Thermal Edge Inc.

TEMPERATURE CONTROL SOLUTIONS FOR ELECTRICAL ENCLOSURES

User & Technical Manual
Air to Water Heat Exchanger
Rev 1.2



CAUTION

Read Manual Before Installation.
For Questions, Please Call Thermal Edge Inc. at (888)-580-0202

To Be Professionally Installed Only

Title: Air to Water Heat Exchanger Technical Manual

Department: Product Management

Objective: To provide important information for maintenance, diagnostics and advance operations of the Thermal Edge Air to Water Heat Exchangers.

Revision History:

Rev	Date	Owner	Description of Changes
1.2	11-10-26	B. Iglehart	Adjustments implemented for electrical schematics and field serviceable parts.

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Overview

Thank you for your purchase of the Thermal Edge Air to Water Heat Exchanger. Our equipment is carefully designed to cool and dehumidify the air in electronic component enclosures. Thermal Edge has designed air to water heat exchangers for all types of electronic equipment enclosures providing capacity from 2,000 to 20,000 BTUH.

This manual will guide you through the installation, maintenance, diagnostics and advance operations of the Air to Water Heat Exchanger. This manual contains important information for the end-user who installs, maintains and/or operates the Air to Water Heat Exchanger.

Technical Support

By Phone: 972-580-0200 / 888-580-0202

(Monday – Friday, 7:30 am – 5:00 pm Central Time)

By Email: support@thermal-edge.com

Our goal is to have continuous improvement for both our equipment and our documentation. We rely on and appreciate your feedback to help us achieve our goal. Our technical support team is glad to work with you if you require additional technical information not provided in this manual.

Unpacking and Inspecting the Heat Exchanger

Thermal Edge air conditioning equipment is designed, manufactured, and packed to prevent damage from normal handling, shock and vibration during shipment. It is necessary to inspect your equipment upon receipt to ensure that there is no visual or hidden damage.

All physical damage to packing or signs of damage to the equipment must be noted on the freight bill of lading. Packages must be opened after receipt and inspected for any internal or concealed damage to the equipment and to verify proper count and order fulfillment. Delivery without the pallet, other freight on top, damaged or wet should be refused.

If the unit is to be transported after initial unpacking, place heat exchanger back in original packing to prevent damage.

For shipment by UPS or freight carrier, repack as received and re-band to the pallet.

Moving the Heat Exchanger

Heat exchangers are not designed to be shipped attached to an equipment enclosure. Heat exchangers shipped which have internal damage due to shipping while attached to enclosures are warranty voided.

Unit Label

Each heat exchanger has a unit label. Be sure to record the data from the label to the template below and keep this information in a safe place for warranty and ordering parts. To prevent damage to equipment, electrical panel and wiring, and to prevent personal injury, assure that the power source is compatible with the equipment before operating.

Voltage _____ Frequency _____ Hz Phase ___
Current Rating (A): _____

Min Circuit Ampacity: _____ Max Fuse/HACR Breaker: ____
Refrigerant: **WATER** Rated Cooling Capacity: ____ W/DEG F
Max Water Pressure: ____ psi Rated Water Flow: ____ GPM
NEMA Type _____ Ingress Protection Rating _____
MODEL No. _____ S/N _____

Operation

Thermal Edge heat exchangers, when sized correctly, will provide cooling to lower the air temperature inside an enclosure to ensure its proper operating temperature. Thermal Edge heat exchangers operate as a “closed loop” system with no exposure to, or introduction of, outside air. This ensures that the enclosure is separated from, and is not contaminated with, ambient air, dirt, chemicals, dust, moisture or foreign matter so that sensitive enclosure components are protected.

For units with the digital controller and solenoid valve option, the digital controller will monitor air temperature inside the electrical enclosure via the temperature sensor and regulate function of the solenoid valve. The valve controls the flow of water through the coil. As water flows through the coil it absorbs heat from air in the electrical enclosure while also dehumidifying it. This process lowers the temperature of the air in the electrical enclosure. The fan draws the hot air from the electrical enclosure and pulls it through the coil and back into the electrical enclosure at a lower temperature.

Mounting the Heat Exchanger

Before mounting the heat exchanger to the enclosure, test for proper operation. Follow the steps below prior to installation.

⚠ WARNING
Check the unit label to assure the electric power available to the heat exchanger is the proper voltage and phase. Check the electric power source for proper ground wire and neutral wire installation per 2008 NEC. Assure that the electric power is protected by a circuit protection device; refer to the Unit Specification section in this manual for proper circuit protection sizing.

Using the template supplied, determine where the heat exchanger is to be mounted and assure that all required cuts and holes will not interfere with or damage the enclosure or its contents. Mount the heat exchanger high on the enclosure in order to cool the hot air in the top of the enclosure. Position the unit where the cold air can circulate across the width of the enclosure to cool it all the way across.

Once proper mounting placement is determined, turn the enclosure equipment off, if possible, to prevent damage. Drill and cut the holes as indicated on the mounting template. Install insulation gasket as required to ensure an airtight closed loop seal. Be cautious not to let any cutting debris fall into the enclosure.

Hang the heat exchanger on the Easy Hang Tabs and from inside the enclosure use the fasteners supplied to attach the heat exchanger to the enclosure. Screw all fasteners hand tight. Then torque to 25-30 in-lbs. These fasteners should be checked periodically to ensure that they have not become loose due to vibration.

The heat exchanger is provided with a power terminal block. A power cord is optional. Ensure that the power supplied is compatible with the heat exchanger's power requirements. Properly connect the unit to a power circuit that meets the equipment requirements and provide a circuit protection device based on the Unit Specifications section of this manual. See Appendix A for power terminal block instructions.

The cooling water connection must be made with 0.5-inch ID pressure resistant flexible hoses which should be secured with clamps. ***NOTE*** the direction of flow and check for absence of leaks.

The units have no separate air-bleed. With pressure-sealed systems, corresponding air bleed facilities are to be installed on the water side. Protect the water circuit from contamination and excess pressure (100 psi max.).

Install a 3/8-inch ID hose to the condensation drainage connector and secure in place with a clamp.
To ensure reliable drainage of condensation water, the drain hose must not be kinked. The hose cross-section must not be constricted in any way. The drainage hose must slope in the right direction.

To minimize the production of condensation water, only use the heat exchanger on sealed electrical enclosures. Set the desired temperature only as low as is necessary to avoid the cooled air temperature from dropping below the dew point.

After mounting the heat exchanger, replace/close the enclosure door and start heat exchanger; test for air leaks to assure a proper closed air loop seal and run test the unit to assure proper operation after mounting. If any cold air leaks are found, check for proper mounting and apply silicone-free Lexel seal if leaks persist.

⚠ CAUTION
If mounting the heat exchanger to the enclosure door, confirm with the enclosure manufacturer that the door's hinges will support the heat exchanger's added weight (see equipment specifications). Ensure that when the door is fully open that the enclosure will not topple over due to the off-center load.

Water Quality

The use of untreated or improperly treated water could result in scaling, erosion, corrosion, algae or slime. It is recommended that the services of a qualified water treatment specialist be engaged to determine what water treatment, if any, is required. Equipment damage that results from untreated or improperly treated water, or saline or brackish water will not be covered by the warranty.



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Unit Specifications

The following tables provides electrical and refrigeration specifications for the Air to Water Heat Exchangers.

A2W30 Unit

Nominal Capacity Rating: 3,960 BTUH
Standard Maximum Ambient: 140°F
Unit Weight: 21.4 lbs.

Model	Operating Voltage Range (Volts)	Loading Current *(Running Current)* (Amps)	SCCR *(Short Circuit Current Rating)* (Amps)	Recommended Fuse Selection (Amps)	VA Rating
A2W30120	103.5-126.5	0.37	*2	15 Amp Class CC, CCMR Time Delay *	44
A2W30230	207-253	0.23	*2	15 Amp Class CC, CCMR Time Delay *	53
A2W30480	414-506	0.12	*2	15 Amp Class CC, CCMR Time Delay *	58

A2W60 Unit

Nominal Capacity Rating: 7,773 BTUH
Standard Maximum Ambient: 140°F
Unit Weight: 34 lbs.

Model	Operating Voltage Range (Volts)	Loading Current *(Running Current)* (Amps)	SCCR *(Short Circuit Current Rating)* (Amps)	Recommended Fuse Selection (Amps)	VA Rating
A2W60120	103.5-126.5	0.59	*2	15 Amp Class CC, CCMR Time Delay *	71
A2W60230	207-253	0.38	*2	15 Amp Class CC, CCMR Time Delay *	87
A2W60480	414-506	0.19	*2	15 Amp Class CC, CCMR Time Delay *	91

* HACR Type Circuit Breakers or Time-delay Fuses with the following electrical characteristics are recommended. Fast-acting fuses are not recommended.

% of Ampere Rating	Opening Time
110 %	15min Minimum
125 %	1hr Maximum
200 %	12sec Minimum 4min Maximum

A2W100 Unit

Nominal Capacity Rating: 17,330 BTUH
Standard Maximum Ambient: 140°F
Unit Weight: 55 lbs.

Model	Operating Voltage Range (Volts)	Loading Current *(Running Current)* (Amps)	SCCR *(Short Circuit Current Rating)* (Amps)	Recommended Fuse Selection (Amps)	VA Rating
A2W100120	103.5-126.5	1.11	*2	15 Amp Class CC, CCMR Time Delay *	133
A2W100230	207-253	0.60	*2	15 Amp Class CC, CCMR Time Delay *	144
A2W100480	414-506	0.30	*2	15 Amp Class CC, CCMR Time Delay *	144

A2W200 Unit

Nominal Capacity Rating: 18,930 BTUH
Standard Maximum Ambient: 140°F
Unit Weight: 70 lbs.

Model	Operating Voltage Range (Volts)	Loading Current *(Running Current)* (Amps)	SCCR *(Short Circuit Current Rating)* (Amps)	Recommended Fuse Selection (Amps)	VA Rating
A2W200120	103.5-126.5	2.51	*2	15 Amp Class CC, CCMR Time Delay *	301
A2W200230	207-253	1.26	*2	15 Amp Class CC, CCMR Time Delay *	302
A2W200480	414-506	0.63	*2	15 Amp Class CC, CCMR Time Delay *	302

* HACR Type Circuit Breakers or Time-delay Fuses with the following electrical characteristics are recommended. Fast-acting fuses are not recommended.

% of Ampere Rating	Opening Time
110 %	15min Minimum
125 %	1hr Maximum
200 %	12sec Minimum 4min Maximum

*2 SCCR rating is based on the SCCR rating for the circuit protection device installed in the panel / enclosure per UL50 & UL508a to protect the AC unit. Typically, 100KA – 200KA for Time-Delay Fuses.

Options

Thermal Edge Air to Water Heat Exchangers may be ordered with the following options. Review the list below for the specifications and functions of the option(s) that apply to your unit.

Digital Programmable Controller and Solenoid Valve

This option provides a method for customers to control the temperature of their enclosure with a digital controller as opposed to using their water supply. When this option is selected, the flow of water through the heat exchanger is managed based on cooling needs.

Dry Contact

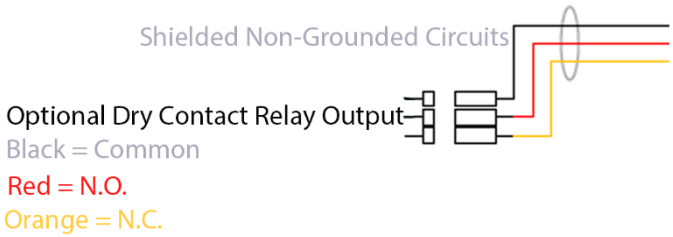
This option provides an early warning capability to your enclosure to aid in the protection of your expensive equipment. The Dry Contact is programmed with an individual dry contact set point to monitor the enclosure temperature limit that you require. When the enclosure temperature has exceeded the maximum limit, the Form C gold plated contact will activate to notify you that there is a problem in achieving your cooling set point.

Default Settings:

- 105°F Dry Contact High Temperature Alarm Set Point

At the default settings the Dry Contact initial conditions are normally open and/or normally closed. When the unit is powered on and the temperature exceeds 105°F for a period longer than 3 minutes the Dry Contact will activate. At this time the normally open contact will close and the normally closed contact will open. This state will remain until the temperature has decreased to 103°F.

NOTE: The dry contact is not a power status indicator, rather a high temperature alarm alerting you that the unit is unable to meet the cooling set point.



Refer to Advanced Digital Temperature Controller Programming section for details on changing these parameters.

Celsius Programming

Celsius Programming option allows the user to control the Thermal Edge heat exchanger in SI units. This feature can be programmed into the digital temperature controller at time of manufacturing.

Special Programming

All Thermal Edge products have a Special Programming option for selecting unique pre in programmed settings for special requirements. Although most parameters are accessible in our digital controller, this option allows you to receive a unit preset to your requirements without the need to manually configure the unit. Refer to Advanced Digital Temperature Controller Programming section for details on all default settings.

System Faults

Thermal Edge Air-to-Water Heat Exchangers are equipped with temperature probes and alarms to monitor and alert the user of extreme temperature conditions of the water supply and their electrical enclosure. The conditions that will trigger an alarm on the controller are:

- Enclosure high temperature alarm (default setting 105°F)
- Enclosure low temperature alarm (default setting 45°F)
- Supply water low temperature alarm (default setting 34°F)
- Supply water high temperature alarm (default setting 85°F)

In the event the supply water temperature or enclosure temperatures reaches the low or high temperature alarm setting, the dry contact relay will close signaling an alarm to the user.

Digital Temperature Controller Programming

For the end user this section will provide all the necessary information to view and change all functions and parameters available to you.



HOW TO SEE THE SETPOINT

1. Press and immediately release the **SET** key. The display will show the setpoint value.
2. Press and immediately release the **SET** key or wait for 15 seconds to display the enclosure temperature again.

HOW TO CHANGE THE SETPOINT

1. Press the **SET** key for more than 2 seconds to change the setpoint value.
2. The value of the setpoint will be displayed and the **"F"** LED starts blinking.
3. To change the **SET** value, press the **UP** or **DOWN** arrow key within 15 seconds.
4. To store the new setpoint value, press the **SET** key again or wait 15 seconds.

NOTE: The set value is stored even when the procedure is exited by waiting for the time-out to expire.

HOW TO ACCESS HIDDEN MENU 1

1. Enter the Programming mode by pressing the **SET + DOWN** arrow keys simultaneously for 3 seconds. The "**F**" LED starts blinking.
2. Select the required parameter by pressing the **UP** or **DOWN** arrow key. Press the **SET** key to display its value.
3. Use the **UP** or **DOWN** arrow key to change its value.
4. Press **SET** to store the new value and move to the following parameter.

To exit: Press **SET** + **UP** arrow keys or wait 15 seconds without pressing a key.

NOTE: The set value is stored even when the procedure is exited by waiting for the time-out to expire.

HOW TO ACCESS HIDDEN MENU 2

1. Enter the Programming mode by pressing the **SET + DOWN** arrow keys simultaneously for 3 seconds. The "**F**" LED starts blinking.
2. Release the keys, then push the **SET** + **DOWN** arrows keys simultaneously, again for more than 7 seconds.
   The **Pr2** label will be displayed immediately followed by the **HY** parameter.
3. Select the required parameter by pressing the **UP** or **DOWN** arrow key. Press the **SET** key to display its value.
4. Use the **UP** or **DOWN** arrow key to change its value.
5. Press **SET** to store the new value and move to the following parameter.

To exit: Press **SET** + **UP** arrow keys or wait 15 seconds without pressing a key.

NOTE: The set value is stored even when the procedure is exited by waiting for the time-out to expire.

HOW TO LOCK THE KEYPAD

1. Press and hold the **UP** and **DOWN** arrow keys simultaneously for more than 3 seconds.
2. The **POF** message will be displayed and the keyboard will be locked.
   At this point, it will be possible only to see the setpoint or the MAX or MIN temperature stored.
3. If a key is pressed for more than 3 seconds the **POF** message will be displayed.

HOW TO UNLOCK THE KEYPAD

1. Press and hold the **UP** + **DOWN** arrow keys simultaneously for more than 3 seconds until the **Pon** message is displayed.

Functions and Parameters

Function	Operation	Parameter	Menu Location	Factory Default	Unit
Cooling Setpoint	Set Desired Cooling Temperature	SET	Main	90	°F
Cooling Differential	Control Hysteresis	Hy	Hidden Menu 1	2	°F
Maximum **Enclosure** Temperature Alarm	Alerts with "HA" when **enclosure** temperature has exceeded maximum value	ALU	Hidden Menu 2	105	°F
Minimum **Enclosure** Temperature Alarm	Alerts with "LA" when **enclosure** temperature has exceeded minimum value	ALL	Hidden Menu 2	45	°F
Maximum **Supply Water** Temperature Alarm	Alerts with "HA2" when **supply water** temperature has exceeded maximum value	AU2	Hidden Menu 2	85	°F
Minimum **Supply Water** Temperature Alarm	Alerts with "LA2" when **supply water** temperature has exceeded minimum value	AL2	Hidden Menu 2	34	°F

Alarm Signals

Message	Cause	Actions
"HA"	Maximum Temperature Alarm: **Enclosure** temperature > 105°F	No Action/Alarm Only
"LA"	Minimum Temperature Alarm: **Enclosure** temperature < 45°F	No Action/Alarm Only
"HA2"	Maximum Temperature Alarm: **Supply water** temperature > 85°F	No Action/Alarm Only
"LA2"	Minimum Temperature Alarm: **Supply water** temperature < 34°F	No Action/Alarm Only

Alarm Recovery

- **Temperature** alarm **HA** automatically clears as soon as the **enclosure** temperature returns to 103°F (ALU set point - 2°F).
- **Temperature** alarm **LA** automatically clears as soon as the **enclosure** temperature returns to 47°F (ALL setpoint + 2°F).
- **Temperature** alarm **HA2** automatically clears as soon as the **supply water** temperature returns to below 85°F.
- **Temperature** alarm **LA2** automatically clears as soon as the **supply water** temperature returns to above 34°F.

Preventative Maintenance

Refer to Field Serviceable Parts section in this manual for details on parts that can be changed to help increase the uninterruptable life of the Heat exchanger.

To avoid frost damage, the minimum permissible water temperature of 34°F (+1°C) must be complied with at any point in the water cycle. Any damage due to freezing is not covered by the warranty.

During storage at temperatures below water freezing temperatures and transportation, the water should be completely drained from the heat exchanger to prevent damage to coil. Disconnect the water lines and use compressed air to remove all water.

Thermal Edge heat exchangers use high efficiency, long life, sealed ball bearing fans engineered for optimum performance that require no maintenance. Keep fan blades clean for optimal performance. Fans are removable and attached by plug in connections.

NOTE: Do no use solvents to clean the digital controller when supplied. Wipe with mild soap and water.

Field Serviceable Parts

Thermal Edge carefully designs and selects components with the maximum life expectancy. Due to OEM manufacturing tolerances, poor unit maintenance or extreme operating conditions, components may fail before their maximum life expectancy. The table below lists parts that are serviceable in the field by a heat exchanger technician.

Unit	Part Description	Thermal Edge Part #		
		115VAC	230VAC	460VAC
A2W30	Digital Controller	52110-1	52112-1	52110-1
	Solenoid Valve	33000-1-1	33000-2-1	33000-1-1
	Temperature Probe, 1.5m	52126-2-2	52126-2-2	52126-2-2
	Temperature Probe Mounting Clip	52126-500C	52126-500C	52126-500C
	Gasket Installation Kit	71440-A2W30	71440-A2W30	71440-A2W30
	Fan	41005-1-2	41005-2-2	41005-1-2
	Float Switch	53052-1	53052-1	53052-1
A2W60	Digital Controller	52110-1	52112-1	52110-1
	Solenoid Valve	33000-1-1	33000-2-1	33000-1-1
	Temperature Probe, 1.5m	52126-2-2	52126-2-2	52126-2-2
	Temperature Probe Mounting Clip	52126-500C	52126-500C	52126-500C
	Gasket Installation Kit	71441-A2W60	71441-A2W60	71441-A2W60
	Fan	41037-1-2	41037-2-2	41037-1-2
	Float Switch	53052-1	53052-1	53052-1
A2W100	Digital Controller	52110-1	52112-1	52110-1
	Solenoid Valve	33000-1-1	33000-2-1	33000-1-1
	Temperature Probe, 1.5m	52126-2-2	52126-2-2	52126-2-2
	Temperature Probe Mounting Clip	52126-500C	52126-500C	52126-500C
	Gasket Installation Kit	71342-A2W100	71342-A2W100	71342-A2W100
	Fan	41045-1-1	41045-2-1	41045-2-1
	Float Switch	53052-1	53052-1	53052-1
A2W200	Digital Controller	52110-1	52112-1	52110-1
	Solenoid Valve	33000-1-1	33000-2-1	33000-1-1
	Temperature Probe, 1.5m	52126-2-2	52126-2-2	52126-2-2
	Temperature Probe Mounting Clip	52126-500C	52126-500C	52126-500C
	Gasket Installation Kit	71343-A2W200	71343-A2W200	71343-A2W200
	Fan	41051-1-1	41051-2-1	41051-2-1
	Float Switch	53052-1	53052-1	53052-1

Safety Information

Unit is carefully designed to restrict access to movable parts to minimize any potential injury. This Heat exchanger has been tested by UL to meet the safety requirements of the UL484 specification. When working with the Thermal Edge Heat exchanger always makes sure shroud is installed. Verify proper voltage is applied to unit as specified in the UL label of the Heat exchanger. In the event of a field service repair, power down unit using the power on/off switch and disconnect power from unit. It is always recommended to use a licensed heat exchanger technician for internal diagnostics and repairs issues.

Contact Thermal Edge technical support for further details on opening the unit and troubleshooting tips.

Troubleshooting Guide

SYMPTOM	POSSIBLE CAUSE
Unit will not run	Check that the power is connected
	Verify that power switch is in ON position
	Verify that input power meets voltage requirements shown in UL label
Fan is not working	Fan faulty – Replace the fan
The fan is working, unit is not cooling	Controller set point is set too high – Adjust set point
	Insufficient water flow – Check that the flow rate corresponds to the prescribed flow rate on the unit nameplate
	Controller faulty – Replace controller
	Solenoid valve faulty – Replace solenoid valve
	Water temperature too high – Adjust the water temperature
	Obstructed airflow in enclosure – Remove airflow blockage

Physical Dimensions

Figure 1: A2W030 Dimensions

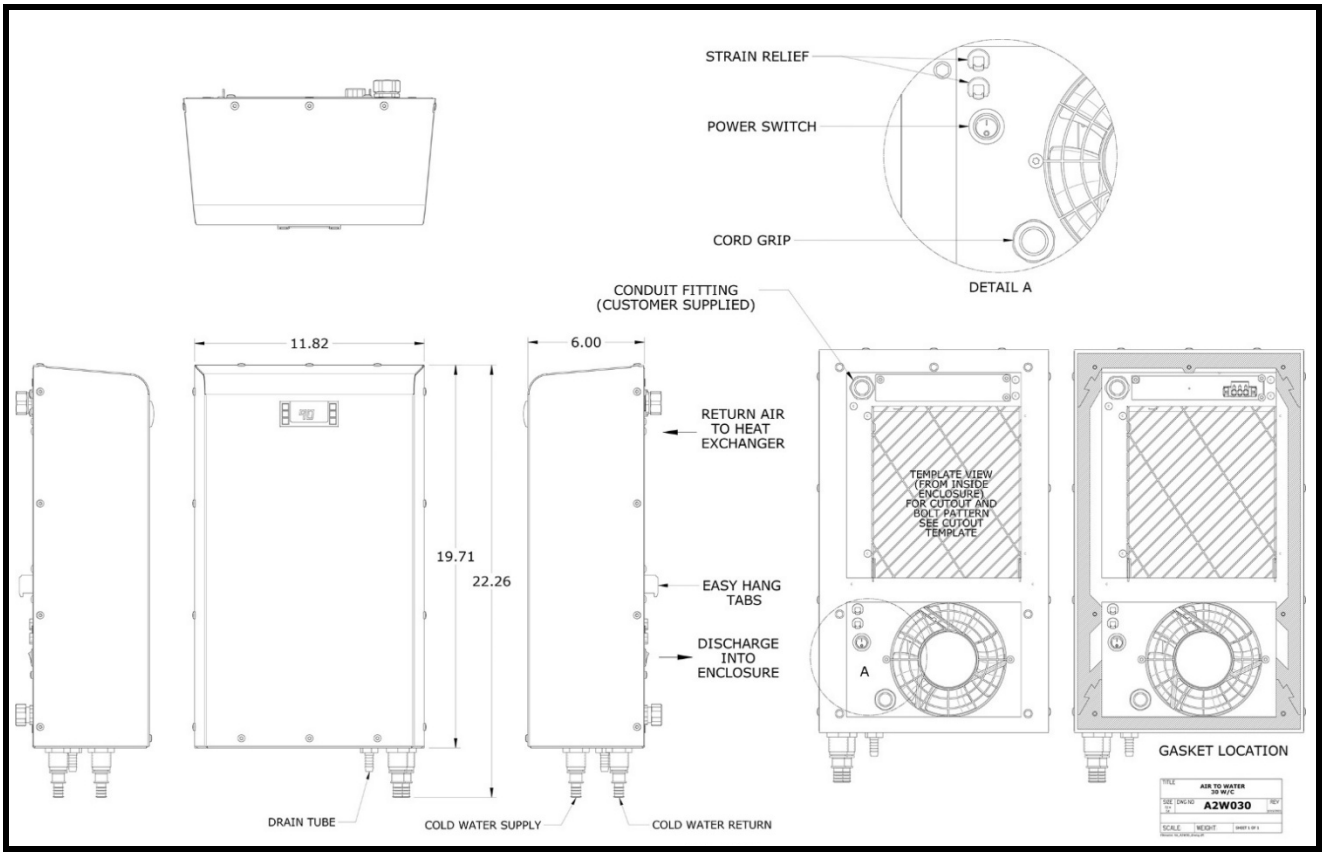


Figure 2: A2W060 Dimensions

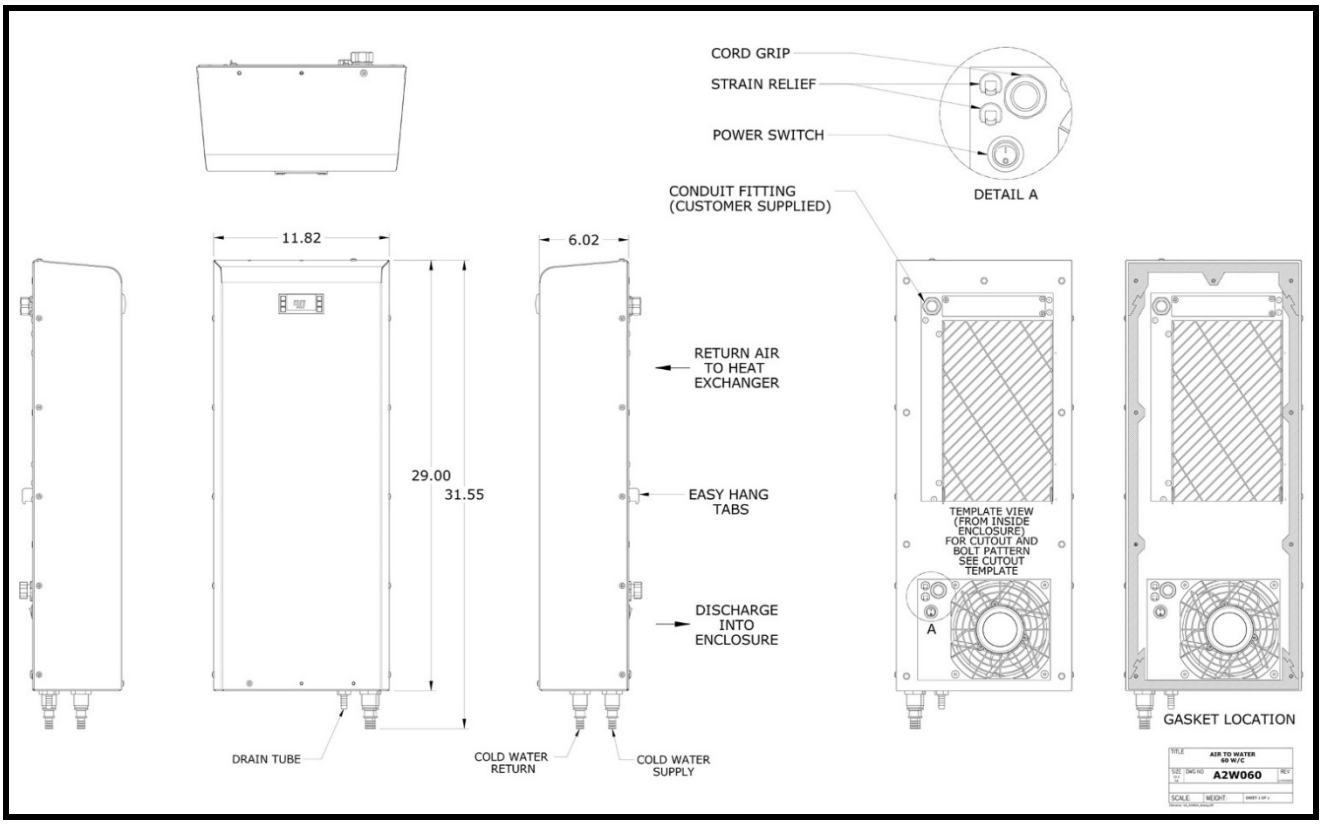


Figure 3: A2W100 Dimensions

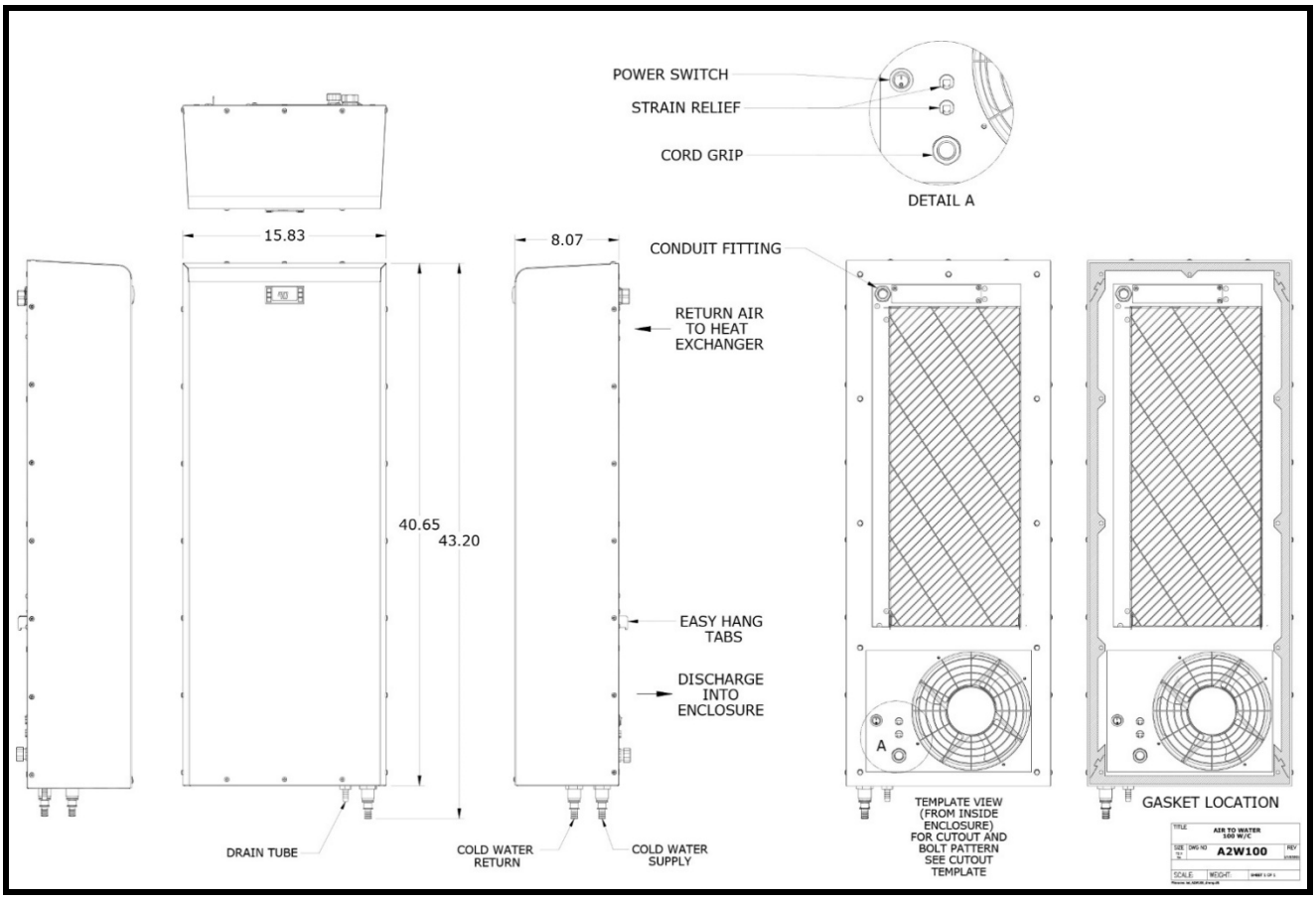
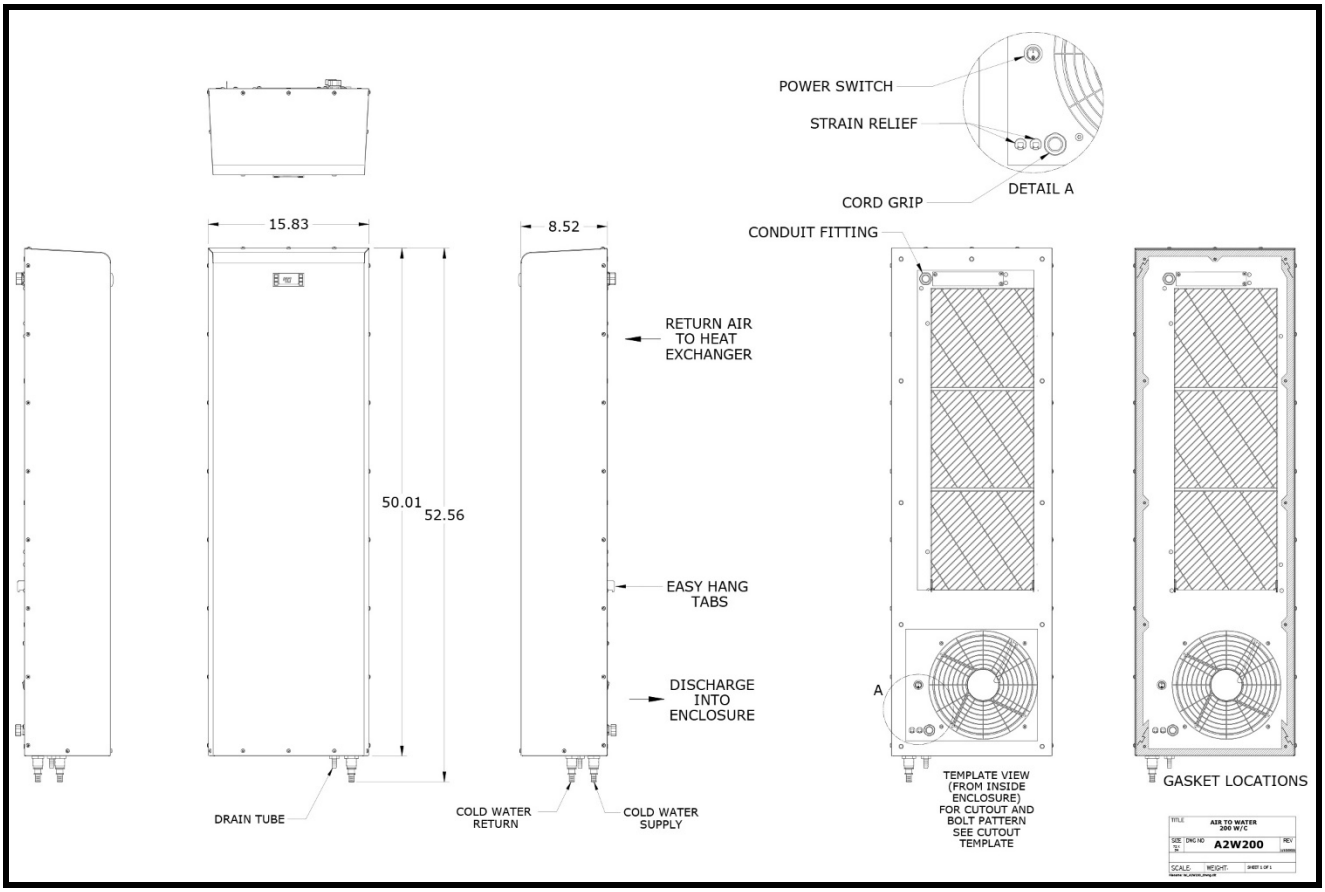
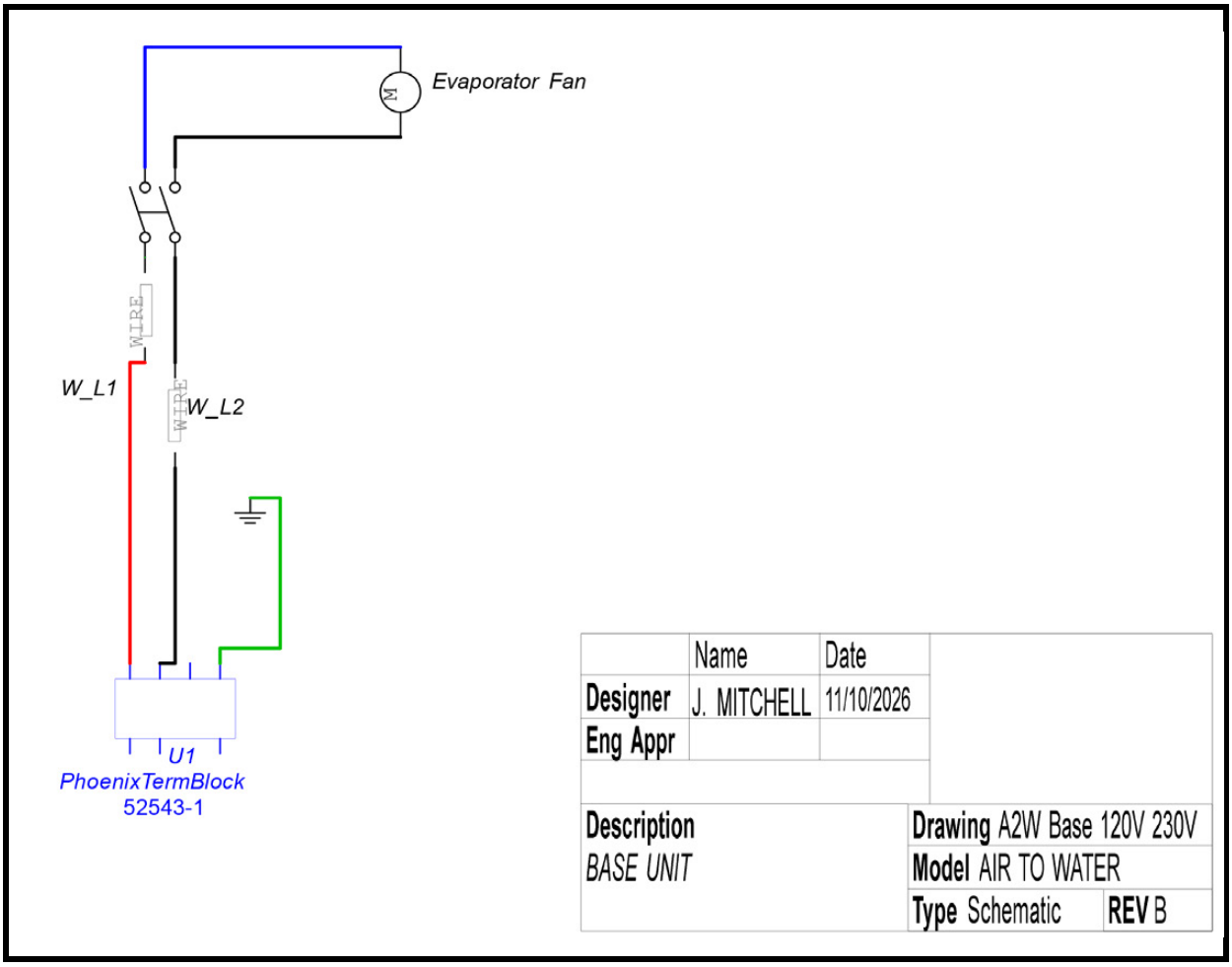
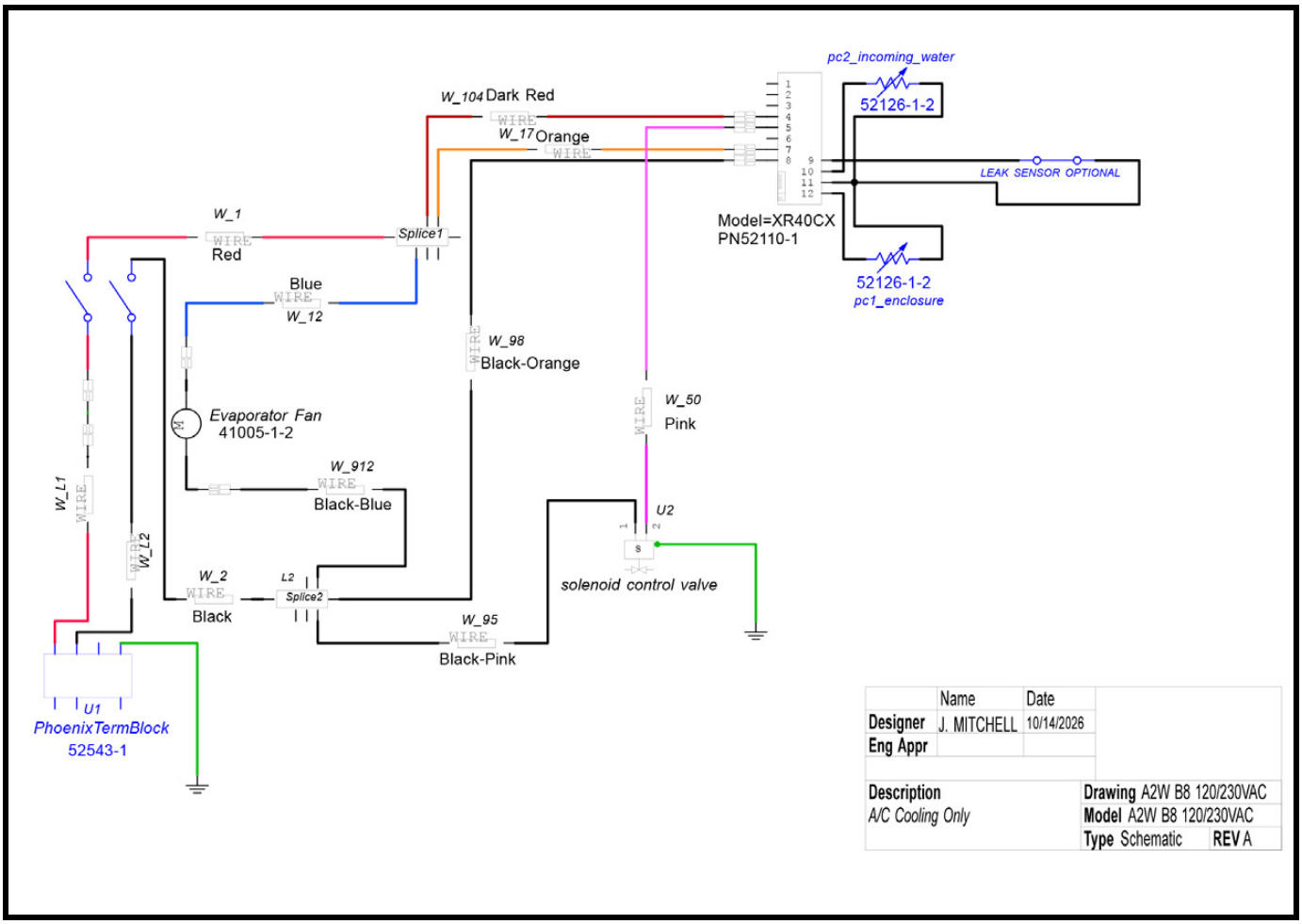


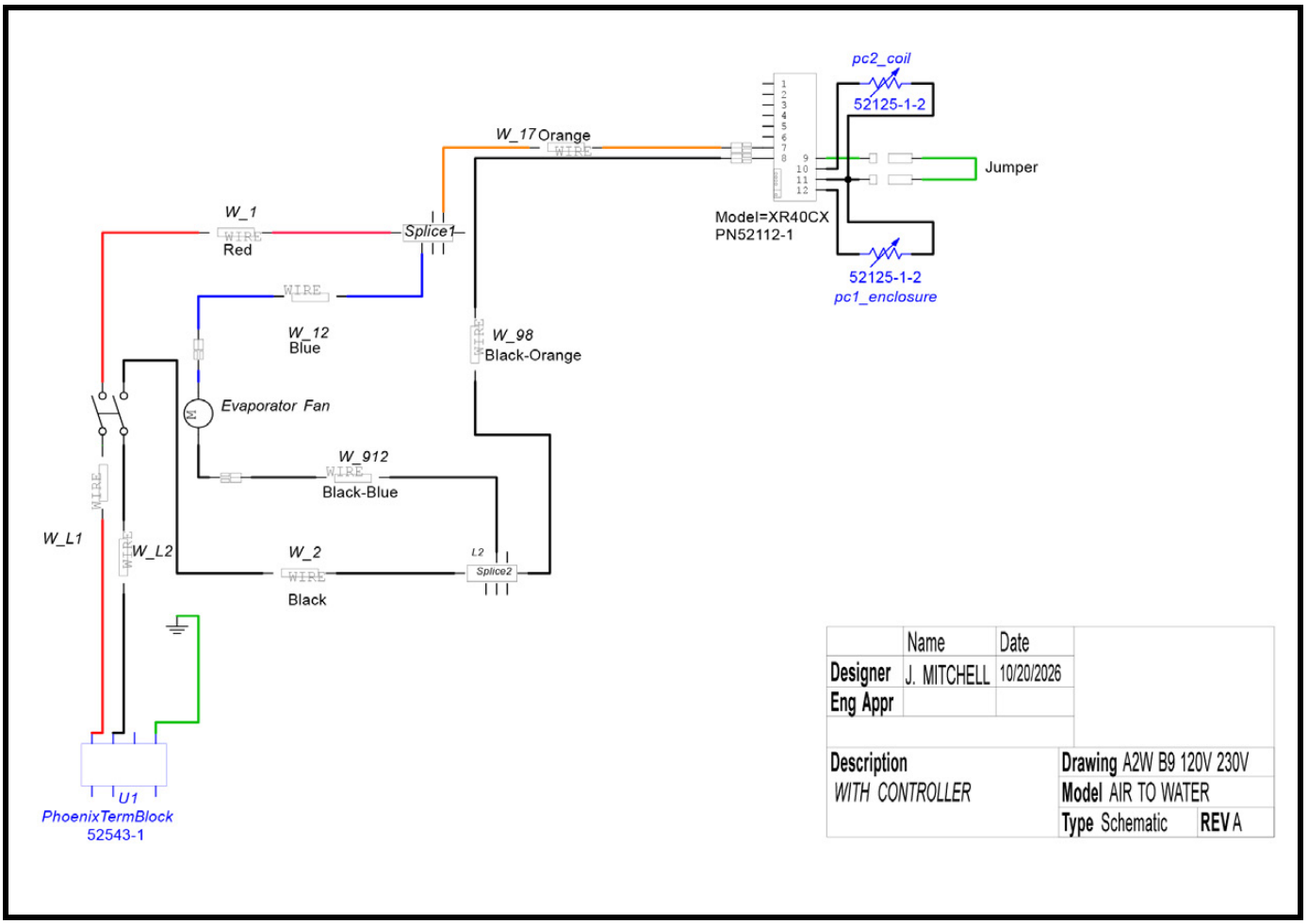
Figure 4: A2W200 Dimensions

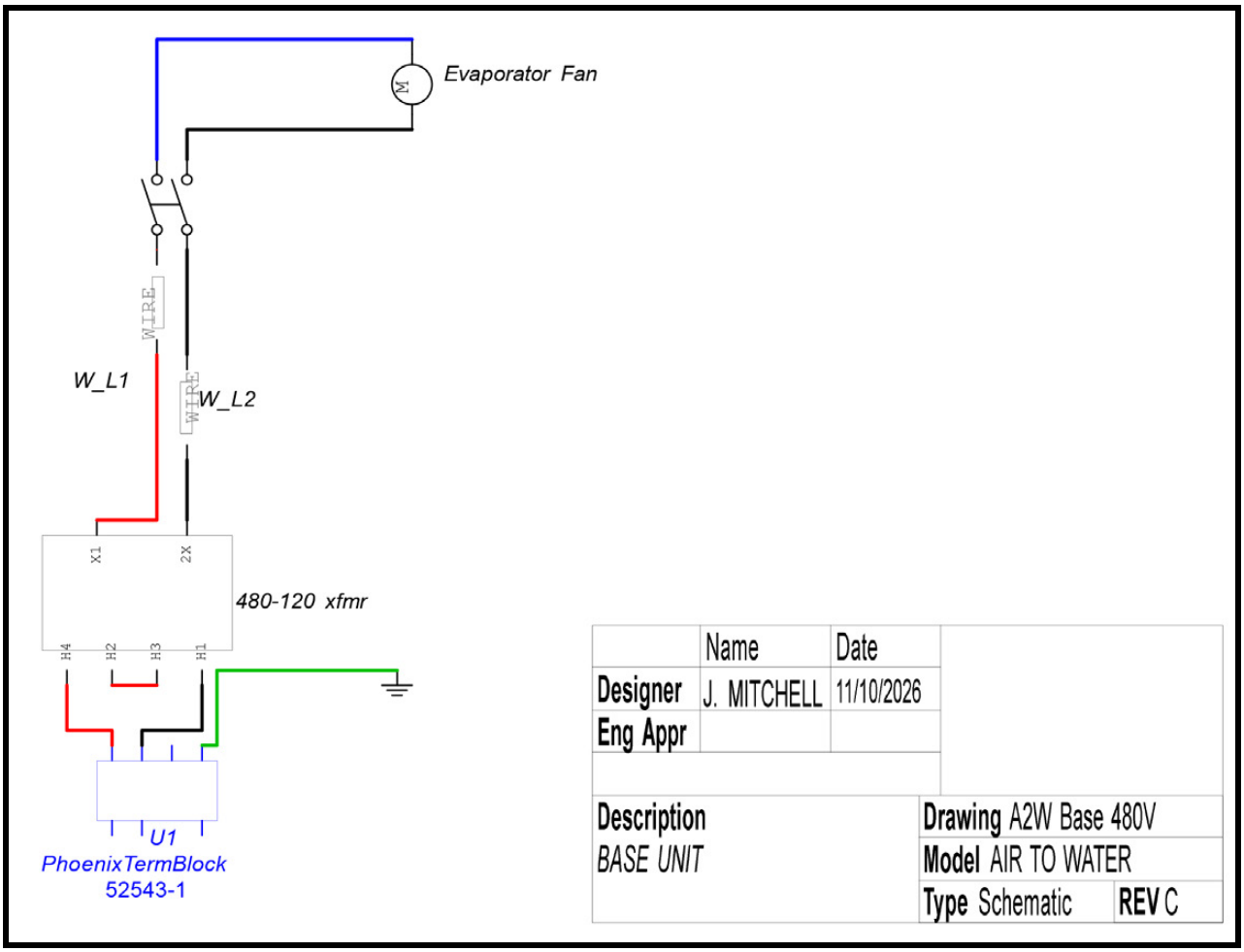


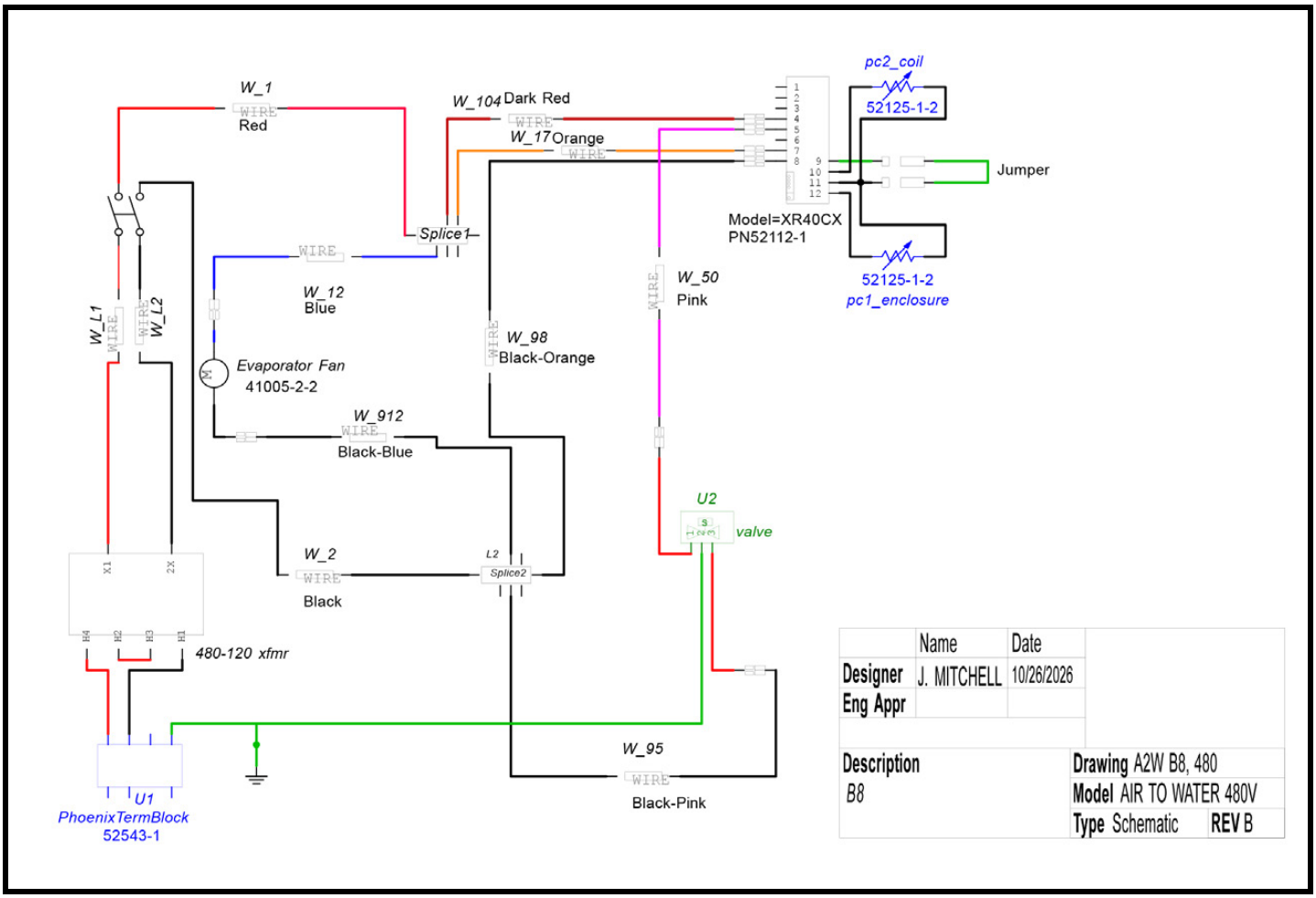
Electrical Schematics

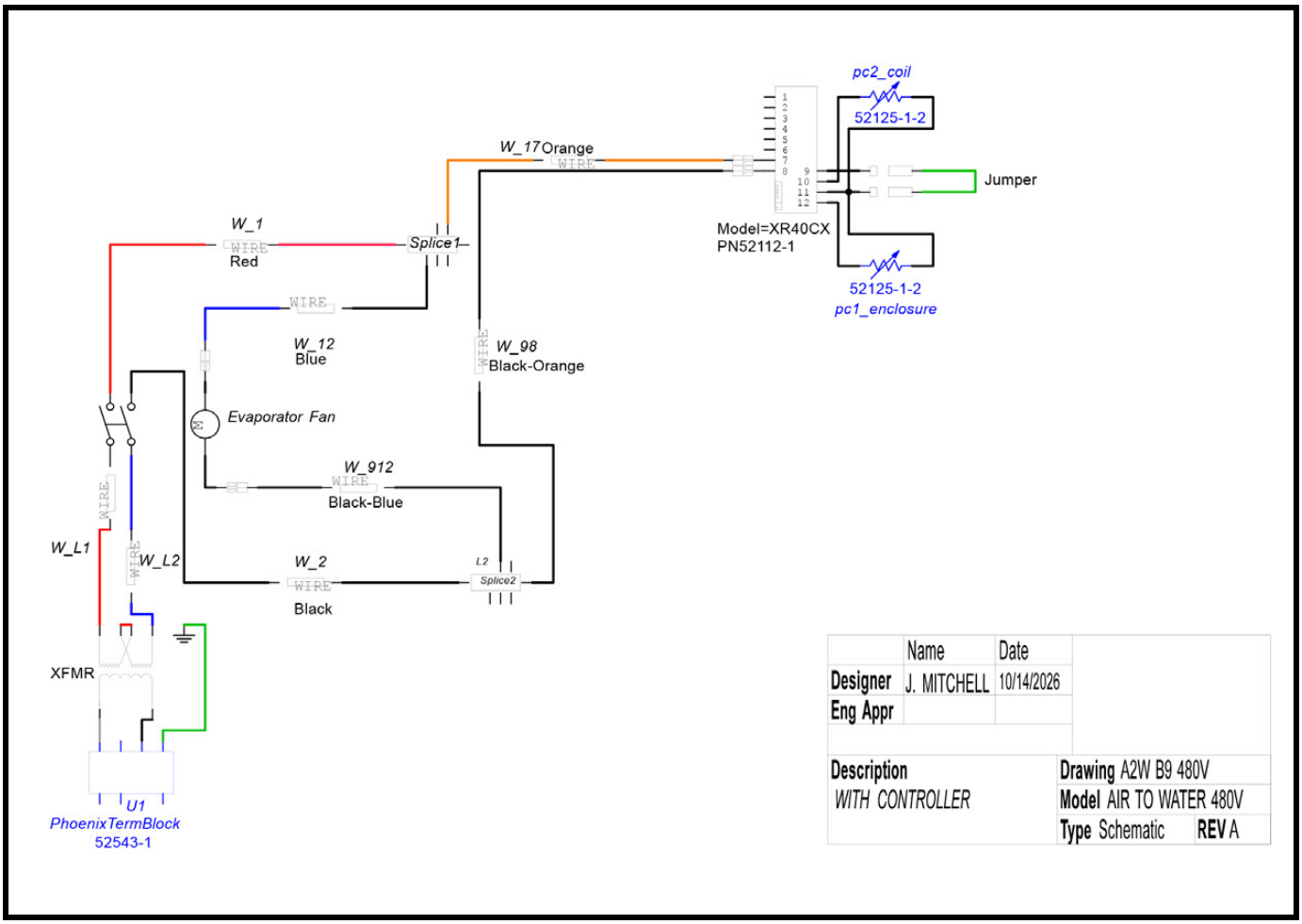



pc2_incoming_water
52126-1-2
W_104 Dark Red
W_17 Orange
LEAK SENSOR OPTIONAL
W_1
Red
Splice1
Model=XR40CX
PN52110-1
Blue
W_12
52126-1-2
pc1_enclosure
W_98
Black-Orange
W_50
Pink
Evaporator Fan
41005-1-2
W_912
Black-Blue
W_L1
W_L2
U2
W_2
Black
L2
Splice2
solenoid control valve
W_95
Black-Pink
U1
PhoenixTermBlock
52543-1
Name
Date
Designer
J. MITCHELL
10/14/2026
Eng Appr
Description
A/C Cooling Only
Drawing A2W B8 120/230VAC
Model A2W B8 120/230VAC
Type Schematic
REV A


pc2_coil
52125-1-2
W_17 Orange
WIRE
Jumper
W_1
WIRE
Red
Splice1
Model=XR40CX
PN52112-1
52125-1-2
pc1_enclosure
WIRE
W_12
Blue
W_98
Black-Orange
Evaporator Fan
W_912
WIRE
Black-Blue
W_L1
W_L2
W_2
WIRE
Black
L2
Splice2
U1
PhoenixTermBlock
52543-1
Name
Date
Designer
J. MITCHELL
10/20/2026
Eng Appr
Description
WITH CONTROLLER
Drawing A2W B9 120V 230V
Model AIR TO WATER
Type Schematic
REV A


Evaporator Fan
M
WIRE
W_L1
WIRE
W_L2
X1
2X
480-120 xfmr
H4
H2
H3
H1
U1
PhoenixTermBlock
52543-1
Name
Date
Designer
J. MITCHELL
11/10/2026
Eng Appr
Description
BASE UNIT
Drawing A2W Base 480V
Model AIR TO WATER
Type Schematic
REV C


W_1
WIRE
Red
W_104 Dark Red
WIRE
W_17 Orange
WIRE
pc2_coil
52125-1-2
Jumper
Model=XR40CX
PN52112-1
Splice1
WIRE
W_12
Blue
W_50
Pink
52125-1-2
pc1_enclosure
W_L1
W_L2
W_98
Black-Orange
Evaporator Fan
41005-2-2
W_912
Black-Blue
U2
valve
W_2
Black
Splice2
480-120 xfmr
W_95
Black-Pink
U1
PhoenixTermBlock
52543-1
Name
Date
Designer
J. MITCHELL
10/26/2026
Eng Appr
Description
B8
Drawing A2W B8, 480
Model AIR TO WATER 480V
Type Schematic
REV B


pc2_coil
52125-1-2
W_17 Orange
WIRE
Jumper
W_1
WIRE
Red
Splice1
Model=XR40CX
PN52112-1
52125-1-2
pc1_enclosure
WIRE
W_12
Blue
W_98
Black-Orange
Evaporator Fan
W_912
WIRE
Black-Blue
W_L1
W_L2
W_2
WIRE
Black
L2
Splice2
XFMR
U1
PhoenixTermBlock
52543-1
Name
Date
Designer
J. MITCHELL
10/14/2026
Eng Appr
Description
WITH CONTROLLER
Drawing A2W B9 480V
Model AIR TO WATER 480V
Type Schematic
REV A



Thermal Edge Inc.
TEMPERATURE CONTROL SOLUTIONS FOR ELECTRICAL ENCLOSURES

Warranty Information

Click link below to see the latest warranty information.

https://thermaledge.com/5year/

Return Material Authorization (RMA) Procedure

All returns require a Return Material Authorization (RMA) number for warranty or non-warranty repair, rotation of stock, damage or any other reason.

IMPORTANT
Returns without an RMA number will be refused and returned. Improper packaging may void warranty.
Heat exchangers shipped laying down will void the warranty. Collect shipments will be refused.
Returns received after 30 days will be refused and RMA will be canceled.

Please be ready to provide:

- Purchase Order Number & Date
- Product Description & Reason for Request
- Model Number & Serial Number
- Customer name and contact info (email, phone number and address)
- Shipping method

Pack unit in a suitable packing for shipment, preferably the original packaging if available.

- Heat exchangers must be returned in an upright position properly secured to a pallet.
- Tip unit to empty water from the evaporator and boil off pans.
- Clearly mark the RMA number on the box.
- Customer will pay all freight charges.

Out of Warranty Repair

If your Thermal Edge heat exchanger is out of warranty and requires repair, simply call Thermal Edge Customer Service at (888)-580-0202 for an RMA number. Customer Service will help you determine what repairs or parts are needed and, if possible, an estimate of the cost.

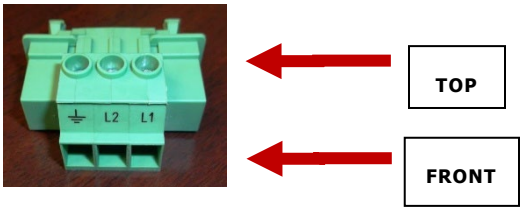
After the unit is received and diagnosed, you will receive a cost estimate on the work and parts needed. The repairs and test process may uncover other issues of which you will be informed and given quotes for the work needed.

Phoenix Contact Power Connection Instructions

Scope: Instructions for connecting power wires to air conditioners equipped with a "Phoenix Contact" power connector.

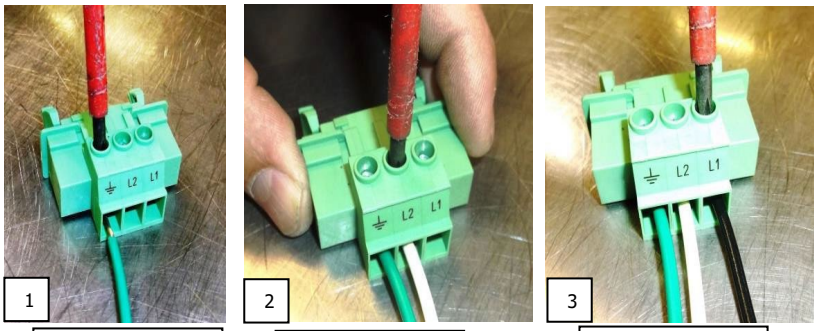
Female (Socket) Connector

The top of the female connector is shown below with wire holding screws facing up (**see picture**).



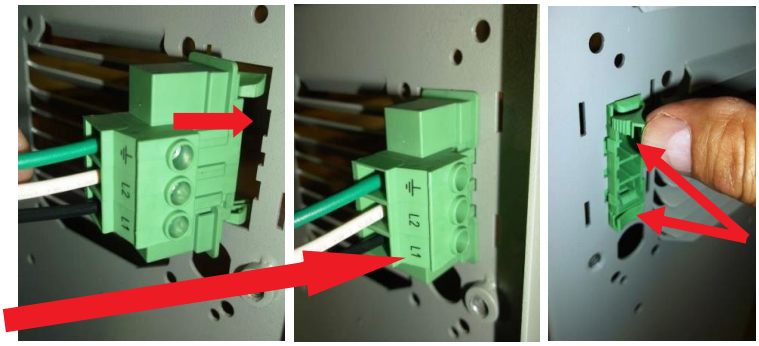
NOTE: Sequence by connecting **left to right**.

Starting from the ⏚ symbol, on the left, connect the wires by inserting them into the lower receptacles located on the front of connector in the following order:



Vertical Mounting

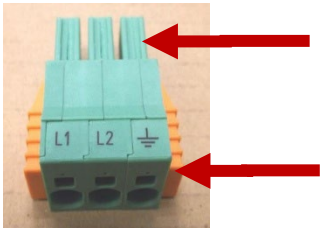
With L1 at the lowest position, rotate the connector horizontally and insert it into the chassis opening.



Press the Locking Tabs to secure the connector in place.

Male (Plug) Connector

The top of the Male Connector is shown below with shaped assembly channels facing **up**.

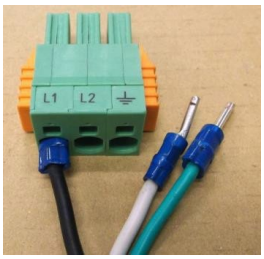


ASSEMBLY CHANNELS

FRONT

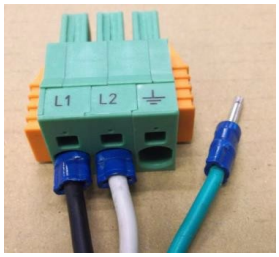
NOTE: Sequence by connecting **left to right**.

1 – Starting from **L1**, on the left, connect the wires by inserting them on the lower receptacles located at the bottom of connector with the following order:



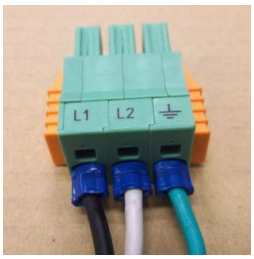
1

L1 → **Line 1 (black)**



2

L2 → Line 2 (white)



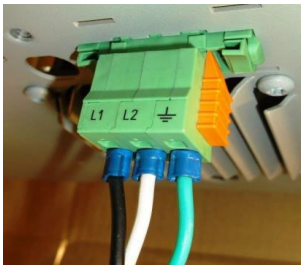
3

⏚ → Ground (green)

Horizontal Mounting

Always ensure the **black** wire is attached to **L1** so that Male and Female connectors match.





Firmly insert the male connector into chassis receptacle. A light click should be audible when secure.