Mysa C-Wire Power Adapter Installation Guide

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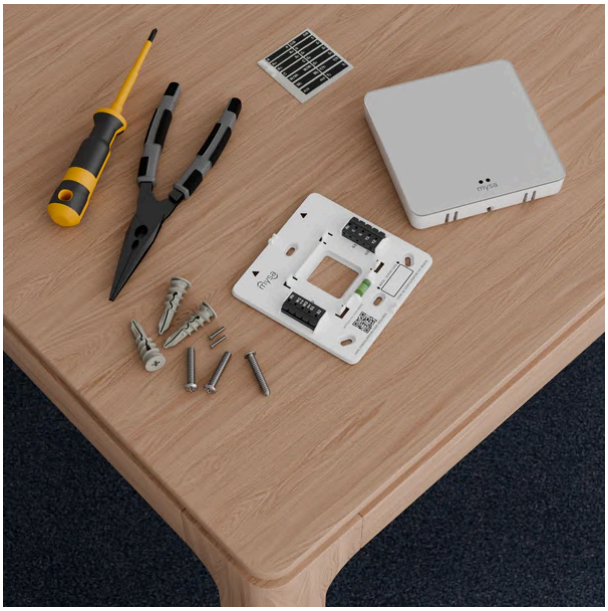
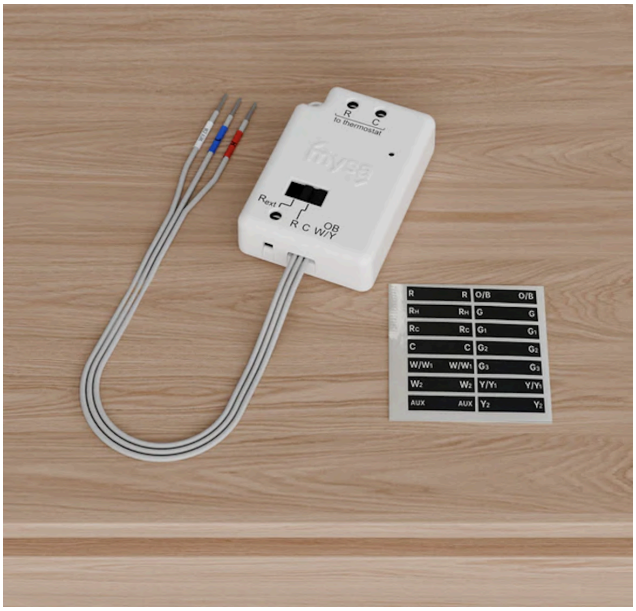




1. Safety Considerations

⚠ WARNING: HIGH VOLTAGES MAY BE PRESENT

Installation of this product involves handling electrical wiring. High voltages may be present in the work area.

Before you begin:

- Turn OFF power to your HVAC system at the circuit breaker or service switch.
- Verify that your thermostat display is OFF before proceeding.
- Follow all installation instructions carefully and completely.

> **UNSURE ABOUT HANDLING ELECTRICAL WIRING?**
> Consult a qualified HVAC technician or licensed electrician.

When to Call a Professional

Contact a qualified HVAC technician if:

- You are uncomfortable working with electrical wiring
- Your system has complex or unfamiliar wiring
- Your HVAC equipment terminals are not labeled - You encounter any issues during installation

2. Overview

What is the Mysa C-Wire Power Adapter?

The Mysa C-Wire Power Adapter is a simple device that provides constant 24V power to your Mysa Smart Thermostat when your existing wiring doesn't include a C-wire (common wire).

Why You Might Need It

Smart thermostats like Mysa for Central HVAC require continuous power to maintain: - Wi-Fi connectivity - Display and touch controls - Smart home integrations - App control and scheduling

Older thermostats often didn't need a C-wire because they ran on batteries or drew minimal power. The Mysa C-Wire Power Adapter bridges this gap, allowing you to use your existing thermostat wiring without pulling new wires.

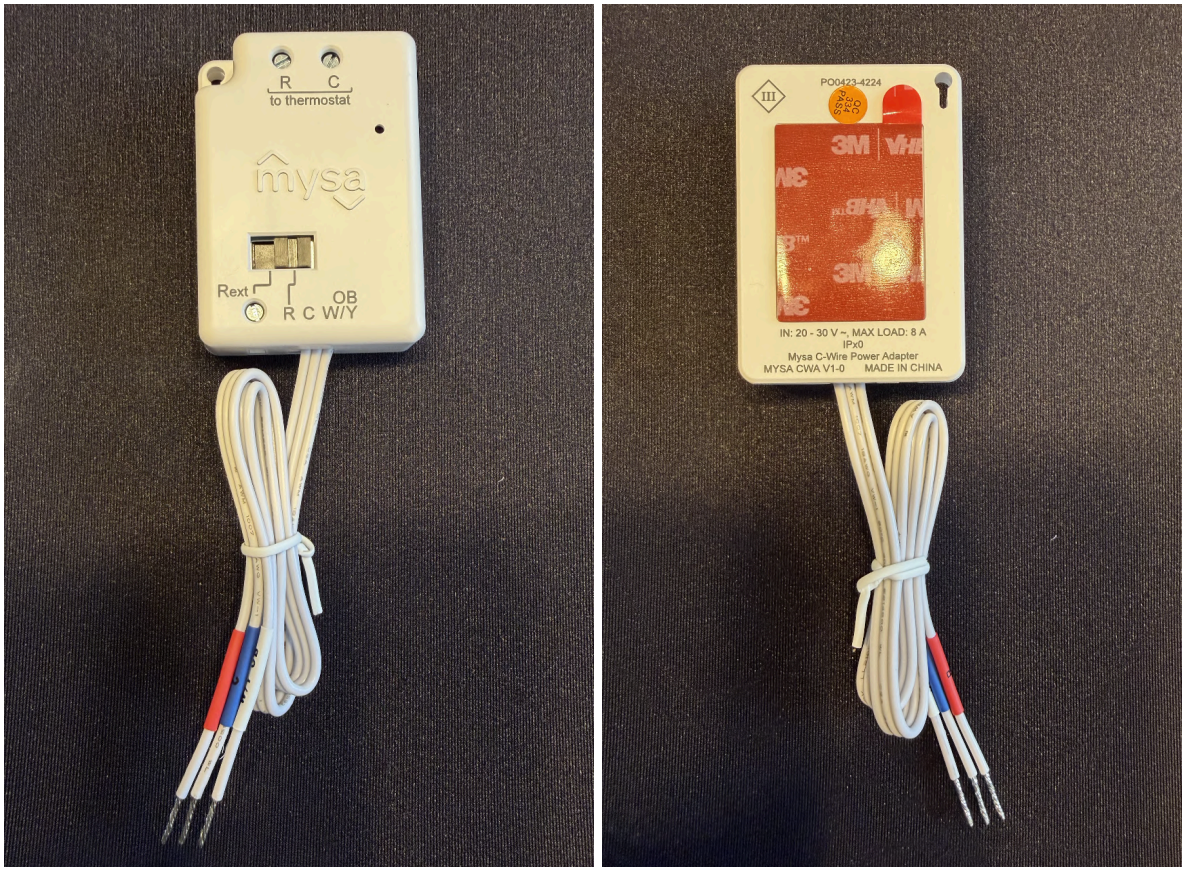
How It Works

The adapter connects between your thermostat wiring and your HVAC control board. It uses your existing wires to deliver steady 24V power to the thermostat's C terminal—while simultaneously sending a control signal from your thermostat to your heating or cooling system.

Key Features

- **Green LED indicator** confirms 24V power presence
- **Color-coded harness** (approx. 12″ length) for easy installation
- **Configuration switch** supports external power adapters as shown in some of the wiring scenarios
- **Easy mounting** with either an eyelet for use with cable ties or an adhesive back that can be used to stick it to a convenient surface nearby the wiring
- **Compact design** mounts near your furnace control board
- **No new wires required** through walls

Meet the Mysa C-Wire Power Adapter



3. What's in the Box

Component	Description
Mysa C-Wire Power Adapter	Main adapter unit with pre-attached wire harness and pre-attached adhesive pad
Wire Connector	For external transformer configurations
Wire Labels	Stickers to label your thermostat wires (R, W, Y, G, C)
Installation Guide	Quick-start printed instructions

4. Compatibility

Compatible Systems and Thermostats

The Mysa C-Wire Power Adapter works with 24 VAC systems only:

- Gas furnaces
- Electric furnaces
- Air handlers
- Heat pumps (with auxiliary/emergency heat)
- Single-stage and multi-stage systems
- Boilers with 24V control
- Zone controllers (zone valves, zone control boards)
- 24V relays
- Dry contact (including millivolt systems, fireplaces, etc.)

The Mysa C-wire Adapter is only compatible with the Mysa Smart Thermostat. It can not be used with other brands.

5. Technical Specifications

Model: MYSA CWA V2-0

Specification	Value
Input Voltage Range	20 – 30 VAC
Current Rating	8A total (2A max on W/Y/OB)
Operating Temperature	0°C to 50°C (32°F to 122°F)
Ingress Protection	IP20
Wire Harness Length	Approx. 12 inches (30 cm)

Terminal	Function	Wire Color
R	24V Power from equipment	Red
C	Common from equipment	Blue
W/Y/OB	Heat, Cool, or Heat Pump Reversing	White
Rext	24V power from external power supply	Screw terminal
R to Thermostat	To send power to the thermostat	Screw terminal
C to Thermostat	To receive control signal from the thermostat	Screw terminal

6. Before You Begin

Tools

Tool	Purpose
Small flathead screwdriver	For adapter screw terminals
Large Phillips screwdriver	For HVAC control board terminals
Smartphone or camera	To photograph existing wiring
Multimeter	To verify voltage (if needed)

Important: Document Your Existing Wiring

Before disconnecting ANY wires:

1. Take a clear photo of your existing thermostat wiring
2. Take a clear photo of your HVAC control board wiring
3. Note which color wire connects to which terminal
4. Save these photos—they're invaluable for troubleshooting

7. Installation

Step 1: Turn OFF Power

To avoid personal risk and damage to your HVAC system, turn OFF power at the circuit breaker or service switch.

How to Verify Power is OFF

Digital thermostat: - Display screen should be completely blank (unless it was a battery powered thermostat) - Adjust the temperature setting significantly - Wait several minutes - System should NOT engage

Analog thermostat: - Adjust the temperature setting significantly - Wait several minutes - System should NOT engage

⚠ Do not proceed until you have confirmed the power is OFF.

Step 2: Check for an Existing C-Wire

You may not need the C-Wire Power Adapter if you already have a C-wire or if you have an unused wire near your thermostat that you can repurpose as a C-wire.

At the Thermostat

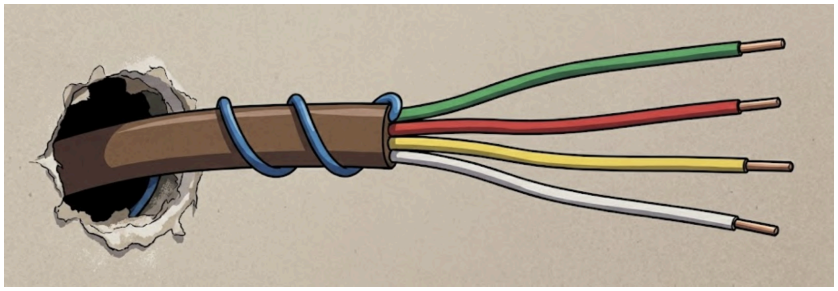
1. Remove the front cover of your existing thermostat (keep wires connected)
2. Look for a wire connected to a terminal labeled C

If you find a C-wire: You do not need this adapter. Follow your Mysa thermostat installation instructions.

If you don't, proceed to the next step below.

Check for a Hidden/Unused Wire

1. Gently pull the thermostat backplate away from the wall
2. Look inside the wire bundle for any unused wires tucked behind
3. Check at your furnace/air handler for a matching wire color connected to the C terminal



If you find an unused wire: You can connect it to the C terminal at both ends (thermostat and control board) instead of using the adapter.

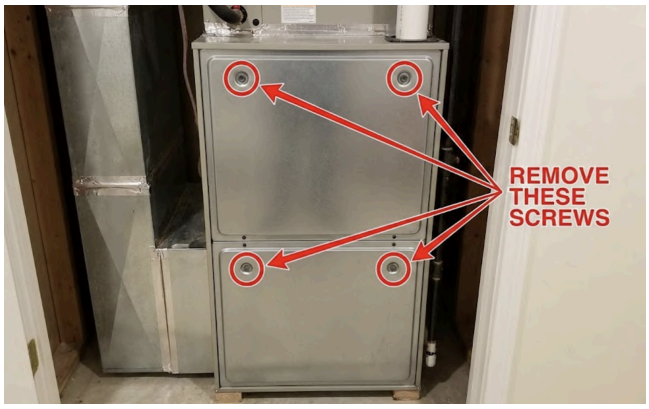
If NO C-wire or spare wire is available: Proceed to Step 3.

Step 3: Locate the Installation Area

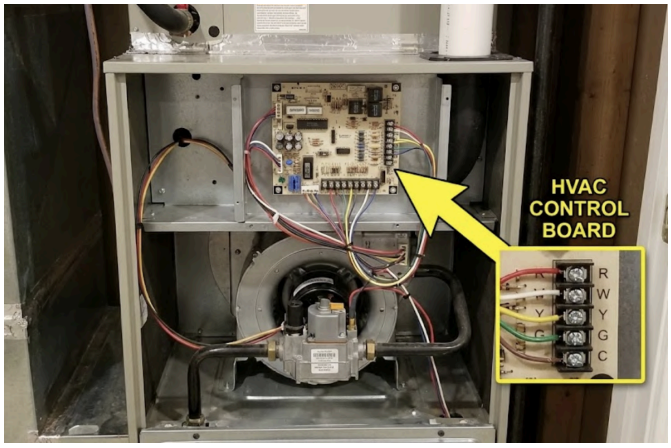
For Central HVAC installs the Mysa C-Wire Power Adapter is installed at your HVAC control board located in your furnace, air handler, or boiler. Click here for info about multi-thermostat/zoned systems.

Finding Your Control Board

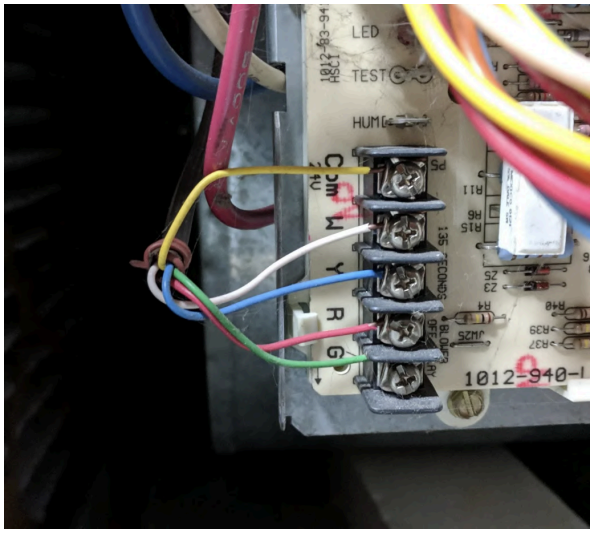
1. Open the equipment cover on your furnace or air handler
2. Locate where your thermostat wires connect to the system
3. This is typically a terminal block on a control board
4. You may need to remove a secondary interior panel to access it



Before: Remove the screws on the furnace access panel to access the control board inside.



After: With the panel removed, you can see the HVAC control board. The inset shows a close-up of the thermostat terminal block with R, W, Y, G, and C terminals.



A close-up of a typical HVAC control board terminal block. Notice the labeled terminals (C, W, Y, R, G) with color-coded wires connected. Your control board may look different, but the terminal labels will be similar.

STOP! Before Proceeding…

📸 **Take a clear photo of the wires attached to the control board terminals.**

This photo is essential for: - Reference during installation - Troubleshooting if needed - Contacting support

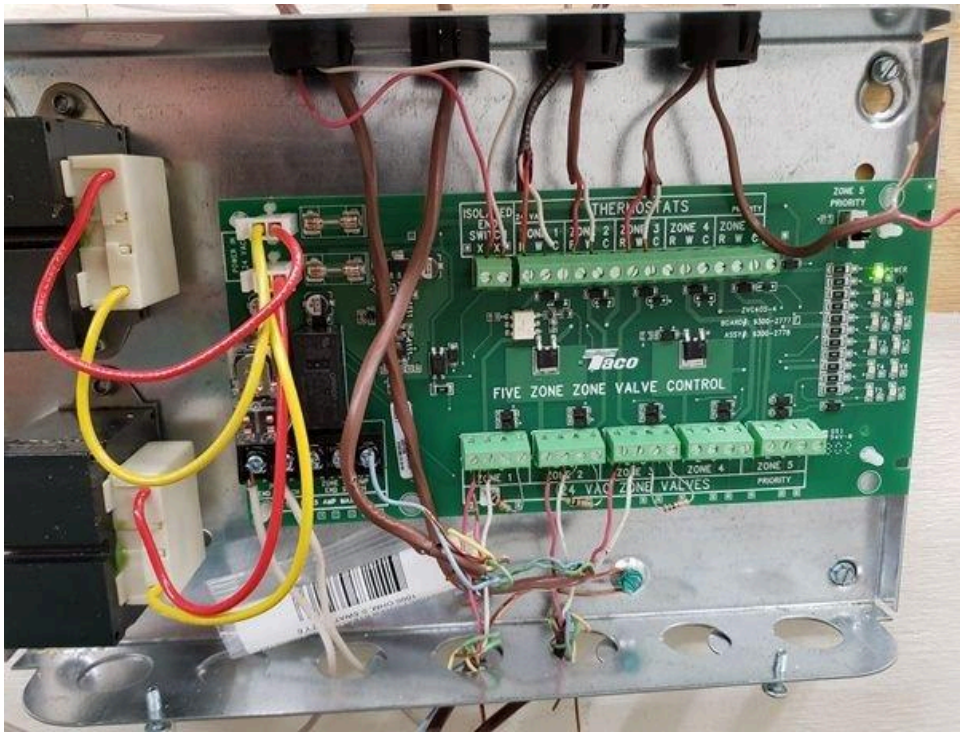
For Multi-Thermostat/Zoned Systems

Install the adapter at the **zone controller or valves/relays**—not the furnace.

> **Note:** One C-Wire Power Adapter is required for each thermostat that lacks a C-wire.

Common Zone Controllers:

Honeywell HZ221 Zone Controller: Shows the exterior cover (left) and interior with zone thermostat terminals (right). Install the C-Wire Power Adapter at the thermostat terminals on this board.



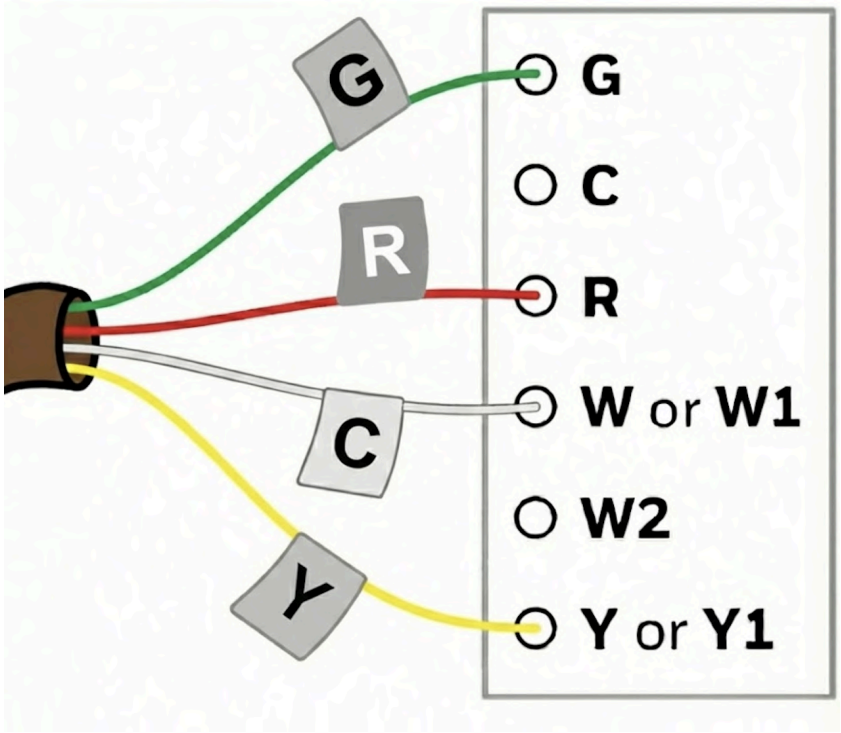
Taco Five Zone Valve Control: A common zone controller for hydronic (hot water) heating systems. The thermostat connections are at the top of the board.

Step 4: Identify and Label Thermostat Wires

Using the provided wire label stickers, label each thermostat wire at the control board:

If the wire goes to terminal…	Apply this sticker
R (power)	R sticker
W (heat)	C sticker*
Y (cooling)	Y sticker
G (fan)	G sticker

*The wire going to W or Y will connect to the adapter's C terminal—this is intentional.



Special Cases

If you have BOTH W and Y wires: - Place **C sticker** on the W wire - Place **Y sticker** on the Y wire

If you have ONLY a Y wire (no W): - Place **C sticker** on the Y wire

If there is NO G wire: - Skip the G label—not all systems have a fan wire

Step 5: Install the C-Wire Power Adapter

Refer to **Section 8** for the wiring diagram that matches your system type.

General Installation Process

1. Connect the R wire: - Disconnect the thermostat R wire from the control board R terminal - Connect this wire to the adapter's R terminal - Connect the adapter's Red-tipped wire to the control board R terminal

2. Connect the W/Y wire (now labelled as C): - Disconnect the thermostat W wire from the control board W terminal - Connect this wire to the adapter's C terminal - Connect the adapter's White-tipped wire (W/Y/OB) to the control board W terminal

3. Connect the adapter's C wire: - Connect the adapter's Blue-tipped wire to the control board C terminal - If an existing C-wire from the condenser is present, ensure it remains connected

4. Leave other wires in place: - The Y wire (cooling) stays connected directly to the control board Y terminal - The G wire (fan) stays connected directly to the control board G terminal - These wires do NOT pass through the adapter

5. Set the adapter switch: - Ensure the switch on the adapter is set to the correct position for your system (typically R position)

6. Mount the adapter (optional): - Use the included adhesive pad to secure the adapter to a nearby surface - Alternative: Use a small screw or cable tie

7. Close the HVAC equipment cover: - Secure the cover properly - Many systems have a safety switch that prevents operation if the cover is open

> ⚠ **STOP! Do NOT turn power ON yet.**
>
> If your Mysa thermostat is not yet installed, complete the thermostat installation first using the instructions included with your Mysa Smart Thermostat.

Step 6: Turn Power ON

Once the C-Wire Power Adapter is installed, the HVAC equipment cover is closed and secured and the Mysa thermostat is installed on the wall, **turn your system power ON at the circuit breaker or service switch.**

Step 7: Confirm System Functionality

Verify that your Mysa thermostat display turns ON, then test your system:

Test Heating

1. Set the thermostat to HEAT mode
2. Raise the target temperature above the current room temperature

3. Wait for the system to engage
4. Confirm warm air is flowing (or heating indicator is active)

Test Cooling

1. Set the thermostat to COOL mode
2. Lower the target temperature below the current room temperature
3. Wait for the system to engage
4. Confirm cool air is flowing

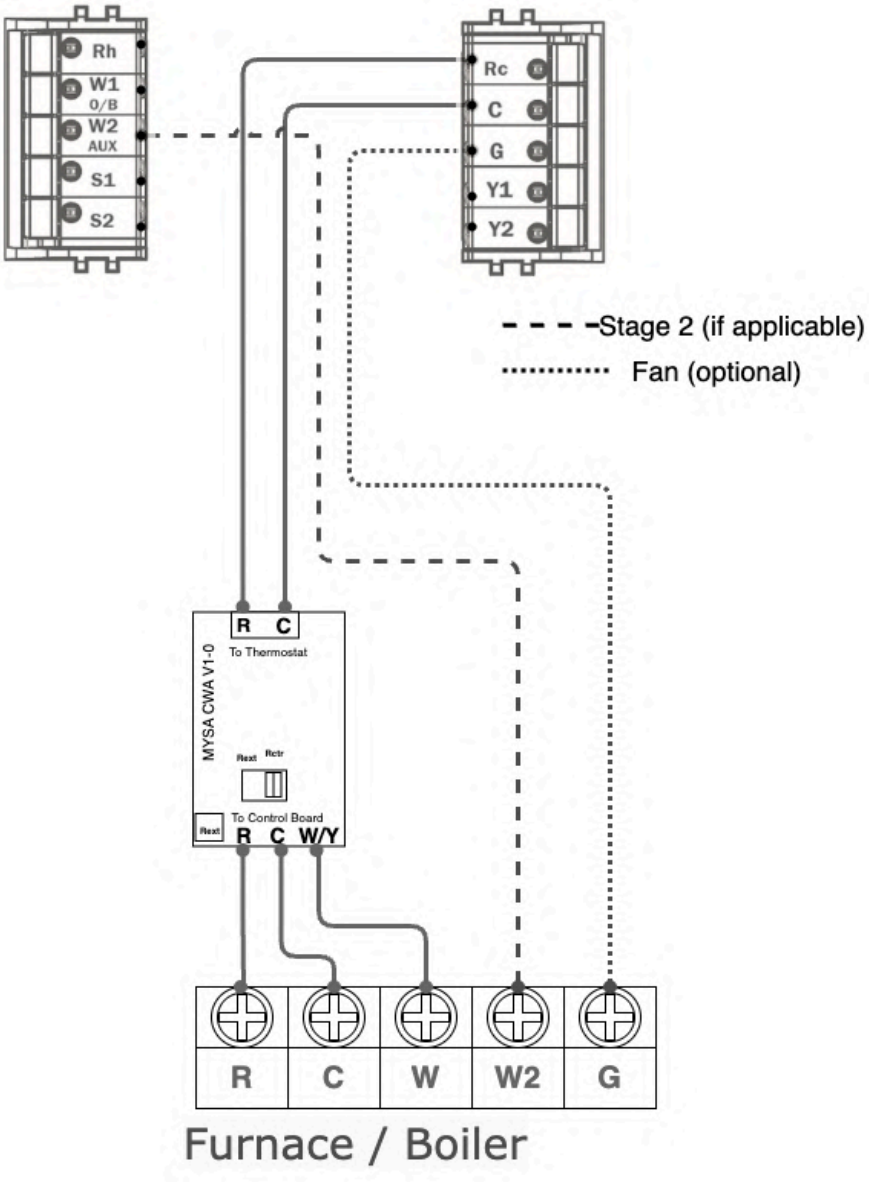
⚠ **DO NOT TEST COOLING** when outdoor temperatures are below 12°C (54°F). Operating your AC compressor in cold weather can damage the equipment.

8. Wiring Diagrams by System Type

Choose the diagram that matches your HVAC system configuration.

A. Furnace or Boiler (Heat-Only)

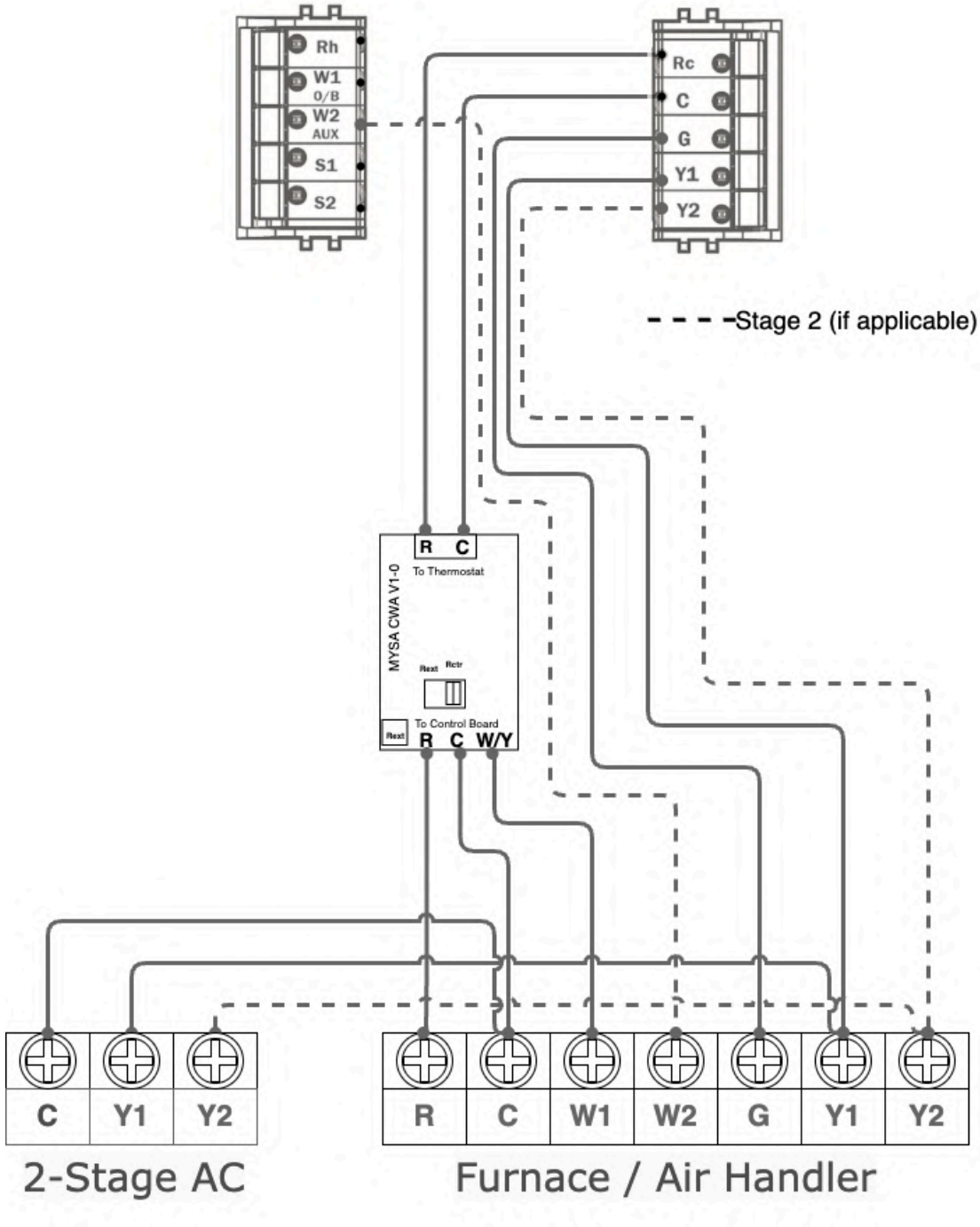
Use this diagram for: Systems with one or two heating stages (W1/W2). Furnaces may include an optional fan (G); boilers typically do not.



Leave the G wire (if present) connected directly to the control board.

B. Furnace or Air Handler + AC

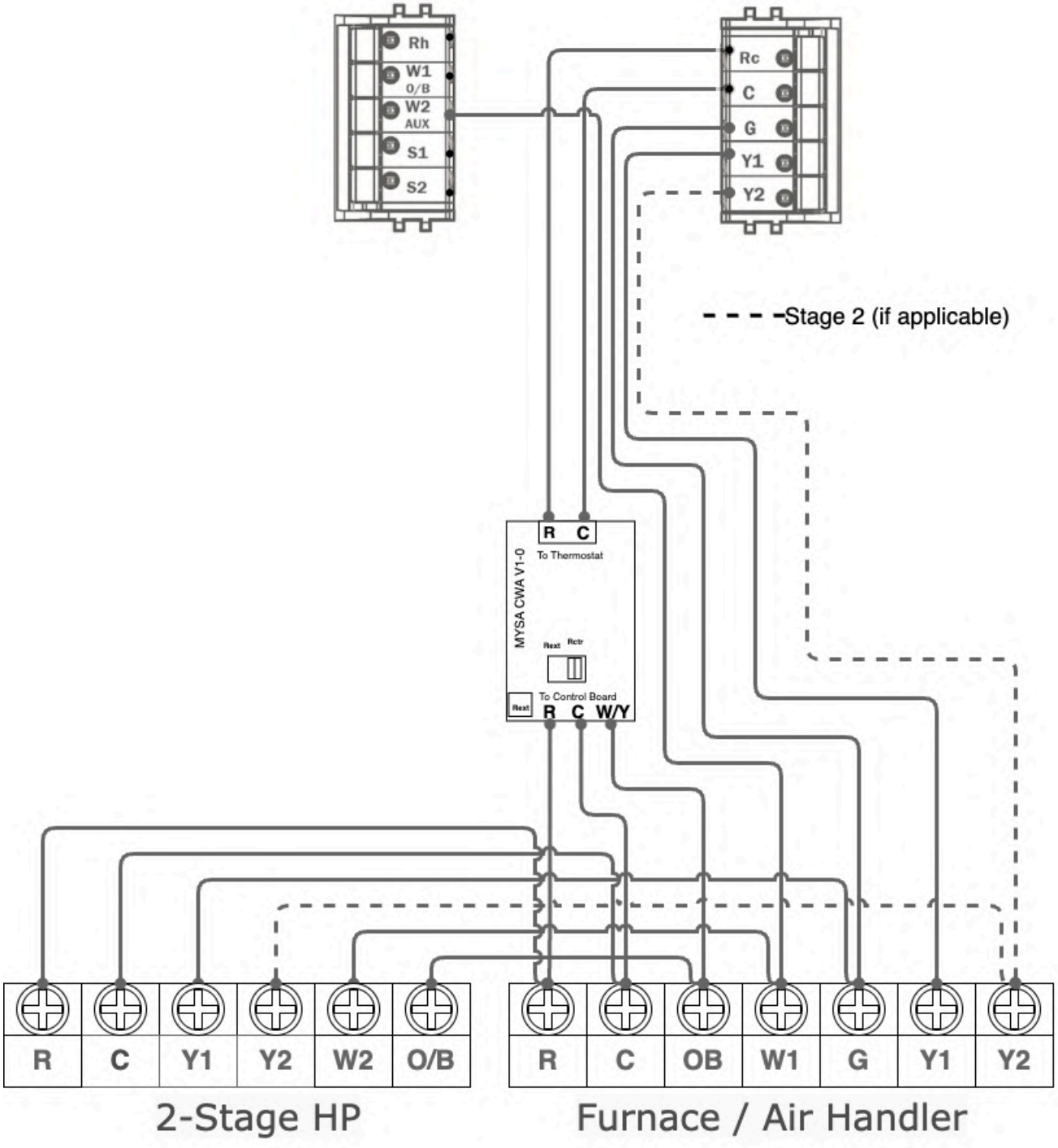
Use this diagram for: Systems with central air conditioning and a furnace or air handler (single or two-stage cooling).



Leave Y1, Y2, and C wires to the AC condenser connected as they were. Leave the G wire connected directly to the control board.

C. Heat Pump + Furnace/Air Handler

Use this diagram for: Heat pump systems (single or two-stage) with auxiliary heat.

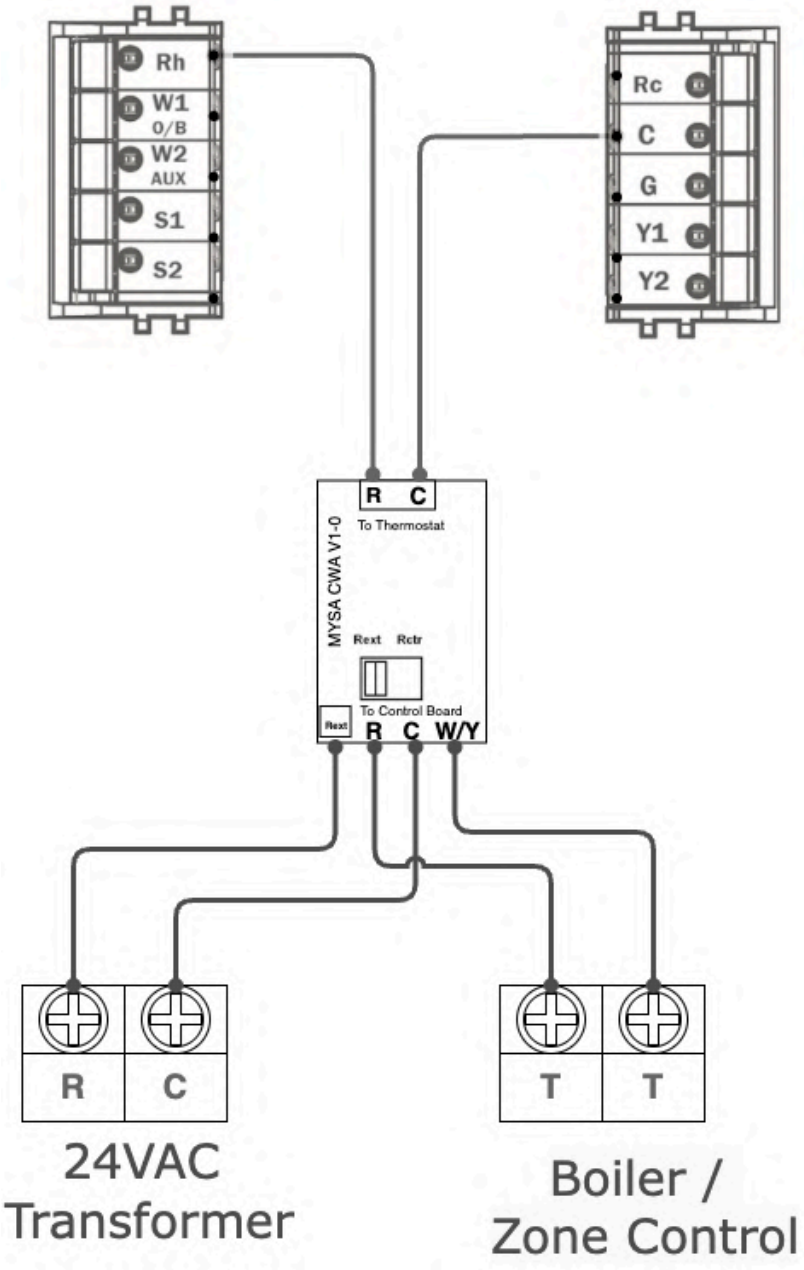


Leave Y1, Y2, and C wires connected as they were.

D1. Heat-Only Boilers, Zone Control, relays, millivolt (External Transformer)

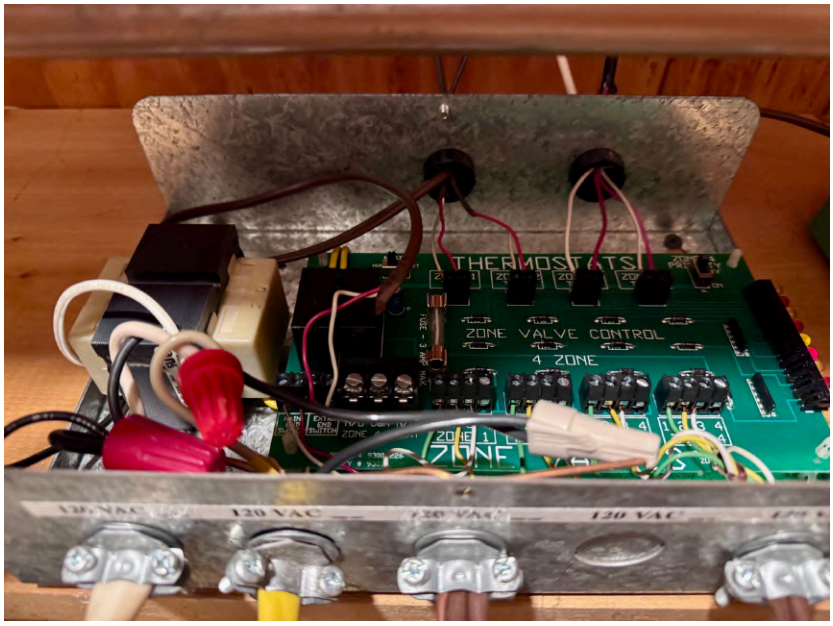
Use this diagram for: Boilers or hydronic zone systems powered by a separate 24VAC transformer. In the following pages there are several illustrative examples of this wiring for different types of system.

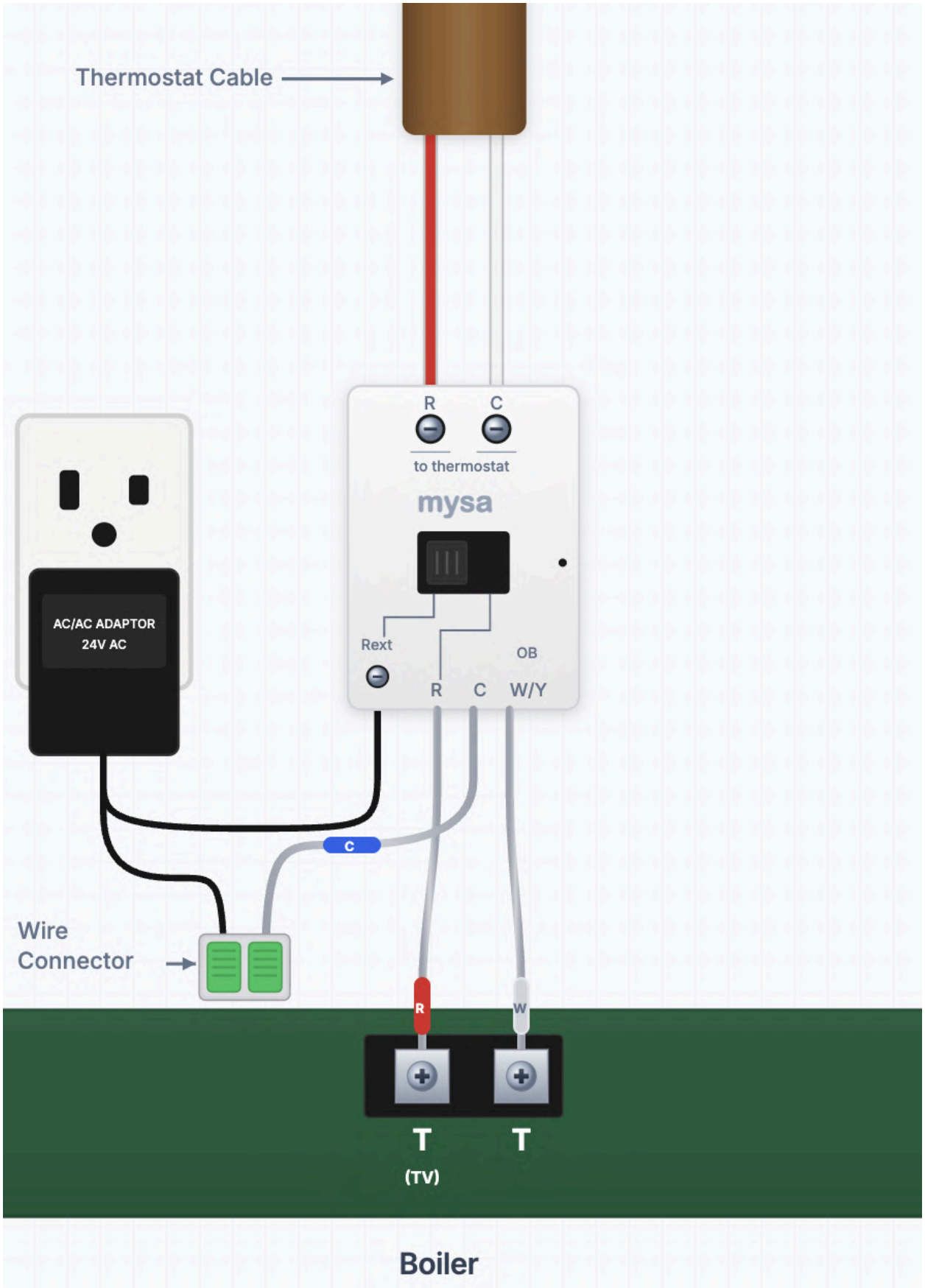
Please note that when using an external transformer you must switch the power switch to the Rext position. When in this position the R and W c-wire adapter wires are fully isolated from the rest of the thermostat/24V circuitry.

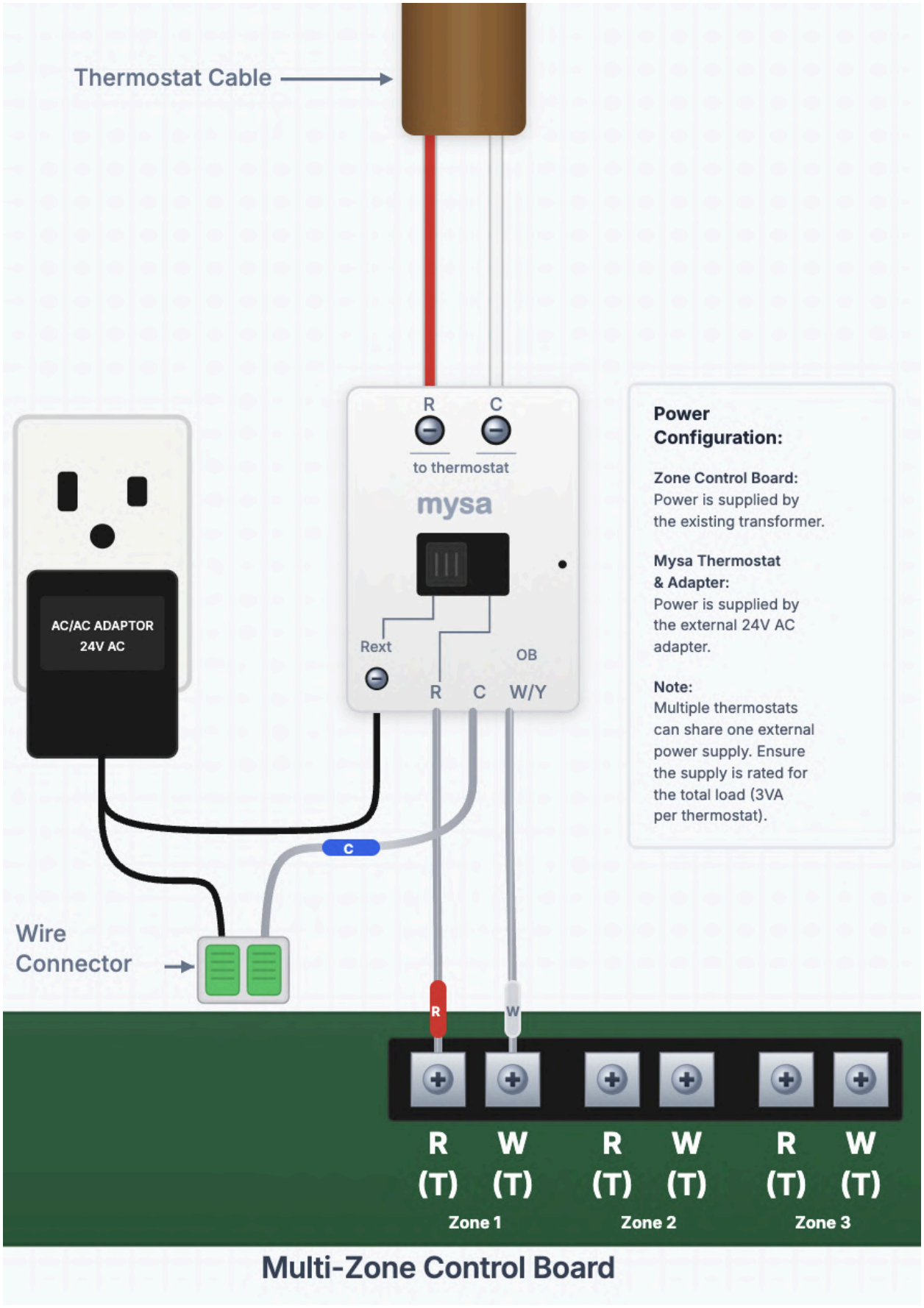


Aquastat: A boiler aquastat controls water temperature and often contains a built-in transformer (the copper-colored component). Look for terminals labeled T-T (thermostat) for your connection.

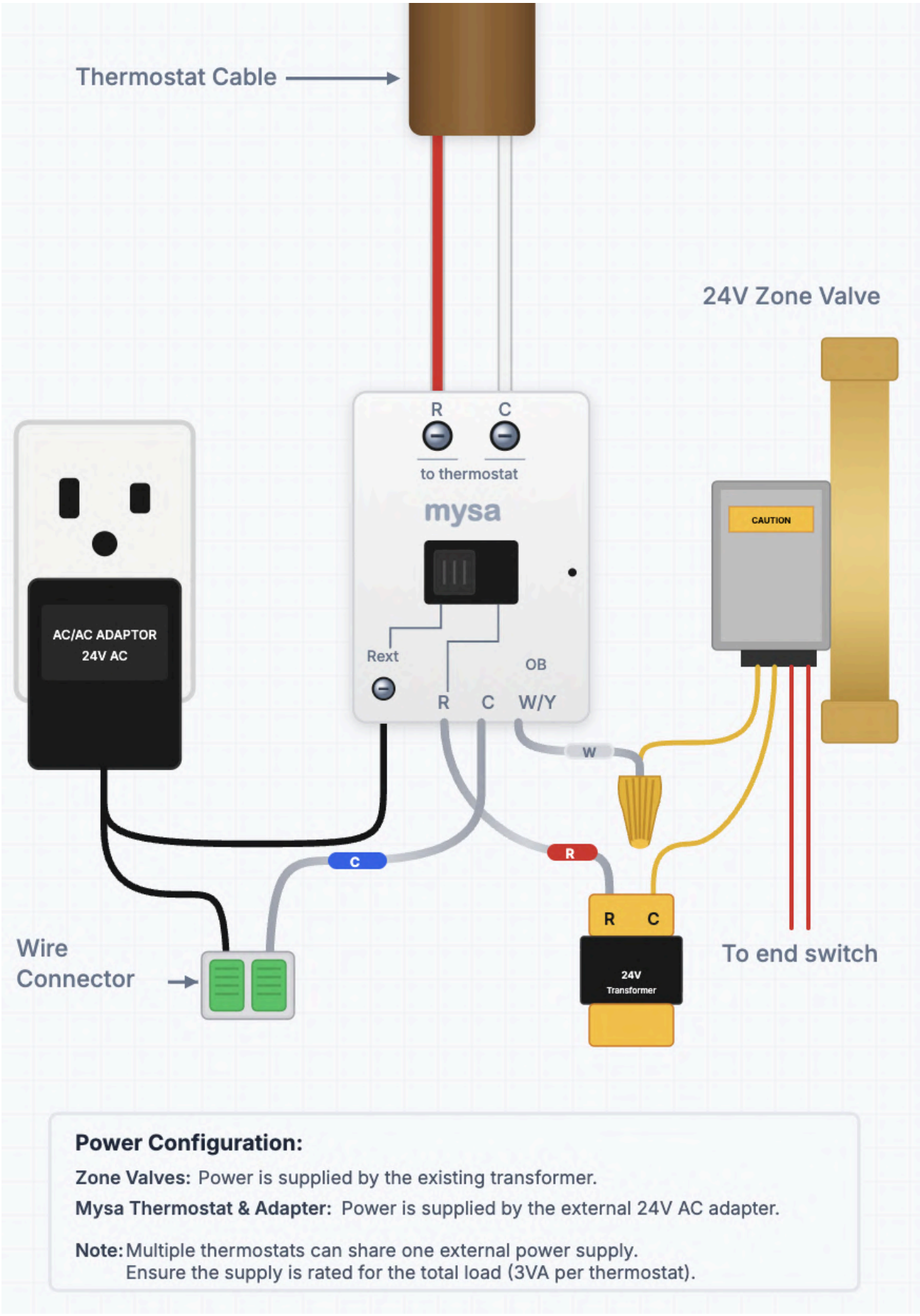
Taco 4-Zone Valve Control: Another common zone controller. Note the "THERMOSTATS" label indicating where thermostat wires connect.




Thermostat Cable
R
C
to thermostat
mysa
AC/AC ADAPTOR
24V AC
Rext
OB
R
C
W/Y
C
Wire
Connector
R
W
T
T
(TV)
Boiler



Multi-Zone Control Board

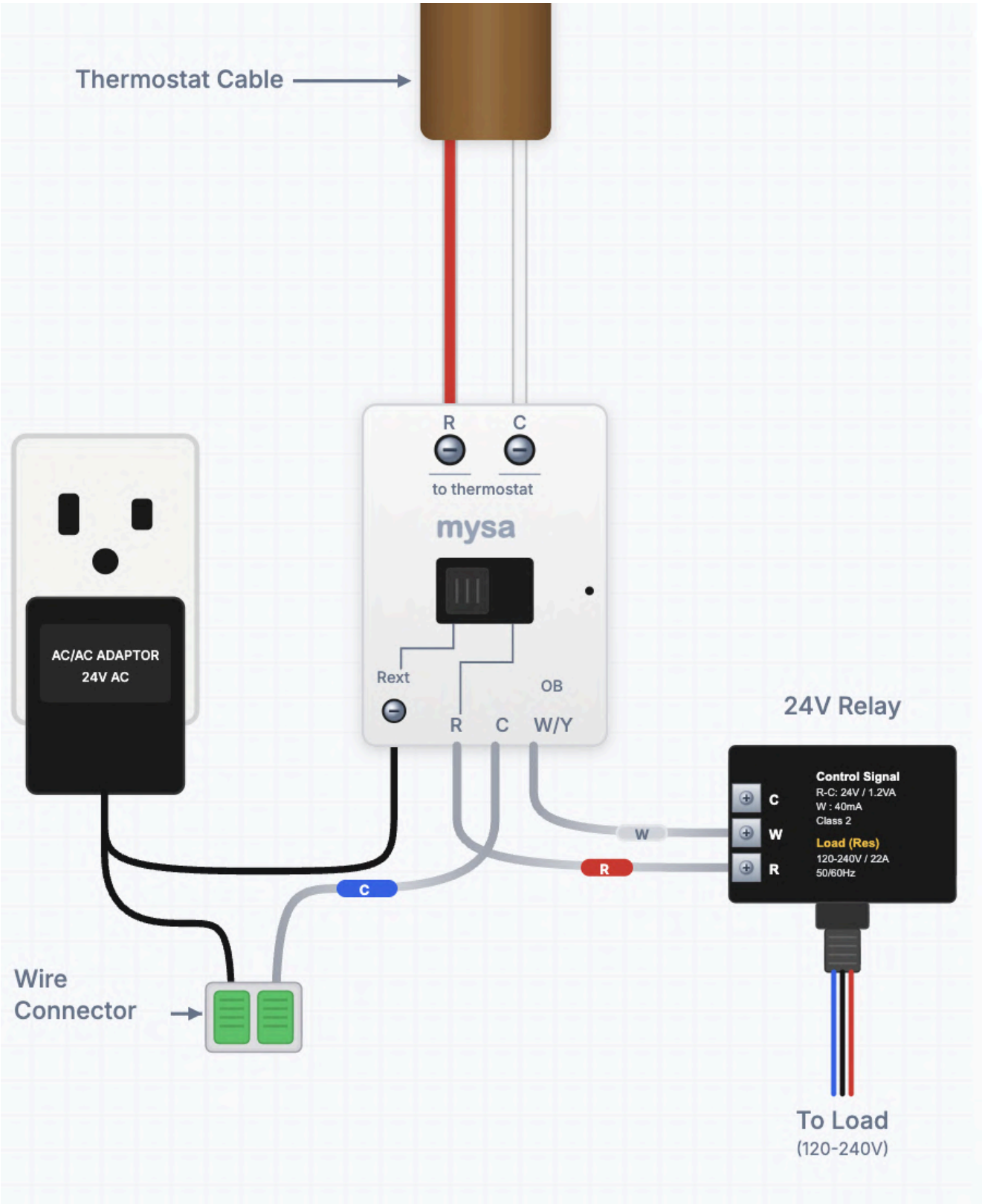


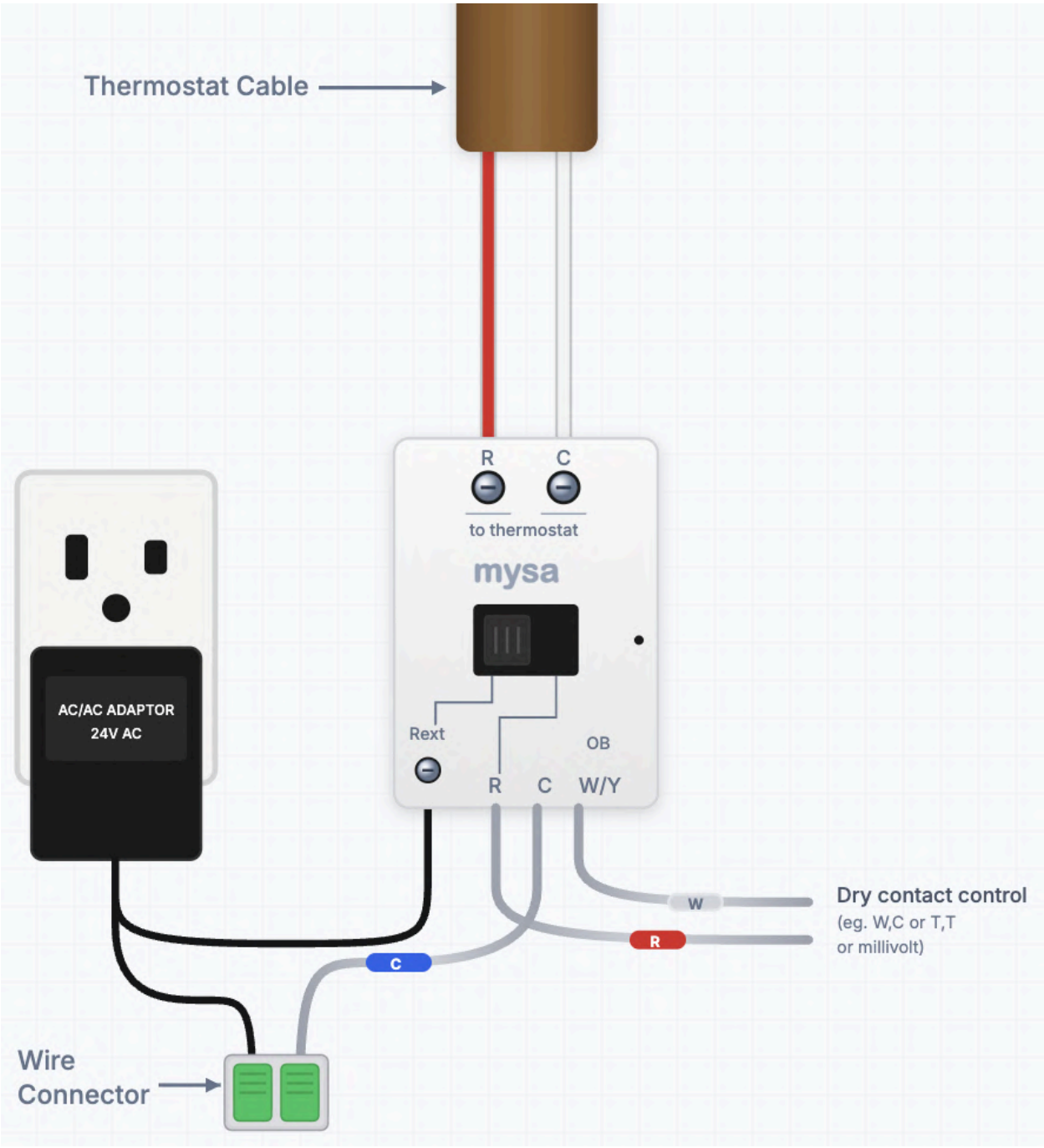
Power Configuration:

Zone Valves: Power is supplied by the existing transformer.

Mysa Thermostat & Adapter: Power is supplied by the external 24V AC adapter.

Note: Multiple thermostats can share one external power supply.
Ensure the supply is rated for the total load (3VA per thermostat).


Thermostat Cable
R
C
to thermostat
mysa
Rext
OB
R
C
W/Y
AC/AC ADAPTOR
24V AC
24V Relay
Control Signal
R-C: 24V / 1.2VA
W : 40mA
Class 2
Load (Res)
120-240V / 22A
50/60Hz
C
W
R
W
R
C
Wire
Connector
To Load
(120-240V)


Thermostat Cable
R
C
to thermostat
mysa
AC/AC ADAPTOR
24V AC
Rext
OB
R
C
W/Y
W
R
C
Dry contact control
(eg. W,C or T,T
or millivolt)
Wire
Connector

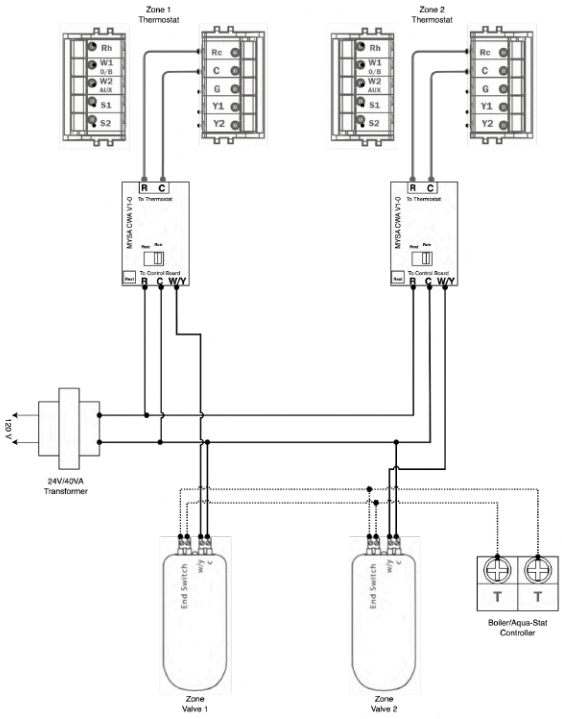
D2. Boilers, Zone Controllers and Zone Valve with Existing Transformer

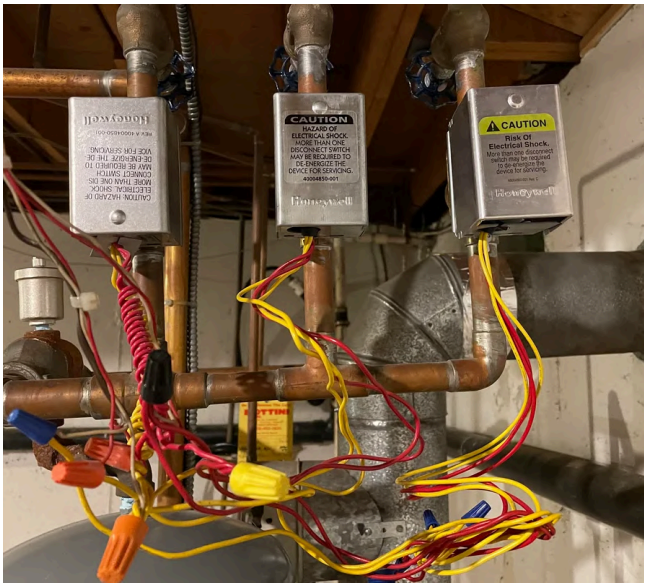
Use this diagram for: Zone valve systems that have an existing 24VAC transformer but no C-wire available at the thermostat.

The diagram below shows an example of two zone valves with two Mysa thermostats and two C-wire adapters, but this configuration can be adapted for a single zone or even multiple zones.

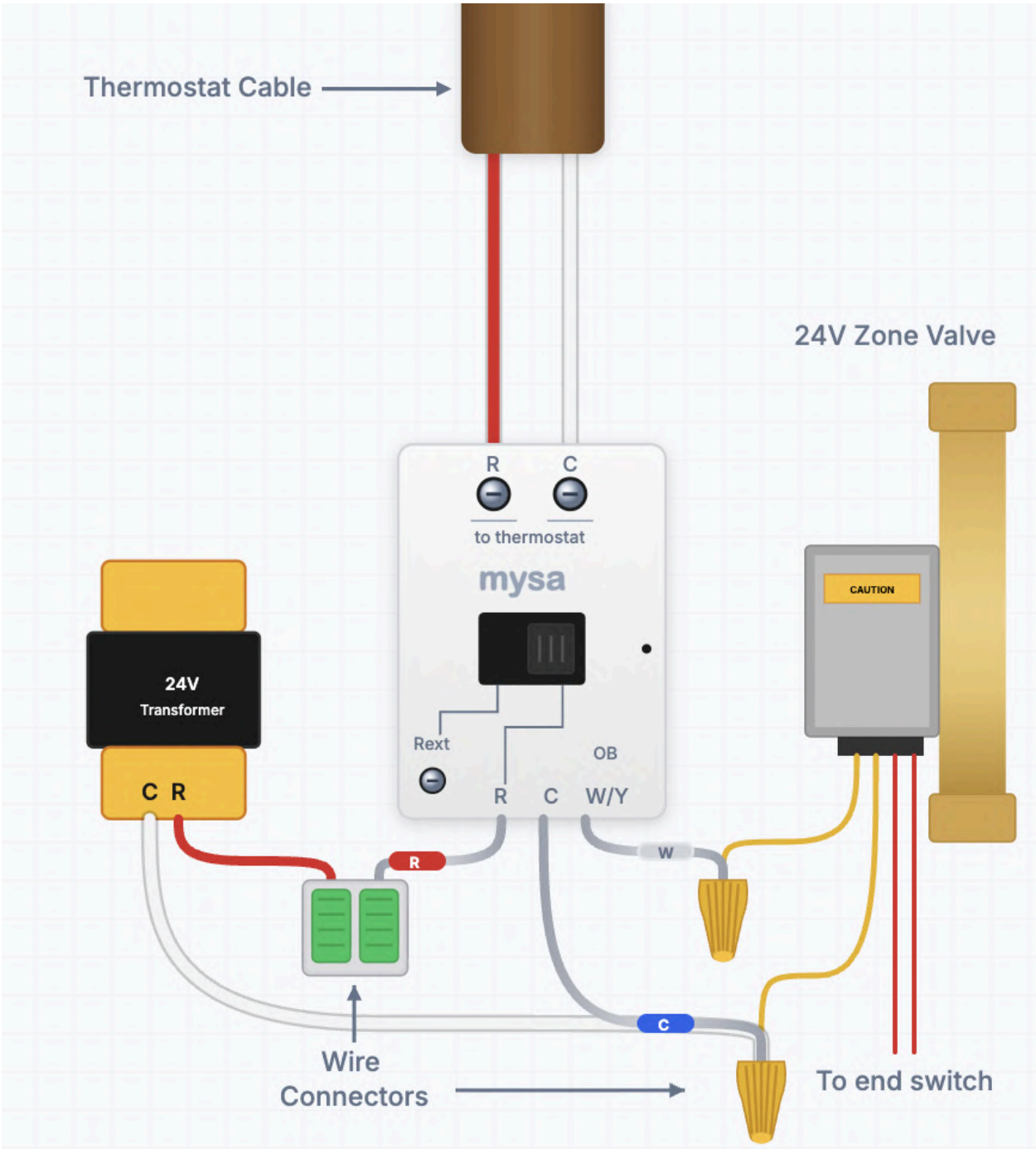
Important: If you are using an existing transformer, ensure that it has sufficient capacity to power all of the Mysa thermostats connected to it. Information about transformer sizing requirements can be found in the “Selecting the Right Transformer Size” section below.

Zone Valve Wiring Configurations: Zone valves can come in different wiring configurations. Most are either four-wire or three-wire connections. In the example wiring diagram shown below, this is a typical four-wire zone valve configuration where: - The two red wires are the end switch that connects to your boiler - The two yellow wires are the typical W and C wires that connect to your transformer and thermostat wires





24V Zone Valves: Another common type of zone valve setup. Each silver box is a zone valve actuator that controls water flow to a heating zone.

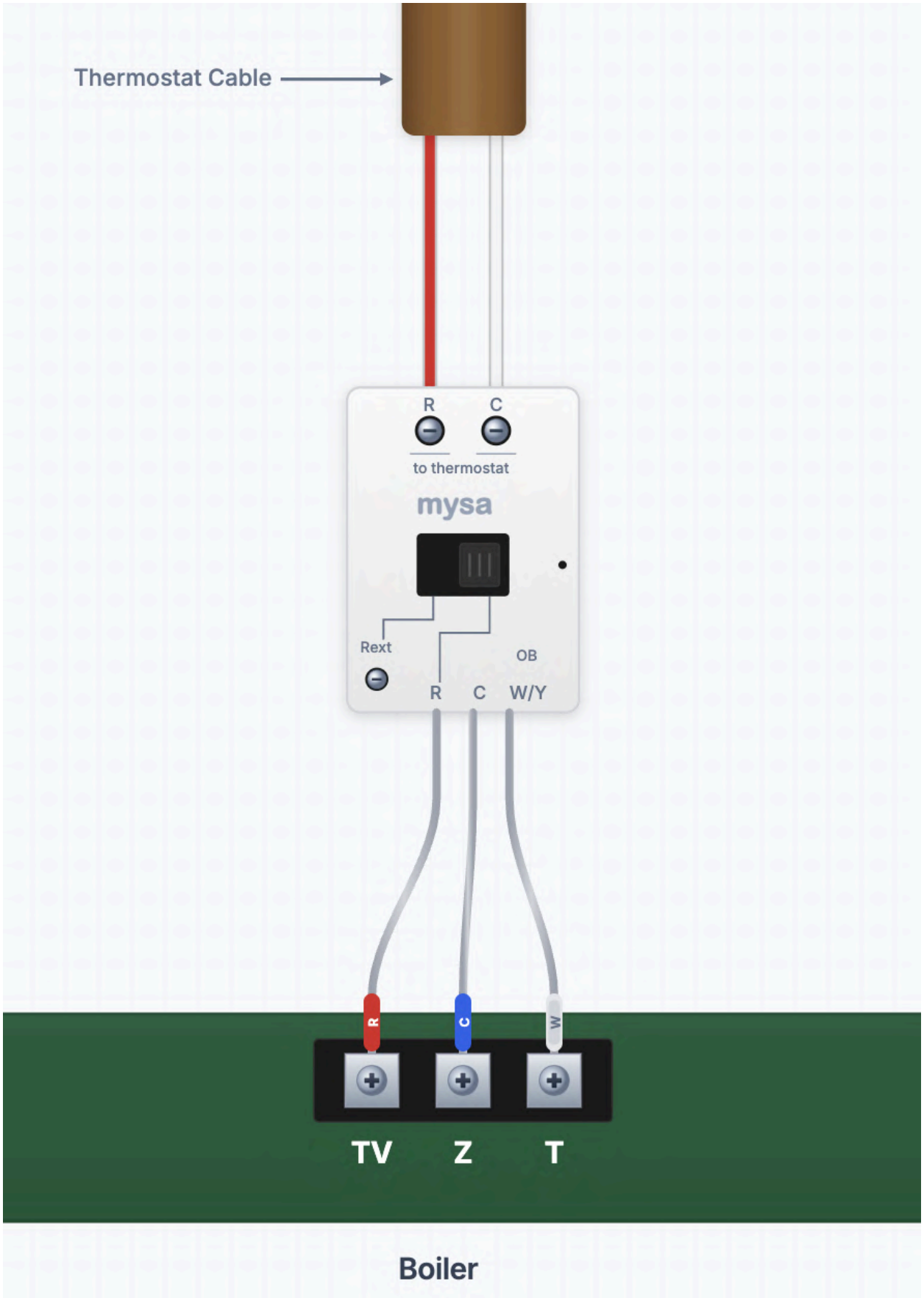


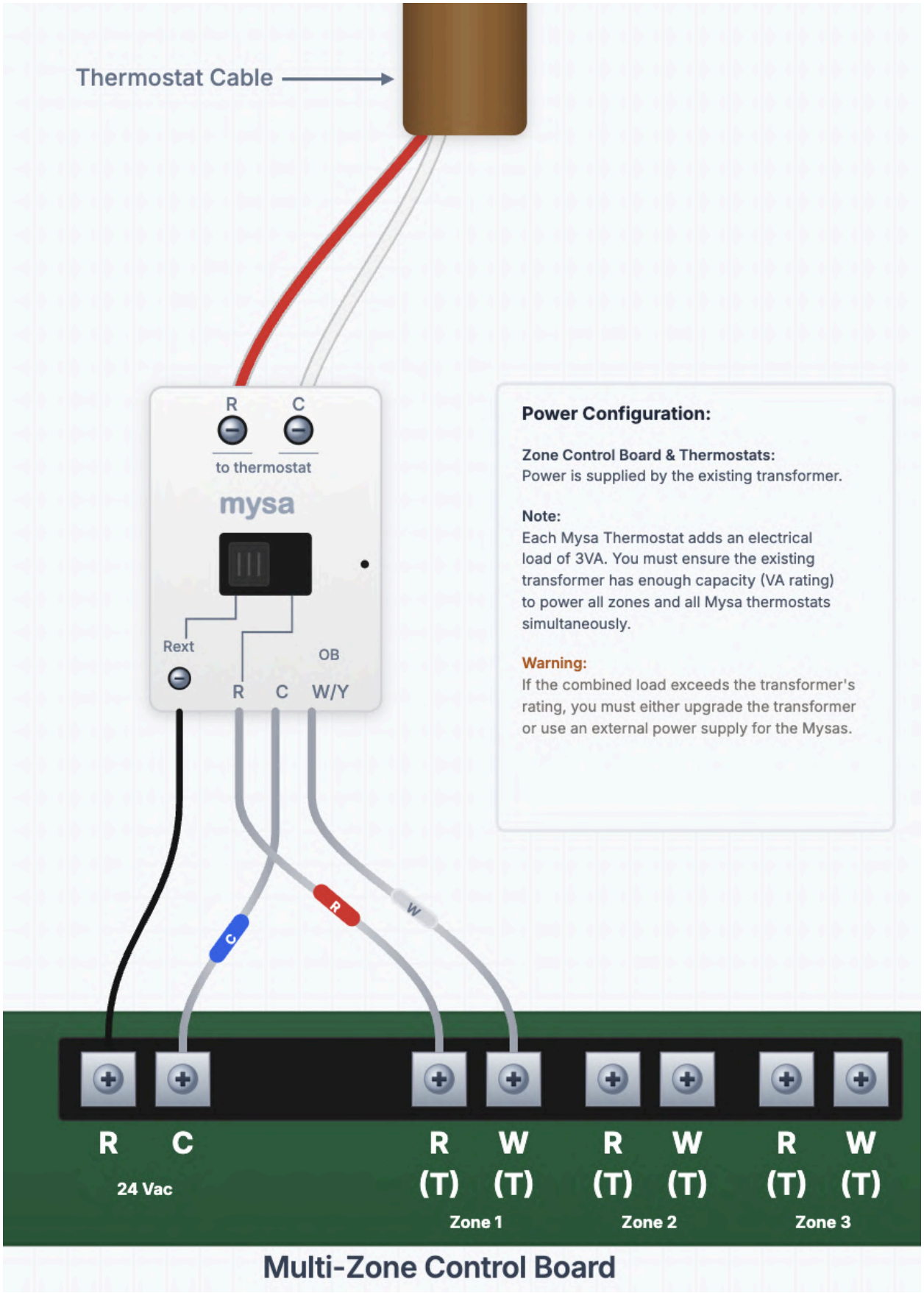
Power Configuration:

Zone Valves & Thermostats: Power is supplied by the existing transformer.

Note: Each Mysa Thermostat adds an electrical load of 3VA. You must ensure the existing transformer has enough capacity (VA rating) to power all zone valves and all Mysa thermostats simultaneously.

Warning: If the combined load exceeds the transformer's rating, you must either upgrade the transformer or use an external power supply for the Mysas.


Thermostat Cable
R
C
to thermostat
mysa
Rext
OB
R
C
W/Y
R
C
W
TV
Z
T
Boiler

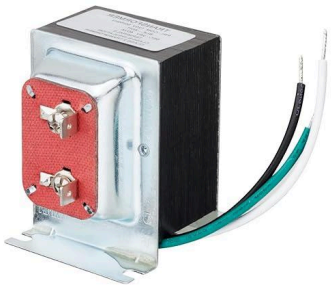


Multi-Zone Control Board

Information about 24V Transformers

If your boiler system doesn't have a built-in transformer, or if you need to add one, external 24V transformers are available in different form factors. All provide the same 24VAC output needed for the C-Wire Power Adapter, but they differ in how they're installed and connected:

Hardwired Transformer: *Connects directly to your home's electrical wiring. Has screw terminals for 24V output (R and C). Installation requires an electrician.*



Plug-in Transformer with Screw Terminals: *Plugs into a standard outlet. Screw terminals provide 24V output. Model shown: 120V input, 24V output.*

Plug-in Transformer with Wire Leads: *Plugs into an outlet with pre-attached wires instead of screw terminals. The two wire leads provide R (24V) and C (common) connections.*

Selecting the Right Transformer Size

Each Mysa Smart Thermostat requires 3 VA of power at 24V to operate reliably. When selecting an external transformer, choose one with sufficient capacity for your installation.

Transformer Sizing Guidelines:

Transformers should only be used up to 80% of their rated capacity to ensure reliable operation. Based on this guideline:

- **15 VA transformer:** Can reliably power up to 4 Mysa Smart Thermostats
- **24 VA transformer:** Can reliably power up to 6 Mysa Smart Thermostats
- **40 VA transformer:** Can reliably power up to 10 Mysa Smart Thermostats

Important Note: If the transformer (existing or new) also powers zone valves or relays in addition to thermostats, you must account for the total VA rating of all equipment. As a rule of thumb, each 24V zone valve uses approximately 10 VA of power.

9. Troubleshooting

Thermostat Won't Power On

Check	Solution
Power restored?	Confirm circuit breaker is ON
HVAC cover closed?	Many systems have a safety switch—close the cover completely
Wire connections secure?	Check all connections at the adapter and control board are tight
Adapter LED lit?	If the green LED is OFF, check R and C connections
Correct terminals?	Verify wires match the diagram for your system type

Heating or Cooling Not Working

Check	Solution
Adapter switch position	Ensure switch is set correctly for your system
W/Y wire connected?	The heating wire must pass through the adapter
Y wire position	For systems with AC, Y wire should remain on control board Y terminal
Reversed heating/cooling?	For heat pumps, try alternate O/B configuration

Adapter Green LED Not Lit

Check	Solution
R wire connection	Ensure adapter R terminal has the thermostat R wire
Control board R connection	Ensure adapter's red-tipped wire is in control board R terminal
Transformer output	Use multimeter to verify 24VAC at control board R and C
Blown fuse	Check HVAC system fuse (often 3A or 5A)

System Behaves Erratically

Symptom	Possible Cause	Solution
Short cycling	Incorrect wiring	Review connections against diagram
Fan won't stop	G wire misconnected	Ensure G wire goes directly to control board
No response to commands	Power issue	Check adapter LED and all connections

HVAC Equipment Terminals Not Labeled

If your control board terminals aren't clearly labeled:

1. Identify wire colors at your thermostat (R, W, Y, G, C)
2. Trace those same color wires to the control board
3. Label the terminals based on the matching wire colors
4. When in doubt, consult an HVAC technician

10. Need Additional Help?

If you have any additional questions or would like help with your specific C-Wire installation, we're here to assist you:

- **Email:** install@getmysa.com
- **Book a call:** getmysa.com/call

Our support team can provide personalized guidance for your installation and answer any questions you may have.