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K100H

INDUSTRIAL DEHUMIDIFIER

OWNER'S MANUAL

www.eipl.co.uk

Puravent

Get In Touch

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Our Address

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INTRODUCTION

Dehumidifiers remove moisture from the air that is circulating through the unit. The resulting reduction of relative humidity helps prevent rust, rot, mold, mildew and condensation within the room, or other enclosed spaces where the dehumidifier is used.

A dehumidifier consists of a motor-compressor unit, a refrigerant condenser, an air circulating fan, a refrigerated surface, a means of collecting and disposing the condensed moisture and a cabinet to house these components.

The fan draws air through the refrigerated surface and cools it below its dew point, removing moisture which is collected and led away. The cool air then passes the hot condenser, where it is reheated. With the addition of other radiated heat the air is discharged into the room at a higher temperature but lower relative humidity than when the air entered the unit. Continuous circulation of the room air through the dehumidifier unit gradually reduces the relative humidity in the room.

A digital Humidistat is included which allows for precise humidity control. A programmable display lets you set a specific desired humidity level.

The K100H dehumidifier is a rugged reliable drying unit designed to operate effectively over a broad range of temperature and humidity conditions. A powerful and reliable reverse cycle defrost system, controlled by an electronic timer, guarantees positive de-icing and thereby optimizing operation at low temperatures.

The unit incorporates a welded steel chassis and is finished in epoxy coated steel covers for resilience to damage caused by rough handling.

The K100H has a number of special features:

- Ebac's "Reverse Cycle" defrost system
- Integral pump out system
- Provision for permanent drainage
- Exterior epoxy powder-coated finish
- Extra long power cord
- Free Standing or Wall Mountable
- Status Indicator
- Digital Humidistat Controller

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SPECIFICATIONS

MODEL:	10185GH-GB
HEIGHT:	692mm
WIDTH:	580mm
DEPTH:	464mm
WEIGHT:	53 kg
AIRFLOW:	510 M^3/Hr
POWER SUPPLY:	230V - 50Hz - 1 ph
FINISH:	Powder-coated Epoxy
OPERATING RANGE:	3℃ – 35℃
REFRIGERANT:	R407c (540g)

"This product contains fluorinated greenhouse gases covered by the Kyoto Protocol. The refrigeration system is hermetically sealed.

The Global Warming Potential (GWP) of refrigerants used in products manufactured by Ebac Industrial Products Ltd is as follows

R134a – 1300
R407c – 1610

For type and weight of refrigerant contained in this unit, please refer to the product data label"

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INSTALLATION

POSITIONING:

Position the dehumidifier unit in the center of the room to be conditioned if at all possible. However if a damp patch is particularly apparent the outlet grille should be pointed towards it.

NOTE: Both inlet grille and outlet grille of the dehumidifier unit must have clear space around them and not be obstructed in anyway. For correct installation and operation the unit must have a clearance of 0.5M from all adjacent surfaces and or structures.

WIRING:

Connect the power mains cable to a designated circuit breaker as follows:-

For Models without plugs:-

Brown	Live
Blue	Neutral
Green/Yellow	Earth (ground)

If the SUPPLY CORD is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified person in order to avoid hazard.

DRAINAGE:

The K100H has an integral water pump fitted as standard. This condensate pump is capable of discharging the condensate water 4.3m vertical lift away from the unit & 30m horizontal. The water can, therefore, be discharged into a drain some distance away

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OPERATION

The following procedures should be followed to test the K100H for correct operation:

1. After unpacking, examine all external features to confirm damage-free shipment. Report all defects and damage at once. Connect the power cable to a grounded 13 Amp electrical outlet.

2. Setting the Digital Humidistat

   The Digital Humidistat is factory preset to give the optimum level of control. Only adjustment of the desired set point is required.

   During normal operation, the display shows the current % Relative Humidity within the space being conditioned.

   The required humidity level can be set as follows:

   - Press the “S” button once to access the set point
   - Press the ▲ or ▼ button to change the display to the desired Humidity level
   - Press the “S” button again to save the set point – The control returns to displaying the current % Relative Humidity

3. Check dehumidification process as follows:

TO ENSURE CONTINUED FULL EFFICIENCY OF THE DEHUMIDIFEIR, MAINTENANCE PROCEDURES SHOULD BE PERFORMED AS FOLLOWS:

A. Place unit on a level surface.

B. Start up unit by turning the ON/OFF switch to ON

C. Check that the compressor is running.

D. Leave the machine running for 15 minutes.

E. Observe the evaporator coils through the rear upper grill, to confirm frost operation.

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i. If the air temperature is below 25°C, an even coating of frost should cover the entire evaporator coil
ii. If the air temperature is above 25°C, frost and/or droplets of condensed water should cover the entire evaporator coil.

F. After continuous running time of approximately 55 minutes, the unit will enter "Hot Gas" defrost mode for 5 minutes and then automatically return to normal operation.

When the unit is defrosting, the % Relative Humidity displayed on the digital controller may increase as a result of the ice / frost melting. This is quite normal and the display will return to its normal reading when the unit returns to dehumidifying mode. (Fan running)

If, after carrying out the above procedures, the unit does not appear to function properly, refer to the *Trouble Shooting* section, which follows, or contact the Factory Service Center.

CAUTION:
ONCE THE UNIT HAS BEEN SWITCHED OFF, WAIT AT LEAST FIVE MINUTES BEFORE RESTARTING.

Discharge Pump

The pump works automatically and periodically pumps away collected moisture to a drain or container. The pump is capable of discharging water to a vertical height of 4.3m.

Warnings.

- Due to the high pressures within the refrigeration circuit, under no circumstances must direct heat be applied to the evaporator coil in an attempt to remove the build up of ice.
- No attempt should be made to cut open any part of the refrigeration circuit due to high pressures and gas involved.
- If the unit is switched off at the mains power supply for any reason, the unit must be allowed to stand at rest for at least three minutes before restarting.

If after carrying out the above procedures, the unit does not appear to function properly, refer to the *Trouble Shooting* section, which follows, or contact the Factory Service Center.

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ROUTINE SERVICE

WARNING:
ENSURE THAT THE POWER CORD TO THE MACHINE HAS BEEN DISCONNECTED BEFORE CARRYING OUT ROUTINE SERVICE. THE SERVICING AND REPAIR OF THIS UNIT SHOULD ONLY BE CARRIED OUT BY A SUITABLY QUALIFIED PERSON.

To ensure continued full efficiency of the dehumidifier, maintenance procedures should be performed as follows:

1. Clean the surface of the evaporator and condenser coils by blowing the dirt out from behind the fins with compressed air. Hold the nozzle of the air hose away from the coil to avoid damaging the fins. Alternatively, vacuum clean the coils.

WARNING:
DO NOT STEAM CLEAN REFRIGERATION COILS

2. Check that the fan is firmly secured to the motor shaft and that the fan rotates freely. **The fan motor is sealed for life and therefore does not need oiling.**

3. To check the refrigerant charge, run the unit for 15 minutes. The evaporator coil should be evenly frost coated across its surface. At temperatures above 25°C, the coil may be covered with droplets of water rather than frost. Partial frosting accompanied by frosting of the thin capillary tubes, indicates loss of refrigerant gas or low charge.

4. Check all wiring connections.

5. To check the operation of the defrost system, switch the machine on and leave it running for approximately 42 minutes. The machine will then enter “Reverse Cycle” defrost mode for approximately 4 minutes before returning to normal operation. If the unit will not defrost, the printed circuit timer board may be defective or the by-pass valve may be inoperable.

IF ANY OF THE PRECEDING PROBLEMS OCCUR, CONTACT THE EBAC SERVICE CENTER PRIOR TO CONTINUED OPERATION OF THE UNIT TO PREVENT PERMANENT DAMAGE.

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REPAIRS

1. Should an electrical component fail, consult the Factory Service Center to obtain the proper replacement part.

2. If refrigerant gas is lost from the machine, it will be necessary to use a Refrigeration technician to correct the fault. Contact the Factory Service Center prior to initiating this action.

   Any competent refrigeration technician will be able to service the equipment. The following procedure must be used:

   a. The source of the leak must be determined and corrected.

   b. The machine should be thoroughly evacuated before recharging.

   c. The unit must be recharged with refrigerant measured accurately by weight.

   d. For evacuation and recharging of the machine, use the crimped and brazed charging stub attached to the side of the refrigerant compressor.

      The charging stub should be crimped and rebrazed after servicing. **NEVER** allow permanent service valves to be fitted to any part of the circuit. Service valves may leak causing further loss of refrigerant gas.

3. The refrigerant compressor fitted to the dehumidifier is a durable unit that should give many years of service. Compressor failure can result from the machine losing its refrigerant gas. The compressor can be replaced by a competent refrigeration technician.

   Failure of the compressor can be confirmed by the following procedure:

   a. Establish that power is present at the compressor terminals using a voltmeter.

   b. With the power disconnected, check the continuity of the internal winding by using meter across the compressor terminals. An open circuit indicates that the compressor should be replaced.

   c. Check that the compressor is not grounded by establishing that a circuit does not exist between the compressor terminals and the shell of the compressor.

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TROUBLESHOOTING

SYMPTOM	CAUSE	REMEDY
Unit inoperative	1. No power to unit	1. Check the power from power supply panel
Little or no airflow	1. Loose fan on shaft 2. Fan motor burnt out 3. Dirty refrigeration coils / filter 4. Loose electrical wiring	1. Tighten fan 2. Replace the fan motor 3. See *Routine Maintenance* Section 4. Check the wiring diagram to find fault and repair
Little or no water extraction	1. Insufficient air flow 2. Compressor fault 3. Loss of refrigerant gas	1. Check all of the above 2. Contact the Factory Service Center 3. Contact the Factory Service Center
Little or no defrost when required	1. Faulty timer 2. Faulty by-pass valve	1. Contact the Factory Service Center 2. Contact the Factory Service Center
Unit vibrates excessively	1. Loose compressor 2. Damaged fan	1. Tighten the nuts on the compressor mounts 2. Replace fan
Water flooding inside the machine	1. Drain pipe blocked/frozen 2. Drain pipe too high 3. Crimped or blocked tubing	1. Clear the obstruction 2. Ensure that no section of the drain hose is above the level of the water outlet 3. Straighten, clear, or replace tubing

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SPARE PARTS LIST

NUMBER	DESCRIPTION	PART NUMBER	QUANTITY
1	Timer	1619508	1
2	Evaporator Coil	3020732	1
3	Condenser Coil	3020727	1
4	Fan Blade	3040116	1
5	Capillary Tube	3014251	2 X 48”
6	Solenoid Valve	3020833	1
7	Filter Dryer	3020957	1
8	Compressor	3944914	1
9	Solenoid Coil	3030454	1
10	Capacitor	3037505	1
11	Fan Motor	3030129	1
12	Contactor	3930733	1
13	Pump	3160148	1
14	Digital Humidistat	3031526	1
15	Rotary Switch	3030557	1

Spare parts available online

www.EIPLDIRECT.com

WARNINGS

This appliance can be used by children from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the application in a safe way and understand the hazards involved.

Children shall not play with the appliance.

Cleaning and user maintenance shall not be made by children without supervision.

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