

## **Operation, installation and maintenance instructions**

### **Axial-flow Fans Type AFC**

The manual should always be available for the operating personnel. The instructions should be carefully read before installation and operation of the fan. If strict notice is taken of these instructions, the fans run with trouble-free operating for years.

With reservations for the right to make alterations. If doubtful, get in touch with the manufacturer.

#### **Table of contents**

- A** Technical data
- B** Warranty
- C** Safety
- D** Installation
- E** Start of operation
- F** Maintenance
- G** Spare parts list

#### **A Technical Data**

Following data is for the fan in its basic form, however, delivered fan can differ from the basic form. See the mark sign or the text "Special execution". Bifurcated axial fan in tubular version, with motor placed in a chamber, isolated from the air stream. Design allows continuous transportation of gases with max temperature 40°C. Casing of rolled and elektro-welded steel sheet, powder coated. Impeller in diecasted aluminium. Casings in acid-proof steel or galvanized steel and impellers in steel sheet may be supplied on request.

The temperature of the conveyed medium may not exceed 40°C. It is not permitted to use the fan in surroundings where the temperature exceeds 40°C or goes below -20°C. Conveying of explosive gases is not permitted. It is not permitted to rebuild or in any other way modify the fan. Special features that can be used in other surroundings than above can be offered on request and clarification with the manufacturer.

#### **Rating plate**

When connecting, maintenance or ordering of spare parts, pay attention to data on the mark sign in first instance.

#### **Special execution**

EEx motors, housing and impeller in other materials, can be delivered on request and after clarification with the manufacturer.

#### **B Warranty**

Warranty is valid in accordance only if these instructions are strictly adhered to.

#### **C Safety**

Following safety instructions must be carefully followed with regard to preventing injury or damage to surrounding equipment and to the fan itself.

## 1 Suction

### **Warning!**

*Objects, clothing and hair can easily be sucked into the fan and cause injury. Make sure that there are no persons nearby the inlet side when the fan operates. Protection guard may be removed only if it is replaced with a house or pipe of at least 1m. The fan must never operate without a wire guard because the rotation impeller can cause serious injury.*

## 2 Discharge side

### **Warning!**

*There is a powerful stream of air from the discharge side. Foreign bodies that might have been sucked into the fan, can be thrown out at high speed and cause injury. Never put the hand directly at the discharge opening.*

## 3 Temperature

### **Warning!**

*When the fan operates the fan housing takes the temperature of the conveyed media. If that temperature exceeds 40 °C the fan must be protected from direct contact to prevent burn injury.*

## 4 Electrical connection

### **Warning!**

*Electrical connection must be made by skilled labour only. The drive motor should be protected with an suitable overload switch, three phase motors should be protected with phase undervoltage decay protection. Electrical circuit should be protected with suitable circuit-breaker.*

## 5 Permitted applications

### **Warning!**

*AFC fans are not to be used for conveying aggressive, toxic or air with high humidity or gas or explosive air-gas mix.*

## 6 Sound level

The sound pressure level is not the same over the whole range on the fans. In some cases it is necessary to use a silencer. We recommend the user to check the sound pressure level.

## D Installation

The fans in this series have been designed to be installed in a ducting system, keeping the motor out of the air stream.

Before making any electrical connection, check that the impeller is not obstructed in any way.

## 1 Electrical connection

Check that the voltage and frequency of the mains are the same as those indicated on the rating plate on the fan (max. variation of voltage and frequency  $\pm 5\%$ ).

Once working, the current absorbed by the motor must not exceed that indicated on the rating plate.

Enclosure specification IP 55 against entry of dust and water. Class "F" electric insulation.

The overload protection when connected in accordance with the diagram stops the motor when there is a problem, thus avoiding overloads and excessive temperatures and giving longer motor life and greater user safety.

The diagrams accompanying each unit must be followed when connecting to the mains – cover of motor terminal box.

Check that correct connection has been made to earth.

Before handling the fan, make sure that it is disconnected, even if it was previously switched off.

## **2 Inspection of rotation direction**

Start up the fan for a short moment, inspect the rotation direction. The rotation direction of the impeller must be in accordance with the arrows on the motor. If not, move the L1 and L3 phases for three-phase operation or check the wiring circuit in the terminal box for single-phase operation. Incorrect rotation direction will cause reduced capacity of the fan.

## **E Start of operation**

If the rated current indicated on the rating plate is being exceeded during operation, it should be checked whether the available supply voltage and frequency are in accordance with the embossed data. Some fans cannot be operated with free airflow (see catalogue). The drive motor is sized for the power requirements when the fan operates in the filled part of the capacity curve. At lower resistance the working range moves out to the pointed part of the capacity curve and the air volume and current increase. The motor will be overloaded with possible overheating as a consequence. To avoid overload it is possible to fit a throttle on the inlet- or discharge side. Do not expose the fan to vibrations and shock.

## **F Maintenance**

AFC -fans are equipped with enclosed grooved ball bearings that do not need lubrication. The grease filling is sufficient for the whole service life of the bearings.

### **Attention!**

Repair works on fans should be done in the factory only in guarantee period. We do not take any responsibility for repairs done by third parties.

## **G Spare parts list**

When ordering spare parts, please state size of fan and part number in accordance with the spare parts list.