x 168	25168	220 to 10K	120	10
RA 30 x 250	30250	330 to 22K	180	10

MECHANICAL SPECIFICATIONS

Mechanical Protection	Vitreous enamel
Resistive Element	Ni-Cr wire
Connections	B band AN or CS collar
Average Unit Weight	40 g to 415 g

TECHNICAL SPECIFICATIONS

Resistance Range	33 to 22K (E6 series)
Tolerance Standard	± 10 %
Power Rating	21 W to 180 W at 25 °C

ENVIRONMENTAL SPECIFICATIONS

Temperature Range	-55 °C, +350 °C
Climatic Category	-55 °C / +200 °C / 56 days

PERFORMANCE

TESTS	CONDITIONS	REQUIREMENTS	TYPICAL VALUES AND DRIFTS
Short Time Overload	10 P_r 5 s Voltage < 6000 V	2 % or 0.05	0.5 %
Climatic Sequence	-55 °C +200 °C 5 cycles	3 % or 0.05 Insulation resistance > 100M	1 %
Humidity (Steady State)	56 days 95 % RH	2 % or 0.05 Insulation resistance > 100M	0.5 %
Thermal Shock	Load at P_r followed by exposure at -55 °C / 15	2 % or 0.05	0.5 %
Resistor Strength	200 N ± 10 N	2 % or 0.05	0.25 %
Vibration	55/10	1 % (1) or 0.05	0.5 %
Terminal Strength AN B	Traction 40 Ncm Torque 60 Ncm	1 % or 0.05	0.25 %
Load Life	1000 h at P_r, 25 °C, 90' / 30'	5 %	1.5 %

Note

(1) 1 % of total resistance and 2 % between sliding collar and fixed connection.

SPECIAL FEATURES

RA STYLE	13 x 70	16 x 94	20 x 117	25 x 138	25 x 168	30 x 250
Designation NF C 93-214	RBA 13 x 70	-	RBA 20 x 117	-	RBA 25 x 168	-
Power Rating NF C 93-214 at 25 °C	13 W	-	25 W	-	50 W	-
Maximum Power Rating at 25 °C	21 W	35 W	50 W	75 W	120 W	180 W
Ohmic Range (E6, E24 series)	33 to 3.9K	68 to 3.9K	100 to 4.7K	150 to 6.8K	220 to 10K	330 to 22K

ADMISSIBLE RATED AMPERAGE

This must in all cases be less than:

$$I_n = \sqrt{\frac{P_n(W)}{R_n(\Omega)}}$$

SLIDING COLLAR

Resistors are normally supplied with 1 sliding collar fi tted and locked in a specific position.

Additional collars can be supplied and adjusted at the factory to special order (on request). (1)

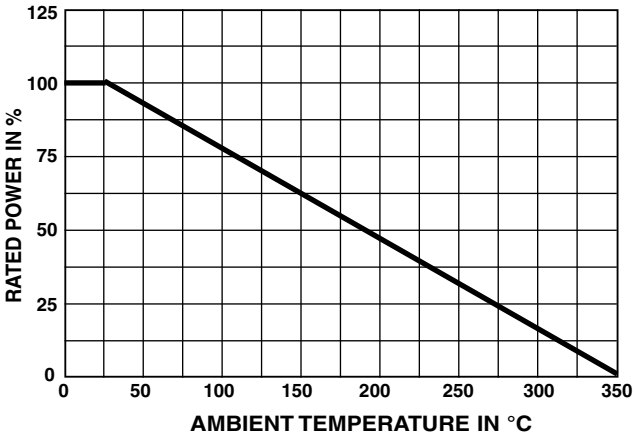
Note

(1) Quote ohmic value and tolerance of each resistance section, and Rn value.

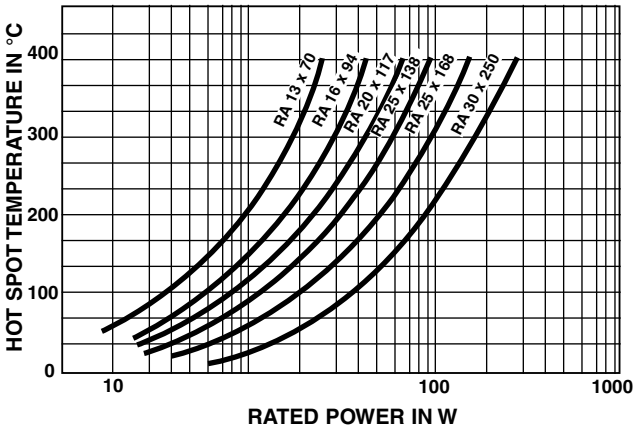
MAXIMUM ADDITIONAL COLLARS

MODEL AND TYPE	RA 13 x 70	RA 16 x 94	RA 20 x 117	RA 25 x 138	RA 25 x 168	RA 30 x 250
Additional Sliding Collar	1	1	1	2	3	4

POWER RATING



TEMPERATURE RISE



MARKING

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

ORDERING INFORMATION

RA	13 x 70		AN	470U	± 10 %	1 C. SUP.	BO10^FIO	e
MODEL	STYLE	SPECIAL DESIGN	CONNECTIONS	OHMIC VALUE	TOLERANCE	ADDITIONAL SLIDING COLLAR	PACKAGING	LEAD (Pb)-FREE
		In option	Custom items are subject to extra-charge and min. order. Please see price list.					

GLOBAL PART NUMBER INFORMATION

R	A	3	0	2	5	0	A	6	8	0	R	0	K	B	0	3			

GLOBAL MODEL	SIZE	LEADS	OHMIC VALUE	TOLERANCE	PACKAGING	SPECIAL
RA	**13 x 70** **16 x 94** **20 x 117** **25 x 138** **25 x 168** **30 x 250**	**A** = AN **B** = B **C** = CS **D** = CR	The first four digits are significant figures and the last digit specifies the number of zeros to follow. R designates decimal point. **680R0** = 630 Ω **20301** = 20.3 kΩ **88R88** = 88.88 Ω	**K** = 10 %	**Box:** BO10 BO10NA BO20 BO30 BO30NA BO40 BO40NA	As applicable. Example: **BA7**

RELATED DOCUMENTS	
APPLICATION NOTES	
Packaging Information	www.vishay.com/doc?50033
Accessories (Fixing)	www.vishay.com/doc?50021
Accessories (Mounting)	www.vishay.com/doc?50023

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