

INSTRUCTIONS

SAHARA

Installation and operating guide

HVAC/R
Service Products





SAHARA

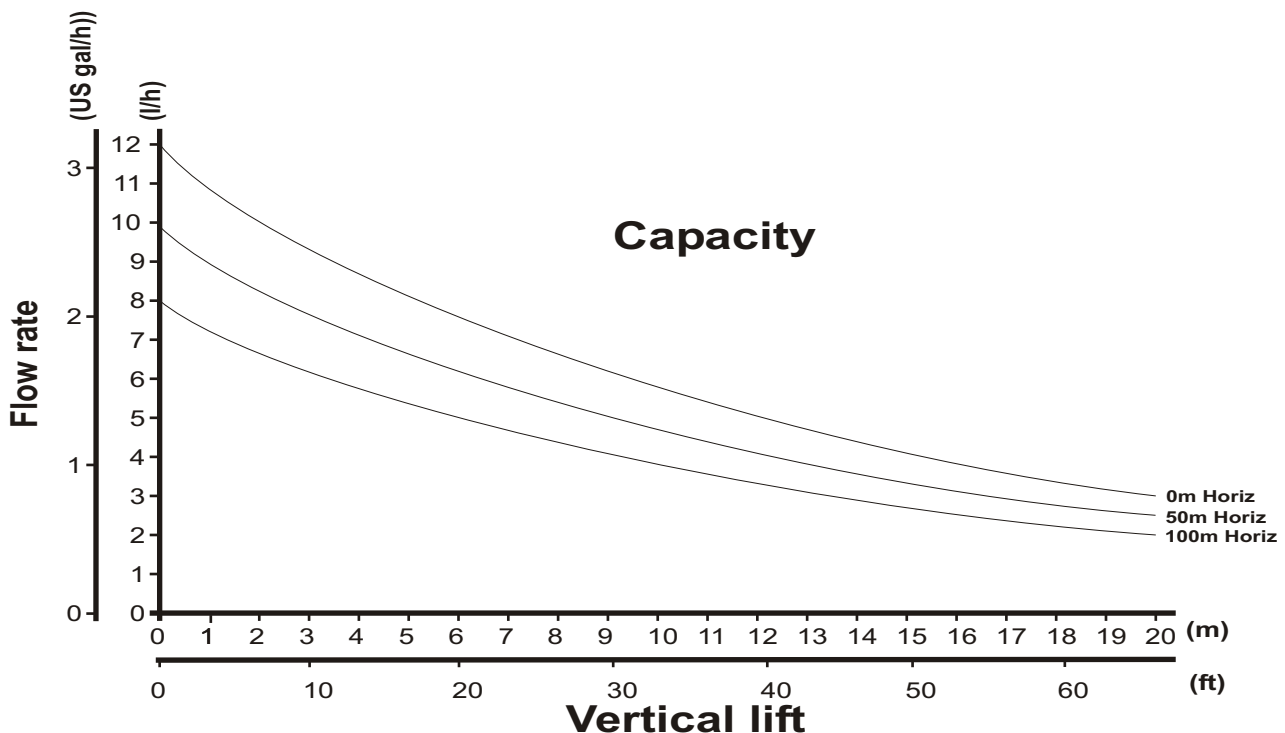
Condensate removal pump
Installation and operating guide

The SAHARA is a self-contained condensate removal system for use directly inside trunking and high-wall-mount air conditioners. The small remote sensor can be fitted inside the air handler whilst the pump unit can be positioned elsewhere.



Specifications

| | |
|--------------------|--|
| Power supply: | 120/240 Vac, 50/60 Hz Auto sensing |
| Power consumption: | 16 W max., 0.25 W when idle |
| Alarm relay: | 5 A, 30 Vdc, 250 Vac Break on fault |
| Capacity: | 12 litres/hour max. (3.17 US gal/h) |
| Maximum head: | Vertical >20 m (65 ft), Horizontal >100 m (328 ft) Suction 1 m max. (3.28 ft) |
| Ambient temp: | 0 - 40°C |
| Water temp: | 25°C max. |
| Material: | Flame retardant ABS UL94 5VA |
| Discharge tube: | 6 mm (1/4") ID |
| Dimensions: | Pump: 135 x 46 x 32 mm (5.3" x 1.8" x 1.26") Sensor: 45 x 36 mm dia. (1.8" x 1.4" dia.) |
| IP: | 20 |



GB SAFETY INSTRUCTIONS AND WARNING

Under normal use this equipment requires no user intervention. Installation, both fixing and electrical, and maintenance work shall be carried out only by the manufacturer or by its service center or in any case by a person having similar skills, so as to prevent any risk. Electrical installation of equipment shall be in compliance with these installation instructions and with all National and Local Regulations for Electrical Safety.

To reduce the risk of fire, electrical shock and injury to persons, the following safety instructions shall be used:

- This pump is intended for indoor use with water only (max 25°C).
- This pump is NOT SUBMERSIBLE.
- Disconnect ALL power supplies before starting installation, connection or maintenance work.
- This pump is provided with a grounding conductor. To reduce the risk of electric shock, be certain that it is connected only to a properly grounded, grounding type receptacle.
- All interconnecting tubes and cables should be confined within the air conditioning unit, or enclosed in any way
- During electrical installation, make sure this condensate pump is connected to a circuit having switch with contact separation in all poles that provide full disconnection from the power supply under over-voltage categories III
- During electrical installation, a fuse non-time delay (rated 250V 1A), shall be fitted into the line, supply side, see electrical installation section.
- The power cord is not replaceable. If the power cord is damaged then the entire pump must be replaced.
- Children should be supervised to ensure that they are not left unattended in the area where the pump is in use.
- Children or persons with reduced physical, sensory or mental capabilities which limits their ability to use the appliance should have a responsible person to instruct them in its use.

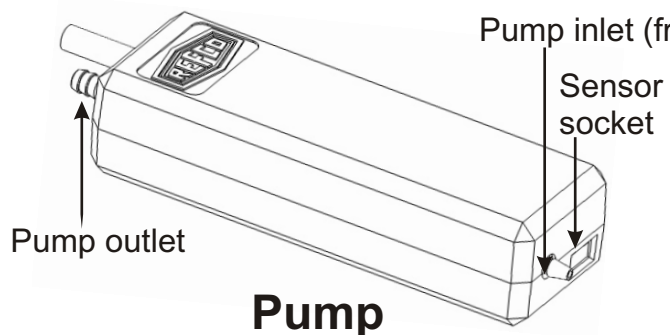
Do not allow any chemicals to come into contact with this pump. Remove the pump from the system before using cleaning fluid or any other chemicals. Flush the system with clean water before re-connecting the pump.

All fittings on this pump are designed to be finger-tight. The use of tools to attach pipework may result in damage to the pump.

In any installations where property damage and/or personal injury might result from an inoperative or leaking pump, it is strongly recommended that the alarm relay should be used to operate an alarm and/or switch off the air conditioning unit.

Operation

The SAHARA sensor will automatically start the pump when condensate is detected and stop the pump when the condensate has been removed. The SAHARA sensor is also fitted with a high water level alarm that will operate the alarm relay if the water level rises to abnormal levels. The pump will continue to run until the minimum water level is reached and then the alarm will reset.



Pump

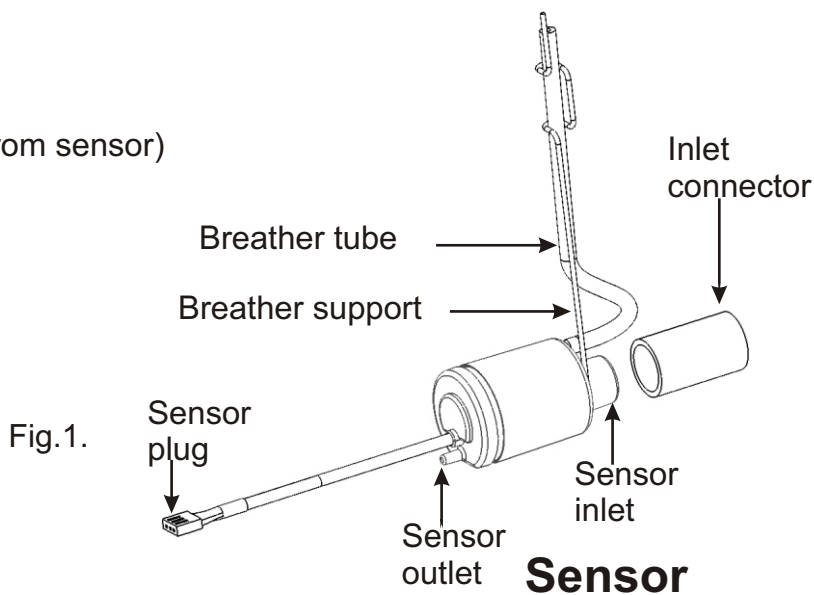


Fig.1.

Sensor

Sensor installation

The SAHARA sensor can be installed at any angle between horizontal and vertical so long as the breather tube inlet is above the condensate inlet (Fig. 3). The SAHARA sensor can also be tilted sideways up to 30° from horizontal (Fig. 2).

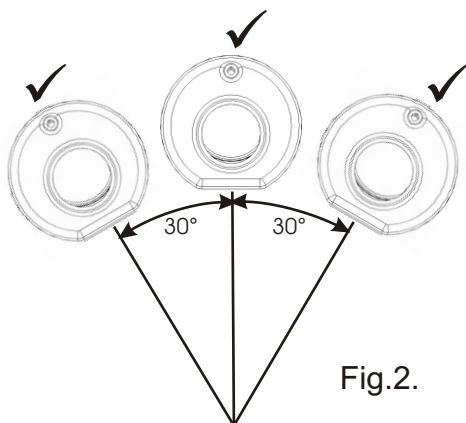


Fig.2.

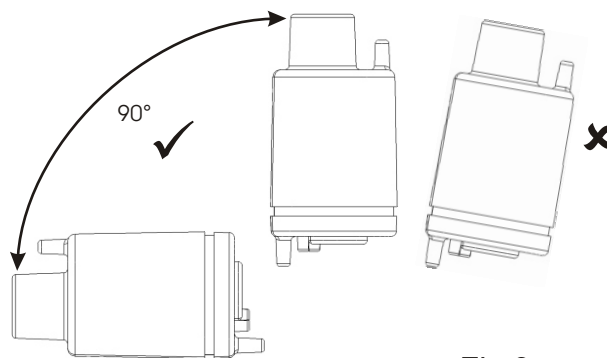


Fig.3.

The SAHARA sensor can be positioned in any suitable location within the equipment below the level of the collection tray. The top of the breather tube should be positioned above the highest level that the condensate may reach. Three typical installations are shown below. (Fig.4) Horizontal mounting, typical of high wall mounted fan units. (Fig.5) Angled, typical of direct mounting to collection tray. (Fig.6) Vertical, typical of cassette unit mounting.

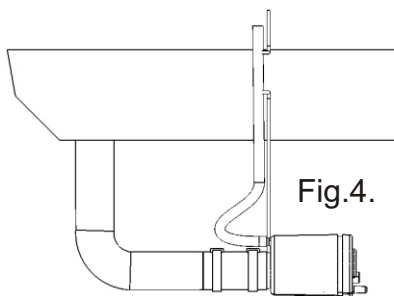


Fig.4.

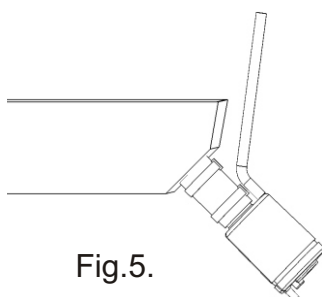


Fig.5.

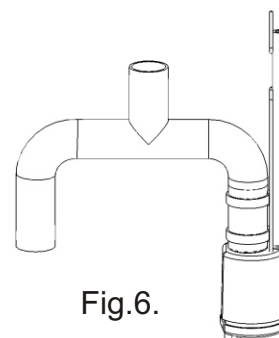
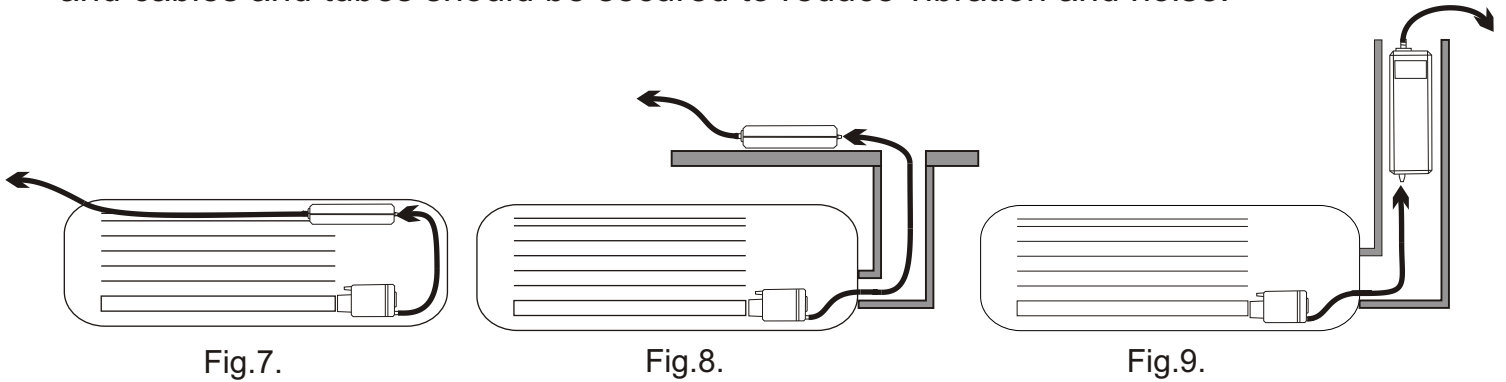


Fig.6.

Pump installation

The SAHARA pump can be installed in any convenient space inside the equipment, trunking or voids up to 1 metre above the sensor. Typical installations are shown below. (Fig.7) Inside the air handler. (Fig.8) In a false ceiling above the air handler. (Fig.9) Inside trunking or false wall.

Where possible the pump should be placed on or wrapped in foam insulation and cables and tubes should be secured to reduce vibration and noise.



Wiring Connections

Connect the ground, live and neutral wire from the supply cable of the SAHARA pump to the supply terminals (see Fig.6)

This product must be connected using a switch with contact separation in all poles that provide full disconnection from the power supply under over-voltage categories III. A fuse non time delay (rated 250V 1A), shall be fitted into the line, supply side (see Fig.10).

Cable Connections

| <u>Wire Colour</u> | <u>Connect</u> | <u>Symbol</u> |
|--------------------|----------------|---------------|
| 1 GREEN/ YELLOW | EARTH | E |
| 2 BLACK | LIVE | L |
| 3 WHITE | NEUTRAL | N |
| 4 VIOLET | Alarm contact | |
| 5 VIOLET | Alarm contact | |

Alarm Contacts

Volt Free Break On Fault connection is rated 5 amps 1250VA. It may be necessary to use a contactor if the air handler supply is to be switched.

POWER SUPPLY

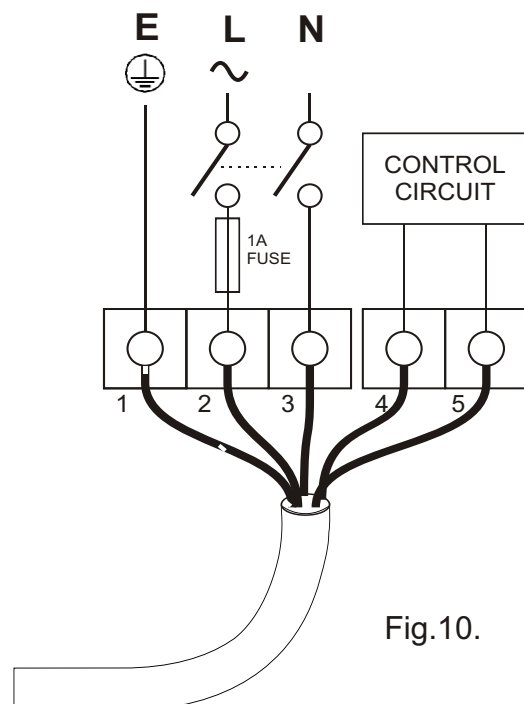


Fig.10.

Testing

Before testing, ensure that the collection tray and drain hose is free of dirt and debris. Pour clean tap water into the collection tray until the pump starts. Pump operation may be noisy initially until any air has been purged from the system. Continue to add water and the pump should switch to full power and the alarm contacts should open. Do not continue to add water if it becomes visible in the breather tube. Allow the SAHARA to clear the water. The pump should switch off and the alarm relay should reset.

Trouble Shooting

Pump does not run:

Check fuse and electrical supply connections. Check that water is reaching the pump sensor in sufficient quantities to start the pump. Check the sensor connector is plugged into the pump.

Pump is noisy:

Check that the SAHARA, mains cable and outlet tube are not vibrating against the sides of the equipment.

Pump continues to run with no water:

The water sensor can become over sensitive if contaminated by dirt or certain cleaning chemicals. If this occurs the pump may continue to run with no water. Disconnect the SAHARA sensor from the pump and flush the sensor by pouring clean tap water into the inlet for around 30 seconds (Fig. 11). If the problem persists, flush with methylated spirit and then rinse with water.

In dirty environments an in-line filter is recommended to avoid pump and sensor damage.

WARRANTY

This product is guaranteed for two years to be free from manufacturing defects or faulty materials. If it should fail for either of these reasons within two years from the date of manufacture it will be repaired or replaced free of charge, at the option of REFCO Manufacturing Ltd.

REFCO Manufacturing Ltd. can accept no liability whatsoever for any loss or damage arising from the use of this product, however caused. Before using this product the user should satisfy himself that it is suitable for use in the intended application and for the manner in which it is intended that it be used.

This product is subject to continuous development and improvement and REFCO Manufacturing Ltd. reserves the right to alter the specification or design without prior notice.

Pump is pumping air:

Check that the sensor is in the correct orientation. Check the tube between sensor and pump. Check that the pump outlet tube is not syphoning. Check sensor for dirt or mould.

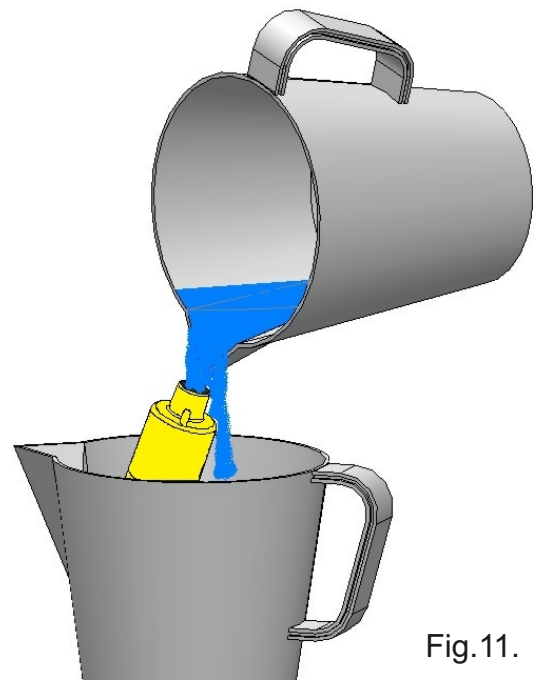


Fig.11.

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