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## **OWNER'S MANUAL**

### **AIR HEATERS**

#### **REFERENCES 6046-06/12/18/56/62/68**

#### **1 - APPLICATION :**

Heating, using recycled aire, of all premises such as : office, technical rooms, workshops, factory hall, warehouses, garages, stores, sports rooms, dining rooms, etc ...

#### **2 - COMPOSITION :**

This air heaters consist of an electro-zinc plated steel case covered with oven fired paint and comprising :

- 3 , 6 or 9 shielded elements of stainless steel at 2 kW / 230 V , coupled as follows :
  - 1 x 6 kW stage for references 6046-06 and 6046-56,
  - 2 x 6 kW + 6 kW stages for references 6046-12 and 6046-62,
  - 2 x 6 kW + 12 kW stages for references 6046-18 and 6046-68,
- One helical fan coil unit.
- One internal regulation thermostat, adjustable in a range from 0 to 40°C (front panel adjustment) with two control thresholds (the two stages are only powered when the measured ambient temperature is more than 4°C or so above the setpoint; a single stages powered when the measured ambient temperature is included between 4°C approximately be lowered the setpoint, and the setpoint itself).
- One temperature safety device by a factory adjusted thermostat set to 95°C, with automatic reset.
- One terminal block for the possible collection of an outside ambient thermostat.
- One connection to a screw-on terminal block.

Noise level : 55 dbA.

Protection degree : IP 33.

#### **3 - PRECAUTIONS FOR USE :**

Check that :

- The power supply voltage used is as indicated on the nameplate :
  - 400 V Three phase for references 6046-06, 6046-12 and 6046-18.
  - 400 V Three phase or 230 V Three phase for references 6046-56, 6046-62 and 6046-68 (equipment supplied coupled at 400 V Three phase default at the works) : for use at 230 V Three phase, the installer will have to make coupling changes on the power connector terminal block and on a tranformer terminal (see circuit diagrams and para. 4-2-1).
- Connections to shielded parts, connection terminal block and motor terminal are securely tightened after transport and handling.
- No obstacles are likely to impede, even partially, the flow of air both at the inlet and at the outlet of the equipment.

- The equipment is properly protected from all risks of liquid projection.

NOTE : It is advisable on shutting down the installation to continue the flow of air for a few minutes after turning off the heating circuit (to evacuate any calories that have built up in the fin resistors) using a time delay relay.

#### **4 - ASSEMBLY AND CONNECTION :**

##### **4-1 - ASSEMBLY :**

- The equipment is designed to be mounted so as to blow horizontally (the use of wall bracket accessories is highly advisable) :
  - reference 6046-98 for equipment 6046-06, 6046-12, 6046-56 and 6046-62.
  - reference 6046-99 for equipment 6046-18 and 6046-68.

A minimum clearance of 100 mm is necessary between the partition on which the consoles are mounted and the back of the air heater.

- The mobile support on wheels, reference 6041-98 makes it easier to use this equipment on site (for instance).

##### **4-2 - ELECTRIC CONNECTION :**

Refer to the circuit diagrams attached to the equipment being used :

- N° 4500053.00 ind. B for equipment reference 6046-06
- N° 4500055.00 ind. B for equipment reference 6046-12
- N° 4500057.00 ind. A for equipment reference 6046-18
- N° 4500052.00 ind. A for equipment reference 6046-56
- N° 4500054.00 ind. A for equipment reference 6046-62
- N° 4500056.00 ind. B for equipment reference 6046-68

Connect the electric power supply cable (3 phase + ground) to the box screw on terminal block (in the bottom part of the unit) :

- using the installation ground connection screw.
- for the three phases :
  - across terminals 1, 5 and 6 :
    - for equipment reference 6046-06, 6046-12 and 6046-18 (400 V Three phase).
    - for equipment reference 6046-56 and 6046-62 if it is coupled as 400 V Three phase (see para. 4-2-1).
  - on terminals U1,V1 and W1 for the equipment referenced 6046-68 if it is coupled as 400 V Three phase (see para. 4-2-1).
  - on terminals 1, 4 and 6 for the equipment referenced 6046-56 and 6046-62 if it is coupled as 230 V Three phase (see para. 4-2-1).
  - on terminals U1,V1 and W1 for the equipment referenced 6046-68 if it is coupled as 230 V Three phase (see para. 4-2-1).

##### **4-2-1- 230 V Three phase or 400 V Three phase coupling for equipment references 6046-56/62/68 :**

- Position the straps of the terminal block as indicated in the circuit diagram of the equipment concerned as a function of the system voltage.
- Connect the transformer connection wire to the terminal marked 230 for the 230 V voltage or to terminal marked 400 for the 400 V.

#### 4-2-2- Connection of external ambient thermostat :

- Connect the normally-closed contact by temperature rise of the external ambient thermostat :
  - to the faston lug identified P1\* of the internal regulation thermostat TH2.
  - to the faston lug identified 2\* of the safety thermostat TH1.  
instead of the strap in place.
- Adjust the internal thermostat setpoint to its maximum value (40 °C).

#### 4-2-3- Fan operating mode :

The fan can be slaved into heating or not :

- Remove the strap between terminal 13 and 14 of the contact (controlling the fan) of relay KM1 so that the fan only blows when heating is required.
- Connect a strap between terminals 13 and 14 of the contact (controlling the fan) of relay KM1 so that the fan blows constantly with the equipment energized (with or without heating).

### 5 - COMMISSIONING PROCEDURE :

- Check there are no obstacles preventing the airflow both upstream and downstream of the equipment.
- Adjust the internal regulation thermostat setpoint (front panel adjusting knob) to the desired value if there is no external ambient thermostat. If an external ambient thermostat is being used, adjust its set point to the desired value and remember to adjust the internal regulation thermostat set point to its maximum value (40°C)
- Switch the unit off by setting the lighted switch (on the facade).  
Check immediately that the line current of each stage is in conformity with that expected.

### 6 - MAINTENANCE :

- After 50 hours of operation : check that all the connections of the heating circuit and motor are secure and correctly placed.
- Every 6 months : perform the same operation as above.  
Remove dust from the area in late and outfit grills and, if necessary, in the shielded components, without damaging them, by blowing them out with quite compressed air for instance.
- Every year : perform the same operation as above.  
Check the general condition of the equipment.
- If the air heater is left for long periods without operating where the relative humidity is not under control :  
If necessary, provide for heating of four hours at the minimum so as to self-heat the assembly and expel any humidity that it has absorbed. Immediately after this heating period, measure the insulation with respect to ground : the value measured at 500 volts CC must be greater than one megohm.

### 7 - GUARANTEE :

Unless stipulated otherwise in a contract, our guarantee conforms that the Interunion agreements for electrical construction and general conditions of sale.

We guarantee the conformity of the equipment and any service treatments defined in our documents.

Any deterioration caused by:

- use at more than 10% of the established nominal voltage.
- where caused by a lack of servicing, in fact, clumsy or inexperienced users.
- failure to comply with these instructions, professional practice rules and legislation.
- phenomena of corrosion or fouling.

are not binding on our responsibility.