



Application Note

App. Note Number: 1016

Title: Modifying H-3611 Radar settings for dry river bed installations.

Description: This document describes how and what settings to change in the H-3611 radar when installed in a location that could dry up.

Product: H-3611 Radar Level Sensor

Author: Brian Shupe

Date: June 2009

Revision: 1.0

75 West 100 South
Logan, UT 84321 USA
Phone: (435) 753-2212
Fax: (435) 753-7669
Web: www.waterlog.com

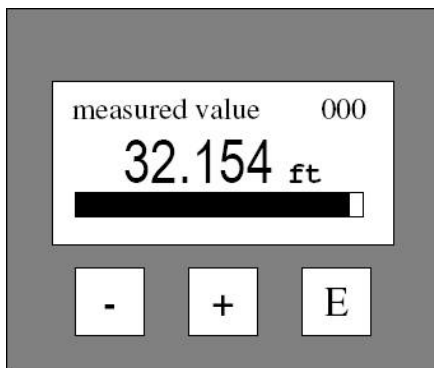
Introduction:

This application note is written to show how and what settings to change in the H-3611 radar stage sensor when installed at a site that could potentially go dry. The H-3611 default settings are set for applications where there is always water. If there is not water, the H-3611 radar signal does not echo back resulting in invalid data points. This can also happen if the reflective surface is mostly sand rather than water. The solution is to change the H-3611 radar settings so it knows when stage is zero or the max distance from the radar to the water. The settings to change are empty calibration, full calibration and the tank bottom detection enable. This application note will explain how to change these settings.

The empty calibration setting, which in this case is the empty river/stream calibration setting, is the distance from the radar flange to the river/stream bottom or the stage 0.00 point. If that distance is unknown and there is water flow in the river/stream, add the stage reading to the measured distance to water value found on the display of the H-3611 and the result should be the distance to river/stream bottom. The full calibration value will be set to the same value as empty calibration. The tank bottom detection will be enabled, which is the option that will detect when it has reached the river/stream bottom. After this point has been reached or exceeded the radar should return 0.00 for the measured stage level.

Step 1: Remove Display

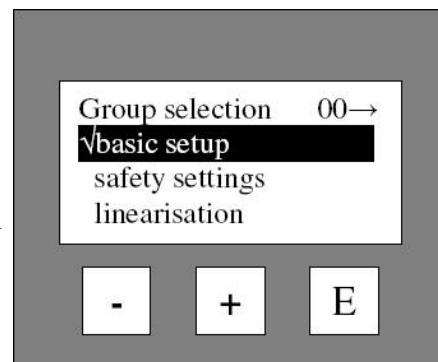
To remove the LCD display from the H-3611 housing there is a small clip on the display closest to the horn, push to release the display.

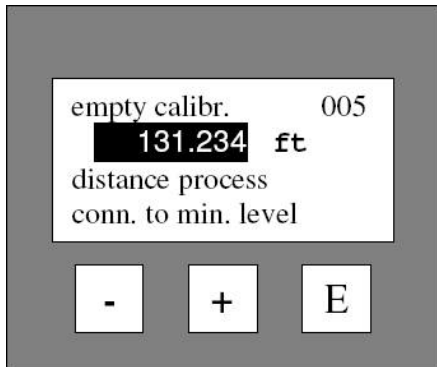


Step 2: Basic Setup Menu

From the main screen as shown above press the 'E' button and this will open the "Group Selection" menu as shown to the right.

Highlight "basic setup" and then press the 'E' button to enter the "basic setup" menu and keep pressing the 'E' button until you get to the menu, "empty calibr." as shown on the next page.



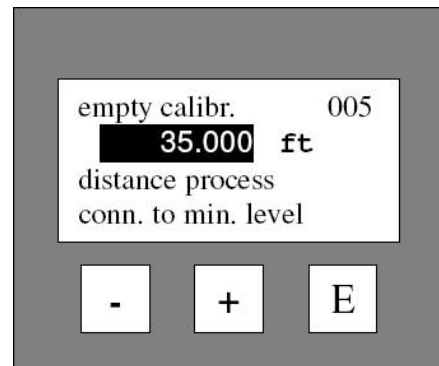
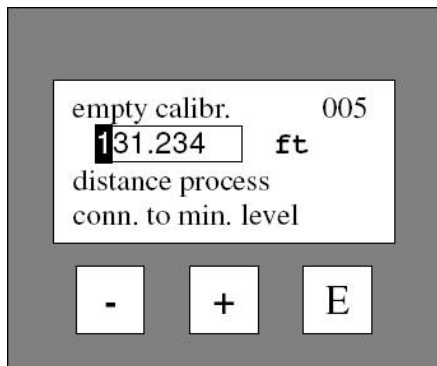


Step 3: Change the Empty Calibration

Press the '-' or '+' button to begin changing the value and press the 'E' button to move to the next character.

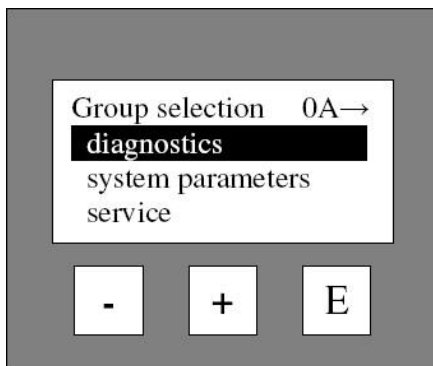
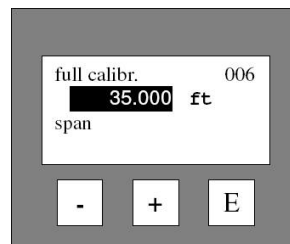
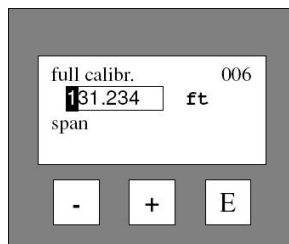
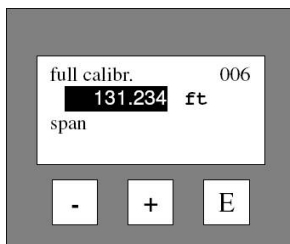
Change the value to the distance value from the H-3611 flange to the bottom of the river/stream or in other words to the stage = 0.00 point.

In this example we are changing the value to 35 feet, because the stage is 2.846 feet and the distance to water is 32.154 feet. The two screen shots below are what is seen before and then after the change is made.



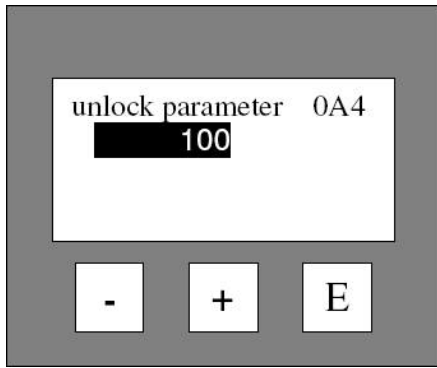
Step 4: Change the Full Calibration

Repeat step 3 for the full calibration value as well, the screen shots are shown below.



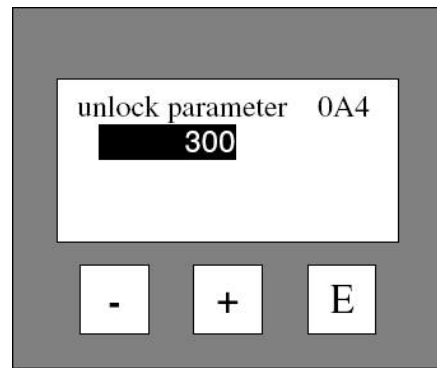
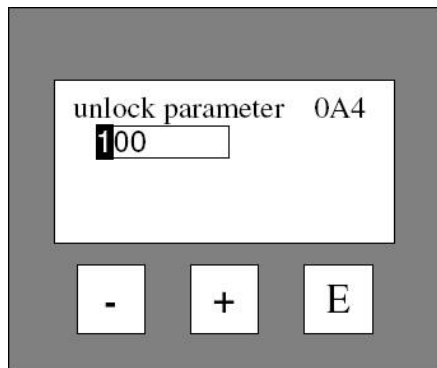
Step 5: Change Unlock Parameter Code

Press the 'E' button until back to the "group selection" menu then using the '-' and '+' buttons highlight "diagnostics" and press the 'E' button.



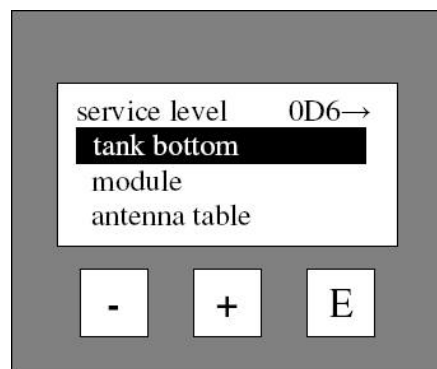
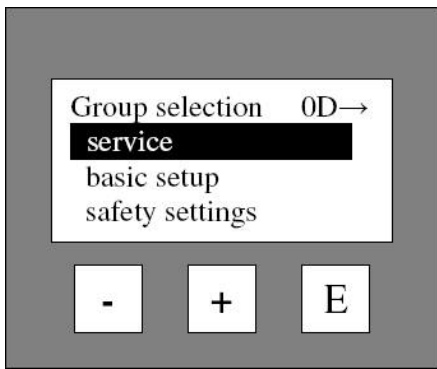
Continue pressing the 'E' button until to the "unlock parameter" screen, as shown to the left.

Using the '-' and '+' buttons change the unlock parameter code to 300. Below are the screen shots of this step. Doing this will allow the tank bottom detection to be turned on.

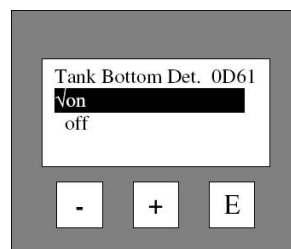
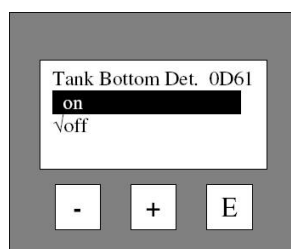
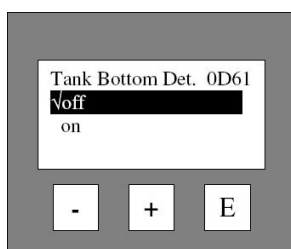


Step 6: Turn On Tank Bottom Detection

Press the 'E' button until back to the "group selection" menu then press the '-' button and highlight "service" and press the 'E' button. Then using the '-' and '+' buttons again highlight "tank bottom" and press the 'E' button, as shown below.

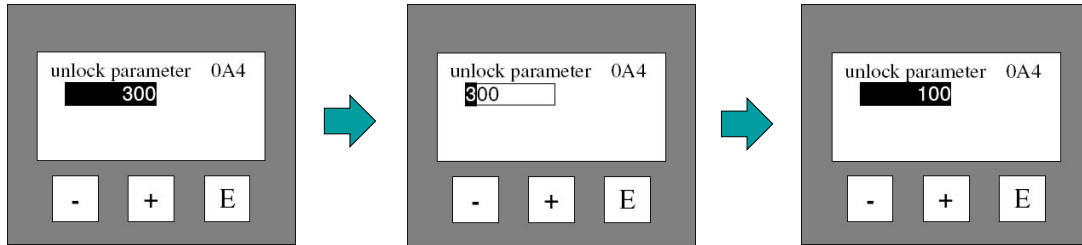


Press the '-' button to highlight "on" and then press the 'E' button.



Step 7: Reset Unlock Parameter Code

Continue to press the 'E' button until back to "group selection", then using the '+' button highlight "diagnostics" and press the 'E' button. Continue pressing the 'E' until the "unlock parameter" screen. Change the unlock parameter code back to 100, as shown below.



Step 8: Perform a Mapping

Whenever changing the H-3611 settings, it is a good idea to perform a mapping to confirm setting changes. Press the 'E' button to until back to "group selection" and then refer to Application Note 1015 found at <http://www.waterlog.com/App%20Notes/Ap-1015%20v1.0.pdf> to perform a mapping.