

**INSTALLATION, OPERATION
AND MAINTENANCE
INSTRUCTIONS**

**CEILING MOUNTED
COOLER WITH ELECTRIC
DEFROST**

Installation, Operation And Maintenance

Piping

The thermostatic expansion valve should be fitted as close as possible to the liquid distributor. Thermostatic expansion valves must be capable of operating with a total superheat (static + opening superheat) of 3°C less than the temperature difference between the air entering the coil and the design evaporating temperature. The equaliser line should be piped to the suction line downstream of the expansion valve. A pressure tapping should be provided to enable accurate setting of the expansion valve superheat. Suction lines should be sized to ensure positive oil return.

Wiring

All wiring should comply with the 16th edition of the IEE regulations and any other relevant local codes or specifications.

All swarf caused by drilling terminal boxes should be removed.

The fans are wired to the terminal box.

A contactor and overload device incorporating single phasing protection should control each fan. The starters should be protected by fuses or circuit breakers providing type 2 coordination as defined in IEC947-4..

All electric heater elements should be wired via a contactor and backed up with fuses or circuit breakers

Defrosting

Defrosting should be carried out at regular intervals to prevent obstruction of the effective surface and consequent reduction in performance.

During defrosting the evaporator fans should be switched off and remain de-energised after the defrost period to allow the coil surface temperature to reduce.

Commissioning Preparation

Run fans to ensure direction of rotation is correct.

Pressure test pipe work

Evacuate pipe work to a vacuum of 2 torr or less

Charge system

Check operation of heaters

Commissioning

Run system until desired evaporating pressure is reached.

Using a thermometer measure the system superheat.

Adjust system superheat to give most efficient operating condition for the evaporator on the expansion valve.

Measure and record entering and leaving air temperatures.

Adjust defrost controls as necessary.

Measure and record motor current to give warning of any operating abnormalities.

Maintenance

All coolers are designed for continuous operation, however, regular checks should be carried out periodically to ensure optimum system performance.

Items which require particular attention are as follows:-

Operation of the defrost system

The fins should be kept clean and free from debris

The drain pan should be checked to ensure that there is no ice build up.

Motor current should be measured and recorded.

Heater elements should be checked for operation

Terminals should be checked for tightness

All mechanical parts should be checked for security of attachment.

Safety

No work should be carried out on the cooler without isolating the circuit involved as automatic starting of the fans could lead to danger.

On completion of any works, unit should be returned to normal operating condition. Fans should not be run with the guards removed under any circumstances.