



PROTERRA



TECHNICAL SERVICE BULLETIN

7ISSUE DATE:	6/1/2020
SERVICE BULLETIN SUBJECT:	Traction Motor Inverter Enable Signal Retrofit
VINs or MODELS AFFECTED:	Service Specified Buses
COMPLETE BY:	Next Service Opportunity
SERVICE BULLETIN #:	SB-20-79

TRACTION MOTOR INVERTER ENABLE SIGNAL RETROFIT

NOTICE! It is expected that this process will require 4 hours per bus. Please schedule appropriately to minimize vehicle downtime.

Retrofit Description:

This retrofit changes the traction motor inverter enable signal from 12 to 24 volts to improve reliability.

Tools/Parts Required

Tools and Supplies Required:

- Wire Strippers
- Side Cutting Pliers
- Crimp Tool
- Pin Extractor
- Scissors
- Heat Gun
- Electrical Tape
- Ratchet
- 13mm Socket
- Calibrated Torque Wrench

Parts Required:

- 054221 RETROFIT KIT, FHT TM ENABLE 12V TO 24V (Consisting of)
 - 001542 WIRE, #14 AWG, TYPE GXL, LIGHT GREEN, (LGN) 6 FT
 - 001268 CONTACT, PIN, SIZE 12, FOR #12-14 AWG 2 EA
 - 002324 RING TERMINAL, #16-14 AWG, BLUE, #8 STUD, VINYL 1 EA
 - 026543 FUSEHOLDER: 20AMP 1 EA
 - 001911 CABLE TIE, STANDARD CROSS SECTION, 7.5 BLACK 10 EA
 - 008294 HEAT SHRINK, DOUBLE WALL, ADHESIVE, 1/4 4' STICK 5 IN
 - 014538 HIGH TEMP SPLIT LOOM, 1/4 ID BLACK 6 FT
 - 009513 15 AMP ATC FUSES/ 10 PACK 1 EA

Parts Required but not included in kit:

- 002332 BUTT CONNECTORS, NON INSULATED, #16-14 AWG 1 EA

Procedure:

1. Perform the Proterra approved Lockout/Tagout procedure to make the bus safe for work.
2. Using Wire Strippers, strip one end of the Green Wire (001542) to accept a Terminal.
3. Using a Crimp Tool, crimp a Pin (001268) onto the stripped end of the wire.
4. Using a Pin Extractor Tool, remove the Terminal and wire from Cavity 101 of PM900 on the Rear Deck Harness. This is the large pass through connector.
5. Seal the removed Terminals and wire with Heat Shrink (008294).
6. Insert the Pin (001268) on the Green Wire (001542) into Cavity 101 of PM900 on the Rear Deck Harness.
7. Route the free end of the new wire along the Rear Deck Harness to the Rear Deck VEC.
8. Using Side Cutting Pliers, cut the Green Wire (001542) to the proper length to reach the Rear Deck VEC and add the Fuse Holder (026543).
9. Using Wire Strippers, strip the free end of the Green Wire (001542) and both wires on the Fuse Holder (026543).
10. Using a Crimping Tool, crimp the wire onto the Fuse Holder (026543) using a Butt Splice (002332) and Heat Shrink (008294) to cover the splice.
11. Using a Crimping Tool, crimp the Ring Terminal onto the Fuse Holder (026543).
12. Install the Fuse (009513) into the Fuse Holder (026543).
13. Using a 13mm Ratchet/Socket, install the Ring Terminal onto the 24V Switched lug on the VEC.
14. Using a Calibrated Torque Wrench with a 10mm Socket, **torque the nut securing the ring terminal to 15 foot pounds.**
15. Secure the cut wire inside the Split Loom (014538) using Electrical Tape.
16. Using a Pin Extractor Tool, remove the wire and terminal from Cavity 2 of MUX7B.
17. Reinstall this terminal into Cavity 14 of MUX7A.
18. Using Cable Ties (001911), neatly secure the wiring inside the Split Loom (014538).
19. Remove the Lockout/Tagout devices and power on the bus.
20. Ensure that the Traction Motor is enabled, and no faults are present on the vehicle.
21. Return the bus to service.