

Technical Support Notification

TLS-450PLUS PLLD Programming

► Overview

This bulletin will explain the hardware, wiring and programming requirements to setup Pressurized Line Leak Detection (PLLD) on a TLS-450PLUS Automatic Tank Gauge (ATG). The instructions below are intended to be used in conjunction with product manuals. For more information visit our [Technical Document Library](#).

► Hardware Requirements

- 330020-619** – USM Module – 16 inputs
- 330020-620** – I/O Module – 5 pumps max per module
- 859080-001** – DPLLD Transducer – 1 per line

► Wiring Setup

DPLLD Transducer

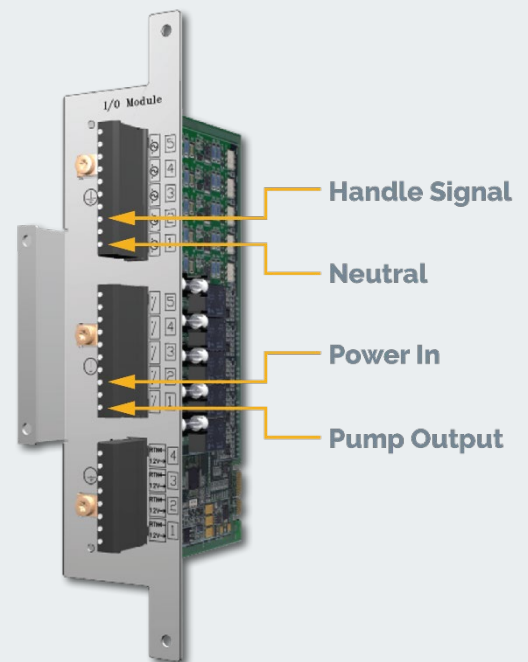
- Each transducer is wired to the USM Module.

Relay (Pump Control Output)

- One terminal is the power in, this is always 120VAC and wired to the breaker panel.
- The other terminal is wired to the pump control box, this will be 120VAC when the pump turns on.

External Input (Pump Sense)

- One terminal is wired to the handle signal. This will be 120VAC when the handle is lifted.
- The other terminal is the neutral, this should be wired to the breaker panel.



► Programming Steps

Below is a brief list showing the order in which PLLD must be programmed.

WARNING: Not going in order will cause the console to go into multiple setup data warnings.

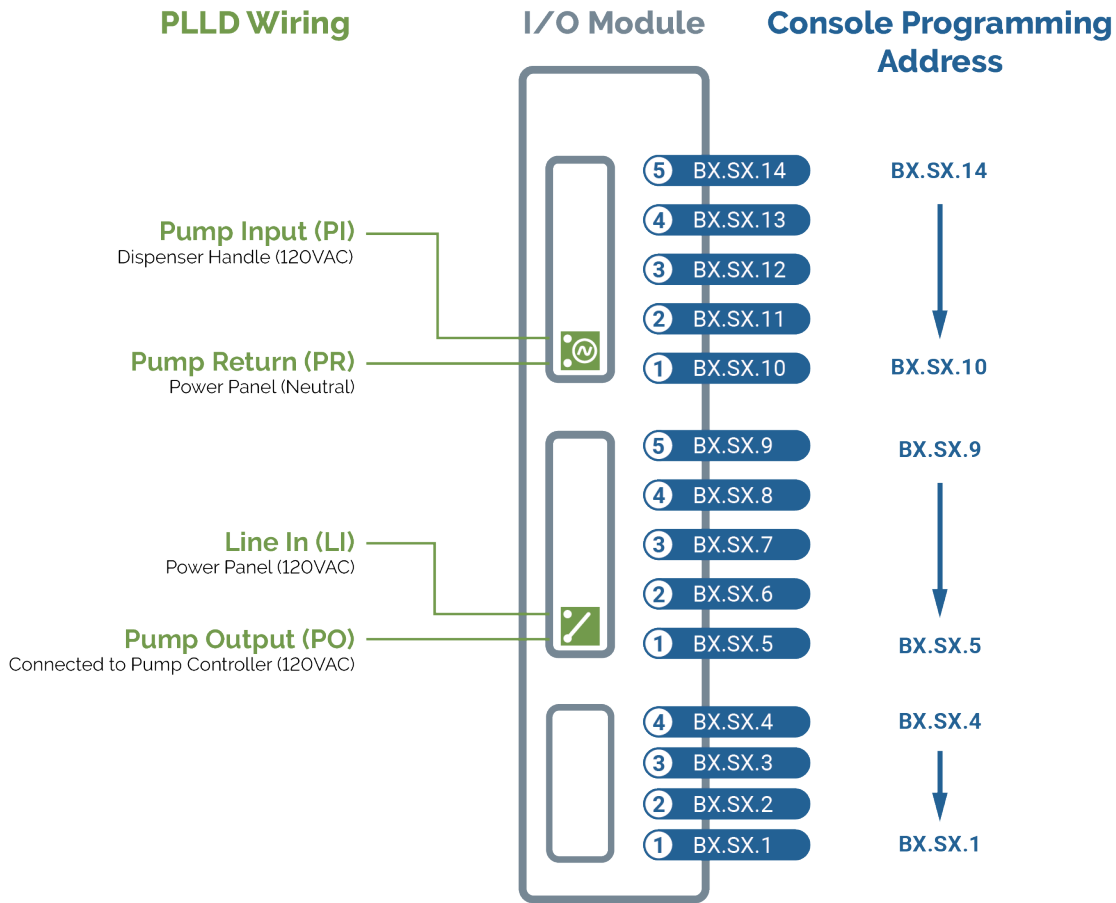
1. Devices

- Relay
- External Input
- Line Pressure Sensor

2. Pumps and Lines

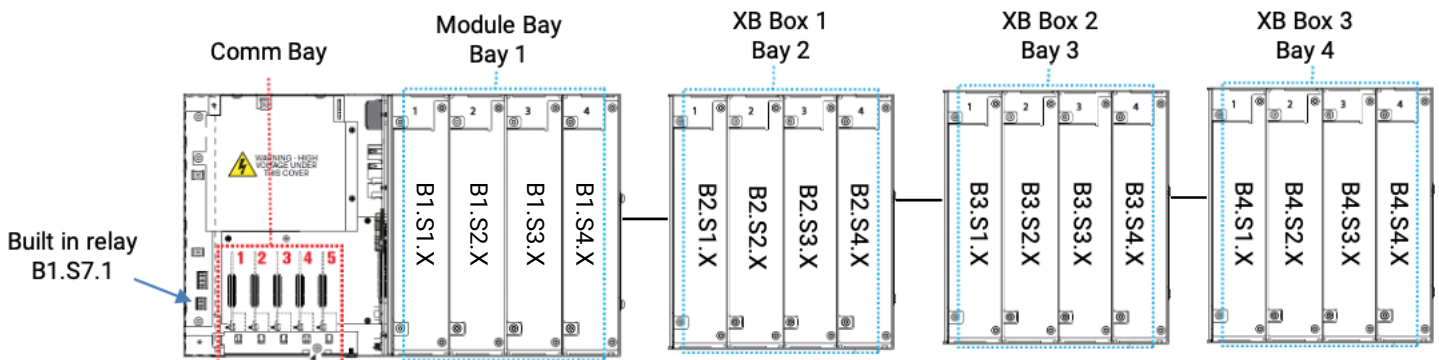
- Pumps
- Lines
- PLLD

► I/O Module Addressing



Note: Low voltage inputs **not** used with PLLD or pump sense.

► ATG and Expansion Box Addressing



1

Relay

- Configured:** Enabled
- Select Address:** BX.SX.5-BX.SX.9
- Enter a Label (fuel type):** Ex: Unleaded, Premium, Diesel
- Type:** Pump Control Output
- Orientation:** Normally Open

The screenshot shows the 'Relay' configuration page. On the left is a navigation sidebar with icons for Home, Favorites, Menu, Actions, and a '1' icon labeled 'Relay'. The main content area has a header 'Setup Devices' and a 'Configured' section with 'Enabled' selected. Below are four rows: 'Address' (dropdown menu with 'B1.S2.5'), 'Label' (text input with 'Unleaded'), 'Type' (dropdown menu with 'Pump Control Output'), and 'Orientation' (dropdown menu with 'Normally Open').

2

External Input

- Configured:** Enabled
- Select Address:** BX.SX.10-BX.SX.14
- Enter a Label (fuel type):** Ex: Unleaded, Premium, Diesel
- Type:** Pump Sense
- Orientation:** Normally Open

The screenshot shows the 'External Input' configuration page. The navigation sidebar is the same as in the Relay page, but the '1' icon is labeled 'External Input'. The main content area has a header 'Setup Devices' and a 'Configured' section with 'Enabled' selected. Below are four rows: 'Address' (dropdown menu with 'B1.S2.10'), 'Label' (text input with 'Unleaded'), 'Type' (dropdown menu with 'Pump Sense'), and 'Orientation' (dropdown menu with 'Normally Open').

3

LPR Sensor

- Configured:** Enabled
- Select Address on USM**
- Enter a Label (fuel type):** Ex: Unleaded, Premium, Diesel
- Once saved, the serial number will appear**

The screenshot shows the 'LPR Sensor' configuration page. The navigation sidebar is the same as in the previous pages, but the '1' icon is labeled 'Line Pressure Sensor'. The main content area has a header 'Setup Devices' and a 'Configured' section with 'Enabled' selected. Below are three rows: 'Address' (dropdown menu with 'B1.S1.1'), 'Label' (text input with 'Unleaded'), and 'Serial Number' (text input with '0017260176').

► Pumps and Lines Setup Menu → Setup → Pumps and Lines

1

Pump

- Configured:** Enabled
- Enter a Label (fuel type):** Ex: Unleaded, Premium, Diesel
- Mode:** TLS Pump Control
- Tank:** Select a tank
- Pump Control:** Select a relay
- Pump Sense:** Select an external input

The screenshot shows the 'Pumps' configuration screen. The 'Configured' status is set to 'Enabled'. The 'Label' is 'Unleaded'. The 'Mode' is 'TLS Pump Control'. The 'Tank' is 'TANK 1: Unleaded'. The 'Pump Control' is 'R 1: Unleaded'. The 'Pump Sense' is 'EXTERNAL INPUT 1: Unleaded'. A sidebar on the left contains navigation icons for Home, Favorites, Menu, Actions, and a '1' icon for the Pump section.

2

Line

- Configured:** Enabled
- Enter a Label (fuel type):** Ex: Unleaded, Premium, Diesel
- Leak Monitoring:** PLLD
- Pressure Sensor:** Select a LPR sensor
- Line Active Relay** – Not required
- Recirculation** – Not required for PLLD – for use with DEF Recirculation
- Selected Pumps (scroll down):**
 - Use the arrows to select the desired Pump

The diagram shows two panels: 'Available Pumps' and 'Selected Pumps Master'. In the 'Available Pumps' panel, a pump icon labeled 'P1/T1' has a blue plus sign in a red box next to it. A red arrow points from this plus sign to the 'Selected Pumps Master' panel, where the same 'P1/T1' pump icon is now selected with a blue plus sign and a checkmark.

The screenshot shows the 'Line' configuration screen. The 'Configured' status is set to 'Enabled'. The 'Line Label' is 'Unleaded'. The 'Leak Monitoring' is 'Monitoring PLLD'. The 'Pressure Sensor' is 'LPR Sensor 1 : Unleaded'. The 'Line Active Relay' is 'Not Assigned'. The 'Recirculation' is 'None'. A sidebar on the left contains navigation icons for Home, Favorites, Menu, Actions, and a '1' icon for the Line section.

3

PLLD

- Configured:** Enabled
- Select Pipe Type**
- Enter Line (Piping) Length**
- Set the following per customer or local regulation requirements:**
 - 0.2 gph Line Leak
 - 0.1 gph Line Leak
 - Shutdown Rate
 - Low Pressure Shutoff
 - Low Pressure Alarm Limit
 - Continuous Handle Timeout
 - Fuel Out Limit
- Pump Comm Control Relay:** Not required

The screenshot shows the 'PLLD' configuration screen. The 'Configure' status is set to 'Disabled'. The 'Controlling Pump' is 'Pump 1 :Unleaded'. The 'Pipe Type' is '2 inch Steel'. The '1st Line Length [ft]' is '100'. The 'Thermal Coefficient' is '0.000700'. The '0.2 gph Line Leak' is set to 'REPETITIVE'. A sidebar on the left contains navigation icons for Home, Favorites, Menu, Actions, and a '1' icon for the PLLD section.

4 — Perform a manual gross test to enable the line

► Further Information

- Contact Veeder-Root Technical Support at 1-800-323-1799 for additional help or questions.
- Learn more about pressure line leak detection on our [Line Leak Detection](#) webpage.