

K100P
INDUSTRIAL DEHUMIDIFIER
OWNER'S MANUAL



www.eipl.co.uk

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.

The K100P 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 K100P 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
- Control Humidistat

SPECIFICATIONS

MODEL:	10241HZ-GB
HEIGHT:	431mm
WIDTH:	711mm
DEPTH:	457mm
WEIGHT:	62 kg
AIRFLOW:	510 M ³ /Hr
POWER SUPPLY:	230V - 50Hz - 1 ph
FINISH:	Powder-coated Epoxy
OPERATING RANGE:	3 °C – 35 °C
REFRIGERANT:	R407c (540g)
OPTIONAL EXTRAS:	<ul style="list-style-type: none"> • Trolley, • Wall Mounting Bracket

"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"

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 inlet and outlet 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)

DRAINAGE:

The K100P 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. Connect a 3/8" inside diameter hose to the water outlet pipe. Secure the hose using a worm drive clip. Run the hose to a permanent drain.

OPERATION

The operation of the dehumidifier is to remove moisture from the air by having it condense on the cold tubes of the evaporator coil. The air then passes over the hot condenser coil and returns to the conditioned space slightly warmer and dryer than when it entered the dehumidifier unit. To concentrate drying all doors and windows should be kept closed.

Test for Correct Operation

<p style="text-align: center;">WARNING: DO NOT RUN THE MACHINE WITHOUT THE COVERS IN PLACE FOR ANY LONGER THAN NECESSARY. DO NOT REMOVE / REPLACE THE COVERS WITH THE POWER ON</p>

Remove the cover by releasing the retaining bolts and follow the test procedure laid out below:-

1. Set the adjustable humidistat to maximum.
2. Switch the machine to the on position, this will result in the compressor starting to run and the fan blade starting to rotate.
3. When the compressor has been running for 20 minutes the coils located above the drain tray will be evenly coated in frost. (If the ambient temperature is above 20°C the coils will be covered in water.)
4. After the machine has been running for approximately 50 minutes the unit will automatically enter into defrost. The defrost cycle lasts for approximately 3 minutes, this will result in the frost on the coils melting and dripping into the drainage tray.
5. After the defrost has finished the machine will return to normal operation.
6. Ensure the condensate drains away from the machine.

Setting the Adjustable Humidistat

The position of the humidistat depends on the application the K100P is being used for and the conditions within the area to be dried. The worse the conditions within the area then the higher the humidistat should be set (i.e. the machine will run for a longer period of time to ensure all the moisture is reduced sufficiently). As a rough guide the humidistat wants to be set at approximately 50% for factories and warehouses, and for basements or de-flooding then the humidistat should be set to approximately 100%.

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.

Indicator Panel

The K100P is fitted with an indicator lamp to show when power is available and the unit is switched on, if this does not appear to be functioning correctly then refer to the repairs section.

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.

<p style="text-align: center;">CAUTION: ONCE THE UNIT HAS BEEN SWITCHED OFF, WAIT AT LEAST FIVE MINUTES BEFORE RESTARTING.</p>

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. Remove the air filter and clean by either blowing compressed air through, vacuuming or washing in warm water
3. 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.**
4. To check the refrigerant charge, run the unit for 15 minutes and briefly remove the top cover. 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. During this inspection, check visually to ensure that the pump rollers are turning.
5. Check all wiring connections.
6. 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.

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.

TROUBLESHOOTING

<u>SYMPTOM</u>	<u>CAUSE</u>	<u>REMEDY</u>
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 <i>Routine Maintenance</i> 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

K100P
SPARE PARTS LIST

<u>NUMBER</u>	<u>DESCRIPTION</u>	<u>PART NUMBER</u>	<u>QUANTITY</u>
1	Filter	2027114	1
2	Timer	1601200	1
3	Evaporator Coil	3020732	1
4	Condenser Coil	3020727	1
5	Fan Blade	3040116	1
6	Capillary Tube	3014251	2 X 48"
7	Solenoid Valve	3020810	1
8	Filter Dryer	3020904	1
9	Compressor	3944914	1
10	Solenoid Coil	3030419	1
11	Capacitor	3037505	1
13	Fan Motor	3030129	1
16	Contactora	3930733	1
17	Pump	3160148	1
18	Humidistat	3035145	1
19	Rotary Switch	3030512	1
20	Indicator Lamp	3032203	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.

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.

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Drawing	: - TPC317
Issue	: - 6
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