



**Tico CNG Chassis
Electronic Control Unit (ECU)
Removal, Replacement and Isolation
ENP-723
May 30, 2019**

1. Introduction

The Agility service team has identified a potential issue related to the fuel system driveaway protection circuit on Tico compressed natural gas (CNG) tractors. Frequent starter engagements and exposure to high current in the starter circuit may cause the electronic control unit (ECU) to prematurely fail. ECU failure will lead to a no crank/no start condition.

Agility has designed a wiring harness to remedy this condition. As a precautionary measure Agility is also supplying a replacement ECU. After performing the repair, return the ECU with the supplied Repair Report Form using provided return merchandise authorization (RMA) label.



*Figure 1.
Fuel Management Module (FMM) (1) location on Tico CNG chassis.*

1.1 Warning Messages Used in this Bulletin

⚠ CAUTION

Damage to equipment, engine, fuel system or vehicle is possible if instructions are not followed.

NOTICE

Best practices or hints to help an operation or procedure go smoothly.

2. Affected Units

Tico CNG tractors.

3. Tools and Materials

Description	
Long Phillips screwdriver	7/16-in. socket wrench
10 mm wrench	9/16-in. socket wrench
Side cutters	Zip ties
Agility Fuel Solutions p/n 69500003 kit contents (<i>Figure 2</i>):	
Qty: 1 - ECU, p/n 20101205	
Qty: 1 - Relay harness, p/n 10400870	
Qty: 1 – TICO CNG ECU Report form ENP-038, p/n 69500004	

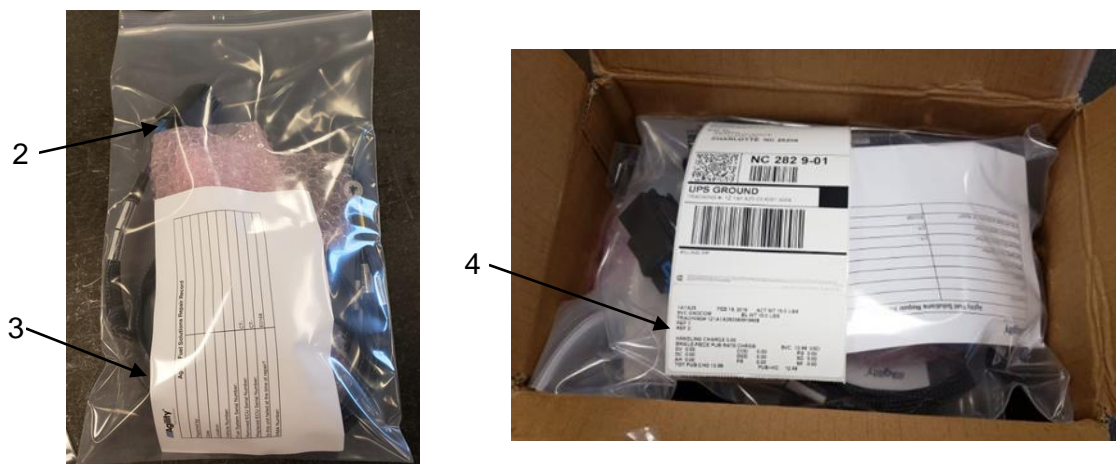


Figure 2.

Agility Fuel Solutions kit p/n 69500003 contents:

ECU (not visible), relay harness (2), report form ENF-038, (3), RMA label (4).

NOTE: If multiple repairs are required at a single facility the Agility package will contain a corresponding number of repair kits with a single RMA label (4). Figure 2

4. Corrective Action / Procedure

Remove and replace fuel system ECU and install replacement relay harness.

⚠ CAUTION

Observe all safety measures for CNG vehicle repair including all facility requirements.

⚠ CAUTION

- *Park vehicle, set parking brake, remove ignition key, and secure vehicle tires with wheel chocks.*
- *If equipped: Lock out/tag out battery disconnect.*

1. Locate fuel management module (FMM) (1) on driver's side frame rail. *Figure 1*
2. Remove 7/16-in. bolts (*not shown*) securing FMM bottom cover and remove FMM cover to gain access to fuel system ECU.
3. Locate ECU (2) on upper right-hand corner of FMM. *Figure 3*

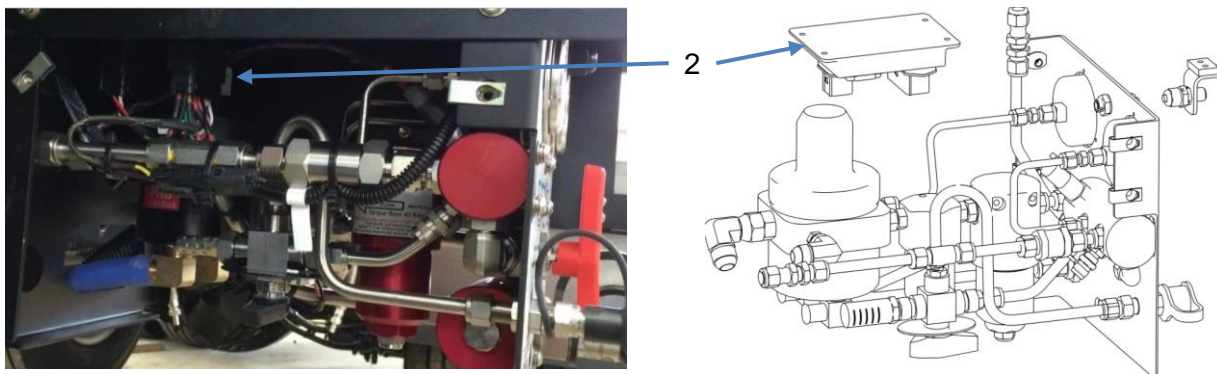


Figure 3.

FMM with cover removed to reveal ECU (2) location.

4. The ECU (2) is a black controller with three ports: 4-pin harness connector (5), 16-pin harness connector (6), 9-pin D-Sub connector (7) which should be capped. Figure 4

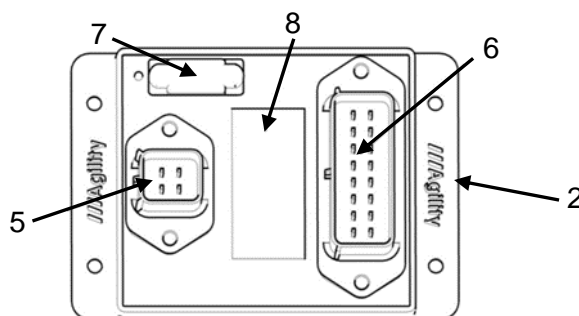


Figure 4.

Agility Fuel Solutions ECU (2), 4-pin harness connector (5), 16-pin harness connector (6), data label (8), NOTE: D-sub connector port (7) should be capped.

5. Remove wire harness connectors (9 & 10) from ECU by pressing locking tab (11) on the side of each connector housing while pulling connector downward. Figure 5

CAUTION Always remove harnesses using the connector and not the wires.

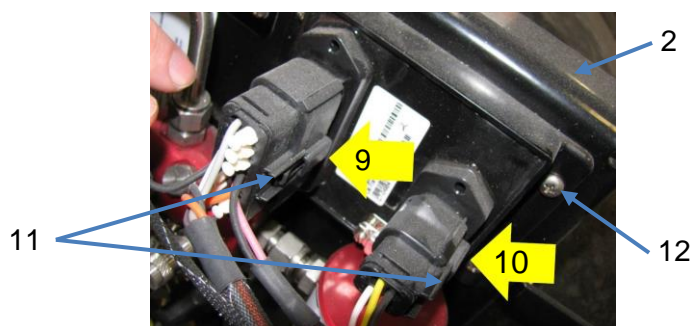


Figure 5.

Large yellow arrows indicate 4-pin (9) and 16-pin (10) connectors. Press each locking tab (11) while pulling on connector to remove harness from ECU (2).

CAUTION Avoid contact with ECU connector ports.

6. Using a long (~12-in.) Philips screwdriver and a 10mm wrench, remove ECU fasteners (12) securing ECU (2) to the FMM. *Figure 5*
7. Gently remove ECU (2) taking care not to damage connector contacts. *Figure 5*
8. Use provided repair report form ENF-038 (4) (*Figure 2*) to record the serial number from label (6) of both removed ECU and replacement ECU 20101205. *Figure 4*

NOTICE ECU serial number begins with “CT-”.

9. Install replacement ECU 20101205 (*not shown*) by reversing Steps 5 through 7.
10. Use 9/16-in. socket to remove four bolts (*not visible*) retaining catwalk grate (13). *Figure 6*



Figure 6.

Remove four 9/16-in. bolts (not shown) from locations indicated below catwalk grate (13).

11. Remove catwalk grate (13). *Figure 7*



Figure 7.

Move catwalk grate (13) aside to access grounding studs.

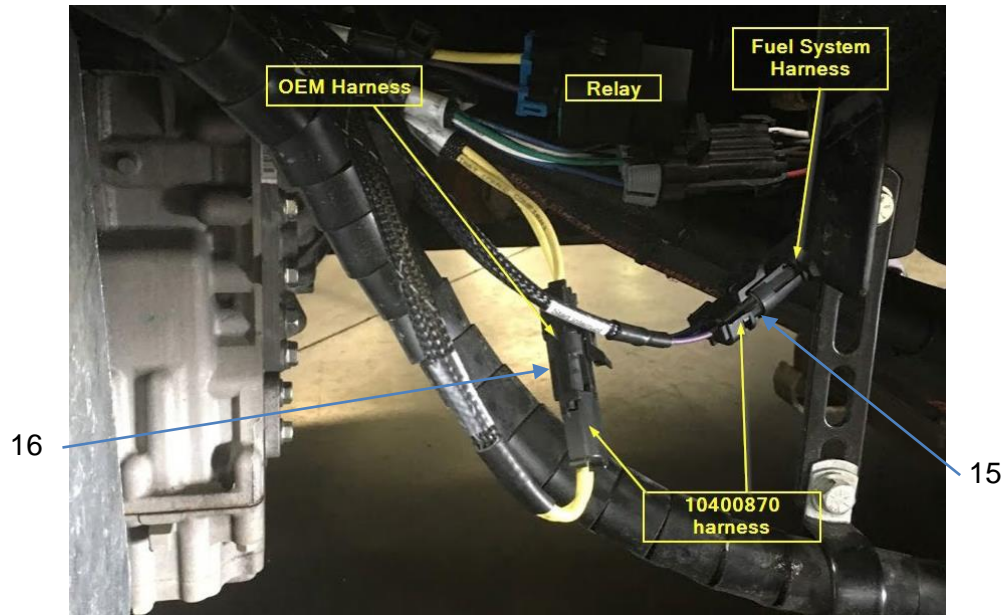


Figure 10.

Relay harness 10400870 installed in serial between OEM harness and fuel system harness.

15. Remove nut (22) from stud (20) on grounding plate at rear of cab and use it to secure relay harness grounding ring terminal (17). *Figure 11*

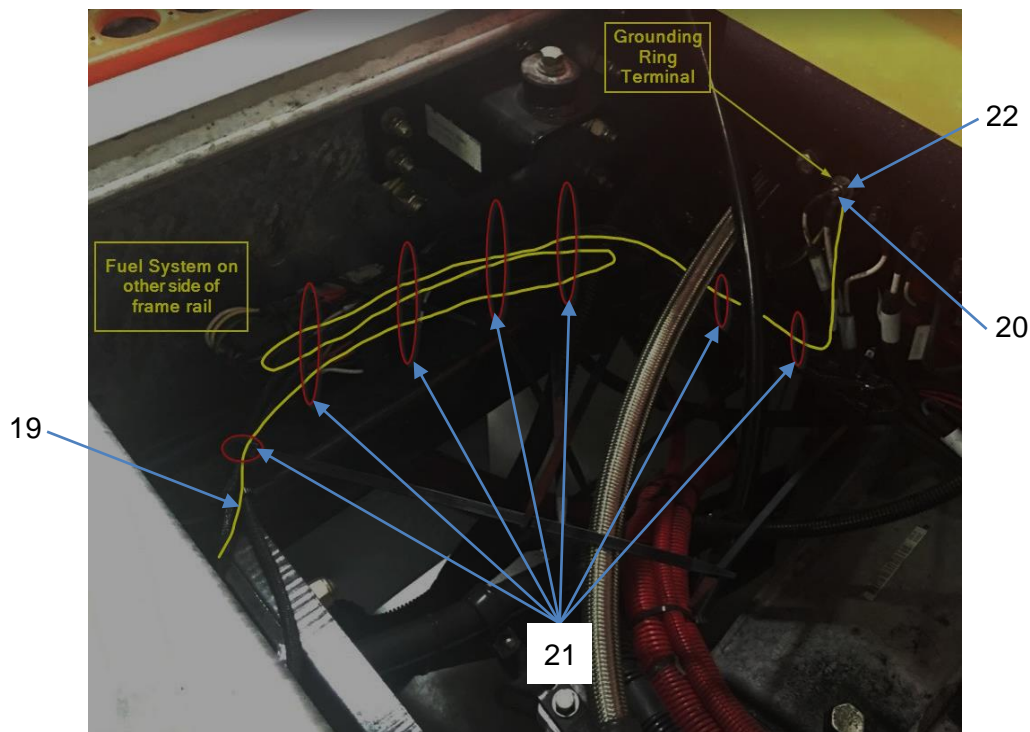


Figure 11.

Correct relay harness ground wire installation: line (19) shows routing, ovals (21) zip tie locations, grounding ring terminal stud (20) and nut (22).

16. Loop excess grounding wire length onto itself inside of frame (19), secure to OEM harness using zip ties at locations (21), and clip zip tie tag ends using side cutters. *Figure 11*
17. Route and secure relay harness to OEM harness using zip ties. *Figure 12. Refer also to "ENP-524: Natural Gas Fuel System Routing, Clipping and Installation Guide."*

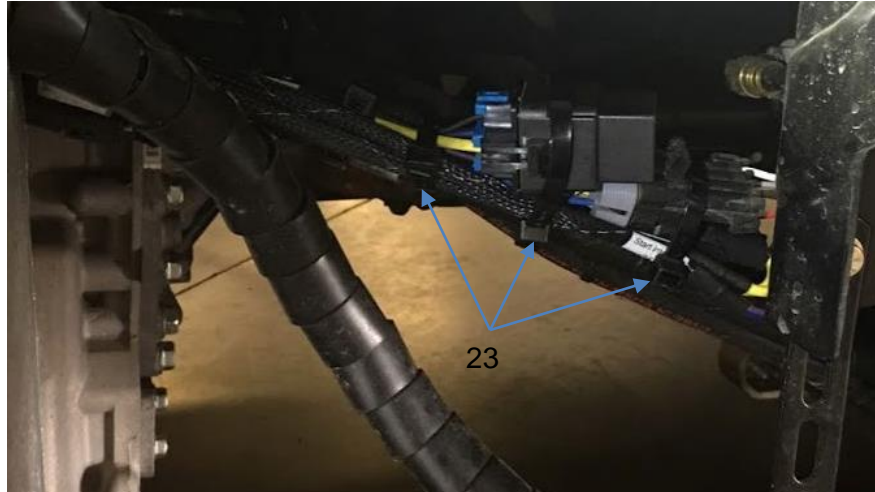


Figure 12.

Secure relay harness, connector junctions and relay to vehicle harness with zip ties at locations (23); use additional zip ties as needed.

18. Reinstall FMM bottom cover and confirm FMM door is closed.
19. *If equipped:* Remove lock out/tag out battery disconnect.
20. Verify proper vehicle operation.
21. Reinstall catwalk grate (13) using four bolts (*not shown*). *Figure 6*
22. Remove wheel chocks and return vehicle to service.
23. Update vehicle maintenance and repair records.
24. After completing the repair, please return the ECU following the steps below:
 - a. Return ECU(s) using the same shipping box Agility used for replacement kit(s).
 - b. Place ECU(s) along with completed ENF-038 report form(s) in the zip lock bag(s) from the replacement kit(s). *Figure 2*
 - c. Pack ECU(s) carefully to prevent damage during transport.
 - d. Affix RMA label (4) to box. If multiple kits were sent to the facility, one label is supplied to return all removed ECU(s). *Figure 2*

For reference, the correct shipping address is as follows:

Agility Fuel Solutions
ATTN: RMA Parts Return
10007 Elm Av
Fontana, CA 92335

- e. Write "RMA E0168" on outside of box.

5. Warranty Information

This procedure is covered under warranty. Standard repair time (SRT) is 0.8 hours. Please refer to Warranty Manual, ENP-067, for warranty reimbursement procedures.

For parts and support, contact Agility Fuel Solutions Customer Care: +1 949 267 7745, toll free: +1 855 500 2445 or parts@agilityfs.com

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