

INSTRUCTIONS

KAROO

Installation and operating guide

Installations- und Bedienungsanleitung

Guide d'installation et d'utilisation

Istruzioni per l'installazione e l'uso

Guía de instalación y funcionamiento

Installatiehandleiding en gebruiksaanwijzing

Руководство по установке и эксплуатации

**HVAC/R
Service Products**



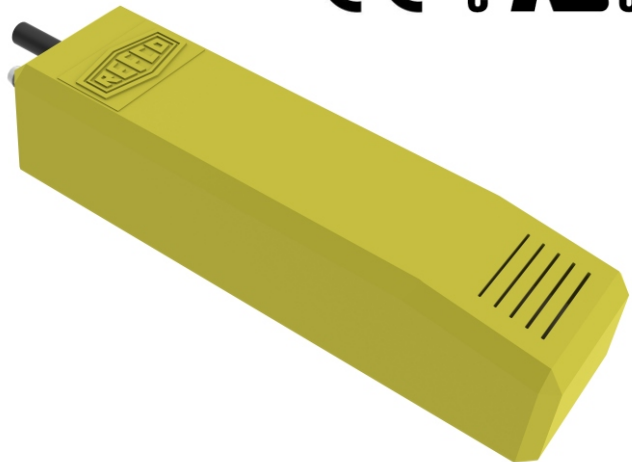


KAROO

Submersible condensate removal pump

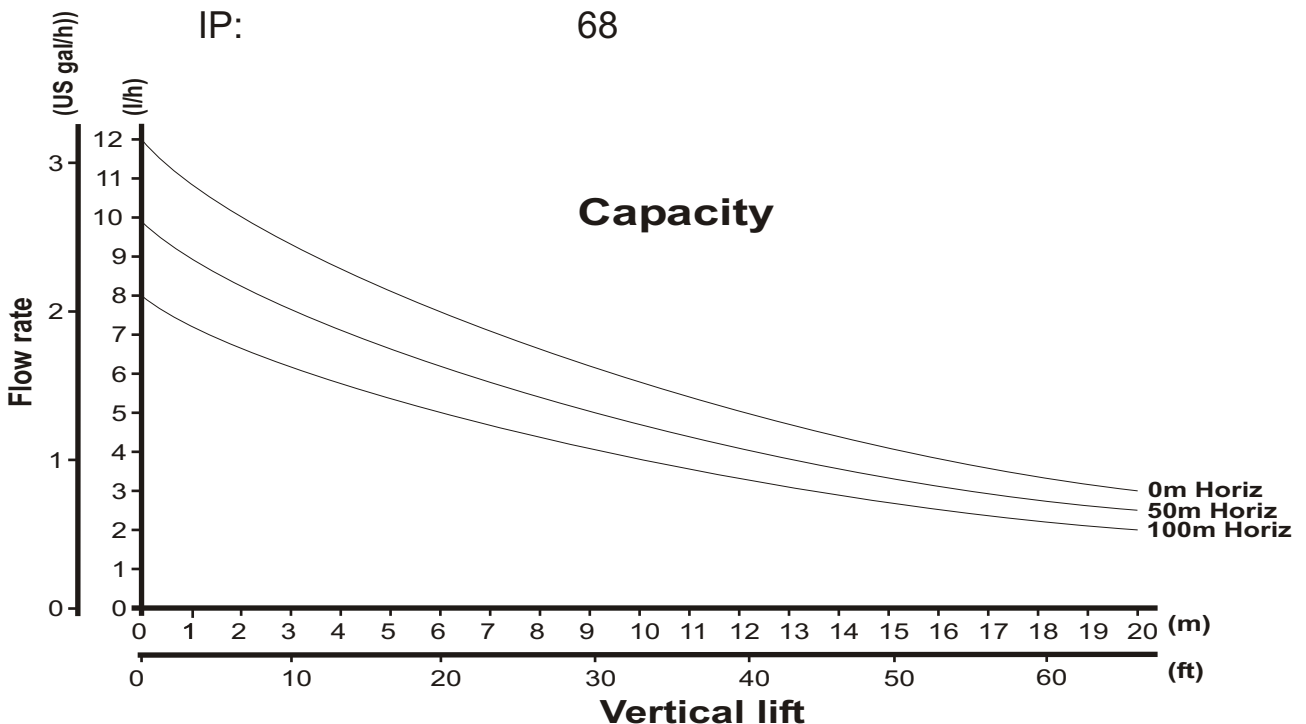
Installation and operating guide

The KAROO is a self-contained condensate removal system for use directly inside the drain pans of air conditioners, refrigerated cabinets and dehumidifiers.



Specifications

Power supply:	120/240 Vac, 50/60Hz 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:	160 x 43 x 34 mm (6.3" x 1.7" x 1.3")
IP:	68



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.

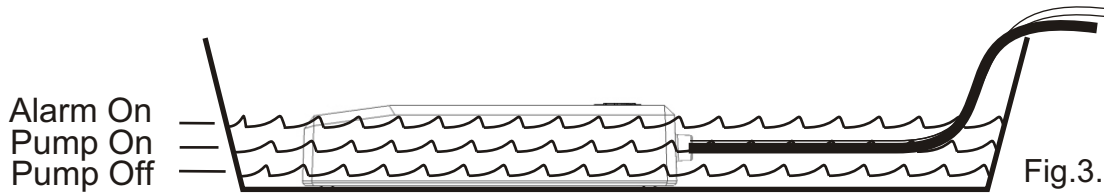
Do not allow any chemicals to come into contact with this pump. Remove the pump from the system before using cleaning fluid or any other chemicals. Flush the system with clean water before re-connecting the pump.

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 KAROO contains an internal sensor that will automatically start the pump when the water level rises above approximately 15 mm and stop the pump when the water level has fallen to approximately 5 mm. The KAROO is also fitted with a high water level alarm that will operate the alarm relay if the water level rises above approximately 25 mm. The pump will continue to run until the minimum water level is reached and the alarm will reset.



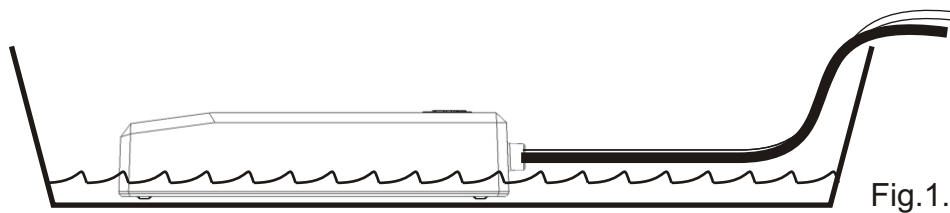
Installation

The KAROO pump is designed to be very easy to install.

Ensure that the drain pan is free of dirt and debris and place the KAROO flat and level in the bottom.(Fig.1)

Route the mains cable and discharge tube so as to avoid sharp edges.

The KAROO pump will vibrate during operation and is fitted with anti-vibration feet to reduce any associated noise. To further reduce possible noise, ensure that the KAROO is not touching the side walls of the drain pan and clamp the discharge tube and mains cable to a convenient solid surface.



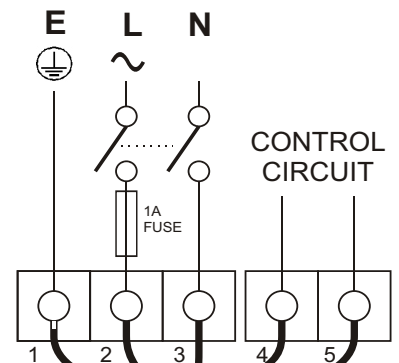
Wiring Connections

Connect the ground, live and neutral wire from the supply cable of the KAROO 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.2).

<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	

POWER SUPPLY



Alarm Relay

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

Fig.2.

Testing

Fill the drain pan with clean tap water until the water level is approximately half way up the KAROO body (Fig. 3. Pump On).

The KAROO should start to pump. It may be noisy initially until any air has been purged from the system.

Continue to fill the drain pan until the water level reaches the Alarm On level (Fig. 3.). The alarm contacts should open.

Allow the KAROO to empty the drain pan. The pump should stop and the alarm relay reset when the water level gets close to the bottom of the KAROO body (Fig. 3. Pump Off).

Trouble Shooting

Pump does not run:

Check fuse and electrical supply connections.

Check water level is high enough to start the pump.

Pump is noisy:

Check that the KAROO mains cable and outlet tube are not vibrating against the sides of the drain pan and that there is no debris in the bottom of the drain pan.

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, disconnect the KAROO from the mains supply and flush the sensor housing with clean tap water for around 30 seconds (Fig. 4.). If the problem persists, flush with methylated spirit and then rinse with water.

Pump is pumping air:

Check that the KAROO is flat and level.

Check that the outlet tube is not syphoning.

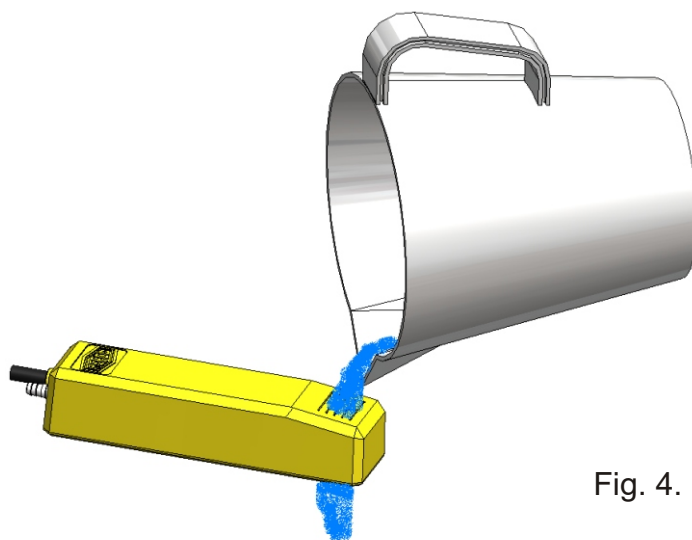


Fig. 4.

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.