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With Heat Exchanger***

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***ADVANTAGE SERIES KXRP28
AIR-TO-AIR
HEAT EXCHANGER

OPERATOR'S MANUAL***

CAUTION

**BEFORE INSTALLING AND
USING THIS HEAT EXCHANGER,
IT IS IMPORTANT THAT THIS
MANUAL BE READ AND
UNDERSTOOD THOROUGHLY**



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I. Introduction

Kooltronic Advantage Heat Exchangers are designed for outdoor and indoor applications with ambient temperature from -20°F to 131°F and maximum allowable enclosure temperature of 160°F. These heat exchangers utilize a counterflow airstream, for maximum heat transfer efficiency in a closed-loop system, providing cooling within sealed electronic cabinets.

This Manual provides you with the necessary general information for properly installing and operating Kooltronic Heat Exchangers. Unit specific technical data and mounting instructions are presented later in the Manual.

II. Incoming Inspection

Kooltronic Heat Exchangers are designed, built, and packaged to withstand the shock and vibration normally associated with shipment by common carriers. Occasionally improper handling during shipping causes damage. Such handling could include unbanding of palletized shipments, failing to respect any carton handling instructions, falling off conveyors, excessive vibration, crushing, etc. Therefore, a thorough inspection should be done upon receipt of all shipments. Any carton tears, dents, scratches, or loose articles should be noted on the Freight Bill. Cartons should be opened promptly and the units inspected for CONCEALED DAMAGE.

An immediate claim **MUST** be filed with the freight carrier and an inspection requested. Retain all packing materials. Kooltronic cannot assume responsibility for Consignee's failure to file a timely freight claim.

III. Product Handling

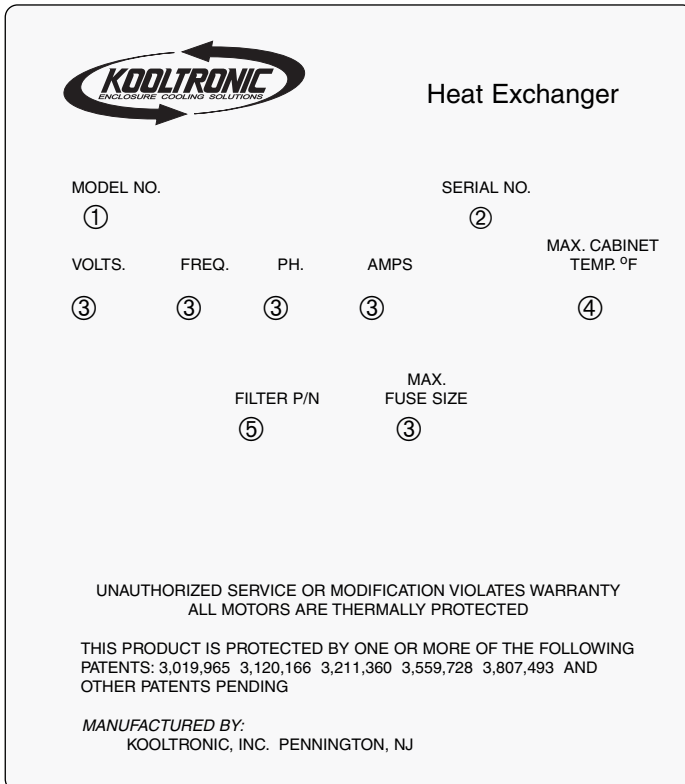
- Do not attempt to operate your Kooltronic Heat Exchanger until you read and thoroughly understand this Manual.
- Before operating this unit, all electrical wiring must be checked to assure the proper connections.

CAUTION

Operate this unit only on the proper voltages and frequencies as noted on the nameplate.

IV. Product Identification and Nameplate

Each Kooltronic Heat Exchanger includes an identification nameplate. This nameplate provides:



The nameplate features the Kooltronic logo at the top left, which includes the text "Kooltronic" in a stylized font with "ENCLOSURE COOLING SOLUTIONS" underneath. To the right of the logo is the title "Heat Exchanger". Below the logo, the nameplate is organized into several sections. The first section contains "MODEL NO." with a circled 1 below it. The second section contains "SERIAL NO." with a circled 2 below it. The third section contains "VOLTS.", "FREQ.", "PH.", "AMPS", and "MAX. CABINET TEMP. °F" with circled 3s and 4s below them. The fourth section contains "FILTER P/N" and "MAX. FUSE SIZE" with circled 5s and 3s below them. At the bottom, there is a warranty statement: "UNAUTHORIZED SERVICE OR MODIFICATION VIOLATES WARRANTY ALL MOTORS ARE THERMALLY PROTECTED". Below that is a patent notice: "THIS PRODUCT IS PROTECTED BY ONE OR MORE OF THE FOLLOWING PATENTS: 3,019,965 3,120,166 3,211,360 3,559,728 3,807,493 AND OTHER PATENTS PENDING". At the very bottom, it says "MANUFACTURED BY: KOOLTRONIC, INC. PENNINGTON, NJ".

- ① Model Number
- ② Serial Number
- ③ Electrical power characteristics
- ④ Maximum enclosure temperature
- ⑤ Filter Part Number

We recommend you copy this information from your unit.

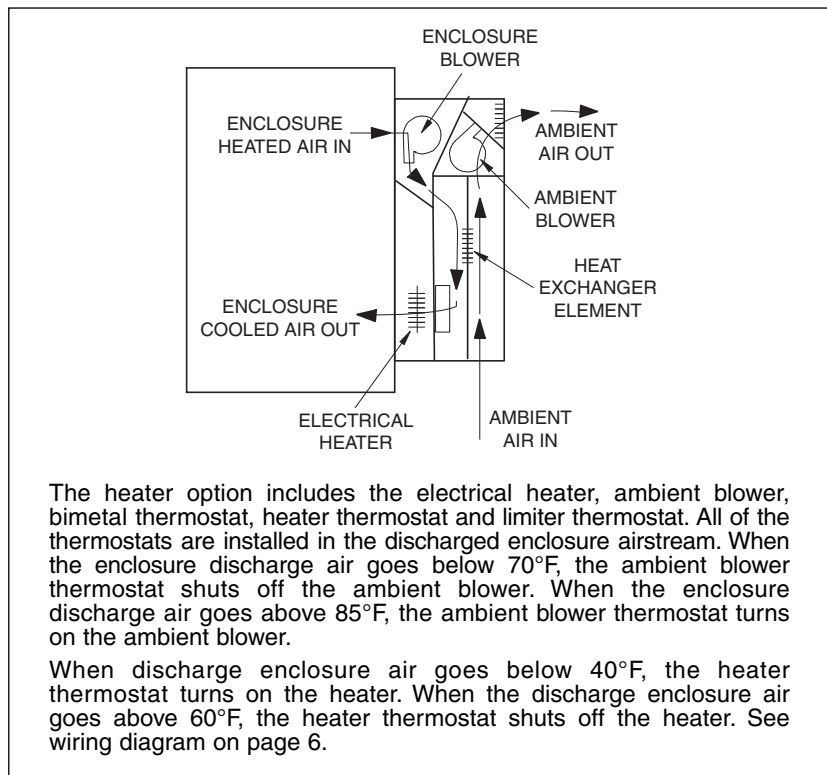
- ① ② ⑤ When ordering parts, specify the Model Number and Serial Number.
- ③ Before operating, be sure that the power source matches these requirements.
- ④ Make sure that these parameters are met. Failure to do so may result in permanent damage to the unit.

V. Principles of Operation

The main component of the heat exchanger is the counterflow aluminum element through which the heat transfer occurs.

Ambient blower draws ambient air from the bottom inlet through an aluminum mesh air filter, and the element, and exhausts it through a discharge grill.

Cabinet blower draws cabinet air from the top inlet, blows it through the element and exhausts it through the bottom discharge into the cabinet.



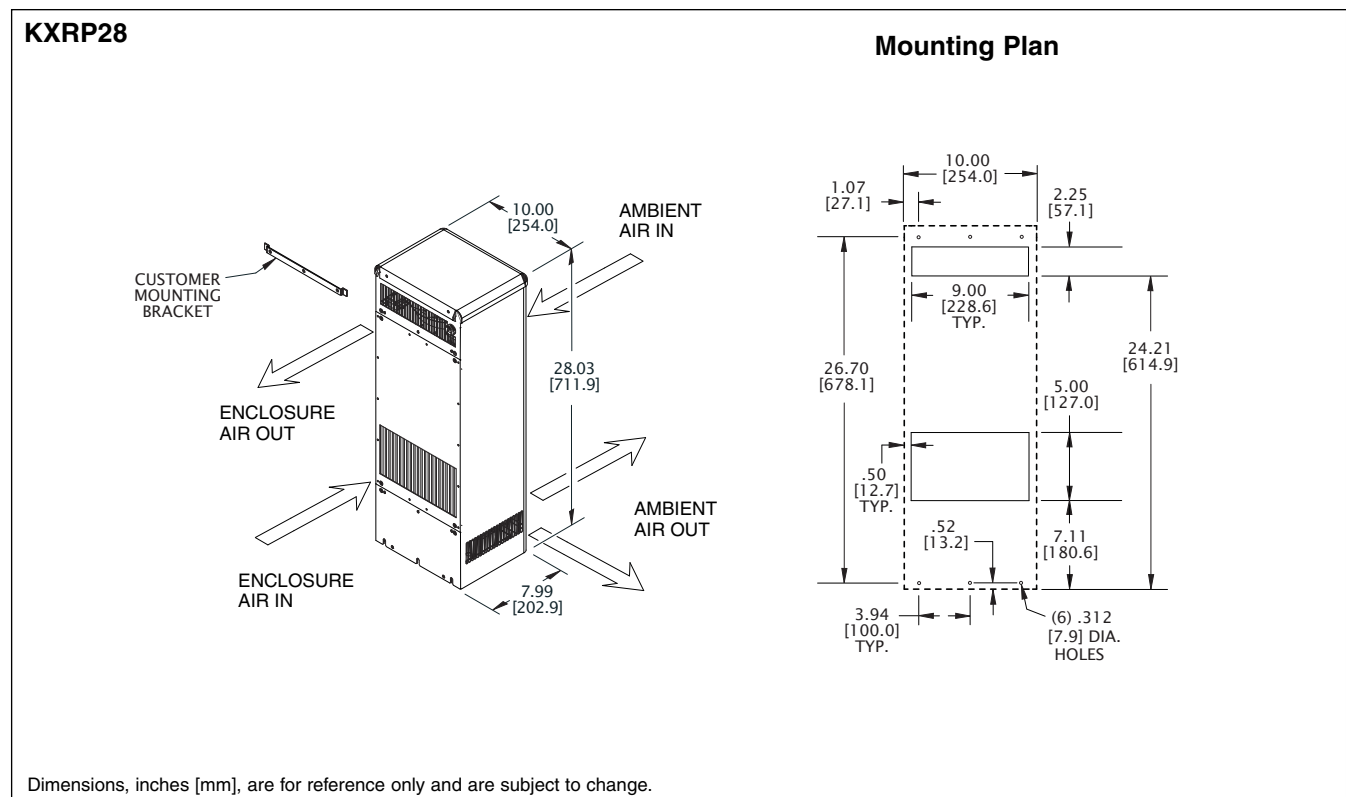
VI. Specific Model Data

Mounting

Kooltronic Heat Exchangers have been engineered to be installed easily. To avoid damaging your Heat Exchanger, please read the following information before installation:

1. Attach the mounting bracket to the enclosure using the mounting hardware supplied by Kooltronic.
2. Route the power cord through the top cut out in your enclosure. Hang the unit on the mounting bracket.
3. Tighten the unit's bottom flange to the enclosure using the hardware supplied by Kooltronic.

Drawings and Dimensions



Technical Data*

Model	Power			Maximum Allowable Temperature °F		Watts/°F Air In	Approx. Weight (lbs.)
	Volts	Amps	Watts	Enclosure Max	Ambient Min/Max		
KXRP28	115	1.2	135	160	-20/131	24	31.5
K2XRP28	230	0.7	153	160	-20/131	24	31.5

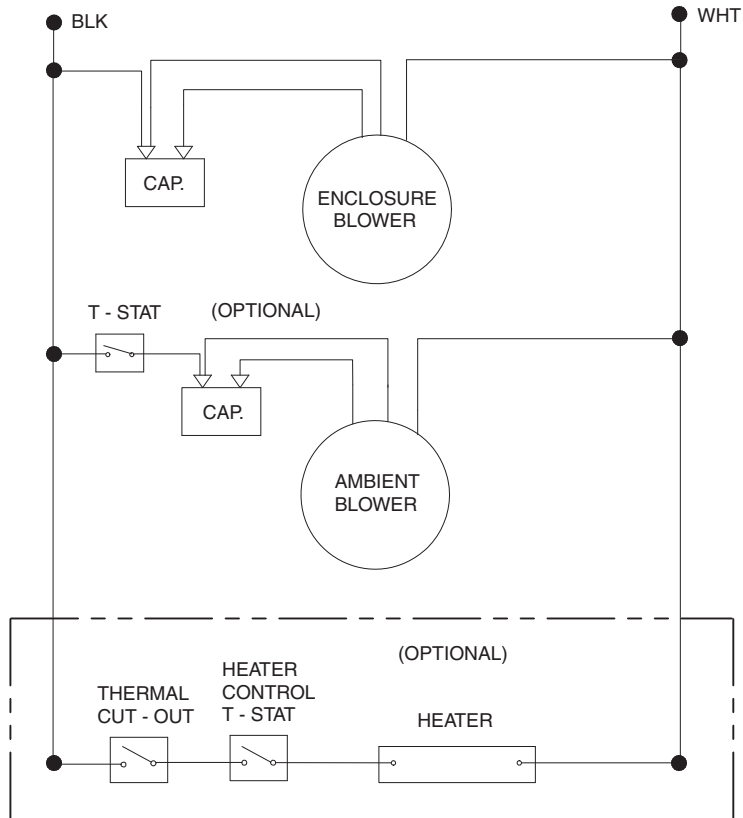
*60 Hz operation. For 50 Hz operation consult Kooltronic.

Major Component Replacements

Model	Impeller	Capacitor	Filter
KXRP28	0194-37	0452-72	5381F
K2XRP28	0194-38	0452-73	5381F

NOTE: Part Numbers shown are for 60Hz/1Ø. For 50Hz consult Kooltronic.

Wiring Diagram



WD-830

VII. Maintenance

With Kooltronic Air-Cooled Heat Exchangers the use of a filter is optional. If you do choose to use a filter, and wish to remove it for cleaning or repair, follow the instructions below.



Optional Filter Removal and Service

Kooltronic Heat Exchangers feature an easily removable optional inlet filter.

1. Move the filter up and toward you from the Filter Retainer.
2. After removal, the filter should be flushed under warm running water with the clean side up, driving contaminants out the dirty side of the filter. If the accumulated dirt is oily, washing in a detergent bath is recommended, followed by warm water rinse as above.
3. The filter may be sprayed with **Kooltronic A-16 Filter Recoating Adhesive** to trap fine airborne contaminants, or they can simply be dried and reinstalled as strainer type filters.
Recoating is recommended for the best results.
4. Reinstall the filter in the Filter Retainer.

VIII. Packing Procedure

- Keep Heat Exchanger in proper upright position.
- Pack Heat Exchanger in an appropriate carton (preferably original carton if possible), with adequate internal protective packaging, making sure carton is marked properly.
- For local controlled transportation, strap carton to a secure part of the vehicle to prevent falling or sliding, and to minimize vibration, etc.
- For common carrier shipment, band unit(s) securely to a pallet. Unpalletized shipment risks severe damage which voids the warranty.

IX. Standard Warranty

KOOLTRONIC products are warranted to be free of defects in workmanship, materials and components. The following warranty periods apply from date of shipment:

- Air moving devices/components and hermetic system components: 1 year
- Spare parts, except filters: 90 days

The above warranty applies when the equipment is operated under the following conditions:

- Ambient temperature not in excess of 125°F (52°C) in normal atmosphere or as stated on product nameplate
- Voltage variation no greater than $\pm 10\%$ from nameplate rating
- Frequency variation no greater than $\pm 3\text{Hz}$ from nameplate rating
- Maximum cooling load no higher than air conditioner nameplate rating
- Waiting five minutes before restarting air conditioner after intentional or accidental shutoff
- Compliance to all other installation, maintenance and operating instructions, as supplied
- The purchaser assumes the responsibility of grounding the unit and installing it in accordance with local electrical and safety codes, as well as the National Electric Code (NEC) and OSHA

KOOLTRONIC cannot assume responsibility for mis-application of its products or the erroneous selection of an inappropriate product by a non-authorized KOOLTRONIC representative. Our applications engineers will gladly assist in the selection of the proper product, provided all required details of the application are furnished.

THIS WARRANTY CONSTITUTES THE ENTIRE WARRANTY WITH RESPECT TO THE PRODUCT AND IS IN LIEU OF ALL OTHERS, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY AND WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE AND IN NO EVENT IS KOOLTRONIC RESPONSIBLE FOR ANY CONSEQUENTIAL DAMAGES OF ANY NATURE WHATSOEVER.

RETURN AUTHORIZATION (RA) PROCEDURE

- All returns require a Return Authorization number whether the return is for warranty or non-warranty repair, rotation of stock, damage or any other reason. Returns without an RA number will be refused.
- Customer must call KOOLTRONIC After Sale Kare (ASK), Pennington, New Jersey (609 • 466 • 3400) to obtain an RA number, or email ask@kooltronic.com.
- The following information is required when an RA is requested:
 - Original customer Purchase Order number and date
 - Date product was received by customer
 - Number of parts to be returned
 - Product description, model and serial number
 - Reason for return
 - Action requested
 - Contact name, telephone, FAX numbers and e-mail address
- Pack unit in a suitable container for shipment, preferably the

KOOLTRONIC assumes no liability beyond the repair or replacement of its own product. This Warranty does not cover:

- Labor or reimbursement of labor for evaluation, removal, installation, repair, or cost of any warranted part, unless authorized in writing by KOOLTRONIC
- Use of equipment for other than its designed purpose or operating conditions
- Operation in harsh, oily, corrosive or other abnormal environmental conditions, without the proper filtration, sealing, protective coatings and/or weather protection
- Damage to hermetic system resulting from continuous operation with dirty or clogged air filters or improper or negligent maintenance
- Use of refrigerant other than designated
- Customer modification or abuse
- Shipping damage or other accident (Claims for shipping damage are the responsibility of the customer. Timely claims must be filed by the customer with the freight carrier)
- Cracked or broken hermetic tubing, brazed joints or other internal damage caused by shipping or mishandling
- Damage caused by shipping units attached to an enclosure
- Any and all conditions resulting from noncompliance with the preceding operating conditions
- Returned freight must be paid by customer
- **This standard warranty does not apply to custom products. Consult your KOOLTRONIC representative for limitations**

original packaging if available. All Heat Exchangers must be returned in an upright position properly secured to a pallet. **Improper packaging may void warranty claim.** If a Heat Exchanger is received laying down or shipped via UPS or similar small parcel service the warranty will be void.

- Mark carton prominently with KOOLTRONIC's Return Authorization Number.
- Enclose all pertinent documents.
- Freight charges on all products returned to KOOLTRONIC shall be paid by the customer. Unauthorized collect shipments will be refused.
- If a unit is repaired under Warranty, KOOLTRONIC will pay the freight charges both ways within the Continental USA at KOOLTRONIC's negotiated rates. Warranty repaired units will be returned to customer at KOOLTRONIC expense only within the Continental USA.
- All authorized returns are subject to a restocking fee.