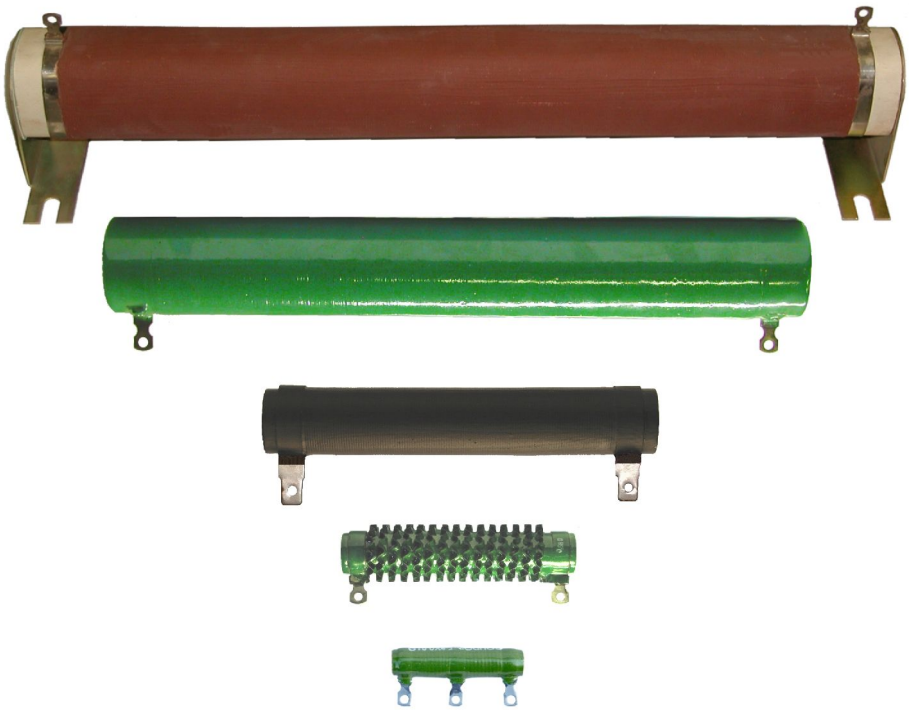
COUDOINT

Wirewound Resistors



Hardware Reference

Document 1101072 - Edition June 2009

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COUDOINT

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1 Main Features

- **Series and models**: We offer standard models in the RCA series and special models in other series.
  Resistor assemblies can be supplied as open frames, available to OEM's for mounting in their own enclosure, or in indoor/outdoor enclosures according to a specified IP level.

- **RCA Series**: The RCA Series consists of 12 models in different sizes, with wattages from 7 to 1325 watts, and ohmic values from 0.1 Ω to 440 kΩ, with different types of coating, terminal connections, mounting bracket (see Product Selection Guide on page 4).

- **Description :** Wirewound resistors are constructed with:
  - a tubular ceramic core with 12 possible sizes for the RCA series: 12 models RCA-1 to RCA-12,
  - a winding of cupro-nickel or chromium-nickel/round or corrugated tape resistance wire, with a low variation of the ohmic value vs. temperature (TCR), or an iron-chromium-aluminum corrugated tape winding,
  - a coating on the winding wires to keep them in place when the temperature rises and to facilitate heat dissipation – bare wires may be used on special models-,
  - terminal connections and, optionally, one or more intermediary taps,
  - optional adjustable lug to adjust the ohmic value,
  - insulated or uninsulated mounting brackets.

- **Coating:**
  - refractory cement coating has the ability to withstand thermal constraints,
  - silicone coating offers good sealing properties and fits all application except if submitted to moisture, but cannot meet the same level of working temperature,
  - vitreous enamel coating also offers good sealing properties, is mechanically robust and fits all uses,
  - some special designs do not use any coating: the winding is kept in place when the temperature rises by a grooved ceramic core or by a tight winding of heavy oxidized resistance wire.

- **Ohmic values**:
  - **each resistor is supplied at the required ohmic value**, in the range of values which are feasible for the model. For ohmic values beyond this range, please contact us.
  - The ohmic value tolerance is ± 5 %. Resistors with reduced tolerances can be supplied on request.
  - Temperature Coefficient of Resistance (TCR) depends on the alloy :
    - for nickel-chrome: 170 ppm/°C
    - for iron-chromium-aluminum: 110 ppm/°C
    - for copper-nickel: 60 ppm/°C

- **Parameters for ordering**:
  - when ordering, a product can be identified by using the product identification code to indicate the model, the type of coating, terminal connections, and mounting style, the ohmic value and wether an intermediary tap is required or not.
  - “Very low inductance” resistors can be supplied:
    - for a fixed model, with an “Ayrton-Perry” type winding,
    - for an adjustable model, with a special “Ayrton-Perry” type winding allowing the adjustable lug to be in contact with the wires in the two layers in every position.

    This winding reduce the overall inductance value to within a few percentages of the normal values, which are usually between 1 and 10 microhenrys.

To select a model, use the technical documentation provided in this document. You may also contact us directly and explain what you need. We would be pleased to help you choose or define the model that matches:
- the parameters of your application,
- the designation, the description - text and/or photos - of the existing product if a replacement.

2 RCA Series

2.1 Product Selection Guide

This matrix shows, for each RCA model, the dimensions of the ceramic core, the power rating P_M and the range of ohmic values R_T which can be supplied, depending on the resistor type (fixed, adjustable, corrugated tape wound) and its coating :

A selection by the maximum current I_M can be done with P_M and R_T, I_M being defined by $P_M = R_T \times I^2_M$. It is important to consider that the current must not exceed the maximum allowed value at every point of the resistance wire and that precautions may have to be taken particularly for adjustable resistors.

Model	Ceramic core dimensions Ø x L (mm)	Coating and type of the resistor					
		Cement		Silicone	Vitreous enamel		
		Fixed	Adjustable	Fixed	Fixed	Adjustable	Corrugated
RCA-1	8 x 35	16 W *0.1 Ω to 8.6 kΩ*	13 W *0.5 Ω to 8.6 kΩ*	8 W *0.1 Ω to 8.6 kΩ*	13 W *1.2 Ω to 300 Ω*	10 W *1.2 Ω to 300 Ω*	–
RCA-2	10 x 50	25 W *0.1 Ω to 21 kΩ*	20 W *0.5 Ω to 21 kΩ*	11 W *0.1 Ω to 21 kΩ*	20 W *2.7 Ω to 600 Ω*	15 W *2.1 Ω to 600 Ω*	–
RCA-3	12 x 70	40 W *0.1 Ω to 32 kΩ*	30 W *0.5 Ω to 32 kΩ*	17 W *0.1 Ω to 32 kΩ*	30 W *2.4 Ω to 1.1 kΩ*	23 W *1.4 Ω to 1.1 kΩ*	–
RCA-4	17 x 95	60 W *0.1 Ω to 50 kΩ*	55 W *0.5 Ω to 50 kΩ*	25 W *0.1 Ω to 50 kΩ*	55 W *4.6 Ω to 2 kΩ*	35 W *4.6 Ω to 2 kΩ*	–
RCA-5	20 x 118	100 W *0.1 Ω to 95 kΩ*	90 W *0.7 Ω to 95 kΩ*	38 W *0.1 Ω to 95 kΩ*	90 W *6.8 Ω to 3,3 kΩ*	55 W *6.8 Ω to 3,3 kΩ*	–
RCA-6	25 x 138	140 W *0.1 Ω to 110 kΩ*	130 W *1 Ω to 110 kΩ*	55 W *0.1 Ω to 110 kΩ*	120 W *10 Ω to 5 kΩ*	75 W *10 Ω à 5 kΩ*	160 W *0.68 Ω to 15 Ω*
RCA-7	25 x 168	200 W *0.1 Ω to 140 kΩ*	180 W *1.3 Ω to 140 kΩ*	85 W *0.1 Ω to 140 kΩ*	175 W *13 Ω to 7 kΩ*	130 W *13 Ω à 7 kΩ*	200 W *0.68 Ω to 10 Ω*
RCA-8	30 x 250	325 W *0.2 Ω to 250 kΩ*	300 W *2.6 Ω to 250 kΩ*	140 W *0.2 Ω to 250 kΩ*	280 W *25 Ω to 12 kΩ*	190 W *25 Ω to 12 kΩ*	350 W *0.47 Ω to 28 Ω*
RCA-9	40 x 370	525 W *0.5 Ω to 260 kΩ*	480 W *2.7 Ω to 260 kΩ*	230 W *0.5 Ω to 260 kΩ*	450 W *25 Ω to 25 kΩ*	300 W *25 Ω to 25 kΩ*	700 W *0.1 Ω to 39 Ω*
RCA-10	50 x 370	700 W *0.6 Ω to 260 kΩ*	640 W *2.8 Ω to 260 kΩ*	320 W *0.6 Ω to 260 kΩ*	600 W *31 Ω to 30 kΩ*	425 W *31 Ω to 30 kΩ*	1000 W *0.16 Ω to 68 Ω*
RCA-11	60*x 500	1050 W *0.8 Ω to 360 kΩ*	960 W *4.5 Ω to 360 kΩ*	460 W *0.8 Ω to 360 kΩ*	–	–	–
RCA-12	60*x 600	1325 W *1.1 Ω to 440 kΩ*	1200 W *5 Ω to 440 kΩ*	570 W *1.1 Ω to 440 kΩ*	–	–	–

*: Nearly square cross-section ceramic cores for the RCA-11 and RCA-12 models

Note: - Adjustable silicone coated resistors can be supplied, but the power rating is very low (see page 7),
- For adjustable resistors, the power rating is given for a position representing an ohmic value close to the maximum.

2.2 Features by Type of Coating and of Wire or Tape

2.2.1 Cement Coated RCA Resistors

Main features

- wide range of ohmic values
- mechanically robust
- good overload capacity
- excellent resistance to thermal shock

Features by model

Power rating is given:

- for continuous duty [for intermittent duty: please contact us]
- for adjustable resistors: for the position of the adjustable terminal that provides an ohmic value close to the maximum

	RCA-1	RCA-2	RCA-3	RCA-4	RCA-5	RCA-6	RCA-7	RCA-8	RCA-9	RCA-10	RCA-11	RCA-12
Core diameter (mm)	8	10	12	17	20	25	25	30	40	50	60	60
Core length (mm)	35	50	70	95	118	138	168	250	370	370	500	600
Maximum voltage (V)	**350**	**500**	**700**	**1000**	**1250**	**1400**	**1750**	**3000**	**4500**	**4500**	**6000**	**6000**
Fixed resistors :												
Power rating (W)	16	25	40	60	100	175	200	325	525	700	1050	1325
Minimum ohmic value (Ω)	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,2	0,5	0,6	0,8	1,1
Maximum ohmic value (kΩ)	8,6	21	32	50	95	110	140	250	260	260	360	440
Average weight (g)	10	15	25	50	80	145	175	315	850	1100	2200	2600
Adjustable resistors :												
Power rating (W)	13	20	30	55	90	160	180	300	480	640	960	1200
Minimum ohmic value (Ω)	0,5	0,5	0,5	0,5	0,7	1	1,3	2,6	2,7	2,8	4,5	5
Maximum ohmic value (kΩ)	8,6	21	32	50	95	110	140	250	260	260	360	440
Average weight (g)	10	15	25	50	80	145	175	315	850	1100	2200	2600

2.2.2 Silicone Coated RCA Resistors

Main features

- wide range of ohmic values
- mechanically robust

Features by model

Power rating is given:

- for continuous duty [for intermittent duty: please contact us]
- for adjustable resistors: for the position of the adjustable terminal that provides an ohmic value close to the maximum

	RCA-1	RCA-2	RCA-3	RCA-4	RCA-5	RCA-6	RCA-7	RCA-8	RCA-9	RCA-10	RCA-11	RCA-12
Core diameter (mm)	8	10	12	17	20	25	25	30	40	50	60	60
Core length (mm)	35	50	70	95	118	138	168	250	370	370	500	600
Maximum voltage (V)	**350**	**500**	**700**	**1000**	**1250**	**1400**	**1750**	**3000**	**4500**	**4500**	**6000**	**6000**
Fixed resistors :												
Power rating (W)	8	11	17	25	38	55	85	140	230	320	460	570
Minimum ohmic value (Ω)	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,2	0,5	0,6	0,8	1,1
Maximum ohmic value (kΩ)	8,6	21	32	50	95	110	140	250	260	260	360	440
Average weight (g)	10	15	25	50	80	145	175	315	850	1100	2200	2600
Adjustable resistors :												
Power rating (W)	6,5	9	13	23	34	50	76	130	210	290	420	515
Minimum ohmic value (Ω)	0,5	0,5	0,5	0,5	0,7	1	1,3	2,6	2,7	2,8	4,5	5
Maximum ohmic value (kΩ)	8,6	21	32	50	95	110	140	250	260	260	360	440
Average weight (g)	10	15	25	50	80	145	175	315	850	1100	2200	2600

2.2.3 Vitreous Enamelled RCA Resistors

Main features

- vitreous enamel coated winding
- excellent protection of the winding, capable of withstanding harsh environmental conditions
- not available for RCA-11 and RCA-12 models

Features by model

Power rating is given:

- for continuous duty [for intermittent duty: please contact us]
- for adjustable resistors: for the position of the adjustable terminal that provides an ohmic value close to the maximum

	RCA-1	RCA-2	RCA-3	RCA-4	RCA-5	RCA-6	RCA-7	RCA-8	RCA-9	RCA-10
Core diameter (mm)	8	10	12	17	20	25	25	30	40	50
Core length (mm)	35	50	70	95	118	138	168	250	370	370
Maximum voltage (V)	**350**	**500**	**700**	**1000**	**1250**	**1400**	**1750**	**3000**	**4500**	**4500**
Fixed resistors :										
Power rating (W)	13	20	30	55	90	120	175	280	450	600
Minimum ohmic value (Ω)	1,2	2.7	1,4	4,6	6,8	10	13	25	25	31
Maximum ohmic value (kΩ)	0,3	0,6	1,1	2	3,3	5	7	12	25	30
Average weight (g)	10	15	20	50	75	135	160	300	800	1050
Adjustable resistors :										
Power rating (W)	10	15	23	35	55	75	130	190	300	425
Minimum ohmic value (Ω)	1,2	2,1	2,4	4,6	6.8	10	13	25	25	31
Maximum ohmic value (kΩ)	0,3	0,6	1,1	2	3,3	5	7	12	25	30
Average weight (g)	10	15	20	60	85	150	175	300	820	1050

2.2.4 Corrugated Tape Wound RCA Resistors

Main features

- only available for RCA-6 to RCA-10
- vitreous enamel coating
- low ohmic values
- high currents
- very good heat dissipation
- low inductance

Corrugated tape wound resistors are not supplied with adjustable lugs and are not available, with an “Ayrton-Perry” type winding option.

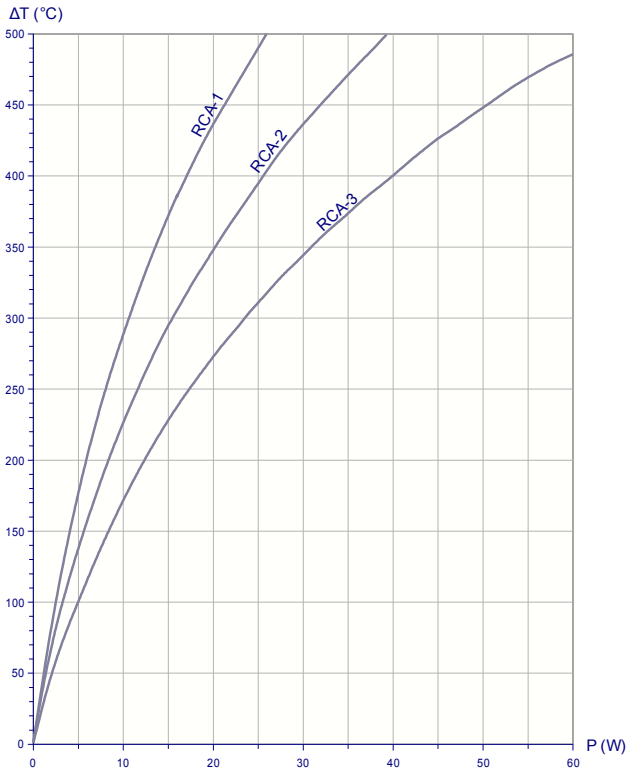
Electrical specification

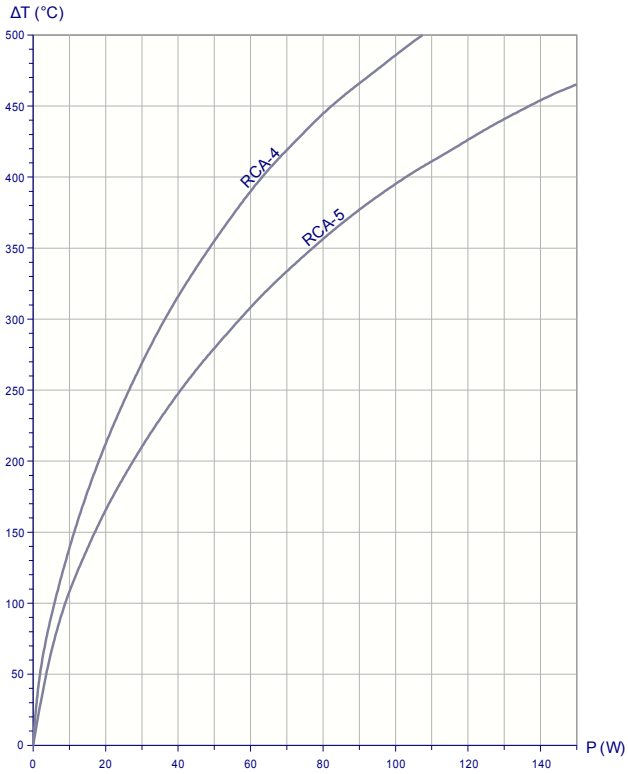
Power rating is given for continuous duty [for intermittent duty: please contact us]

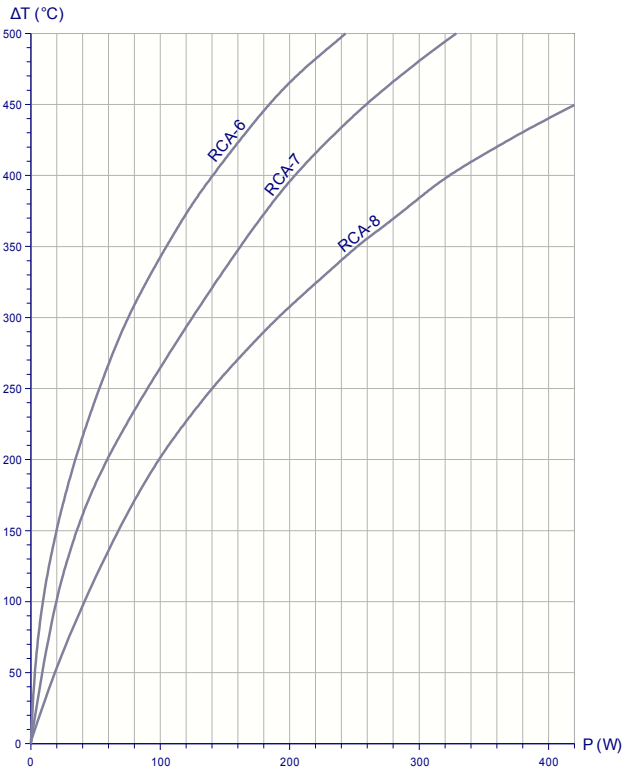
	RCA-1	RCA-2	RCA-3	RCA-4	RCA-5	RCA-6	RCA-7	RCA-8	RCA-9	RCA-10	RCA-11	RCA-12
Core diameter (mm)	–	–	–	–	–	25	25	30	40	50	–	–
Core length (mm)	–	–	–	–	–	138	168	250	370	370	–	–
Maximum voltage (V)	–	–	–	–	–	**1750**	**2200**	**3700**	**6500**	**6500**	–	–
Power rating (W)	–	–	–	–	–	160	200	350	700	1000	–	–
Minimum ohmic value (Ω)	–	–	–	–	–	0,68	0,68	0,47	0,1	0,16	–	–
Maximum ohmic value (Ω)	–	–	–	–	–	15	10	28	39	68	–	–
Average weight (g)	–	–	–	–	–	150	180	300	800	1050	–	–

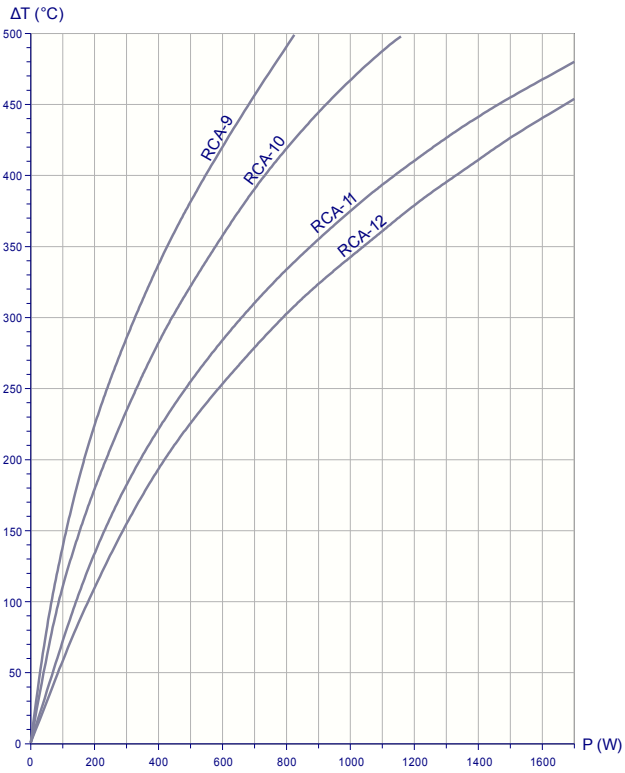
2.3 Temperature Rise Curves

2.3.1 Round wirewound models: for continuous duty (intermittent duty: please contact us), temperature rise above ambient (25°C) versus dissipated power is shown below :

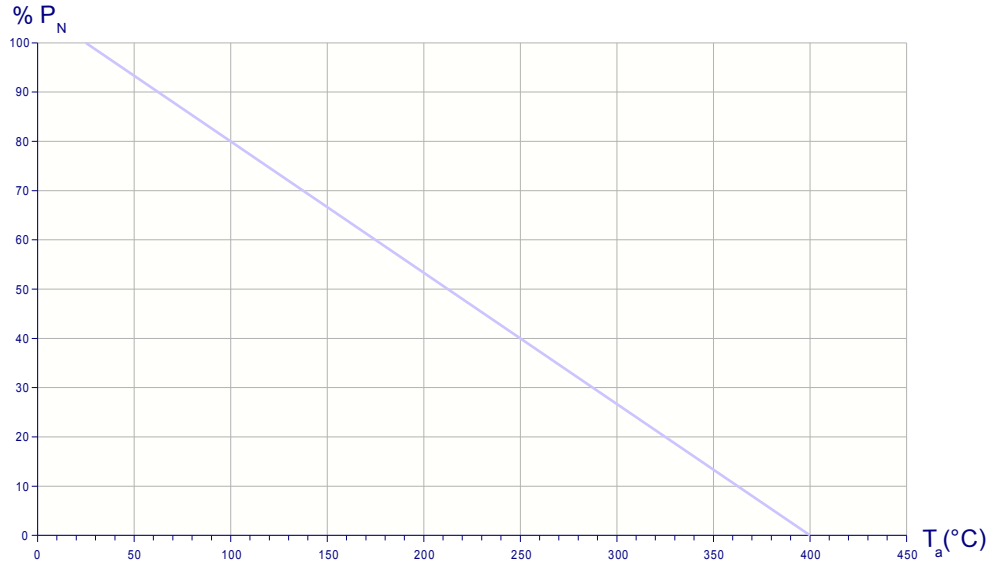




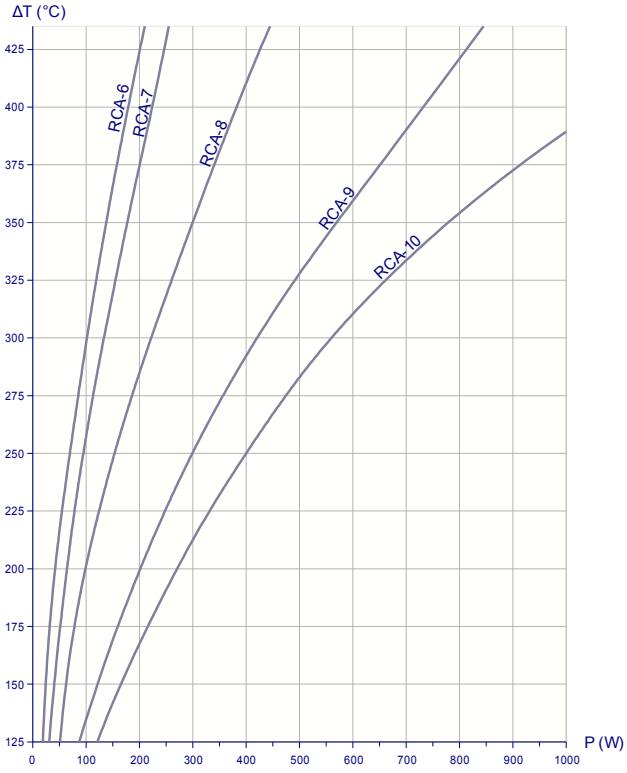




The power rating depends on the ambient temperature. The percentage of variation versus ambient temperature is shown by the following derating curve:

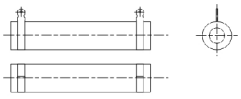
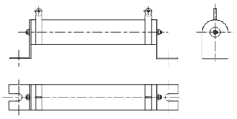
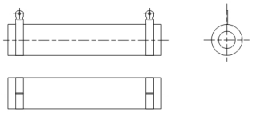
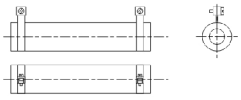
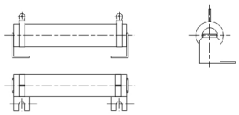
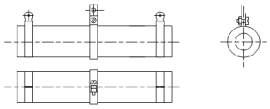
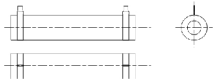
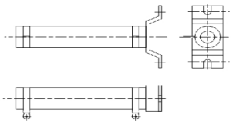
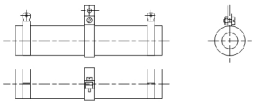
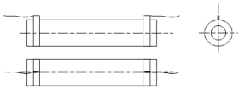
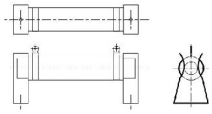
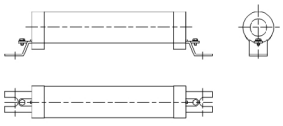
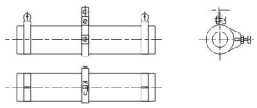
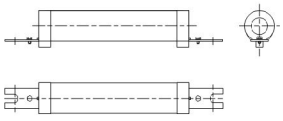
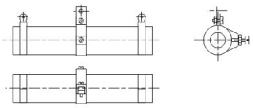
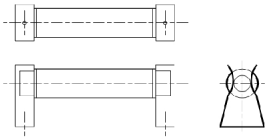


2.3.2 Corrugated tape wound models: for continuous duty (intermittent duty: please contact us), temperature rise above ambient (25°C) versus dissipated power is shown below:



2.4 Mechanical Specifications

2.4.1 Overview table

	Terminals	Mounting style	Intermediary taps	
Insulated terminals	Type **S**  **General purpose lug**	Type **PS**  **Outside L-brackets**	Fixed resistor	Type **X**  **Without adjustable lug**
	Type **ET**  **Screw lugs**	Type **ID**  **Inside L-brackets**	Adjustable resistor	Type **O**  **Adjustable lug – screw driver type**
	Type **FA**  **Faston terminals**	Type **EB**  **Single end bracket**		Type **OL**  **Large adjustable lug – screw driver type**
	Type **F** [RCA 1/2/3]  **Direct wires**	Type **C2** [RCA 6/7]  **Mounting clips**		
Uninsulated terminals	Type **TC** 			Type **SP** [RCA-3 to RCA-12]  **Double screw driver type**
	Type **TD** 			Type **SPL** [RCA-3 to RCA-12]  **Large double screw driver type**
	Type **C1** [only for RCA-6 and RCA-7]  **Ferrule terminals**			

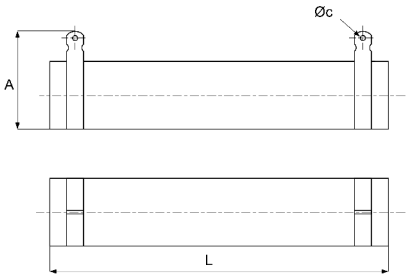
2.4.2 Mounting Styles and Dimensions

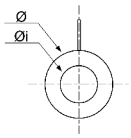
RCA resistors can be supplied unmounted, or with insulated or uninsulated terminals. The mounting brackets are white zinc-plated steel brackets.

- **Unmounted resistor**:

  The RCA-1 to RCA-12 models come with ceramic cores in different sizes with a circular cross-section for the RCA-1 to RCA-10 models and a nearly square cross-section for the RCA-11 and RCA-12 models.

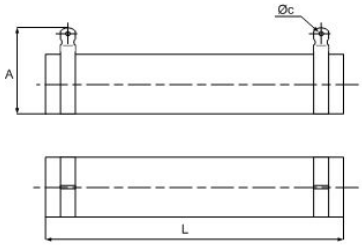
RCA-1 to RCA-10 :

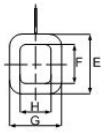




Example: Model RCA5SFAXX1KR

RCA-11 and RCA-12 :





Example: Model RCA11CSXX500R

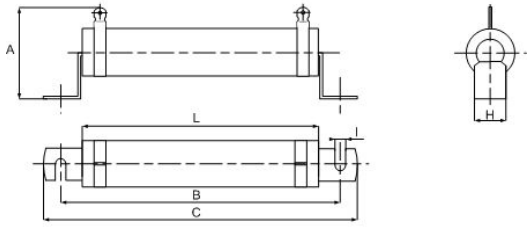
(mm)	RCA-1	RCA-2	RCA-3	RCA-4	RCA-5	RCA-6	RCA-7	RCA-8	RCA-9	RCA-10	RCA-11	RCA-12
L	35	50	70	95	118	138	168	250	370	370	500	600
A	20	25	27	32	35	43	43	48	60	70	82	82
Øc	3,2	3,2	3,2	4,2	4,2	5,2	5,2	5,2	5,2	5,2	5,2	5,2
Ø	8	10	12	17	20	25	25	30	40	50	–	–
Øi	4	6	7	9	12	15	15	18	24	34	–	–
E	–	–	–	–	–	–	–	–	–	–	62	62
F	–	–	–	–	–	–	–	–	–	–	41	41
G	–	–	–	–	–	–	–	–	–	–	56	56
H	–	–	–	–	–	–	–	–	–	–	36	36

Resistors with insulated mounting brackets

- PS brackets

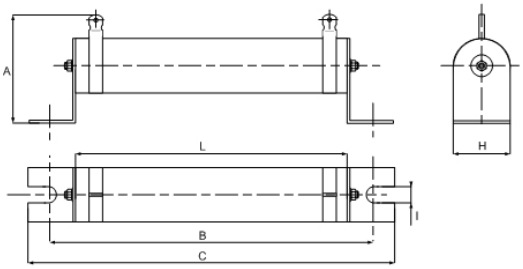
PS brackets are outside L-brackets, depending on the model :
- spring-grip type slotted brackets for RCA-1 to RCA-8 models : brackets fit inside the core of the resistor and remains in place with spring tension
- end-slotted, through-bolt type mounting brackets for RCA-9 to RCA-12 models

RCA-1 to RCA-8:



Example: Model RCA4VSOPS20R

RCA-9 to RCA-12



Example: Model RCA11CSXPS100R

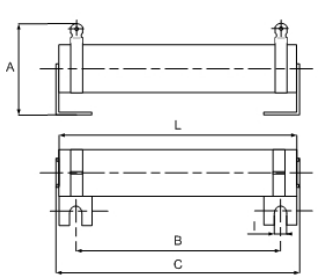
(mm)	RCA-1	RCA-2	RCA-3	RCA-4	RCA-5	RCA-6	RCA-7	RCA-8	RCA-9	RCA-10	RCA-11	RCA-12
A	33	38	40	48	51	62	62	66	90	100	110	110
B	55	70	90	119	142	164	194	276	402	402	525	625
C	62	77	97	133	156	184	214	296	424	424	558	658
H	8	8	8	12	12	15	15	15	39	49	59	59
I	3,2	3,2	3,2	4,5	4,5	6	6	6	7	7	9	9
L	35	50	70	95	118	138	168	250	370	370	500	600

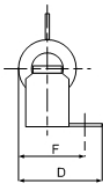
- ID brackets

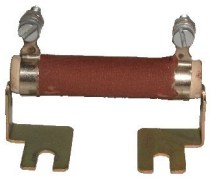
ID brackets are inside L-brackets, depending on the model :

- spring-grip type side slotted brackets for RCA-1 to RCA-8 models : brackets fit inside the core of the resistor and remain in place with spring tension
- side-slotted, through-bolt type mounting brackets for RCA-9 to RCA-12 models

RCA-1 to RCA-8 :

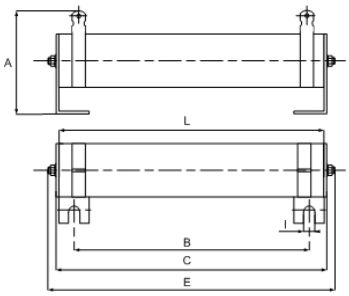


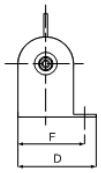




Example: Model RCAC2CSXID47R

RCA-9 to RCA-12:



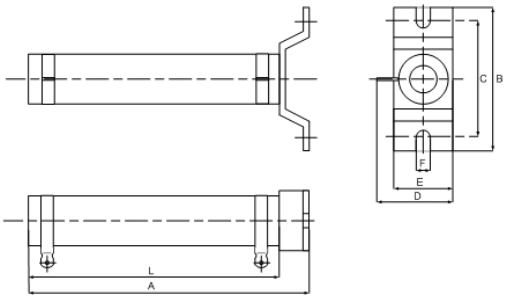


Example: Model RCA11CSXID150R

(mm)	RCA-1	RCA-2	RCA-3	RCA-4	RCA-5	RCA-6	RCA-7	RCA-8	RCA-9	RCA-10	RCA-11	RCA-12
A	35	40	42	48	51	64	64	68	90	100	108	108
B	15	30	50	76	99	112	142	224	343	343	473	573
C	37	52	72	97	112	140	170	252	375	375	506	605
D	20	22	33	34	35	40	40	44	56	61	89	89
F	14	16	18	27	29	32	32	35	44	48	72	72
L	35	50	70	95	118	138	168	250	370	370	500	600
E	–	–	–	–	–	–	–	–	386	386	515	615
I	4.5	4.5	4.5	5.5	5.5	6	6	6	9	9	9	9

- "EB" mounting bracket

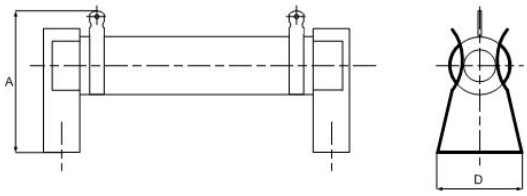
  With the "EB" bracket the resistor can be mounted at only one end:

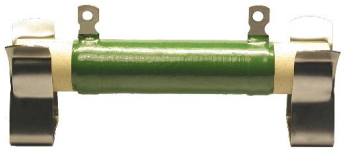


Example: Model RCA7CSXEB68R

(mm)	RCA-1	RCA-2	RCA-3	RCA-4	RCA-5	RCA-6	RCA-7	RCA-8	RCA-9	RCA-10	RCA-11	RCA-12
A	44	57	78	105	127	147	177	259	388	388	–	–
B	45	45	45	60	60	80	80	80	145	145	–	–
C	35	35	35	50	50	65	65	65	115	115	–	–
D	24	27	27	35	35	48	48	48	60	60	–	–
E	12	12	12	20	20	30	30	30	40	40	–	–
F	5	5	5	5	5	6,5	6,5	6,5	8.2	8.2	–	–
L	35	50	70	95	118	138	168	250	370	370	–	–

- Type C2: resistors mounted - insulated - on fuse-clip type brackets: only for RCA-6 and RCA-7 models
  The use of clips makes it quick and easy to replace the resistor





Example: Model RCA6VSXC2-100R

(mm)	RCA-1	RCA-2	RCA-3	RCA-4	RCA-5	RCA-6	RCA-7	RCA-8	RCA-9	RCA-10	RCA-11	RCA-12
A	–	–	–	–	–	55	55	–	–	–	–	–
B	–	–	–	–	–	127	157	–	–	–	–	–
C	–	–	–	–	–	144	174	–	–	–	–	–
D	–	–	–	–	–	32	32	–	–	–	–	–
Øe	–	–	–	–	–	5	5	–	–	–	–	–
L	–	–	–	–	–	138	168	–	–	–	–	–

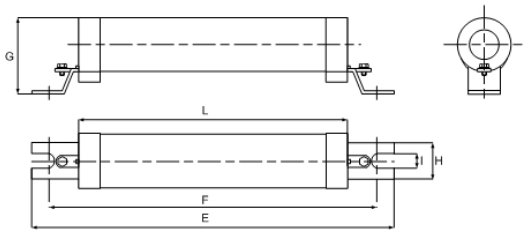
Resistors with uninsulated terminals

- "TC" and "TD" mounting brackets

TC and TD are end-slotted mounting brackets and also play the role of terminal lugs
- TC offset mounting brackets available for RCA-6 to RCA-10 models
- TD straight mounting brackets available for RCA-6 to RCA-10 models

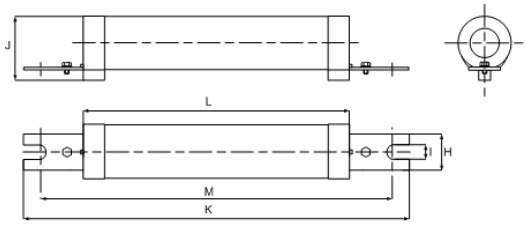
TC and TD mounting brackets can be supplied for other dimensions. Please contact us.

"TC" mounting brackets:



Example: Model RCA8OCXXTC10R

"TD" mounting brackets :

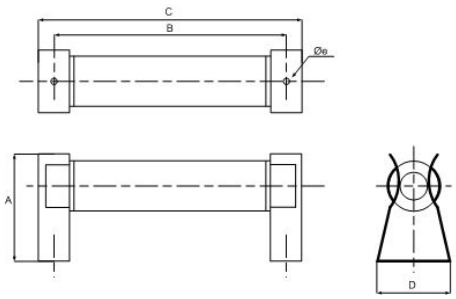


Example: Model RCA10VXXTD250R

(mm)	RCA-1	RCA-2	RCA-3	RCA-4	RCA-5	RCA-6	RCA-7	RCA-8	RCA-9	RCA-10	RCA-11	RCA-12
E	–	–	–	–	–	192	222	336	454		–	–
F	–	–	–	–	–	160	190	304	424	424	–	–
M	–	–	–	–	–	–	–	322	442	442	–	–
K	–	–	–	–	–	–	–	350	470	470	–	–
H	–	–	–	–	–	23	23	30	30	30	–	–
I	–	–	–	–	–	6.5	6.5	8.5	8.5	8.5	–	–
L	–	–	–	–	–	138	168	250	370	370	–	–
J	–	–	–	–	–	–	–	45	55	65	–	–
G	–	–	–	–	–	45	45	56	67	77	–	–

- Type "C1": ferrule resistors which can be mounted on fuse-clip type brackets: only for RCA-6 and RCA-7 models

  The use of clips makes it quick and easy to replace the resistor



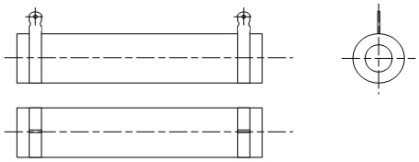
Example: Model RCA6VXXC1-950R

(mm)	RCA-1	RCA-2	RCA-3	RCA-4	RCA-5	RCA-6	RCA-7	RCA-8	RCA-9	RCA-10	RCA-11	RCA-12
A	–	–	–	–	–	47	47	–	–	–	–	–
B	–	–	–	–	–	127	157	–	–	–	–	–
C	–	–	–	–	–	144	174	–	–	–	–	–
D	–	–	–	–	–	32	32	–	–	–	–	–
Øe	–	–	–	–	–	5	5	–	–	–	–	–
L	–	–	–	–	–	138	168	–	–	–	–	–

2.4.3 Terminal connections

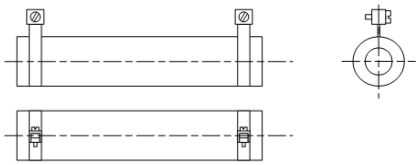
Four types of insulated terminals can be provided:

- "S" type: general purpose lugs (standard)



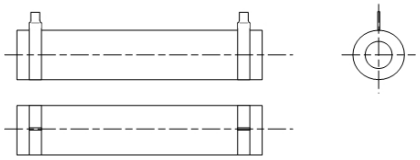
Example: Model RCA4VSOX20R

- "ET" type: 4 mm diameter screw lug



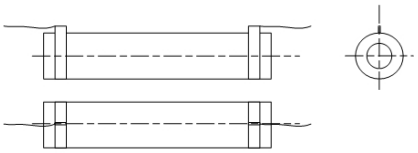
Example: Model RCA6VETXX11R

- "FA" type: 6.35 mm Faston terminals



Example: Model RCA5SFAXX1KR

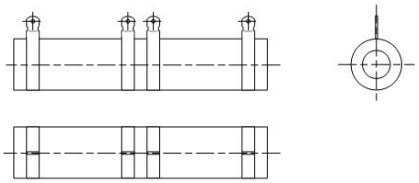
- "F" type with flexible leads for limited power levels: RCA-1, RCA-2, RCA-3



Example: Model RCA2CFXX40R

2.4.4 Intermediary taps

Resistors may be fitted with one or more intermediary taps:



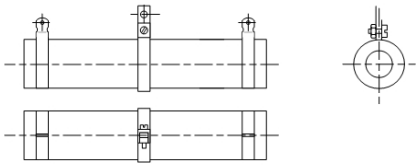
Example: Model RCA3VSXXX81R

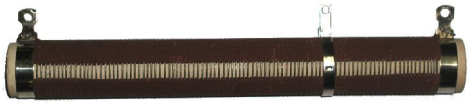
2.4.5 Adjustable terminals

Adjustable resistors have an adjustable terminal, which is in contact with the resistance wire through a window managed in the coating.

Four types of adjustable terminals can be provided:

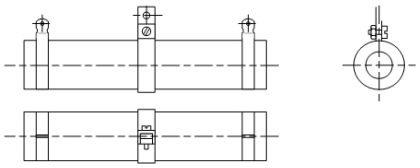
- "O" type: screw driver type adjustable lug

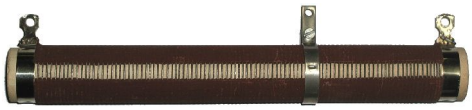




Example: Model RCA8CSOX7R5

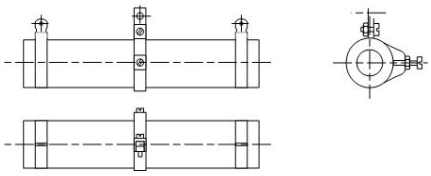
- "OL" type: screw driver type adjustable lug - larger





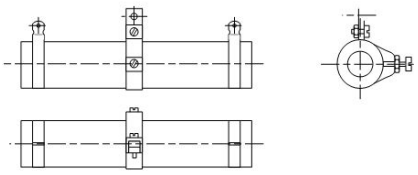
Example: Model RCA8CSOLX7R5

- "SP" type: double screw driver adjustable lug, with 3 mm diameter screws



Example: Model RCA8CSSPX7R5

- "SPL" type: double screw driver adjustable lug: larger, with 4 mm diameter screws



Example: Model RCA8CSSPX7R5

2.5 Product Identification Code

RCA10	C	FA	OL	PS	3R27

Model:

RCA1 to RCA12

Total ohmic value:

nnnRddd for nnn.ddd Ω

Ex.: 3R27 for 3.27 ohms

Coating:

"X": without
"C": cement coated
"S": silicone coated
"V": vitreous enamelled

Mounting style:

"X": unmounted
"PS": outside L-brackets
"ID": inside L-brackets
"EB": single end bracket
"TC": offset mounting brackets
"TD": straight mounting brackets
"C1": ferrule terminals for fuse type clips
"C2": insulated on fuse type clips

Terminals:

"X": terminals = mounting brackets
"S": general type lugs
"ET": screw lug
"FA": faston terminals

Adjustable lug:

"X": fixed resistor
"O": screw driver type
"OL": screw driver type - large
"SP": double screw driver type
"SPL": double screw driver type - large

This identification code is followed :
– when ordering, from the list of the optional features which are not described in the code,
– internally, from a special code if the product cannot be considered as a standard model.

3 Other Series and Models

3.1 TCA Series

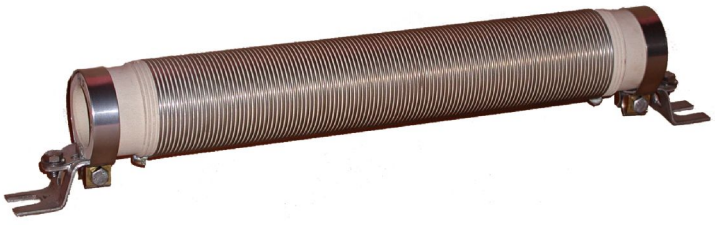
"TCA" resistors (TCA-3 to TCA-12) are similar to RCA resistors. The ceramic cores have the same diameter for a similar model, but in customized lengths:

- TCA-3: any length with as a maximum the length of the RCA-3
- TCA-4, TCA-5: any length with a maximum of 400 mm
- TCA-6, TCA-7, TCA-8, TCA-9, TCA-10, TCA-11, TCA-12: any length with a maximum of 600 mm

3.2 RCA Resistors with Grooved Ceramic Core

Special models have a ceramic core with grooves that keep the wire in the right position even at high temperatures without any coating, as shown on these two examples (railway applications):

RCAFXXXX2R29B136-ET1221



RCA10FIL

3.3 Use of Oxidized Resistance Wire

On some special designs, heavily oxidized resistance wire may be used. The insulating oxide layer of the resistance wire allows a tight winding which does not need any coating, as shown on this example (railway application):

RESP507X60OJO1R3HO13
(railway application)

3.4 RCE Series

The RCE series is a good example of how we design and manufacture resistors to meet very special needs. These heating resistors (1100 W), are used in equipment for the food industry. They consist of a flexible resistor, shaped as a ring.

RCE315XPXX11R3B025A

3.5 RES Series

RES Series is a former Coudoint standard series, with models that are similar to the RCA series, but with ceramic cores in a nearly square cross-section.

RES resistors can be supplied as replacements.

RES250X40CSOLS100R

4 Wirewound Resistor Assemblies

Resistor assemblies can be supplied as open frames, available to OEM's for mounting in their own enclosure, or in indoor/outdoor enclosures.

4.1 Open Frame Constructions

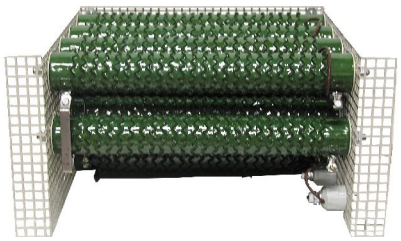
Zinc-plated steel brackets are used as a standard. Aluminum, stainless steel or painted steel may be used on request. Terminal connections may be made as the resistor terminals or as connecting plugs or blocks.

Examples of open frame assemblies using wirewound resistors:

E1221
(railway application)

E1368
(vitreous enamelled RCA resistors)

E1366
(cement coated RCA resistors)



E1405
(corrugated tape wound RCA resistors)

E1313
(railway application)

E1365
(painted open frame)

E1406
(stainless steel open frame.)

4.2 Resistor Enclosures

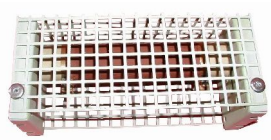
Resistors or resistor assemblies can be packaged in metallic boxes/enclosures/cages to conform to a required protection level, usually IP20 to IP23.

Enclosures are made of white zinc-plated steel, or optionally of painted steel, aluminum or stainless steel.

Terminal connections can be made using connecting sockets, connecting blocks on the front, side or rear panels, screw fastened door for user protection, etc.

Other accessories may be added, such as switches. When switches are used to select the ohmic value, the resistor box is considered a bench or a load bank, which can be found in a separate document.

Examples of wirewound resistor assemblies in cages/boxes/enclosures :



E1371
(IP 20)

E1549
(IP 20)

E1560
(IP 20)

E1556
(IP 20)

E1511
(IP 20)

E1492
(IP 23)

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