Electrical cabinet heater Why should I use?

Electrical equipment produces heat under a load of work to prevent the accumulation of condensate, however, when the device stops working after cooling down gradually to adapt to ambient temperature, the temperature inside dropped to below the dew point. So this needs to trigger the radiant heat! Electrical cabinet heater temperature by increasing the external ambient temperature a few degrees higher than the counter method to prevent the formation of condensate.

- R Series heater covers the range from 10W-1200W.
- Supporting unit heater: temperature control, humidity control, pressure relief compensation devices.

Heater Selection

Calculated Prerequisites:

1. Electrical control cabinet dimensions (length, width, height)

2 By convention, we must understand the placement of electrical control cabinet (for example: a single counter, row counter) and the effective surface area of electrical cabinets

3. Electric cabinet cabinet material (for example: metal, plastic) of the heat exchange coefficient (W/m^2K)

4. Power set the cabinet temperature Ti (℃) and the cabinet outside temperature Tu (℃) (example: day - night, summer - winter, climate change) temperature difference △ T (K)

5. electrical cabinet interior electrical equipment (for example: transformers, relays and converters, etc.) the heat at work

Selection parameters were calculated

1. according to panel size to calculate the surface area

2. the placement of electrical cabinets (shown below)

Open space around a single

Single wall

Cabinet in the front row or the last unit, and the remaining open space

Cabinet in the front row or the last unit, the wall

The middle row of counter units, followed by open space

The middle row of counter unit against the wall

The middle row of counter unit against the wall above are covered

Panel surface area formula A (m^2)

(H high, W W, D D)

$A = 1.8 \times H \times (W + D) + 1.4 \times W \times D$

$A = 1.4 \times W \times (H + D) + 1.8 \times D \times H$

$A = 1.4 \times D \times (H + W) + 1.8 \times W \times H$

$A = 1.4 \times H \times (W + D) + 1.4 \times W \times D$

$A = 1.8 \times W \times H + 1.4 \times W \times D + D \times H$

$A = 1.4 \times W \times (H + D) + D \times H$

$A = 1.4 \times W \times H + 0.7 \times W \times D + D \times H$

Example: open space around the panel, 2000mm high / 800mm wide / 600mm deep, then A = 1.8 × 2.0 × (0.8 +0.6) +1.4 × 0.8 × 0.6 = 5.712m²

3. Electric cabinet cabinet material and heat transfer coefficient K (W/m²k)

Steel finish	5.5 W/m²k
Stainless steel	4.5W/m²k
Aluminum	12 W/m²k
Double layer aluminum	4.5W/m²k
Plastic plate	3.5W/m²k

4. cabinets inside and outside temperature difference △T (K)

△T=Ti -Tu

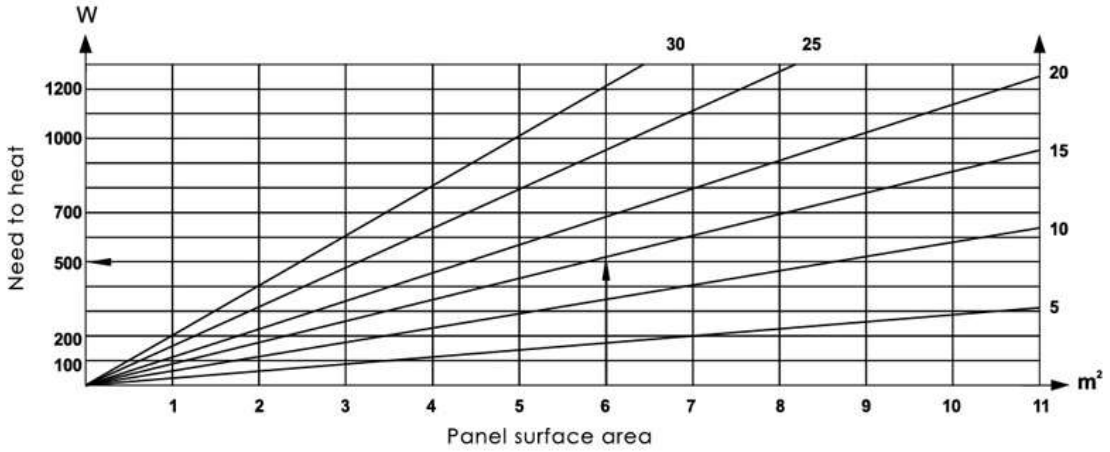
The formula for calculating the required heat (heater)

Need to heat P (W) = surface area of electrical cabinets A (m²) × cabinet material heat transfer coefficient K (W/m²k) × temperature difference △ T (K)

Example: W = 5.712 m² × 5.5W/m²k × 15K = 471.24W

Results: The need to 500W of heat for the heater to meet the requirements, if the panel is located outdoors, the heater needs to be double the heat!

Experience through the following selection chart



5. If the electrical work, electrical equipment cabinets inside a fever, in the calculation of heat heater electrical equipment must be less heat.

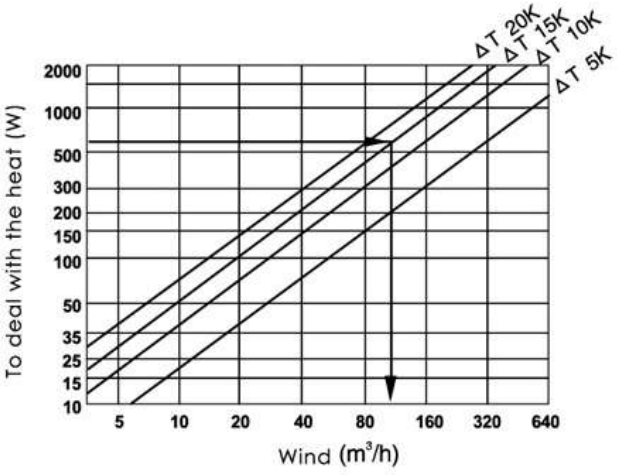
Selection of the fan filter

According to the chart below select the appropriate experience of cooling equipment:

Calculated by formula to select the cooling equipment (filter fan)

Required air flow V (m³/h) = [to deal with the heat PV / cabinet temperature difference △T (K)] × air constant [3.3 m³K/Wh]

Example: V = [600W/15K] × 3.3m³K/Wh = 132 m³/h



Air constant value range:

PV (0-100) = 3.1 m³K/Wh PV (500-750) = 3.4 m³K/Wh

PV (100-250) = 3.3 m³K/Wh PV (750-1000) = 3.5 m³K/Wh

PV (250-500) = 3.3 m³K/Wh

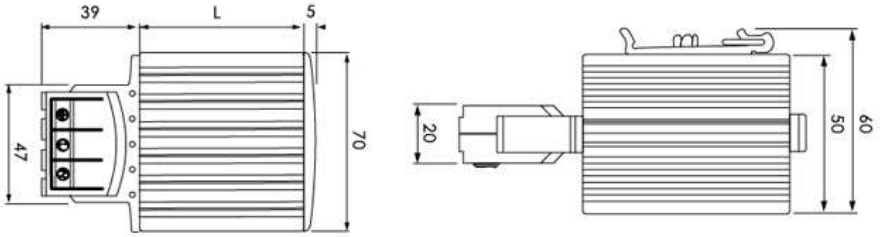
Cabinet Heater

JRQ15 ~ JRQ150 heater

Certification	Case Material	Protection class
CE RoHS	Aluminum	IP20

Heater for electrical cabinet wet applications in need of protection, or the temperature is not below a specified minimum number of occasions. Aluminum profile body design more stable form of the chimney effect of the release of heat. Pressure terminal connectors save time and be more simpler to install.

Dimensions



Voltage end of the 140V will be reduced by about 10% of the heat output

Model	Order	Heat output (W) 20 ℃ ambient temperature	Maximum Allowable Current (A)	L(mm)	Weight (kg)
JRQ15	2020.001	15	1.5	65	0.2
JRQ30	2020.002	30	3	65	0.2
JRQ45	2020.003	45	3.5	65	0.2
JRQ60	2020.004	60	2.5	140	0.36
JRQ75	2020.005	75	4	140	0.36
JRQ100	2020.006	100	4.5	140	0.36
JRQ150	2020.007	150	9	220	0.54

Technical data

Operating Voltage	230VAC 50/60 Hz
Heating element	PTC, self-adjustment and temperature limits
Electrical connection	3 pressure line terminal, the standard line of 0.5-2.5mm²
Connection terminal	UL94V₀
Installation Requirements	Vertical
Operating / storage temperature	-45℃ to +70℃