POWERFLEET®

Speed Manager
Installation Guide

Proprietary and Confidential
Version 085-00000888 rev E
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About this Guide

This Guide provides detailed information on the proper installation and integration of the Speed Manager System.

Safety

The Powerfleet solution is not intended for use as a primary safety device. Installation must NOT adversely affect any vehicle safety system or safety device. The installation, configuration and operational procedures provided in this Guide are intended for use ONLY by personnel certified on Powerfleet solution installation. It is the user's responsibility to ensure that the procedures in this Guide are completed by certified personnel ONLY, using the proper tools and following the proper safety protocols. The procedures and recommendations in this guide do not supersede any Federal, State or Local regulations.

Confidentiality Notice

Disclaimer

The information contained in this Guide is subject to change without notice and should not be construed as a specification.

Disclaimer and Limitation of Liability

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System Overview

Speed Manager from Powerfleet is an intelligent industrial vehicle control system used to control the Electric and Internal Combustion Engine (ICE) maximum vehicle speed during events generated by Powerfleet's telematics systems. The unique design ensures hydraulic and driving performance levels are unaffected while maintaining a safe maximum speed during active events such as impacts, pedestrian area breaches, etc.

The system works on forklifts and mobile equipment with Drive-by-Wire (sometimes called Fly-by-Wire) accelerator pedals.

Problems Solved

Speed Manager reduces the probability of high-speed incidents when high risk events are triggered by telematics systems. Additionally, Speed Manager can be used to limit the maximum speed of vehicles after recorded impacts to allow vehicles to continue to move but only at a limited pace.

Features

- *Supports a wide range of Drive-by-Wire trucks.*
- *Supports up to 2 triggers for limiting speed.*
- *Configurable parameters to select the maximum speed allowed during events.*

System Components

The Speed Manager kit includes components required to integrate the system with Powerfleet Telematics Systems, Pedestrian Proximity Detection, and most vehicles. Some additional parts may need to be purchased based vehicle specific vehicles.

Component	Description	Quantity
Control Unit	*Factory-sealed enclosure with I/O connector and mounting points*	*1*
Control Unit Cable Harness	*Main harness for connecting Speed Manager input/output to truck*	*1*
Supply Cable Harness	*Harness for Speed Manager to truck power*	*1*
Pedal Cable Harness	*Harness for throttle pedal connection*	*1*
Deutsch DT Connector Pair	*Set of 3 male and 3 female 2-position Deutsch connectors and pins/contacts for easy truck integration*	*3*
Input Relay	*Set of 2 relays (12 VDC), one for each speed control input*	*2*

Other components typically required but not supplied (tools also not supplied):

- *Voltage regulator for truck voltage >24 VDC*
- *Laptop computer with minimum one USB port and WiFi capability*
- *Speed Manager Interface software application 4.50 or later*
- *Digital Multimeter and needle probes to back probe connectors.*
- *Deutsch connector pin crimpers*
- *Quantity one USB-to-Speed Manager harness cable*
- *Butt splices*
- *Spade terminals*
- *Extension wire*
- *Cable ties*
- *Mounting screws or bolts/nuts*
- *Drill motor with assorted drill bits*

Health & Safety

PRECAUTIONS WHEN INSTALLING THIS PRODUCT

- *Always pay attention to "Safety" before starting any work.*
- *Never attempt any work if there is danger to you or to others.*
- *Incorrect installation may produce fork truck fault codes, cause a permanent failure or other invalid conditions.*
- *Care should be taken to ensure the installation is completed satisfactorily.*

Maintenance Location

- *When carrying out inspection and maintenance activities, use a level, dry, dust free area.*
- *If work is carried out inside a building, make sure there is ample ventilation.*

Precautions for Maintenance and Inspection

- *Always have a fire extinguisher nearby and make sure that you know how to use it.*
- *Before carrying out inspection, lower forks to ground and stop machine.*
- *When carrying out maintenance or inspection and the forks must be raised, the mast must be supported to prevent the forks and mast from dropping.*
- *Do not run the machine unless it is necessary.*
- *Place directional lever, speed lever and work equipment control levers in neutral.*

Use Suitable Tools

- *Always use tools that are 'fit for the purpose' of inspection and maintenance. Never use broken tools or tools designed for other purposes.*

Personal Protective Equipment

- *Wear suitable clothes for the job.*
- *Use safety and protective equipment (hard hat, safety boots, safety glasses, gloves etc.) suited for the job and as directed by site representative.*

Install Speed Manager Hardware

Speed Manager installation involves connecting the Speed Manager harness to the truck fly-by-wire accelerator pedal, calibrating the accelerator pedal with the Speed Manager, configuring the Speed Manager "Slow" and "Very Slow" speeds using configuration software, connecting external trigger inputs, and verifying (if applicable) Pedestrian Proximity Detection and Speed Manager system operation.

The Speed Manager Control unit intercepts the truck fly-by-wire throttle pedal potentiometer outputs to override the throttle pedal and reduce truck speed when events are triggered (e.g., Pedestrian Proximity Detection object in zone detection).

Read these instructions thoroughly and completely before commencing work.

Installation Steps

- *Disassemble the vehicle*
- *Identify the location of vehicle connections*
  - *Vehicle throttle pedal interface*
  - *Speed Manager power source*
  - *Trigger input(s) to activate the Speed Manager*
- *Mount the Speed Manager Control Unit*
- *Complete wiring*
- *Configure Speed Manager*
- *Reassemble vehicle*
- *Verify system operation*

WARNING

Speed Manager power and ground must be connected to battery positive (B+) and battery negative (B-). Connecting to any other power and ground source could lead to complications or even equipment damage. If the power source is greater than 24VDC, an appropriate power converter must be connected in between the power source and the Speed Manager. Nothing else can share the voltage converter!

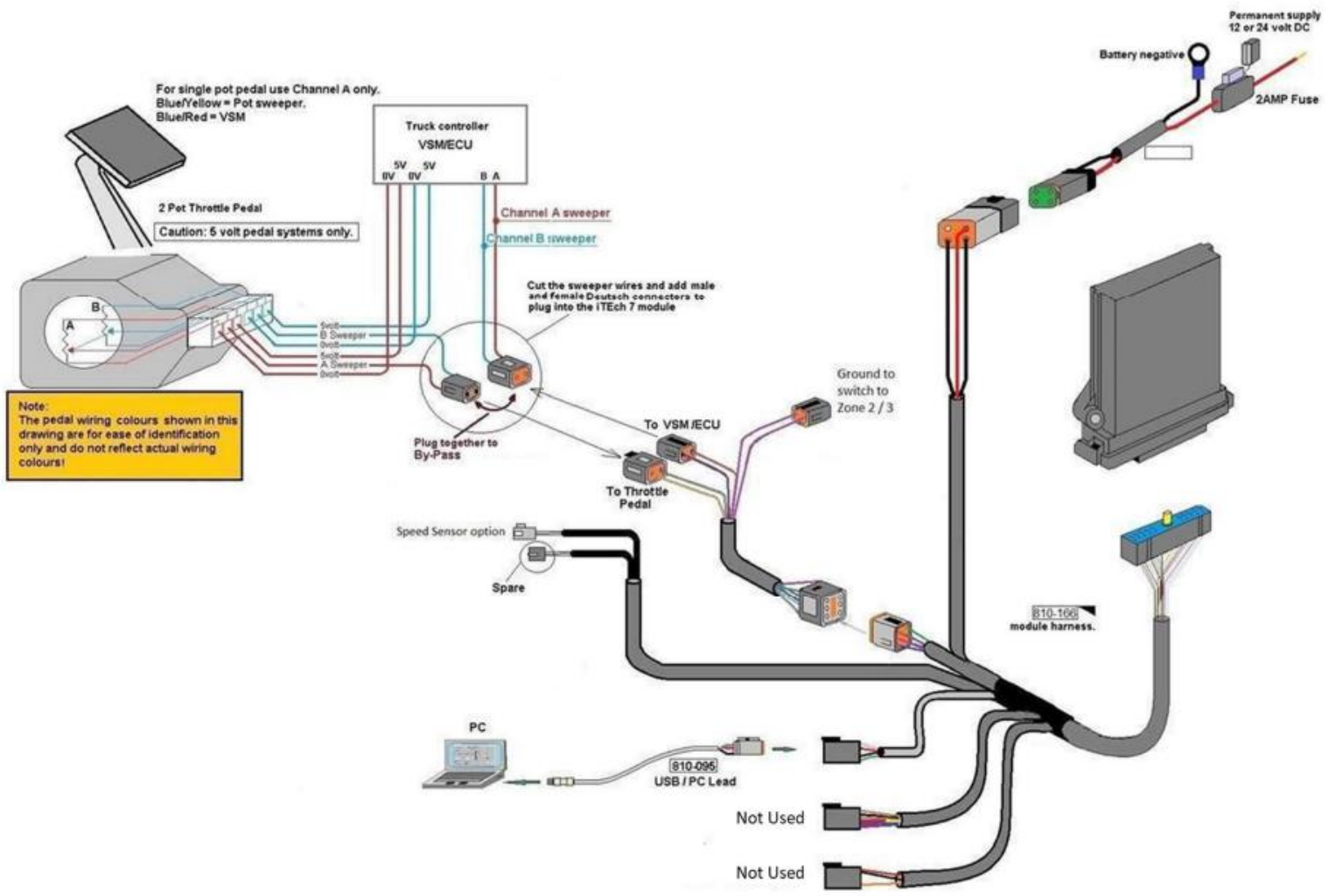


Figure 1: Speed Manager Control Unit Truck Interconnect Diagram

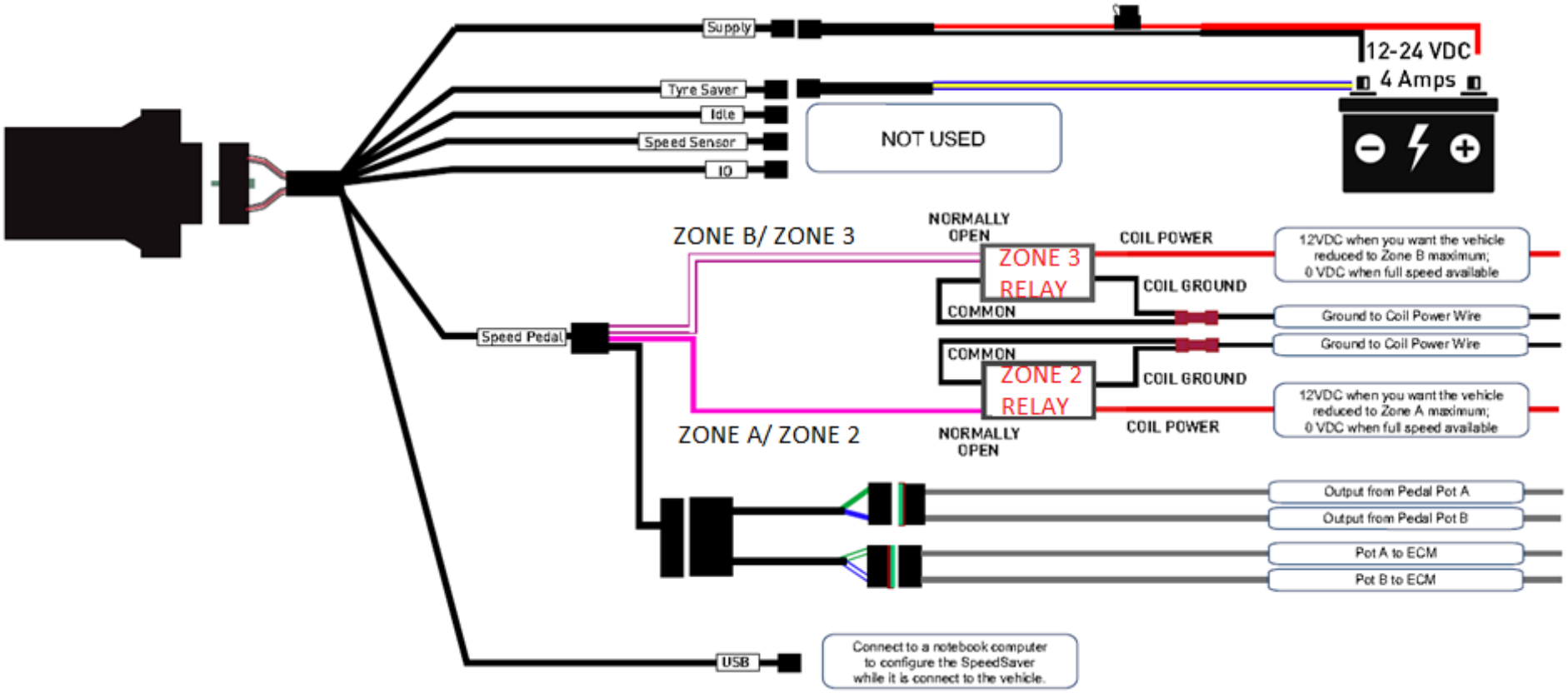


Figure 2: Speed Manager Generic, Forklift Gateway (VAC4) or Forklift Gateway Trigger Wiring Diagram

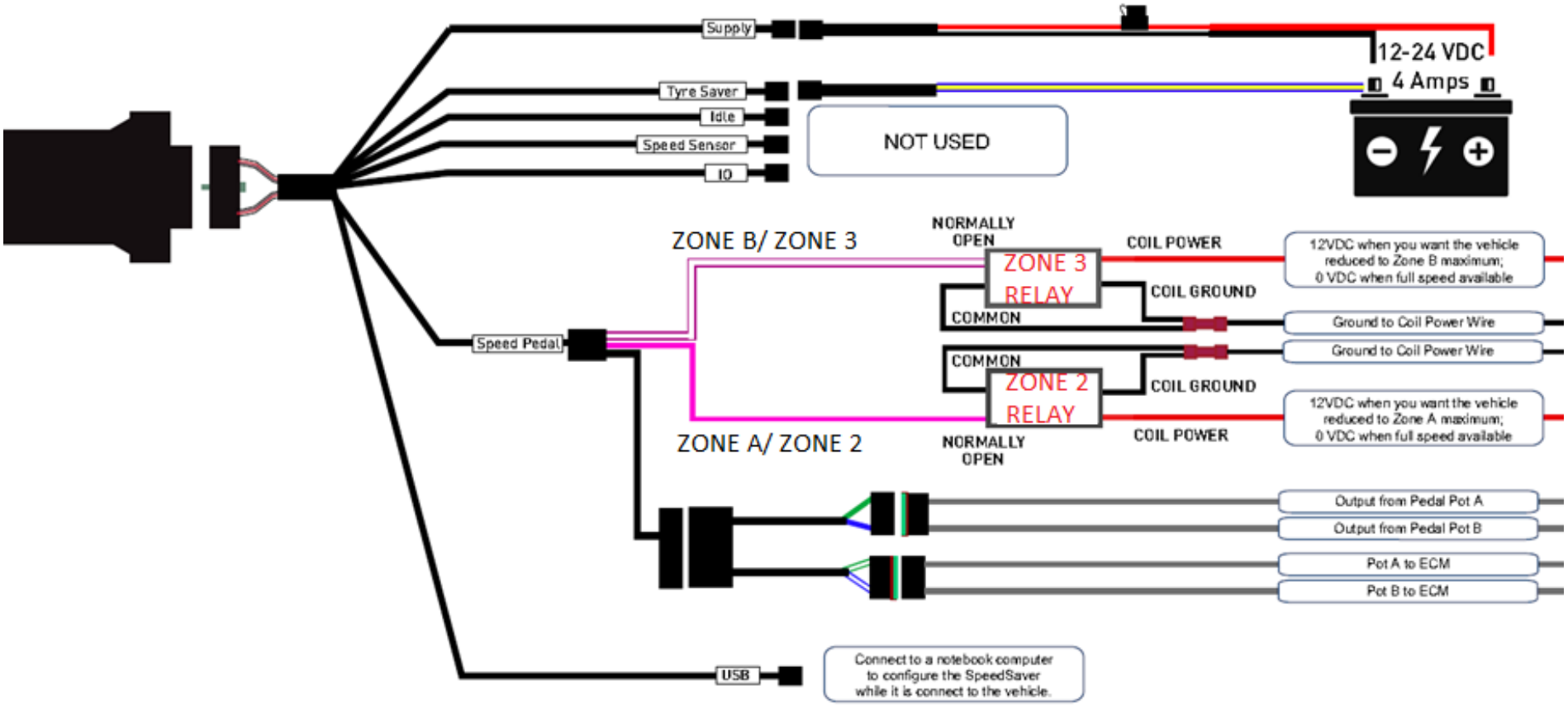
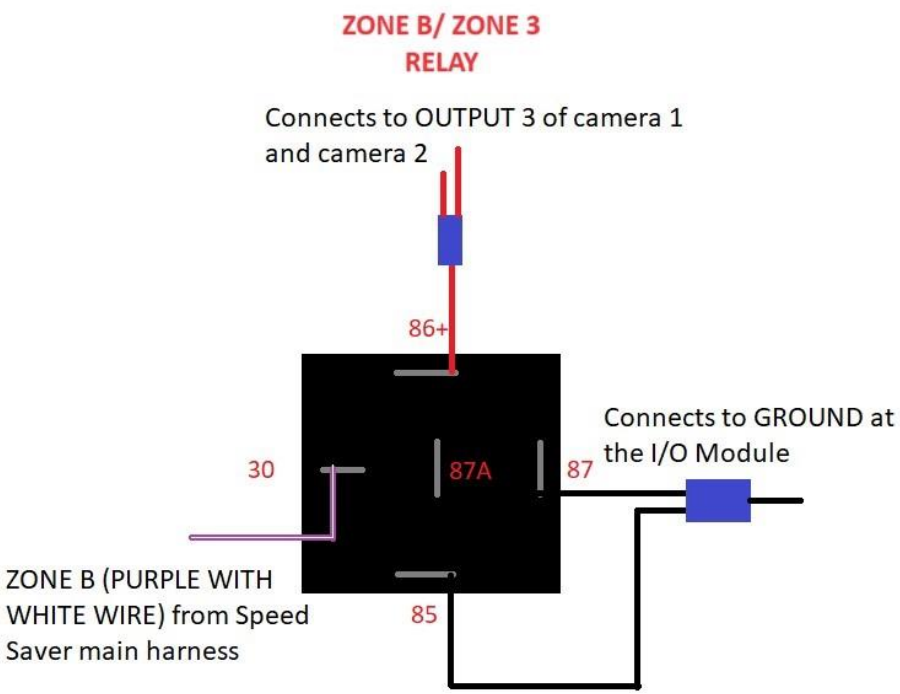
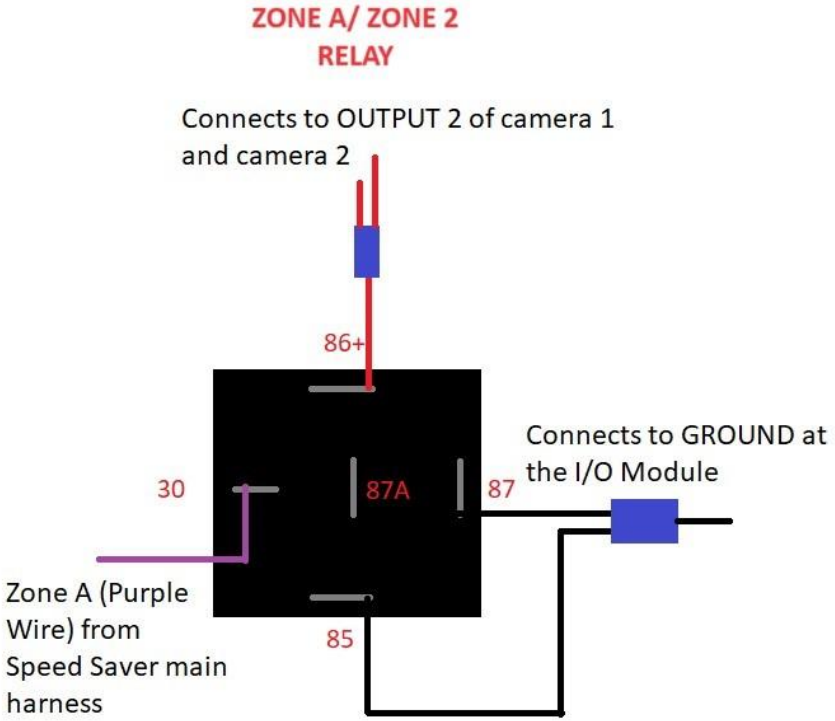
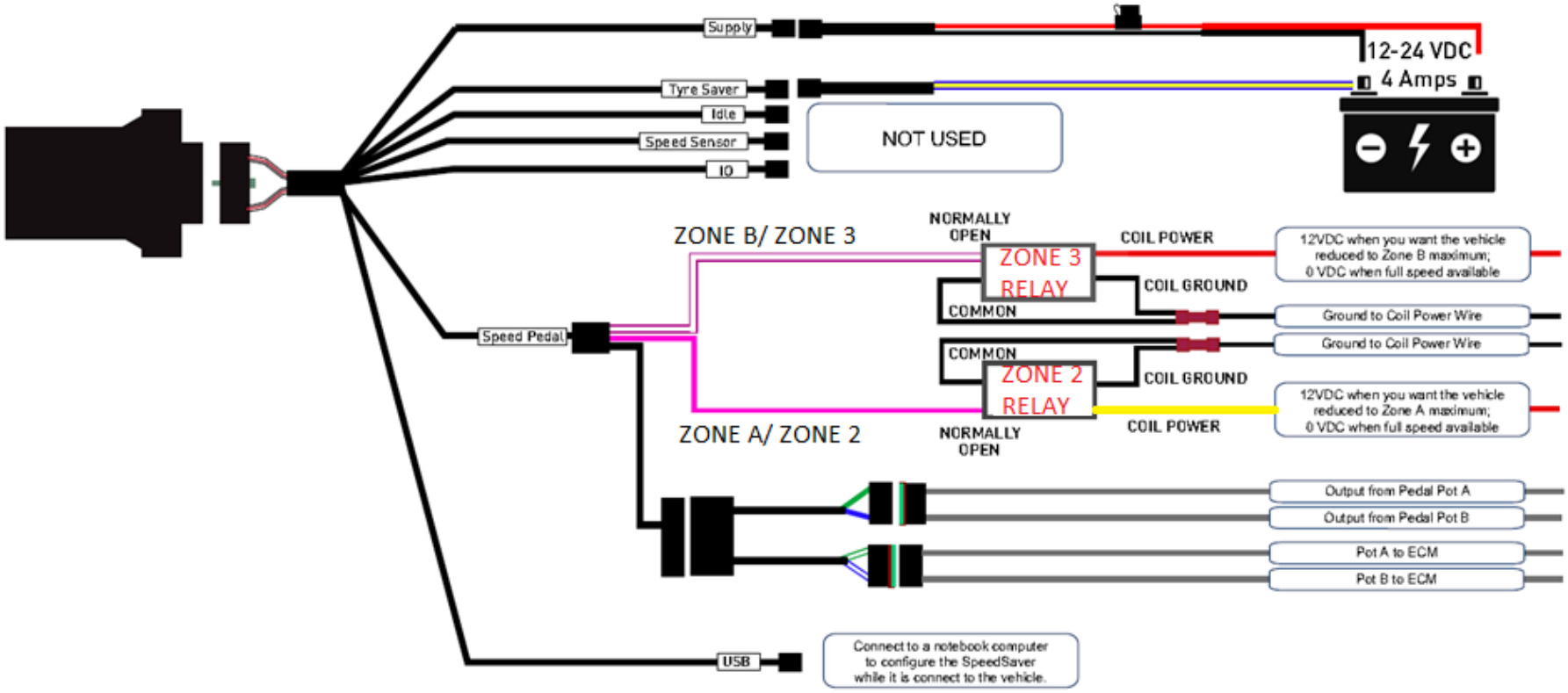


Figure 3: Speed Manager & V1 Pedestrian Proximity Detection-Speed Trigger Wiring Diagram (relay connection detail on next page)

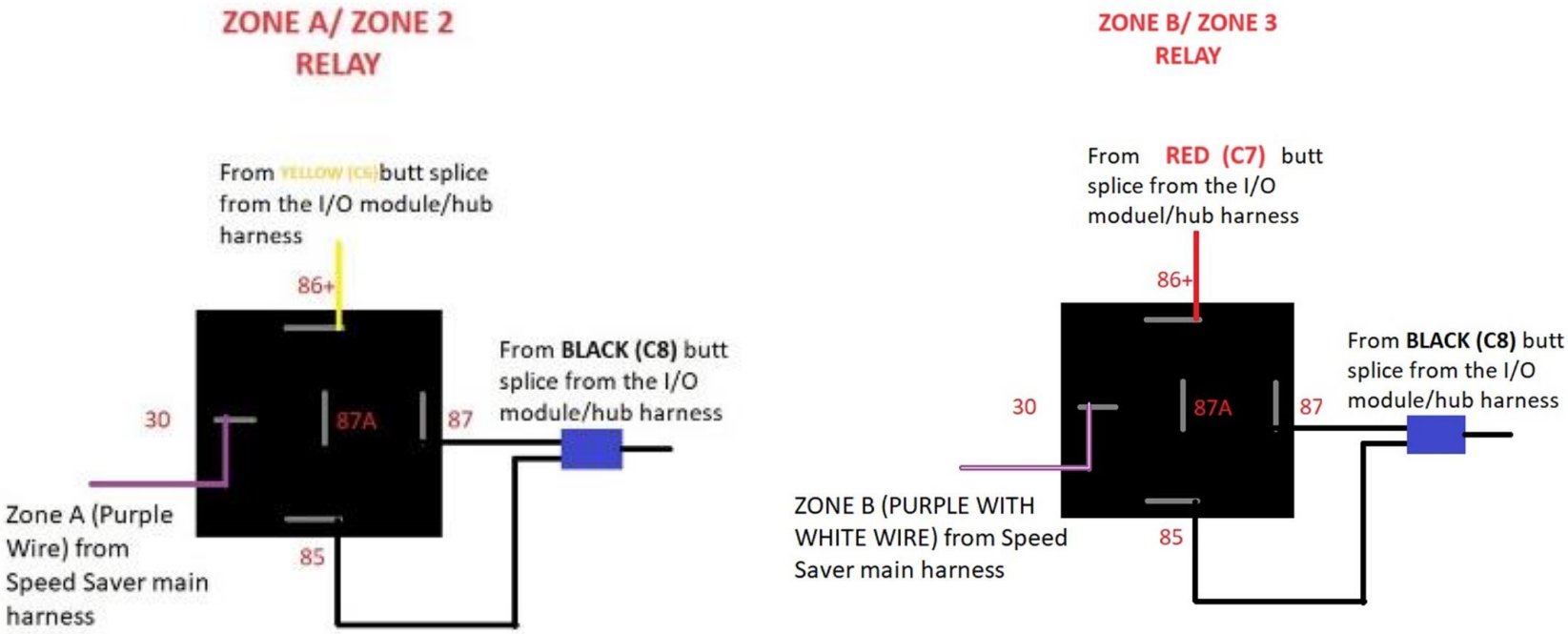
ZONE A/ ZONE 2 RELAY and ZONE B/ ZONE 3 Relay connections for V1 Pedestrian Proximity Detection- Speed trigger







Speed Manager & V2 Pedestrian Proximity Detection-Speed Trigger Wiring Diagram
(relay connection detail on next page)



ZONE A/ ZONE 2 RELAY and ZONE B/ ZONE 3 Relay connections for V2 Pedestrian Proximity Detection- Speed trigger

Control Unit Mounting

- *The Control Unit can be mounted to any flat surface on the truck, inside the overall cover of the vehicle, away from sources of heat or excessive electrical noise.*
- *Choose a location for mounting the control unit so that the supplied harness can be interconnected to all relevant locations on the truck original equipment (OEM) cabling.*

Figure 4 Speed Manager Control Unit

Truck Throttle Pedal Connection

- *The Speed Manager harness ships pre-assembled with Deutsch DT connections. If the existing pedal connections have the same Deutsch DT connections, simply unplug the pedal connections, and connect them to the Powerfleet pedal cable as indicated.* **(Figure 5.A)**

- *Determine if the Pedal Pot A and Pot B are synchronized or inverse. You will need this information during configuration.*
  - *Jack the vehicle up, chalk the non-drive wheels so throttle pedal can be used without moving the vehicle.*
  - *Using a multimeter, measure the Pot A output signal while pressing the pedal.*
  - *Using a multimeter, measure the Pot B output signal while pressing the pedal.*
  - *If the signals are the same, the potentiometers are Synchronized, if they are opposite, the potentiometers are Inverted. Record Synchronized or Inverted for configuration process to follow.*

- *If the vehicle uses different connectors or no connectors, cut the appropriate wires and assemble to the provided Deutsch DT connectors in the kit for making a connection to Speed Manager* **(Figure 5.A)**.

- *Pedal-to-Speed Manager: terminate Pedal Pot output wire(s) with the DT-0602S Socket connector.*

- *Speed Manager-to-ECM: terminate each wire with the DT-0402P Pin connector* **(Figure 5.A)**.

- *Route the wiring harness from the Speed Manager Control Unit to the truck throttle pedal connector. Ensure harness is routed away from high heat sources (e.g., the exhaust system) and high voltage ignition leads and circuits.*

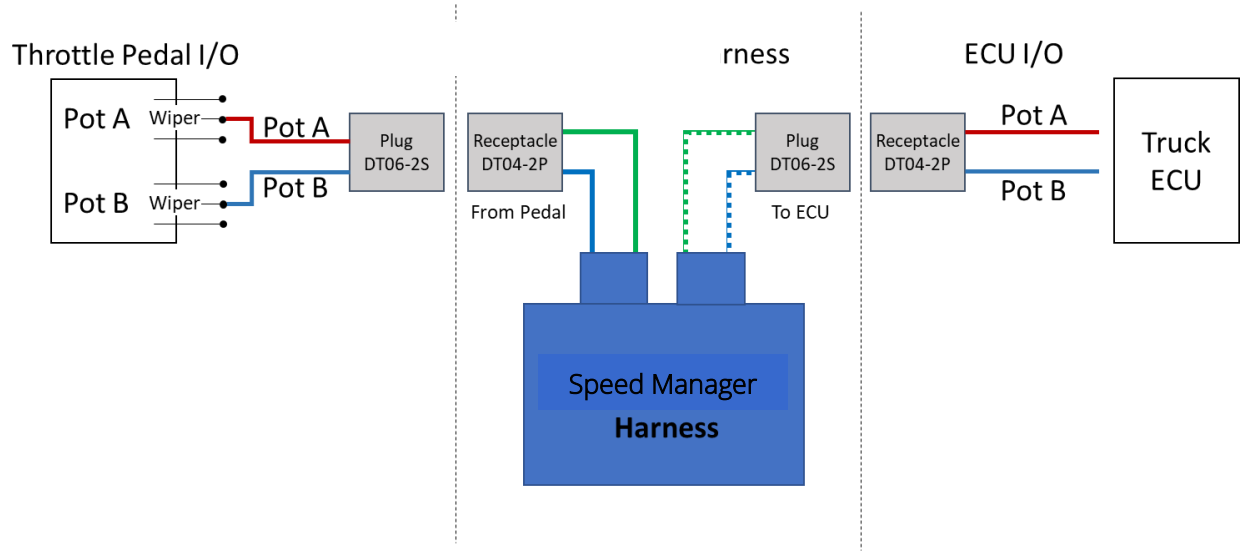


Figure 5.A (Wired Method) Truck Pedal and Truck ECU Potentiometer A and B Connection to Speed Manager Harness

- *NOTE: Customers may opt for a "Y" harness customized for a vehicle's specific make and model, creating a "plug and play" installation. Customers must contact their Powerfleet Sales Manager to scope the customized solution. A vehicle list detailing vehicles' make, model, and year needs to be supplied ahead of time to have custom "Y" harnesses built and delivered.* **(Figure 5.B)**

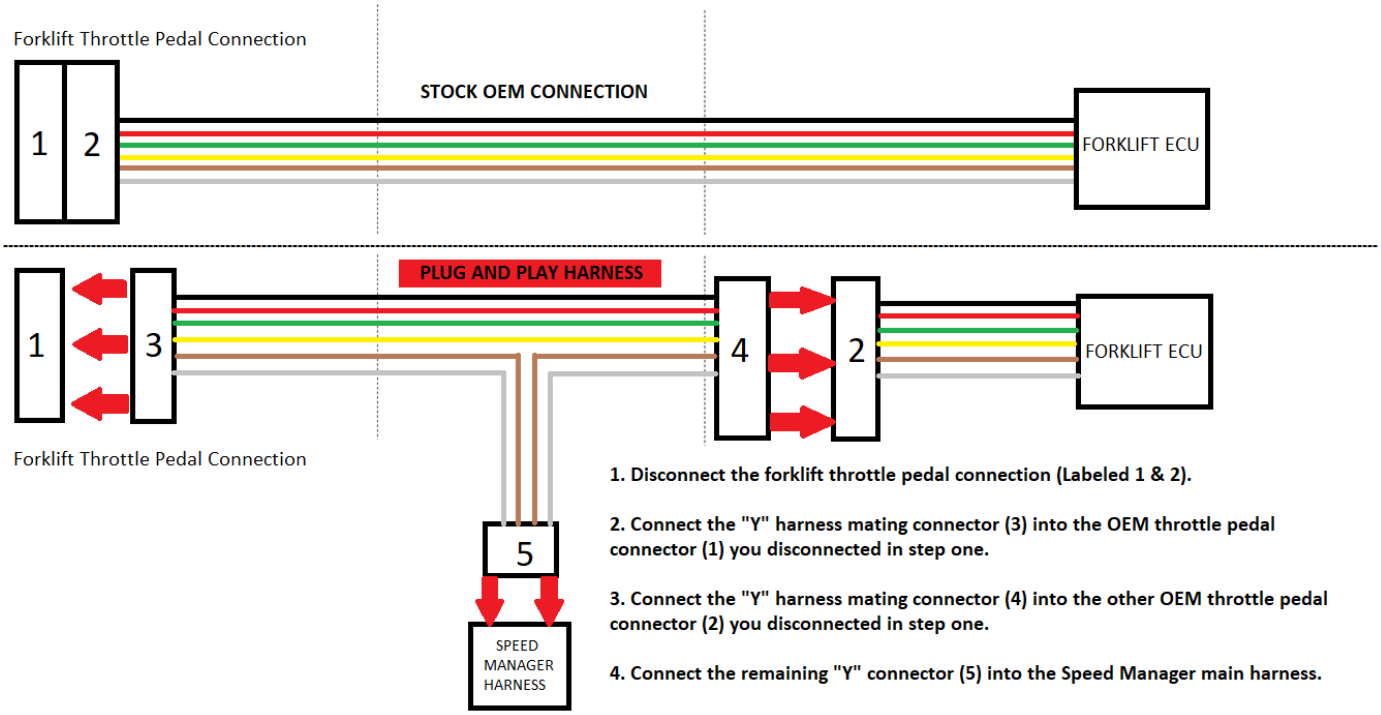


Figure 6.B (PLUG & PLAY) Utilizing a "Y" harness for connection to Speed Manager Harness

Truck Power Connection

- *Connect the vehicle power harness to the vehicle battery or power source using butt splice and ring terminal connectors.*
- *If the power source is greater than 24 VDC, use a DC-DC voltage converter to reduce the voltage to 24 VDC or less.*
- *Route the wiring harness power input to the vehicle power connection and connect the Deutsch connectors.*

Speed Manager External Trigger Connections

- *The Pedestrian Proximity Detection system supports 2 speed control external triggers to the Speed Manager.*
- *The Forklift Gateway (VAC4) and 601 system support 1 speed control external triggers to the Speed Manager.*
- *Speed Manager trigger inputs are ground switched, which requires a Normally Open (NO) relay to provide a ground connection when external input(s) are triggered.*
- *Wire external trigger(s) (Pedestrian Proximity Detection, Forklift Gateway (VAC), or 601) per the wiring diagrams detailed in*
-
-
- **Figure 2**.

System Configuration

System configuration includes:

- *Cabling PC to Speed Manager Control Unit and connecting Interface programming software*
- *Applying and verifying parameters*
- *Calibrating throttle pedal to the Speed Manager Control Unit*

Install Interface software on a laptop computer.

- *Interface software provided on USB cable provided with the site kit.*
- *Use the .msi setup file to install the software.*

Connect the notebook computer to the powered Speed Manager you want to configure.

- *Use USB cable to connect laptop computer the Speed Manager harness USB connector.*

Verify Interface Connection

- *Open the Speed Manager software.*
- *With the truck switched on, the Speed Manager Control Unit powered, and the PC connected to the Speed Manager Control Unit,* **Click the Connect button** *to connect to the Speed Manager Control Unit.*
- *The screen will change to show (see Figure 6)*
  - *"***Connected***" in the upper right corner.*
  - *The Connect button will change to "Disconnect."*
  - *The* **Firmware Version** *is displayed.*

Figure 7:
Interface Application Home Screen

Figure 8:
Interface Application Showing Connected Screen

Initial Settings

With the Interface software application connected to the Speed Manager Control Unit, follow below steps to apply/confirm parameter settings.

- *Speed Tab – This is the only tab in the software we work with!*
- *Walk through each of the Speed Settings to ensure they match the default settings below Figure 9*
- *If the Pot A and Pot B are Inverted, be sure to check POT B Rev check box (item 18 in* **Figure 9***).*

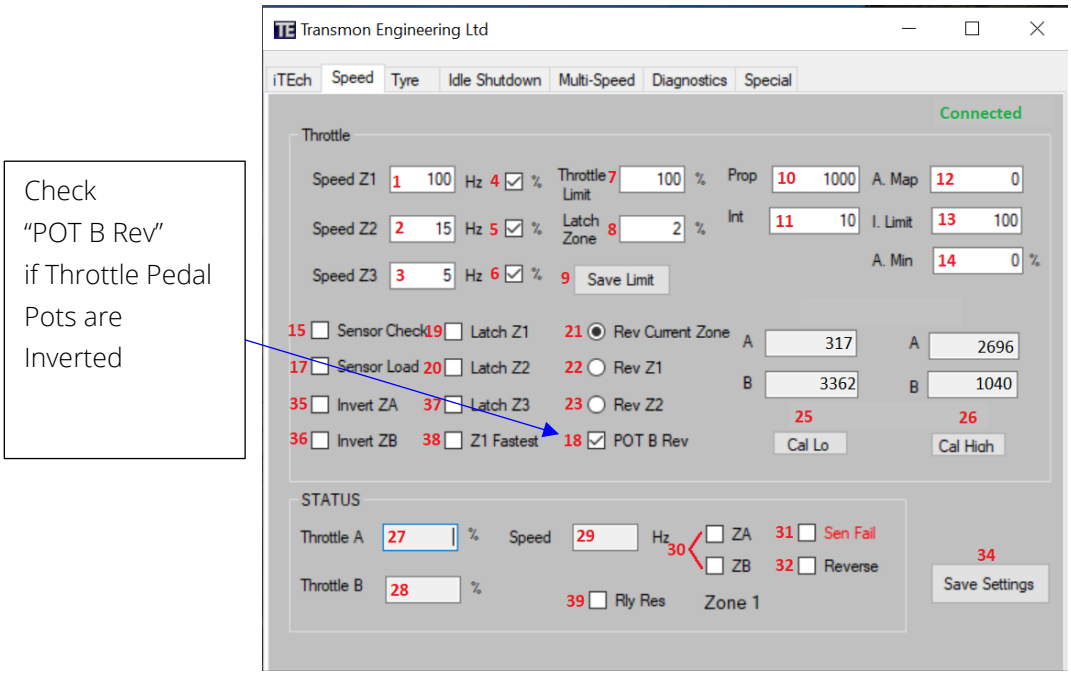


Figure 9: Speed Manager Control Unit Speed Settings and Status Tab

Item	Tab	Function	Description	Default
1	*Speed*	*Speed Z1*	*Full Speed*	*100%*
2	*Speed*	*Speed Z2*	*Zone A*	*15%*
3	*Speed*	*Speed Z3*	*Zone B*	*5%*
4	*Speed*	*Speed Z1 %*	*Changes Z1 setting from Hz to throttle %*	*Checked*
5	*Speed*	*Speed Z2%*	*Changes Z2 setting from Hz to throttle %*	*Checked*
6	*Speed*	*Speed Z3 %*	*Changes Z3 setting from Hz to throttle %*	*Checked*
8	*Speed*	*Latch Zone %*	*Throttle must cycle below to resume higher speed*	*2%*
15	*Speed*	*Sensor Check*	*If signal is not received within 10s of direction selection, the throttle is restricted by Throttle Limit %*	*Unchecked*
17	*Speed*	*Sensor Load*	*Check that MPU (speed sensor) is present*	*Unchecked*
18	*Speed*	*POT B Rev*	*If the POT test from Step 3.5 is "Inverse", check this box*	*[set per truck]*
19	*Speed*	*Latch Z1*	*Hold lowest speed until throttle is below Latch Zone %*	*Unchecked*
20	*Speed*	*Latch Z2*	*Hold lowest speed until throttle is below Latch Zone %*	*Unchecked*

Item	Tab	Function	Description	Default
25	*Speed*	*Cal Lo*	*Needs to be set for each truck – see steps below*	*[set per truck]*
26	*Speed*	*Cal High*	*Needs to be set for each truck – see steps below*	*[set per truck]*
	Tyre	*High Switch*	*Select if iTEch Tire is not used*	*Selected*
	Multi-Speed	*Dummy Resistor*	*Select dummy resistor "N" series (trucks with monitored solenoids)*	*Selected*

Note: The following Speed reference items are not used and can be left with whatever value loads: 7, 10, 11, 12, 13, 14, 16, 21, 22, 23, 24

Pedal Calibration

- *With the* **accelerometer pedal at rest (not depressed)**, **click Cal Lo button** *(see Figure 10)*

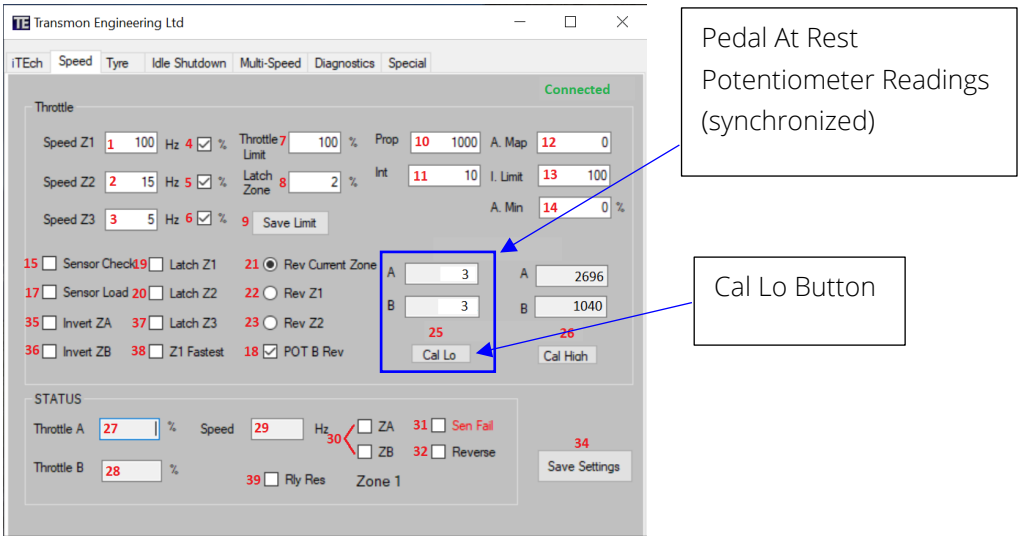


Figure 10: Pedal At Rest Low Calibration Readings and Button

- *With the accelerometer pedal fully depressed, click Cal High button (See Figure 11)*
- *Click "Save Settings" to apply the low and high calibration*

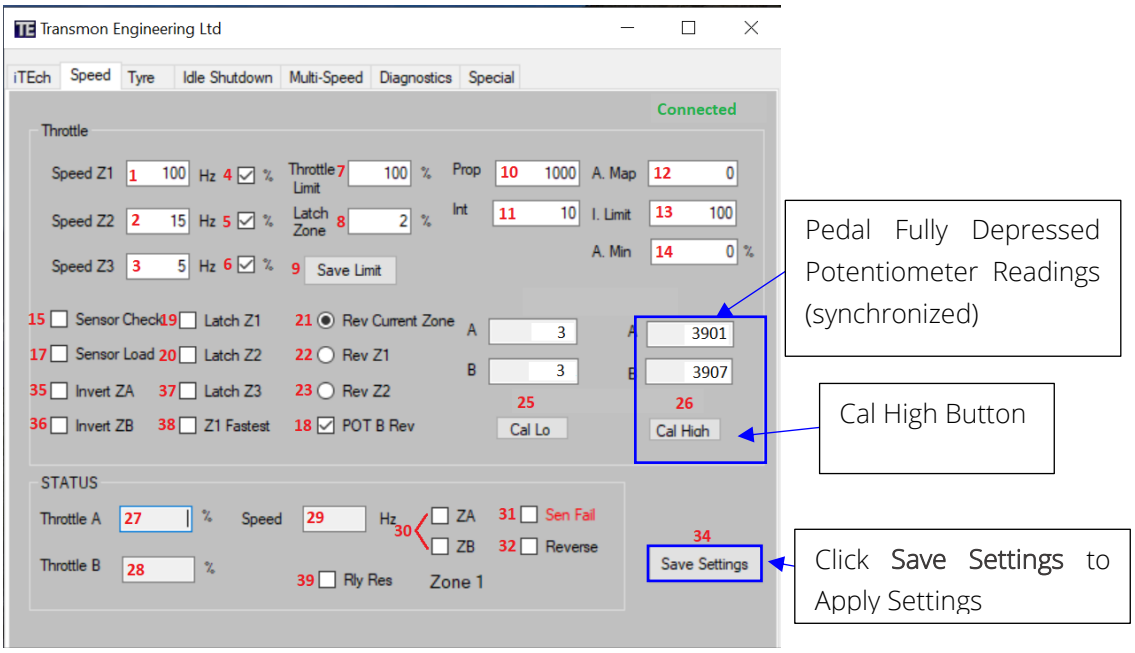
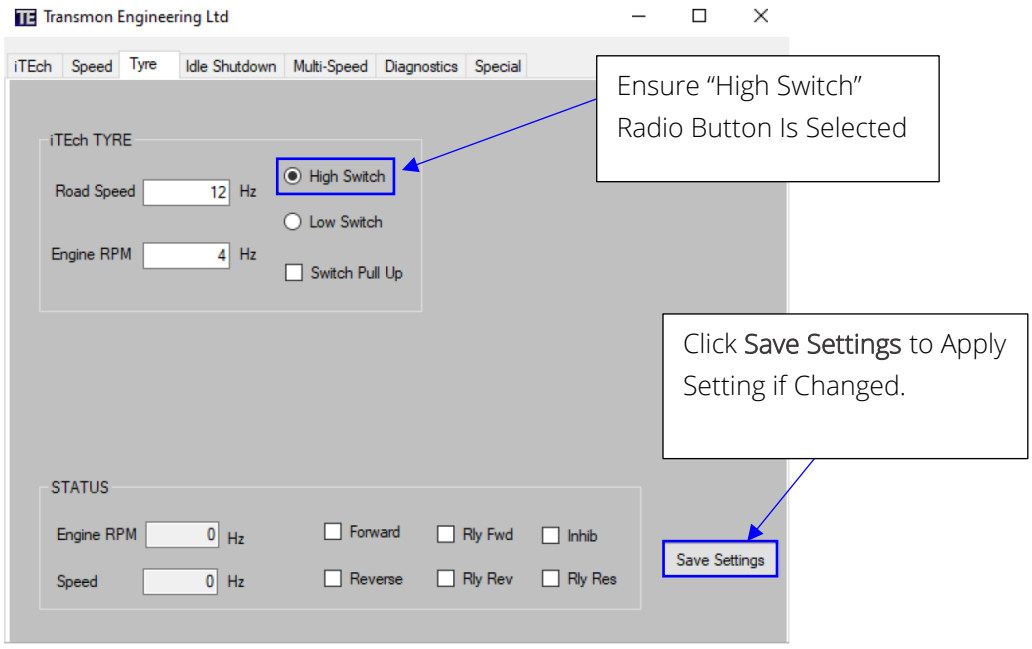


Figure 11: **Pedal Fully Depressed High Calibration Readings and Button**

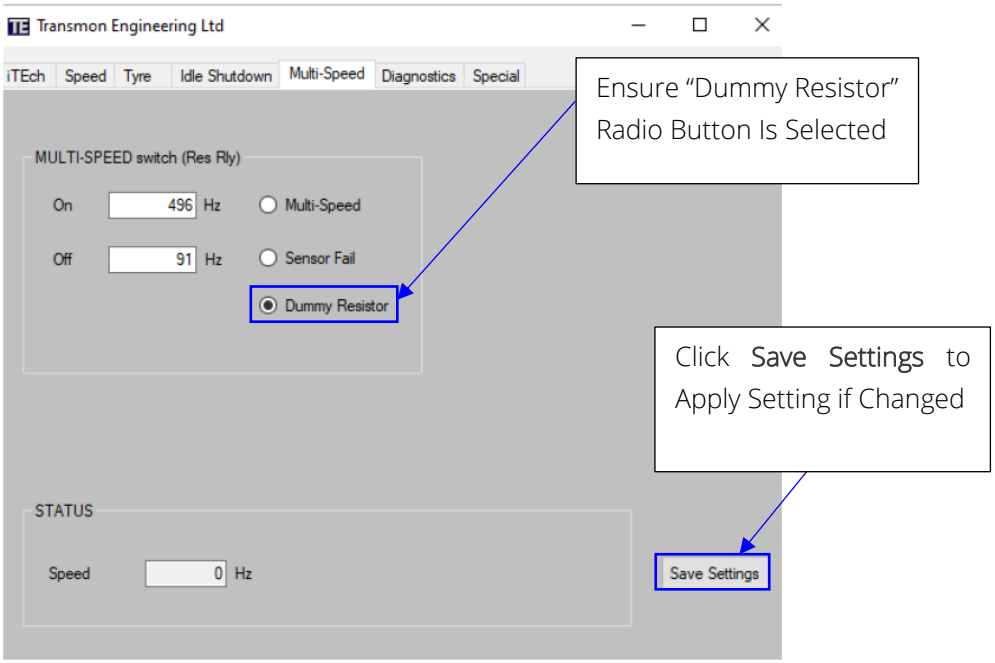
Ensure Tire Saver Disabled

- *Under the Tyre tab, ensure iTEch TYRE > High Switch radio button is selected.*
- *All other radio buttons and check boxes must be unchecked.*
- *Click "Save Settings" to apply any setting changes.*



Ensure Multi-Speed Disabled

- *Under the Multi-Speed tab, ensure MULTI-SPEED switch (Res Rly) > Dummy Resistor radio button is selected.*
- *All other radio buttons and check boxes must be unchecked.*
- *Click "Save Settings" to apply any setting changes.*


Transmon Engineering Ltd
iTEch
Speed
Tyre
Idle Shutdown
Multi-Speed
Diagnostics
Special
MULTI-SPEED switch (Res Rly)
On
496
Hz
Multi-Speed
Off
91
Hz
Sensor Fail
Dummy Resistor
STATUS
Speed
0
Hz
Save Settings
Ensure "Dummy Resistor" Radio Button Is Selected
Click Save Settings to Apply Setting if Changed

Configure Throttle Limits

Throttle Limit settings control maximum throttle percentage allowed during Speed Zone 2 and Speed Zone 3 events.

Set Zone 2 and Zone 3 Throttle Percentage Limits

- *With the software connected to the powered Speed Manager Control Unit:*
- *Click the "Speed" tab to display the Throttle and STATUS screen.*
- *Enter "15" in the Speed Z2 text box and check the corresponding "%" box (items 2 and 5 in Figure 12)*
- *Enter "5" in the Speed Z3 text box and check the corresponding "%" box (items 3 and 6 in Figure 12)*
- *Click "Save Settings" to apply configuration.*

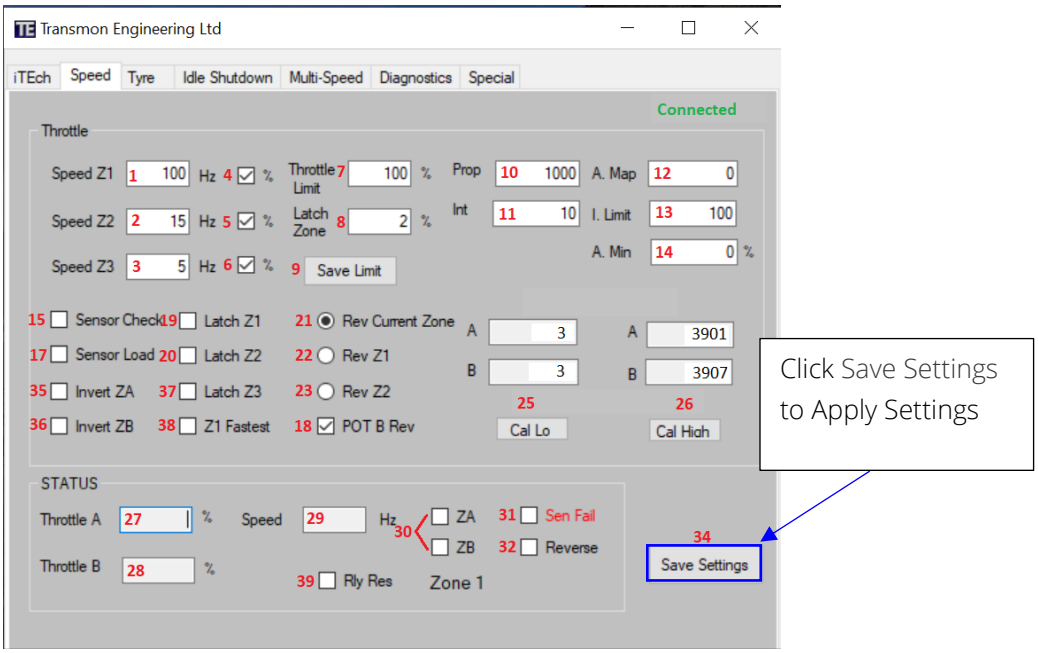


Figure 12: Throttle Limit Percentage Configuration

Confirm Pedestrian Proximity Detection Behavior (if applicable)

With the Pedestrian Proximity Detection and Speed Manager systems fully installed and configured, follow below steps to ensure Pedestrian Proximity Detection Warning Area and Alert Area breaches trigger Speed Manager Zone A and Zone B speed control as configured.

The system confirmation process uses Pedestrian Proximity Detection and Speed Manager software applications to manually simulate and clear Warning Area and Alert Area breaches and confirm corresponding Speed Manager speed control set and clear. Below details verification process for a two-camera Pedestrian Proximity Detection system. Follow same process for one- and three-camera systems.

Test Setup

- *Laptop with latest InFocus Pedestrian Proximity Detection and Interface Speed Manager applications installed. InFocus is software for Version 1 of Pedestrian Proximity Detection. Version 2 of Pedestrian Proximity Detection uses web-based interface with Laptop. (See guide* PPD Configuration Software User Guide 085-00001156)
- *PC WiFi connection to Front or Rear Pedestrian Proximity Detection camera.*
- *PC USB connection to Speed Manager USB harness connector*
- *Do not depress the throttle peddle during verification testing.*
- *Truck drive wheels jacked up off the drive surface and non-drive wheels chalked to secure the truck.*

Speed Manager Zone 1, Zone A, and Zone B Verification

- *Use Pedestrian Proximity Detection InFocus application to manually enable and disable Relay 2 and Relay 3 (see* **Figure 12***)*
- *Use Speed Manager Interface application to monitor Speed Zone status (see* **Figure 14***)*

Front Camera Speed Control Verification

- **Table 1** *and* **Table 2***, use InFocus or web-based application to enable and disable Relay 2*
- *ZA speed control radio button should be enabled when Relay 2 is enabled.*
- *ZA speed control radio button should be disabled when Relay 2 is disabled.*

1.1 *Rear Camera Speed Control Verificatio*

- **Table 4***, use InFocus or web-based application to enable and disable Relay 3*
- *ZB speed control radio button should be enabled when Relay 3 is enabled.*
- *ZB speed control radio button should be disabled when Relay 3 is disabled.*

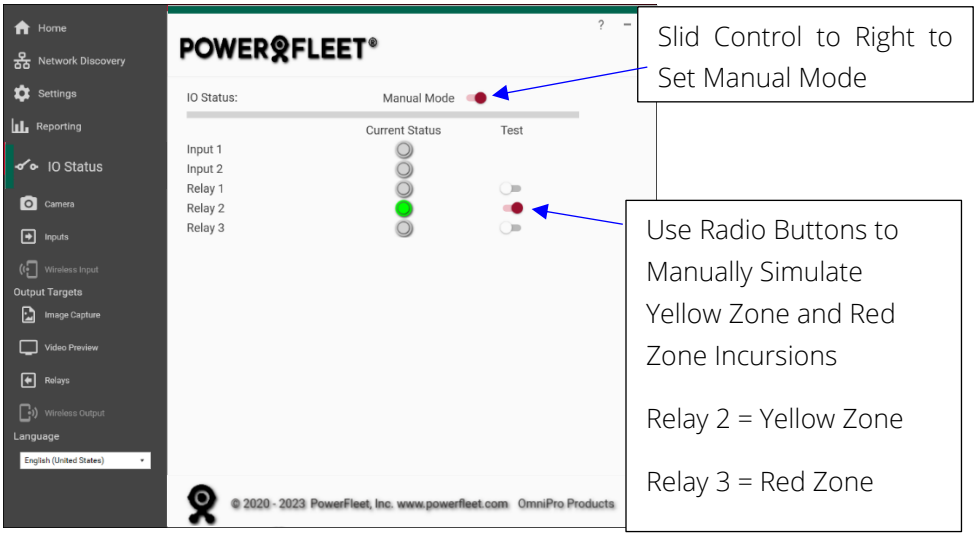


Figure 13: ***InFocus*** **IO Status Screen Used to Manually Set/Clear Camera Zone Incursions**

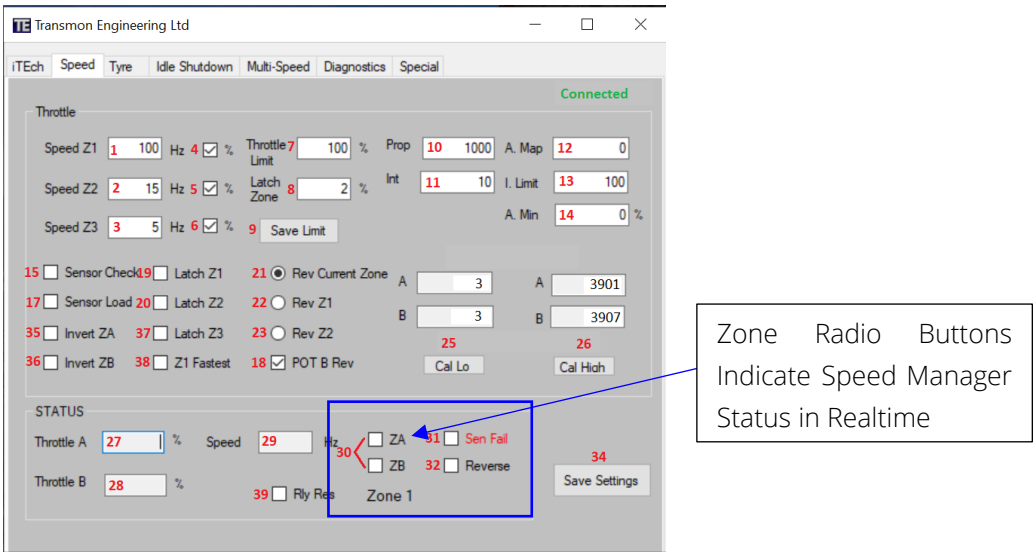


Figure 14: **Speed Manager *Interface* Realtime Zone Status Indication**

Front Camera Speed Zone Operation

Front Camera Manual Relay Setting			**Expected Speed Manager Status**		
Relay 1	**Relay 2**	**Relay 3**	**Zone 1**	**ZA**	**ZB**
N/A	*Enabled*	*Disabled*	*Not Set*	*Set*	*Not Set*
N/A	*Disabled*	*Enabled*	*Not Set*	*Not Set*	*Set*

Table 1: **Front Camera Yellow Zone and Red Zone Incursion Speed Control Test**

Front Camera Manual Relay Setting			Expected Speed Manager Status		
Relay 1	**Relay 2**	**Relay 3**	**Zone 1**	**ZA**	**ZB**
N/A	*Disabled*	*Disabled*	*Set*	*Not Set*	*Not Set*

Table 2: Front Camera No Incursion and No Speed Control Test

Rear Camera Speed Zone Operation

Rear Camera Manual Relay Setting			Expected Speed Manager Status		
Relay 1	**Relay 2**	**Relay 3**	**Zone 1**	**ZA**	**ZB**
N/A	*Enabled*	*Disabled*	*Not Set*	*Set*	*Not Set*
N/A	*Disabled*	*Enabled*	*Not Set*	*Not Set*	*Set*

Table 3: Rear Camera Yellow Zone and Red Zone Speed Control Test

Rear Camera Manual Relay Setting			Expected Speed Manager Status		
Relay 1	**Relay 2**	**Relay 3**	**Zone 1**	**ZA**	**ZB**
N/A	*Disabled*	*Disabled*	*Set*	*Not Set*	*Not Set*

Table 4: Rear Camera No Incursion and No Speed Control Test

Verification Failure Remediation

In the event verification results are not in line with Table 1, Table 2, Table 3 and Table 4, troubleshoot Pedestrian Proximity Detection and Speed Manager systems independently until expected operations are verified then resume total system verification steps.

Installation and Verification Complete

- *When all installation and system verification steps are completed and conforming, reassembly the truck and record truck, system configuration and installation details.*

Confirm Forklift Gateway (VAC4) and Speed Manager System Behavior

With the Forklift Gateway (VAC) and Speed Manager systems fully installed and configured, follow the steps below to ensure Forklift Gateway (VAC) external indicator operation triggers Speed Manager ZA speed control as configured.

The system confirmation process uses Forklift Gateway (VAC) and Speed Manager software applications to manually simulate and clear Forklift Gateway (VAC) external indicator operation and confirm corresponding Speed Manager speed control set and clear.

Test Setup

- *Forklift Gateway (VAC) system installed and verified.*
- *Laptop with Interface Speed Manager applications installed.*
- *PC USB connection to Speed Manager USB harness connector*
- *Do not depress the throttle peddle during verification testing.*
- *Truck drive wheels jacked up off the drive surface and non-drive wheels chalked to secure the truck.*

Speed Manager Zone 1, ZA, and ZB Verification

- *Use Forklift Gateway (VAC) keypad and VIM Output 107 verification process to Enable and Disable the External Indicator (see* **Figure 15** *and* **Figure 16***)*
- *Use Speed Manager Interface application to monitor Speed Zone status (see* **Figure 14***)*

Figure 15: On the Forklift Gateway (VAC) Keypad, Select *Sensor* Option and Navigate to module VIM screen.

Forklift Gateway (VAC) External Indicator Speed Zone Operation

- *When the External Indicator screen is displayed, validate that the installed output alert (horn, alarm, strobe, creeper speed, etc.) is active (within 5 seconds)*
- *ZA speed control radio button should be enabled when Relay 2 is enabled.*
- *Select Yes on the Forklift Gateway (VAC) keypad to disable the External Indicator*
- *ZA speed control radio button should be disabled when Relay 2 is disabled.*

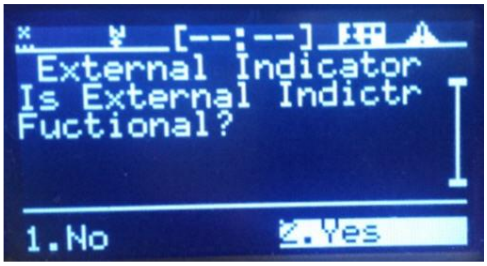


Figure 16: Forklift Gateway (VAC) External Indicator Enabled when Test Screen Displayed and No selected and Disabled when Yes selected

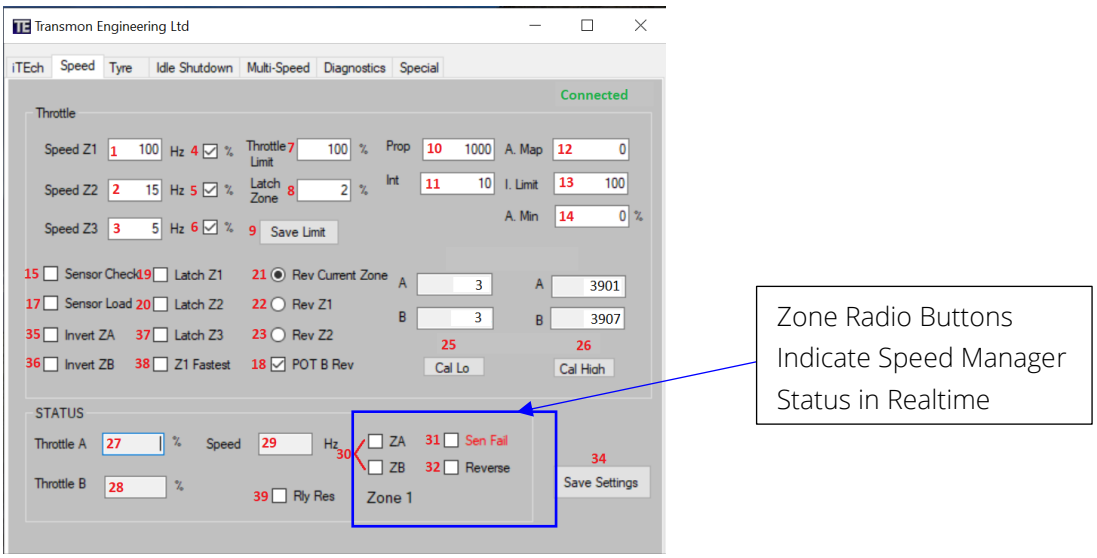


Figure 17: Speed Manager *Interface* Realtime Zone Status Indication

Forklift Gateway (VAC) External Indicator State	Expected Speed Manager Status		
	Zone 1	ZA	ZB
Enabled	*Not Set*	*Set*	*Not Set*
Disabled	*Set*	*Not Set*	*Not Set*

Table 5: Expected Speed Manager Zone Operation with Forklift Gateway (VAC) External Indicator

Verification Failure Remediation

In the event verification results are not in line with

- **Table 5**, *troubleshot Forklift Gateway (VAC) and Speed Manager systems independently until expected operation is verified, then resume total system verification steps.*

Installation and Verification Complete

- *When all installation and system verification steps are completed and conforming, reassembly the truck and record truck, system configuration and installation details.*

Confirm 601 and Speed Manager System Behavior

With the 601 and Speed Manager systems fully installed and configured, follow below steps to ensure 601 Flashing Strobe Alarm (FSA) operation triggers Speed Manager Zone 2 speed control as configured.

The system confirmation process uses 601 keypad and Impact Sensor and Speed Manager software application to manually trigger and clear 601 Impact FSA operation and confirm corresponding Speed Manager speed control set and clear.

Test Setup

- *601 keypad, Shock Sensor, and Flashing Strobe Alarm installed and verified.*
- *Laptop with Interface Speed Manager applications installed.*
- *PC USB connection to Speed Manager USB harness connector*
- *Do not depress the throttle peddle during verification testing.*
- *Truck drive wheels jacked up off the drive surface and non-drive wheels chalked to secure truck.*

Speed Manager Zone 1, ZA, and ZB Verification

- *With the 601 in normal operating mode, tap the Shock Sensor to trigger Flashing Strobe Alarm operation.*
- *Use Speed Manager Interface application to monitor Speed Zone status (see* **Figure 18***)*

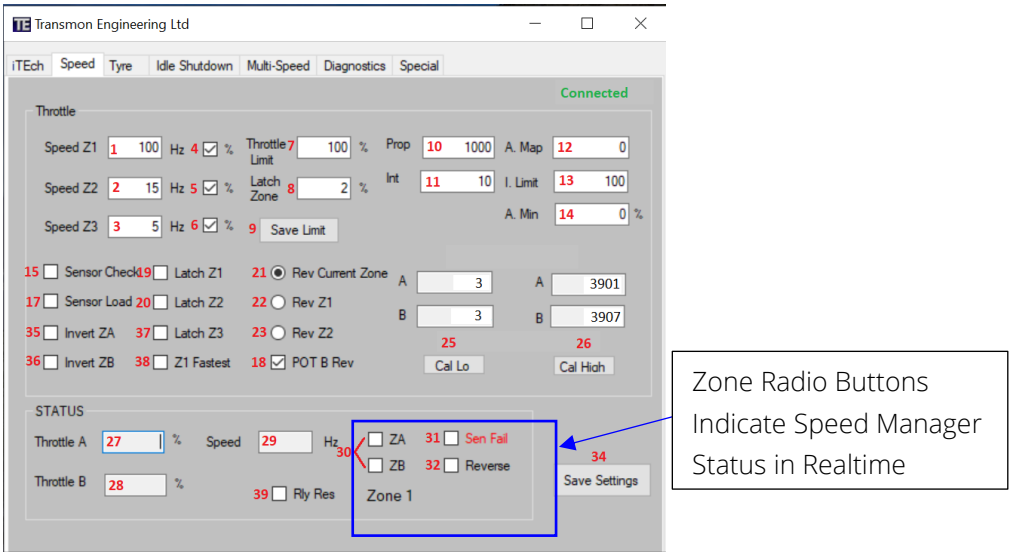


Figure 18: **Speed Manager *Interface* Realtime Zone Status Indication**

601 Flashing Strobe Alarm State	Expected Speed Manager Status		
	Zone 1	ZA	ZB
Enabled	*Not Set*	*Set*	*Not Set*
Disabled	*Set*	*Not Set*	*Not Set*

Table 6: **Expected Speed Manager Zone Operation with 601 FSA Enabled and Disabled**

Verification Failure Remediation

- *In the event verification results are not in line with* **Table 6**, *troubleshot 601 and Speed Manager systems independently until expected operation is verified, then resume total system verification steps.*

Installation and Verification Complete

- *When all installation and system verification steps are completed and conforming, reassembly the truck and record truck, system configuration and installation details.*

Product Disclaimer

All specifications are subject to change for product improvement without notice. Other company or product names mentioned in this document may be trademarks or registered trademarks of their respective companies.

Appendix A: Customer Support and Return Merchandise Authorization (RMA) Policy & Procedures

Customer Support & RMA Information
Technical Support/RMA: Tel +1.201.690.7011
Support Hours: 9:00am - 6:00pm, Monday - Friday (Eastern)
An RMA number can be requested 24 / 7 (Excluding Holidays)

RMA Procedure
Step 1: *Troubleshoot with a Powerfleet Support member.*
Supply the End User's company name, city, and state/province. Identity your role: End User, Dealer, or 3rd Party Service representative.

Step 2: *Request an RMA*
In the event the hardware requires repair, please email the RMA details listed below to RMA@Powerfleet.com:

- *End User's company name, city, and state/province.*
- *Device Description*
- *Part Number (see Locating Part Numbers on the following pages)*
- *Device Serial Number*
- *Description of failure - primary symptoms or issue*
- *Shipment Information (address and contact info)*
- *PO Approver - in the event there is hardware damage, who should receive the quotation*

Step 3: *Return the RMA to Powerfleet*
Upon receipt of an RMA number, package the material and return it to Powerfleet. Material cannot be returned to Powerfleet without an RMA already assigned. **The shipping address is supplied as part of the automated RMA e-mail notice.**

Step 4: *Evaluation and Damage Determination*
In the event the repair requires a purchase order to proceed, Powerfleet will send the quotation for repair to the PO approver defined in Step 1. The RMA hardware will remain on hold until the PO Approver provides additional direction. If there is no response from the PO Approver, we will return the hardware after 90 days.

Step 5: *Repair and Return*
Once the RMA hardware is repaired, it will be returned using the shipping information identified in Step 2.

Additional Terms

- *If the product is covered under the warranty, the repair work will be completed without the customer's consent. If the product is no longer covered under the warranty, an estimate of the repair, shipping and handling costs will be provided to the customer. Upon receipt of a PO or credit card number, the hardware will be repaired and shipped back to the customer. If a PO or credit card number is not provided, the devices may be returned unrepaired.*
- *Please be sure to ship the item(s) requiring a signature upon delivery. All packages must be shipped to Powerfleet, Inc. as freight prepaid.*
- *Items will be tracked according to the RMA number, so please be sure to include this number on the outside of the box, as well as on a label that is affixed to the unit(s). Any customer that does not note the RMA number on the box may be subject to a service charge and the product will be kept in a holding area until the discrepancy is resolved.*