

### Mechanical characteristics

IP20, Wirewound on mica plate coated with cement into an iron case

### Market

Industrial automation

### Applications

Dynamic braking, Charge/discharge capacitors

### Special version

Ohmic values out of range, Special tolerance on resistance (2%,1%), Special cables, Different cable length, Thermal switch

# RFX

## 600 1300



### 110 W ÷ 210 W



## ELECTRICAL CHARACTERISTICS

refers to room temperature 25°C

ID	Max Power	Rated Power	Min Resistance	Max Resistance	Thermal time constant
Unit	W	W	Ω	Ω	s
RFX 600	110	75	1.1	9k1	300
RFX 1300	210	140	3.6	30k	500
Insulation resistance 1000 VDC ≥1.000 MΩ		Dielectric strength (50Hz; 60") 4000 V		Limit Voltage 1000 V	

Active materials: calculation for min ohmic value are made considering wire material CuNi44, whereas max ohmic value refers to wire material FeCrAl. Resistors can be made also with NiCr alloys. Temp. Coefficient Resistance depends on the used alloy, typically it is between 20 and 240 10<sup>-6</sup>/°C.

The standard version cable is single core with flexible conductor silicone rubber insulated with fiberglass braid. For cross section AWG14 and AWG16 the cable is classified 200°C – 600 V and made according to UL Style 3071

For cross section 1 mm<sup>2</sup>, 4 mm<sup>2</sup> and 6 mm<sup>2</sup> the cable is classified 180°C – 500 V and made according to IEC EN 60228 cl. 5 /CEI EN 50363-5

The tolerance on cable length is ±5 mm

The choice of cross section to be used depends on the current that flows in the resistor.

Internal thermal switch 160±5°C (rated voltage: 250 V; rated current: 2,5 A; leads single core conductor silicone rubber insulated cross section 0,25 mm<sup>2</sup> length 300 mm), it is an option that must be indicated in the order.

Housing is galvanised iron. Standard tolerance on ohmic value is ±5%.

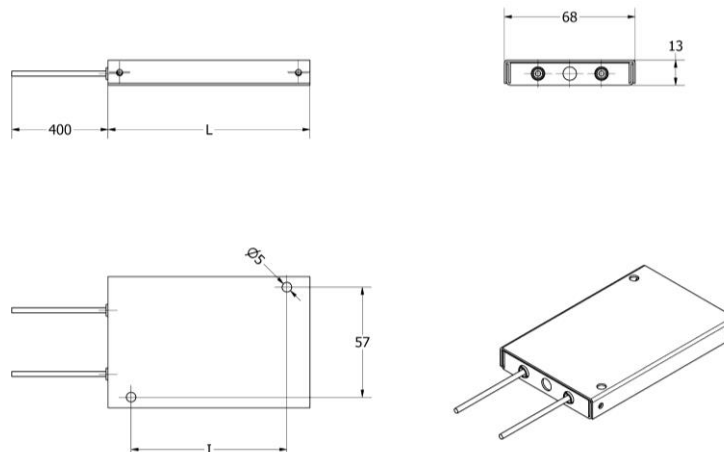
Max power can be supplied to the resistor for not more than 30 minutes. With appropriate heat-sink it's possible to increase the power to 400 W (for RFX 1300) and to 220 W (for RFX 600). Picture above refers to RFX 600.

## MECHANICAL DATA

Dimensions [mm]	L	I	Weight [gr]
RFX 600	105	81	260
RFX 1300	198	174	460

Unless otherwise specified, applicable standard of general tolerances for linear and angular dimensions is ISO 2768-1 class c.

## DRAWING



**Overload conditions**

Case resistors are mostly used for overload operation, such as precharge of capacitors, dynamic braking of VFD, crowbar operations.

We can distinguish between 3 typical overload conditions: one is the isolated single pulse (emergency braking, precharge in case of short circuit or abnormal duty), the second one is the cyclic work load (i.e. braking of a lift), and the third one is a long overload (i.e. due to a fault in the system).

In all 3 cases, we can state that for pulses of duration less than 60 s, the mass of the wire must be taken in account to define the admissible overload. The mass of the wire depends on the ohmic value.

Fairfield technical office is at your disposal for further detailed information.

As far the operation in the **cyclic work load** condition, we can easily calculate the admissible braking power in respect off the duty cycle (ton / total time):  $\text{Braking power} = \text{Rated power} * (1 / \text{Duty cycle})$

This is valid only if the period does not exceed 60 s.

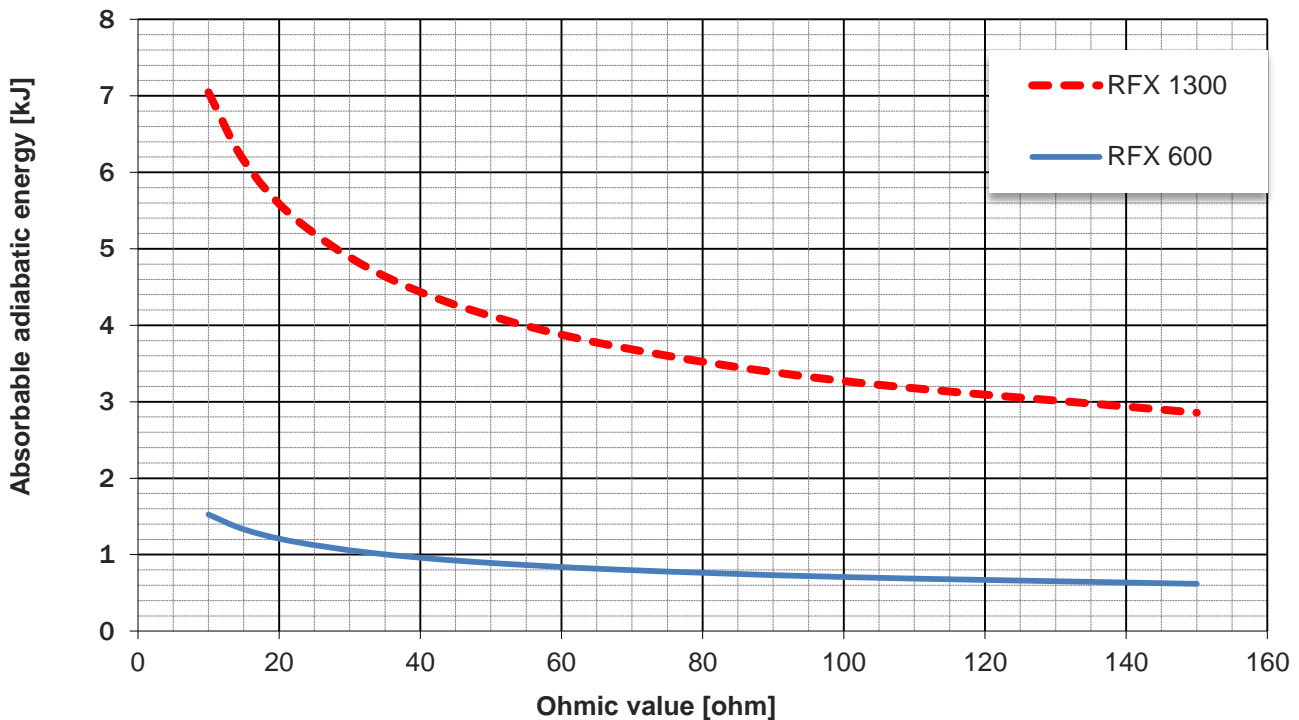
In the following table is shown the max power that is possible to supply for different duty cycle and period.

**CYCLIC WORK LOAD**

Model	Pulse load period 60s			
	ED 2.5%	ED 10%	ED 25%	ED 50%
	W	W	W	W
RFX 600	3000	750	300	150
RFX 1300	6000	1500	600	300

**PULSE LOAD GRAPH**

In the following graph is shown, for ohmic value range between 10 Ω and 150 Ω, the maximum **pulse energy** of max 1 second that is possible to supply to the resistor in a cyclic load. In case of isolated pulse, the value can be multiplied times 2.



The rated power stated in this datasheet refers to the resistor mounted in horizontal position (with no possibility to exchange heat in the bottom direction) at the ambient temperature of 25°C and 300°C on the external surface. The power dissipation is influenced by:

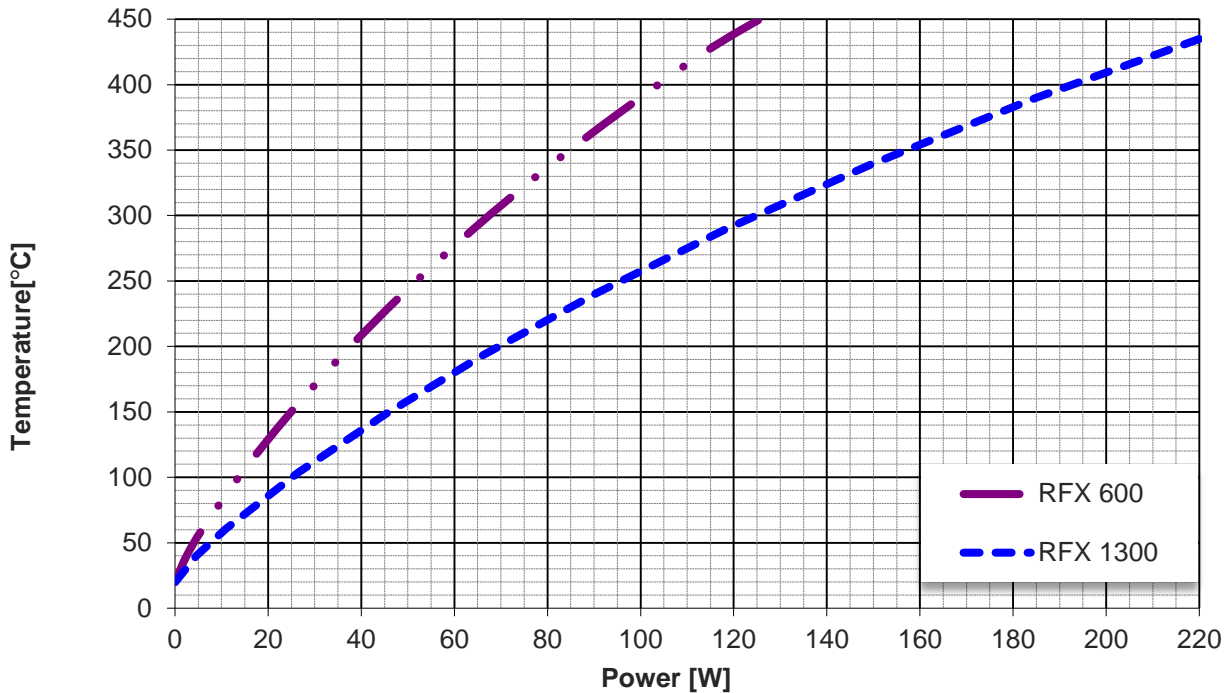
- Mounting position and arrangement (wall, heat - sink)
- Number of resistors mounted together (grouping)
- Ambient temperature (in free air or inside an enclosure)

Ask the appropriate test reports for more details. See the following graph to know the external temperature corresponding to a certain continuous power.

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**SURFACE TEMPERATURE CHARACTERISTIC**



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**Marking**

The resistor is marked on the housing with indelible ink high temperature  
 FAIRFIELD – RFX 1300 30K 5% WW/YY (week / year)

**Installation**

Warning: Units must never be mounted with the terminals uppermost

**Packing**

The resistor is packed in a way to preserve incidental damages due to transport. To avoid resistor's break we recommend to never take it from the cables and to handle with care inside the original boxes provided by the factory.

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**Ordering information**

RFX/Y XXX RRRR 5%  
 Y T : Internal thermal switch 160±5°C (rated voltage: 250 V; rated current: 2,5 A; leads single core conductor silicone rubber insulated cross section 0,25 mm<sup>2</sup> length 300 mm).

XXX Model 1300, 600

RRRR Resistance value (nominal at 20°C)

Example  
 RFX 1300 15R 5%  
 RFX is the name of the product  
 150 is the model  
 15R means 15 Ω that is the nominal ohmic value at 20°C  
 5% is the tolerance on the ohmic value, in this case the value of the resistor is accepted when is within 14.25 Ω ÷ 15.75 Ω