

TECHNICAL BULLETIN 02-11 – Civacon Overfill System Testing Procedure

The following steps will best assure that the Overfill Detection System is installed correctly and tested properly in accordance with the API Recommended Practice RP-1004 (2003).

1. Proper Overfill Sensor Set Point in Tank Compartments:

- a. The API Recommended Practice RP-1004 (2003) recommends “... ***the sensor must be set deep enough in each of the tank vehicle compartments to assure that once the sensor has been activated, product flow stops before the compartment is completely full.***”
- b. In order to assure the above, API RP-1004 (2003) further recommends “***The minimum [empty space] outage requirement for each compartment’s sensor setting is 60 gallons (227 Liters / 0.227 m³).***”
- c. Based in the above recommendations, the proper procedure requires the installer to set each overfill detection sensor’s high-level detection point at a distance ***below*** the tank compartment’s “shell full” capacity (based on the tank’s actual capacity chart) of no less than 60 gallons (227 Liters / 0.227 m³).

2. Routine Wet Testing of the Overfill Detection System:

After installing a new overfill detection system, after replacing ***any*** system component, as well as during ***each*** of the tank vehicle’s scheduled preventative maintenance work sessions. We recommend you perform the points outlined in the test below, at a minimum, one time annually.

- a. Connect an appropriate Overfill Detection System Tester to the tank vehicle’s Thermistor and/or Optic Socket. This tester should have a visual and/or audible indication of the system’s permissive and non-permissive status (to simulate the same connection to the loading rack).
- b. Assure the above tester is in proper working order and the operator is properly trained on the tester’s use.
- c. Each of the tank vehicle’s overfill detection sensors should be “dip tested” by immersing the detection end of the sensor in water or an appropriate liquid.
- d. A technician at ground level should assure that the tester displays the appropriate Non-Permissive (Wet) status when ***each*** sensor is wetted.
- e. Repeat the above testing on ***all*** Sockets on the tank vehicle.
- f. During testing, only the appropriate number of overfill detection sensors (one each) matching the number of compartments on the tank vehicle should be found. For example, if the tank vehicle has 3 compartments, then only 3 sensors should be found and ***all*** 3 sensors, when wetted, should result in a Non-Permissive (Wet) tester condition. Adjust testing procedure accordingly for the actual number of compartments.

3. What To Avoid:

Do not expose the components to undue mechanical, thermal, chemical or electrical stresses that are outside of the normal range of the products. During tank cleaning, directing steam at a probe can cause damage and affect its performance. The same risk applies to physical force.

This procedure is non-product, non-manufacturer specific. Feel free to contact any Overfill Detection System manufacturer to assist you with the above procedure, or if you need equipment or product to facilitate recommended testing.