

FREE STAR INDUSTRIAL DEHUMIDIFIER USERS MANUAL



www.ebacusa.com

UNPACKING

Thank you for deciding to purchase an Ebac dehumidifier. Like the many tens of thousands of people who have already bought an Ebac dehumidifier we are confident you will find it is the most effective answer to your condensation and dampness related problems.

Carefully remove the Free Star dehumidifier unit from its packing material and visually check for signs of transit damage. If there is evidence of damage DO NOT attempt to operate the unit, call your supplier for advice. Do not discard the packing material; it will be useful when transporting the dehumidifier unit in the future. Your dehumidifier is packed in a plastic wrapping, please ensure that it is disposed of safely and where it will not be a danger to children.

INTRODUCTION

This user's manual tells you how to properly use the Free Star dehumidifier. Please read it thoroughly before operating the dehumidifier. If you have any questions about the unit please contact our Customer Service Department online at support.ebacusa.com or you can call (757) 873-6800 between the hours of 8:00 am and 4:30 pm EST Monday through Friday.

Dehumidifiers remove moisture from the air circulating through it. Continuous operation reduces the relative humidity in the air and thus helps prevent rust, rot, mold, mildew and condensation.

The Free Star dehumidifier consists of an air to air heat exchange, rotary compressor, evaporator coil, condenser coil, air circulating fan and condensate pump.

GENERAL

The Free Star dehumidifier should only be stored and transported in the upright position. To operate, first make sure the unit is on a level surface and then connect the power supply. Once these steps are completed the unit is ready for operation.

OPERATION

The fan draws the moist air through the refrigerated surfaces which cools it below its dew point, removing moisture which is collected and removed. The cool air then passes over the hot condenser, where it is repeated. With the addition of other radiated heat the air is discharged into the room at a higher temperature but a lower relative humidity than when it entered the unit.

Continuous circulation of the air in the room through the dehumidifier gradually reduces the relative humidity in the room.

The Free Star dehumidifier is a robust, compact unit designed to control the humidity in the enclosed space in which it is placed.

The unit is thermally protected and will switch off for a period if maximum operating temperature of 40°C is exceeded.

ELECTRICAL CONNECTIONS

WARNING THIS APPLIANCE MUST BE GROUNDED

GFCI PLUG WIRING: This unit comes standard with a GFCI plug. The units wiring sequence is as follows:

Brown	Live / Line
Blue	Neutral
Green/Yellow	Ground / Earth

When a generator is used as the power source it is essential to check the minimum KVA required in the technical section within this manual. The generator should be started before the connection is made to the dehumidifier.

BASIC STEPS FOR DRYING

Ensure that all External doors and windows are closed. Where no doors or windows are fitted, temporarily screen off the openings.

POSITIONING

For small areas position centrally in the area to be dried, for larger areas such as open floor plan buildings, offices or factories, a number of dryers may be required, in such cases they should be spaced evenly around the area. Ensure that no unit is positioned in such a way that it blows directly into another.

For multi-level houses or apartments, position the dryer on one floor at a time, starting at the lowest floor, closing all internal doors on the floor previously dried. Continue until all floor levels have been dried.

Note when a particular damp patch is to be dried out, the air outlet grille should be directed towards that area but should never be closer than 1 meter or 3 feet to that area. At no time should the inlet or outlet grilles be covered or obstructed.

DRAINAGE

Under most operating conditions water will be produced continuously and it is important that it is drained away correctly and not allowed to spill. Any spillage will evaporate and will therefore, have to be recycled through the dryer again, which in effect, only prolongs the drying period.

PORTABLE CONTAINERS

Position a closed top container within close proximity (approximately 25 litres or 53 pints capacity). Use a transparent container; this will enable you to check the level of water in order to prevent overflowing. As the unit will be running for long periods of time, a regular check should be made on the container water level.

PERMANENT DRAINAGE

This unit is equipped with a built in condensate pump which is capable of a 20 foot vertical lift. This unit also comes with a 25 foot section of detachable drain hose.

SWITCHING ON

Plug the unit into the power supply and switch on. Set the illuminated Rocker switch to the ON position the switch should light up and show that the unit has power.

SWITCHING OFF

Set the illuminated Rocker switch to the OFF position. Turn off the power supply and disconnect.

ADJUSTABLE HUMIDISTAT

The positioning of the humidistat depends on the application that the Free Star is being used for and the conditions within the area to be dried. The following table can be used as a guide to setting the humidistat.

APPLICATION	HUMIDISTAT SETTING
FACTORIES	60%
WAREHOUSES	50%
BASEMENTS	50%
DEFLOODING	40%

The humidistat incorporates a knob / pointer and a graduated scale which gives the customer the facility to select the desired humidity level within the room being dried. The humidistat is positioned on the control panel to allow easy adjustment.

SPECIAL FEATURES

DEFROST OPERATION

If the ambient temperature of the room in which the dehumidifier is conditioning, falls below 15°C ice will form on the evaporator coil as the air passes over it. Over a period of time this build up of ice will affect the efficiency of the dehumidifier on its ability to maintain the required set conditions within the room.

The Free Star is therefore fitted with a defrost control device. This defrost control device is equipped with a thermistor which will only engage the defrost cycle when needed. During the defrost cycle the high pressure hot gas from the compressor is diverted into the evaporator coil where it melts the ice which has formed on the evaporator coil.

CONTROL PANEL LIGHTS

The On/Off Switch illuminates when the unit is turned on to give a visual indication that the unit has power.

The unit also has 2 lights on the control panel which are green and amber, when the green light is illuminated this indicates that the unit is going through its drying process. When the amber light is illuminated this indicates that the unit is going through the defrost cycle.

External Humidistat Option

The Free Star has the option of using an external humidistat remotely mounted within a room, where available.

In the control box there is a connector that can be wired to, which will enable the use of an external humidistat. The following steps should be carried out to enable correct operation of the external humidistat.

- Locate the control box and remove the cover, keeping screws for re-attachment
- Locate the connector within the control box and remove the plug from the socket
- Dismantle the plug and remove the link wire from terminals 2 & 3
- Wire remote humidistat to terminals 1 & 3, ensuring wires pass through the plug back shell
- Re-assemble the plug and refit to the socket on the control box
- The Free Star internal humidistat will now be by-passed and the external humidistat will control the unit.

SAFETY

- **DO NOT** Use the unit if the cabinet or power cord is damaged.
- **DO NOT** Insert objects into any of the grilles on the machine.
- **DO NOT** Cover or obstruct airflow from the grilles.
- **DO NOT** Operate the unit with the covers removed.
- **DO NOT** Attempt any repairs should the unit fail to operate.
- **DO NOT** Stand on the unit.
- **DO NOT** Attempt to lift heavy units unassisted.
- **DO** Check the plug on the equipment matches the supply.
- **DO** Use this unit for the purpose for which it was designed.
- **DO** Ensure the power cord and supply is grounded correctly.
- **DO** Use a **ground fault circuit interrupter (GFCI)**, **ground fault interrupter (GFI)** or an **appliance leakage current interrupter (ALCI)** where possible.

SERVICE

The machine should be serviced by qualified Ebac personnel or other persons having technical competence in servicing refrigeration equipment following the instructions in the Ebac service manual.

SPARES

Spare parts listings and Ebac Service Manuals are available upon request by contacting one of the Ebac locations listed in this manual.

OZONE FRIENDLY

The gas which is inside the hermetically sealed refrigeration circuit is R407C, which is an HFC. Under No circumstances should this gas be released into the atmosphere. The unit should be serviced by trained personnel who will reclaim the removed gas.

DISPOSAL OF UNIT

At the end of the machines working life the refrigerant must be disposed of in the correct manner.

SPECIFICATIONS

10283GR-US		
HEIGHT:	38.1	inches
WIDTH:	24.3	inches
DEPTH:	18.7	inches
WEIGHT:	160	lbs
AIRFLOW:	600	m3/h
VOLTAGE:	115	V
PHASE:	1	
FREQUENCY:	60	Hz
MAXIMUM POWER:	1.02	kW
MAXIMUM CURRENT:	9	A
GENERATOR SIZE:	1.5	KVA
FUSE RATING:	13	A
EFFECTIVE VOLUME:	300	m3
REFRIGERANT TYPE:	R407c	
REFRIGERANT	0.585	Kg
QUANTITY:		
NORMAL	0.85	l/h
EXTRACTION:		
MAXIMUM	1.75	l/h
EXTRACTION:		

Noise Level: Less than 70dB (A) when running

Finish: Epoxy Coated Zintec Steel

Mobility: Light in construction and easily positioned.

Normal: Rated Extraction at 12°C 70% RH Condition

Maximum: Rated Extraction at 27°C 60% RH Condition

"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"



Drawing	: - TPC308
Issue	: - 4
Date	: - 20/04/11

CONTACTING EBAC CUSTOMER SERVICES

If you have any further questions please contact the Ebac Customer Service Department online at **support.ebacusa.com** or you can call (757) 873-6800 between the hours of 8:00 am and 4:30 pm EST Monday through Friday. In order to properly assist you please have the following information at hand:

- Part Number and Serial Number of the machine (located on the machines rating plate).
- Full name and address.
- Where your machine was purchased.

Spare parts available online

www.EIPLDIRECT.com



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LIMITED WARRANTY

Our products carry a one-year unconditional warranty against any defects in workmanship or material. This warranty will cover all parts and labor required to repair your Ebac product. This warranty is invalid if the unit has been abused, damaged, whether intentional or accidental, or if any modifications have been made to the unit.

THE FOREGOING WARRANTY IS EXCLUSIVE AND IS ISSUED IN LIEU OF ALL OTHER WARRANTIES (WHETHER WRITTEN, ORAL, OR IMPLIED) INCLUDING THE WARRANTY OF MERCHANTABILITY AND THE WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. EBAC INDUSTRIAL PRODUCTS, INC. DISCLAIMS ANY LIABILITY FOR CONSEQUENTIAL DAMAGES, LOST PROFITS, OR INCIDENTAL DAMAGES FOR BREACH OF ANY WRITTEN OR IMPLIED WARRANTY WITH RESPECT TO THE FOREGOING DESCRIBED MERCHANDISE.

For Your Records: Model: _____
 S/N: _____
 Date Received: _____

SAVE THIS SECTION FOR YOUR RECORDS

 CLIP AND RETURN THIS CARD

PLEASE NOTE

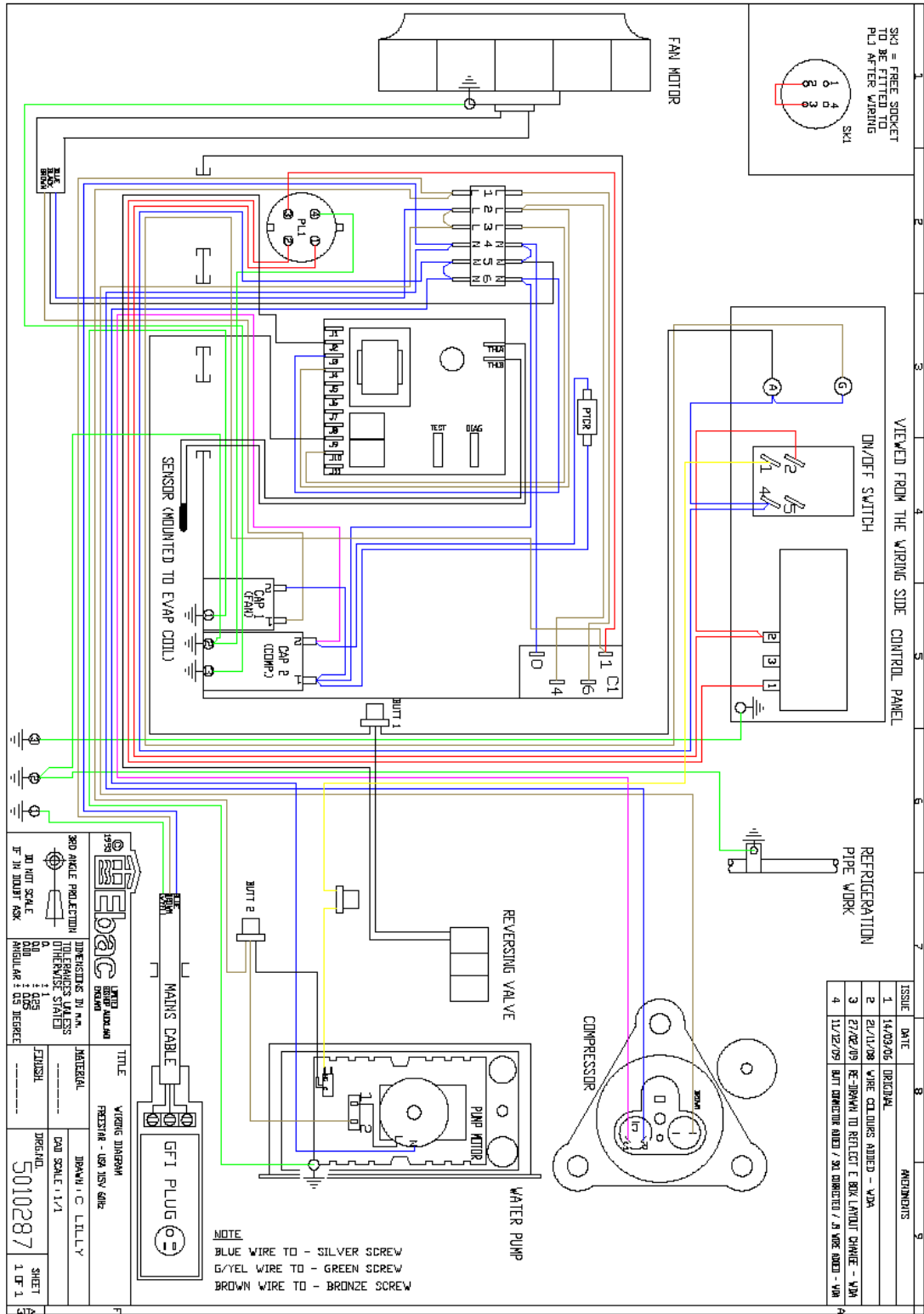
To ensure that your Ebac Dehumidifier is accorded the full coverage provided by this warranty, please complete and mail this card at your earliest convenience.

Thank You

WARRANTY REGISTRATION		
MODEL _____	S/N _____	DATE RECEIVED _____
OWNER _____		
ADDRESS _____		
CITY _____ STATE _____ ZIP _____		
COMMENTS _____		

Ebac Industrial Products. 700 Thimble Shoals Boulevard, Suite 109, Newport News, Virginia. 23606-2575		

Wiring diagram





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