

Latham

The Pool Company

Mechanical Rotary Encoder Limit Switch

USAGE & INSTALLATION GUIDE



Thank you for purchasing this product.

- Read and follow all instructions prior to setup and use.
- Keep this guide for future reference.

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Safety Instructions

⚠WARNING: IMPORTANT SAFETY INSTRUCTIONS

1. Turn off power at distribution panel before attempting to service or install equipment.
2. This device must be installed in accordance with national and local electrical codes.
3. Electrical wiring and service work must be performed by a qualified individual.
4. All electrical junction boxes must be rated for outdoor use.
5. Do not exceed the maximum electrical ratings identified in this manual.

Product Information

The Mechanical Rotary Limit Switch is designed to provide a simple means to override water features, such as waterfalls and fountains, to prevent the flow of water onto the cover when the cover is deployed over the pool.

Product Specifications

Control Capabilities: 3-Way Valve*, Motor Relay*, Pool Controller

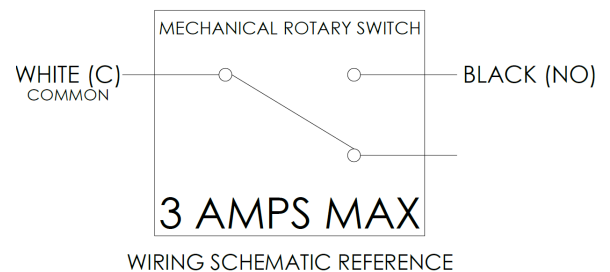
Maximum Switching Voltage:	220VDC, 250VAC
Maximum Switching Current:	3 AMPS

Cable Details:

- 30' 18/4 AWG 300V water/sunlight resistant
- Direct Burial (indoor/outdoor wire included)

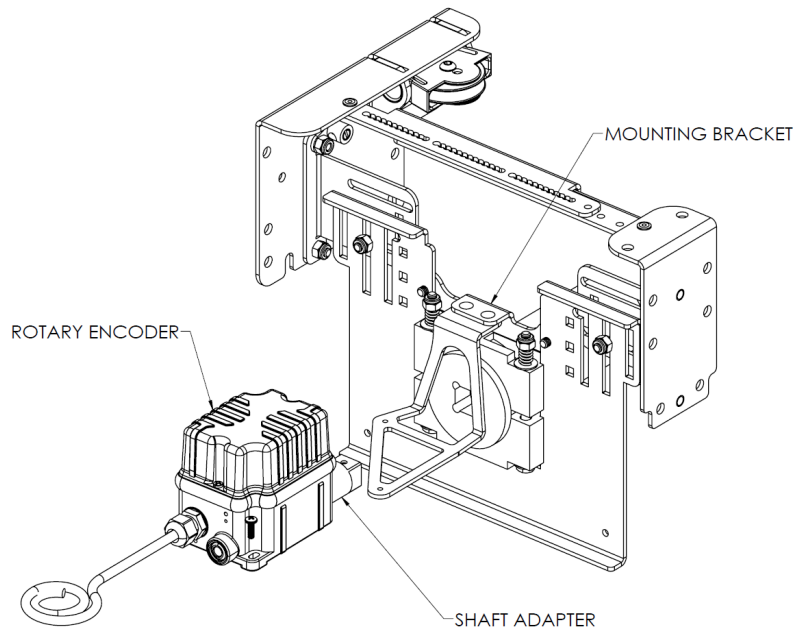
The unit is configured to support one of the following: a 3 way valve, relay interrupt or feedback to a compatible pool controller. Examples are on pages 4 and 5.

*These configurations require an interface board to function.



General Operations

The Mechanical Rotary Limit Switch is positioned on the non-motor side of the cover rollup tube. The shaft adapter is inserted into the rollup tube non motor end and the mechanical rotary limit switch is bolted to a bracket which attaches to the non-motor mechanism. The Mechanical Rotary Limit Switch detects the rotation of the cover to determine if the cover's leading edge position is behind or in front of the home position. When the cover moves behind the home position, the mechanical rotary limit switch will activate a switch to turn on the water feature being interrupted or alert the pool controller that the cover has been opened.



The mechanical rotary limit switch is an accurate device, however, due to different ways that a cover can roll up on the roll up tube exact positioning of the cover can vary up to 1 foot.

Wiring Information

⚠ WARNING: To prevent electrocution, turn off power at distribution panel before attempting to service or install equipment. Do not run Low Voltage and High Voltage lines in the same conduit.

The Mechanical Rotary Limit Switch comes with 30 feet of outdoor rated 18AWG 4 conductor wire additional wire can be run as needed according to your local electric code.

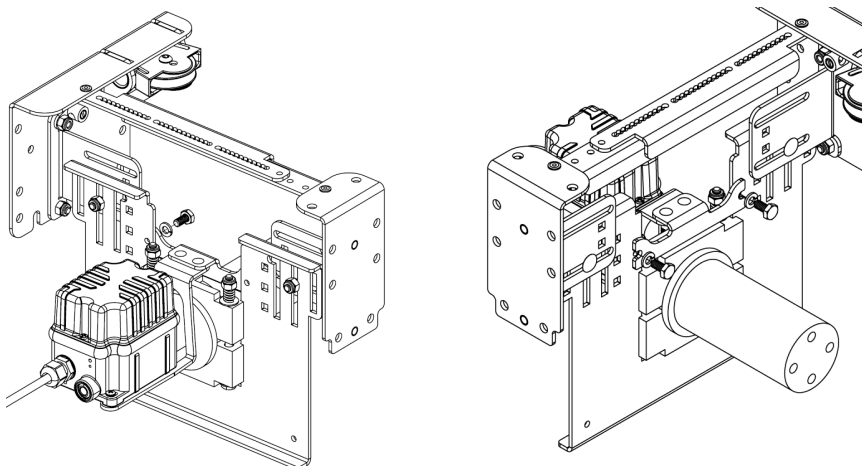
Installation and Setup

Installation

The mounting setup between systems varies. Refer to the installation guide below for your system.

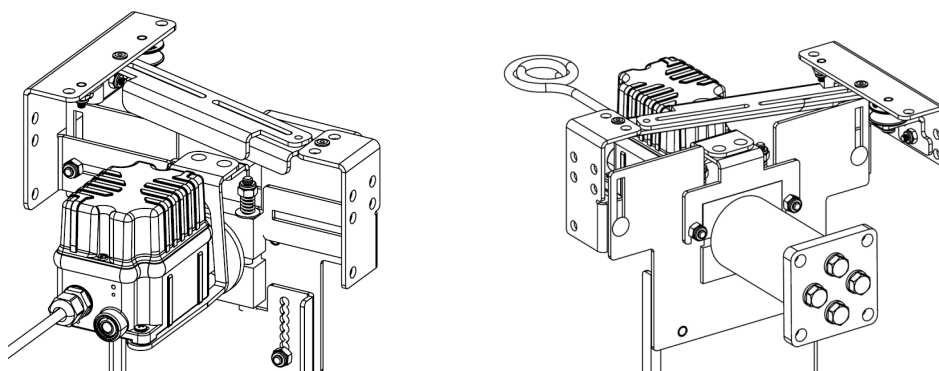
Eclipse Systems

- 1) Remove Brake Retainer.
- 2) Install mounting bracket in place of brake retainer using existing hardware.
- 3) Insert the shaft adapter into the non-motor end access hole and bolt the limit switch to the bracket.



CS300HD Systems

- 1) Remove Brake Retainer.
- 2) Install mounting bracket in place of brake retainer using existing hardware.
- 3) Insert the shaft adapter into the non-motor end access hole and bolt the limit switch to the bracket.

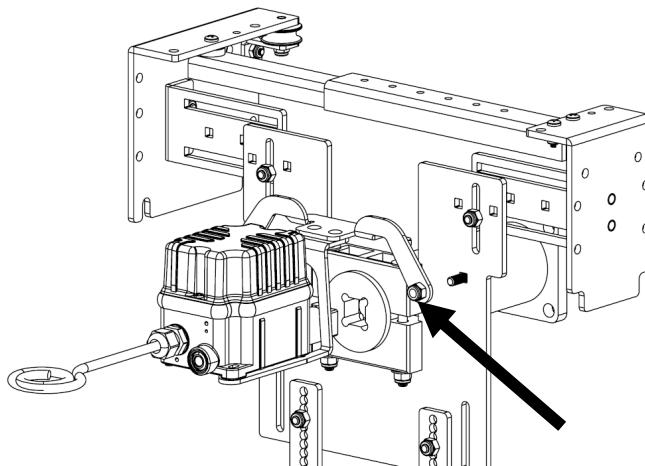


Installation (cont.)

CS3000 Systems

New installations

- 1) Mount Encoder with bracket to mechanism using mounting holes and supplied hardware.
- 2) Insert the shaft adapter into the non-motor end access hole and bolt the limit switch to the bracket.

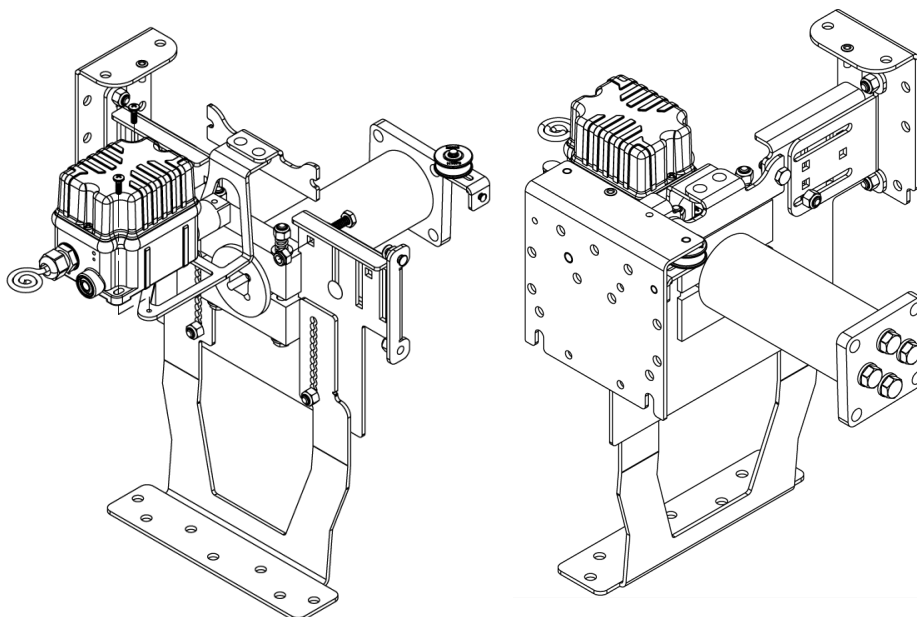


Legacy retrofits

- 1) Follow instructions above. Drill holes as necessary.

ATOM Systems

- 1) Remove Brake Retainer
- 2) Install mounting bracket in place of brake retainer using existing hardware
- 3) Insert the shaft adapter into the non-motor end access hole and bolt the limit switch to the bracket

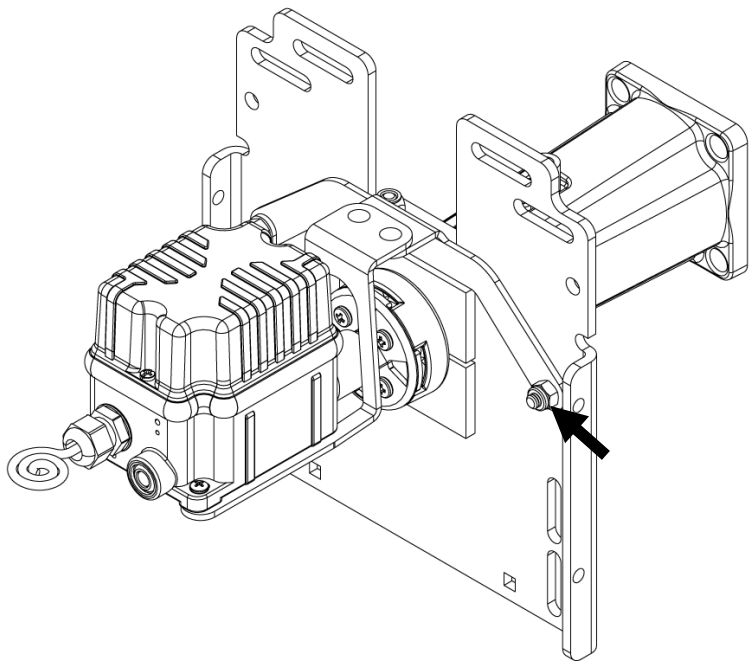


Installation (cont.)

Infinity 4000 Systems

New Installations

- 1) Mount Encoder with bracket to mechanism using mounting holes and supplied hardware
- 2) Insert the shaft adapter into the non-motor end access hole and bolt the limit switch to the bracket



Configuration

Connecting to a Pool Controller

On systems with an auxiliary input, connect the White (C) and Black (NO) wires of the rotary encoder to the pool controller auxiliary input and configure the features you require to interlock with the rotary encoder. Review pool controller instructions for further information.

To connect to a system that does not have an auxiliary input circuit. Utilize the Multivalve Interface Board (E1144) to control one or more units. Each E1144 Board can control two features. (2 Valves, 2 Relays, or 1 Valve and 1 Relay) additional units can be chained together to control the desired number of features.

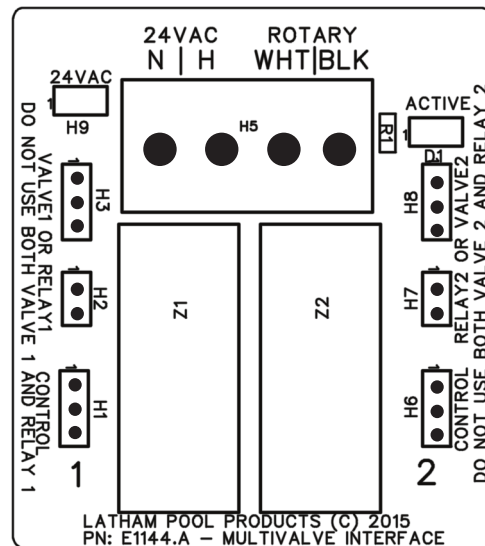
Configure a Feature

⚠ CAUTION: To avoid costly repairs, always allow 30 seconds for valve actuators to fully close before operating the cover.

Valves can take up to 30 seconds to fully open or fully close. Simultaneously changing a valve state and operating the autocover within the 30 second window can lead to the valve not functioning correctly and potentially building up water on the cover.

Configure a Feature (cont.)

1. Disconnect the Valve or Relay connector from the pool controller. Plug the connector into the “Control” or “Relay” connector on the Interface Board.
2. Select the cable labeled VALVE to control a Valve or select the cable labeled RELAY to control a Pump Relay.
3. Plug the 3 position connector of the cable into the 3 position connector labeled “Valve” on the Interface Board.
4. Plug the other end into the location where the original Valve or Relay connector was located.
5. Wire the rotary encoder wires to the 2 screw terminals White to W and Black to B. If controlling a Pump Relay, only the White and Black wires are required.



For multivalve interface: Use the optional E1144 Multivalve Interface board and follow the modified instruction sheet. Connect the White Rotary Encoder Wire to the WHT terminal on the E1144 board and the Black Rotary Encoder Wire to the BLK terminal on the E1144 board. Connect the 24VAC power to a 24VAC power source in the pool control box. For convenience, a plug in adaptor is setup to plug into an open Valve port if available. When the circuit is active a Red LED will light up on the board.

Setting the Home Position

1. **Position the cover where you want the feature to turn on.** (Typically about a foot in front of the cover open position)
2. **Loosen the center cam screw.**
3. **Rotate the cam that is associated with the active switch** (typically the top cam) **into the appropriate position for the mechanism** (see figure) **until there is an audible click.** Cam can be adjusted by hand or by associated flat head screw (1 for bottom cam, 2 for top cam).
4. **Tighten the center cam screw.**
5. **Operate the cover in the closing direction for at least 5 feet.** This sets the rotational direction for closing the cover.
6. Test to make sure the feature is turning off and on by moving the cover to the desired open position and seeing if feature has been actuated.
7. If steps 1 through 6 did not provide expected results repeat the configuration steps.

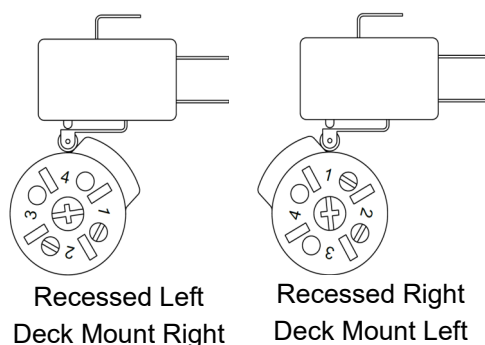
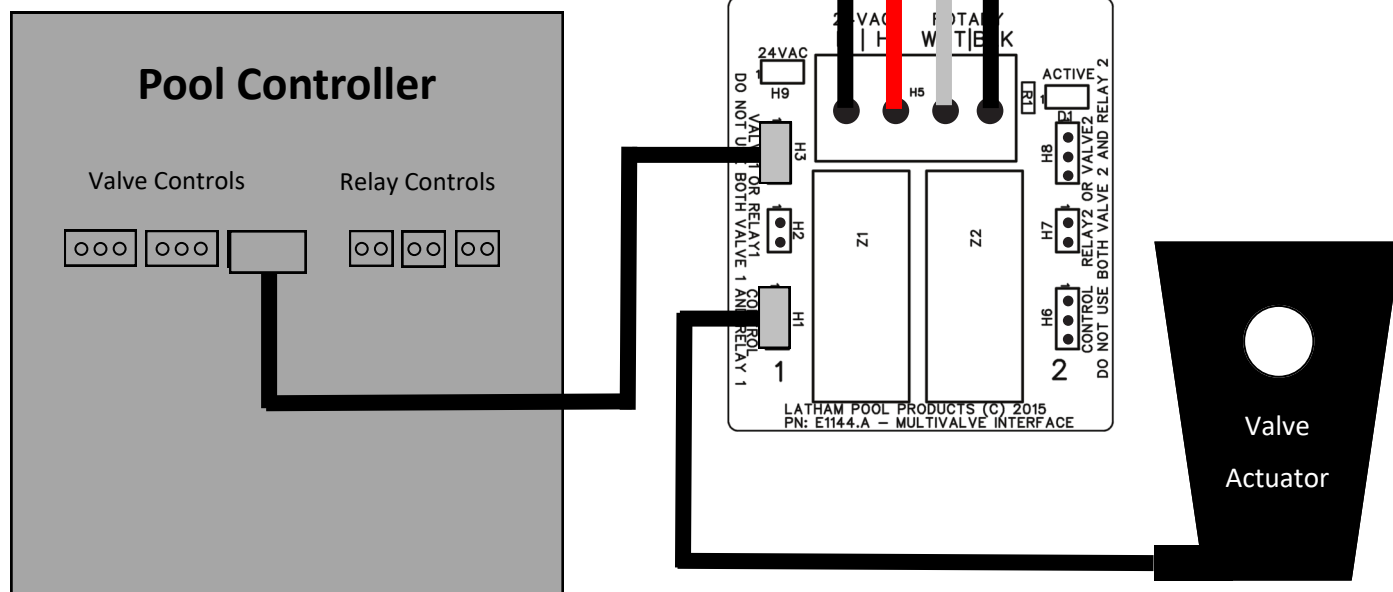


Figure 1

Modified Instructions for E1144 Multivalve Interface

Valve Actuator

Connect the valve actuator to the header labeled “Control” on the E1144. Connect the desired valve port on the pool controller to the header labeled “Valve” on the E1144.



Relay

Connect the relay to the header labeled “Relay” on the E1144. Connect the desired relay port on the pool controller to the header labeled “Relay” on the E1144.

