



(800) 846-9659

## AUTO LEVEL TO SMART-LEVEL CONVERSION GUIDE

General Application 2007- 2018

### Overview

- This document covers the conversion of EQ Systems control systems that used keypad models 2318, 3012, 3103, and 3104 with a remotely mounted controller (used years 2007 through 2018) over to the newer EQ Smart-Level control.
- The control panel will be changed out to the new EQ Smart-Level control panel.
- A new wire harness will be installed from the control panel to the pump assembly.
- There are several differing EQ Smart-Level control panels and wire harnesses depending on the application.

### Important Notes

- The EQ Smart-Level control panel does not control the slides. However, it is important that the hydraulic slides (if present) do work. If they do not, it may indicate an issue with the pump assembly.
- The EQ Smart-Level control panel will fit into the same hole as the original keypad (control panel). The level sensors are located inside the EQ Smart-Level control panel, as well as all output commands to the pump and manifold assembly for the jacks.
- This conversion replaces both the original keypad (control panel) and the remotely mounted controller, which can be located on the underside of the main floor between the frame rails mid-coach.
- The original keypad, controller, and wire harnesses will not be used.

# Step-by-Step Instructions

## 1. Disconnect Current Harness Connections:

- Locate the controller, this is the black box located somewhere mid coach [probably below the floor. Unplug the two 9 pin connectors. It is recommended that the controller be removed.
- Locate the pump assembly. Unplug the 9-pin connector and the 2-pin power and ground. The harness may be removed or abandoned.

## 2. Remove the Original Keypad (Control Panel):

- Remove the original keypad (control panel).
- Disconnect the single 4-pin connector at the back of the keypad.  
This connector will not be used with the new EQ Smart-Level.
- Locate the breakout of the harness with the chassis interface wires.  
These will be connected to the new EQ Smart-Level harness later.

## 3. Install the New EQ Smart-Level Wire Harness, From Panel To Pump Assembly:

The end of the harness with the two row 12-pin and the 3-pin connector wires go to the new Smart-Level control panel mounting area. The end with the 3 row 9 pin and the two pin connectors go to the pump assembly. The harness should be routed away from high heat sources such as exhaust components and kept away from moving items such as suspension parts or the drive shaft. The harness should be “tied in place” with the use of loom champs or tie wraps.

## 4. Interface Wires:

Generally located near to the keypad (control panel mounting). Some coaches will have a breakout with two wires in a single two pin connector. One will be pink, and the other will be black with a trace. The pink wire is the ignition on signal or feed. The black wire is the park brake signal or feed. The chassis side of these connections will connect to the new Smart-Level harness pink and black with trace wires. These are for jacks down warning and operational disable. These are mandatory safety connections.

Some coaches, specifically diesel pusher units will/may have a second connector with 2 or 3 wires. These are for the air suspension inflate and deflate (if coach is equipped). Locate and connect these matching the colors with those in the Smart-Level harness.

Note that the colors stated are on the EQ Systems harnesses. The coach or chassis side of these connections can/will vary. For more information on these see Smart-Level installation and operational manuals located on our web site.

### **5. Connecting the Wire Harness to the EQ Smart-Level Control Panel:**

- Connect the 12-pin and 3-pin connectors to the back of the control panel.
- Verify connector locks snap in place.
- Check wire security with a slight pull.
- There is a 4-pin connector at the back of the new control panel. This is not used for most applications. **Do not plug in the original 4-pin harness connector to this.**

### **6. Mount/Install the EQ Smart-Level Control Panel:**

The Smart-Level control panel includes the leveling sensors inside of the control panel. Thus, it is imperative for proper operation that the panel be mounted firmly to structure that is secure and “reacts” with the coach. Use the supplied bezel for mounting. Use 4 screws through the bezel and panel corners. Do not use screws that are larger than the hole size through the bezel or the control panel. When completed the panel should not move when pressing buttons.

### **7. Wire Harness Connection at the Pump Assembly:**

The new Smart-Level wire harness should plug directly into the harness at the pump assembly. Simply unplug the original 9 pin and 2 pin connectors (abandon the original harness connectors) and then connect the new harness. There may be additional connectors 4 pin or 6 pin at the pump assembly for slide out control or other these are to remain as was original.

### **8. The New Smart-Level Panel Should Now Power Up (with the ignition key off):**

All lights should come on for a couple of seconds, then all except for the power light and the jacks down status lights should go out. To clear the jacks down status lights, press all retract. The pump should come on the operation light should come on fully retracting and pressurizing the retract side of the system. The lights should go out and the pump will stop. All lights except for the power light should be off.

The manual switches/buttons should operate the jacks.

Note that most units will not allow extension when the ignition key is on. However, some coach manufacturers deny operation both extend and retract unless the key/ignition is on. So, if operation is denied try with the ignition key on. In these instances, the park brake becomes the extension disable.

### **8. Programming and Additional Information:**

- Auto Level requires panel programming.
- See Orientation and Null Setting instructions.
- Refer to EQ Smart-Level operation instructions.
- For Bluetooth operation, see the Quick Start Guide.



(800) 846-9659

## EQ SMART-LEVEL CONTROL PANEL PROGRAMMING

May 2023

After the system is fully installed the control panel must be programmed for operation. Failure to do this will result in a failed or improper Auto Level. There are two program settings that must be programmed in the following order - 1) Orientation and 2) Null.

### **Step 1 - Orientation Setting**

- This process cannot be completed until after the system has been connected to power and the control panel has been mounted and all electrical harness connections have been completed.
- This process teaches the control panel where the front of the vehicle is and how the control panel is mounted (vertical or horizontal). If this process is not performed correctly the processor will not know where the front of the vehicle is.
- It is possible that without doing this process it may work on a level floor/shop environment however when at locations where the system needs to operate specific legs for leveling it very likely will operate the improper legs.
- Once this process is properly completed the setting will be “retained” in the control panel and should not ever need to be performed again unless the control panel is replaced or moved to a different location.
- With the control panel off, press and hold the ALL RETRACT button, then while holding it press the POWER button, then release both buttons. The power light will start blinking and you will hear a rhythm beeping, and the 4 jacks down indicator lights will be on.
- Next the orientation is selected by pressing one of the manual control arrows. The exact specific one is determined by how the panel is mounted (see examples below). You will select an up arrow if the panel is mounted vertically and down arrow if it is mounted horizontal. The specific one is the one that most relates to the front of the coach.

### **Examples**

- If the panel is mounted vertically inside the vehicle so that when you are looking at it, you are also looking at the inside of the front of the vehicle. You would push the UP ARROW for the front jacks.
- If the panel is mounted vertically inside the vehicle so that when you are looking at it, you are also looking at the inside of the rear of the vehicle then you would press the UP ARROW for the rear jacks.
- If the panel is mounted vertically on the vehicle so that when you are looking at it, you are also looking at the side of the vehicle then you would press the UP ARROW for the left or right jacks depending on which is the closest to the front of the vehicle.

# EQ SMART-LEVEL CONTROL PANEL PROGRAMMING

## **Step 2 - Setting the Null**

Null is the term used to indicate the levelness of the coach. A Null setting should have been performed by the installer. If the coach is not level following an attempt to Auto Level, you will need to level the coach and reset the null.

Use a bubble level on a flat surface in the center of the coach as a reference. You do not need to have the jacks deployed to set the null.

- To set the null, first press the POWER button on the keypad to activate the unit. The LED light next to the Power button should be lit RED when the power is on.
- Level the coach by deploying jacks manually, or by simply parking the coach on a level site. Once the coach is level, turn the POWER off at the panel.
- While holding down the AUTO LEVEL button, press and release the POWER button. This should cause the keypad to make a series of beeps.
- After the Keypad has beeped 5 to 6 times, release the AUTO LEVEL button and you will get a confirmation beep. (The Keypad will continue to beep if the Auto Level button is held) The new null has been set and the panel will store/remember this setting.
- Press and release the ALL RETRACT button to retract the jacks to the stowed position.

**Note: if you are not clear on this process please check our website for videos and/or call EQ Systems for assistance.**

# EQ SYSTEMS QUICK START OPERATION

## EQ SMART-LEVEL

Park coach, set the brake, and turn off the ignition.\*

Press the **POWER** button on the **EQ SMART-LEVEL KEYPAD/EQ SMART-LEVEL APP** to turn the system on.

If the four lights are lit in the center of the keypad, press **ALL RETRACT**.

After the four lights go out press **AUTO LEVEL**. During the leveling process the keypad will beep.

Allow **EQ SMART-LEVEL** system to run in the auto mode until all jacks are finished adjusting.

At this time you will hear two beeps indicating you are level and the process is complete.

Press the **POWER** button on the **EQ SMART-LEVEL KEYPAD/EQ SMART-LEVEL APP** to turn the system off.

\*Note: The leveling system on your coach may require the ignition on and the engine running. Refer to the operation manual per manufacturer.

## RETRACTING LEVELING SYSTEM

When you are ready to move your coach, press the **POWER** button and then press the **ALL RETRACT** button.\*

When all jacks are fully retracted, the four lights will go out and the beeping will stop. Once you're finished, press power to turn off.

Visually inspect to be sure that all jacks are fully retracted prior to travel.

\*Note: If your coach is equipped with air ride suspension you will need to start your coach engine and build air pressure before retracting to ensure that the suspension will air up.

## BLUETOOTH OPERATION

- If the face of your keypad indicates that your controller is compatible with a bluetooth device, download the EQ Smart-Level app in the Android or Apple app store.
- If your keypad does not indicate compatibility, your Bluetooth connectivity may be done through your multiplex system.
- When downloading the app, make sure your Bluetooth setting is turned on or the app will not connect to your coach.
- Once the app is downloaded please follow the instructions above to level your coach.

## PREVENTATIVE MAINTENANCE

- Make sure that all battery and electrical connections are tight and free of corrosion.
- Verify that the batteries are good and properly charged.
- Depending on how often the jack shafts are exposed to the outdoor elements, it is good to keep them coated with a silicone based lubricant.
- Do not use grease or any other lubricant that stays wet.
- In the event that it is necessary to add fluid to the reservoir, use a good quality automatic transmission fluid (Dexron).



## FOR RECALIBRATION/SETTING THE NULL

please view the video in the Support section of our website.



## FOR MANUAL OVERRIDE OF THE RETRACT FUNCTION

please view the video in the Support section of our website.



**(800) 846-9659**

For a complete operation and troubleshooting manual or to activate your warranty please visit **EQSYSTEMS.US**