

## Quick Troubleshooting Guide

### NOTICE

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- Contact TLS Systems Technical Support for additional troubleshooting information at 800-323-1799.

### Contractor Certification Requirements

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Veeder-Root requires the following minimum training certifications for contractors who will install and setup the equipment discussed in this manual:

**Installer Certification (Level 1):** Contractors holding valid Installer Certification are approved to perform wiring and conduit routing; equipment mounting; probe, sensor and carbon canister vapor polisher installation; wireless equipment installation; tank and line preparation; and line leak detector installation.

**Technician Certification (Level 2/3):** Contractors holding valid Technician Certifications are approved to perform installation checkout, startup, programming and operations training, system tests, troubleshooting and servicing for all Veeder-Root Series Tank Monitoring Systems, including Line Leak Detection. In addition, Contractors with the following sub-certification designations are approved to perform installation checkout, startup, programming, system tests, troubleshooting, service techniques and operations training on the designated system.

- Wireless 2
- Tall Tank

**VR Vapor Products Certification:** Contractors holding a certification with the following designations are approved to perform installation checkout, startup, programming, system tests, troubleshooting, service techniques and operations training on the designated system.

- ISD – In Station Diagnostics
- PMC – Pressure Management Control
- CCVP - Veeder-Root Vapor Polisher
- Wireless – ISD/PMC Wireless
- A current Veeder-Root Technician Certification is a prerequisite for the VR Vapor Products course.

**Warranty Registrations** may only be submitted by selected Distributors.

### Safety Warnings

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**FAILURE TO COMPLY WITH THE FOLLOWING WARNINGS AND SAFETY PRECAUTIONS COULD RESULT IN SERIOUS INJURY OR DEATH, AND/OR CAUSE DAMAGE TO PROPERTY, AND THE ENVIRONMENT.**

**EXPLOSIVE:** Fuels and their vapors are extremely explosive if ignited.

**FLAMMABLE:** Fuels and their vapors are extremely flammable.

# 794380-322 and 794380-352 Discriminating Dispenser Pan and Sump Sensors



## Quick Troubleshooting Guide

**ELECTRICITY:** High voltage exists in, and is supplied to, the device. A potential shock hazard exists.

**TURN POWER OFF:** Live power to a device creates a potential shock hazard. Turn Off power to the device and associated accessories when servicing the unit.

**WARNING:** Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

**READ ALL RELATED MANUALS:** Knowledge of all related procedures before you begin work is important. Read and understand all manuals thoroughly. If you do not understand a procedure, ask someone who does.










***This system operates near highly combustible fuel storage tanks.***

To ensure proper installation, operation, and continued safe use of this product:

1. Read and follow all instructions in this manual, including all safety warnings.
2. Have equipment installed by a contractor trained in its proper installation and in compliance with all applicable codes including: National Electrical Codes 70 and 30A; federal, state, and local codes; and other applicable safety codes.
3. Substitution of components may impair intrinsic safety.
4. Do not modify or use service parts other than those provided by Veeder-Root.

## Safety Precautions

The following safety symbols are used throughout this manual to alert you to important safety hazards and precautions.

 <p><b>EXPLOSIVE</b> Fuels and their vapors are extremely explosive if ignited.</p>	 <p><b>FLAMMABLE</b> Fuels and their vapors are extremely flammable.</p>
 <p><b>ELECTRICITY</b> High voltage exists in, and is supplied to, the device. A potential shock hazard exists.</p>	 <p><b>TURN POWER OFF</b> Live power to a device creates a potential shock hazard. Turn Off power to the device and associated accessories when servicing the unit.</p>
 <p><b>WARNING</b> Indicates a hazardous situation which, if not avoided, could result in death or serious injury.</p>	 <p><b>WEAR EYE PROTECTION</b> Wear eye protection when working with pressurized fuel lines to avoid possible eye injury.</p>
 <p><b>USE SAFETY BARRICADES</b> Unauthorized people or vehicles in the work area are dangerous. Always use safety cones or barricades, safety tape, and your vehicle to block the work area.</p>	 <p><b>APPROVED CONTAINERS</b> Use nonbreakable, clearly marked containers, suitable for collecting and transporting hazardous fuels during service.</p>
 <p><b>READ ALL RELATED MANUALS</b> Knowledge of all related procedures before you begin work is important. Read and understand all manuals thoroughly. If you do not understand a procedure, ask someone who does.</p>	

Reference Documents: 577013-814

## Quick Troubleshooting Guide

### Troubleshooting Steps:

1. Before starting, make sure the following items and tools are available:
  - The operations manual for the console that is installed at the site.
  - A digital multi-meter capable of measuring up to 1 MOhm (1 million ohms), or higher, full scale.
2. Before replacing a sensor, confirm that the TLS alarm has not cleared after pressing the alarm/clear button on the console front panel. This procedure assumes that a valid continuous alarm is active during the troubleshooting process. Refer to the console operating instructions to confirm the presence of the alarm.
3. Inspect the containment area looking for indications of leaking fuel or the presence of water. If the sensor is in a valid alarm condition, because of the presence of fuel, water or other liquid, the condition causing the alarm must be addressed and the sensor tested and recovered per the Veeder-Root 577013-814 Operability Testing Guide. For any further testing, any liquid in the containment area should be removed or, the sensor should be lifted so that it is not in direct contact with any liquid.
4. Each TLS console has a diagnostic display that will show the sensor measurement information on the console's front panel. In this case, find the sensor resistance. Step to the sensor diagnostic screen and note the resistance value of the sensor and the sample counter - see the console operating instructions for details on accessing the diagnostic menus.
5. Under normal conditions, a sensor will indicate between 113,000 (113 kOhm) and 244,000 (244 kOhm) resistance. If the resistance is reading below the normal range, skip Steps 6 and 7 and proceed to Step 8. If the resistance is reading above the normal range, proceed to Step 6.
6. Check the TLS setup (programming) to see if the sensor is configured for high vapor mode.
7. If not, configure it for high vapor mode to see if the fuel alarm clears. By setting the sensor configuration to high vapor mode, the TLS now requires the presence of liquid, which raises at least one float, to be in contact with the sensor and a high resistance on the hydrocarbon sensor. If the alarm is cleared by configuring the sensor for high vapor mode, skip Steps 8 - 12.



**CAUTION:** Programming for high vapor mode may not be allowed by some site operators or in certain jurisdictions. Check with the local authority before leaving a sensor programmed for high vapor mode. It must also be determined that the high vapor condition is not being caused by something more serious such as a fuel leak. The high vapor mode programming may be a reasonable solution only if the containment area is completely dry or may only have occasional water present.

8. Check that the sample counter is stable; not changing from a count of 5. This can indicate a field wiring issue.
9. Disconnect the sensor from the field wiring in the sump or dispenser pan and note the TLS resistance measurement.
10. If the TLS is indicating a resistance of less than 10,000,000,000 (10 gOhm or 10E9 Ohm), replace the sensor cable.
11. If the TLS is still indicating less than 10 gOhm with the sensor disconnected and a new cable installed, check for water in the junction box and/or conduit between the junction box and console. If this area is wet, it will need to be dried and re-sealed to prevent further water intrusion.
12. With an Ohm meter, measure the sensor resistance at the connection terminals. If it is less than 113 kOhm, replace the sensor.
13. If a sensor has been found to have been exposed to high vapor concentrations and is indicating higher than 244 kOhm resistance, it can be cleaned with gasoline or white gas as specified in Veeder-Root manual number 577013-814 Operability Testing Guide.
14. For additional assistance, please contact Veeder-Root Technical Support by phone at 800-323-1799 (U.S. only) or by email to [technicalsupport@veeder.com](mailto:technicalsupport@veeder.com).