System	Date of Issue	Type of Service Information
G2V2	12/10/15	☒ **Troubleshooting** ☐ **Procedure**

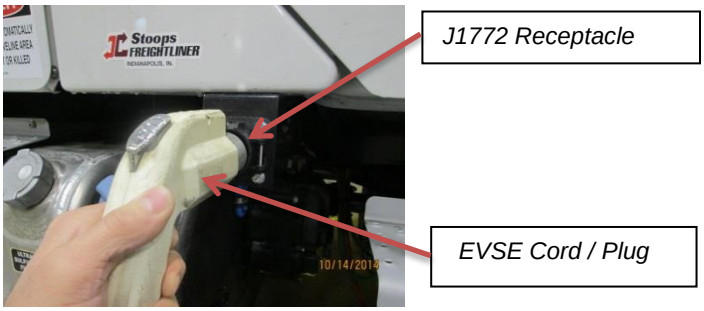
Title: Troubleshoot G2V2 Plug-In Charge Issues

This document describes how to test the Currentways Charger, Currentways Drive Away Module, and Wiring Harness on a G2V2 truck. Testing is typically performed when the State of Charge (SOC) of the RESS batteries is not increasing during plug-in charging.

Test Charger

1. Turn the ignition key **OFF.**
2. Power up the Electric Vehicle Supply Equipment (EVSE).

   NOTE: The Level 2 EVSE is powered continually by a circuit breaker located in the building's breaker panel.
3. Inspect the EVSE plug and the J1772 receptacle and remove dirt or debris as needed.
4. Plug the EVSE into the J1772 Receptacle on the vehicle. The SAE J1772 charge port is located below the cab, on either the street side, curbside, or at the rear of the vehicle.



EVSE to J1772

NOTE: It may take 1-2 minutes for the system to activate and the in-dash display to turn on, before charging begins.

5. If after several minutes charging does <u>not</u> start, consider the following.

   Connection – Make sure the EVSE plug is fully seated and latched. If not latched, the proximity switch will not close and charging cannot begin.

   Smart Grid – If the vehicle is equipped with a Pathways Multi-Protocol Router, charging may not start immediately because of demand on the grid, or economical energy rate restrictions.

   - If the facility is equipped with Smart Grid technology, the MPR communicates with the smart grid. The unit may delay the charging cycle until off-peak hours for the electrical grid.
   - If the facility doesn't have Smart Grid technology or the vehicle is off-site and not plugged into the smart grid, the Hybrid system communication may be delayed up to 15 minutes. When charging begins, diagnostic faults *550 pathways CAN time out*, *551 pathways server not found*, *552 previous session not complete*, or *553 pathways previous session Hybrid error,* may appear because there is no connection to the smart grid. These codes do <u>not</u> impact charging ability.

Test Pathways MPR (Multi-Protocol Router)

If the vehicle is equipped with a Pathways MPR, test the MPR. If not equipped, proceed to Test Currentways Drive Away Module procedures.

1. Locate the MPR. The location varies based on type of vehicle.
   - Conventional cab chassis – located to the rear of the street side battery pack (A).
   - Walk-in van chassis – located on the front of the street side battery pack (A).
2. Unplug the J42 connector from the MPR.
3. Plug EVSE into the truck. The system should respond and begin charging.
   - If the truck begins to charge, leave the EVSE plugged in for several hours to verify the system is charging properly. Then, contact Odyne (parts@odyne.com) and request an MPR delete plug part number 20282.
   - If the truck does not begin to charge or does not charge to >95%, continue with Test Currentways Drive Away Module procedures.

Test Currentways Drive Away Module

The Currentways Drive Away Module is located under the truck near the electronics bracket.

Drive Away Module

The function of each wire in the drive away module appears in the table below.

Wire Color	***Function***
Red	12 volt supply
Black	Ground
Green	Ground
Orange	Proximity input 1.4 VDC
Brown	Proximity out to charger 1.4 VDC
Yellow	Proximity out to HCU 12 VDC

Drive Away Module Wire Function

1. Plug the EVSE into the J1772 Receptacle socket.
2. Set a multi-meter to the DC volt setting, and check the voltage on the drive away module connector J15.
   a. Back-probe the Red and Black (ground) wires and verify battery voltage is **12 volts**. If 12 volts DC is not present, check the 5 amp fuse at F23 in PDM mounted on electronics bracket. Replace the fuse as needed.
   b. Back-probe the Orange and Black (ground) wires and verify voltage is around **1.4 volts**. If not, verify the button on EVSE is fully engaged / latched. (If not latched, the circuit from the Proximity switch is open and the reading is usually 2.5 volts.)
   c. Back-probe the Brown and Black (ground) wires and verify **1.5 volts**. If there is no voltage on the Brown wire or voltage is out of range (>1.5) on the Orange wire, replace the Currentways Drive Away Module.
   d. Back-probe the Yellow and Black (ground) wires and verify battery voltage is **12 volts**. If not, there is no signal from the HCU. Then, check the continuity from the J15 connector, Pin 4 to the J2 connector, Pin F1. If no continuity, there is a break in the wire or a terminal is not seated properly in the J15 or J2 connector.

Test Wiring Harness

If the tests for charger and drive away module do not identify the problem, test the wiring harness.

There are two types of EVSE plug-in charge ports. EVSE Level 1 is 120 volt AC, and EVSE Level 2 is 240 volt AC. Specifications listed in the table below appear for both types.

1. Check the Pilot signal circuit from J1772 to the charger. Using a multi-meter, back-probe the Blue (S239) wire from J1772 socket to chassis ground. Plug the EVSE into the J1772 socket and verify the following settings are present.

Level / Amp	*EVSE Contactor*	*Voltage (VDC)*
Level 1 EVSE 12 amp	Open	-7.8
Level 1 EVSE 12 amp	Closed	-8.4
Level 2 EVSE 20 amp	Open	-5.0
Level 2 EVSE 20 amp	Closed	-6.0
Level 2 EVSE 30 amp	Open	-1.5
Level 2 EVSE 30 amp	Closed	-3.0

Pilot Signal Circuit Settings

2. Check the fuse in PDM F19 to the charger. Replace the fuse as needed.

3. Check the J30 E-cup Diode.
   a. Plug the EVSE into the J1772 receptacle socket. Using a multi-meter, back-probe the wire in Pin #2 of the J30 connector to chassis ground. Verify that 12 volts DC is present (circuit is ok). If 12 volts is not present, inspect the J11 connector for loose or damaged connection.

   b. Check E-cup Diode continuity. Unplug the diode. Using a multi-meter in diode check mode, check the continuity between pin 2 and pin 4 to ensure continuity is present and diode is good. If continuity is not present the diode is bad, and replace the diode.

Odyne Service Support Resources:

To request technical assistance, contact ServiceSupport@Odyne.com.
To request parts, contact Parts@Odyne.com.