

## INSTRUCTION MANUAL

# Thermoelectric Cooler

TE090624020, TE121024020, TE121048020,  
TE162024020, TE162048020, TE090624010,  
TE121024010, TE121048010, TE162024010,  
TE162048010, TE090624011, TE121024011,  
TE162024011



# McLean<sup>®</sup>

**Protecting Electronics.  
Exceeding Expectations.™**

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## RECEIVING THE THERMOELECTRIC COOLER

Inspect the thermoelectric cooler. Check for concealed damage that may have occurred during shipment. Look for dents, scratches, loose assemblies, etc. Damage evident upon receipt should be noted on the freight bill. Damage should be brought to the attention of the delivering carrier -- NOT to Pentair Technical Products -- within 15 days of delivery. Save the carton and packing material and request an inspection. Then file a claim with the delivering carrier.

Pentair Technical Products cannot accept responsibility for freight damages; however, we will assist you in any way possible.

## HANDLING & TESTING THE THERMOELECTRIC COOLER

TEST FOR FUNCTIONALITY BEFORE MOUNTING THE THERMOELECTRIC COOLER TO THE ENCLOSURE.

Refer to nameplate for proper electrical current requirements, then connect power cord to a properly grounded power supply. Minimum circuit ampacity should be at least 125% of the amperage shown in the design data section for the appropriate model. No other equipment should be connected to this circuit to prevent overloading.

Operate the thermoelectric cooler for five (5) to ten (10) minutes. No excessive noise or vibration should be evident during this run period. The ambient and enclosure fans should be running.

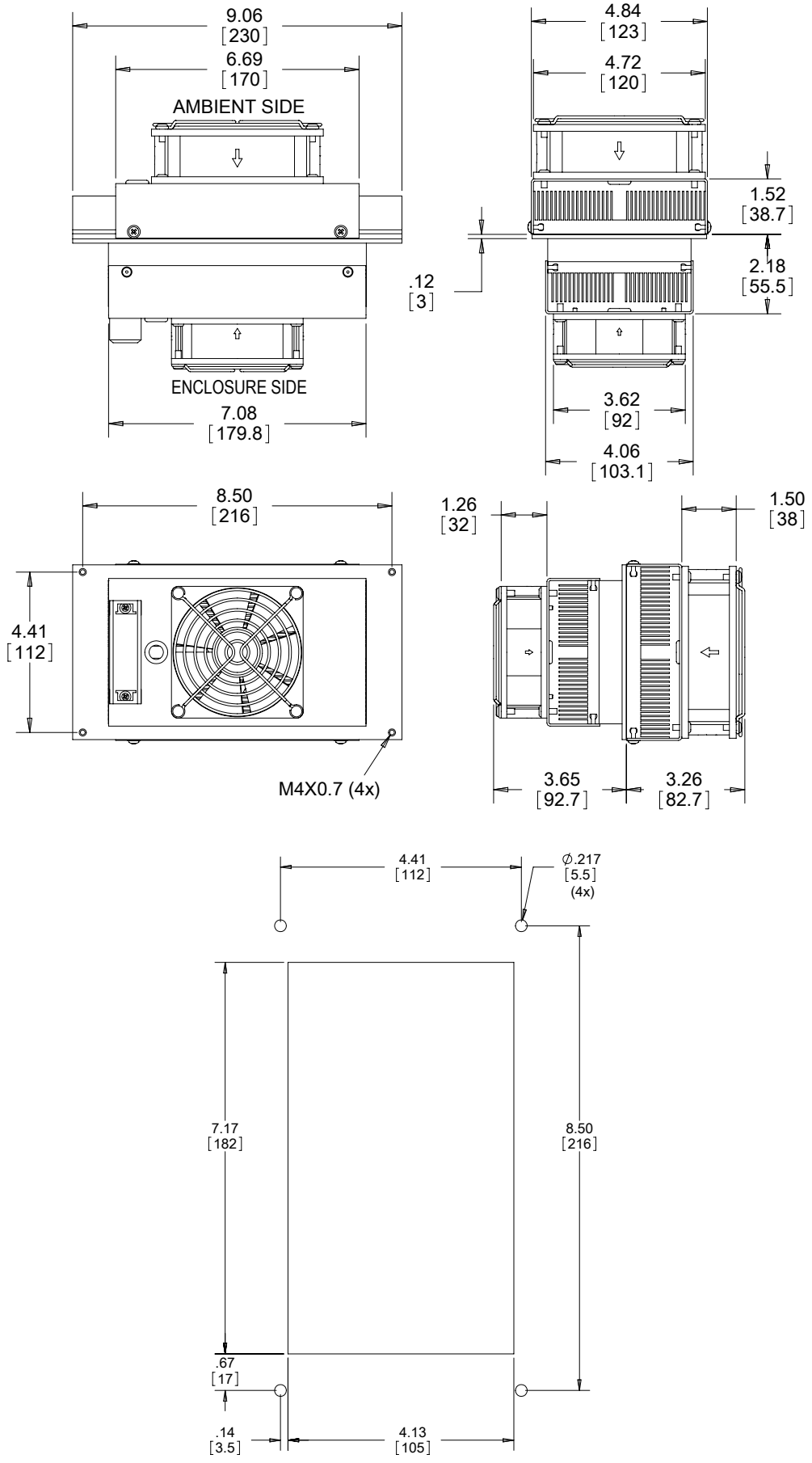
# INSTALLATION INSTRUCTIONS

1. Inspect thermoelectric cooler. Verify functionality before mounting the thermoelectric cooler, see HANDLING & TESTING THE THERMOELECTRIC COOLER on page 3.
2. Using the cutout dimensions shown in this manual, prepare the air openings, and mounting bolt hole pattern for the enclosure.
3. Mount thermoelectric cooler on enclosure using mounting fasteners provided.
4. Refer to top of nameplate for electrical requirements. Connect the thermoelectric cooler to a properly grounded power supply.

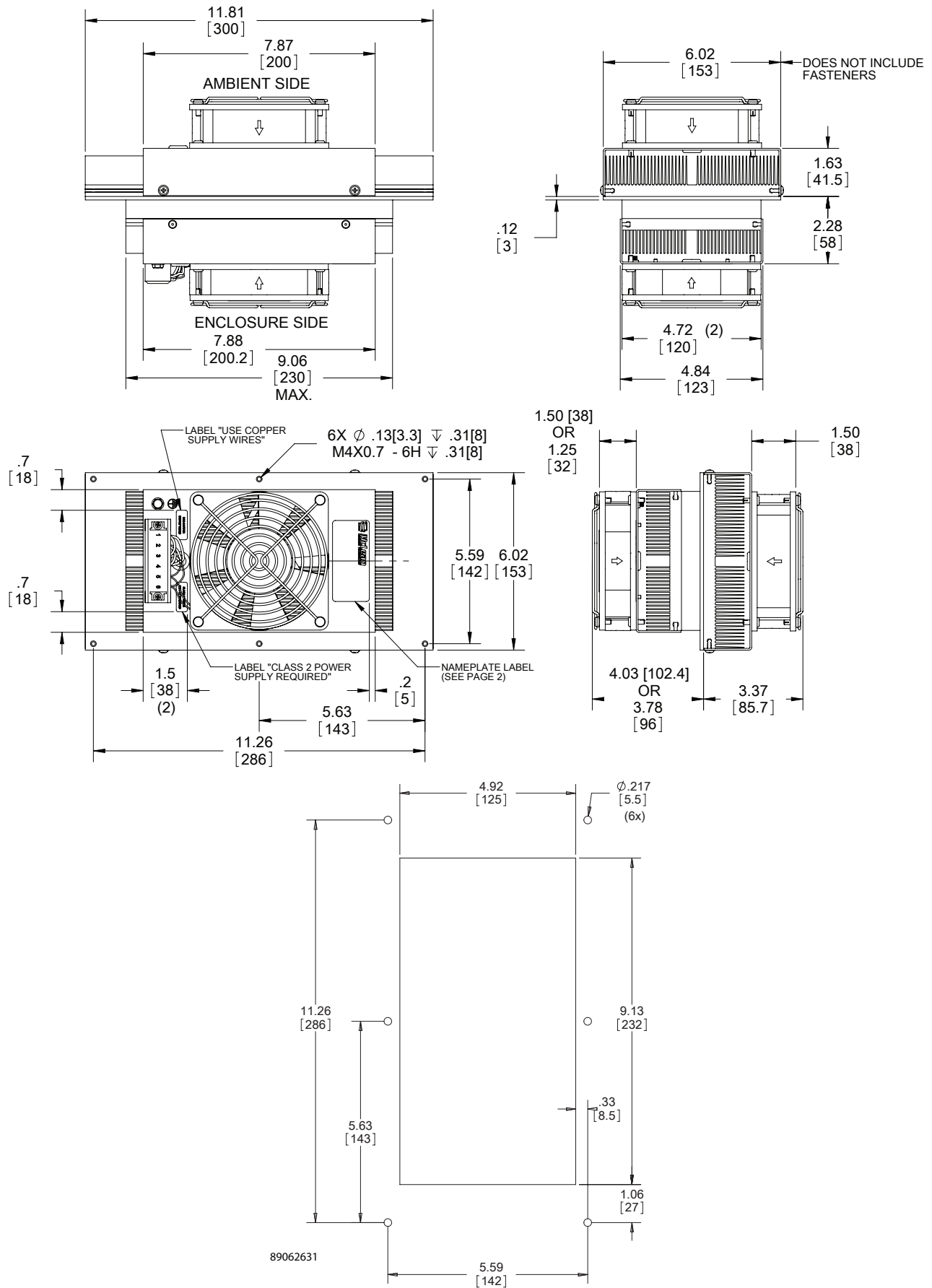
## Design Data

Model	Description	Voltage	Full Load Amps	Nominal Cooling/ Heating Watts	Maximum Ambient Temperature °F / °C	Shipping Weight lb. / kg
TE090624020	60 Watt 24 Volt TEC No Shroud	18 - 27.6 Vdc	4.4 @ 27.6 Vdc	52 / 64	131 / 55	7.5 / 3.4
TE121024020	100 Watt 24 Volt TEC No Shroud	18 - 27.6 Vdc	8.5 @ 27.6 Vdc	94 / 94	131 / 55	10.8 / 4.9
TE121048020	100 Watt 48 Volt TEC No Shroud	40 - 56.7 Vdc	4.4 @ 56.7 Vdc	94 / 94	131 / 55	10.8 / 4.9
TE162024020	200 Watt 24 Volt TEC No Shroud	18 - 27.6 Vdc	14.7 @ 27.6 Vdc	166 / 144	131 / 55	16.9 / 7.7
TE162048020	200 Watt 48 Volt TEC No Shroud	40 - 56.7 Vdc	7.6 @ 56.7 Vdc	166 / 149	131 / 55	16.9 / 7.7
TE090624010	60 Watt 24 Volt TEC Galvanized Shroud	18 - 27.6 Vdc	4.4 @ 27.6 Vdc	52 / 64	131 / 55	9.3 / 4.3
TE121024010	100 Watt 24 Volt TEC Galvanized Shroud	18 - 27.6 Vdc	8.5 @ 27.6 Vdc	94 / 94	131 / 55	13.3 / 6.1
TE121048010	100 Watt 48 Volt TEC Galvanized Shroud	40 - 56.7 Vdc	4.4 @ 56.7 Vdc	94 / 94	131 / 55	13.3 / 6.1
TE162024010	200 Watt 24 Volt TEC Galvanized Shroud	18 - 27.6 Vdc	14.7 @ 27.6 Vdc	166 / 144	131 / 55	20.7 / 9.4
TE162048010	200 Watt 48 Volt TEC Galvanized Shroud	40 - 56.7 Vdc	7.6 @ 56.7 Vdc	166 / 149	131 / 55	20.7 / 9.4
TE090624011	60 Watt 24 V TEC Stainless Steel Shroud	18 - 27.6 Vdc	4.4 @ 27.6 Vdc	52 / 64	131 / 55	9.3 / 4.3
TE121024011	100 Watt 24 V TEC Stainless Steel Shroud	18 - 27.6 Vdc	8.5 @ 27.6 Vdc	94 / 94	131 / 55	13.3 / 6.1
TE162024011	200 Watt 24 V TEC Stainless Steel Shroud	18 - 27.6 Vdc	14.7 @ 27.6 Vdc	166 / 144	131 / 55	20.7 / 9.4

# Dimensional Drawing (TE090624020)

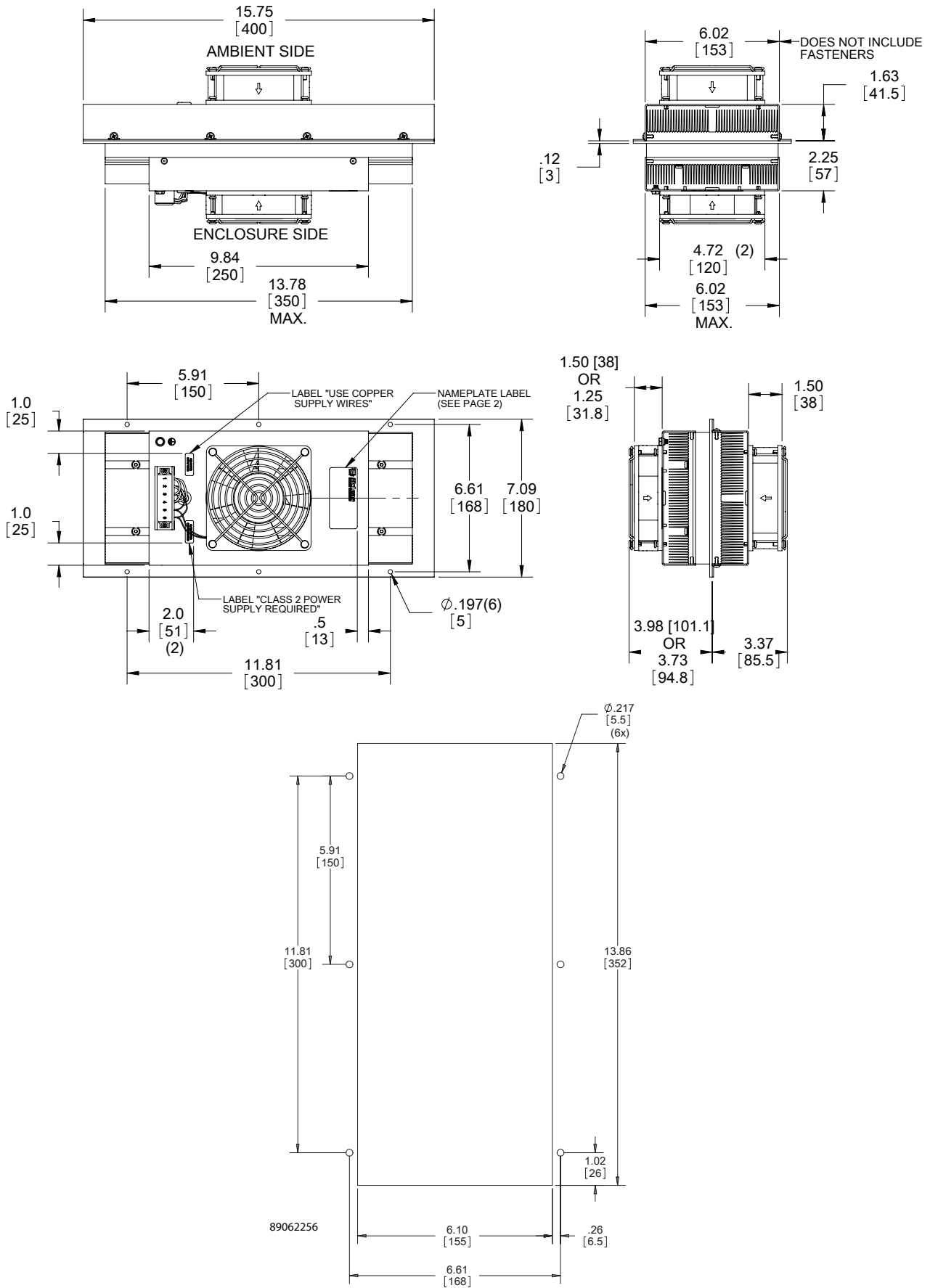


# Dimensional Drawing (TE121024020)



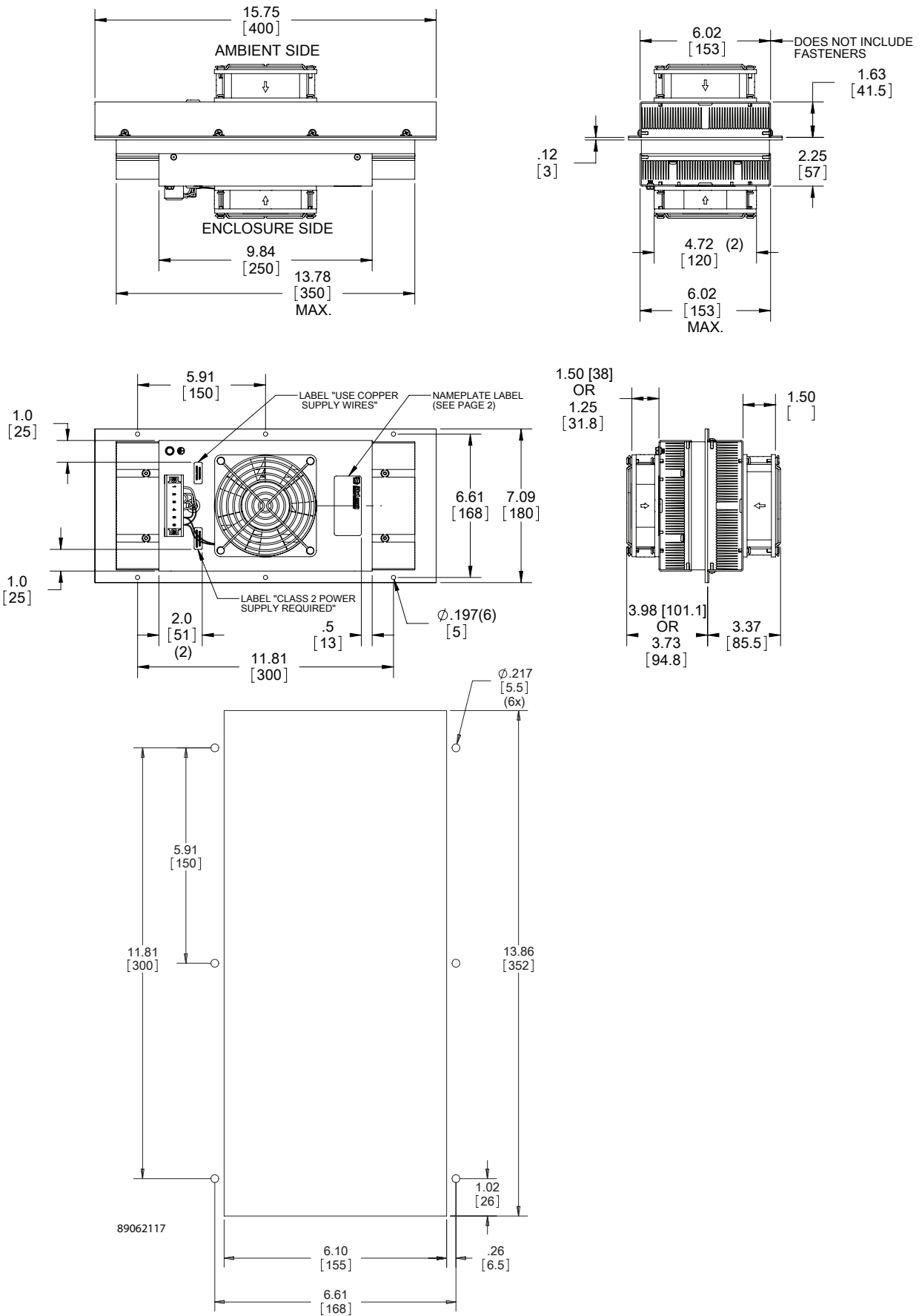


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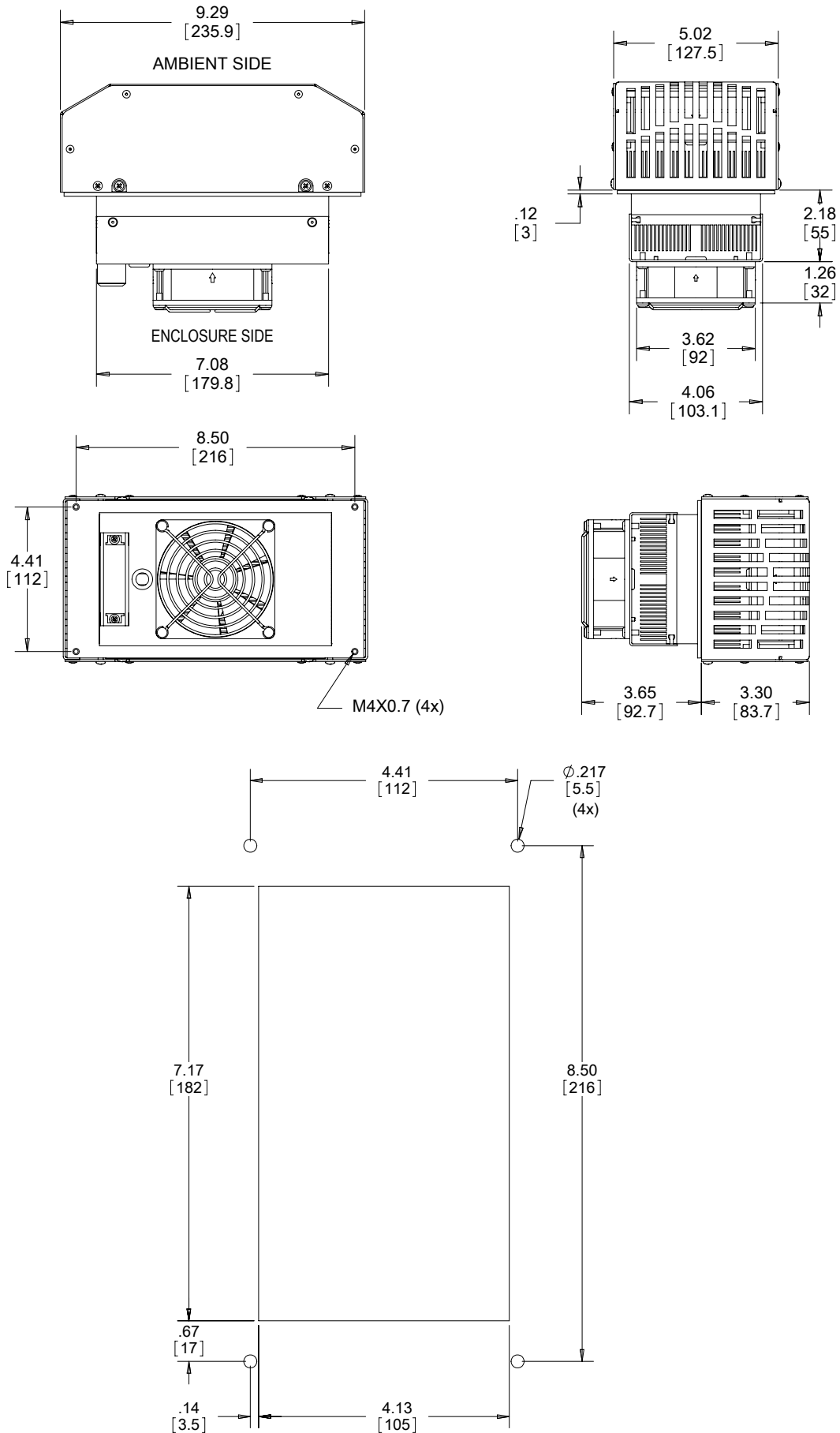




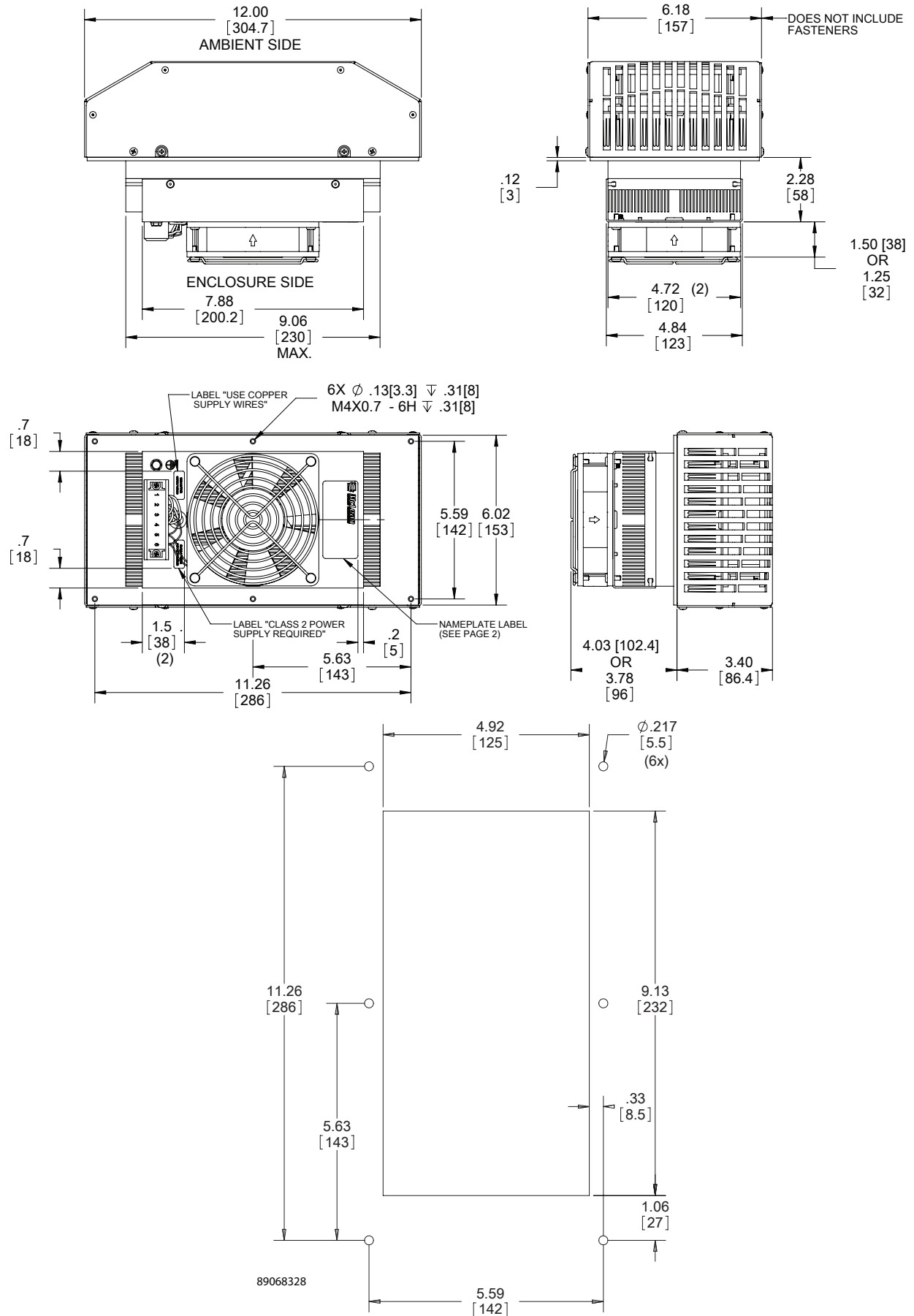
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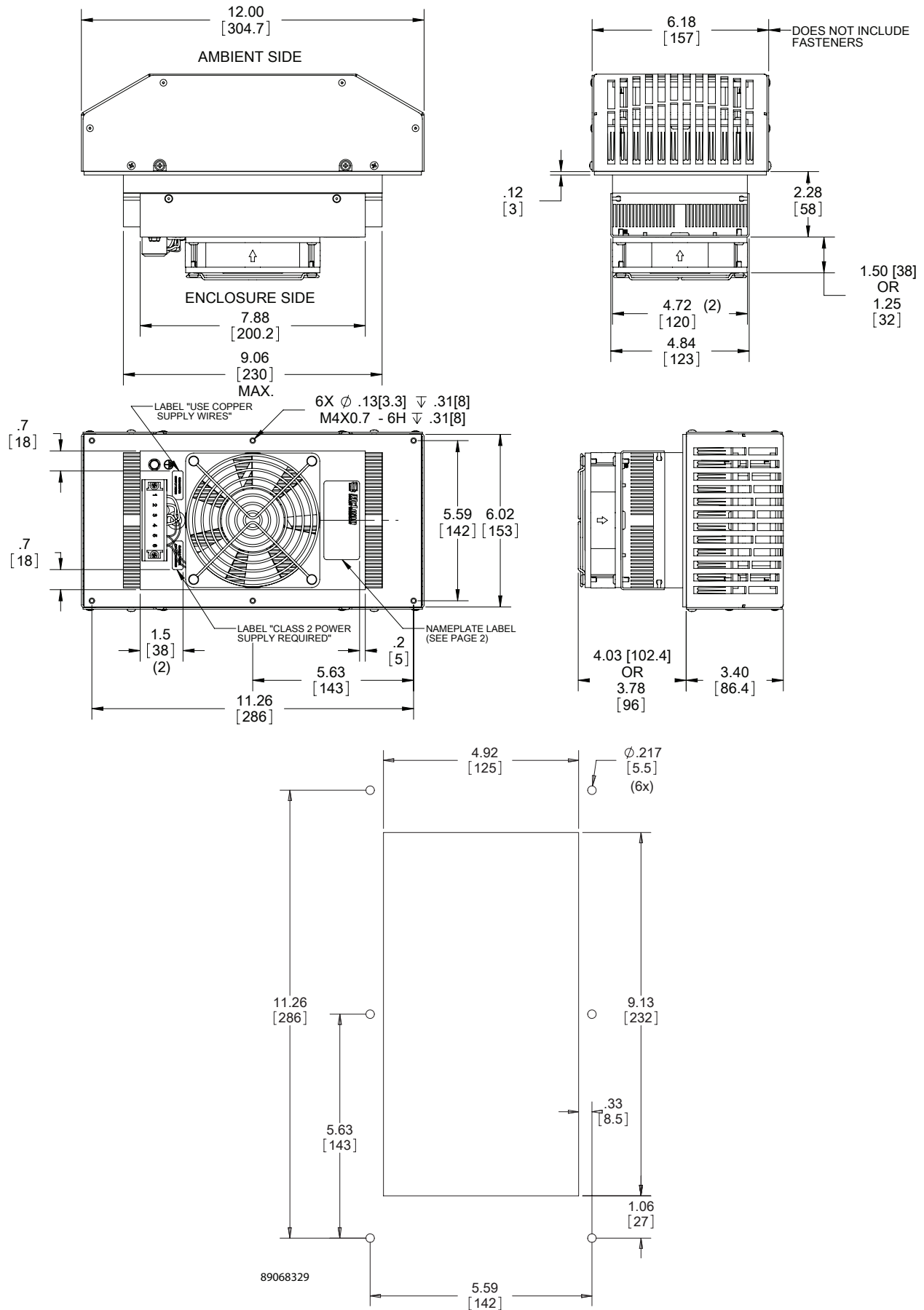
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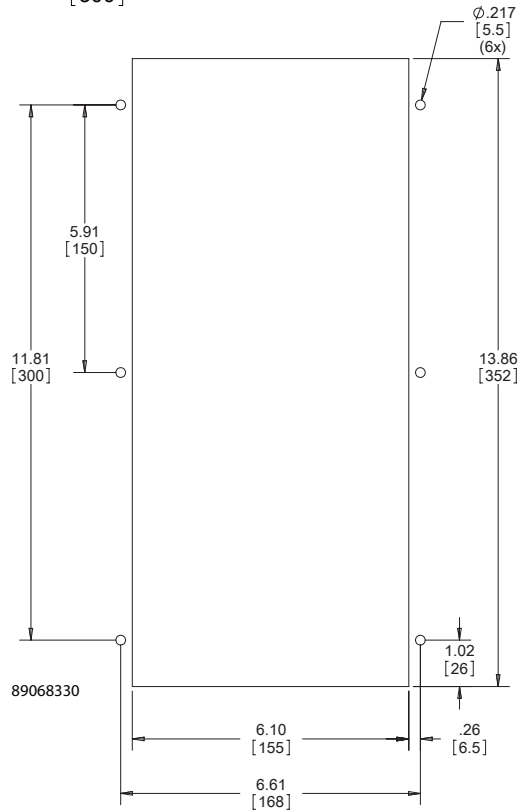
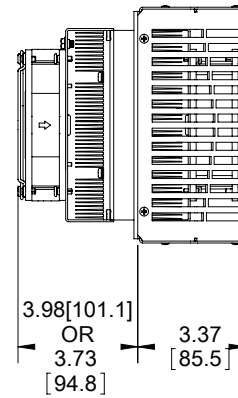
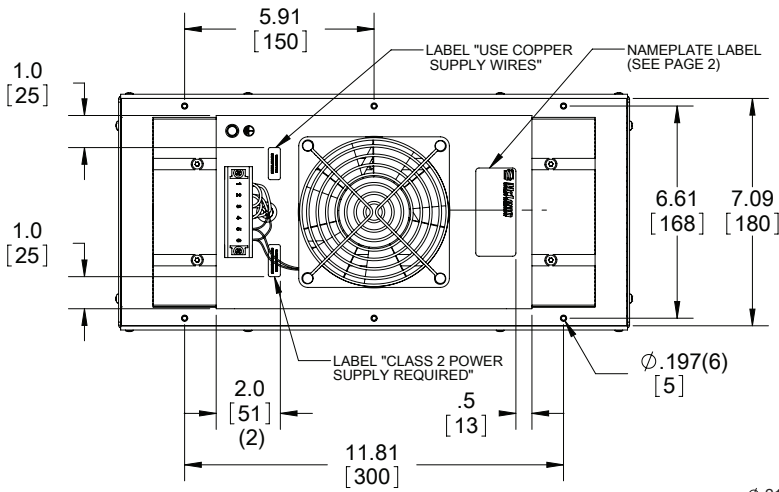
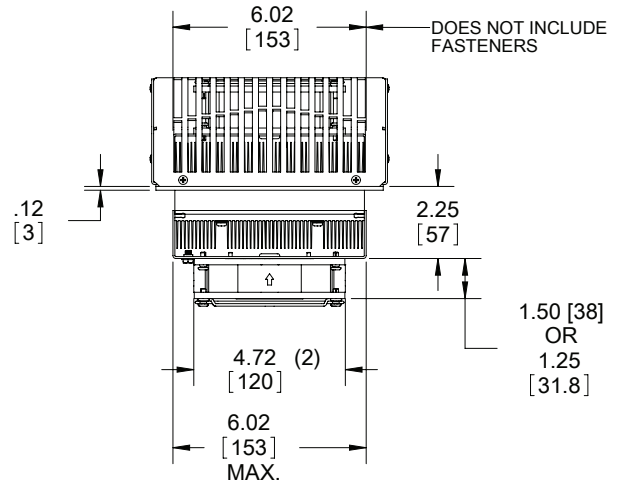
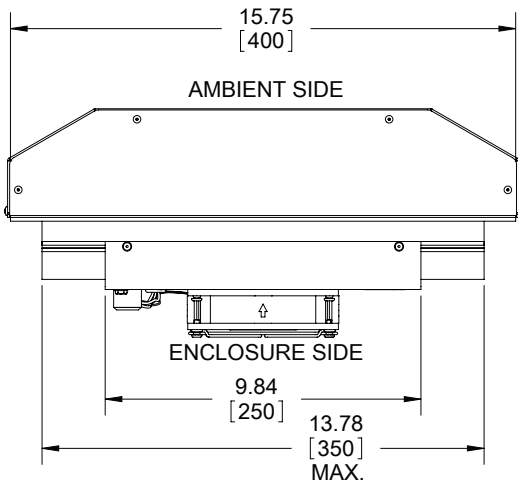
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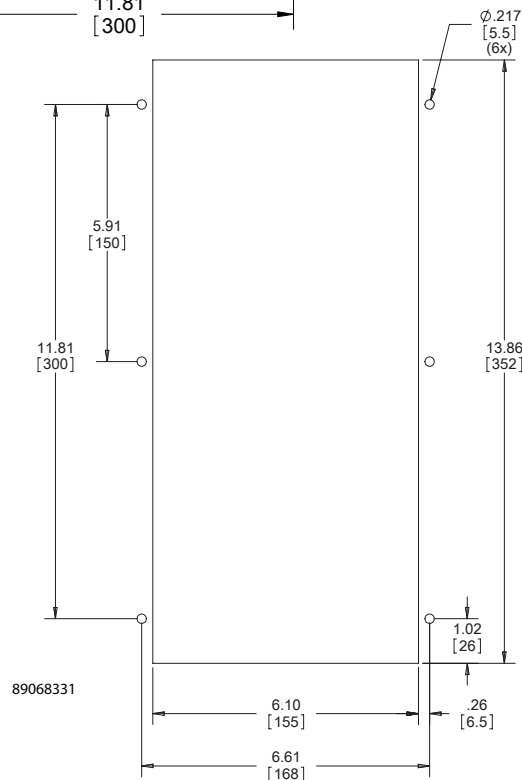
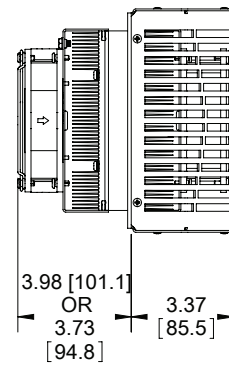
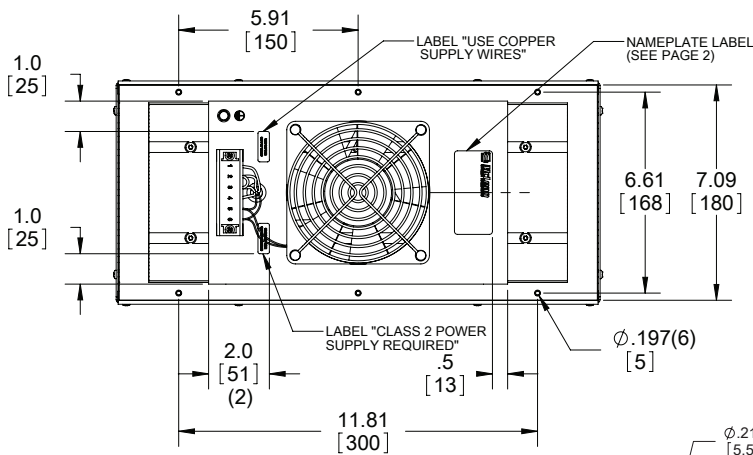
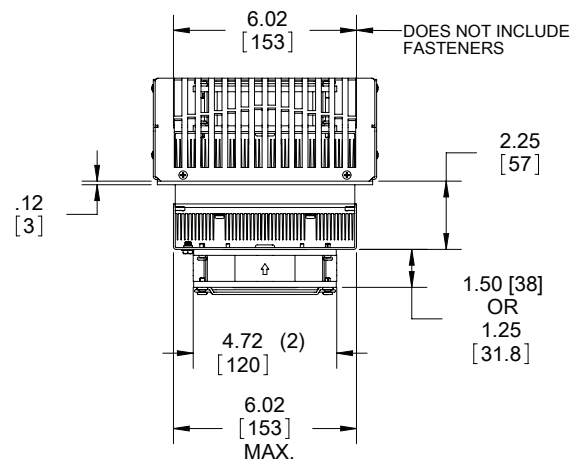
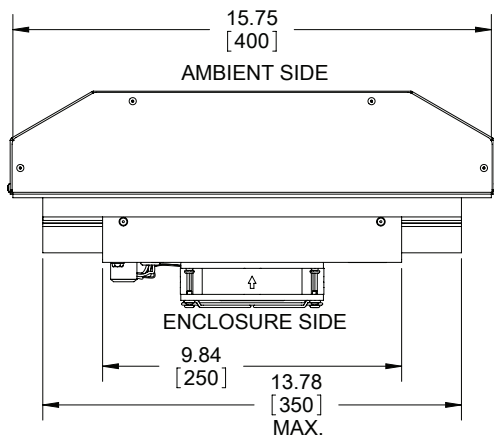
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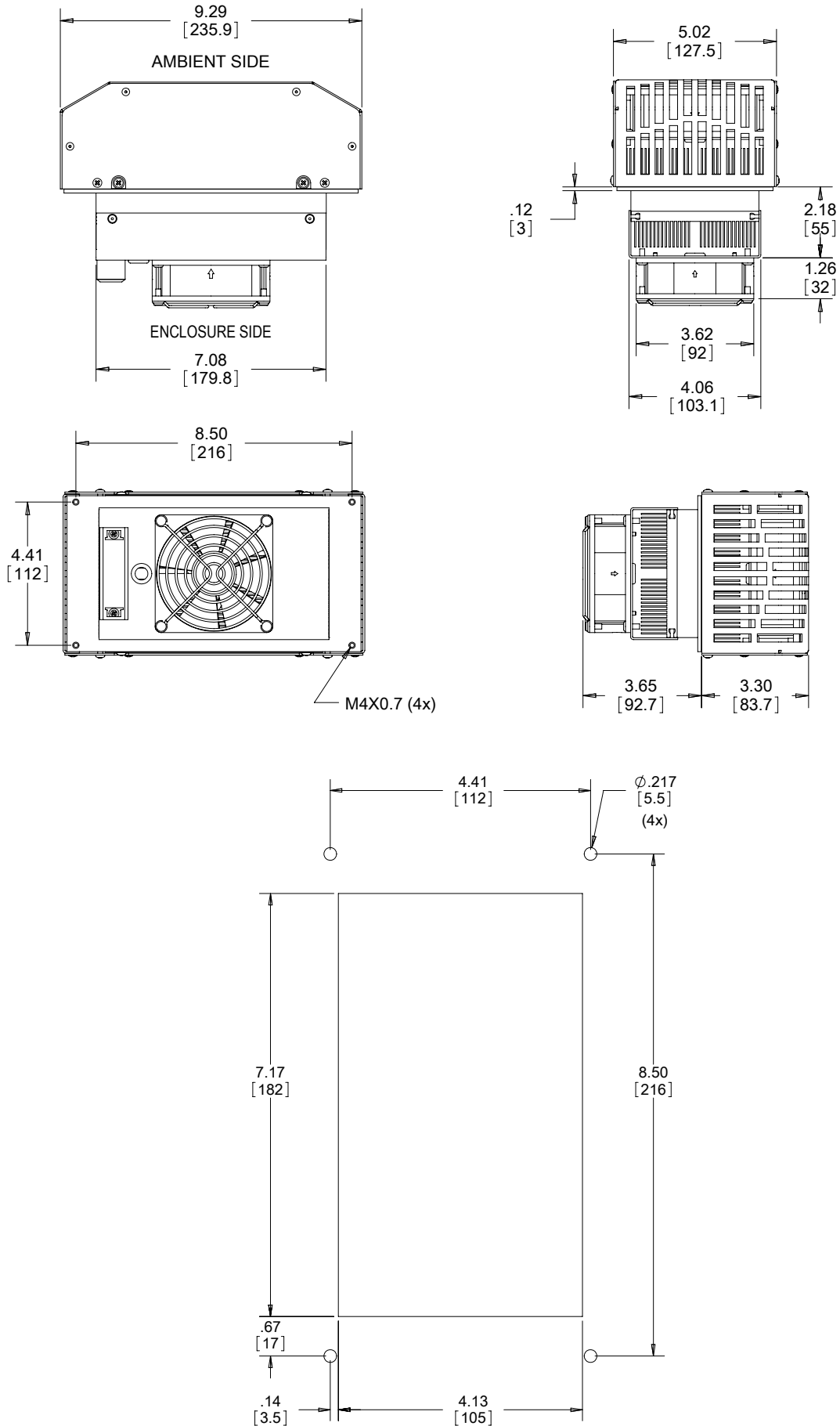
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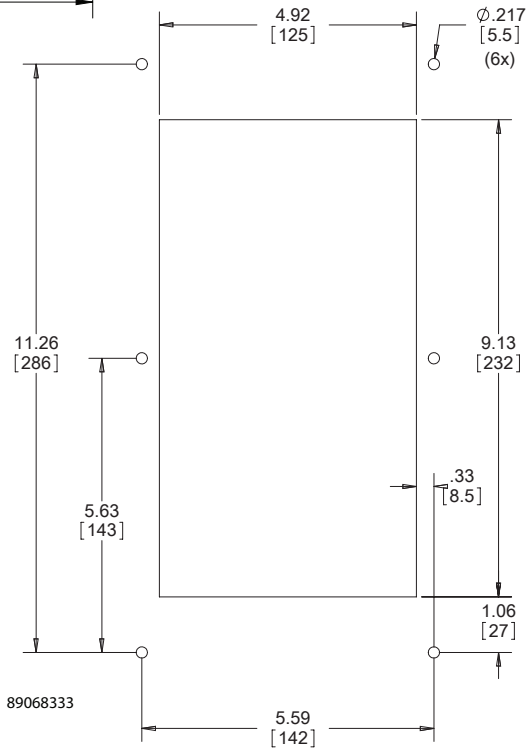
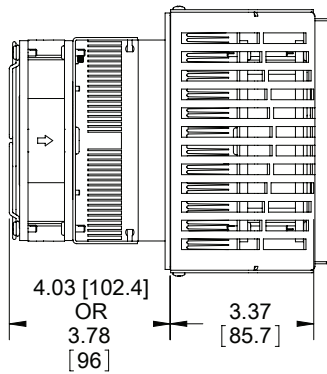
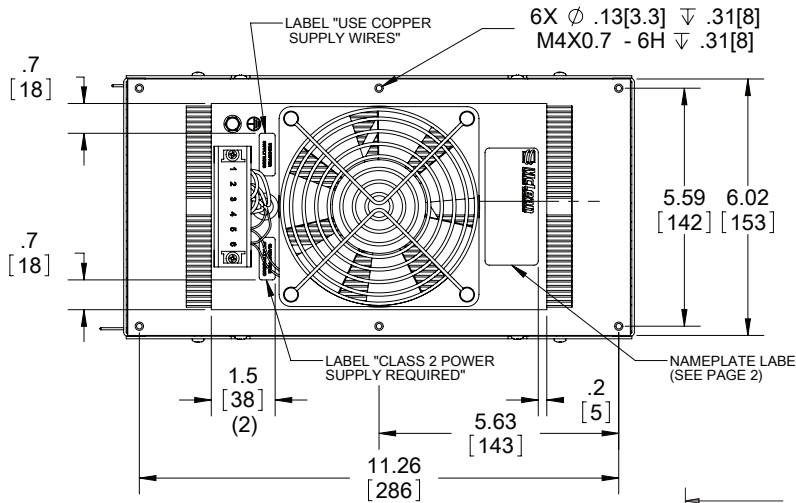
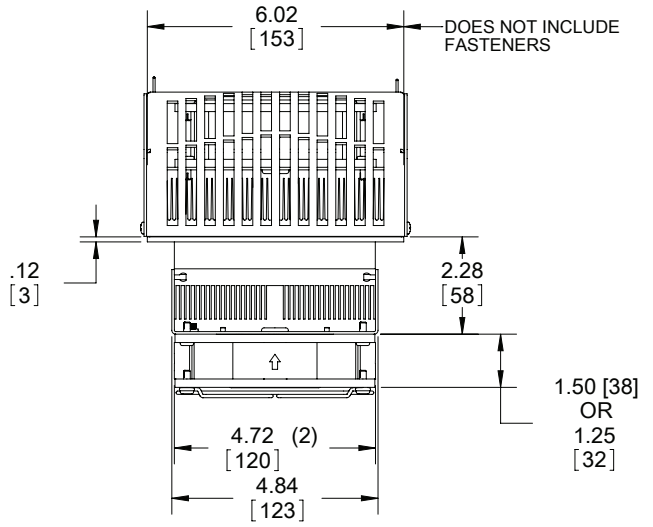
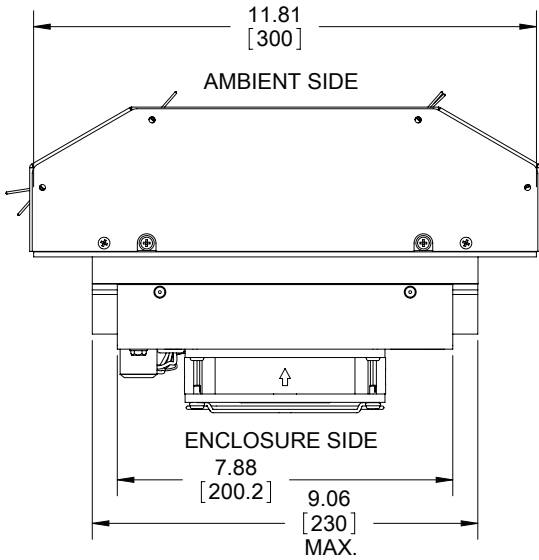
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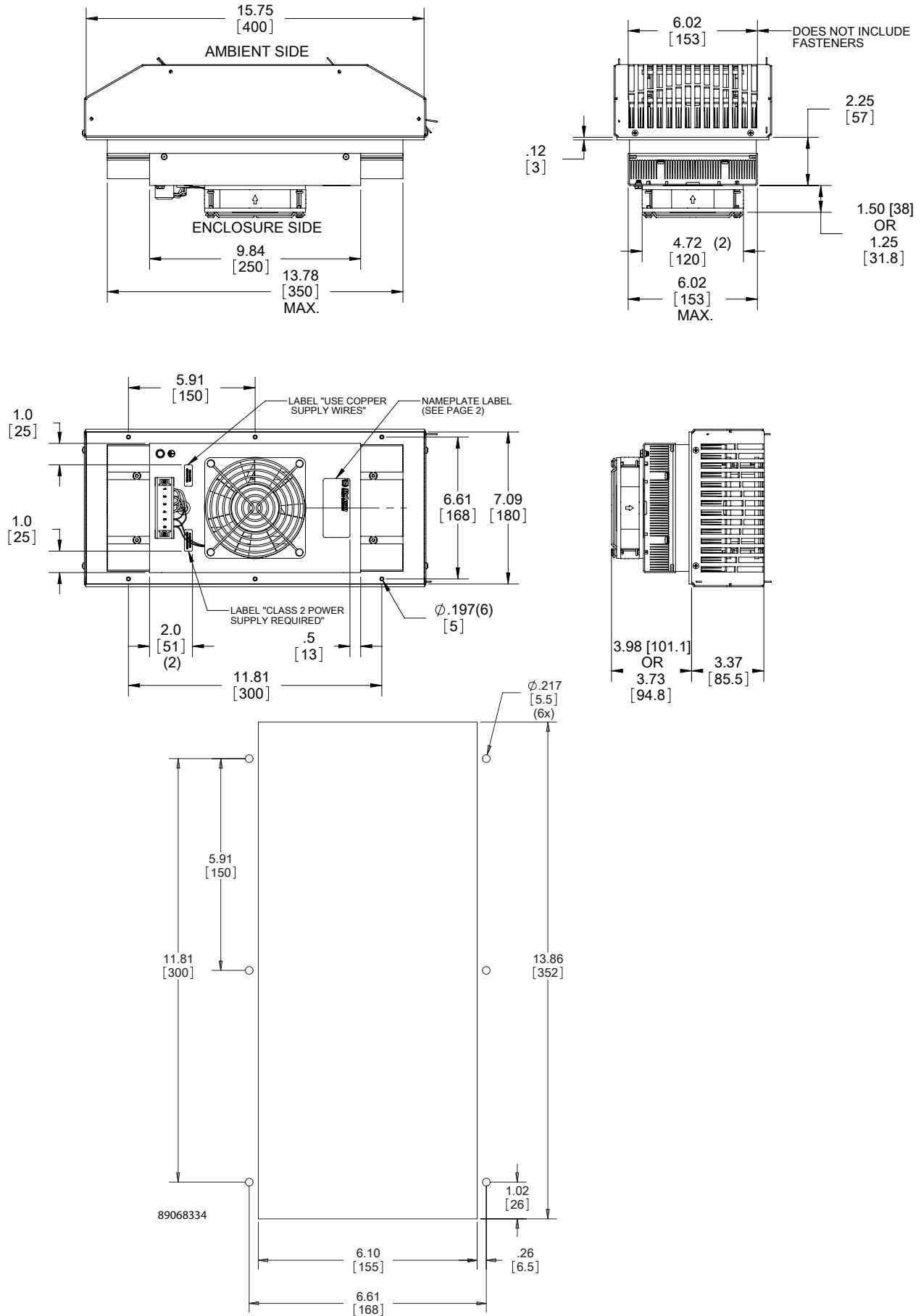


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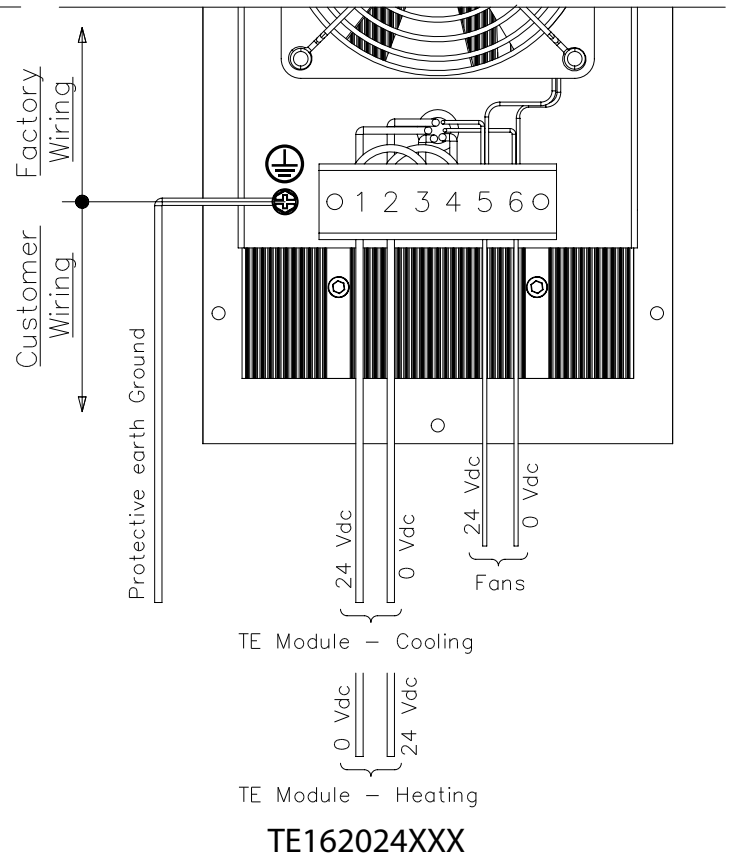
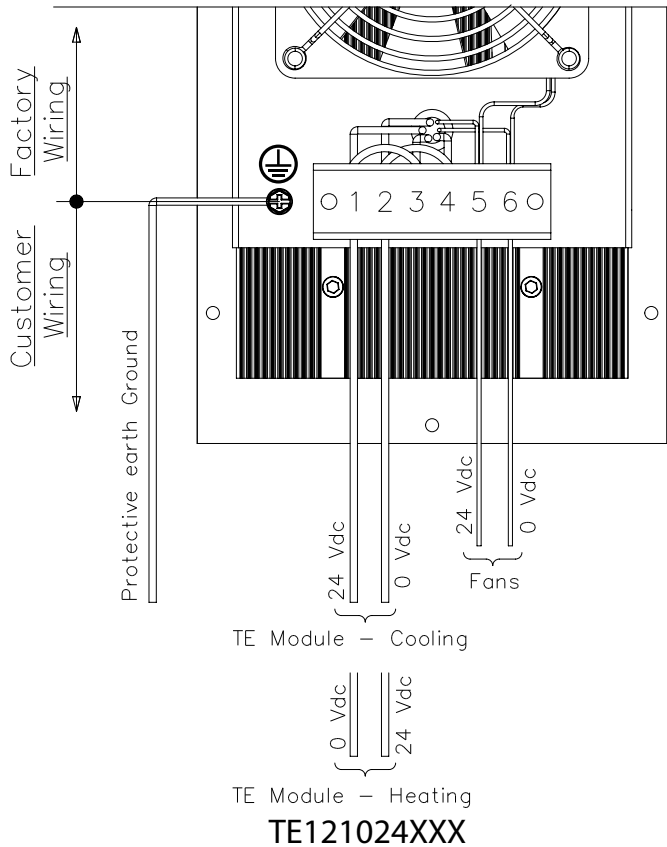
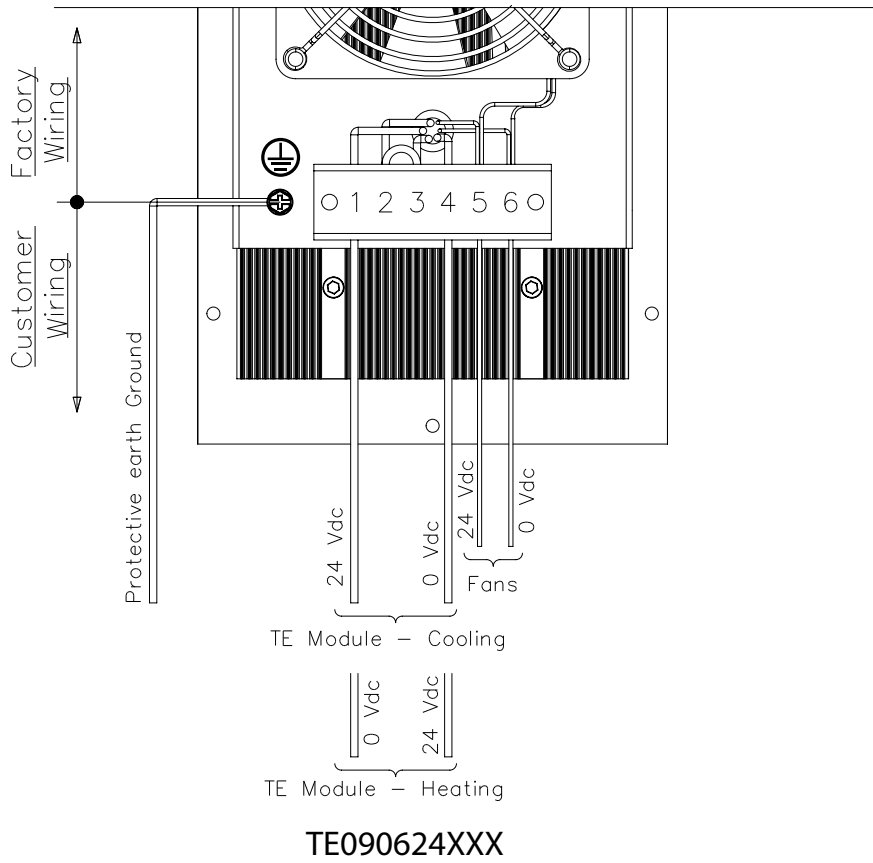




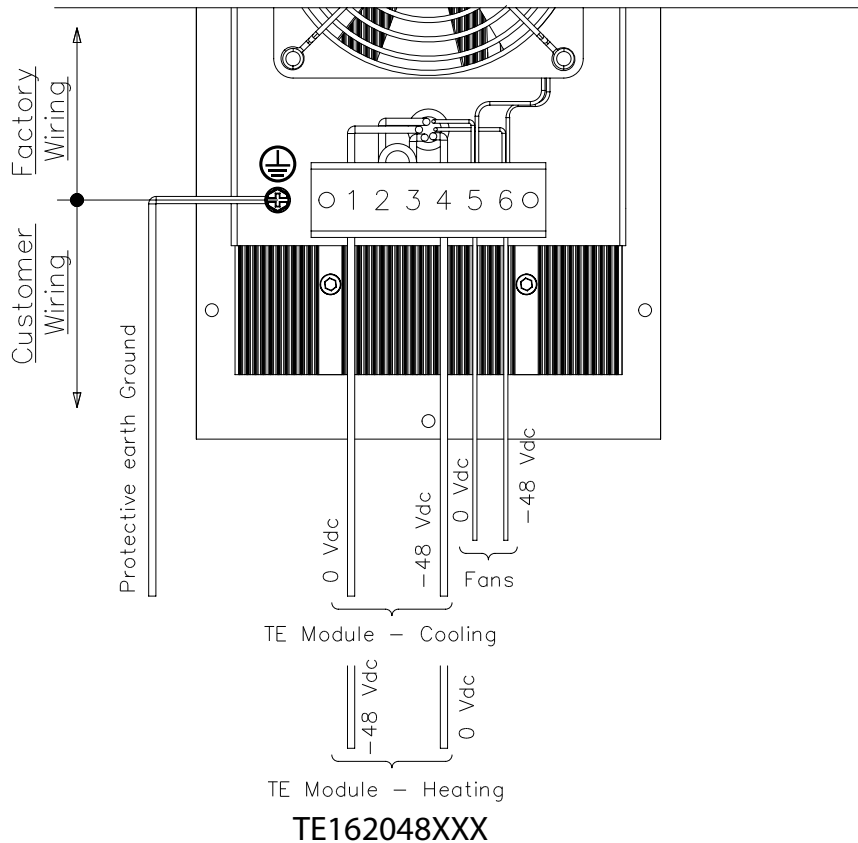
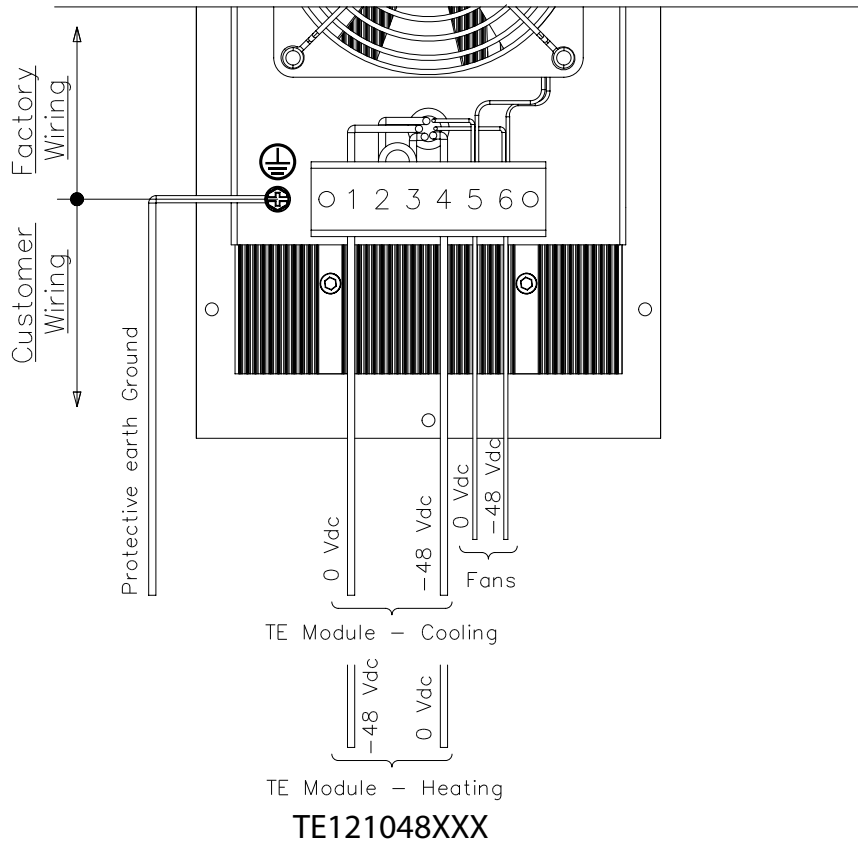
# Dimensional Drawing (TE162024011)



# Wiring Diagrams 24 Vdc Units



# Wiring Diagrams 48 Vdc Units



## **PRINCIPLES OF OPERATION**

The thermoelectric cooler is configured for direct power application through the input connections on the terminal block. The terminal block is located on the enclosure side of the product. The thermoelectric cooler can be used for cooling or heating and is determined by the DC voltage polarity applied for the peltier modules at the terminal block. Refer to the wiring diagrams for the correct wire connections depending on the desired operating condition. Note the fan wiring will not change to match the peltier module wiring. The fan wiring is the same regardless of whether the thermoelectric cooler is configured for cooling or heating.

## **MAINTENANCE**

Beyond occasional inspection for dust or dirt buildup no special maintenance should be required.

## Notes

## WARRANTY

Pentair Technical Products warrants that the Goods manufactured by Pentair Technical Products will be free from defects in material and workmanship for a period of one (1) year from the date of shipment by Pentair Technical Products, subject to the following conditions and exclusions:

- A. Conditions. All Goods must be installed and operated according to the following specifications:
1. Maximum voltage variation no greater than plus or minus 10% of nameplate nominal rating;
  2. Maximum frequency variation no greater than plus or minus 3 Hz. of nameplate nominal rating;
  3. Must not exceed minimum and maximum stated temperatures on the nameplate;
  4. Must not exceed (BTU/Hr) rating, including any heat sink as indicated on the nameplate;
  5. Refrigerant bearing Goods must not be restarted for a period of one (1) minute after intentional or accidental shut-off;
  6. The filters (if applicable) must be cleaned regularly;
  7. The Goods and any parts thereof must not be modified, unless prior written authorization is received from Pentair Technical Products; and
  8. All Goods must be installed and grounded in accordance with all relevant electrical and safety codes, as well as the National Electric Code and OSHA rules and regulations.
  9. All Goods must be installed in a stationery application, free of vibration.

A violation of any one of these conditions shall render the warranty hereunder void and of no effect.

- B. Exclusions. This warranty shall be void if product is misapplied in any way or:
1. Buyer specified product is inappropriate for system or environment in which it is operating.
  2. Pentair Technical Products product modified in any way without prior written authorization from Pentair Technical Products.
  3. Removal or modification of Pentair Technical Products label affixed to product without written Pentair Technical Products approval.

Pentair Technical Products must be notified of a claim in writing not later than fourteen (14) days from the date when Buyer has become aware of such occurrence, or where the defect is such that it may cause damage, immediately, such notice containing a description of how the defect manifests itself. Failure to provide such prompt notice to Pentair Technical Products shall result in forfeiture of Buyer's rights under this warranty.

In the event of a warranty claim, Buyer is to return defective goods to Pentair Technical Products in accordance with Pentair Technical Products Return Policy. Warranty period for repaired goods remains at 1 year from shipment of original goods. Pentair Technical Products sole obligation to Buyer under this warranty will be, at Pentair Technical Products option:

- A. Repair or replace Pentair Technical Products products or parts found to be defective in material or workmanship.
- B. Issue credit for the purchase price paid by Buyer relating to such defective Goods or part.

THIS WARRANTY CONSTITUTES THE ENTIRE WARRANTY WITH RESPECT TO THE GOODS AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY AND IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

## RETURN AND REPAIR POLICY

Pentair Technical Products products that: (i) are made to order, (ii) have been modified by Buyer, (iii) have special finishes, or (iv) are determined by Pentair Technical Products to constitute "custom" products that cannot be returned to stock or resold to other Buyers, will not be accepted for return by Pentair Technical Products.

All returns require a Return Material Authorization number (RMA #), regardless of reason for return, whether it be for warranty or out of warranty repair. Returns without an RMA # will be refused by our Receiving Department. An RMA # is valid for 60 days.

- A. An RMA # will be issued by our Repair Department in Anoka, MN at 866-545-5252. Buyer should have following information available at time of RMA request:

1. Complete Model Number, Serial Number and description of damaged unit being returned.
  2. Original Buyer Purchase Order number and date product was received by Buyer.
  3. Quantity to be returned and a brief description of failure for each unit, if different.
  4. Contact information of Buyer that must include: name of company, billing and shipping address, phone, number, fax number, freight carrier and the name and phone number of a Buyer contact who can elaborate on the claimed defect in detail.
  5. Buyer must provide a Repair Purchase Order number for both warranty and out of warranty repairs. The PO will not exceed 50% of a new unit. Buyer will be notified of repair charges that exceed approved PO amount.
- B. All returns to Pentair Technical Products must be securely packed, using original cartons if possible. All returns must have the RMA number visible on the outside of the carton. Pentair Technical Products is not responsible for material damaged in transit. Any refrigerant-bearing Goods must be shipped upright for return.
- C. Shipping cost for all non-warranty repairs is the responsibility of the sender and must be shipped prepaid. Shipping costs for all warranty related repairs will be covered by Pentair Technical Products provided the goods are returned using a Pentair Technical Products approved carrier. If after diagnoses the product is determined by Pentair Technical Products not be covered under warranty, Buyer will be responsible for all shipping charges and will be billed accordingly.
- D. Non-warranty repairs are subject to a \$75 minimum analysis fee. Analysis fee will be waived if Buyer approves repair work. If approval is not received within 30 days, material will be scrapped and all shipping expenses and corresponding analysis fees will be billed to Buyer.
- E. At Buyer's request, Failure Analysis can be provided by Pentair Technical Products for warrantable goods at no charge. Failure analysis for non-warranty repairs are subject to a \$100 per hour Engineering charge plus any other incurred testing costs.
- F. All returned merchandise must be sent to the following address: Pentair Technical Products, 2100 Hoffman Way, Anoka, MN 55303-1745.
- G. Credit for accepted returns shall be at the original selling price or the current selling price, whichever is lower, less the restocking charge indicated as follows:
1. Within 60 days of invoice date - 20% of applicable selling price.
  2. Within 61-120 days of invoice date - 30% of applicable selling price.
  3. Within 121-180 days of invoice date - 40% of applicable selling price.
  4. Beyond 180 days - subject to individual review by Pentair Technical Products.
- If product being returned for credit requires repair or modification, the cost of any labor or material necessary to bring product into saleable condition will be deducted from credit. Buyer may not take credit against returns without prior written Pentair Technical Products approval.

## LIMITATION OF LIABILITY

PENTAIR TECHNICAL PRODUCTS WILL NOT BE LIABLE UNDER ANY CIRCUMSTANCES FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES, INCLUDING WITHOUT LIMITATION ANY LOST PROFITS OR LABOR COSTS, ARISING FROM THE SALE, USE OR INSTALLATION OF THE GOODS, FROM THE GOODS BEING INCORPORATED INTO OR BECOMING A COMPONENT OF ANOTHER PRODUCT, FROM ANY BREACH OF THIS AGREEMENT OR FROM ANY OTHER CAUSE WHATSOEVER, WHETHER BASED ON WARRANTY (EXPRESSED OR IMPLIED) OR OTHERWISE BASED ON CONTRACT, OR ON TORT OR OTHER THEORY OF LIABILITY, AND REGARDLESS OF ANY ADVICE OR REPRESENTATIONS THAT MAY HAVE BEEN RENDERED BY PENTAIR TECHNICAL PRODUCTS CONCERNING THE SALE, USE OR INSTALLATION OF THE GOODS

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