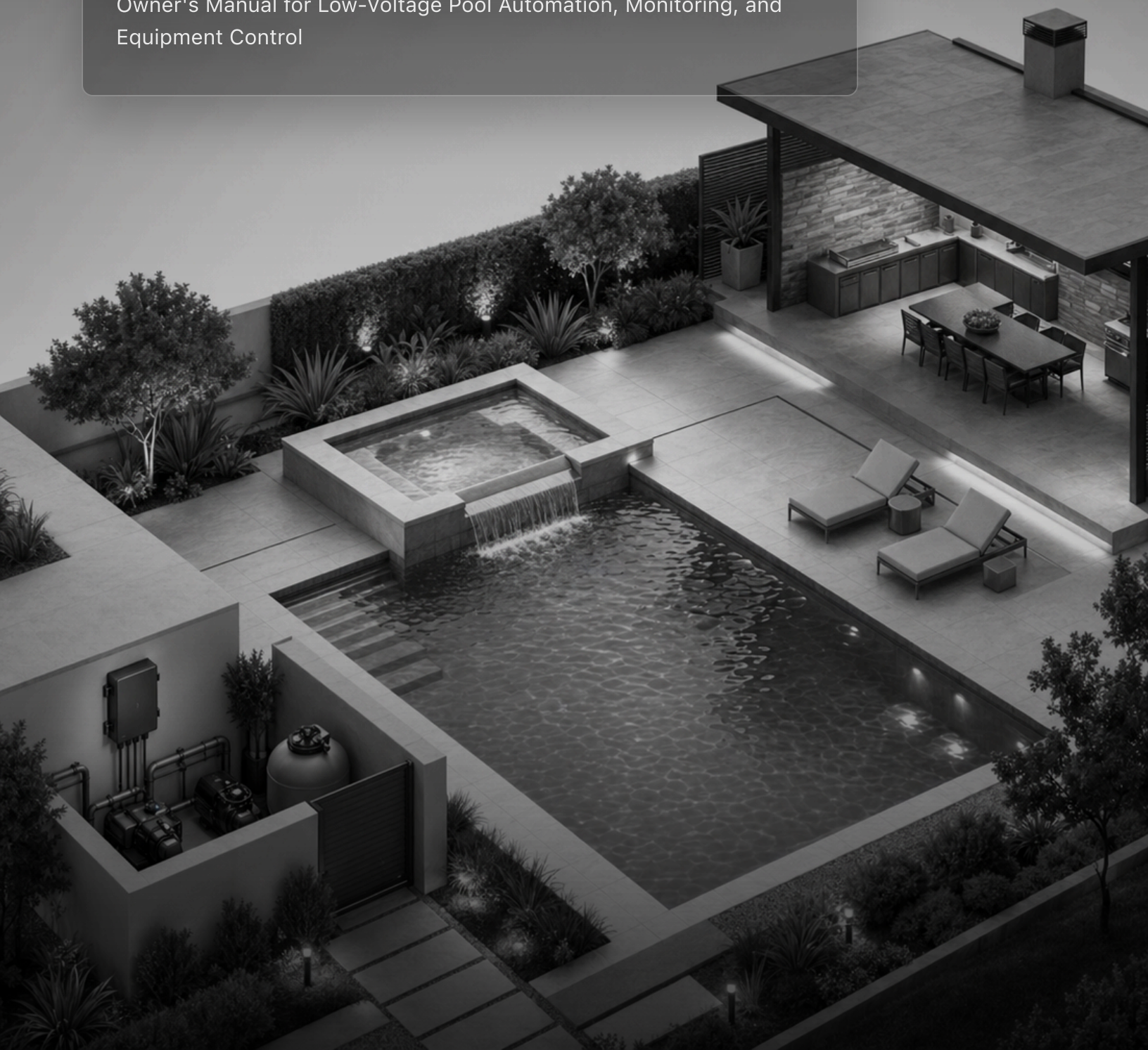
CL4R POOL AUTOMATION

CL4R CONTROLLER

Owner's Manual for Low-Voltage Pool Automation, Monitoring, and Equipment Control



FCC AND WIRELESS COMMUNICATIONS

FCC and Wireless Communications

The Clyr Controller uses an ESP32-family WiFi and Bluetooth radio module for wireless setup, network connectivity, and cloud communication. Production labeling and regulatory disclosures must match the exact radio module installed in the controller.

WIRELESS ITEM	REGULATORY REFERENCE
Radio module family	Espressif ESP32-family WiFi / Bluetooth module
Assumed module for this draft	ESP-WROOM-32 WiFi & Bluetooth module
FCC ID	**2AC7Z-ESPWROOM32**
Host product label wording	**Contains FCC ID: 2AC7Z-ESPWROOM32**

FCC Part 15 Notice

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: this device may not cause harmful interference, and this device must accept any interference received, including interference that may cause undesired operation.

Unauthorized Changes

Changes or modifications to the wireless radio, antenna, enclosure, shielding, firmware radio parameters, or approved module configuration that are not expressly approved by the party responsible for compliance may void the user's authority to operate the equipment.

Antenna and RF Exposure

The wireless module must be used only with the antenna configuration approved for the installed module. Do not modify the antenna, add an external antenna, relocate the radio module, or change RF shielding unless the revised configuration is reviewed for regulatory compliance.

> **Manual and label alignment:** If the module FCC ID is not visible after installation, the outside of the finished controller or product label should identify the enclosed transmitter module using the "Contains FCC ID" wording above, or equivalent wording allowed by FCC modular transmitter labeling guidance.

READ FIRST

Document Information

This owner's manual is written for owners, service professionals, and installers who need a complete product-style reference for the Clyr Controller. It is intended to explain the controller, its low-voltage connections, supported equipment categories, screen behavior, setup flow, and service checks without exposing internal software implementation details.

FIELD	VALUE
Product	Clyr Controller, screen and no-screen variants
Document Type	Owner's Manual / Installation and Operation Reference
Revision	Rev A
Prepared Date	April 27, 2026
Primary Use	Pool automation, monitoring, dosing enablement, RS485 equipment communication, valve actuation, and auxiliary relay control

> **Important:** This manual explains the controller and standard installation concepts. It does not replace local electrical codes, pool equipment manufacturer instructions, licensed electrical work, or site-specific safety review.

How to Use This Manual

- Read all safety pages before opening pool equipment, removing covers, wiring terminals, or installing sensors.
- Use the table of contents to move from overview to wiring, then to app setup and commissioning.
- Follow the printed labels on the physical board in front of you when the label count or port placement differs from an older guide.
- Record the installation details, network assignment, and device names in the commissioning checklist before leaving the site.

NAVIGATION

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NAVIGATION CONTINUED

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Safety Symbol Key

The Clyr Controller is a low-voltage control product used in a pool equipment environment. Low voltage does not remove risk. The controller may be installed near pumps, heaters, salt systems, relay cabinets, water lines, chemical feeders, and outdoor branch circuits. Understand these symbols before proceeding.

Warning

Indicates a hazardous situation that could result in injury, equipment damage, loss of water containment, or unsafe pool operation if ignored.

Important Information

Identifies setup details that affect reliable operation, including network selection, port selection, sensor configuration, or cloud connectivity.

Electrical Voltage

Identifies wiring, terminals, power supplies, or nearby equipment that may expose the installer to hazardous voltage or damaging miswiring.

Water and Weather Exposure

Identifies areas where moisture control, enclosure sealing, drip loops, cable gland tightening, or outdoor-rated accessories are required.

Prohibited Action

Identifies actions that should not be performed, such as energizing equipment with covers removed, mixing control buses incorrectly, or running valves without the proper external 24 V AC supply.

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Critical Electrical Warnings

LOW-VOLTAGE ENCLOSURE ONLY: The Clyr Controller is a low-voltage electronics enclosure only. Any high-voltage wiring inside the Clyr Controller enclosure, including any wiring above 24 VDC or 24 VAC, is non-compliant, forbidden, and may violate applicable electrical requirements and standards, including UL, NEC, UL 508A, and other local, state, national, or product-specific electrical codes. Do not route, splice, terminate, switch, or land high-voltage conductors inside this enclosure.

Risk of electric shock, fire, or death: Pool pads often contain 120/240 V AC equipment. Always turn off the appropriate breakers before removing pump covers, heater panels, salt-cell power-center covers, relay cabinet covers, or any enclosure that may contain line voltage.

Qualified Installation

- Use a certified electrician when working inside any line-voltage panel, relay cabinet, pump power compartment, heater compartment, salt-cell power center, or outdoor receptacle.
- Verify power is off using proper test equipment before touching conductors or terminals in equipment cabinets.
- Do not assume a breaker label is correct. Confirm the actual circuit is de-energized.
- Do not install the controller where local code requires a different enclosure, disconnect, GFCI protection, bonding method, conduit method, or weatherproofing practice.

Low-Voltage Wiring Limits

The Clyr Controller uses low-voltage control and communication wiring, but those wires may enter cabinets that also contain high-voltage equipment. Keep low-voltage conductors separated from line-voltage conductors as required by code and by the equipment manufacturer.

AREA	OWNER / INSTALLER ACTION
Controller power	The Clyr Controller may **only** accept 9-24 VDC for controller power. Use the supplied or approved low-voltage DC supply method and observe polarity at the labeled controller power terminals. Typical power use is approximately 4 W when powered as a standalone controller with the screen installed, and approximately 2 W without the screen.
Valve actuators	Install the external 24 V AC valve power supply before expecting actuator movement. The controller does not make a 24 V AC actuator supply from DC power.
Auxiliary relays	Use the Clyr relay jumper and required relay-power jumper or shunt for the installed board version. External relay loads must be wired by qualified personnel.
RS485	Do not connect RS485 A/B conductors to line voltage, relay load terminals, heater fireman circuits, or actuator power terminals.

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Outdoor, Water, and Enclosure Warnings

The Clyr Controller enclosure is IP65 rated and is generally waterproof for normal outdoor pool-pad exposure when it is mounted upright, latched, gasketed, and sealed correctly. Weather resistance depends on correct mounting, cable routing, gasket condition, and cable gland sealing.

Sealing and Service

- Inspect the enclosure gasket before closing the lid.
- Tighten cable glands around the outer cable jacket, not around loose individual wires.
- Never leave unused openings unsealed.
- Close and latch the cover after setup, commissioning, and service.

Moisture warning: The enclosure is IP65 rated and generally waterproof when installed correctly, but water inside the controller is still abnormal. Water inside an electronics enclosure can corrode terminals, interfere with sensor readings, cause communication failures, or damage the controller. If moisture is found inside, de-energize the system and correct the water-entry path before returning the controller to service.

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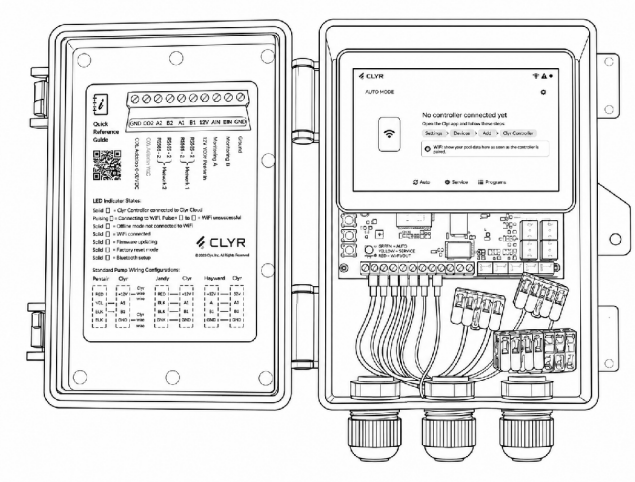
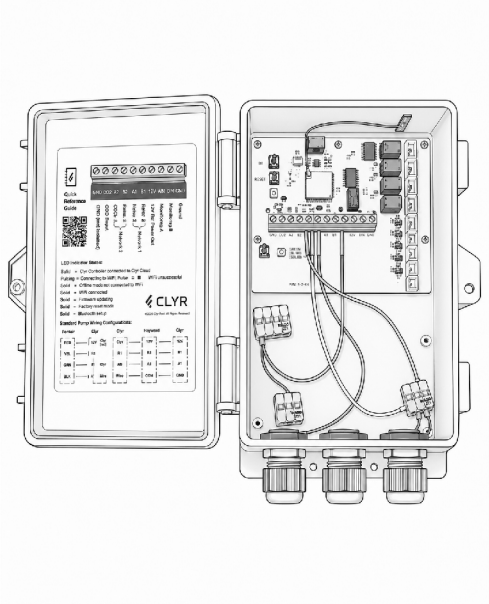
Controller Overview

The Clyr Controller is a compact low-voltage pool automation controller that may be supplied with an integrated touchscreen or without a screen. It is designed to modernize pool equipment control while keeping the controller enclosure low-voltage only.

The controller is built to control pumps, heaters, valve actuators, lights, pool chemistry equipment, sensors, and more. It brings modern connected-pool technology together with AI-assisted control logic and a smartphone app for setup, monitoring, and day-to-day operation.



Version 5 screen-equipped controller reference: open enclosure with touchscreen, board area, terminal blocks, cable glands, and lid guide.



Version 3 controller reference: open enclosure with printed lid guide, V3 board, terminal block, relay/valve connectors, and wiring area.

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Valve Actuator Ports

Four dedicated valve actuator ports for pool/spa, return, suction, water feature, and similar valve workflows.

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AUX Ports

Five auxiliary ports for supported relay-controlled loads and add-on control paths.

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Physical RS-485 Ports

Two separate RS-485 networks for equipment and sensor communication planning.

Control Capacity

FEATURE	SUPPORTED CAPABILITY
Variable-speed pumps	Control up to four variable-speed pumps across the two RS-485 networks.
Smart relays	Control up to three smart relays on this controller version.
External temperature sensors	Control or read up to two external temperature sensors.
CO2 output	Dedicated CO2 port for approved CO2 control hardware.
Dry-contact heaters	Generation 3 and below include one dry-contact heater output. Generation 4 and above include two dry-contact heater outputs.

Connectivity and Multi-Controller Operation

Version 4 and above include built-in WiFi and built-in Bluetooth. Ethernet is available as an optional connection path when the optional Ethernet module is used. Multiple Clyr Controllers can be added to the same local location and can work together as part of the same pool automation system.

> **Owner note:** Specific equipment capacity depends on controller generation, installed modules, wiring plan, and app configuration. Use the printed board labels and app options for the controller in front of you.

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Supported Equipment Overview

The Clyr Controller is designed to integrate with major pool equipment families across pumps, salt systems, heaters, lights, relays, heat pumps, and dosing equipment. Supported models and protocols may depend on controller generation, installed modules, wiring, and app configuration.

Hayward

- TriStar pumps using both the TriStar protocol and the Hayward universal protocol.
- AquaRite salt systems through v2 of the salt-cell protocol.
- Hayward heaters using supported heater control wiring.
- Hayward ColorLogic and other click-style lights through relay control.
- Hayward smart relay control.

Jandy

- FloPro pump.
- ePump.
- Jandy AquaPure salt system.
- Jandy heaters using the dry-contact switch.

Pentair

- WhisperFlo pump.
- IntelliFlo VSF, IntelliFlo VS, and IntelliFlo3 pumps.
- IntelliChlor salt system.
- Pentair heaters using the dry-contact switch.

Other Supported Equipment

- Waterway Power Defender series pumps.
- Black and Decker pumps.
- MadiMack InverFLOW pump.
- MadiMack InverCHLOR salt cell.
- MadiMack heat pumps via RS-485.
- MadiMack peristaltic pump.

Compatibility note: Equipment support is tied to the controller software, selected network, physical wiring, and exact equipment revision. Confirm the selected equipment profile in the Clyr app before commissioning.

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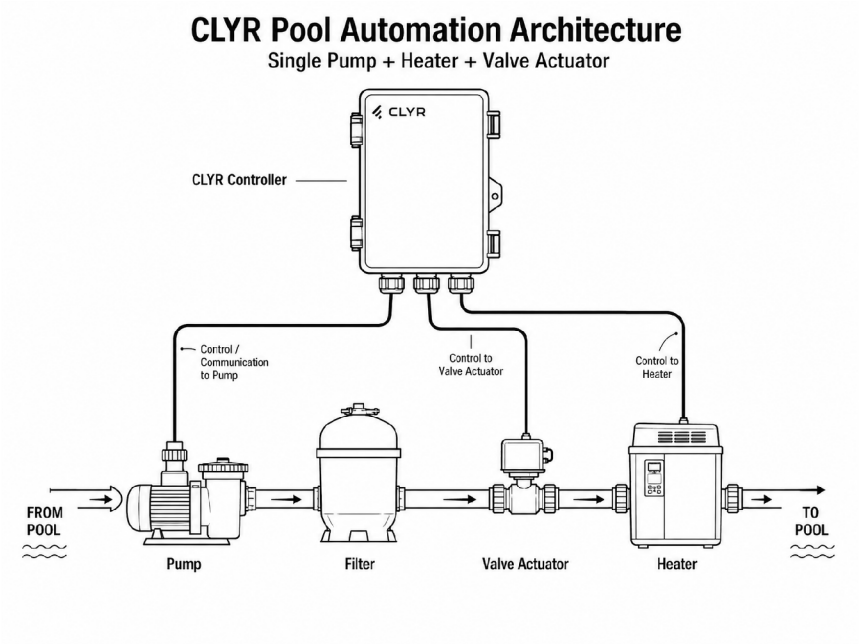
Reference Controller Architecture

Example installation architecture for a single-pump pool using the Clyr Controller for pump communication, valve actuator control, and heater control.



Single pump + heater + valve actuator reference architecture.

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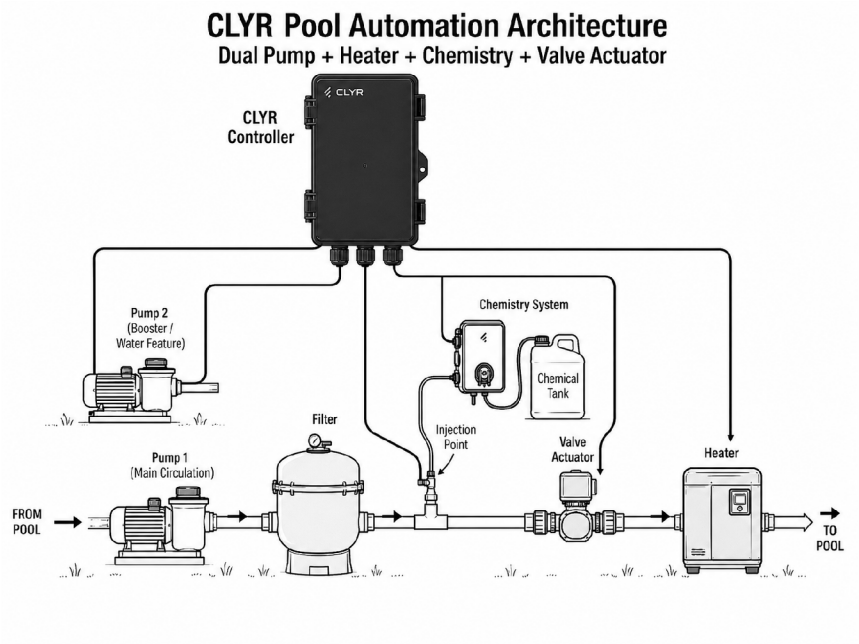
Reference Controller Architecture

Example installation architecture for a larger pool equipment pad using the Clyr Controller with dual pumps, heater control, chemistry injection, and valve actuator control.



Dual pump + heater + chemistry + valve actuator reference architecture.

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Before You Begin

Open the package and confirm the included items before mounting or wiring the controller. The Clyr Controller is a low-voltage product; do not begin installation until the missing accessories, site wiring, and required tools are available.

Package Contents

- Clyr Controller.
- Wiring harness with WAGO-style lever clips for attaching field wiring.
- Included 24 V DC power supply.
- Two relay jumpers.
- Quick start card and guide.

Not Included

- Additional RS-485 wiring.
- Additional power wiring beyond the included 24 V DC power supply.
- Ethernet cable.
- 24 V AC valve power supply. If using valve actuators or any module requiring 24 V AC, an external 24 V AC supply is required.
- Mounting hardware or mounting gear.

Tools Needed

TOOL	USE
Phillips and flathead screwdrivers	Open equipment covers, secure terminals, and support controller installation.
Wire cutters and wire strippers	Prepare low-voltage field wiring.
Drill and drill bits	Prepare mounting holes for the controller enclosure.
Pliers	Assist with routing, gripping, and low-voltage wire handling.
Level	Mount the enclosure squarely and vertically.

> **Before wiring:** Confirm the included 24 V DC power supply is used only for controller power. It is not a 24 V AC valve actuator supply and does not replace an external 24 V AC transformer where one is required.

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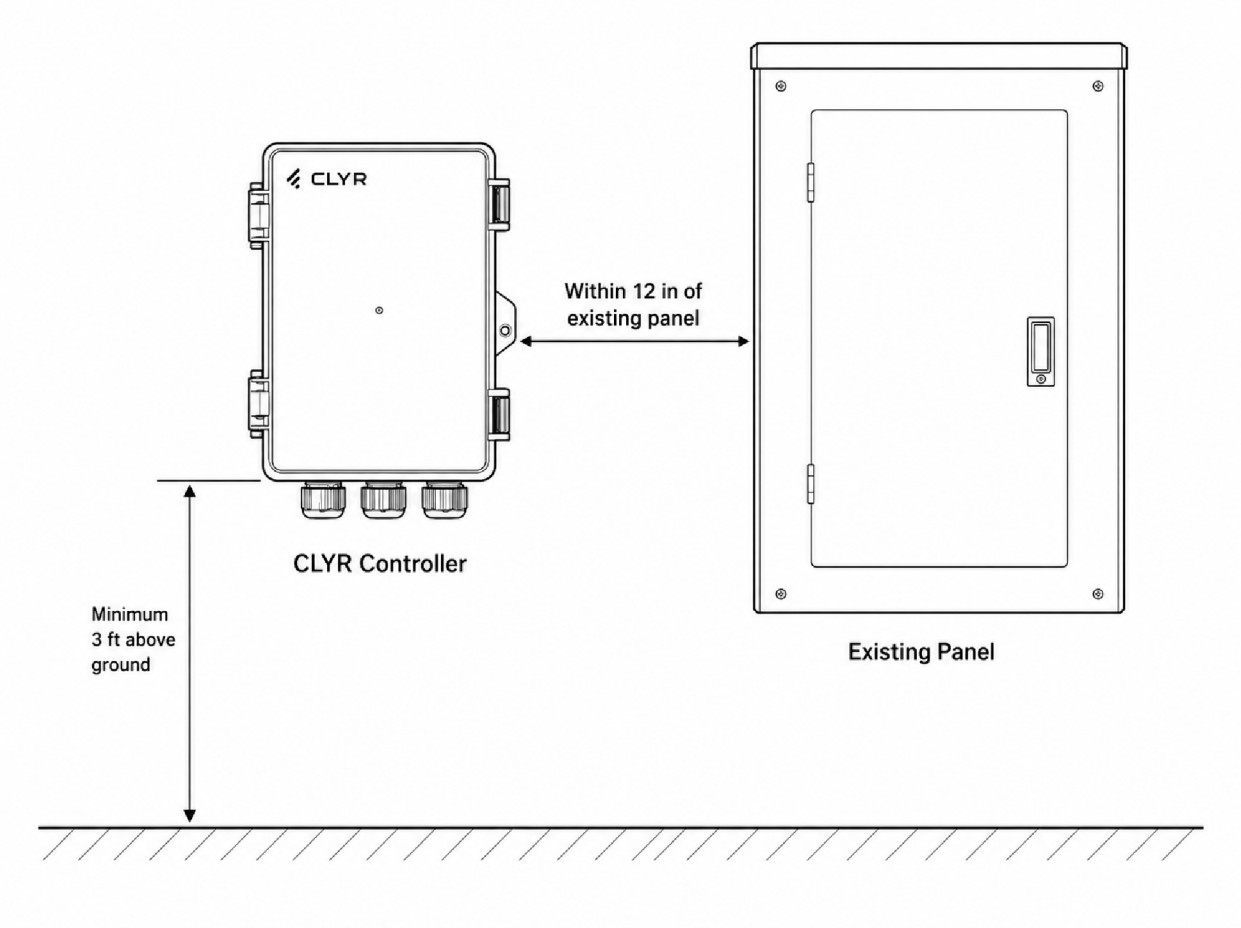
Mounting Instructions

Mounting guidance is intentionally separated from wiring guidance so the enclosure location, orientation, clearance, and weather exposure can be reviewed before any conductors enter the box. Mount the Clyr Controller near the existing equipment panel, but keep it outside the high-voltage enclosure and preserve the controller as a low-voltage box only.



Mounting reference: place the Clyr Controller within 12 inches of the existing panel and at least 3 feet above ground, while keeping all high-voltage wiring out of the Clyr enclosure.

Mounting Procedure

1. Select a vertical mounting surface close to the equipment being controlled, ideally within 12 inches of the existing panel as shown.
2. Mount the bottom of the controller at least 3 feet above ground.
3. Keep the controller high enough to avoid standing water, splashback, and routine service hose spray.
4. Hold the enclosure in place and mark the flange mounting holes.
5. Drill pilot holes or install anchors appropriate for the mounting surface.
6. Fasten the enclosure without distorting the plastic body, hinge, or gasket channel.

7. Confirm the lid opens fully and closes without compressing cables.

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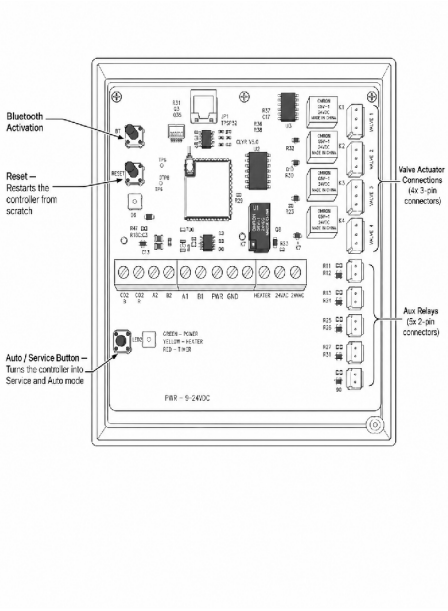
Board Layout and Terminal Overview

Before wiring, identify every connector on the board. This page uses the V3 callout board reference to explain the main terminal block, buttons, valve actuator connectors, and AUX relay connectors.



V3 board callout reference: Bluetooth activation, reset, auto/service, terminal block, valve actuator connections, and five AUX relay connectors.

V3 BOARD AREA	KEY FUNCTION	OWNER / INSTALLER NOTE
Bluetooth Activation	Places the controller into Bluetooth setup mode.	Use during app pairing when prompted.
Reset	Restarts the controller from scratch.	Use only when setup or service instructions call for a restart.
Auto / Service Button	Switches between service and automatic operation.	Confirm the mode before testing pumps, relays, valves, or chemistry.
Valve Actuator Connections	Four 3-pin actuator connectors.	Require external 24 V AC on the valve-power terminals before actuators will move.
AUX Relay Connections	Five 2-pin low-voltage relay-control connectors.	Use for approved external relay control only; line-voltage load wiring remains outside the controller.
Main Screw Terminal Block	CO2, RS485 networks, controller power input, input ground, heater dry contact, and valve 24 V AC input.	Use the terminal table on the next page before landing conductors.

V3 board note: This reference is for the V3 board wiring section. Later controller generations may move connectors, change relay count, or add features. Always install by the board revision in hand and the labels printed on that board.

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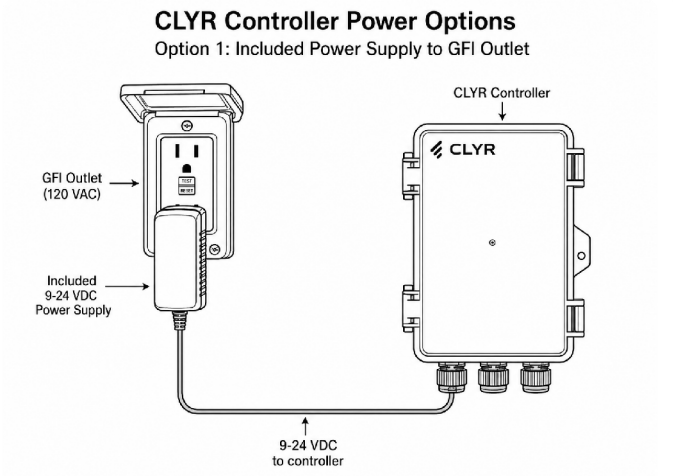
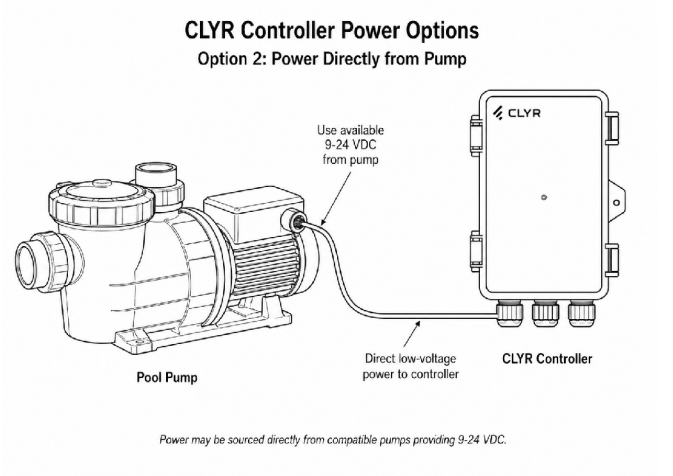
Powering the Controller

After the enclosure is mounted, power the Clyr Controller using only a compliant low-voltage DC source. The controller may only accept 9-24 V DC for controller power. Use the included 24 V DC supply where practical, or use a compatible pump-provided low-voltage DC output only when that equipment explicitly provides a suitable 9-24 V DC source.



Option 1: included low-voltage DC power supply connected to a GFI-protected outlet, with 9-24 V DC routed to the controller.



Option 2: compatible pump-provided 9-24 V DC low-voltage output routed directly to the controller.

Option 1: Included Supply

Use the included 24 V DC power supply as the standard power method. The outlet and any 120 V AC wiring remain outside the Clyr enclosure. Only the low-voltage DC output from the supply enters the controller.

Option 2: Compatible Pump Output

Some compatible pumps may provide low-voltage DC power that can be used for the controller. Verify the pump documentation, voltage range, polarity, available current, and wiring path before using this method.

> **Low voltage only:** Never bring 120/240 V AC into the Clyr Controller enclosure. The controller power input is 9-24 V DC only and must remain isolated from line-voltage wiring.

POWER METHOD	ALLOWED INPUT TO CONTROLLER	USE WHEN	INSTALLER CHECK
Included power supply	9-24 V DC output from approved supply	Default installation path	Confirm GFI protection, dry routing, polarity, and strain relief.
Compatible pump output	9-24 V DC from pump accessory output	Pump documentation confirms suitable auxiliary low-voltage DC power	Measure voltage under load and confirm polarity before landing wires.

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Pairing, WiFi, and Cloud Connectivity

After wiring power, the controller is paired through the Clyr app. The public setup guide describes a pulsing yellow light when powered and ready for setup, pressing the middle black button to activate Bluetooth, blue light while Bluetooth is active, and a solid turquoise state after cloud connectivity completes.

1. Install the app and sign in to the correct pool location.
2. Confirm the controller has power and shows the expected powered setup state.
3. In the app, go to the location, then Settings, Devices, Add, and choose Clyr Controller.
4. When prompted, press the controller's middle black button to activate Bluetooth pairing.
5. Select the discovered controller in the app.
6. Choose the WiFi network and enter the password.
7. Wait for registration to complete and confirm the LED indicates cloud connectivity.

OBSERVED STATE	MEANING	ACTION
Pulsing yellow	Powered and ready for setup	Begin app pairing or continue setup
Blue after button press	Bluetooth pairing active	Select the controller in the app
Yellow then red repeatedly	WiFi connection attempt failed	Retry setup with correct network and password
Solid green, not turquoise	WiFi may be connected but cloud path is not complete	Power cycle and check firewall/SNTP/MQTT restrictions
Solid turquoise	Controller is online and connected to Clyr Cloud	Allow several minutes for app state to sync if needed

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Chemical, Sensor, and Pressure Warnings

Chemical Handling

When the controller is used with CO2, liquid chlorine, or other dosing equipment, follow all chemical supplier instructions and pool equipment manufacturer instructions. Wear appropriate eye and hand protection when handling chemical containers, tubing, regulators, injectors, or chemical feed pumps.

- Never mix chemicals in tubing, containers, fittings, or injection lines.
- Label each feed line and verify flow direction before enabling a dosing output.
- Do not install injection points before equipment that is prohibited by the chemical or equipment manufacturer.

Pressurized Water

Pressure sensors, flow cells, tubing, saddle clamps, tees, and injection points may be connected to pressurized pool plumbing. Shut off the pump and relieve pressure before opening a line, removing a gauge, drilling pipe, or changing fittings.

- Turn the pump breaker off before plumbing work.
- Release filter pressure before removing gauges or plugs.
- Leak-test fittings before leaving the site.

Sensor Accuracy and Pool Safety

Continuous monitoring improves visibility, but the controller is not a substitute for responsible pool maintenance. Verify readings during commissioning and after sensor replacement, calibration, plumbing changes, or unusual pool conditions. Do not rely on a sensor reading that conflicts with observed unsafe water conditions, chemical odor, cloudy water, or equipment alarms.

> **Do not bypass normal safety checks:** Keep pump priming, heater flow, salt-cell flow, valve position, chemical storage, and manual water testing practices aligned with the equipment maker's requirements.

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Models: Screen and No-Screen Versions

The controller may be supplied with an integrated screen or without a screen. Both versions use the same owner-facing installation concepts: low-voltage power, RS485 wiring, sensor setup, cloud pairing, and equipment configuration.

Controller With Screen

The screen version provides local visibility and touch navigation for controller status, WiFi setup states, service status, equipment screens, and QR-assisted setup flows. It is useful during installation because the installer can confirm local state without relying only on the mobile app.

- Shows operating mode and cloud/WiFi status.
- Displays device information and QR screens.
- Provides local equipment screens for common controls.

Controller Without Screen

The no-screen version uses the app, button, LED states, and cloud connectivity as its primary owner-facing interface. Internal board space under the screen area is minimal; the critical wiring references remain the printed board labels, terminal blocks, actuator ports, and AUX ports.

- Uses the same app-based pairing and setup flow.
- Relies on LED/button feedback during commissioning.
- Allows simpler enclosure layout where no local display is required.

Owner note: If your controller has no screen, complete the same wiring and app setup steps. Use the physical LED state and the app's device status to confirm progress.

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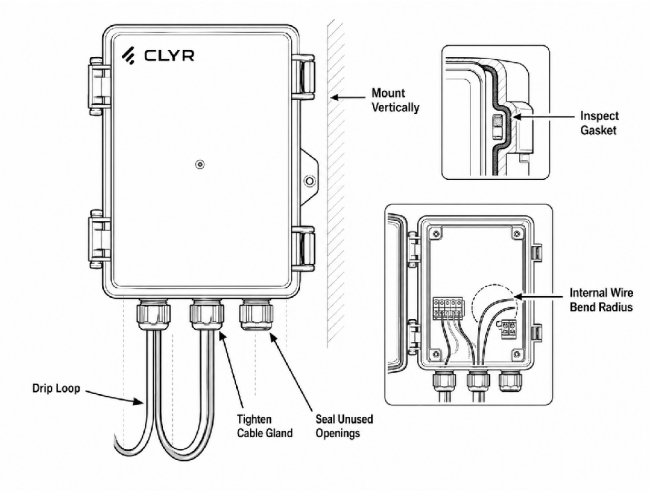
Enclosure and Cable Glands

After the controller is mounted, route wiring through the bottom cable glands and preserve the IP65 sealing path. Cable glands must seal on the cable jacket and unused openings must remain closed.

Cable Entry Procedure

1. Route cables upward through the bottom glands only.
2. Leave drip loops below the enclosure.
3. Land conductors neatly at the intended terminal or connector.
4. Tighten each cable gland around the cable jacket, not around loose individual conductors.
5. Seal unused openings before returning the controller to service.



Sealing reference: mount vertically, inspect the gasket, leave drip loops, tighten cable glands, seal unused openings, and preserve internal wire bend radius.

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Power Architecture: 24 V DC and 24 V AC

The controller uses low-voltage DC power for the controller electronics and sensor/control circuits. Valve actuators are different: they require an external 24 V AC supply connected to the controller's valve-power input before the valve ports can move an actuator.

Controller DC Power

Use the approved Clyr low-voltage DC supply or an approved equipment low-voltage source when permitted by the installation guide. Public setup material describes a supplied 20-24 V power supply and also shows 12 V / GND terminal use for specific low-voltage wiring and jumper configurations.

- Observe polarity at all DC terminals.
- Do not power the controller from unsupported equipment outputs.
- Do not overload sensor or relay jumper power outputs.

Valve 24 V AC Power

Valve actuators such as standard Hayward, Jandy, and Pentair actuators require 24 V AC. The controller's valve ports route actuator control, but actuators will not move unless the external 24 V AC valve supply is installed and powered.

- Use an outdoor-rated 24 V AC supply.
- Follow the board's HOT / COM labeling.
- Verify actuator movement manually before app testing.

Never substitute line voltage for low voltage. Do not connect 120/240 V AC directly to controller low-voltage terminals, RS485 terminals, valve actuator signal connectors, or AUX jumper ports.

POWER PATH	VOLTAGE TYPE	PURPOSE	REQUIRED FOR
Controller power	Low-voltage DC	Runs the controller board and communication logic	All installations
Sensor / accessory output	Low-voltage DC	Supports compatible sensors and low-voltage accessories as labeled	pH/ORP/temp, pressure sensor, relay jumper power where required
Valve power input	24 V AC external supply	Powers valve actuator movement	Any valve actuator installation
External relay cabinet	Depends on load and relay cabinet	Switches lights, blower, single-speed pump, or auxiliary loads	AUX relay control

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Main Terminal Block Pinout

The V3 main screw terminal block is the central low-voltage landing area. The terminal order below follows the V3 board reference shown in this manual.

CO2 B	CO2 R	A2	B2	A1	B1	PWR	GND	HEATER	24VAC	24VAC

V3 TERMINAL	FUNCTION	USE / RESTRICTION	OWNER CHECK
CO2 B / CO2 R	Clyr CO2 control port	For the Clyr CO2 port only. These terminals are not general-purpose relay outputs and are not meant for relays.	Only connect approved Clyr CO2 hardware.
A2 / B2	RS485 Network 2	Communication wires for the second RS485 network.	Select Network 2 in the app for equipment wired here.
A1 / B1	RS485 Network 1	Communication wires for the first RS485 network.	Select Network 1 in the app for equipment wired here.
PWR	Controller power input	9-24 V DC input to power the controller board.	Verify DC voltage and polarity before applying power.
GND	Input ground	Ground / return for the controller power input.	Confirm the ground conductor is secure and tug-tested.
HEATER	Dry contact heater circuit	Dry contact closure for compatible heater control. Do not apply external voltage unless the heater wiring instructions require a dry-contact loop exactly as connected.	Verify heater remote-fire terminals before wiring.
24VAC / 24VAC	External valve actuator power input	External 24 V AC input used to power valve actuator movement through the valve ports.	Required for valve actuators; not controller DC power.

A/B polarity matters. Match A to A and B to B for a given equipment connection. Some vendors use wire colors differently; follow the equipment-specific wiring guide rather than assuming color meaning.

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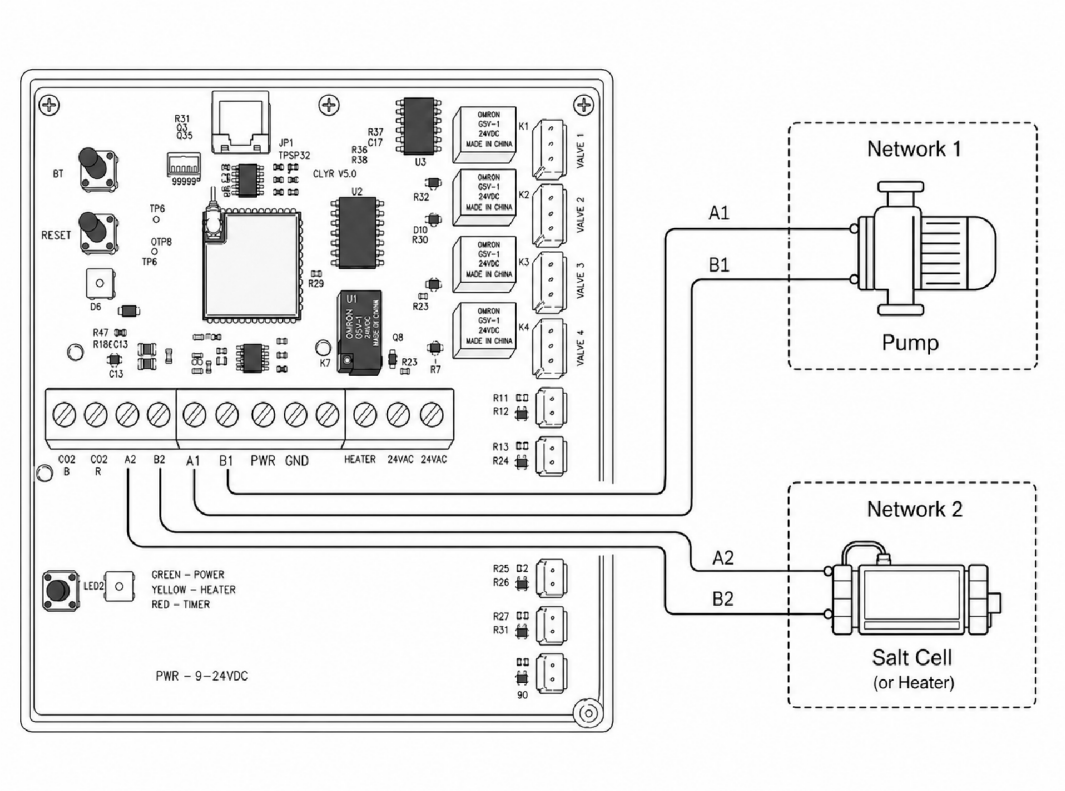
RS485 Networks and Monitor Input

RS485 is the controller's communication path for compatible pool equipment. On the V3 board, Network 1 uses A1 / B1 and Network 2 uses A2 / B2. The equipment selected in the app must match the physical network where the wires are landed.



V3 RS485 wiring example: A1 / B1 route to Network 1 equipment such as a pump; A2 / B2 route to Network 2 equipment such as a salt cell or heater.

Network 1

A1 / B1 is commonly used for the primary controlled equipment bus. The example shows A1 and B1 connected to a pump on Network 1.

Network 2

A2 / B2 can be used for a separated equipment bus. The example shows A2 and B2 connected to a salt cell or heater on Network 2.

Network Planning Rules

- Use Network 1 for the first controlled equipment bus unless the installation plan requires separation.
- Use Network 2 when sensors or equipment should be isolated from the primary equipment bus.
- Select the same network in the app that was used at the screw terminal block.
- For equipment with special isolation requirements, keep it on its own network.

App location: Network selection is typically found while adding or configuring equipment in the Clyr app under advanced options. If no change is made, controller setup typically defaults equipment to Network 1.

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Controlling vs. Monitoring Existing Equipment

Clyr can be installed as a monitor alongside an existing automation system or as the controller for compatible equipment. The installation method must match the intended mode.

Monitoring Mode

Use monitoring mode when an existing automation system should remain in control, but Clyr should observe equipment performance and pool chemistry. In this mode, AIN / BIN listens to the existing RS485 traffic. Sensors can still use Network 2.

- Existing automation remains the controlling system.
- Clyr listens to equipment traffic.
- Use the monitor toggle when adding supported equipment.

Control Mode

Use control mode when Clyr is intended to command the equipment. In control mode, Clyr should be the active controller for that equipment bus or device.

- Use Network 1 or Network 2 according to the wiring plan.
- Add equipment in the app as controlled equipment.
- Do not allow two automation systems to control the same device at the same time.

Do not create dual control. An OEM automation system and Clyr should not both control the same equipment at the same time. Incorrect dual control can cause erratic operation or equipment damage.

QUESTION	USE MONITORING	USE CONTROL
Should the existing automation panel remain primary?	Yes	No
Should Clyr command pump speeds or salt output?	No, observe only	Yes, when supported and configured
Which terminals are central?	AIN / BIN for existing bus, A2/B2 often for sensors	A1/B1 or A2/B2 for controlled bus

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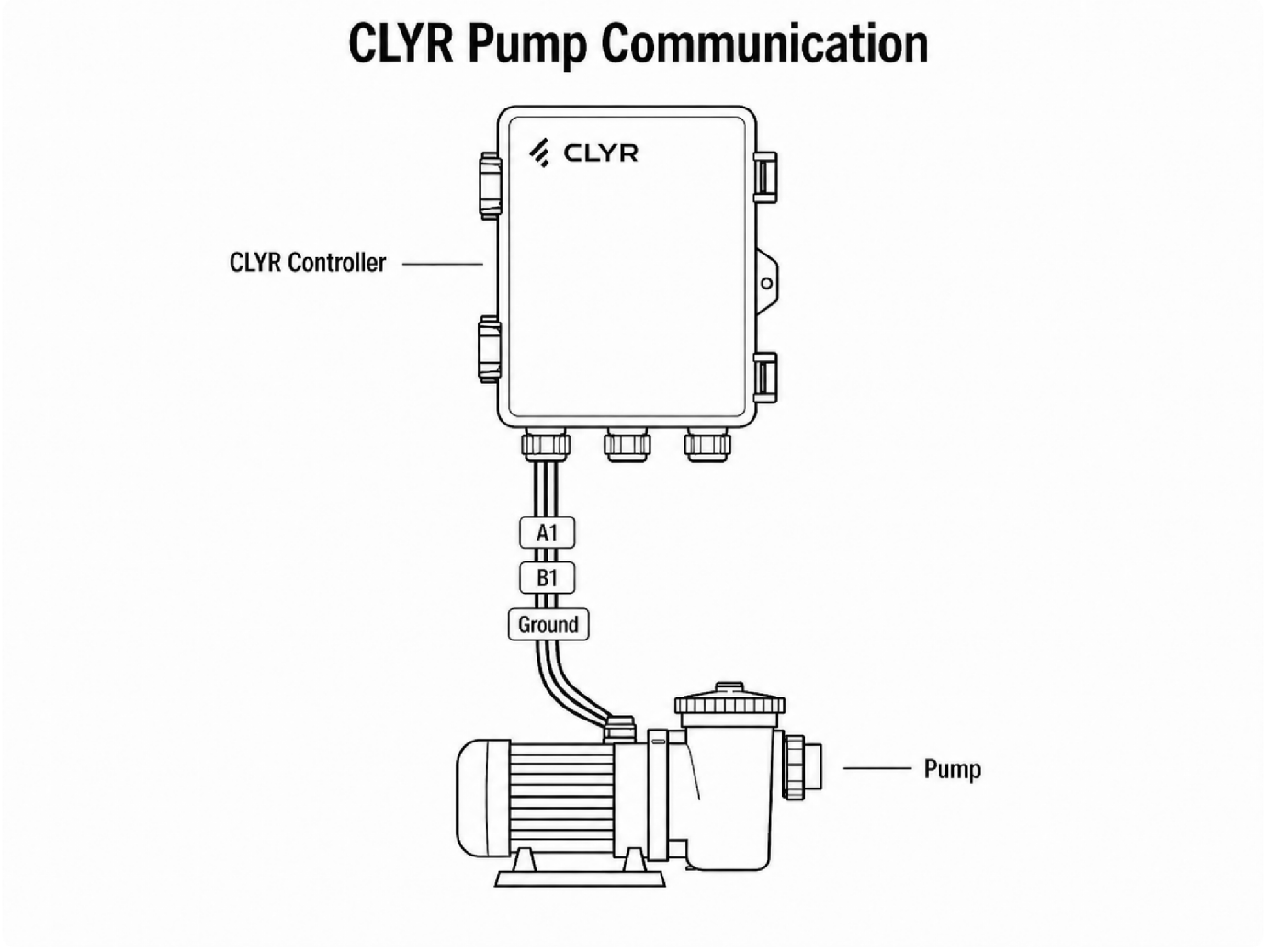
Hayward Variable Speed Pump Wiring

Use this page when wiring a compatible Hayward variable speed pump, including Hayward TriStar-style RS485 control. The Clyr RS485 network selected in the app must match the physical A/B terminal pair used at the controller.



Generic three-wire pump communication wiring: Clyr A, B, and ground routed to the pump communication terminals.

HAYWARD PUMP WIRE	CLYR CONNECTION	PURPOSE
Green	Clyr ground	Communication/common reference for the RS485 connection.
Black	Clyr A wire	RS485 A communication line. Land on A1 for Network 1 or A2 for Network 2.
Yellow	Clyr B wire	RS485 B communication line. Land on B1 for Network 1 or B2 for Network 2.

Hookup and App Setup

1. Turn off the breaker feeding the pump and verify the pump is de-energized before opening any wiring compartment.
2. Complete the RS485 communication wiring: green to Clyr ground, black to the selected Clyr A terminal, and yellow to the matching Clyr B terminal.

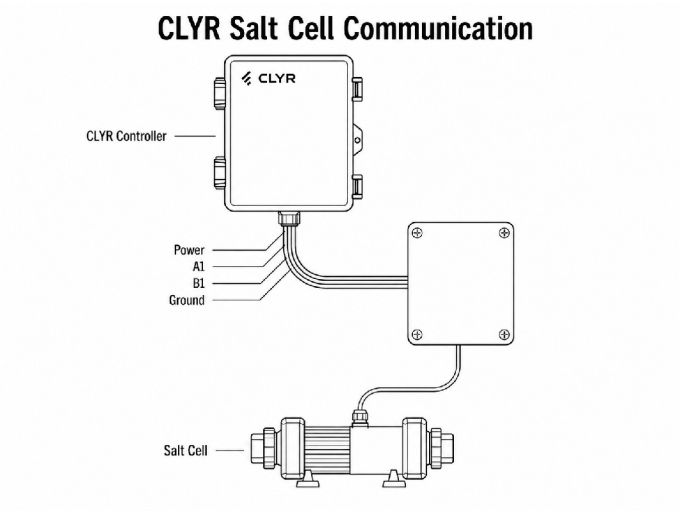
3. Restore the pump wiring compartment covers and turn the breaker back on.
4. Open the Clyr app.
5. Go to Settings.
6. Open Devices.
7. Select Add Pool Equipment.
8. Select Pump.
9. Select Hayward TriStar.
10. Select Network 1 if the pump is wired to A1 / B1, or select Network 2 if the pump is wired to A2 / B2.
11. Follow the remaining app steps to add the pump.
12. Confirm the pump appears in the app and responds to basic control.

> **Network match required:** If the pump is wired to A1 / B1 but added as Network 2, or wired to A2 / B2 but added as Network 1, the pump will not communicate correctly.

21

Hayward AquaRite Salt Cell Wiring

Use this page when wiring a compatible Hayward AquaRite salt cell controller for RS485 communication. The Clyr network selected in the app must match the physical A/B terminal pair used at the controller.



Generic salt cell communication wiring: Clyr power, A, B, and ground routed to the salt-cell controller.

HAYWARD AQUARITE WIRE	CLYR CONNECTION	PURPOSE
Green	Clyr ground	Communication/common reference for the RS485 connection.
Black	Clyr A wire	RS485 A communication line. Land on A1 for Network 1 or A2 for Network 2.
Yellow	Clyr B wire	RS485 B communication line. Land on B1 for Network 1 or B2 for Network 2.
Red	Clyr power connection	Low-voltage power/reference connection required for this salt-cell communication hookup.

Hookup and App Setup

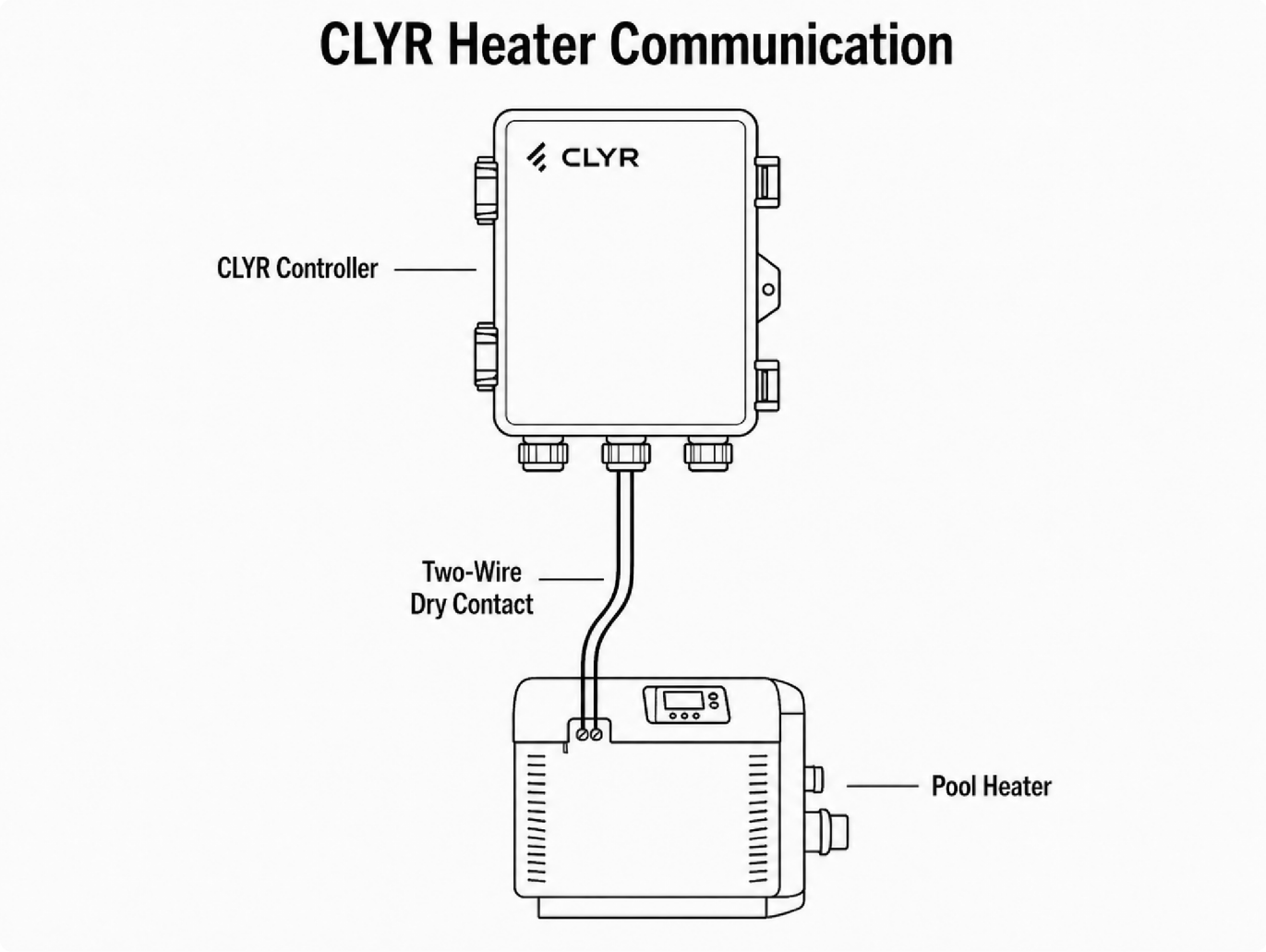
1. Turn off the breaker feeding the salt system and verify it is de-energized before opening any wiring compartment.
2. Complete the wiring: green to Clyr ground, black to the selected Clyr A terminal, yellow to the matching Clyr B terminal, and red to the Clyr power connection.
3. Restore all covers and turn the breaker back on.
4. Open the Clyr app.
5. Go to Settings > Devices > Add Pool Equipment > Salt Cell > Hayward AquaRite.
6. Select Network 1 if the salt cell is wired to A1 / B1, or select Network 2 if it is wired to A2 / B2.
7. Click Activate Salt Cell.
8. Follow the remaining app steps to complete setup and confirm the controller can communicate with the salt cell.

Network match required: The salt cell network selected in the app must match the Clyr A/B terminals used for the physical wiring.

22

Hayward Heater Dry-Contact Wiring

Use this page when wiring a compatible Hayward heater through the Clyr dry-contact heater circuit. The Clyr controller does not supply heater power through these terminals; it closes a dry-contact loop to request heat.



Generic heater dry-contact communication wiring: two non-polarity-sensitive conductors routed from the heater fireman switch or remote terminals to the Clyr HEATER terminals.

HAYWARD HEATER CONNECTION	CLYR CONNECTION	PURPOSE
Fireman switch / remote two-wire terminal 1	Either Clyr HEATER terminal	One side of the dry-contact heater request loop.
Fireman switch / remote two-wire terminal 2	Other Clyr HEATER terminal	Other side of the dry-contact heater request loop.

Hookup and App Setup

1. Turn off the breaker feeding the heater and verify the heater is de-energized before opening the service panel.
2. Locate the two-wire fireman switch or remote-control terminals inside the heater.
3. Route the two dry-contact conductors from the heater back to the two Clyr terminals labeled HEATER.
4. Land either heater conductor on either Clyr HEATER terminal; the dry-contact loop is not polarity-sensitive.

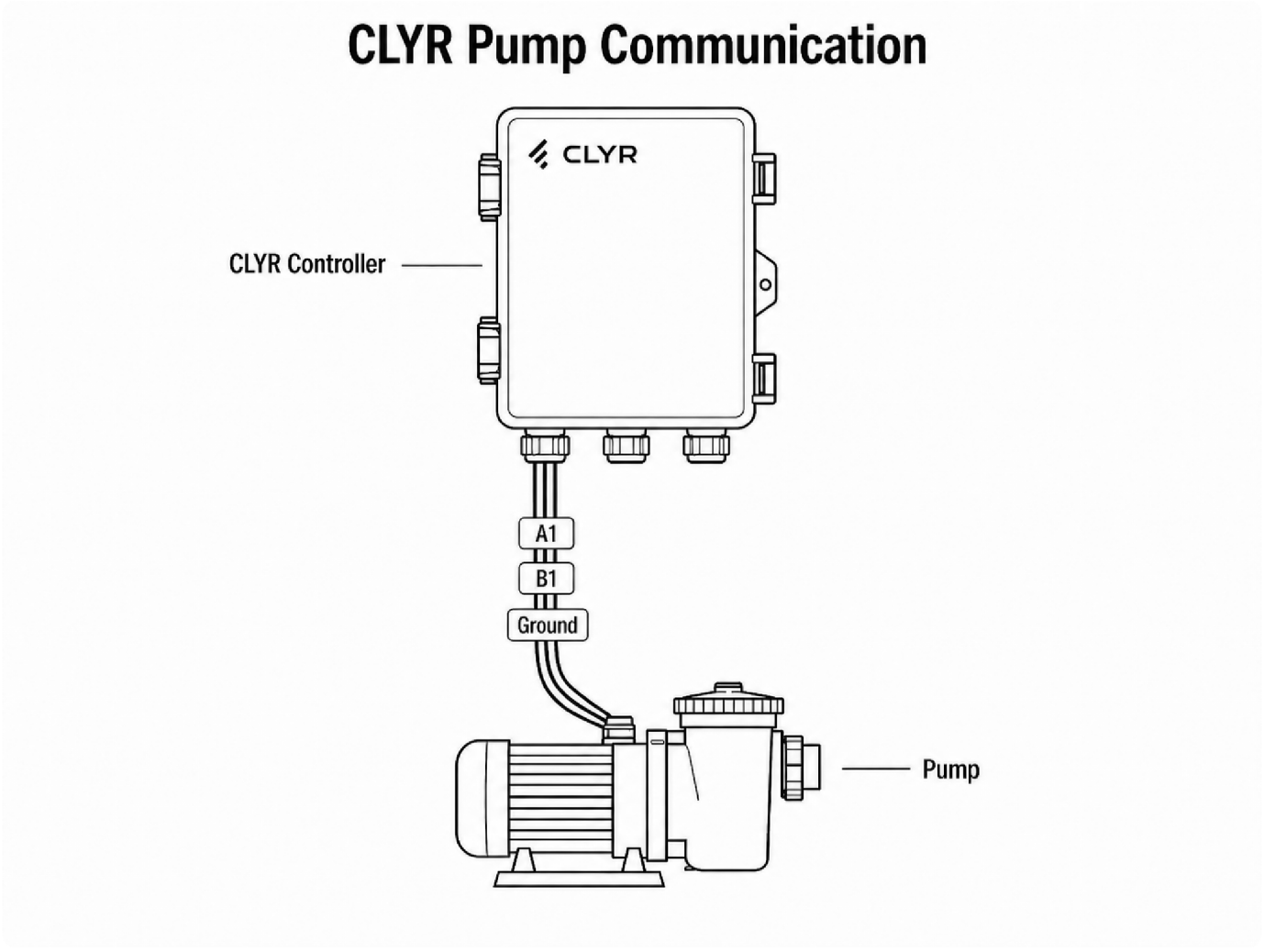
5. Restore covers and turn the breaker back on.
6. Open the Clyr app and go to Settings > Devices > Add Pool Equipment > Heaters.
7. Name the heater clearly and follow the remaining setup steps.
8. Test heat request only after pump flow and temperature readings are confirmed.

> **Temperature accuracy note:** For the heat setting to match water temperature exactly, install and configure the Clyr Flow Pro temperature sensors so Clyr can control the heater from verified water temperature.

23

Jandy Flow Pro / ePump Wiring

Use this page when wiring a compatible Jandy variable speed pump, including Flow Pro or ePump RS485 control. The Clyr RS485 network selected in the app must match the physical A/B terminal pair used at the controller.



Generic three-wire pump communication wiring: Clyr A, B, and ground routed to the pump communication terminals.

JANDY PUMP WIRE	CLYR CONNECTION	PURPOSE
Green	Clyr ground	Communication/common reference for the RS485 connection.
Black	Clyr A wire	RS485 A communication line. Land on A1 for Network 1 or A2 for Network 2.
Yellow	Clyr B wire	RS485 B communication line. Land on B1 for Network 1 or B2 for Network 2.

Hookup and App Setup

1. Turn off the breaker feeding the pump and verify the pump is de-energized before opening any wiring compartment.
2. Complete the RS485 communication wiring: green to Clyr ground, black to the selected Clyr A terminal, and yellow to the matching Clyr B terminal.

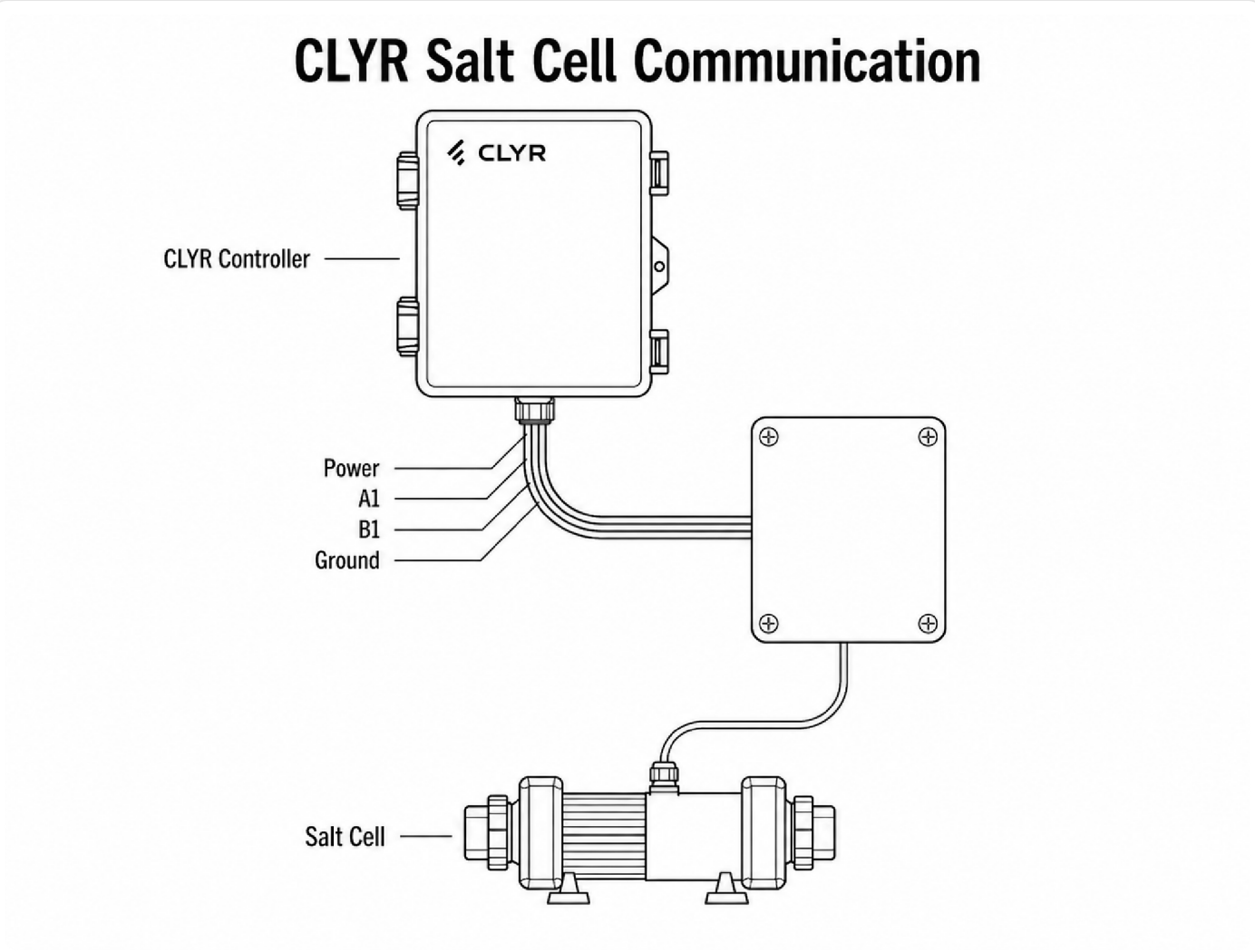
3. Restore the pump wiring compartment covers and turn the breaker back on.
4. Open the Clyr app.
5. Go to Settings.
6. Open Devices.
7. Select Add Pool Equipment.
8. Select Pump.
9. Select Jandy Flow Pro or Jandy ePump.
10. Select Network 1 if the pump is wired to A1 / B1, or select Network 2 if the pump is wired to A2 / B2.
11. Follow the remaining app steps to add the pump.
12. Confirm the pump appears in the app and responds to basic control.

> **Network match required:** If the pump is wired to A1 / B1 but added as Network 2, or wired to A2 / B2 but added as Network 1, the pump will not communicate correctly.

24

Jandy AquaPure Salt Cell Wiring

Use this page when wiring a compatible Jandy AquaPure salt cell controller for RS485 communication. The Clyr network selected in the app must match the physical A/B terminal pair used at the controller.



Generic salt cell communication wiring: Clyr power, A, B, and ground routed to the salt-cell controller.

JANDY AQUAPURE WIRE	CLYR CONNECTION	PURPOSE
Green	Clyr ground	Communication/common reference for the RS485 connection.
Black	Clyr A wire	RS485 A communication line. Land on A1 for Network 1 or A2 for Network 2.
Yellow	Clyr B wire	RS485 B communication line. Land on B1 for Network 1 or B2 for Network 2.
Red	Clyr power connection	Low-voltage power/reference connection required for this salt-cell communication hookup.

Hookup and App Setup

1. Turn off the breaker feeding the salt system and verify it is de-energized before opening any wiring compartment.

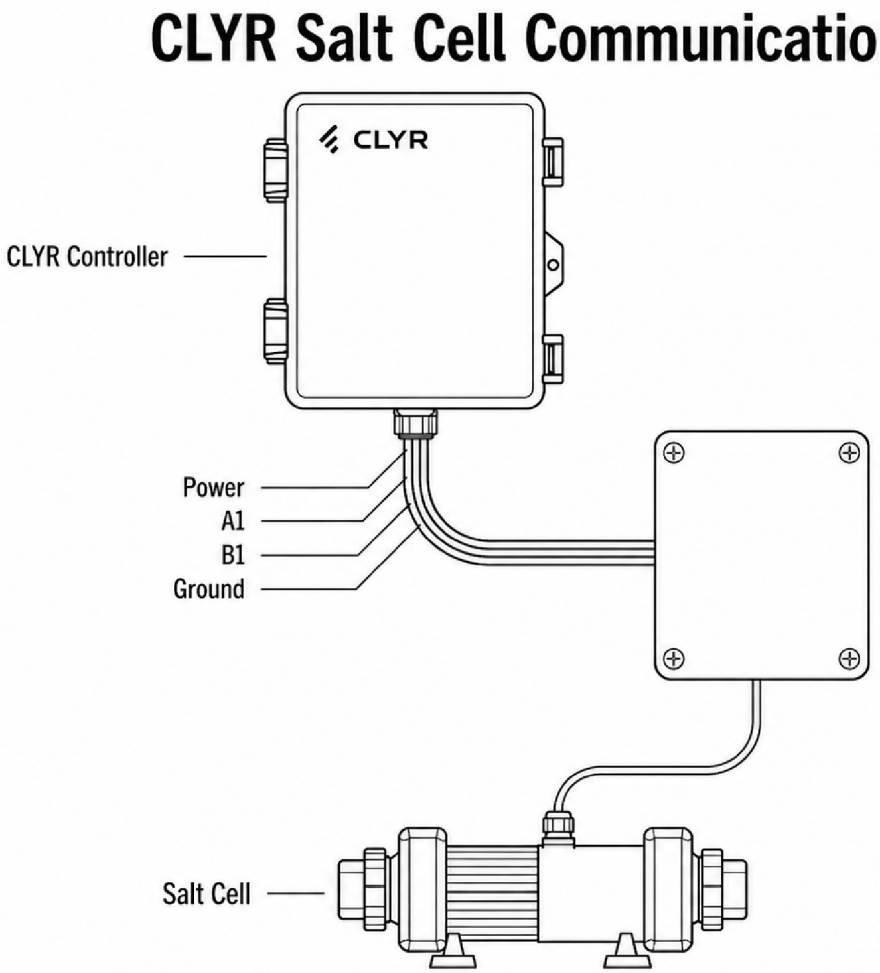
2. Complete the wiring: green to Clyr ground, black to the selected Clyr A terminal, yellow to the matching Clyr B terminal, and red to the Clyr power connection.
3. Restore all covers and turn the breaker back on.
4. Open the Clyr app.
5. Go to Settings > Devices > Add Pool Equipment > Salt Cell > Jandy AquaPure.
6. Select Network 1 if the salt cell is wired to A1 / B1, or select Network 2 if it is wired to A2 / B2.
7. Click Activate Salt Cell.
8. Follow the remaining app steps to complete setup and confirm the controller can communicate with the salt cell.

> **Network match required:** The salt cell network selected in the app must match the Clyr A/B terminals used for the physical wiring.

25

Pentair IntelliChlor Salt Cell Wiring

Use this page when wiring a compatible Pentair IntelliChlor salt cell controller for RS485 communication. The Clyr network selected in the app must match the physical A/B terminal pair used at the controller.



Generic salt cell communication wiring: Clyr power, A, B, and ground routed to the salt-cell controller.

PENTAIR INTELLICHLOR WIRE	CLYR CONNECTION	PURPOSE
Green	Clyr ground	Communication/common reference for the RS485 connection.
Black	Clyr A wire	RS485 A communication line. Land on A1 for Network 1 or A2 for Network 2.
Yellow	Clyr B wire	RS485 B communication line. Land on B1 for Network 1 or B2 for Network 2.
Red	Clyr power connection	Low-voltage power/reference connection required for this salt-cell communication hookup.

Hookup and App Setup

1. Turn off the breaker feeding the salt system and verify it is de-energized before opening any wiring compartment.

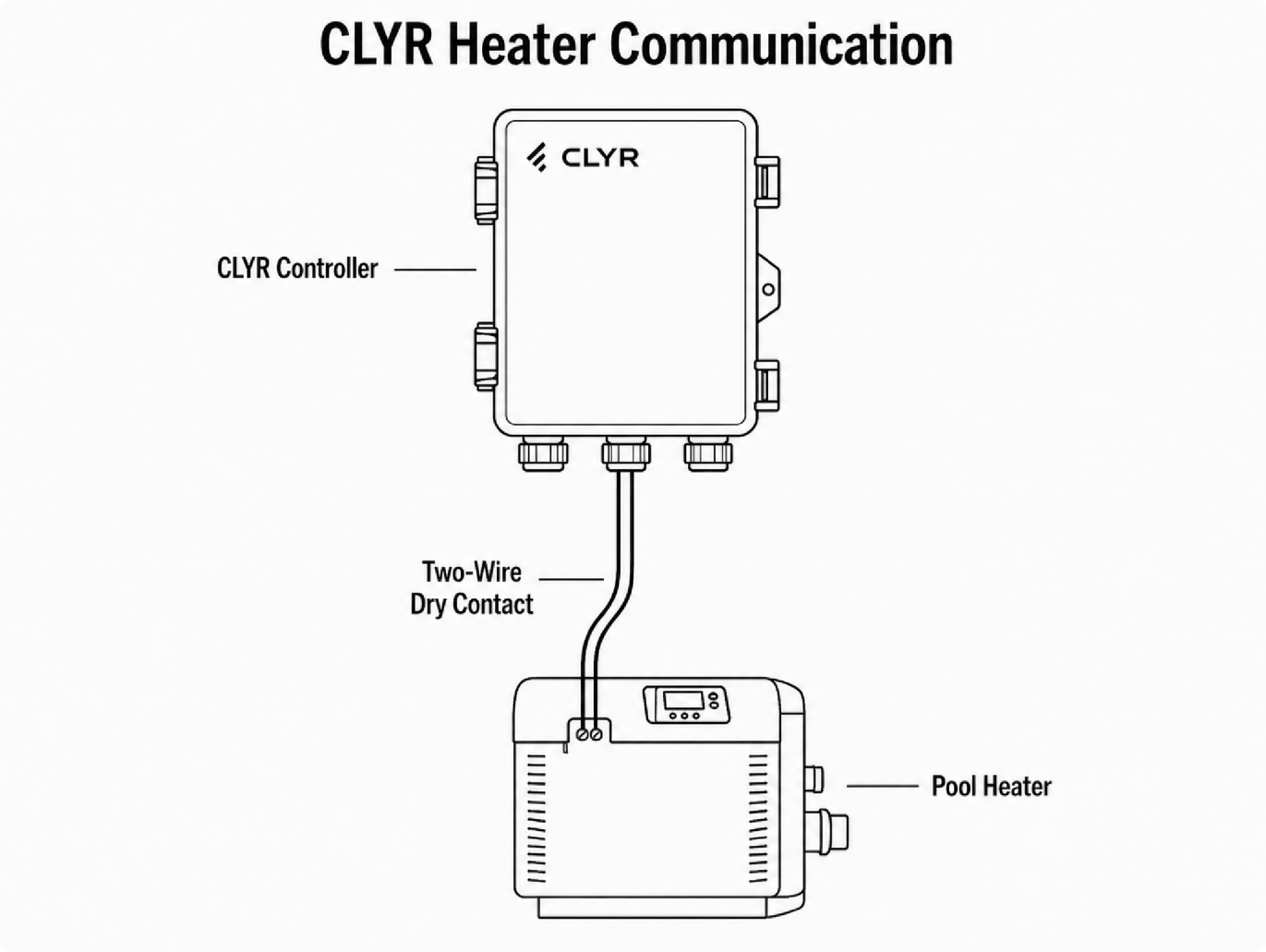
2. Complete the wiring: green to Clyr ground, black to the selected Clyr A terminal, yellow to the matching Clyr B terminal, and red to the Clyr power connection.
3. Restore all covers and turn the breaker back on.
4. Open the Clyr app.
5. Go to Settings > Devices > Add Pool Equipment > Salt Cell > Pentair IntelliChlor.
6. Select Network 1 if the salt cell is wired to A1 / B1, or select Network 2 if it is wired to A2 / B2.
7. Click Activate Salt Cell.
8. Follow the remaining app steps to complete setup and confirm the controller can communicate with the salt cell.

> **Network match required:** The salt cell network selected in the app must match the Clyr A/B terminals used for the physical wiring.

26

Jandy Heater Dry-Contact Wiring

Use this page when wiring a compatible Jandy heater through the Clyr dry-contact heater circuit. The Clyr controller does not supply heater power through these terminals; it closes a dry-contact loop to request heat.



Generic heater dry-contact communication wiring: two non-polarity-sensitive conductors routed from the heater fireman switch or remote terminals to the Clyr HEATER terminals.

JANDY HEATER CONNECTION	CLYR CONNECTION	PURPOSE
Fireman switch / remote two-wire terminal 1	Either Clyr HEATER terminal	One side of the dry-contact heater request loop.
Fireman switch / remote two-wire terminal 2	Other Clyr HEATER terminal	Other side of the dry-contact heater request loop.

Hookup and App Setup

1. Turn off the breaker feeding the heater and verify the heater is de-energized before opening the service panel.
2. Locate the two-wire fireman switch or remote-control terminals inside the heater.
3. Route the two dry-contact conductors from the heater back to the two Clyr terminals labeled HEATER.
4. Land either heater conductor on either Clyr HEATER terminal; the dry-contact loop is not polarity-sensitive.

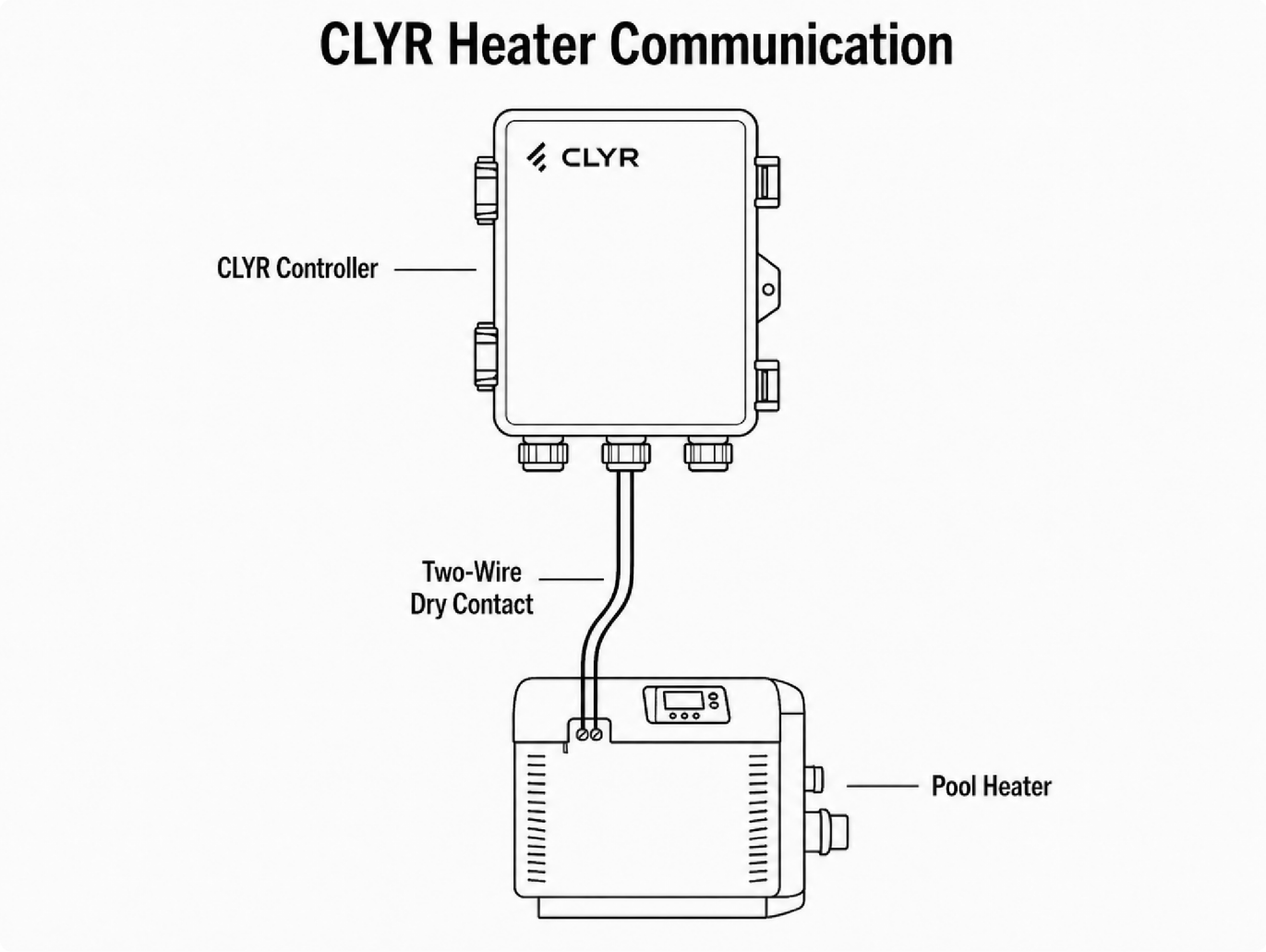
5. Restore covers and turn the breaker back on.
6. Open the Clyr app and go to Settings > Devices > Add Pool Equipment > Heaters.
7. Name the heater clearly and follow the remaining setup steps.
8. Test heat request only after pump flow and temperature readings are confirmed.

> **Temperature accuracy note:** For the heat setting to match water temperature exactly, install and configure the Clyr Flow Pro temperature sensors so Clyr can control the heater from verified water temperature.

27

Pentair Heater Dry-Contact Wiring

Use this page when wiring a compatible Pentair heater through the Clyr dry-contact heater circuit. The Clyr controller does not supply heater power through these terminals; it closes a dry-contact loop to request heat.



Generic heater dry-contact communication wiring: two non-polarity-sensitive conductors routed from the heater fireman switch or remote terminals to the Clyr HEATER terminals.

PENTAIR HEATER CONNECTION	CLYR CONNECTION	PURPOSE
Fireman switch / remote two-wire terminal 1	Either Clyr HEATER terminal	One side of the dry-contact heater request loop.
Fireman switch / remote two-wire terminal 2	Other Clyr HEATER terminal	Other side of the dry-contact heater request loop.

Hookup and App Setup

1. Turn off the breaker feeding the heater and verify the heater is de-energized before opening the service panel.
2. Locate the two-wire fireman switch or remote-control terminals inside the heater.
3. Route the two dry-contact conductors from the heater back to the two Clyr terminals labeled HEATER.
4. Land either heater conductor on either Clyr HEATER terminal; the dry-contact loop is not polarity-sensitive.

5. Restore covers and turn the breaker back on.
6. Open the Clyr app and go to Settings > Devices > Add Pool Equipment > Heaters.
7. Name the heater clearly and follow the remaining setup steps.
8. Test heat request only after pump flow and temperature readings are confirmed.

> **Temperature accuracy note:** For the heat setting to match water temperature exactly, install and configure the Clyr Flow Pro temperature sensors so Clyr can control the heater from verified water temperature.

28

pH, ORP, and Temperature Sensor Setup

The Clyr 3-in-1 sensor provides pH, ORP, and temperature readings through a flow-cell installation and RS485 wiring. The public setup guide places the flow cell after the filter and before the heater, with approximately one foot of straight pipe for the saddle clamps.

Installation Flow

1. Power and pair the controller before adding sensors.
2. Turn off the pump breaker before drilling or opening plumbing.
3. Locate straight pipe after the filter and before the heater.
4. Install saddle clamps and flow-cell tubing so water flows gently through the cell.
5. Wire the sensor to the selected RS485 network and low-voltage power as instructed for the sensor cable.
6. Add pH and ORP as separate components in the app, using the same network selected at the terminal block.
7. Refresh the water quality page and verify values appear.

> **Do not install the bypass after the chlorinator or salt cell.** The sensor flow path should reflect representative filtered water and follow Clyr installation guidance.

APP ITEM	WHY IT IS SEPARATE	OWNER CHECK
pH Sensor	Reports acidity / basicity trend	Add as pH and select the wired network
ORP Sensor	Reports oxidation-reduction potential	Add separately as ORP and select the same wired network
Temperature	Included in the 3-in-1 sensor data path	Confirm reading appears with water quality data

Controller Wiring

SENSOR WIRE	CLYR TERMINAL
Red	12V
Green	A1 or A2
White	B1 or B2
Black	GND

Use A1/B1 for Network 1 or A2/B2 for Network 2, then choose the same network in the app.

29

Pressure Sensor Setup

The Clyr pressure sensor measures pressure for filter and equipment monitoring. Public setup material describes installing the sensor with an optional 1/4 in. female tee so the analog gauge and digital pressure sensor can be used together.

Plumbing Steps

1. Turn off the pump breaker.
2. Relieve filter pressure.
3. Remove the analog gauge or plug.
4. Apply thread tape and install the tee.
5. Reinstall the analog gauge and Clyr pressure sensor into the tee.
6. Leak-test after restoring flow.

Controller Wiring

SENSOR WIRE	CLYR TERMINAL
Red	12V
Green	A1 or A2
White	B1 or B2
Black	GND

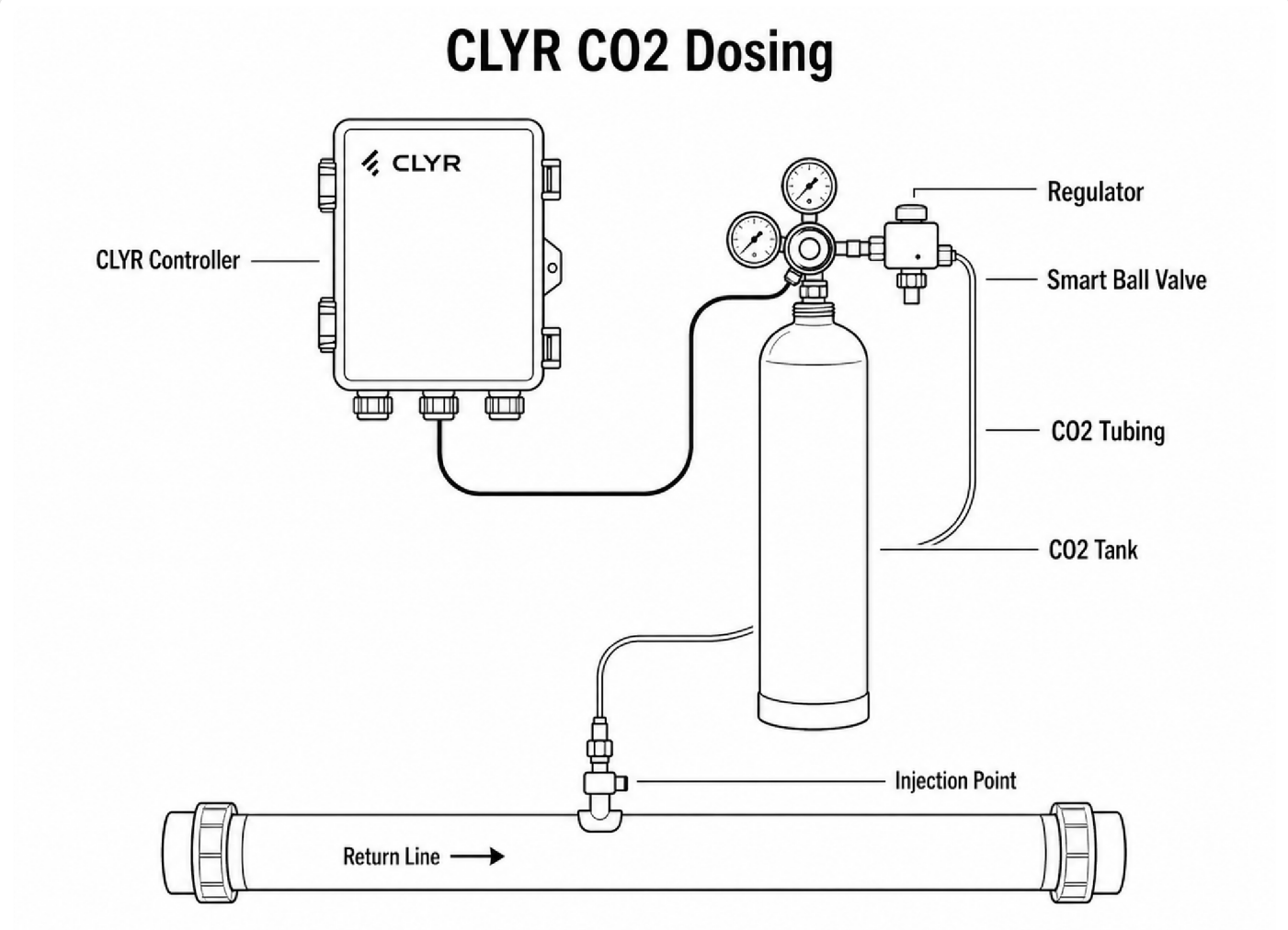
Use A1/B1 for Network 1 or A2/B2 for Network 2, then choose the same network in the app.

Sensor range note: The Clyr pressure setup guide identifies the pressure sensor as a 0-50 PSI sensor. Use it where that range is appropriate for the monitored pool pad location.

30

CO2 and Low-Voltage Dosing Outputs

The controller includes a dedicated CO2-labeled output for approved Clyr CO2 dosing control. CO2 dosing lowers pH by introducing carbon dioxide into the return line through a regulator, smart ball valve, tubing, and injection point.



CO2 dosing reference: Clyr Controller wired to the dosing valve, with regulator, CO2 tubing, owner-supplied CO2 tank, and injection point on the return line.

Owner-Supplied CO2 Tank

The CO2 tank is not included with the controller. Most installations use a refillable 20 lb CO2 tank sourced locally. Refill pricing varies by market, but a typical 20 lb refill is commonly about $30 to $80.

Why CO2

CO2 dosing is a safe, common way to lower pool pH when it is installed with the proper regulator, tubing, injection point, pressure monitoring, and chemistry feedback. It avoids handling strong liquid acid at the equipment pad.

> **Accessory compatibility required:** Do not connect an unapproved solenoid, pump, regulator, or chemical feeder directly to the CO2 terminal. Use the approved CO2 dosing assembly and confirm voltage, current, polarity, and installation instructions before wiring.

Setup Steps

1. Before app setup, take the red and black CO2 dosing wires and land them on the red and black designated CO2 terminals on the Clyr board.
2. Open the Clyr app and go to Settings > Devices > Add Pool Equipment > CO2 Dosing, then add the dosing device.
3. Go to Settings > Auto Pilot > Auto Dosing and set the desired pH target.
4. Complete the CO2 dosing details in Auto Dosing, including the pressure sensor, which is required for this setup.
5. Complete the chemistry sensor details in Auto Dosing so the controller has the pH feedback needed for dosing decisions.
6. Verify tubing direction, injection point location, regulator installation, and leak checks before enabling automatic dosing.

REQUIRED ITEM	PURPOSE	SETUP CHECK
CO2 dosing assembly	Controls CO2 flow from the tank to the injection point	Red and black wires landed on the matching Clyr CO2 terminals.
Pressure sensor	Confirms operating conditions required for dosing	Required in Auto Dosing setup before enabling the system.
Chemistry sensor	Provides pH feedback for dosing decisions	Verify pH readings before enabling automatic dosing.
Owner-supplied CO2 tank	Provides the CO2 source	Tank filled, regulator attached, and connections leak-checked.

31

Valve Actuator Ports and External 24 V AC

The full controller can control up to four standard valve actuators. Standard Hayward, Jandy, and Pentair valve actuators are supported in the public guide; Pentair IntelliValves are not supported there. Valve actuators require the separate 24 V AC valve power supply.

> **Critical:** Valve actuators will not move from the Clyr valve ports unless the external 24 V AC supply is installed and powered. The controller's DC power supply is not a substitute for actuator 24 V AC.

Installation Sequence

1. Power and pair the Clyr Controller.
2. Turn off the relevant pump/equipment breaker before installing the valve power supply.
3. Install the outdoor-rated 24 V AC power supply.
4. Land the valve power wires at the controller's valve power input, following HOT / COM labeling. Public guidance shows brown HOT on the left and blue COM on the right.
5. Plug the actuator into Valve 1, Valve 2, Valve 3, or Valve 4. The connector should fit only one direction; the public guide shows black wire on top.
6. Use the actuator's manual switch to move to the desired default position.
7. Add the valve in the app, name it, label its positions, and set the default direction.
8. Test movement with a schedule or command after power is restored and wiring is checked.

VALVE FIELD	RECOMMENDED NAMING
Pre-pump valve	Suction, Pool/Spa Suction, Cleaner Suction
Post-pump valve	Return, Pool/Spa Return, Bubbler, Water Feature
Default direction	The physical position the valve should use when the system is off or state is unknown

32

Five AUX Relay Ports

The current controller layout for this manual includes five AUX relay ports. These ports are low-voltage control outputs intended to drive external relays through Clyr relay jumper cabling. They do not replace proper relay load wiring for line-voltage equipment.

Typical Controlled Loads

- Pool or spa light relay.
- Blower relay.
- Single-speed pump relay.
- Water feature relay.
- Other auxiliary relay-controlled equipment permitted by the relay cabinet and site design.

Setup Procedure

1. Confirm the controller is powered and online.
2. If required by the board version, install the relay-power jumper or provided shunt.
3. Plug the Clyr relay jumper into AUX 1, AUX 2, AUX 3, AUX 4, or AUX 5 as labeled.
4. Connect the relay side of the jumper according to the relay cabinet instructions.
5. Add an Auxiliary Relay in the app and select the same AUX port.
6. Name the relay by the load it controls.
7. Test for relay click and correct load behavior.

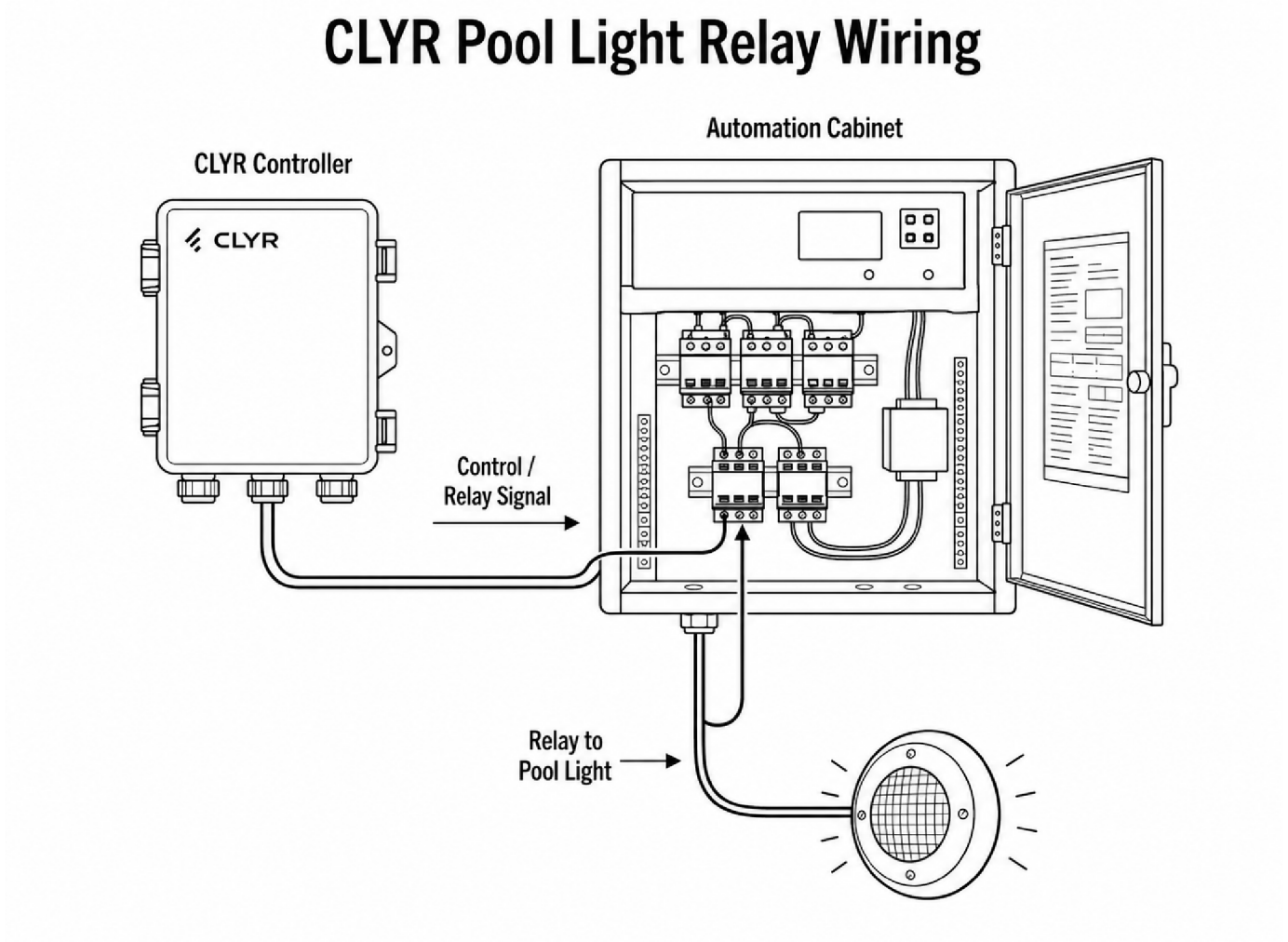
Legacy documentation note: Some older Clyr guides describe Aux 1 through Aux 3. This manual follows the current five-AUX controller request and product imagery. Install using the labels printed on your board and the options shown in your app.

Line-voltage relay loads require qualified wiring. The AUX port is the controller signal path. The load side of an external relay cabinet may contain hazardous voltage and must be installed according to code and equipment instructions.

33

Hayward Relay Light Wiring

Use this page when a Hayward relay-controlled pool light is switched by an external relay cabinet and the Clyr Controller provides the low-voltage AUX relay signal.



Generic relay-light wiring: Clyr AUX signal cable routed to the low-voltage side of an existing relay cabinet, with the relay load side controlling the pool light.

FIELD CONNECTION	CLYR CONNECTION	PURPOSE
8 ft Clyr relay jumper cable	AUX 1, AUX 2, AUX 3, AUX 4, or AUX 5	Low-voltage relay-control signal from the controller.
Relay low-voltage control side	Other end of the Clyr relay jumper	Allows Clyr to command the existing relay.
Pool light load wiring	Existing relay load terminals, not the Clyr board	The relay cabinet switches the light circuit according to its rated load wiring.

Hookup and App Setup

1. Turn off power to the relay cabinet and pool light circuit before opening any enclosure.

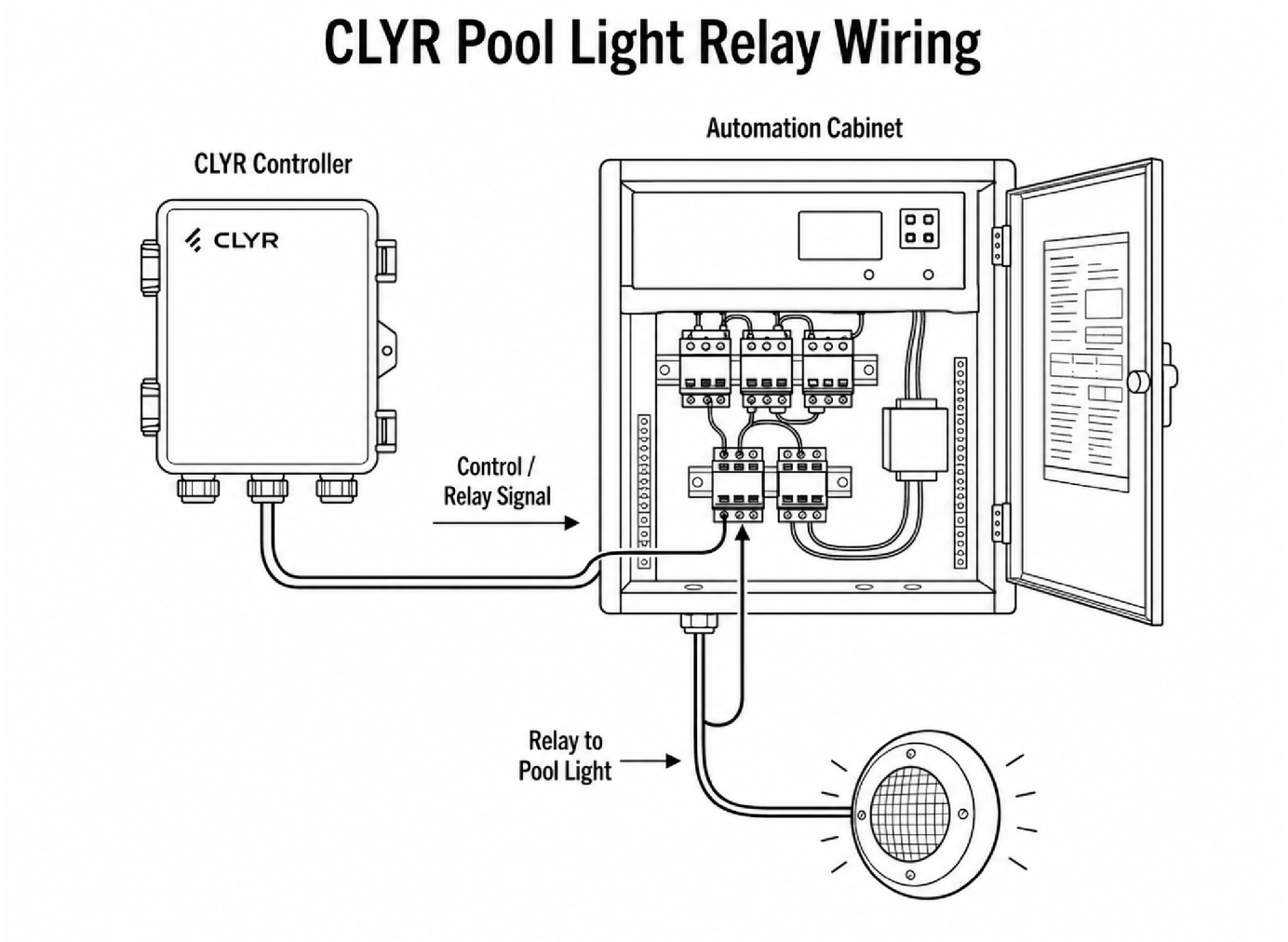
2. Plug the Clyr relay cable into the AUX port you want to use on the Clyr Controller, AUX 1 through AUX 5.
3. Route the 8 ft jumper cable to the existing cabinet where the relay is mounted and the light is connected to the relay.
4. Wire the jumper cable to the low-voltage side of the relay according to the relay cabinet instructions.
5. Restore covers and power after wiring is complete and inspected.
6. Open the Clyr app and go to Settings > Devices > Add Pool Equipment > Relay Light.
7. Select Hayward as the relay light manufacturer.
8. Select the same AUX port used at the controller and click Add.
9. Confirm the relay light appears in the app and test on/off control.

> **Relay load wiring may contain high voltage.** The Clyr Controller only provides the low-voltage control signal. Do not route line-voltage pool light wiring into the Clyr low-voltage enclosure.

34

Jandy Relay Light Wiring

Use this page when a Jandy relay-controlled pool light is switched by an external relay cabinet and the Clyr Controller provides the low-voltage AUX relay signal.



Generic relay-light wiring: Clyr AUX signal cable routed to the low-voltage side of an existing relay cabinet, with the relay load side controlling the pool light.

FIELD CONNECTION	CLYR CONNECTION	PURPOSE
8 ft Clyr relay jumper cable	AUX 1, AUX 2, AUX 3, AUX 4, or AUX 5	Low-voltage relay-control signal from the controller.
Relay low-voltage control side	Other end of the Clyr relay jumper	Allows Clyr to command the existing relay.
Pool light load wiring	Existing relay load terminals, not the Clyr board	The relay cabinet switches the light circuit according to its rated load wiring.

Hookup and App Setup

1. Turn off power to the relay cabinet and pool light circuit before opening any enclosure.

2. Plug the Clyr relay cable into the AUX port you want to use on the Clyr Controller, AUX 1 through AUX 5.
3. Route the 8 ft jumper cable to the existing cabinet where the relay is mounted and the light is connected to the relay.
4. Wire the jumper cable to the low-voltage side of the relay according to the relay cabinet instructions.
5. Restore covers and power after wiring is complete and inspected.
6. Open the Clyr app and go to Settings > Devices > Add Pool Equipment > Relay Light.
7. Select Jandy as the relay light manufacturer.
8. Select the same AUX port used at the controller and click Add.
9. Confirm the relay light appears in the app and test on/off control.

> **Relay load wiring may contain high voltage.** The Clyr Controller only provides the low-voltage control signal. Do not route line-voltage pool light wiring into the Clyr low-voltage enclosure.

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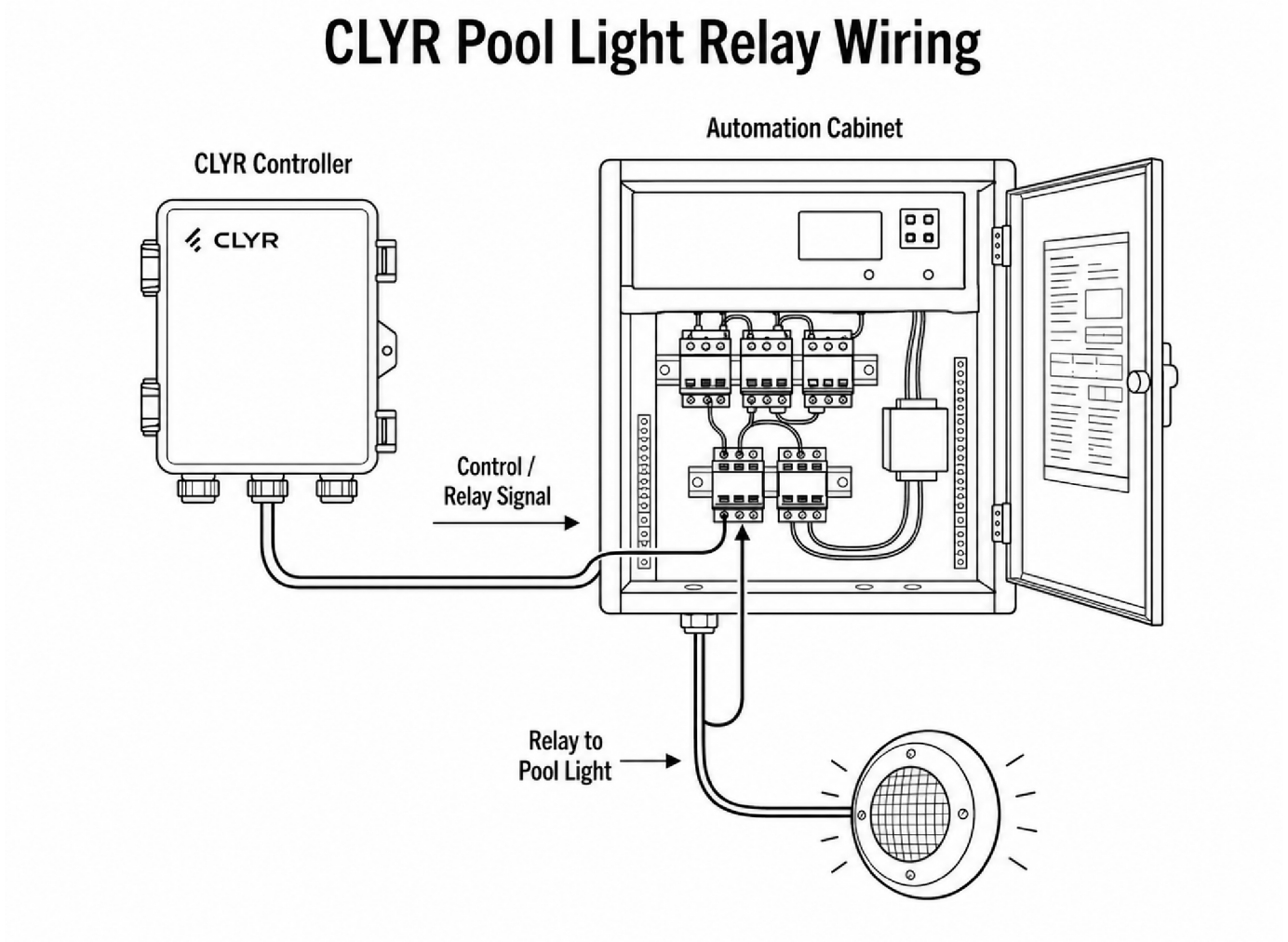
Pentair Relay Light Wiring

Use this page when a Pentair relay-controlled pool light is switched by an external relay cabinet and the Clyr Controller provides the low-voltage AUX relay signal.



Generic relay-light wiring: Clyr AUX signal cable routed to the low-voltage side of an existing relay cabinet, with the relay load side controlling the pool light.

FIELD CONNECTION	CLYR CONNECTION	PURPOSE
8 ft Clyr relay jumper cable	AUX 1, AUX 2, AUX 3, AUX 4, or AUX 5	Low-voltage relay-control signal from the controller.
Relay low-voltage control side	Other end of the Clyr relay jumper	Allows Clyr to command the existing relay.
Pool light load wiring	Existing relay load terminals, not the Clyr board	The relay cabinet switches the light circuit according to its rated load wiring.

Hookup and App Setup

1. Turn off power to the relay cabinet and pool light circuit before opening any enclosure.

2. Plug the Clyr relay cable into the AUX port you want to use on the Clyr Controller, AUX 1 through AUX 5.
3. Route the 8 ft jumper cable to the existing cabinet where the relay is mounted and the light is connected to the relay.
4. Wire the jumper cable to the low-voltage side of the relay according to the relay cabinet instructions.
5. Restore covers and power after wiring is complete and inspected.
6. Open the Clyr app and go to Settings > Devices > Add Pool Equipment > Relay Light.
7. Select Pentair as the relay light manufacturer.
8. Select the same AUX port used at the controller and click Add.
9. Confirm the relay light appears in the app and test on/off control.

> **Relay load wiring may contain high voltage.** The Clyr Controller only provides the low-voltage control signal. Do not route line-voltage pool light wiring into the Clyr low-voltage enclosure.

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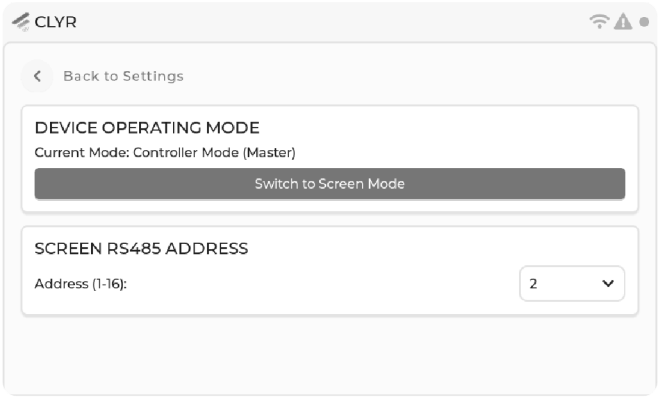
Controller Screen Operation

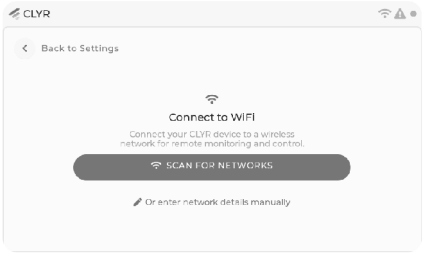
On screen-equipped controllers, the local display provides status and setup context. The screen does not remove the need for correct wiring, app configuration, or cloud pairing; it provides local visibility during setup and operation.



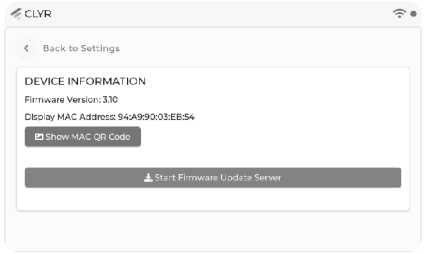
Operating mode screen reference.

Common Screens

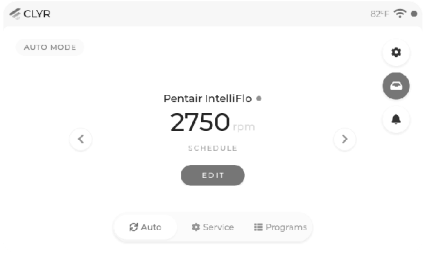
- **Auto:** Shows the controller in normal automated operation.
- **Service:** Used for service workflows and local checks.
- **Programs:** Provides access to configured one-time operating events.
- **WiFi:** Shows network setup and connection state.
- **Device Info:** Displays identification and setup details.



WiFi configuration.



Device information.



Equipment home.

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Adding Equipment in the App

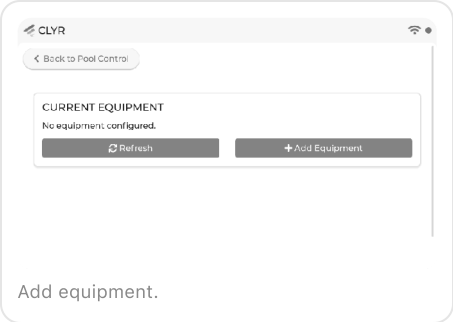
Equipment must be added in the app after wiring. The app configuration must match the physical port or RS485 network used during installation.

Typical Add Path

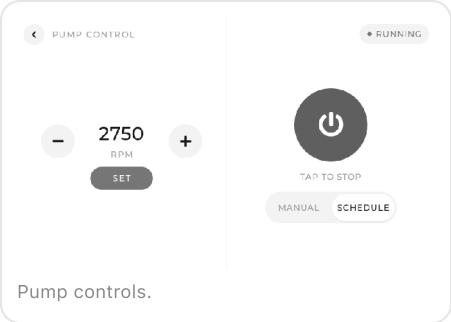
1. Open the correct pool location.
2. Go to Settings.
3. Open Devices.
4. Select Add.
5. Choose Pool Equipment.
6. Select the equipment type.
7. Name the equipment clearly.
8. Select network, port, or advanced options to match the wiring.
9. Save and test.

Configuration Must Match Wiring

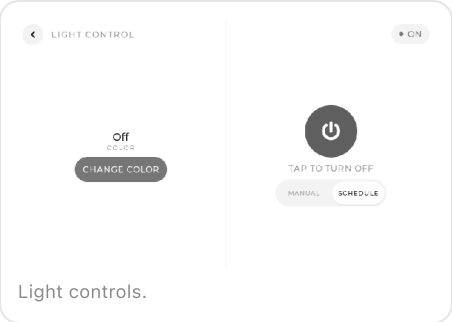
WIRED ITEM	APP CHOICE
Valve 1-4	Valve Actuator, matching valve port
AUX 1-5	Auxiliary Relay, matching AUX port
A1/B1	Network 1
A2/B2	Network 2
AIN/BIN	Monitor mode where supported



Add equipment.



Pump controls.



Light controls.

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Schedules, Programs, and Autopilot

Schedules, programs, and autopilot determine how equipment runs after setup. These features should only be used after wiring, app configuration, and individual equipment tests are complete.

Schedules

Schedules are time-based and accessed from the home page. Use schedules for routine hourly operation such as daily pump runtime, light timing, or repeated auxiliary actions.

Programs

Programs are one-time run events. A common example is spa mode, where pump, heater, valves, and other equipment may need to change together.

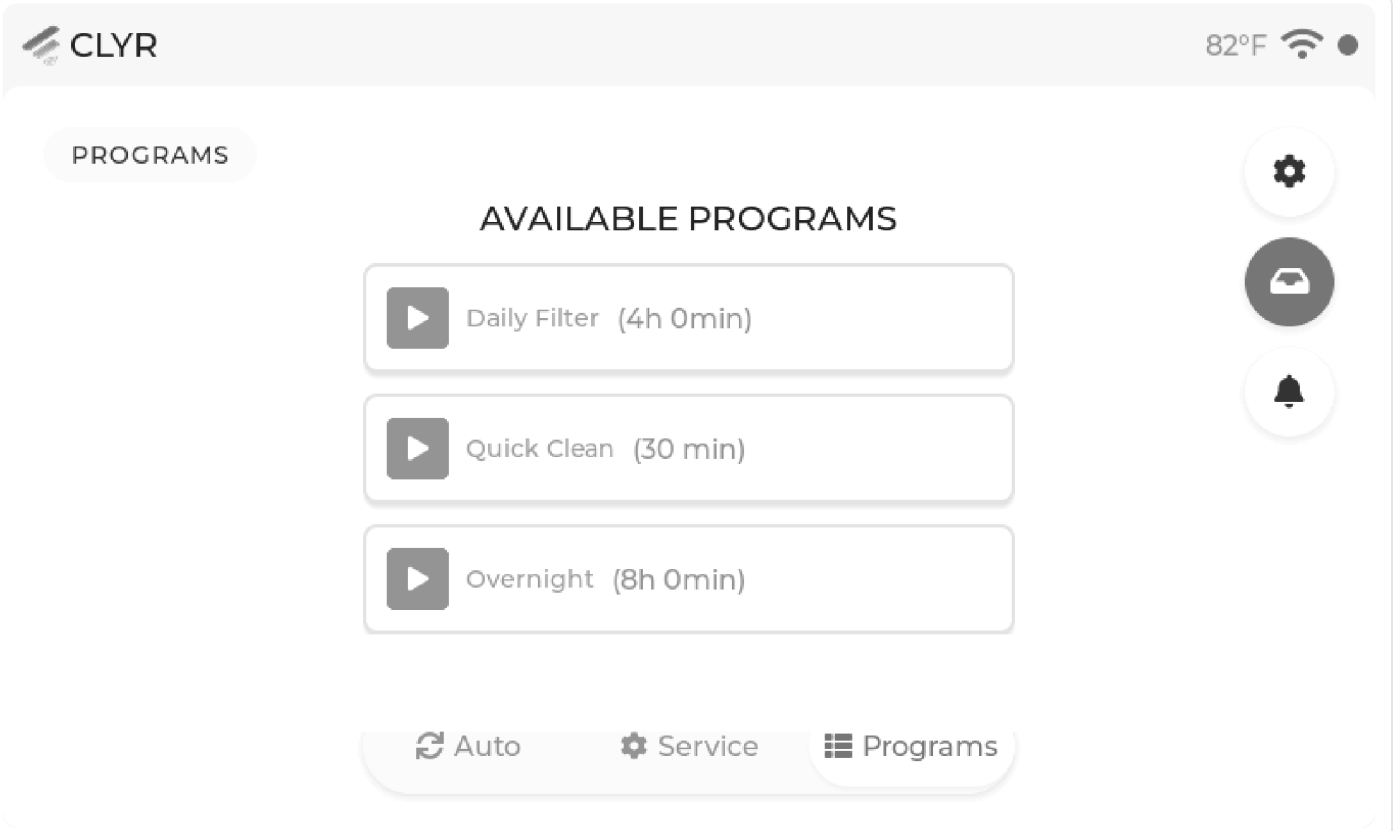
Autopilot

Autopilot lets Clyr automation attempt to run equipment to maintain pool health according to configured logic, available sensors, and enabled equipment.

> **Priority hierarchy:** Public Clyr documentation describes Programs as overriding Autopilot and Schedules, and Autopilot as overriding Schedules.

Recommended Owner Routine

1. Verify all equipment has been individually tested.
2. Create basic schedules for equipment with predictable daily operation.
3. Create programs for special operating modes such as spa mode or water feature mode.
4. Enable autopilot only after sensors are verified and equipment behavior is understood.
5. Review activity after the first day, first week, and after seasonal changes.



Programs screen reference.

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Commissioning Checklist

Complete this checklist before leaving the pool pad. The goal is to prove that the physical installation, app configuration, and owner-facing operation all match.

- Controller enclosure is mounted vertically and securely.
- Gasket is clean, seated, and undamaged.
- All cable glands are tightened on cable jackets.
- Unused openings are sealed.
- DC power polarity is verified before final closeout.
- Controller LED or screen confirms power.
- Controller is paired to the correct pool location.
- WiFi network and cloud status are confirmed.
- Each RS485 device uses the matching app network.
- A/B polarity is checked at both ends of each communication cable.
- Sensors show fresh readings in the app.
- Pressure sensor fittings are leak-tested.
- pH/ORP/temp flow cell has gentle flow.
- Valve 24 V AC supply is installed if valves are used.
- Each actuator moves and returns to expected/default position.
- Each AUX relay clicks and controls the intended load.
- No equipment is controlled by two automation systems at once.
- All high-voltage covers are reinstalled.
- Programs and schedules are reviewed with the owner.
- Owner knows how to identify offline state and call for support.

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Installation Record

Record the installed controller, network assignments, and equipment ports before the installation is closed. This page should stay with the pool equipment records for future service.

RECORD ITEM	FILL IN
Pool location name	
Controller serial / device ID	
WiFi network	
Network 1 devices	
Network 2 devices	
Valve ports used	
AUX ports used	
Installer / service contact	

> **Owner handoff:** Confirm the app login, controller location name, device names, network assignments, and service contact before leaving the site.

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Troubleshooting and Maintenance

SYMPTOM	LIKELY CAUSE	RECOMMENDED CHECK
Controller never powers on	No DC supply, wrong polarity, loose terminal	Verify source power, polarity, and terminal seating
WiFi setup returns to red/yellow cycle	Wrong network/password or weak signal	Retry setup close to the router or improve pool-pad WiFi
Solid green but not turquoise	Cloud path unavailable	Power cycle and check firewall/SNTP/MQTT restrictions
Equipment does not communicate	A/B swapped, wrong app network, loose conductor	Check A/B at both ends, tug-test terminals, confirm network selection
Sensor has no readings	No power to sensor or wrong network	Verify at least required low-voltage power at red/black and app network selection
Valve does not move	No external 24 V AC, wrong valve port, actuator switch off	Verify 24 V AC supply, port selection, and manual switch operation
AUX relay does not click	Wrong AUX port, missing relay jumper/shunt, no relay power path	Verify physical AUX port, app setting, relay jumper, and board-version power jumper
Moisture inside enclosure	Loose gland, damaged gasket, unsealed opening, water spray	De-energize, dry, repair sealing path, and inspect for corrosion

Owner Maintenance

- Inspect the enclosure monthly for damage, cracked plastic, loose latches, or water intrusion.
- Check that cable glands remain tight after service visits.
- Review app status after storms, power outages, router changes, and pool-equipment service.
- Verify sensor values after cleaning filters, replacing sensors, changing plumbing, or performing chemical corrections.
- Keep the area around the controller free of chemical containers, loose cords, and standing water.

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Closing Notes and Support

The Clyr Controller is designed to modernize pool automation while keeping the controller enclosure low-voltage, organized, and serviceable. A successful installation should leave the owner with a controller that is mounted securely, sealed correctly, powered from an approved low-voltage DC source, paired to the app, and configured to match the physical wiring at the pool pad.

Before You Leave the Equipment Pad

- Confirm the controller is online in the Clyr app.
- Confirm each pump, heater, salt cell, valve, relay light, AUX relay, sensor, and dosing device is assigned to the same network or port used in the wiring.
- Confirm no high-voltage wiring enters the Clyr Controller enclosure.
- Confirm all cable glands, gaskets, unused openings, and enclosure latches are sealed for outdoor service.
- Review schedules, programs, Auto Pilot settings, and service mode behavior with the owner.

> **Keep this manual with the pool equipment records.** Future service work is faster and safer when the installer, owner, or service company can reference the controller wiring, network assignments, AUX ports, and commissioning record.

Support Information

ITEM	RECORD
Pool location name	
Clyr Controller serial / device ID	
Installer or service company	
Installer phone / email	
Installation date	
Notes for future service	