

## INSTRUCTIONS FOR REPLACING W900 SERIES CIRCUIT BOARDS



**CAUTION!** There are live circuits inside the controller even when the power switch on the front panel is in the OFF position! The front panel must never be opened before power to the controller is REMOVED!



**CAUTION!** The hinged front panel or door is secured with screws which require a Phillips #2 screwdriver to open. No user adjustments are inside. The electrical installation or modification of the controller must be done by trained personnel only and conform to all applicable National, State and Local electrical and building codes!

### ELECTROSTATIC DISCHARGE PRECAUTIONS

The following practices minimize the possible damage to the circuit boards due to improper handling.

- Keep the boards in the anti-static bag until ready to install
  - Touch a known ground (metal pipe, etc.) to discharge any static charge on your body before handling the circuit board
- Handle the circuit board by the edges only; do not touch any components.
- Do not slide the circuit boards across any surface
- Note the orientation of the part being removed, and install the new part in the same orientation

### RELAY BOARD REPLACEMENT

1. Open the front panel of the controller **AFTER POWER HAS BEEN REMOVED** by loosening the two #10 screws on the right-hand corners of the enclosure lid. Unlatch the two latches.. The Relay Board as shown in Figure 1 will have a ribbon cable and a number of discrete wires attached to it. These will have to be removed and later reinstalled on the new board. Some of these wires will be under a plastic cover (fastened with three captive flat head screws) which needs to be removed first.

Remove the incoming AC power connection wires by loosening the screw terminals, noting the colors to L and N terminals. Remove the incoming Ground wire going to the large Ground terminal block.

2. Remove the ribbon cable, by pulling down the locking mechanism on each end of the connector, and pulling the cable up out of the connector. Be sure to note the position of the red line.
3. Remove the four 6-32 screws that attach the option card retainer, and then remove any Input/Output option cards by pulling them straight up out of the edge connector. **Take care to follow all electrostatic discharge precautions!**

4. Remove the two flag terminals connecting the power switch to the board. Use needle-nosed pliers to grip the connectors. Pull firmly upwards with the pliers to disconnect.
5. Remove the five flag terminals connecting the power supply to the board. Use needle-nosed pliers to grip the connectors. Pull firmly upwards with the pliers to disconnect.
6. Remove the discrete wires from the screw terminals. **Mark the wires so they can be reattached to the replacement board in the same position!**
7. Remove the ten 6-32 screws that secure the relay board to the plastic adapter plate. The relay board will now be free.
8. Double check that the relay board you are installing is the same as the one you are removing.
9. Install the new relay board. Insert the ten 6-32 screws into the mounting holes in the relay board, and tighten. Reattach incoming AC power and Ground wires. Reattach all discrete wires, flag terminals, and reconnect and lock the ribbon cable. Reinstall the Input/Output option cards and plastic card retainer last.
10. See the Controller Instruction Manual for further information on wiring the Inputs/Outputs.
11. Close the front panel of the controller, secure the front panel screws, and restore power. See the Instruction Manual for detailed information about the verification and control of the Relay Board.

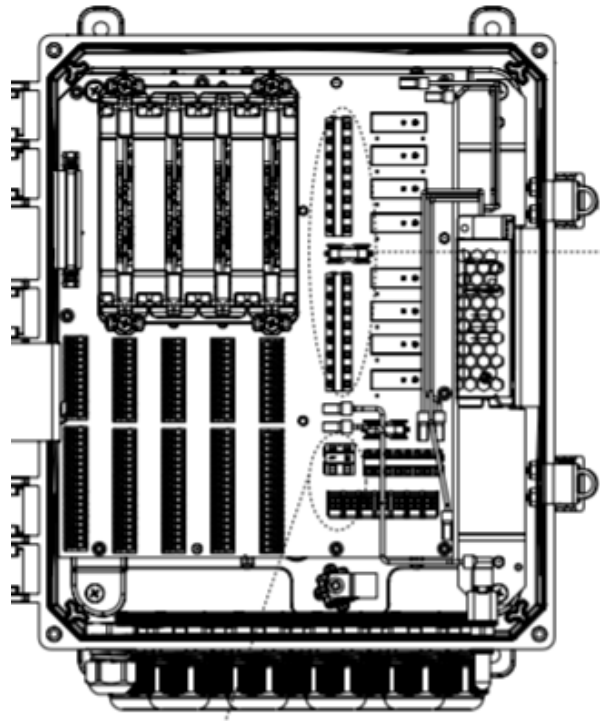


Figure 1

## MAIN CONTROLLER BOARD//DISPLAY REPLACEMENT

1. Open the front panel of the controller AFTER POWER HAS BEEN REMOVED.

Remove the ribbon cable from the Main Controller Board, by pulling down the locking mechanism on each end of the connector, and pulling the cable up out of the connector. Be sure to note the position of the red line.

2. Disconnect the Ethernet cable if installed.
3. Remove the eleven 6-32 screws that secure the board to the front panel.
4. Pull the assembly straight up to disengage from the USB connector.
5. Install the new assembly by pressing the board into place. For proper orientation, be sure to land the board onto the three locator pins which do not have a screw in them. Replace the ribbon cable.
6. Close the front panel of the controller, then secure the front panel screws and restore power. See the Instruction Manual for detailed information.

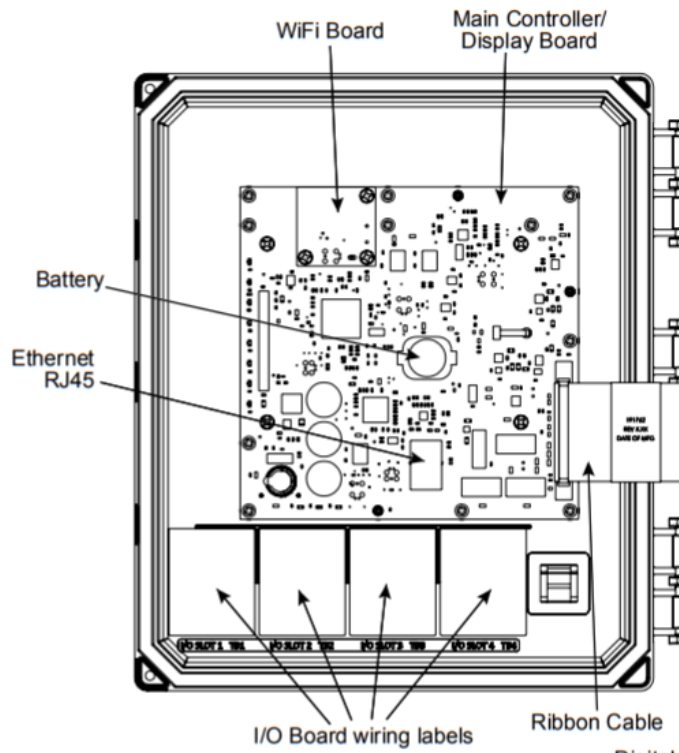


Figure 2

## INPUT/OUTPUT OPTION BOARD REPLACEMENT

1. Open the front panel of the controller **AFTER POWER HAS BEEN REMOVED**. If you are adding an option card rather than replacing one, skip to step 4.
2. Loosen the four captive 8-32 screws that secure the plastic option board retainer near each corner and remove it.
3. Pull the option board to be replaced straight up from its connector.
4. Double check that the option board you are installing is the same as the one you are removing.  
**IMPORTANT: If changing from one type of option board to another, disconnect all sensor wires from TB1 or TB2 first! Failure to do so may damage the sensor and/or option board!**
5. Install the new option board by inserting into the edge connector. Boards will only fit one way. See figure 3 for the board locations. Insert the 8-32 screws into the mounting holes in the option board retainer, and to secure it again to the relay board.
6. Once the option boards are in their final location, reconnect sensors according to the wiring diagram for that board.
7. Option boards are loaded with software that must be compatible with the software on the Main Controller Board. Go to [http://www.walchem.com/techsupport/W900/Upgrading\\_Software\\_W900.htm](http://www.walchem.com/techsupport/W900/Upgrading_Software_W900.htm), download the latest software to a USB stick, and follow the instructions to upgrade the Main Controller Board software, if there is a software version mismatch.
8. It is possible, if the software on the replacement option board is not at the latest version, you will get an error message, or the new board will not be detected. If this occurs, re-run the software upgrade.

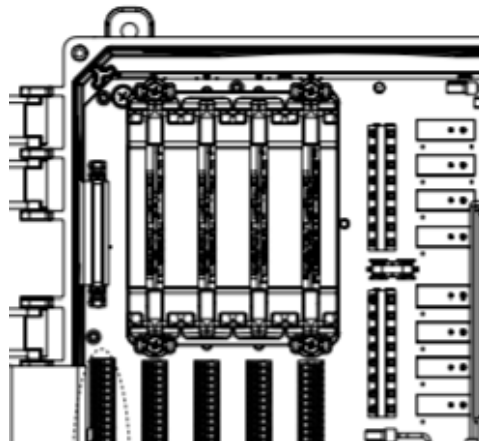


Figure 3