

Detail of Board Layout

1601 Electronic Controller Description:

The 1601 electronic controller is designed to operate Latham’s 3 wire motors and hydraulic power pack units. It is compatible with the Latham (Coverstar or Pool Cover Specialists) Touchpad, Touchpad WiFi, and Low Voltage Switch devices. It also has built in feature control capability to override water features such as water falls and fountains to prevent the flow of water onto the cover when the cover is deployed over the pool.

Troubleshooting Tips:

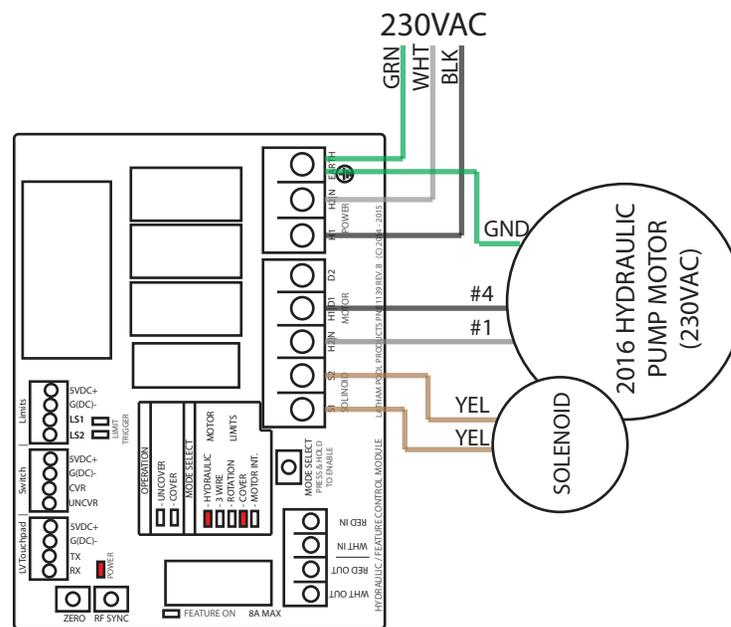
- * If the red POWER LED does not begin flashing when power is connected check the power supply for H1 and H2/N is present.
- * If the power comes on but the motor does not run at all, check the connections going to the motor.
- * Ensure CVR LED corresponds to the COVER direction and UNCVR LED corresponds to the UNCOVER direction. For key switch units, reverse CVR and

- UNCVR low voltage wires. For touchpad/hydraulic units reverse the hoses on the hydraulic pump. For touchpad/electric motor reverse H1/D1 and D2.
- * Disconnect wires from the controller and test all connections for continuity
- * Make sure the hydraulic unit is housed in a water tight area such as a pool house or shed.



Installation Notes:

- * The control switch is mounted in a standard depth single gang all weather box.
 - * 1601 electronic systems should be installed in a covered area where water ingress is limited such as a pool house or shed.
 - * Use **water tight connections** at all wire junction locations.
 - * The control switch **must be** mounted in a location where 100% of the pool surface is visible.
 - * The power circuit should be sized for 20 amps and must be sized accordingly.
 - * Use a 20amp GFCI breaker at the panel.
 - * Perform a pool calibration on touchpad after installation for accurate operational cycle counts.
 - * Wifi enabled units (**A2520**) require a wifi network to be present and associated to the device to receive alerts.
- Please see programming instructions for further details.
- * To change modes press and hold the **MODE SELECT** button for approx 4 sec. Every 4 seconds the control will cycle to the next available mode. Release the button once the desired mode is selected.



HYDRAULIC WIRING SCHEMATIC



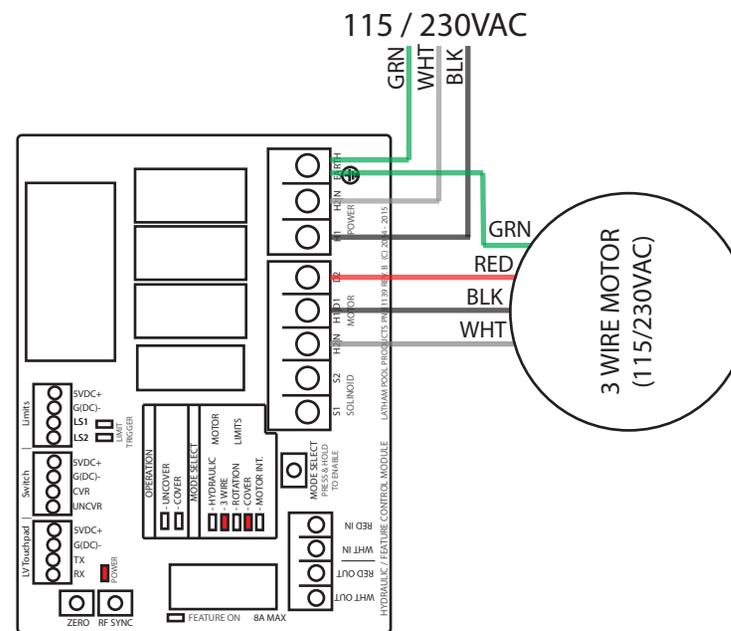
To prevent severe shock or electrocution, always turn the power OFF at the service panel before working with high voltage wiring.

Safety Information:

This device must be installed in accordance with national and local electrical codes and should be installed by a qualified electrician only

Feature Control Operation:

The 1601 electronic controller operates by receiving low voltage signals via a Keyswitch or Touchpad. In order to enable feature control operation a sensor is used in conjunction with magnets to determine the position of the cover. There are two configurations supported. Option 1 uses magnets attached to the cover and a sensor positioned near the guide feed to determine the position of the cover. Option 2 uses a magnet attached to the roll-up tube and the sensor attached to the frame of the cover mechanism to count rotations of the cover. Option 1 will provide better accuracy and Option 2 is easier to configure.

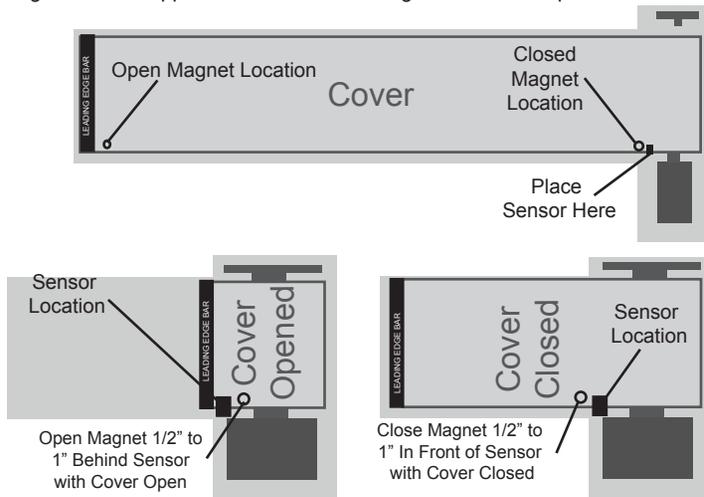


3 WIRE MOTOR WIRING SCHEMATIC

Attach the sensor over or under cover in a fixed location near webbing so that a magnet placed on the cover will pass within 1/2 inch of the sensor when attached to the cover. Open the cover and attach a magnet to the cover about 1 to 1/2 inch behind where the sensor is located. Close the cover and place the close magnet about 1 to 1/2 inches in front of where the sensor is located.

When the cover senses the magnet the momentum from the system will allow the cover to travel about 1 to 2 inches. Placing the magnets in the right position will ensure proper open and close operation every time.

The diagram shows approximate location of magnet and sensor positions on the cover.



Rotational Counting (OPTION B):

Make sure Mode Select is set to Rotation (Not Cover). Then configure your installation as follows. Install the sensor onto outer frame of the mechanism within 1/2 inch of the rollup tube shaft. Attach magnet to drive shaft of rollup tube so that the magnet can "trigger" the sensor when the magnet rotates past the sensor (less than 1/2 inch). Move the cover to the open location where the feature needs to enable. With the unit powered on Press the ZERO button on the control board (located near the power LED). Zero position will now be set. The cover will turn on the feature when it senses the unit return to the "Zero" position.

Wiring for Control of Features:

The 1601 controller has built in feature control capabilities and is configurable to interrupt motors and other general interrupts upto 8A or 1/3HP motor(250VAC Max). One feature interrupt or one automatic valve can be controlled via the controller. The automatic valve will interrupt power to the on side of the valve (WHT) and redirect to the off side of the valve (RED) when the cover moves out of the open position.

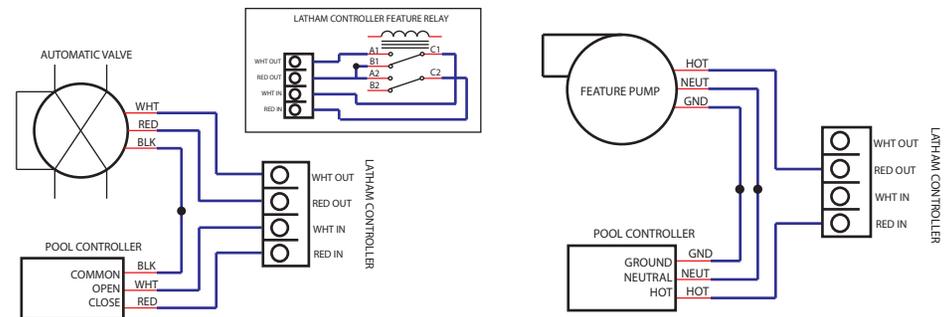
For additional interrupts or higher current ratings use the feature control capability to actuate an auxillary relay or relays. Below are a few supported sample diagrams for feature control.

When wiring directional inputs from a switch make sure that the "COVER" switch direction and the "CVR" LED on the feature controller actuate together. If "UNCVR" LED lights up when the "COVER" direction is actuated then the directional wires from the switch must be reversed for proper feature control.

Additional Wiring Options:

The 1601 electronic controller accepts several different directional inputs for motor control operation. Low Voltage (5VDC), and Low Voltage Touchpad (5VDC) options are all available as indicated on pages 3,6, & 7 wiring diagram.

Directional signals are required for proper controller operation of sensing and motor controls. If the cover motor interrupt controls are not desired, disable Mode Select Motor Int. on the controller. This will make it so only the feature is actuated when a trigger shutoff event occurs.



Wiring Diagram for Valve Control, Swap White and Red Wires to Reverse Control Operation

Wiring Diagram for Pump Interrupt 8 Amps or 1/3HP MAX RATING

Control Board Configuration:

To change control board configuration (MODE SELECT) press and hold the **MODE SELECT** button for 4 seconds. Every 4 seconds the control will cycle to the next available mode. Continue to hold the button until the desired configuration is set.

Mode Select Option:

HYDRAULIC = This configures the control to work with a single solenoid direction control hydraulic power pack (230VAC). When the control is ran in either direction H1/D1 will provide power, S1 and S2 will only provide power in one direction (D2 is not used for hydraulic mode).

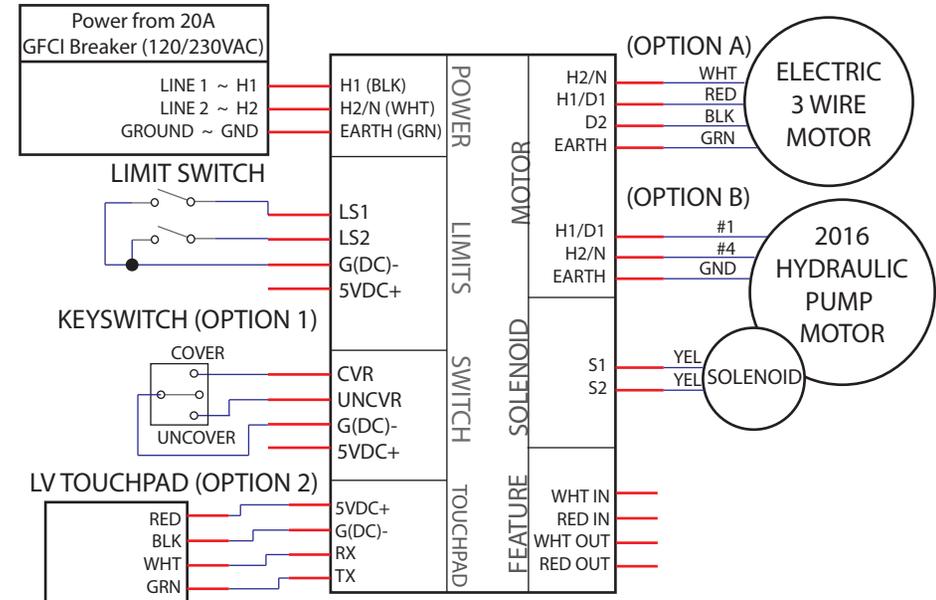
3 WIRE = This allows the control to work with a 3 wire electric motor (115/230VAC). When the control is ran in one direction H1/D1 will connect to power, in the opposite direction D2 will connect to power (S1 and S2 will not be used for 3 wire motor mode).

ROTATION = For more information about using the rotation sensor see “Rotational Counting (OPTION B)” section.

COVER = See “Sensor and Magnet Placement (OPTION A)” section for more information.

MOTOR INT. = If enabled the motor will shut down when the sensor for that direction is triggered. this allows the sensor to work for both the feature trigger and motor limits. If disabled the feature relay will still respond to the sensor input disabling the pool features (i.e. waterfall) if the cover is not open but the motor will ignore the sensors.

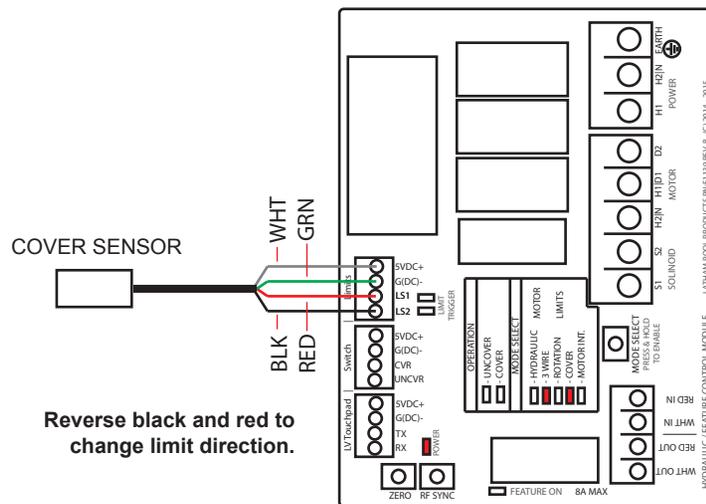
1511 ELECTRONIC CONTROL WIRING INSTRUCTIONS



Sensor and Magnet Placement (OPTION A):

Make sure Mode Select is set to Cover (Not Rotation). Then configure your installation as follows. Two magnets are attached to the cover. The sensor is “triggered” when the magnets pass the sensor. When the cover is being operated with the UNCOVER switch a “trigger” from a passing magnet indicates the cover to be fully opened and the controller will shut off the motor (if Mode Select Motor Int. is set) in the uncover direction and turn on relays to enable the feature that is in the circuit. When a “trigger” from a passing magnet is sensed using the COVER direction the motor is shut down (if Mode Select Motor Int. is set) in the cover direction. To prevent a false trigger of a magnet in the opposing direction the trigger mechanism is ignored for the first few seconds of operation.

Operating the cover in the COVER direction will unlock the uncover direction if previously triggered as open and shut off any enabled feature relay. Operating the cover in the UNCOVER direction will unlock and enable the cover direction if previously triggered as closed. **Disable Mode Select Motor Int. if cover motor interlock needs to be disabled.**



2013 LIMIT SENSOR WIRING SCHEMATIC