

USER MANUAL

LOAD RESISTANCE CABINET



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1. INTRODUCTION

ARM load resistance cabinets are composed of 1 to 3 groups of three resistors, with their respective non-sealable strip and 2 A circuit breaker, located in a metal cabinet with ventilation (natural or forced, depending on the characteristics requested) and with the connections protected by a sealable cover to avoid possible manipulations.

In the case of requiring forced ventilation, the cabinet will incorporate a fan with magnetothermal protection and a thermostat for DIN rail, 0°... 60°C.

They are designed for indoor service, but on demand they can be manufactured in stainless steel for outdoor service, as well as with different internal configurations.

These load resistance groups have the function of charging the measuring equipment, usually a voltage transformer (TT), so that it operates, at least, at 25% of its precision load, according to BOE-A-2020-2.

The resistance value is determined by the load we want to add to the voltage transformer:

$$P = \frac{U^2}{R}$$

where:

- P is the power or load, which we want to compensate, in voltamperes (VA).
- U is the secondary voltage, in volts (V).
- R is the resistance value, in ohms (Ω).

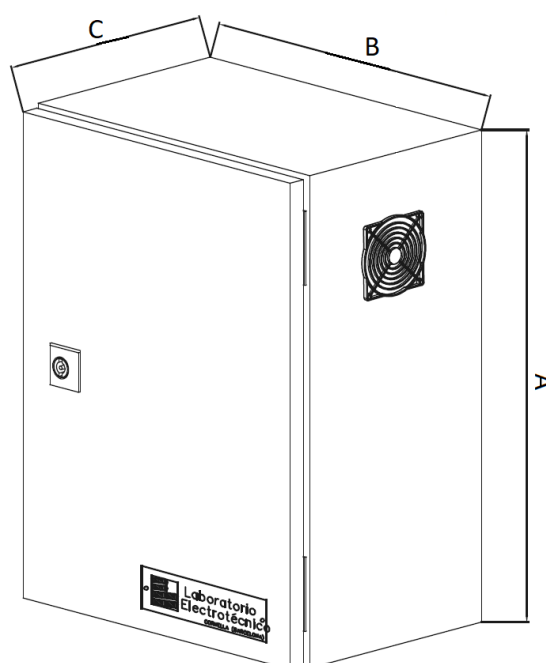
2. SPECIFICATIONS

Transformer load (VA)	2° Voltage (V)	Power R (W)	Value R ($\pm 4\%$)	Cabinet load (VA)		
				110 $\sqrt{3}$ -7%	110 $\sqrt{3}$	110 $\sqrt{3}$ +7%
10	110 $\sqrt{3}$	150W	1400 Ω	2,5	2,9	3,3
15	110 $\sqrt{3}$	150W	930 Ω	3,75	4,3	5,0
20	110 $\sqrt{3}$	150W	700 Ω	5	5,8	6,6
25	110 $\sqrt{3}$	150W	560 Ω	6,25	7,2	8,3
30	110 $\sqrt{3}$	150W	465 Ω	7,5	8,7	9,9
40	110 $\sqrt{3}$	150W	350 Ω	10	11,6	13,2
50	110 $\sqrt{3}$	150W	280 Ω	12,5	14,5	16,5
75	110 $\sqrt{3}$	150W	190 Ω	18,75	21,7	24,8
100	110 $\sqrt{3}$	150W	1400 Ω	2,5	2,9	3,3

The references shown here refer to the load resistors, the value of which does not vary depending on the required cabinet.

Resistance value calculated at $\pm 7\%$ of network fluctuation, according to Royal Decree 1955/2000, of December 1, article 104.

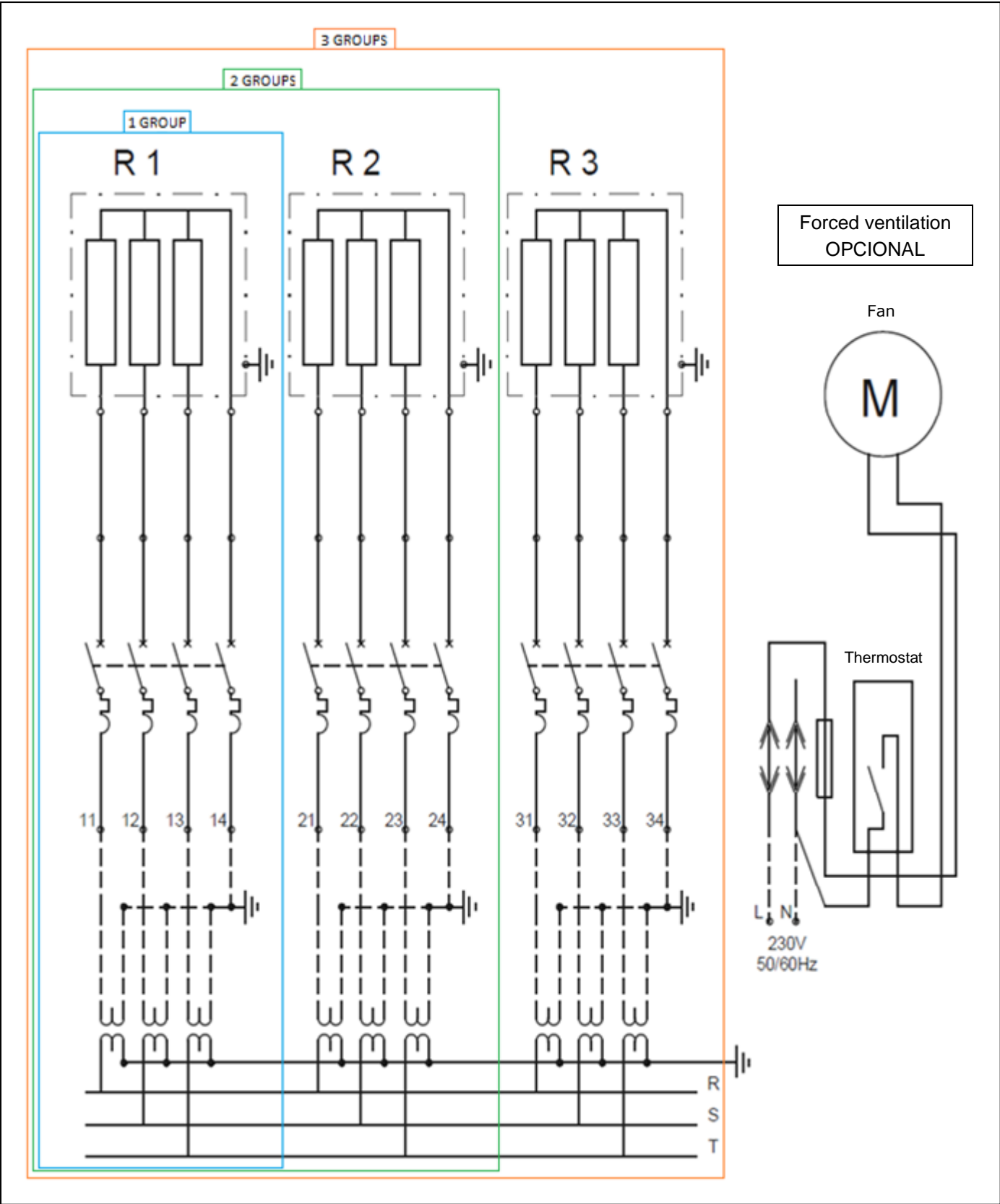
CABINET REFERENCE	DIMENSIONS (mm) A x B x C	APPROX. WEIGHT (kg)
ARM 1 GROUP	400x300x210	10
ARM 2 GROUPS	500x500x210	15
ARM 3 GROUPS	700x500x250	20



3. CONNECTIONS

In this section we see on the left the connection diagram of the different ARM assemblies. We can differentiate the connection scheme for 1, 2 and / or 3 resistor groups.

On the right we observe the scheme of forced ventilation; according to the characteristics of the environment where the resistance cabinet will be installed and for loads greater than 75 VA of the secondary of the transformer, its installation will be necessary.



4. SAFETY

- The cabinet can have a high operating temperature.

ATTENTION! DO NOT TOUCH DURING OPERATION.

- It must be ensured that the ventilation grill is at a safe distance from any obstacle, to avoid poor ventilation.
- The cabinet must be grounded.

ELECTRIC RISK



This electrical device is connected to dangerous voltages and contains moving parts that act at high speed. Contact with these risks can result in death, serious injury or damage to the equipment.

Only qualified personnel can install, operate and maintain this equipment. Always comply with the "5 golden rules" for electrical work: disconnect; prevent any possible feedback; verify the absence of voltage; ground and short; and protect against live elements and signal the area. The use of unspecified or unauthorized parts to repair the equipment or the trapping of safety devices may result in dangerous conditions that can cause death, serious personal injury or damage to the equipment. Follow all safety instructions contained in this manual.

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