



## Understanding and Operating the Hi-Lo Tank Controller

Congratulations on your purchase of Buckeye's Hi-Lo tank controller – you've made the right choice! This controller is used to keep fluid levels in an atmospheric (unpressurized) tank between a float switch mounted high in a tank, and another float switch mounted lower in the tank. The Hi-Lo Tank Controller (HLTC) energizes a 110 volt outlet when the fluid level reaches the lower float, and de-energizes the outlet when fluid level reaches the top float.

The HLTC was developed to control RO and RODI systems feeding an atmospheric tank. Controlling these systems with the HLTC avoids "short-cycling" – the frequent on/off cycles common in RO or RODI systems that flow to a float valve in an atmospheric tank.

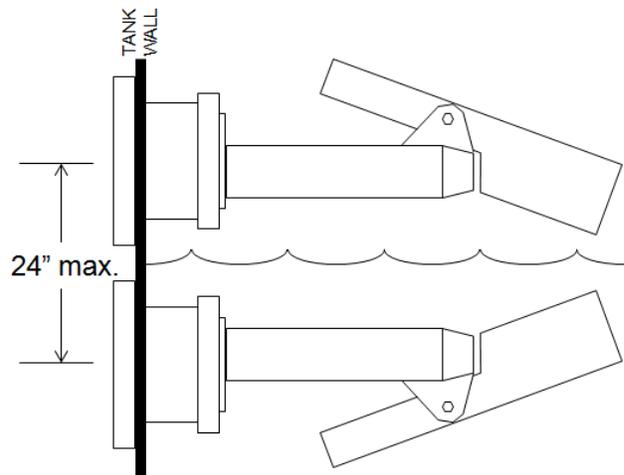
After reading these instructions in their entirety, begin by carefully removing all parts from the shipping box. Identify the following parts:

- Two connected float switches, one labeled "high" and one labeled "low"
- Control module with 110 volt receptacle and LED indicator light
- Power cord
- Gray float switch extension cable
- 12 volt transformer and cable

To complete the installation you'll also need the following parts and tools:

- Atmospheric (unpressurized tank)
- Whatever it is you intend to control – typically either an RO or RODI system with feedwater controlled by a solenoid or other electric valve; or a pump
- Electric drill with 7/8" bit

Drill two 7/8" holes in the tank, one above the other, from several inches to a maximum of 24" apart. Contact Buckeye if cable extensions are needed. Maximize the vertical distance between the float switches to lengthen the fill period and minimize the effects of TDS creep. Inset each float into the drilled holes from the *outside* of the tank. **CRITICAL:** *Rotate the top float switch such that the float hinges downward when the water level drops. Position the bottom float so that the float hinges upward when the water level in the tank rises.* While pressing the float against the tank, tighten the plastic nut by hand. As the nut is tightened, the unique rubber sleeve will compress and seal the hole in the tank wall. Connect the float switch plug to the matching plug on the gray float switch extension cable.



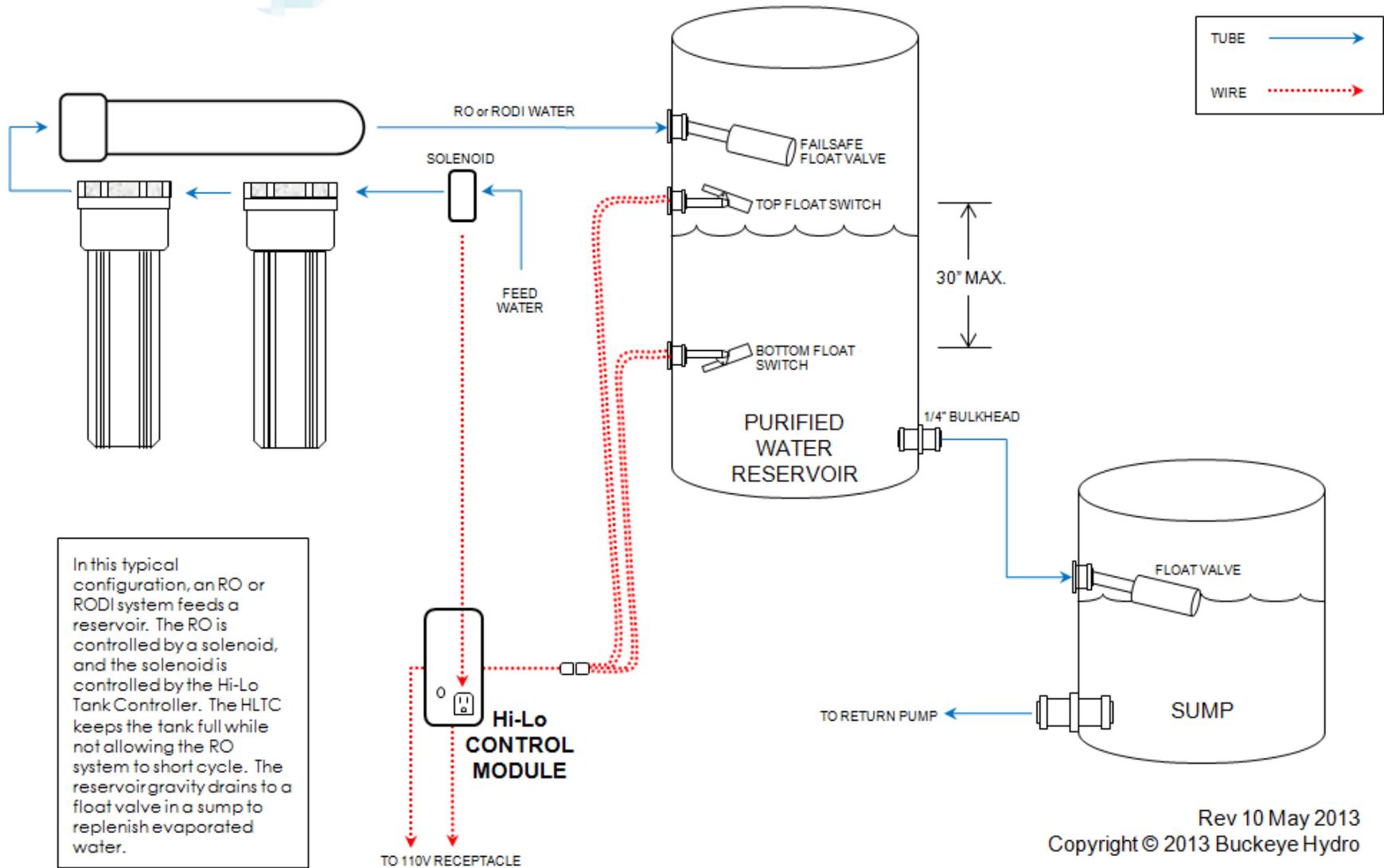
Plug the small transformer into a 110 volt wall outlet, and the bayonet plug into the control module. Plug the control module into a 110 volt outlet. The green LED indicator will be illuminated when the 110 volt receptacle on the control module is energized. The attached graphic depicts a typical configuration. Contact Buckeye Hydro with questions regarding other possible configurations.

### *Why Avoid "Short Cycling?"*

Each time an RO system kicks on, it produces a pulse of not-so-clean water due to a phenomenon called "TDS Creep." Product water TDS typically declines to desired levels after approximately 60-90 seconds.



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In this typical configuration, an RO or RODI system feeds a reservoir. The RO is controlled by a solenoid, and the solenoid is controlled by the Hi-Lo Tank Controller. The HLTC keeps the tank full while not allowing the RO system to short cycle. The reservoir gravity drains to a float valve in a sump to replenish evaporated water.