

# UNIVERSAL RELAY ELECTRICAL CONTROL BOX INSTALLATION MANUAL



**PLEASE SAVE THIS  
MANUAL FOR  
FUTURE REFERENCE.**

READ THIS MANUAL CAREFULLY.  
SEE INSIDE COVER FOR IMPORTANT  
INFORMATION ABOUT THIS MANUAL.  
KEEP INSTRUCTION WITH  
APPLIANCE FOR FUTURE REFERENCE.

# PLEASE READ ALL INSTRUCTIONS PRIOR TO INSTALLING THE INNOVA ELECTRICAL CONTROL BOX.

This manual contains important information about the installation, and operation of the Innova Electrical Control Box. Please pay close attention to the important safety information shown throughout this instruction manual.

## A LICENSED ELECTRICIAN IS REQUIRED TO INSTALL THIS PRODUCT.



### WARNING

- READ THIS MANUAL CAREFULLY before installing or servicing the Innova Electrical Control Box.
- Improper installation or operation can result in death, severe injury, or property damage.
- Use this Innova Electrical Control Box only as described in this manual. Any other use not recommended by the manufacturer may cause fire, electric shock, or injury to persons.
- This Innova Electrical Control Box is intended for fixed installation in accordance to its rating plate either 240V max or 480V max power supply.
- Installation MUST be performed by a licensed and authorized technician in accordance with National Electrical Code (NEC) or Canadian Electrical Code (CEC), along with other local electrical codes as applicable.
- Innova Electrical Control Box rated for 240V or less are intended for both residential and commercial use.
- Innova Electrical Control Box rated for more than 240V are intended for commercial use only.



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Note: Innova Heating Co. reserves the right to make changes to specifications, parts, components and equipment without prior notification.  
This Installation, operation and service manual may not be reproduced in any form with prior written consent from Innova Heating.

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## WARNING

The Innova Electrical Control Box should only be used as described in this manual. Any use not recommended by the manufacturer may result in fire, electric shock, or personal injury.

- Use this Innova Electrical Control Box only as described in this manual. Any other use not recommended by the manufacturer may cause fire, electric shock, or injury to person (s).
- Improper installation, adjustment, or alteration and failure to follow the warnings and instructions in this manual could result in severe personal injury, death or property damage.
- The manufacturer is not responsible for any damage from improper use. The manufacturer emphasises this Innova Electrical Control Box should be used in a responsible manner and that all procedures, warnings, and safety instructions contained in this booklet be followed strictly.
- The product must be fixed on surfaces which cannot be damaged by the high temperature. It cannot be hermetically closed. It must be fixed vertically.
- The connection cables must be protected against any accidental impacts, by using proper conduits.
- This Innova Electrical Control Box is not intended for use in bathrooms, laundry areas and similar indoor locations. Never locate Innova Electrical Control Box where it may fall into a bathtub or other water container.
- Do not install the Innova Electrical Control Box directly near a bathtub, shower or swimming pool. Any switches or controls must not be within reach of a person in the bathtub, shower or swimming pool.
- Extreme caution is necessary when the Innova Electrical Control Box is used by or near children or individuals and whenever the Innova Electrical Control Box or heater is left operating and unattended.
- This Innova Electrical Control Box is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Keep packaging materials out of reach of children.
- Children and adults should be alerted to the hazards of electrocution and should stay away to avoid serious personal injury.
- Children should be carefully supervised when they are in the area of the Innova Electrical Control Box.
- Do not attempt to alter the Innova Electrical Control Box in any manner.
- Do not paint any surface of the Innova Electrical Control Box.
- Do not touch the Innova Electrical Control Box with wet hands at any time.
- Do not use or store flammable materials near this appliance.
- Do not spray aerosols or flammable materials in the vicinity of the Innova Electrical Control Box while it is in operation.
- Never operate the Innova Electrical Control Box in an explosive environment such as areas where petrol or other flammable liquids or vapours are stored.
- Do not run cord under carpeting. Do not cover with throw rugs, runners or the like arrange cord away from traffic area and where it will not be tripped over.
- A Innova Electrical Control Box has hot and arcing or sparking parts inside. Do not use it in areas where gasoline, paint or flammable liquids are used or stored.
- This Installation manual should not be removed from the site of installation. Installer should leave manual with the customer for future reference.
- Any guard or other protective device removed for servicing (conducted by an authorised person) must be replaced before operating the Innova Electrical Control Box.
- If the Innova Electrical Control Box has not been used, or will not be used, for a long period of time, disconnect power supply.
- For the disconnection from the power line, use an all-pole switch with contacts having a dimension of at least 3.5mm.

### MAINTENANCE / REPAIR

- Installation and repair must be carried out by a qualified & licenced service person only. The Innova Electrical Control Box should be inspected before use and at least annually serviced & inspected by a qualified & licenced service person.
- Do not perform maintenance until Innova Electrical Control Box has been turned off and power disconnected.
- Check for damage to the Innova Electrical Control Box regularly. If damage to the appliance is suspected, discontinue use immediately and contact the supplier or qualified person to repair.
- If any conductor is damaged, it must be replaced by an authorized and licenced person in order to avoid a hazard.
- At the end of this product's useful life, it must not be disposed of as domestic waste, but must be taken to a collection centre for waste electrical and electronic equipment. It is the user's responsibility to dispose of this appliance through the appropriate channels at the end of its useful life. Failure to do so may incur the penalties established by laws governing waste disposal. Proper differential collection and the subsequent recycling, processing and environmentally compatible disposal of waste equipment avoids unnecessary damage to the environment and possible related health risks, and also promotes recycling of the materials used in the appliance. For further information on waste collection and disposal, contact your local waste disposal service, or the place of purchase.

### ELECTRICAL CONNECTIONS

- All connections must be rated according to rating plate that is either 240V max or 480V max power supply, with an earth connection; at no times exceed its rated requirements.
- Arrange all the necessary safety devices and use only materials that comply with standard electrical installations.
- Signal and power voltage wiring must be separated one from the other if the rating voltage is greater than 240VAC.
- The protective device must protect the building from overcurrents and short circuit.
- A readily accesible disconnect device shall be incorporated in the building installation wiring.
- The cable must have a section properly rated according to the load connected and nominal temperature minimum 60°C.

### INSTALLATION

- **IMPORTANT** - Installation must be carried out by a licensed or authorized person.
- The installer shall ensure the installation in compliance with a local authority, local electrical installation code, municipal building codes, and any other relevant statutory regulations.
- This Innova Electrical Control Box must only be used no greater than its rating plate that is 240V max or 480V max.
- This Innova Electrical Control Box is NOT intended to be installed on recreational vehicles and/or boats.

### PRODUCT: Innova Electrical Control Box

The Innova Electrical Control Box makes managing your comfort zone easier. It helps control multiple heaters and furthermore, creates varied heat zones throughout your space. Optimizing the warmth based on your preference or your guests' requirements becomes a tailor-made experience. For full coordination and a seamless application to your home or commercial space, the Innova Electrical Control Box is compatible with any 0-10V, 120-277V lighting dimmer. This Innova Electrical Control Box is a highly recommended addition for commercial spaces like restaurant patios where customers have individual heat preferences. Modify each area with precise temperature conditions that are easily accessible and achievable with this Innova Electrical Control Box that is ETL listed and Made in Canada.

### PRODUCT FEATURES:

- This Innova Electrical Control Box is suitable for 0-10V Dimmer, where the grey wire is common (0V) and purple wire is positive (10 VDC).
- One dimmer controls up to 12,000W at the applicable rated voltage.
- Dimming capability: 0% to 100%
- Innova Electrical Control Box can control heaters with voltages ranging from 240V max or 480V max at the rated amperage.

## Installation / Safety Information

Responsibility for determining suitability for use in any application / equipment lies solely on the purchaser. Suitability for use in your application is determined by applicable standards such as UL and cUL and the completed system involving this component should be tested to those standards. Please consult with local authorities and applicable wiring standards for your application.



**WARNING – Isolate mains before installing.  
Use only on with a properly secured heater.**

### INSTALLATION:

Study the Installation Instructions at the end of this document before starting installation.

1. Open cover of box.
2. Follow pages 6 to 9 to wire in power and heaters per the instruction manual drawings.
3. Follow page 10 to 12 to wire in dimmers and timers as per the installation manual drawings.
4. Refit cover to the box.

### OPERATION:

#### WARNING – FIRE HAZARD!



**Even quality electronic components  
CAN FAIL, KEEPING FULL POWER ON!**  
**Provide a SEPARATE (redundant)  
protective device where advisable and  
or required by local codes.**

#### WARNING – HIGH VOLTAGE!

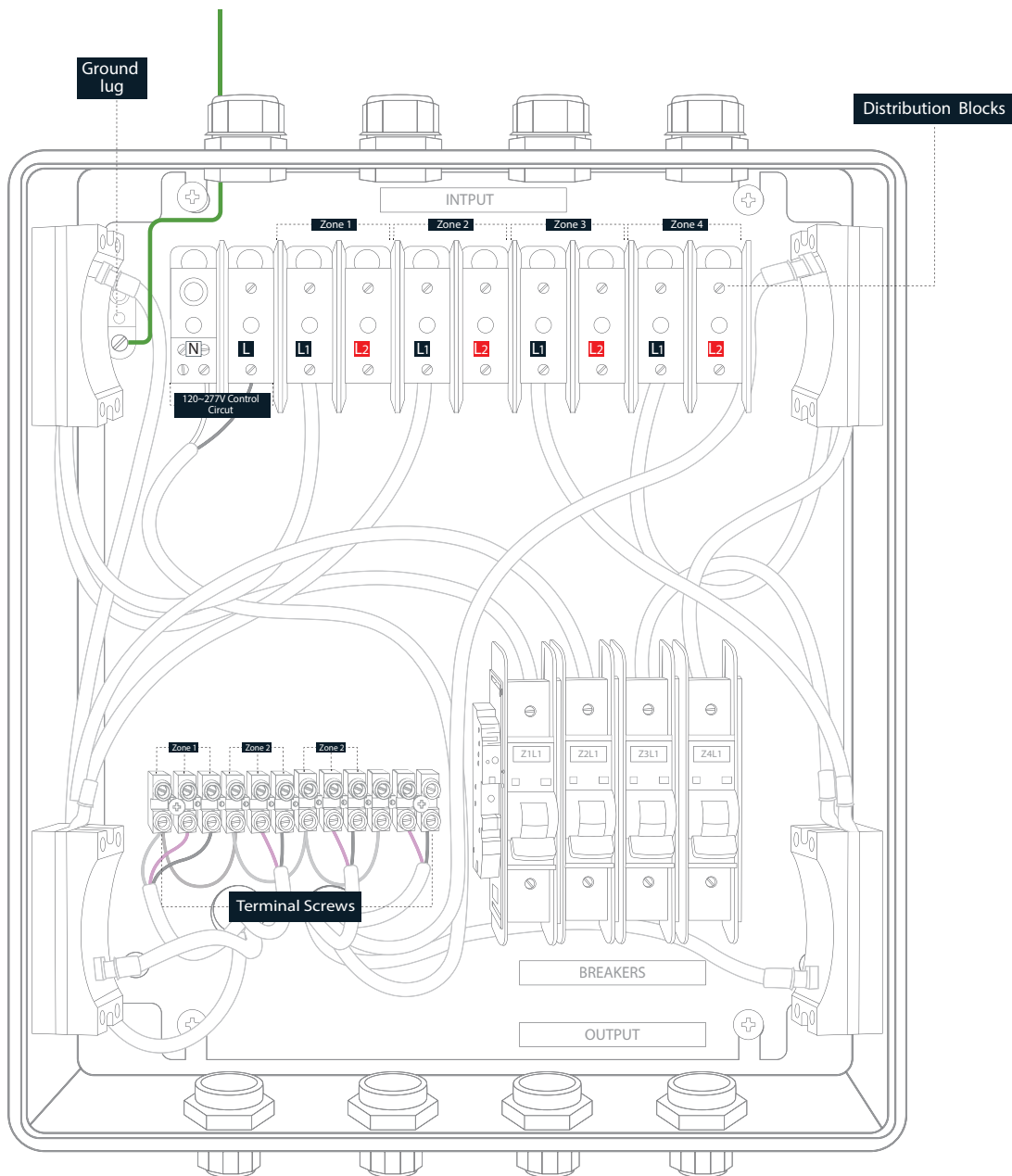


**This Innova Electrical Control Box is  
used to control HIGH VOLTAGES and  
must be installed in a GROUNDED  
enclosure by a qualified electrician in  
accordance with applicable local and  
national codes including NEC and other  
applicable code.**

## STEP 1:

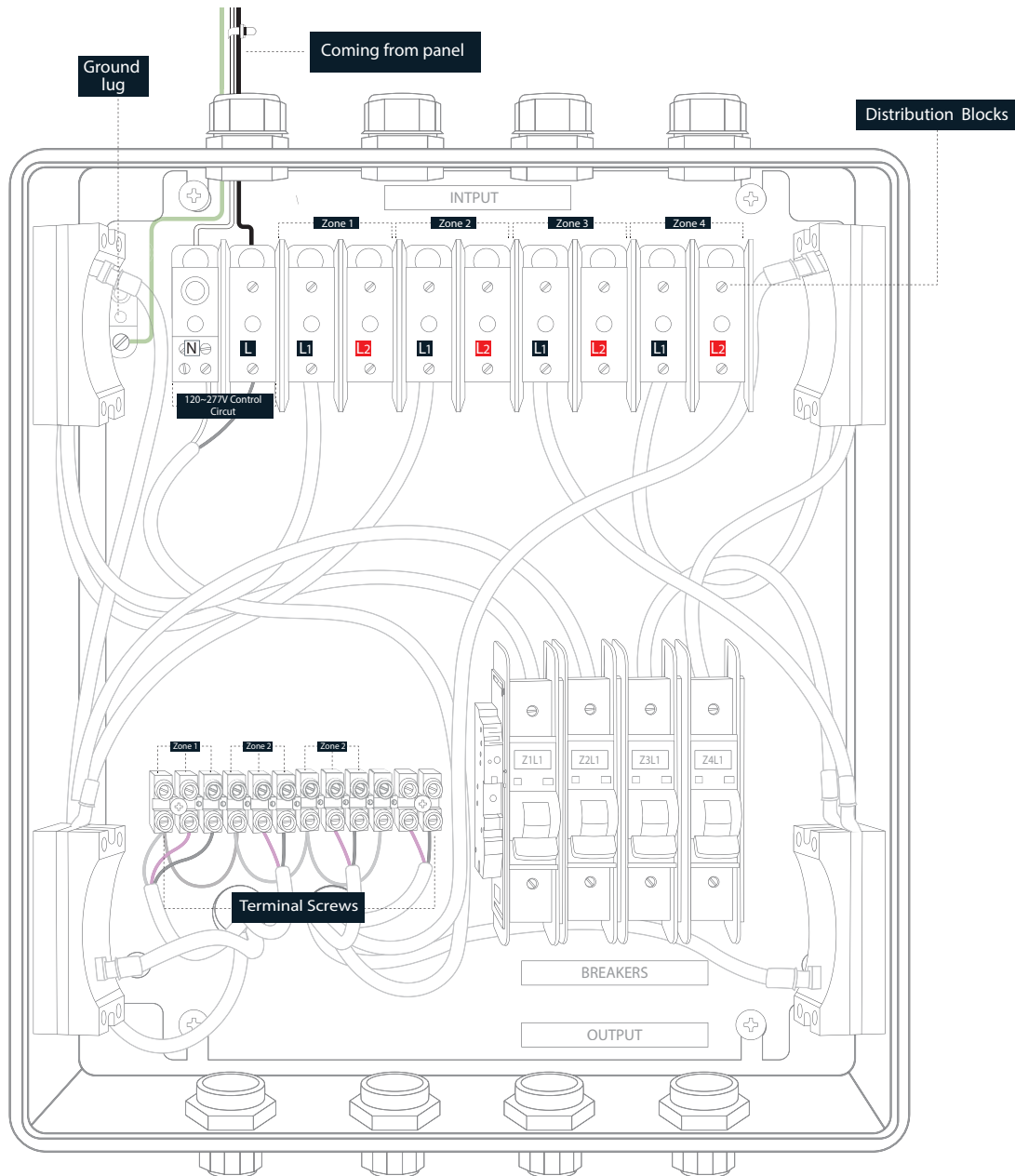
- Turn the power OFF at the circuit breaker before installation.
- Connect the ground wire to the ground lug.(⏏)

**Note:** Drawing below is a four zone Innova Electrical Control Box



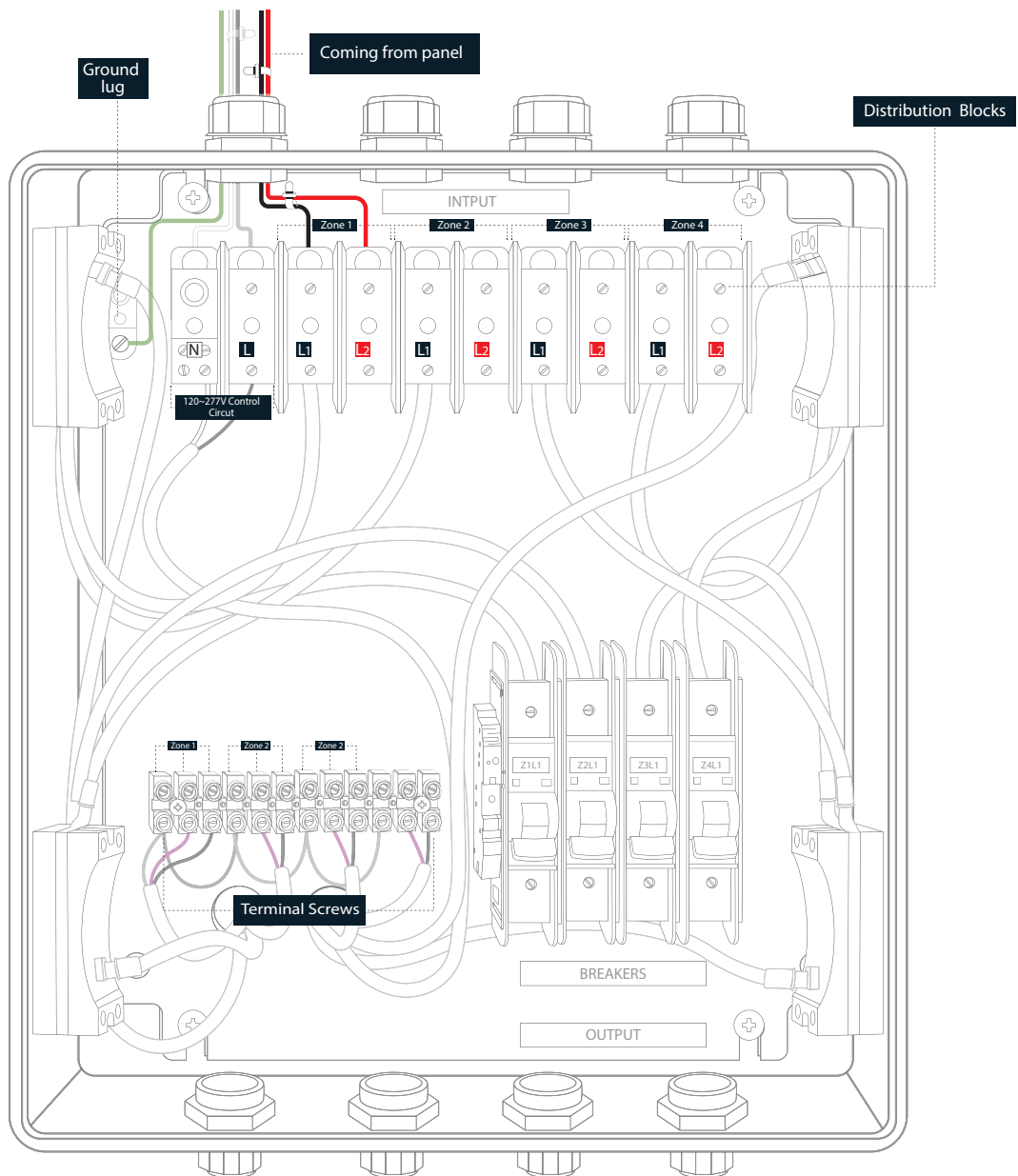
## STEP 2:

- Connect the 120V-277V control circuit to the distribution block, white to the neutral and black to line.



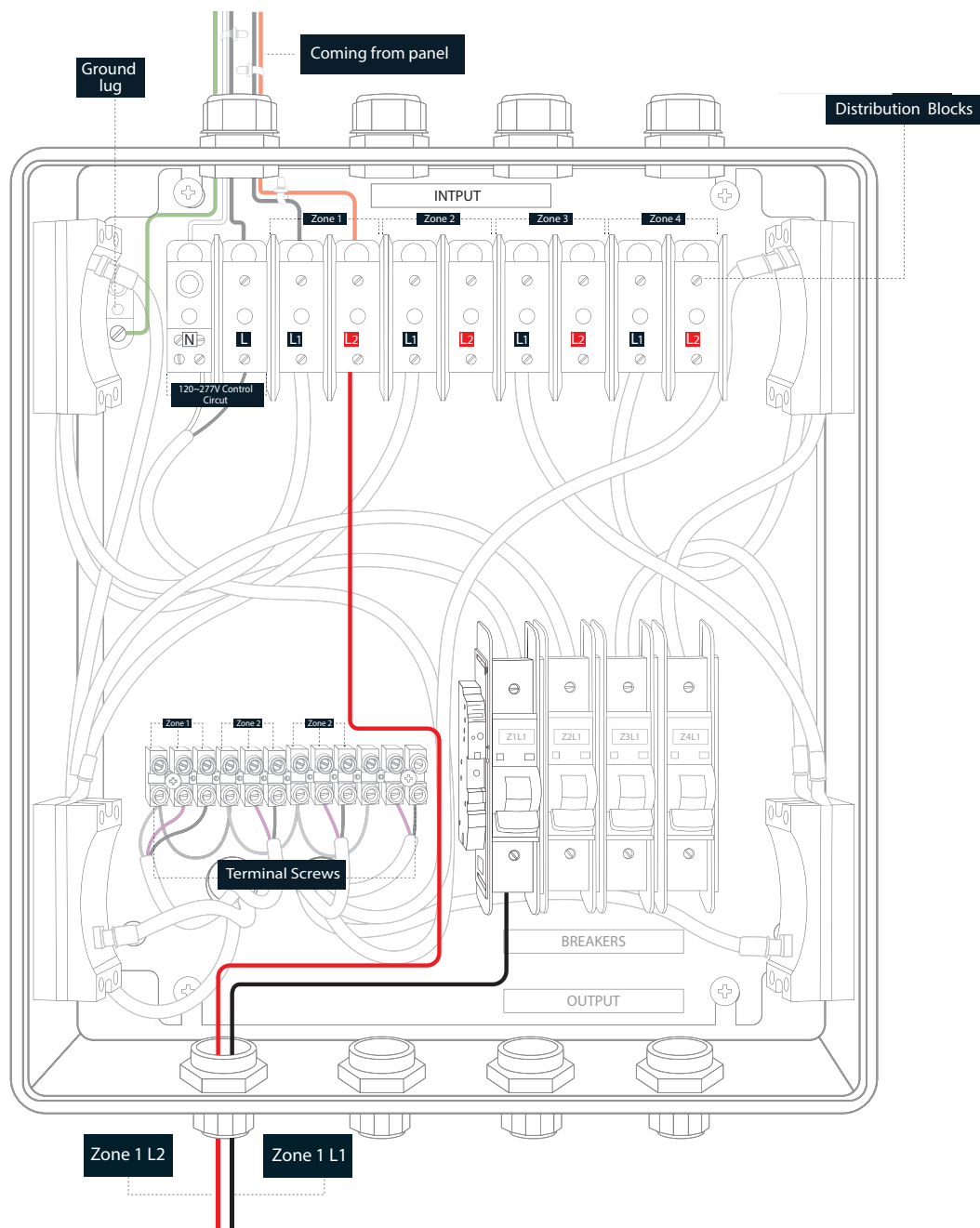
## STEP 3: *Example connection in zone 1*

- Connect the line wires from the power source for the heater to the zone 1 L1 and L2.



## STEP 4:

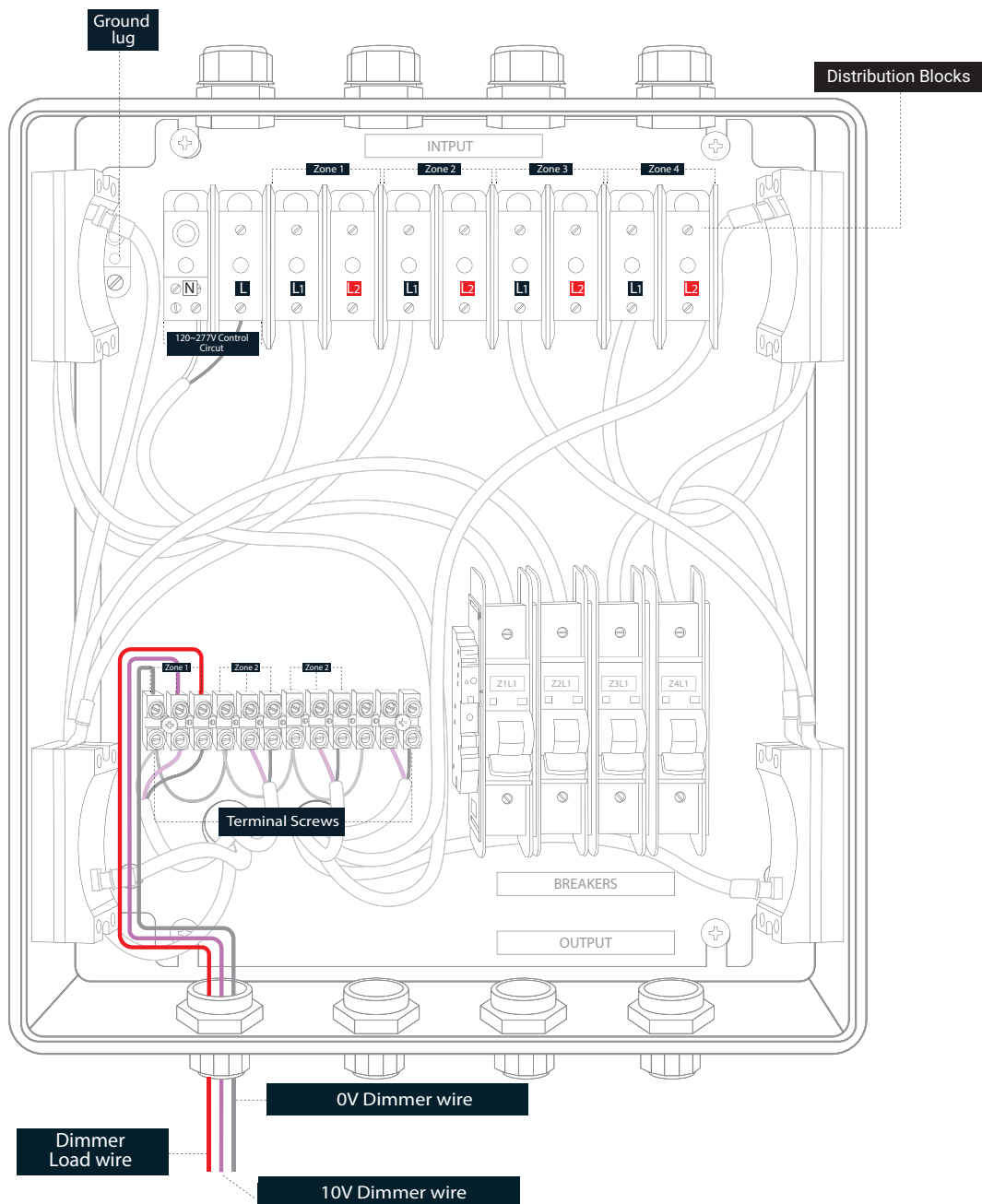
- Connect zone 1 L1 load wire from the breakers inside the Innova Electrical Control Box to heater line wire L1.
- Connect zone 1 L2 to heater line wire L2.



## 1 Dimmer / Timer for 1 Zone:

1. Connect dimmer/timer output load wire from the dimmer/timer switch to terminal screw of zone 1 switch on the Innova Electrical Control Box.
2. Connect purple Dimmer wire (10 VDC) from the dimmer switch to terminal screw of zone 1 switch on the Innova Electrical Control Box.
3. Connect grey Dimmer wire (0 V) from the dimmer switch to terminal screw of zone 1 switch on the Innova Electrical Control Box.

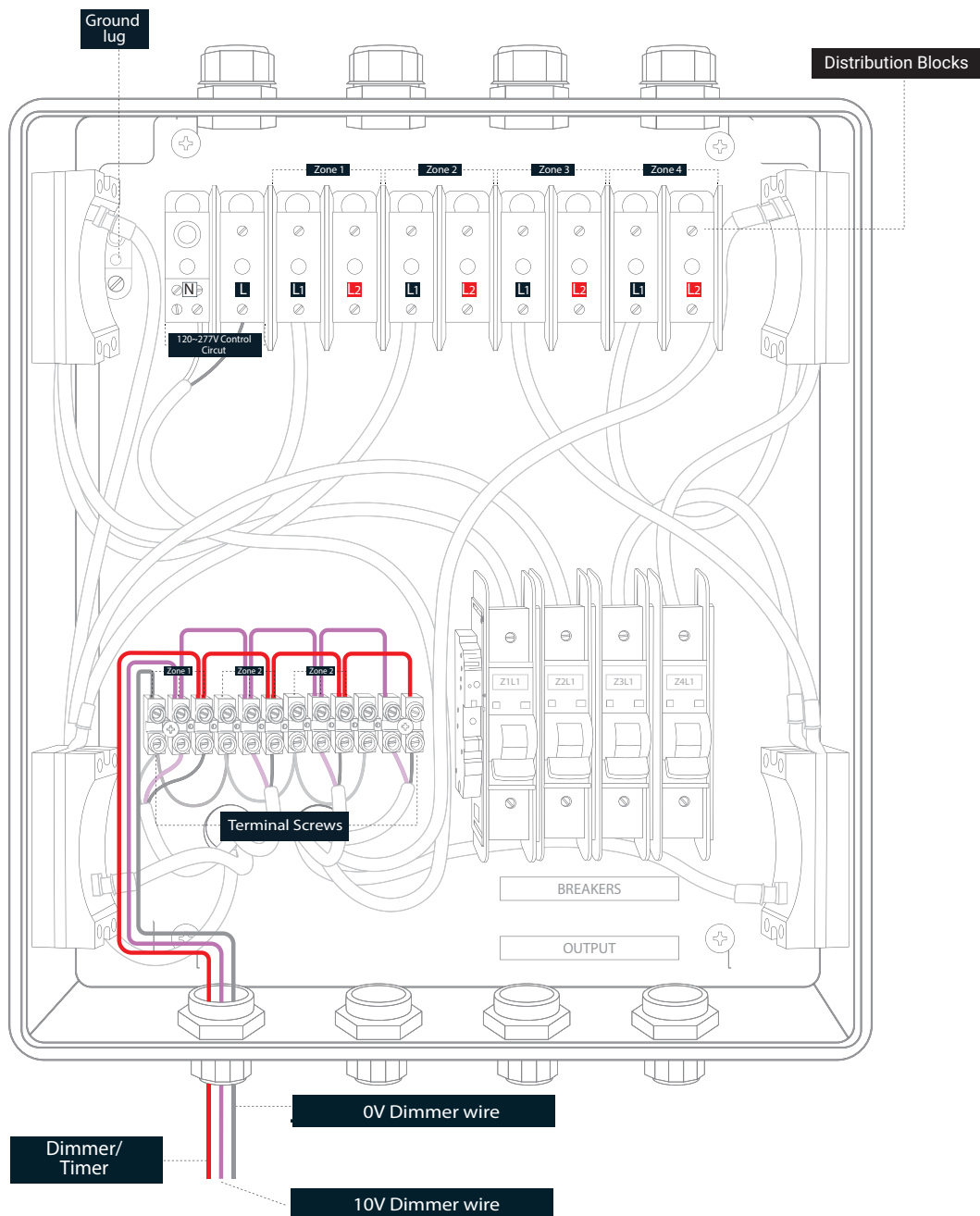
For dimmer continue to steps 2 and 3. For timer, no steps 2 and 3.



# 1 Dimmer / Timer for up to 4 Zones:

1. Connect dimmer/timer load wire from the dimmer/timer switch to terminal screw of zone 1 switch on the Innova Electrical Control Box.
2. Connect purple dimmer wire (10 VDC) from the dimmer switch to terminal screw of zone 1 switch on the Innova Electrical Control Box.
3. Jump red load wire of zone 1 switch to zone 2 switch on terminal screw.
4. Jump purple dimmer wire (10 VDC) of zone 1 switch to zone 2 switch on terminal screw.
5. Repeat step 3 & 4 for zone 3 and 4.
6. Connect grey wire (0 V) from the dimmer/timer switch to any terminal screw of zone grey wire on the Innova Electrical Control Box.

For timer only need step 1, 3, 5



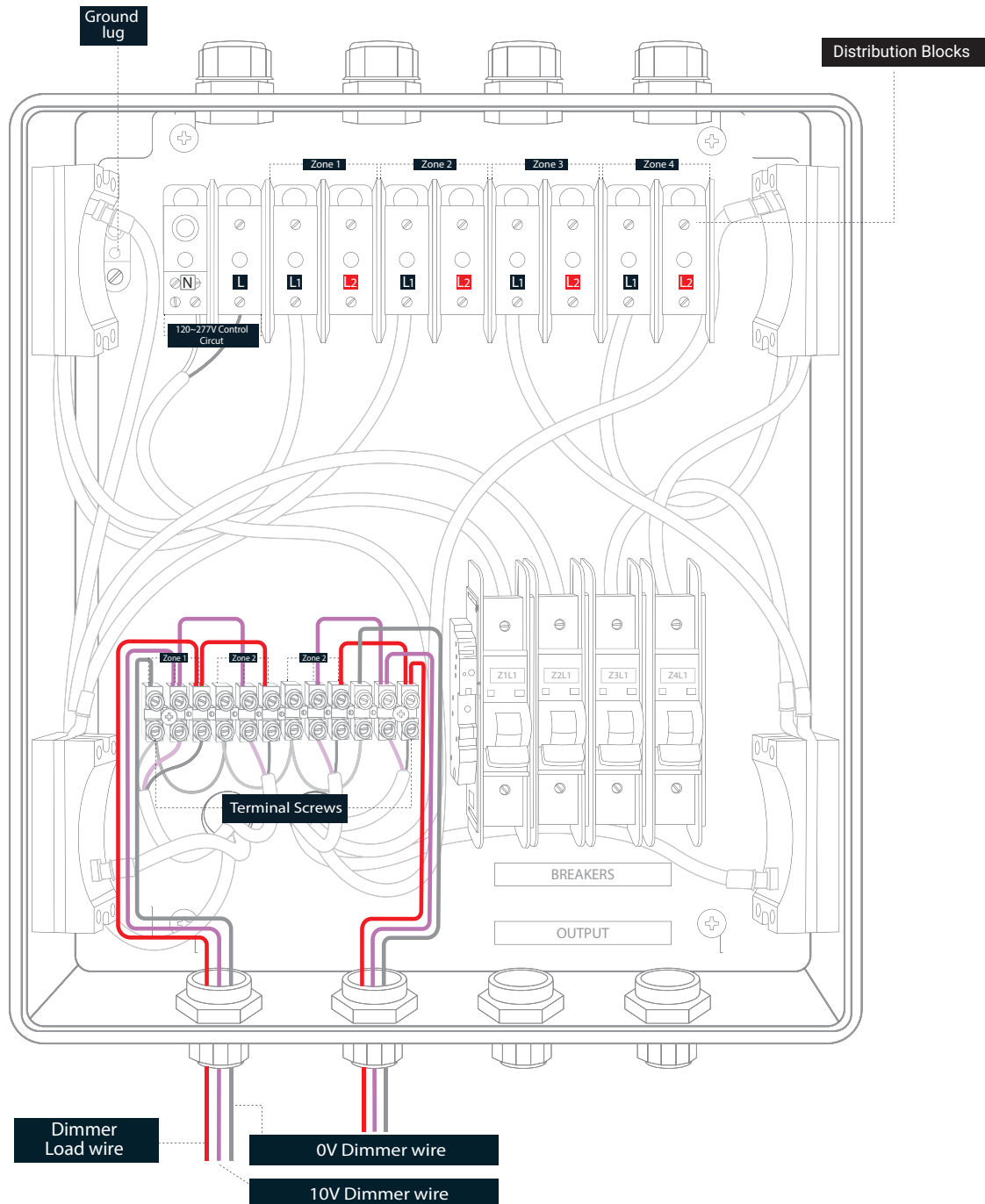
## 2 Dimmers / Timers for 4 Zones:

### Side 1 \* For timer only need steps 1&3

1. Connect dimmer 1/timer 1 load wire from the dimmer/timer switch to terminal screw of zone 1 switch on the Innova Electrical Control Box.
2. Connect dimmer 1 purple wire (10 VDC) from the dimmer switch to terminal screw of zone 1 on the Innova Electrical Control Box.
3. Jump load red wire of zone 1 switch to zone 2 switch terminal screw.
4. Jump purple wire (10 VDC) of zone 1 switch to zone 2 switch terminal screw.
5. Connect dimmer 1 grey wire (0 V) from the wall to any terminal screw with grey wire.

### Side 2 \* For timer only need steps 1&3

1. Connect dimmer 2 / timer 2 load wire from the dimmer/timer switch to terminal screw of zone 3 switch on the Innova Electrical Control Box.
2. Connect dimmer 2 purple wire (10 VDC) from the dimmer switch to terminal screw of zone 3 switch on the Innova Electrical Control Box.
3. Jump load wire of zone 3 switch to zone 4 switch terminal screw.
4. Jump purple dimmer wire (10 VDC) of zone 3 switch to zone 4 switch terminal screw.
5. Connect Dimmer 2 grey wire (0 V) from the wall to any terminal screw with grey wire.







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