INCON®

Franklin Fueling Systems

Data Transfer Unit

Dispenser Retrofit Manual

Model TS-DTU

Franklin Fueling Systems • 3760 Marsh Rd. • Madison, WI 53718 USA
Tel: +1 608 838 8786 • 800 225 9787 • Fax: +1 608 838 6433 • www.franklinfueling.com

Important Safety Messages

Franklin Fueling Systems (FFS)/Healy equipment is designed to be installed in association with volatile hydrocarbon liquids such as gasoline and diesel fuel. Installing or working on this equipment means working in an environment in which these highly flammable liquids may be present. Working in such a hazardous environment presents a risk of severe injury or death if these instructions and standard industry practices are not followed. Read and follow all instructions thoroughly before installing or working on this, or any other related, equipment.

As you read this guide, please be aware of the following symbols and their meanings:

Warning This symbol identifies a warning. A warning sign will appear in the text of this document when a potentially hazardous situation may arise if the instructions that follow are not adhered to closely. A potentially hazardous situation may involve the possibility of severe bodily harm or even death.

Caution This is a caution symbol. A caution sign will appear in the text of this document when a potentially hazardous environmental situation may arise if the instructions that follow are not adhered to closely. A potentially hazardous environmental situation may involve the leakage of fuel from equipment that could severely harm the environment.

Warning **Follow all applicable codes governing the installation and servicing of this product and the entire system. Always lock out and tag electrical circuit breakers while installing or servicing this equipment and any related equipment. A potentially lethal electrical shock hazard and the possibility of an explosion or fire from a spark can result if the electrical circuit breakers are accidentally turned on during installation or servicing. Please refer to the Installation and Owner's Manual for this equipment, and the appropriate documentation for any other related equipment, for complete installation and safety information.**

Warning **Follow all federal, state and local laws governing the installation of this product and its associated systems. When no other regulations apply, follow NFPA codes 30A and 70 from the National Fire Protection Association. Failure to follow these codes could result in severe injury, death, serious property damage and/or environmental contamination.**

Warning **Always secure the work area from moving vehicles. The equipment in this manual is usually mounted underground, so reduced visibility puts service personnel working on this equipment in danger from moving vehicles entering the work area. To help eliminate these unsafe conditions, secure the area by using a service truck to block access to the work environment, or by using any other reasonable means available to ensure the safety of service personnel.**

Warning **Use circuit breakers for multiple disconnect to turn off power and prevent feedback from other dispensers.**

Important: All electrical and hydraulic plumbing fittings referred to in these instructions must be UL "listed" or "recognized" for the purpose.

Important: The TS-DTU will increase the current draw of the dispenser by 0.25 amps. Use the label supplied to note this change.

Contents

Important Safety Messages **2**
Purpose: 4
Specifications: 5
Tools Required 6

Installing the TS-DTU in the Dispenser **6**

Mounting the TS-DTU module **6**

Intrinsically Safe Wiring **6**

Connecting the Vapor Flow Meter and Vapor Pressure Sensor **7**
TS-VFM Splice 7
TS-VPS Splice 7

Dispenser Specific Installation **7**
Gilbarco Advantage Narrow Frame 8
Gilbarco Encore 300 and 500 Series 12
Tokheim Premier B 16
Tokheim Premier C 20
Wayne Vista 1 28
Wayne Vista 2 32
Wayne Vista 3 36

Purpose:

This procedure describes the tools, methods and skill levels required to install an INCON/Franklin Fueling Systems. Model TS-DTU, Data Transfer Unit in UL Approved Dispensers. Only INCON/ Franklin Fueling Systems trained and certified contractors will be able to perform these retrofits or warranty will be void. The installer shall be a skilled petroleum technician and thoroughly familiar with the requirements of State, Federal and local codes for installation and repair of gasoline dispensing equipment. Also, they shall be aware of all the necessary safety precautions and site safety requirements to assure a safe and trouble free installation. NOTE: All electrical fittings referred to in these instructions must be UL “listed” or “recognized” for the purpose.

Important Safety Messages

Before installing the equipment, read, understand and follow:
- The National Electrical Code (NFPA 70)
- The Automotive and Marine Service Code (NFPA 30A)
- Any national, state and local codes that may apply.

The failure to install the equipment in accordance with NFPA 30A and 70 may adversely affect the safe use and operation of the system. Accurate, sound installations reduce service calls: Use experienced, licensed contractors that practice accurate, safe installation techniques. Careful installation provides a sound troubleshooting framework for field repairs and can eliminate potential problems.

1. Read all instructions before beginning.
2. Follow all safety precautions:
   - Barricade the area.
   - Do not allow vehicles or unauthorized people in the area.
   - Do not smoke or allow open flames in the area.
   - Do not use power tools in the work area.
   - Wear eye protection during installation.
3. Use circuit breaker for multiple disconnects to turn off power and prevent feedback from other dispensers.

Specifications:

Power 100-240 VAC, 60 Hz, 0.25 A

Parts List

The TS-DTU kit consists of the following major components. Make sure you have these parts before installing the DTU.

Figure 1: TS-DTU/P Data Transfer Unit

- TS-DTU
- Mounting Plate
- Fasteners (5 screws, nuts, and washers)

Figure 2: 020-1513 IS Conduit Kit

- Straight Conduit Fitting
- 90degree Conduit Fitting
- Conduit Reducer
- Flexible Conduit (1/2”PVC)
- Two splice connectors

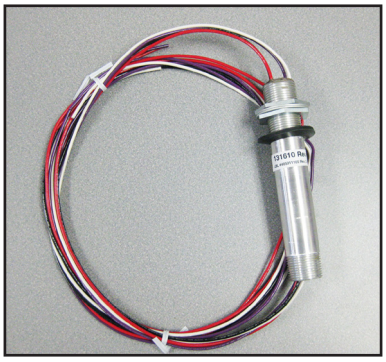


Figure 3: 131610 Potted Nipple Assembly

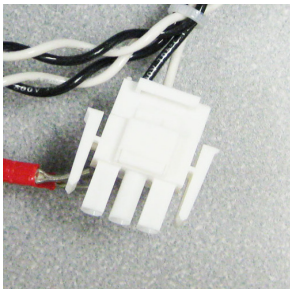
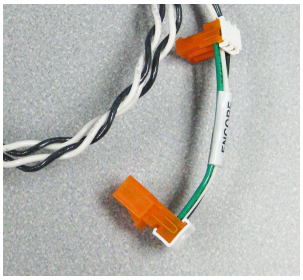
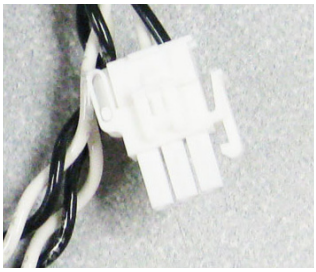
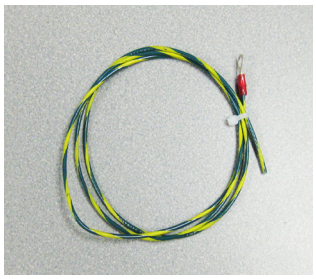
Wayne Dispenser Power Harness	
Gilbarco Dispenser Power Harness	
Tokheim Dispenser Power Harness	
One Green/Yellow Ground Wire with ring terminal	
Four Orange Wire Nuts	

Figure 4: 600-0165 Power Harness Kit

General Instructions

Tools Required

(This applies to all dispenser installation procedures)

- Assorted Open End Wrenches 1/4” through 3/4”
- Wire Cutters/Strippers 16 AWG to 26 AWG
- 3/8” Drill Assembly
- Assorted Drill Bits 1/16” through 7/16”
- Assorted Screwdrivers (Flat blade-one must be 1/8” wide)
- 3/4" Conduit Hole Punch (For potted nipple assembly)
- Electrical Multi-meter
- 12” adjustable Wrench
- 18” Channel lock Pliers

Attaching the Mounting Bracket

For each dispenser installation, the mounting bracket will need to be attached to the back side of the TS-DTU. Refer to each dispenser installation instruction as it will specify the correct orientation of the bracket

1. Remove the TS-DTU enclosure cover and set it aside.
2. Find the correct orientation for the mounting bracket in the dispenser-specific instructions.
3. Find two screws, washers, and star nuts from the TS-DTU/P kit. Insert the two screws into the two mounting holes of the front face of the TS-DTU enclosure.
4. Put the mounting bracket on the side of the DTU enclosure and install a washer and star nut.

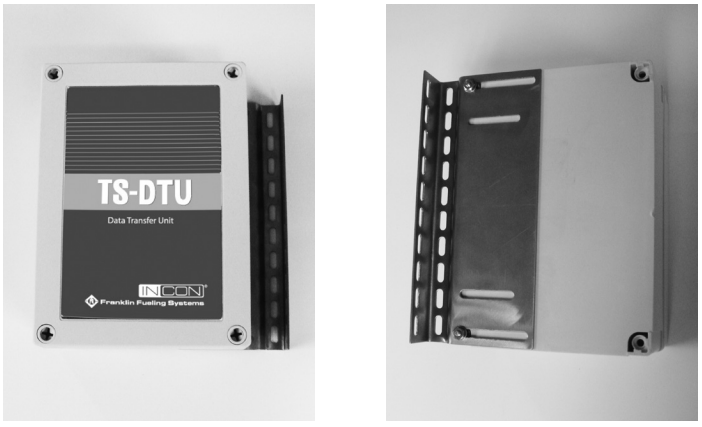


Figure 5: Mounting Bracket On Side Of Unit

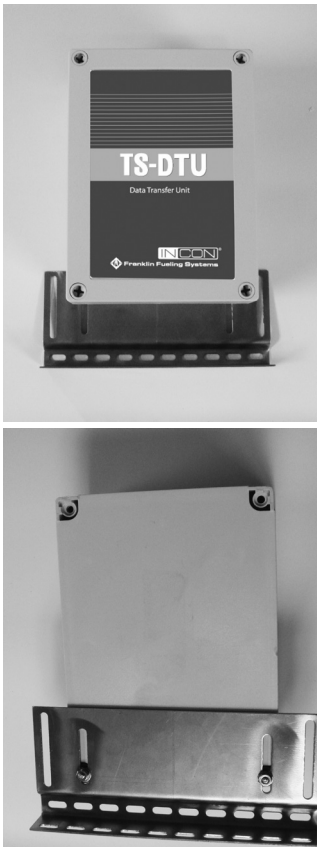


Figure 6: Mounting Bracket On Bottom Of Unit

Intrinsically Safe Wiring

The Intrinsically safe wiring is the same for all type of dispensers. The wires from the top end of a potted nipple should be connected to the TS-DTU module and from the bottom end to the TS-VFM and TS-VPS. These wires connect intrinsically safe devices (TS-VFM and TS-VPS) to the associated apparatus (TS-DTU) and therefore must be protected in non-hazardous area where TS-DTU is located.

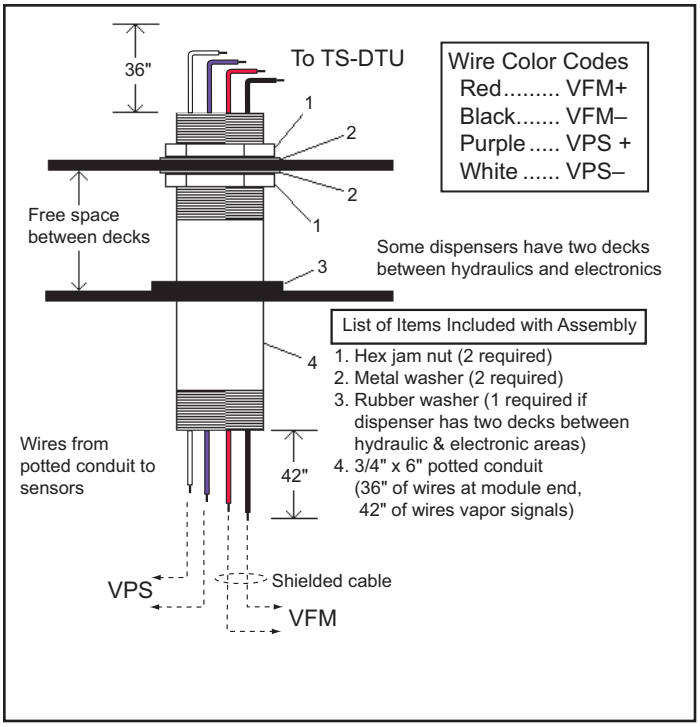


Figure 7: Potted Nipple Assembly

Follow the dispenser-specific instructions for the installation location and procedure of the potted nipple on the dispenser vapor barrier.

Connecting the Vapor Flow Meter and Vapor Pressure Sensor

The connection of potted nipple to the TS-VFM and TS-VPS in the lower section of the dispenser is the same for all dispensers. For ease of installation, a junction box may be connected directly to the bottom of the potted nipple. Note, the potted nipple is a ¾" conduit thread, see Figure 8.

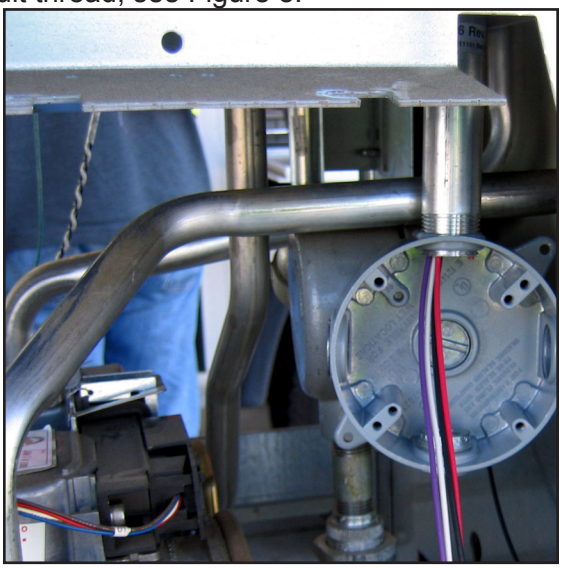


Figure 8: Junction Box Connected to Potted Nipple

TS-VFM Splice

1. Find two-splice connectors in the IS Wiring Kit, 020-1513.
2. Make the following splice connections:

- Red wire of potted nipped to Red wire of TS-VFM cable.
- Black wire of potted nipple to Black wire of TS-VFM cable.

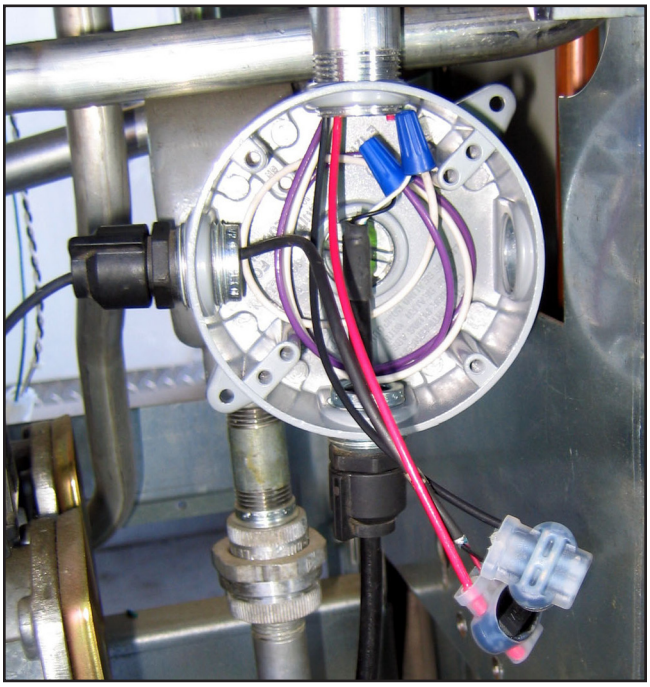


Figure 9: VFM and VPS Spices

TS-VPS Splice

1. Find two wire nuts in the Power Harness Kit, 600-0165.
2. Make the following splice connections:

- Purple wire of potted nipped to Black wire of TS-VPS cable.
- White wire of potted nipple to White wire of TS-VPS cable (Refer to Figure 9).

Dispenser Specific Installation

This manual covers the following types of dispensers:

Make	Type
Gilbarco	Advantage
	Encore 300 & 500
Tokheim	Premier B
Tokheim	Premier C
Wayne	Ovation
	Vista 1V, 2V, 3V

Gilbarco Advantage Narrow Frame

This section illustrates the basic components needed to retrofit a TS-DTU module into an existing or UL remanufactured dispenser. This system can be installed in any “Non-Vapor or Vapor Ready” dispenser including dispensers with existing “Balance” or “VacAssist” piping.

1. Loosen three bolts at the bottom of each main door assembly.

Figure 1: Loosen Bolts

2. Unlock the left options door on each main door.

Figure 2: Open Options Door

3. Lift latch on right side of left options door opening to release right options door on each side of the dispenser.

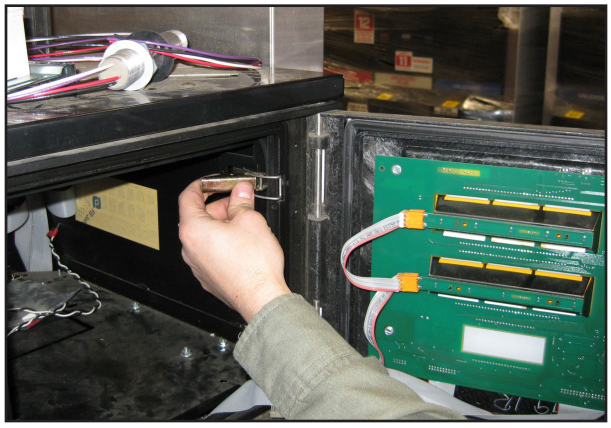


Figure 3: Release Options Door

4. Disengage two latches, one in each right and left options door openings, and open main door on both sides of dispenser.
5. Move to side A of dispenser. Side A can be determined by the side that the credit card reader (crind) tray pops out.
6. Find ground wire mounting location shown and remove screw and star washer.

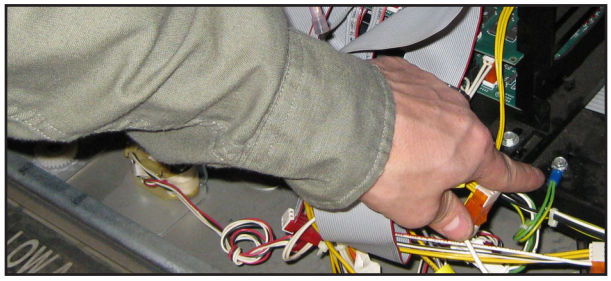


Figure 4: Find Ground Wire

7. Reinstall ground with ring terminal screw and star washer in alternate location shown. Tighten screw securely.

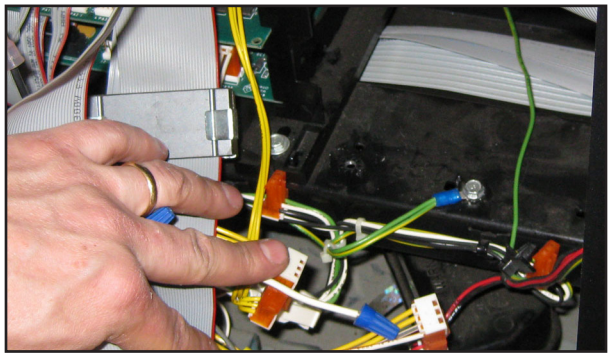


Figure 5: Reinstalled Ground Wire

8. Find shield covering opening in air gap and remove two bolts from shield. Retain shield and bolts for future reassembly.

Figure 6: Air Gap Shield

9. Remove two screws from upper air gap knock-out cover and remove. Discard cover but keep screws for reuse.

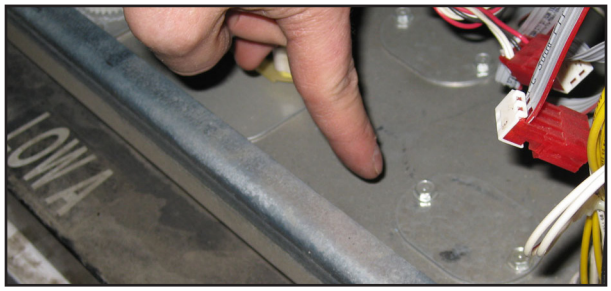


Figure 7: Remove Screws

10. Remove two screws from lower air gap knockout cover and remove. Discard cover and screws.
11. Remove lower door from side A of dispenser using key lock on right side of door. Save door for future reassembly
12. Find potted nipple assembly, 131610. Remove all washers and nuts and set aside.
13. Pull wires from top side of potted nipple assembly through dispenser hydraulics enclosure up through opening in lower air gap knock-out.

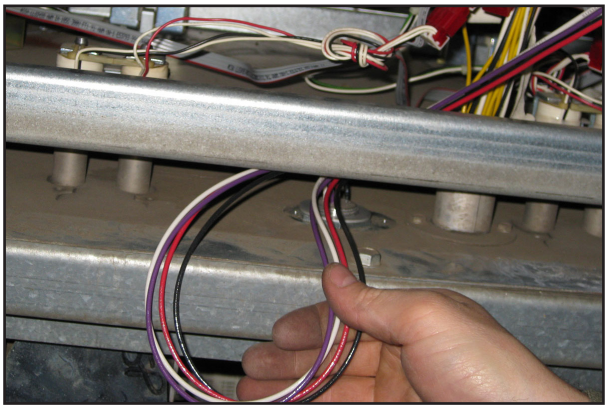


Figure 8: Potted Conduit wires

14. Attach one nut and washer onto the potted nipple assembly before pushing wires up through electrical enclosure.
15. Pull wires and then nipple assembly up into electronics enclosure. Fit washer and nut over wires and tighten nut securely in place, as shown in Figure 9.

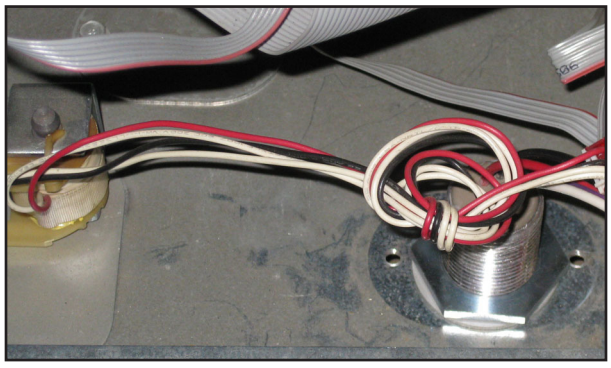


Figure 9: Potted Nipple Installed

16. Reattach air gap shield using screws previously retained in step 8.
17. Reinstall the screws previously retain in step 9. These screws seal the holes left behind by the air gap knockout.
18. Find TS-DTU/P kit and remove brackets, DTU, and hardware from box.
19. Remove cover from DTU.
20. Install mounting bracket to DTU with two screws, nuts and washers from hardware provided with DTU as described in the General Information section. Ensure that bracket is installed on correct side as shown.

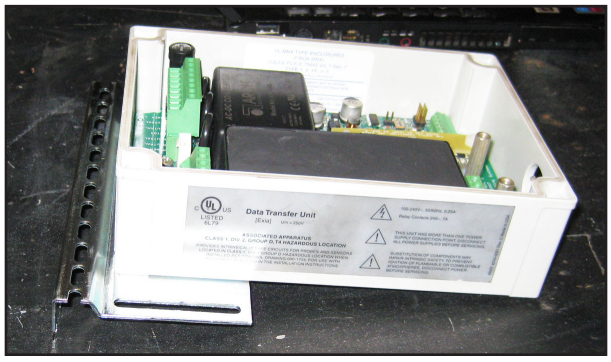


Figure 10: Mounting Bracket on DTU

21. Remove two screws from IS wiring cover inside the DTU and remove cover. Retain cover and screws for reassembly
22. Find the 90 degree fitting from IS wiring kit, 020-1513. Remove nut from 90 degree fitting. Attach fitting to opening nearest IS wiring terminal block of DTU using nut previously removed.
23. Find power harness kit part number 600-0165. Find the Gilbarco power harness and ground with ring terminal as shown in figure 4 of the Parts List.
24. Put wiring harness end with crimp connector through opening in DTU nearest terminal block J1. Attach white lead to terminal block position labeled NEUTRAL and black lead to terminal block position labeled L1 on terminal block J1 of DTU. Attach ground wire to terminal block position labeled GND of J2 on DTU.

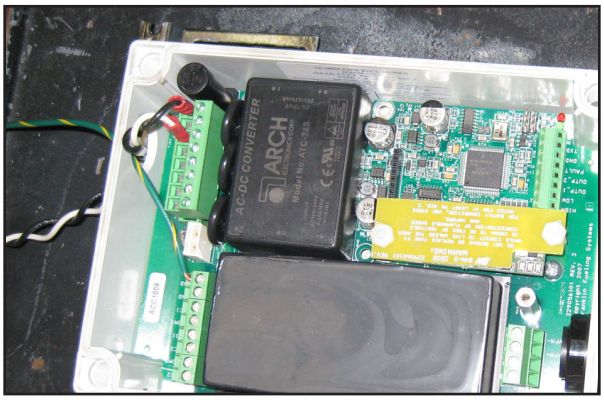


Figure 11: DTU Power Connections

25. Move DTU assembly to dispenser nearest intended mounting location

26. Find reducer from IS wiring kit, 020-1513. From electrical enclosure, pull wires from potted nipple assembly through 3/4” opening of reducer and attach reducer to the top of the nipple assembly.
27. Find straight conduit fitting from IS wiring kit, 020-1513. From electrical enclosure, pull wires from the potted nipple assembly through opening of straight conduit fitting. Attach straight conduit fitting onto the reducer.
28. Remove nut and bushing from straight conduit fitting. Place bushing on one end of flexible conduit. Push wires from nipple assembly through bushing / flexible conduit and secure flexible conduit to straight conduit fitting using nut.

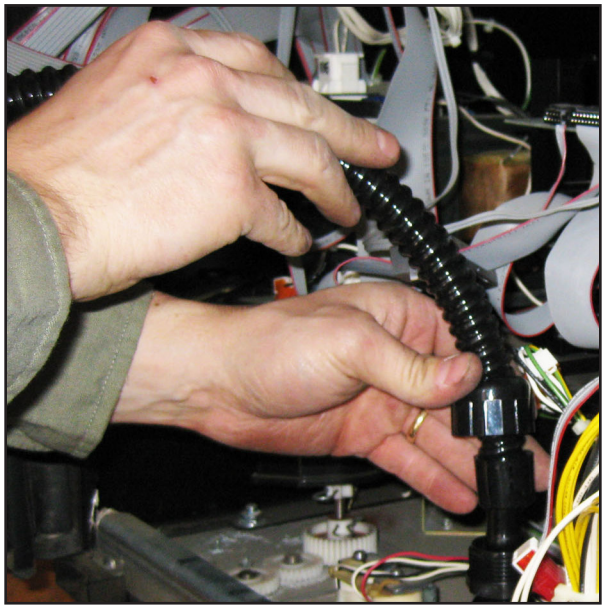


Figure 12: Attaching Flexible Conduit

29. Remove nut and bushing from 90 degree conduit fitting and push flexible conduit through nut. Put bushing on unattached end of flexible conduit. Push wires from flexible conduit through the 90 degree conduit fitting and pull excess wire into DTU. Attach flexible conduit to 90-degree fitting with nut.

Figure 13: Attach Flexible Conduit to DTU

30. Cut excess wire inside DTU allowing a length of 2” for terminal block wiring. Strip insulation $^{3}/_{8}$” from ends of wire. Attach wires to DTU terminal block as follows (DIAGRAM)

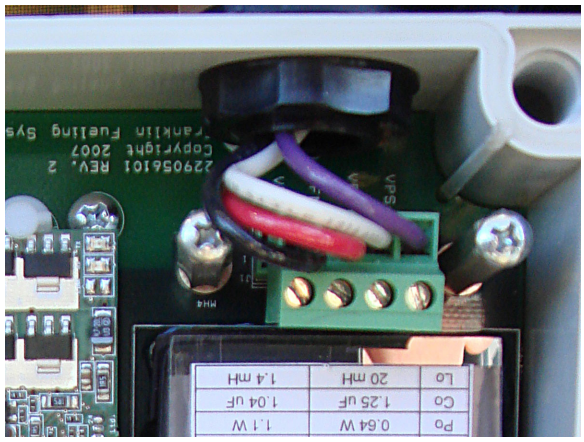


Figure 14: Attach Wiring to DTU

31. Reinstall barrier cover using screws that were removed in step 23.
32. Replace DTU cover.
33. Install the DTU assembly on the horizontal cross bracket as shown in Figure 15. Use the two screws, washers, and nuts as supplied in the TS-DTU/P hardware kit.

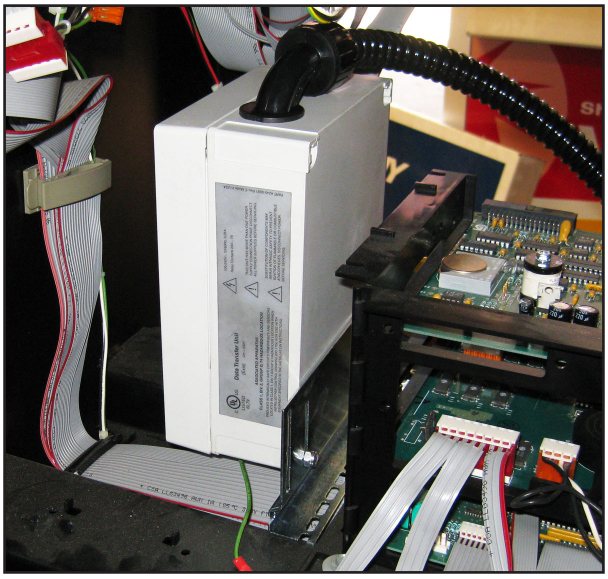


Figure 15: Attach DTU Mounting Bracket

34. Find unused connector on AC distribution wiring harness.
35. Attach connector from DTU power wiring harness to AC distribution wiring harness.

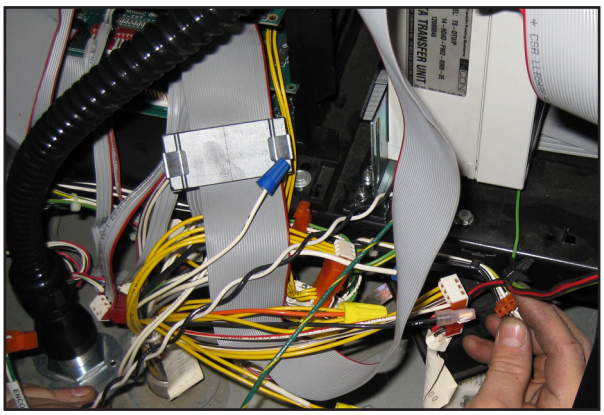


Figure 16: Connecting to Dispenser Power

36. Attach ring terminal of DTU ground wire to dispenser with bolt, nut and star washer.

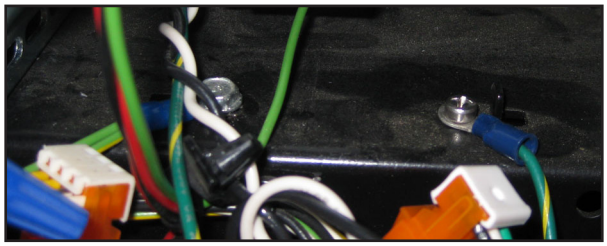


Figure 17: Attach Ground Wire

37. Use wire-wrap ties to attach excess wires from AC wiring harness together.
38. Use wire-wrap ties to attach excess wire from DTU power harness and ground away from door and gears.
39. Find cable assembly extending from TS-VFM vapor meter in dispenser hydraulics enclosure.
40. Find wiring from previously installed potted nipple assembly inside hydraulics enclosure.
41. Find two wire-splice connector kits. Inside hydraulics enclosure, connect black wire from potted nipple assembly to black wire from TS-VFM flow meter by placing each lead into an opening in the wire splice connector and push fitting closed to lock.
42. Find cable extending from TS-VPS inside hydraulics enclosure. Cut yellow and blue leads from end of cable.
43. Find purple and white wires from potted nipple assembly in hydraulics enclosure. Strip wiring insulation $^{3}/_{8}$" from end of wire.
44. Using wire nuts provided with kit, attach purple wire from potted nipple assembly to black wire of TS-VPS and white wire from potted nipple assembly to white wire of the TS-VPS.
45. Close main doors on Side A and Side B.
46. Engage main door latches located in both option openings for each side. Refer to figure 2 & 3.
47. Tighten the three bolts at the bottom of each main door assembly. See figure 1.
48. Reinstall side A lower dispenser door. Firmly attach using key lock on right side of door.

Gilbarco Encore 300 and 500 Series

This section illustrates the basic components needed to retrofit a TS-DTU module into an existing dispenser. This system can be installed in any “Non-Vapor or Vapor Ready” dispenser including dispensers with existing “Balance” or “VacAssist” piping.

1. Unlock interface doors on both sides of dispenser. Open two latches on left side of interface door and open main doors.

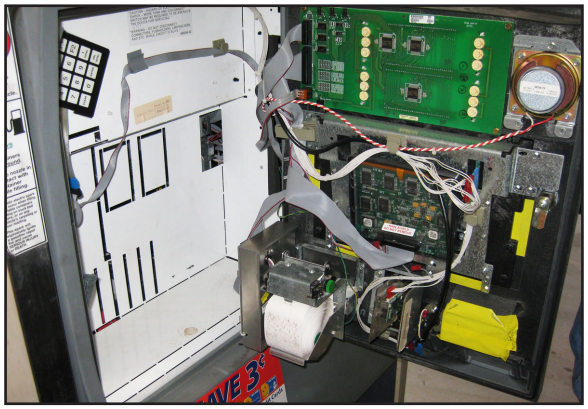


Figure 1: Open Doors

2. Find TS-DTU/P from kit and remove brackets, DTU, and hardware from box.
3. Remove cover from DTU.
4. Install mounting bracket to DTU using two screws, nuts and washers from hardware provided with DTU as described in the General Information section. Make sure the bracket is installed on correct side as shown.

Figure 2: Install Mounting Bracket

5. Install the DTU assembly on the horizontal cross bracket as shown in Figure 3. Use the two screws, washers, and nuts as supplied in the TS-DTU/P hardware kit.

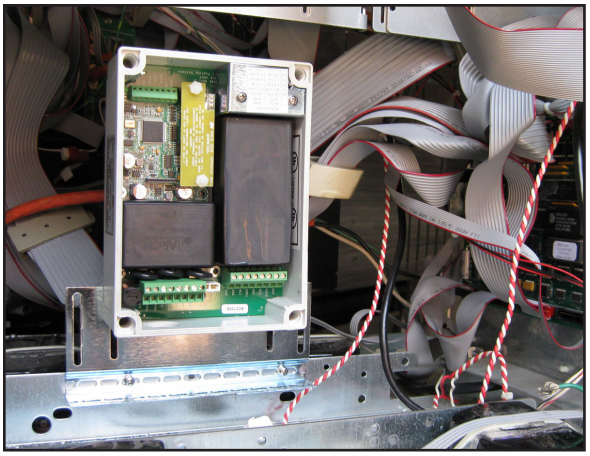


Figure 3: Mount DTU in Dispenser

6. Find power harness kit part number, 600-0165. Find the Gilbarco power harness as shown in figure 4 of the Parts List. Remove tie-wraps and uncoil.
7. Inside dispenser, find AC power distribution harness. Harness has three wires, white, black and green, with orange connectors. Attach orange connector from the end kit wiring harness to an open connector on the dispenser AC power distribution harness.

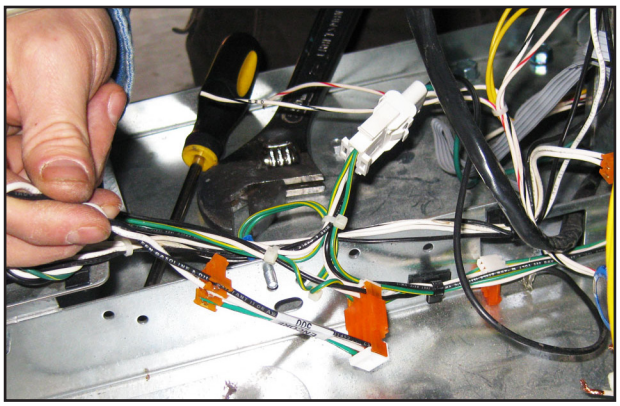


Figure 4: Power Distribution Wires

8. Carefully route DTU power wiring harness to DTU.

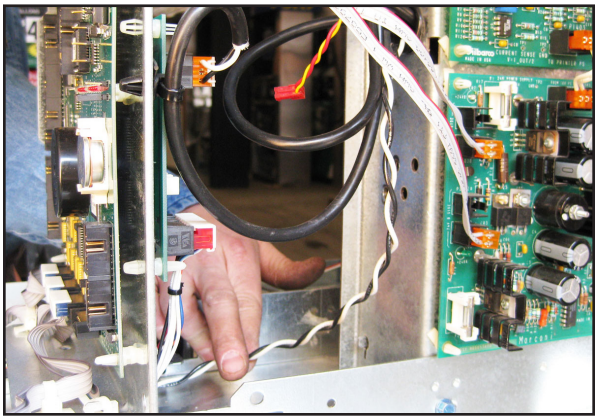


Figure 5: Power Wiring

9. Route crimp terminal end of harness through opening in the bottom of the DTU and connect white lead to terminal block position labeled NEUTRAL and black lead to terminal block position labeled L1 on terminal block J1 of DTU.

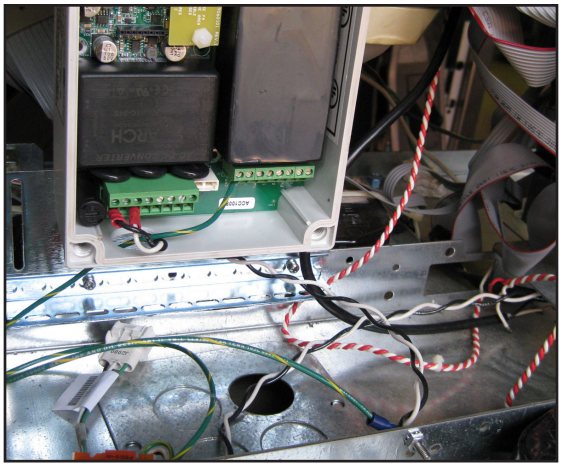


Figure 6: Connect Power Leads

10. Find ground wire from power harness kit 600-0165. Remove ties and uncoil. From end without ring coil, strip insulation 3/8” from end of wire.
11. Route ground wire end with out ring terminal through DTU and secure to terminal block.
12. Attach ring terminal of ground wire to dispenser bracket using screw and nut as shown. Coil excess wiring and tie it to ensure that it does not interfere with door closing.

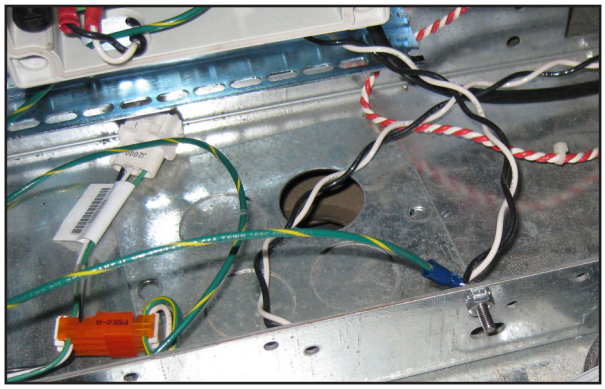


Figure 7: Attach Ground Wire

13. Find side of dispenser opposite of power supply. Remove lower door on that side of dispenser by loosening two screws.
14. Remove lower doors on both sides of dispensers. Set doors aside and save for later assembly
15. Find knockout panel on the bottom of the electrical enclosure closest to the DTU (See Figure 7).
16. Using screwdriver, remove one knockout plug from knockout panel.
17. Find potted nipple assembly, 131610. Undo wire ties and uncoil wiring.
18. Remove top nut from potted nipple and remove one washer by pulling over wire leads. Keep nut and washer for future use.
19. Pull wires from top of potted nipple assembly up through the opening created in step 16 from the hydraulics enclosure to the electrical enclosure. Ensure that wiring is not damaged by sharp edges.

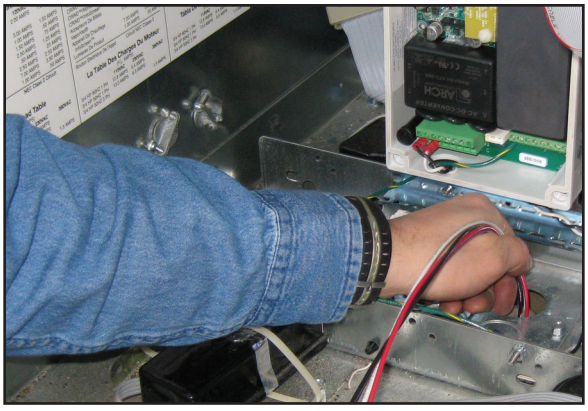


Figure 8: Pulling Wires Through Opening

20. Pull top of potted nipple assembly through the bottom of the electrical enclosure as shown in Figure 9.

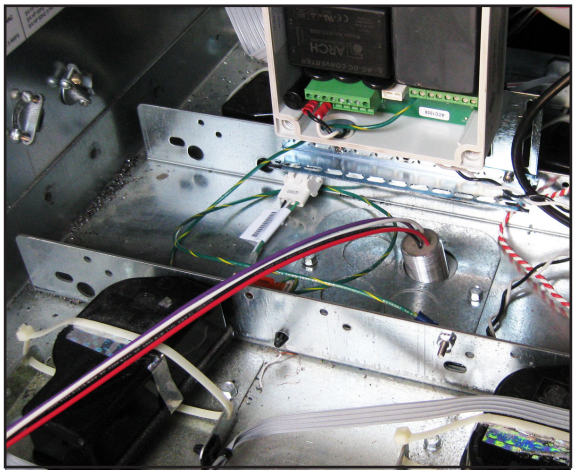


Figure 9: Potted Nipple in Position

21. Put wires in electrical enclosure through washer and nut that were removed from potted nipple assembly in step 18.
22. Tighten nut to tightly hold potted nipple assembly.
23. Find reducer from IS wiring kit, 020-1513. From electrical enclosure, pull wires from the potted nipple assembly through ¾” opening of reducer and attach reducer to the top of the nipple assembly.

24. Find straight conduit fitting from IS wiring kit 020-1513. From electrical enclosure, pull wires from the potted nipple assembly through opening of straight conduit fitting. Attach straight conduit fitting onto the reducer. Refer to Figure 10.

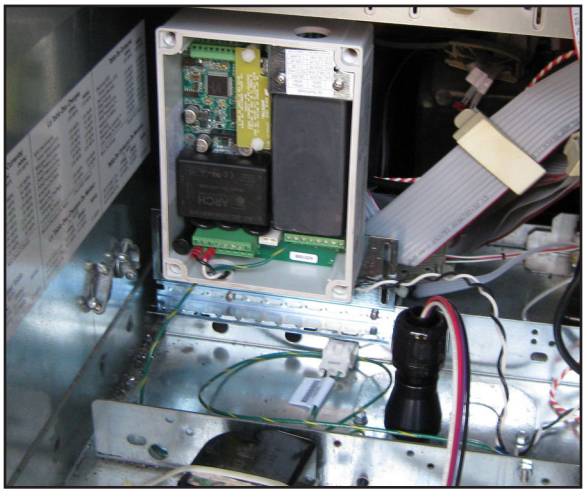


Figure 10: Reducer Installed

25. Remove two screws from IS wiring cover inside the DTU and remove cover. Keep cover and screws for future reassembly.
26. Find the 90-degree fitting from IS wiring kit, 020-1513. Remove nut from 90-degree fitting. Attach fitting to opening of DTU nearest the IS connector using nut previously removed.

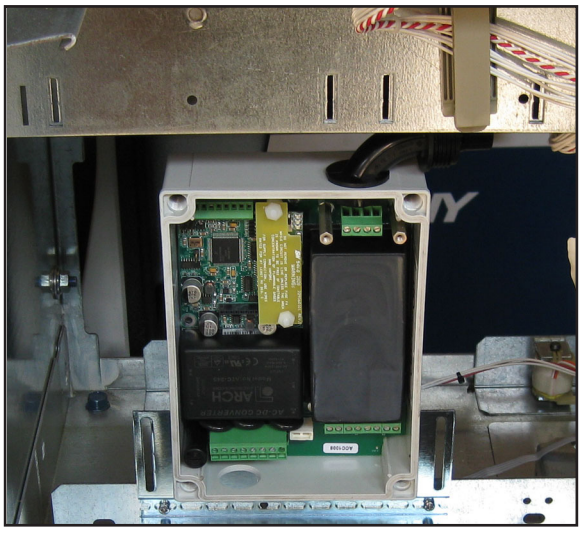


Figure 11: 90-degree Fitting Installed

27. Find the flexible conduit from the IS Wiring Kit, 020-1513. Using 90-degree fitting and straight fitting installed earlier, determine length of flexible conduit assembly needed and cut to fit. Refer to Figure 12.

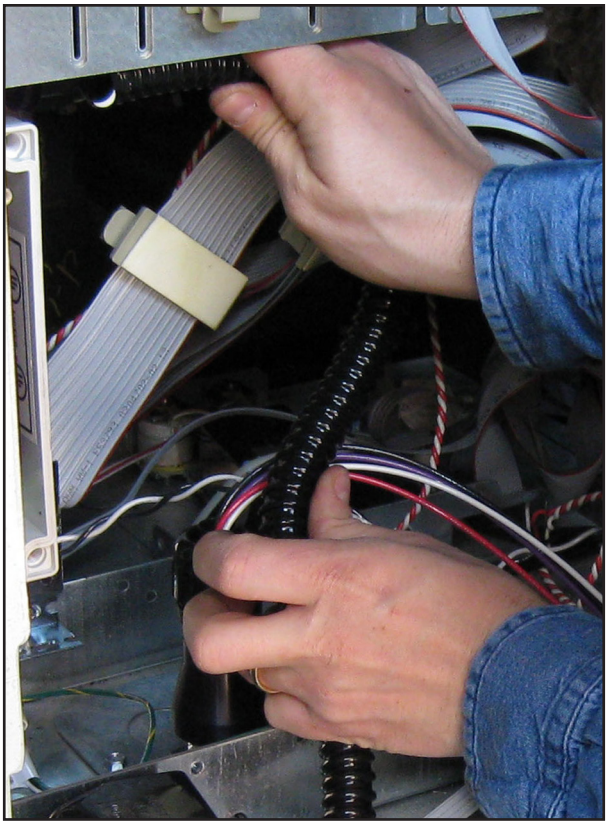


Figure 12: Flexible Conduit Installation

28. Pull wires from potted nipple assembly through flexible conduit.
29. Remove nut and bushing from straight conduit fitting.
30. Push bushing onto end of flexible conduit and reattach to straight fitting using nut.
31. Remove bushing and nut from 90-degree conduit fitting on DTU and pull wiring/flexible conduit through.
32. Route wires through 90-degree conduit fitting and pull into the DTU enclosure.

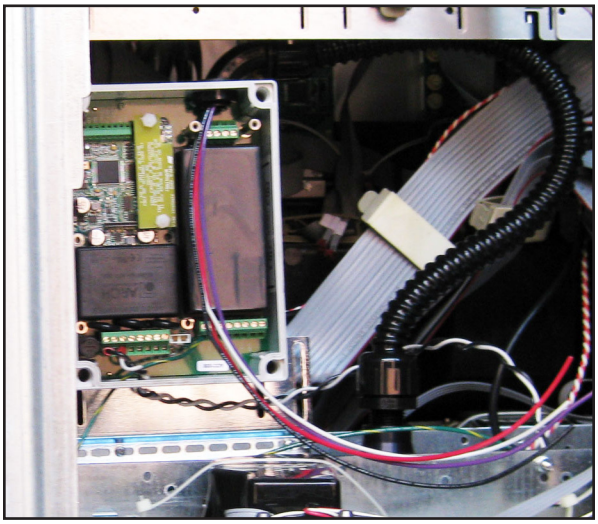


Figure 13: Wires in Flexible Conduit

33. Using nut and then bushing, attach flexible conduit to 90-degree conduit fitting.

34. Cut excess wire inside DTU allowing a length of 2” for terminal block wiring. Strip wire insulation 3/8” from the end. Connect wires to DTU terminal block.

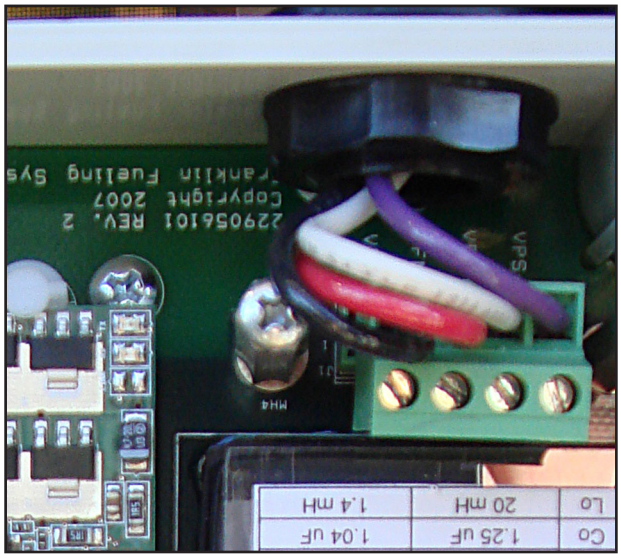


Figure 14: Wiring Connection to DTU

35. Reinstall barrier cover using screws from step 23.

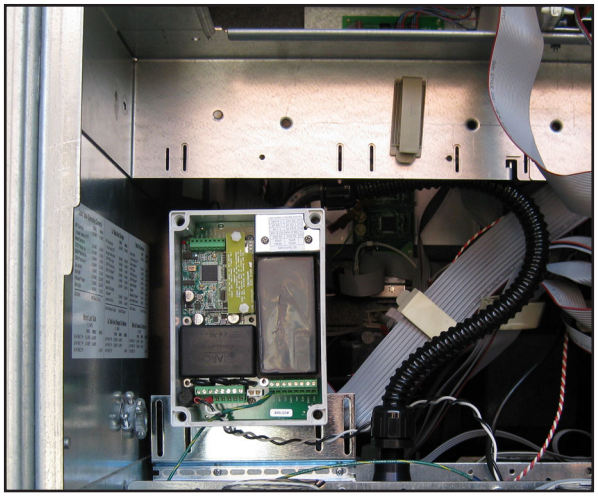


Figure 15: Reinstall Barrier

36. Replace DTU cover.

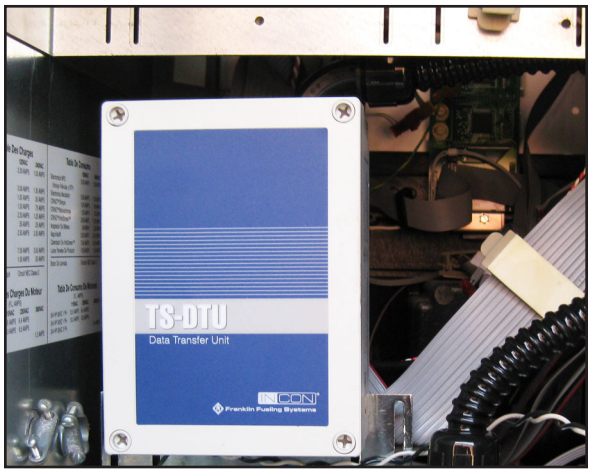


Figure 16: Replace Cover

37. Find cable assembly extending from TS-VFM vapor meter in dispenser hydraulics enclosure.
38. Find wiring from previously installed potted nipple assembly inside hydraulics enclosure.
39. Find two wire splice connector kits. Inside hydraulics enclosure connect black wire from potted nipple assembly to black wire from TS-VFM flow meter by putting each lead into an opening in the wire splice connector and push fitting closed to lock.
40. Find cable extending from TS-VPS inside hydraulics enclosure. Cut yellow and blue leads from end of cable.
41. Find purple and white wires from potted nipple assembly in hydraulics enclosure. Strip wiring insulation 3/8” from end of wire.
42. Using wire nuts provided with kit, attach purple wire from potted nipple assembly to black wire of TS-VPS and white wire from potted nipple assembly to white wire of the TS-VPS.
43. Attach lower hydraulics covers to dispenser and secure each using key lock.
44. Close both main doors of dispenser. Securely attach the two latches on the left side of each interface door.
45. Close both interface doors and lock.

Tokheim Premier B (422B)

This section illustrates the basic components needed to retrofit a TS-DTU module into an existing dispenser. This system can be installed in any “Non-Vapor or Vapor Ready” dispenser including dispensers with existing “Balance” or “VacAssist” piping.

Note: Conduit knockouts measure 1 1/4”. Holes are too small for conduits to make a good seal. These knockouts cannot be used. New conduit knockouts will need to be made.

1. Open right options door with key on Side A of dispenser. Side A has manufacturer’s nameplate. Remove door and set aside for future installation.

Figure 1: Unlocking door

2. Open printer door on B side of dispenser.

Figure 2: Unlock Printer Door

3. Unlock right options door on B side of dispenser.

Figure 3: Release Latch

4. Release latch on display cover on B side of dispenser.

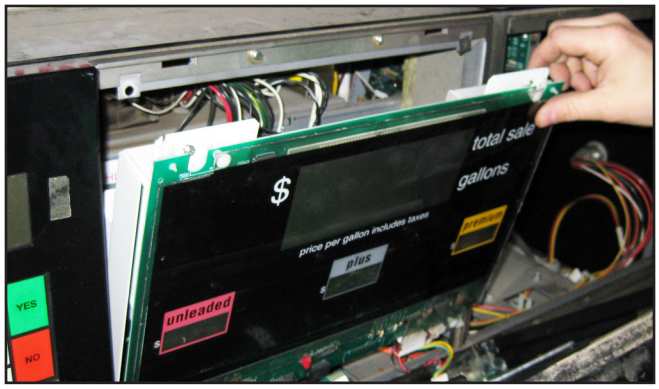


Figure 4: Lower Display Assembly

5. Loosen two screws on display assembly and lower it.
6. Remove lower hydraulics door from side A of dispenser by releasing key lock on either side of door.
7. From side A of dispensers, examine opening on right side of electrical enclosure. Choose drilling location ensuring that components in electrical enclosure and hydraulics enclosure will not be disturbed by the drilling. Use washer to insure proper clearance after install.

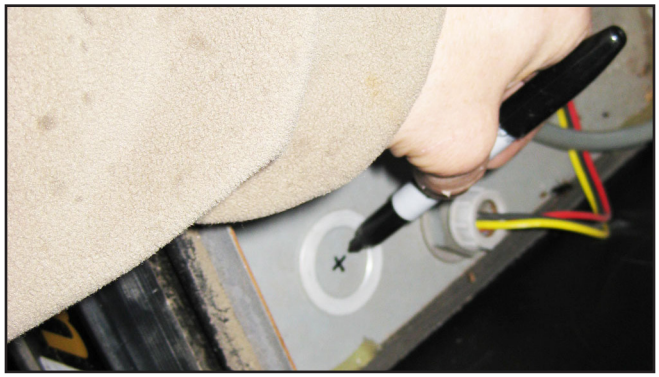


Figure 5; Mark Drilling Location

8. Using a low speed pneumatic drill, drill a small pilot hole through the bottom of the electrical enclosure.

Note: During drilling, put a catch pan under the drilling location to catch shavings and metal filing during drilling operation.

9. Carefully remove all metal filing and shavings from inside of electrical enclosure.

10. Using a ¾” conduit hole punch, open hole previously drilled.

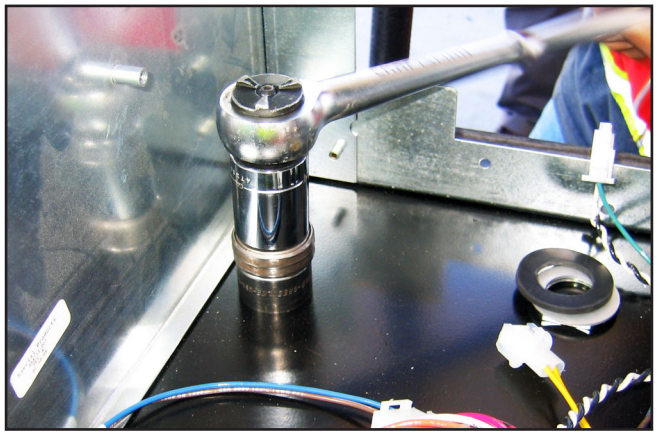


Figure 6: Use Hole Punch

11. Find potted nipple assembly, 131610. Undo wire ties and unwind wiring.
12. Remove and dispose of rubber washer from assembly.
13. Remove top nut and washer from potted nipple. Keep nut and washer for future use.
14. Pull wires from top of potted nipple assembly up from the hydraulics enclosure to the electrical enclosure. Make sure wiring is not damaged by sharp edges.
15. Pull top of potted nipple assembly through opening in electrical enclosure. Push wires inside electrical enclosure through washer and nut retained in step 13. Securely attach potted nipple assembly by tightening nut.

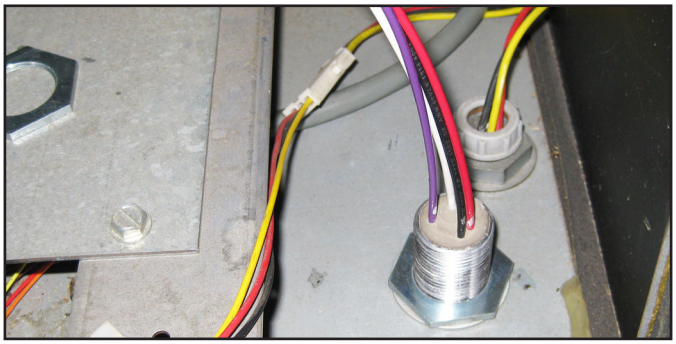


Figure 7: Potted Nipple Assembly Attached

16. Find reducer from IS wiring kit 020-1513. From electrical enclosure, pull wires from the potted nipple assembly through ¾” opening of reducer and thread reducer to the top of the nipple assembly.
17. Find straight conduit fitting from IS wiring kit. From electrical enclosure, pull wires from the potted nipple assembly through opening of straight conduit fitting. Attach straight conduit fitting onto the reducer.
18. Find TS-DTU/P kit and remove brackets, DTU, and fasteners from box.
19. Remove cover from DTU.

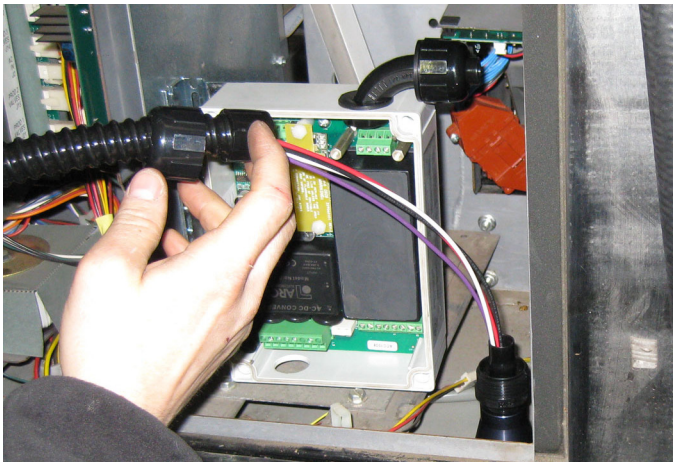
Figure 8: DTU Open

20. Install mounting bracket to DTU with two screws, nuts and washers from hardware provided with DTU as described in the General Information section. Ensure that bracket is installed on correct side as shown.
21. Remove two screws from IS wiring cover inside the DTU and remove cover. Retain cover and screws for future reassembly
22. Find 90-degree fitting from IS wiring kit. Remove nut from 90-degree fitting. Attach fitting to opening nearest IS wiring terminal block of DTU using nut previously removed.

Figure 9: Attach 90-degree Fitting

23. Find power harness kit part number 600-0165. Find the Tokheim power harness and ground wire with ring terminal as shown in figure 4 of the Parts List. Remove tie-wraps and uncoil.
24. Route wiring harness end with crimp connector through opening in DTU nearest terminal block J1. Attach white lead to terminal block position labeled NEUTRAL and black lead to terminal block position labeled L1 on terminal block J1 of DTU. Attach ground wire to terminal block position labeled GND of J2 on DTU.

25. Remove nut and bushing from straight conduit fitting. Place bushing on one end of flexible conduit. Push wires from nipple assembly through bushing/flexible conduit and attach flexible conduit to straight conduit fitting using nut.



Φιγυρε 10: Ατταχη Φλεξιβλε Χονδυιτ το Ποττεδ Νιππλε

26. Remove nut and bushing from 90-degree conduit fitting and pull flexible conduit through nut. Attach bushing on unattached end of flexible conduit. Pull wires from flexible conduit through the 90-degree conduit fitting and pull excess wire into DTU.
27. Attach flexible conduit to 90-degree fitting with nut.

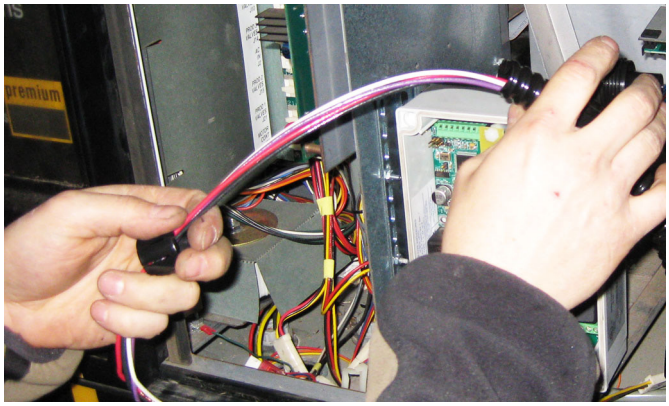


Figure 11: Attach Flexible Conduit to 90-Degree Fitting

28. Cut excess wire inside DTU allowing a length of 2” for terminal block wiring. Strip wire insulation 3/8’ from the ends of wire. Attach wires to DTU terminal block as follows.

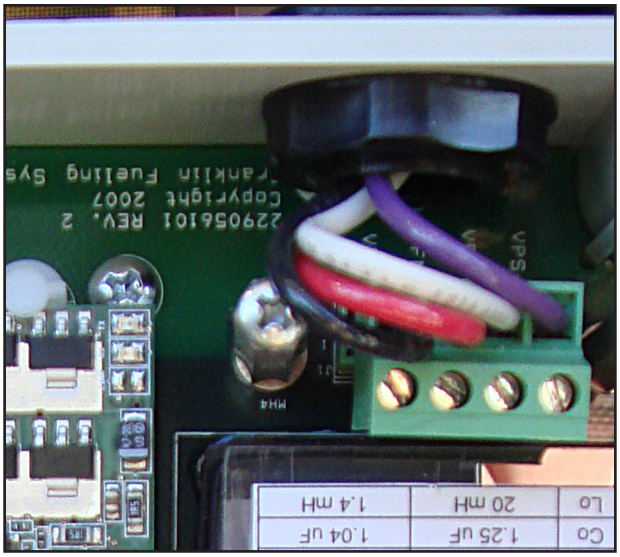


Figure 12: Wiring Connection to DTU

29. Reinstall barrier cover using screws uninstalled in step 23.

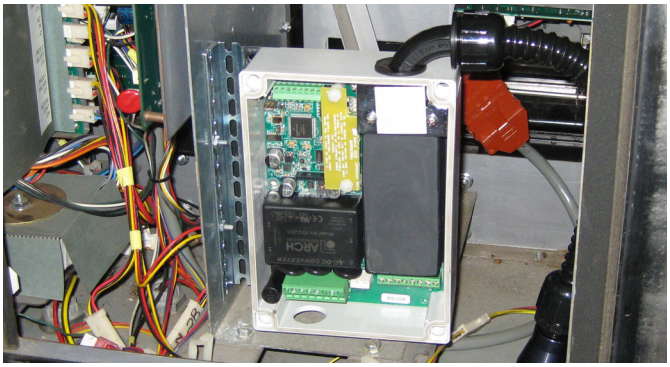


Figure 13: Reinstall Barrier Cover

30. Replace DTU cover.
31. Install the DTU assembly on the dispenser vertical bracket as shown in Figure 14. Use the two screws, washers, and nuts as supplied in the TS-DTU/P hardware kit.

Figure 14: DTU Attached to Dispenser

32. Route power cable along bottom of electrical enclosure and attach to AC power distribution board as shown. Ensure that wiring is kept away from sharp edges and will not interfere with door closing.
33. Plug the connector from the Tokheim power harness into available connector on AC power distribution board.

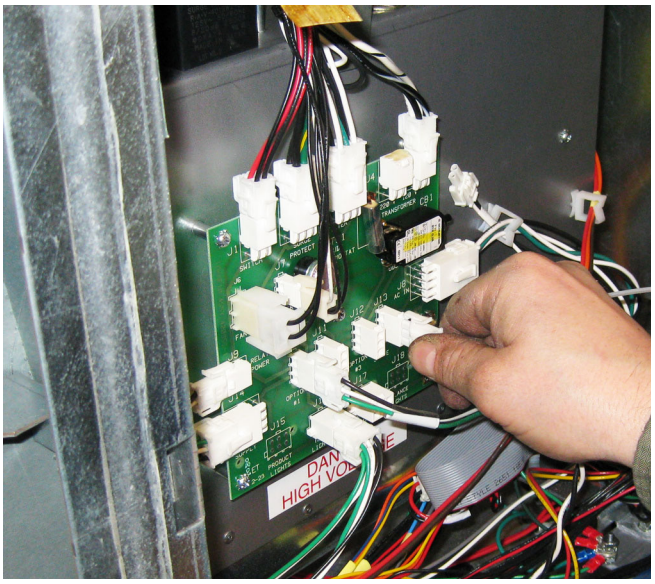


Figure 15: Connect to AC Power Board

34. Attach ring terminal of ground wire to dispenser bracket using screw and nut as shown. Coil excess wiring and secure with tie-wraps to ensure that it does not interfere with door closing.

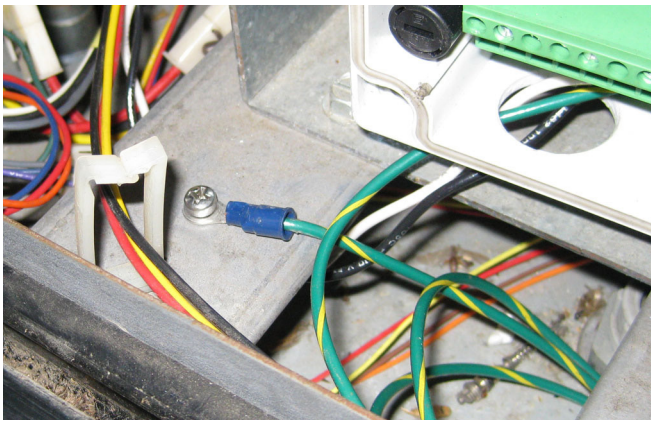


Figure 16: Attach Ground Wire

35. Find cable assembly extending from TS-VFM in dispenser hydraulics enclosure.
36. Find wiring from previously installed potted nipple assembly inside hydraulics enclosure.
37. Find two wire splice connector kits. Inside hydraulics enclosure, connect black wire from potted nipple assembly to black wire from TS-VFM flow meter by putting each lead into an opening in the wire splice connector and push fitting closed to lock.
37. Find cable extending from TS-VPS inside hydraulics enclosure. Cut yellow and blue leads from end of cable.
37. Find purple and white wires from potted nipple assembly in hydraulics enclosure. Strip wiring insulation 3/8”from end of wire.
40. Using wire nuts provided with kit, attach purple wire from potted nipple assembly to black wire of TS-VPS and white wire from potted nipple assembly to white wire of the TS-VPS.
41. Replace lower hydraulics door to side A and lock with key.
42. Lift the display assembly back to normal position and tighten with two attached screws.
43. Lock latch on display cover on B side of dispenser.
44. Close right options door on B side and lock.
45. Close printer door on B side and lock.
46. Close right options door on A side and lock.

Tokheim Premier C

This section illustrates the basic components needed to retrofit a TS-DTU module into an existing dispenser. This system can be installed in any “Non-Vapor or Vapor Ready” dispenser including dispensers with existing “Balance” or “VacAssist” piping.

1. Unlock left door from each side of dispenser and open the door.

Figure 1: Unlock Door

2. Release inside latch from left door assembly and open center door.

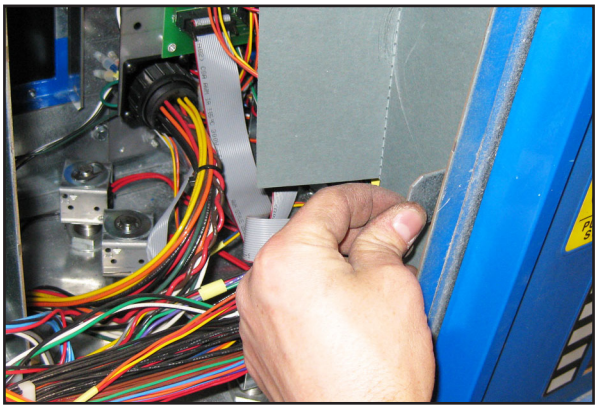


Figure 2: Release Inside Latch

3. Repeat step 2 for right door assembly.

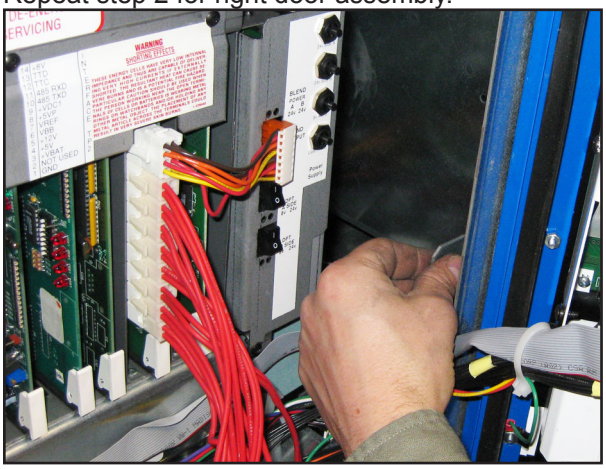


Figure 3: Right Door Assembly

4. Find side B of dispenser. Side B will be the side without the AC distribution board. Unit will be installed on the right side of side B
5. Find TS-DTU/P kit and remove brackets, DTU, and fasteners from box.
6. Remove cover from DTU.
7. Install mounting bracket to DTU with two screws, nuts and washers from hardware provided with DTU as described in the General Information section. Ensure that bracket is installed on correct side as shown.

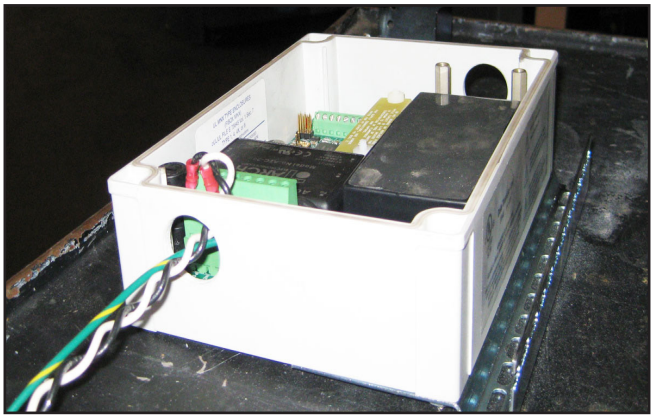


Figure 4: Attaching DTU

8. Remove two screws from IS wiring cover inside the DTU and remove cover. Keep cover and screws for future reassembly.
9. Find 90-degree fitting from IS wiring kit 020-1513. Remove nut from 90 degree fitting. Attach fitting to opening nearest IS wiring terminal block of DTU using nut previously removed.
10. Find power harness kit part number 600-0165. Find the Tokheim power harness and ground wire with ring terminal as shown in figure 4 of the Parts List. Remove tie-wraps and uncoil.
11. Pull wiring harness end with crimp connector through opening in DTU nearest terminal block J1. Attach white lead to terminal block position labeled NEUTRAL and black lead to terminal block position labeled L1 on terminal block J1 of DTU. Attach ground wire to terminal block position labeled GND of J2 on DTU.
12. Find vapor barrier plug on bottom of dispenser electronics barrier enclosure.
13. Remove lower door on side A of dispenser (side with AC distribution board).

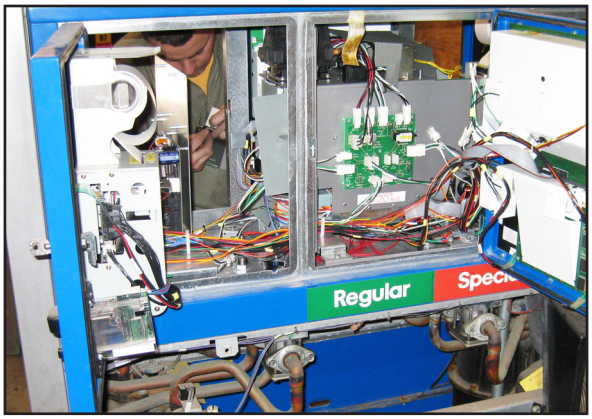


Figure 5: Remove Lower Door

14. Remove nut from top of plug using wrench.
15. Remove plug, washers, and nuts and discard all hardware.

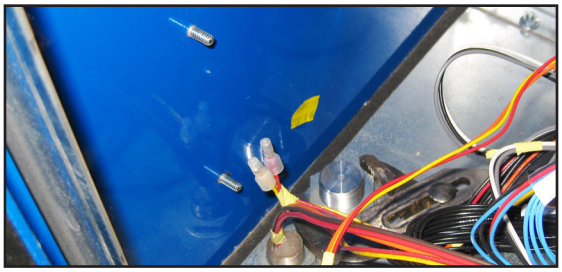


Figure 6: Remove Nut

16. Find potted nipple assembly 131610. Untie wire ties and unwind wiring.
17. Remove and dispose of rubber washer from assembly.
18. Remove top nut from potted nipple and remove nut and one washer by pulling over wire leads. Keep nut and washer for future use.
19. Put wires from top of potted nipple assembly up from the hydraulics enclosure to the electrical enclosure. Ensure that wiring is not damaged by sharp edges.

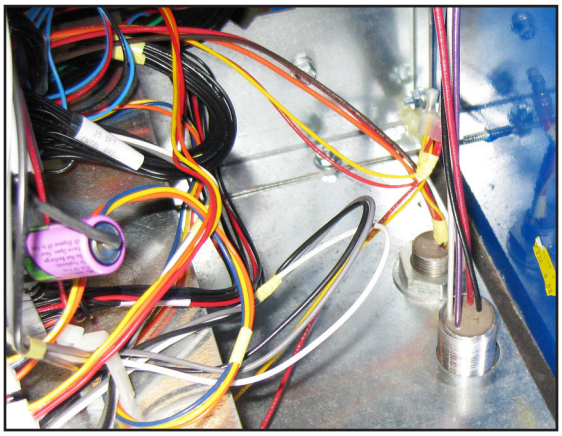


Figure 7: Potted Nipple Location

20. Push top of potted nipple assembly through opening in electrical enclosure. Pull wires inside electrical enclosure through washer and nut kept in step 8. Secure potted nipple assembly by tightening nut.

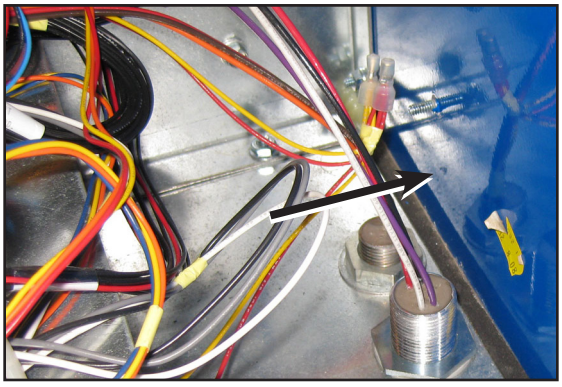


Figure 8: Potted Nipple Installed

21. Find reducer from IS wiring kit, 020-1513. From electrical enclosure, pull wires from the potted nipple assembly through ¾" opening of reducer and attach reducer to the top of the nipple assembly.

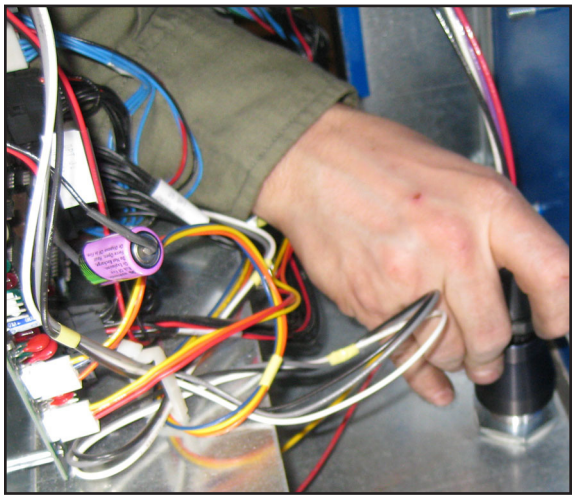


Figure 9: Attach Reducer

22. Find straight conduit fitting from IS wiring kit. From electrical enclosure, pull wires from the potted nipple fitting through opening of straight conduit assembly. Attach straight conduit fitting onto reducer.
23. Remove two screws from IS wiring cover inside the DTU and remove cover. Keep cover and screws for future reassembly.
24. Find 90-degree fitting from IS wiring kit. Remove nut from 90-degree fitting. Attach fitting to top opening of DTU using nut previously removed.
25. Find flexible conduit from IS wiring kit 020-1513. Using 90-degree fitting and straight fitting installed earlier, determine length of flexible conduit needed and cut to fit.
26. Pull wires inside electrical enclosure through flexible conduit.

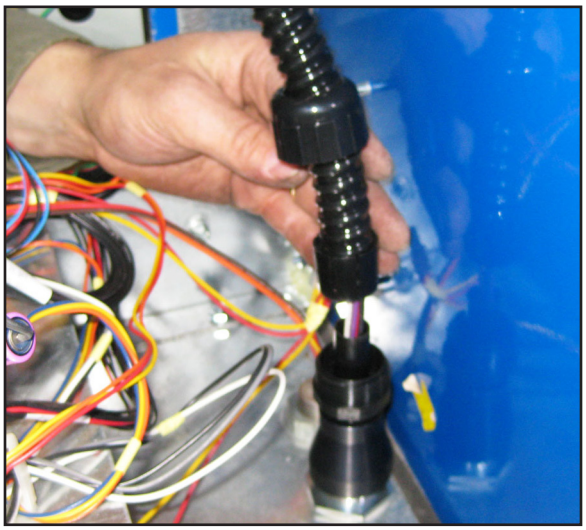


Figure 10: Wire in Flexible Conduit

27. Remove nut and bushing from straight conduit fitting.
28. Push bushing onto end of flexible conduit and reattach to straight fitting using nut.

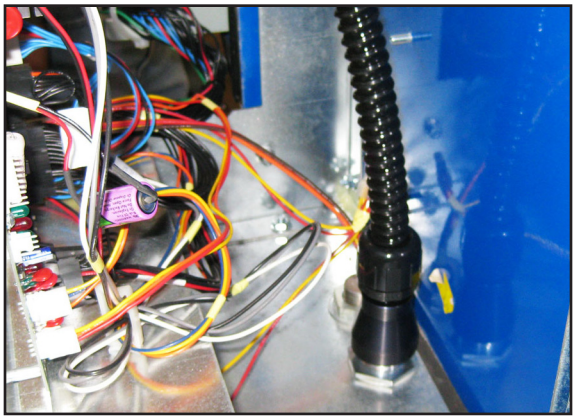


Figure 11: Flexible Conduit Connected

29. Remove bushing and nut from 90-degree conduit fitting on DTU and pull wires through the bushing.
30. Pull wires through 90-degree conduit fitting.

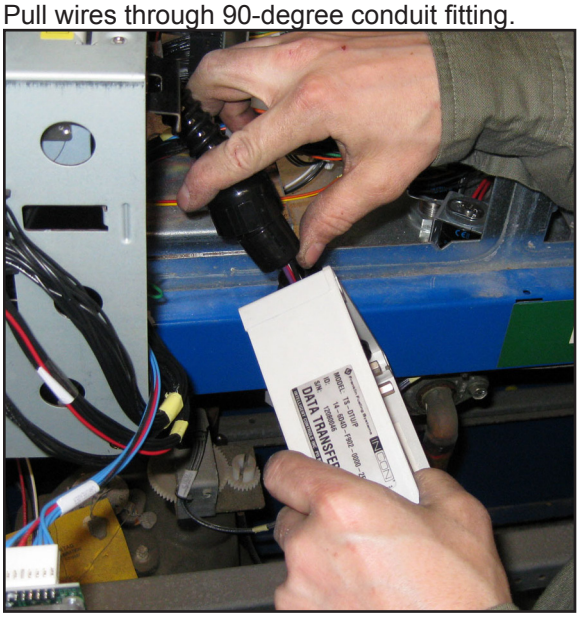


Figure 12: Pull wires through 90-degree fitting

31. Using nut, firmly attach flexible conduit to 90 degree conduit fitting.

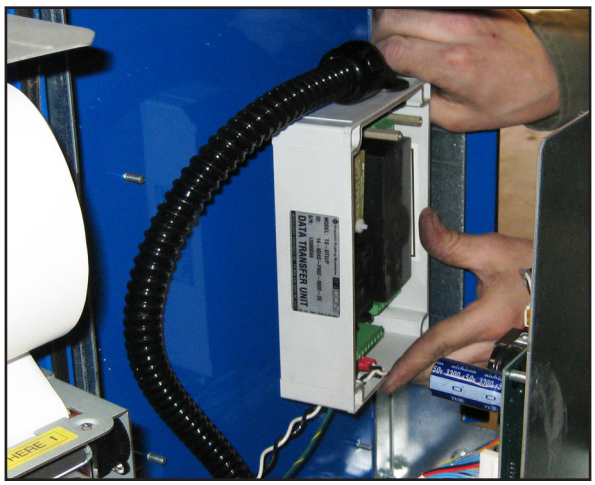


Figure 13: 90-Degree Conduit Connected

32. Cut excess wire inside DTU allowing a length of 2" for terminal block wiring. Strip wire insulation $^{3}/_{8}$" from ends of wire. Attach wires to DTU terminal block as follows.

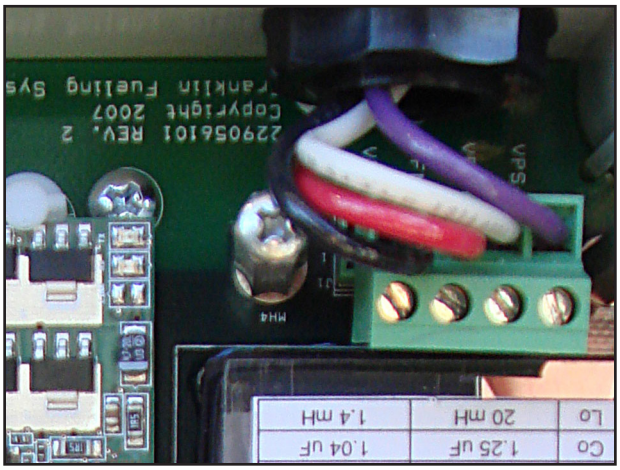


Figure 14: Wiring Connection to DTU

33. Reinstall barrier cover using screws that were removed in step 23.
34. Replace DTU cover.

Install the DTU assembly on the supporting studs located on the vertical side of the dispenser as shown in Figure 15. Use two 10-24 locking nuts to secure the assembly to the dispenser.

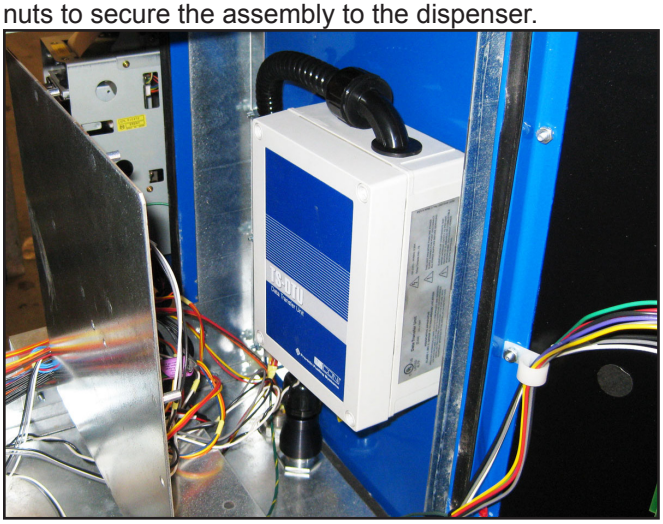


Figure 15: DTU Attached to Dispenser

35. Route power cable along bottom of electrical enclosure to AC power distribution board as shown. Ensure that wiring is kept away from sharp edges and will not interfere with door closing.

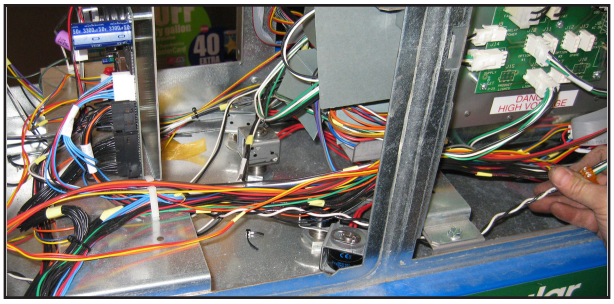


Figure 16: Power Cable Installation

36. Attach connector from the Tokheim power harness into available connector on AC power distribution board.

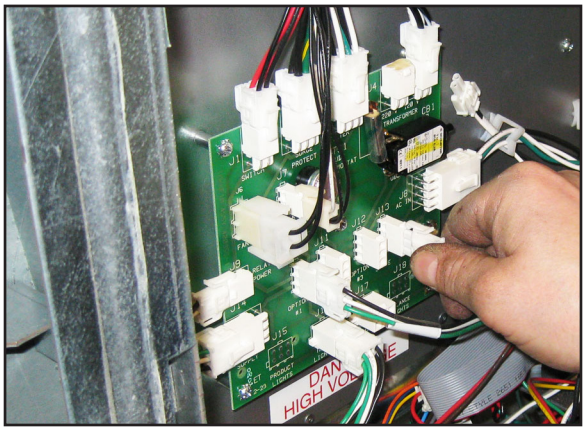


Figure 17: Attach White Connector

37. Attach ring terminal of ground wire to dispenser bracket using screw and nut as shown. Coil excess wiring with tie wraps to ensure that it does not interfere with door closing

Figure 18: Ground Wire Attached

38. Find cable assembly extending from TS-VFM vapor meter in dispenser hydraulics enclosure.
39. Find wiring from previously installed potted nipple assembly inside hydraulics enclosure.
40. Find two wire splice connector kits. Inside hydraulics enclosure connect black wire from potted nipple assembly to black wire from TS-VFM flow meter by placing each lead into an opening in the wire splice connector and push fitting closed to lock.
41. Find the cable extending from TS-VPS inside hydraulics enclosure. Cut yellow and blue leads from end of cable.
42. Find purple and white wires from potted nipple assembly in hydraulics enclosure. Strip wiring insulation $^{3}/_{8}$" from end of wire.
43. Using wire nuts provided with kit, attach purple wire from potted nipple assembly to black wire of TS-VPS and white wire from potted nipple assembly to white wire of the TS-VPS.
44. Close right door assembly and tighten latch. Refer to Figure 3.
45. Close center door assembly and tighten latch. Refer to Figure 2.
46. Close and lock left options door.
47. Repeat steps 45 through 47 for opposite side of dispenser.

Wayne Ovation

This section illustrates the basic components needed to retrofit a TS-DTU module into an existing dispenser. This system can be installed in any “Non-Vapor or Vapor Ready” dispenser including dispensers with existing “Balance” or “VacAssist” piping.

1. Open the upper dispenser door on both sides by loosening two screws on each door.

Figure 1: Open Dispenser

2. Find TS-DTU/P kit and remove brackets, DTU, and hardware from box.
3. Remove cover from DTU.
4. Install the mounting bracket on DTU with two screws, nuts and washers from hardware provided with DTU as described in the General Information Section. Ensure that bracket is installed on correct side as shown.

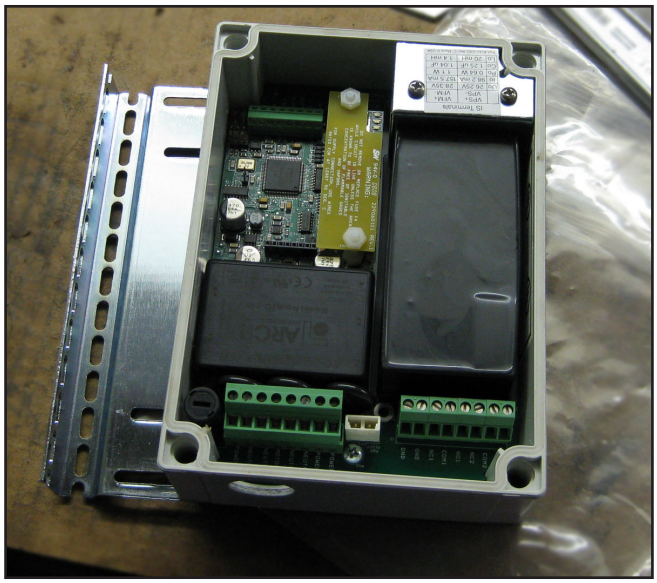


Figure 2: Mounting Bracket Installed

5. Install the DTU assembly in the vertical dispenser bracket as shown in Figure 3. Use the two screws, washers, and nuts as supplied in the TS-DTU/P hardware kit.

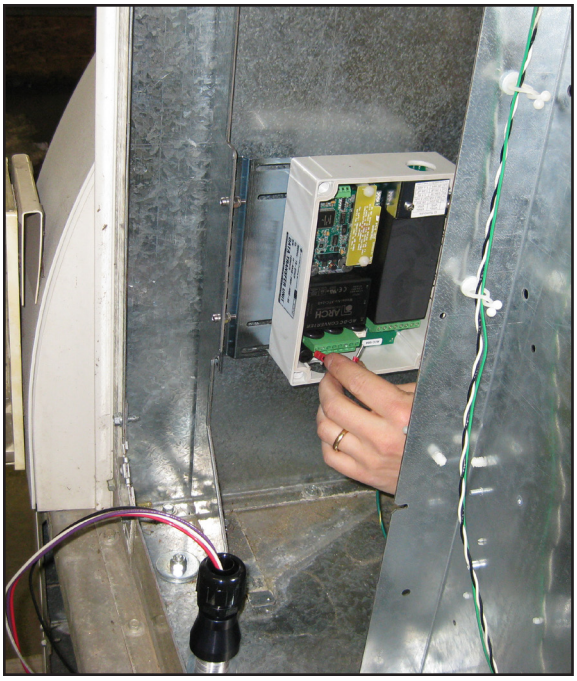


Figure 3: Attach DTU to Dispenser

6. Find power harness kit part number 600-0165. Find the Wayne power harness as shown in Figure 4 of the Parts List. Remove tie-wraps and uncoil.
7. Pull wiring harness end with crimp connector through bottom of DTU. Attach white lead to terminal block position labeled NEUTRAL and black lead to terminal block position labeled L1 on terminal block J1 of DTU.

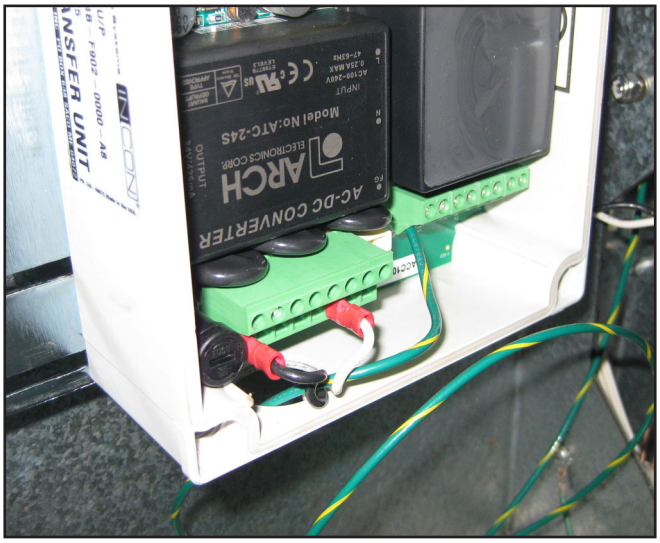


Figure 4: Attach Power Wiring

8. Attach white connector of the Wayne Power harness into an available socket on the dispenser power supply board. Sockets are labeled J3 through J9.

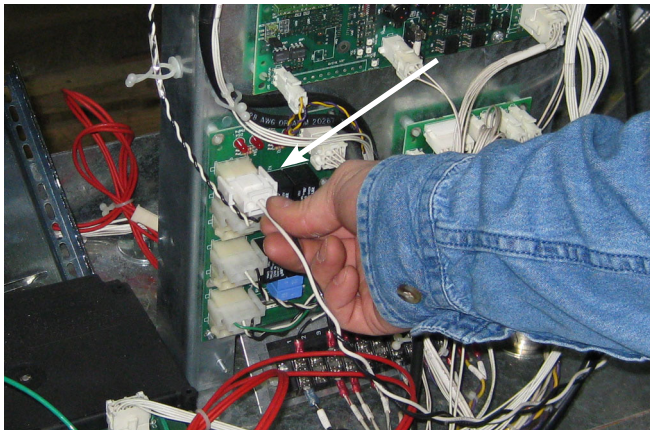


Figure 5: Attach Power Connector to Board

9. Pull wires away from door using positioning devices included with dispenser
10. Find ground wire from power wiring harness kit. From end without ring terminal, strip 3/8” of wiring insulation.
11. Attach ground wire to terminal block position labeled GND of J2 on DTU.
12. Attach ring terminal of ground wire to dispenser bracket using screw and nut as shown. Wind excess wiring and attach with tie wraps to ensure that it does not interfere with door closing.

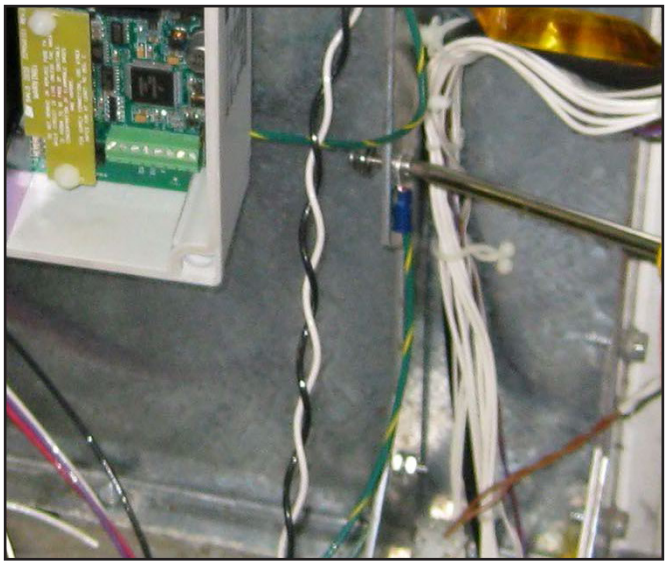


Figure 6: Attach Ground Wire to Frame

13. Find the side of dispenser opposite of power supply. Remove lower door on that side by loosening two screws. Set door aside and save for later assembly.
14. Remove nut from hole plug located at the bottom of the electrical enclosure using two wrenches. Remove bolt, nut, and washers and dispose of them.

Figure 7: Remove Hole Plug

15. Find potted nipple assembly, 131610.
16. Remove and dispose of rubber washer from assembly.
17. Turn top nut from potted nipple counter-clockwise and remove nut and one washer by pulling it over wire leads. Keep nut and washer for future use.
18. Using ¾” conduit hole punch, increase size of 1/2” hole exposed after following step 14.

Figure 8: Increase Hole Size

19. Push wires from top of potted nipple assembly up from the hydraulics enclosure through to the electrical enclosure. Make sure that wiring is not damaged by sharp edges.

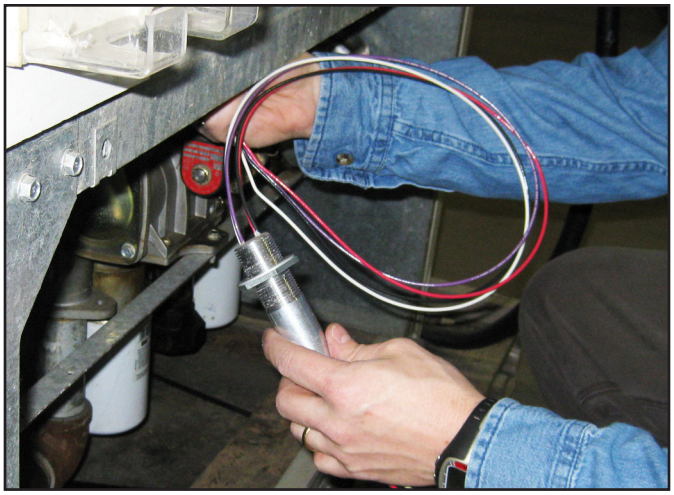


Figure 9: Push Wire to Electrical Enclosure

20. Push top of potted nipple assembly through opening in electrical enclosure. Pull the wires inside electrical enclosure through washer and nut retained in step 17. Tighten potted nipple assembly nut.

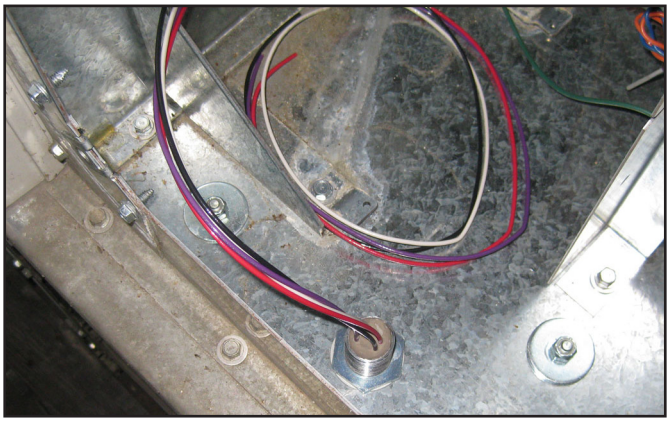


Figure 10: Install Potted Nipple

21. Find reducer in IS conduit kit. From electrical enclosure, pull wires from the potted nipple assembly through ¾" opening of reducer and thread reducer to the top of the nipple assembly.
22. Find straight conduit fitting from IS wiring kit. From electrical enclosure, pull wires from the potted nipple assembly through opening of straight conduit fitting. Turn straight conduit fitting clockwise onto reducer.
23. Remove two screws from IS wiring cover inside the DTU and remove cover. Retain cover and screws for future reassembly.

Figure 11: Remove Wiring Cover

24. Find 90-degree fitting from IS conduit kit. Remove nut from 90-degree fitting. Attach fitting to top opening of DTU using nut previously removed.

Figure 12: Attach 90-Degree Fitting

25. Find flexible conduit fitting in IS conduit kit, 020-1513. Using 90-degree fitting and straight fitting installed earlier, determine length of flexible conduit needed and cut to fit.
26. Pull wires inside electrical enclosure through IS conduit assembly.
27. Remove nut and bushing from straight conduit fitting.

28. Push bushing onto end of flexible conduit and reattach to straight fitting using nut.

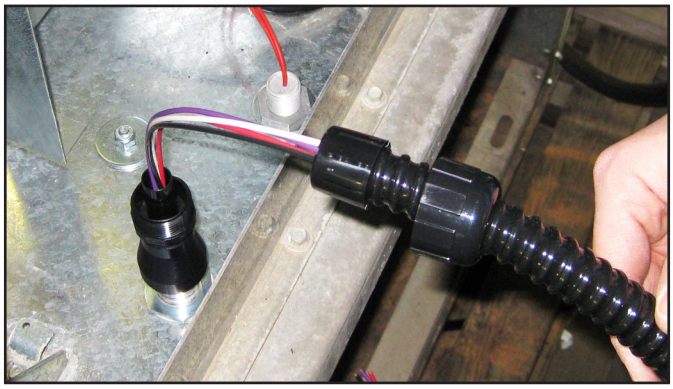


Figure 13: Attach Flexible Conduit to Potted Nipple

29. Remove bushing and nut from 90-degree fitting on DTU and pull wiring and flexible conduit through.
30. Pull wires through 90-degree fitting and pull into the DTU enclosure.
31. Use nut and attach flexible conduit to 90-degree fitting.

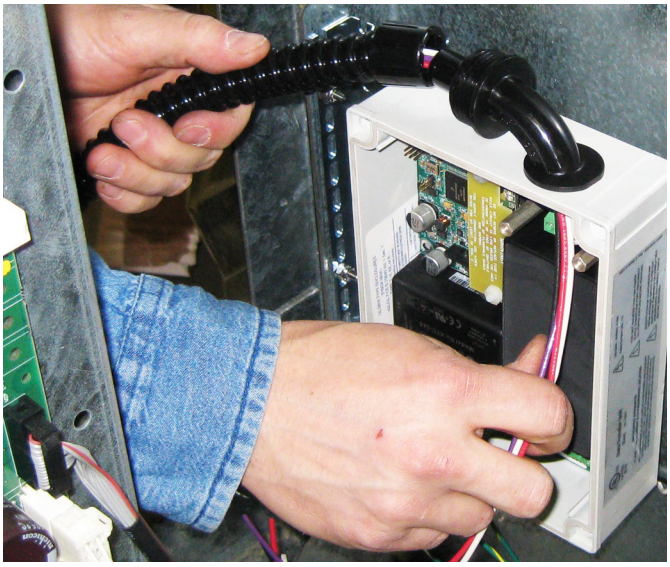


Figure 14: Attach Flexible Conduit to 90-Degree Fitting

32. Cut excess wire inside DTU allowing a length of 2” for terminal block wiring. Strip insulation 3/8” from end of wire. Attach wires to DTU terminal block as follows

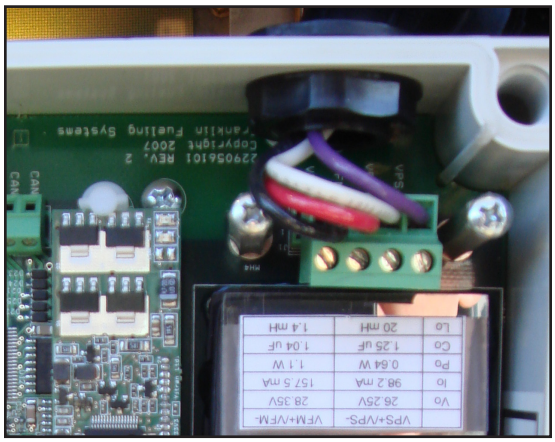


Figure 15: Terminal Block Wiring

33. Reinstall barrier cover using screws removed in step 23.
34. Replace DTU cover.

Figure 16: Attach Cover to DTU

35. Find cable assembly extending from TS-VFM vapor meter in dispenser hydraulics enclosure.
36. Locate wiring from previously installed potted nipple assembly inside hydraulics enclosure.
37. Find two-wire splice connector kits. Inside hydraulics enclosure connect black wire from potted nipple assembly to black wire from TS-VFM flow meter by placing each lead into an opening in the wire splice connector and push fitting closed to lock.
38. Find cable extending from TS-VPS inside hydraulics enclosure. Cut yellow and blue leads from end of cable.
39. Find purple and white wires from potted nipple assembly in hydraulics enclosure. Strip wiring insulation at end 3/8”.
40. Using wire nuts provided with kit, attach purple wire from potted nipple assembly to black wire of TS-VPS and attach white wire from potted nipple assembly to white wire of the TS-VPS.
41. Replace lower hydraulics door using two screws on door.
42. Close dispenser doors on each side of the unit and firmly attach with two screws located in each door.

Wayne Vista 1

This section illustrates the basic components needed to retrofit a TS-DTU module into an existing dispenser. This system can be installed in any “Non-Vapor or Vapor Ready” dispenser including dispensers with existing “Balance” or “VacAssist” piping.

1. Remove lower brand panel door using key locks.
2. Remove two thumb screws from each side of bezel and pull bezel off of dispenser
3. Remove product select connector from center bezel.

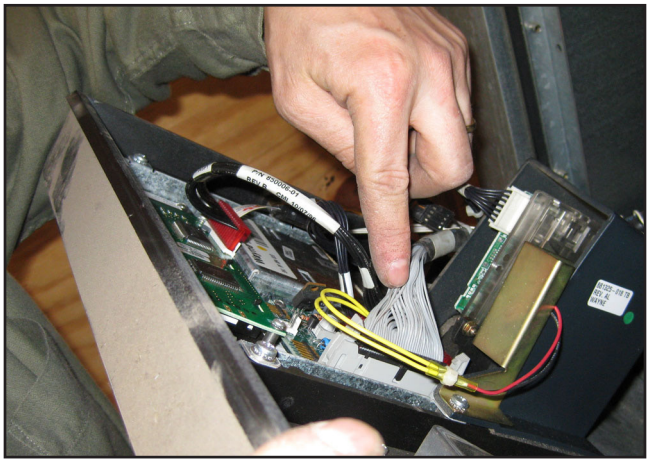


Figure 1: Lower Door Panel Open

4. Remove keypad data P2 cable, and LCD power connectors from door

NOTE: Alternate display assembly will require the removal of a fourth connector from the LCD/keypad assembly.

Figure 2: 4th Connector

5. Remove bezel and retain for future reassembly
6. Repeat steps 2 through 5 for other side
7. Using two wrenches, remove nut from hole plug found at the bottom of the electrical enclosure. Remove bolt, nut, and washers and dispose of them.

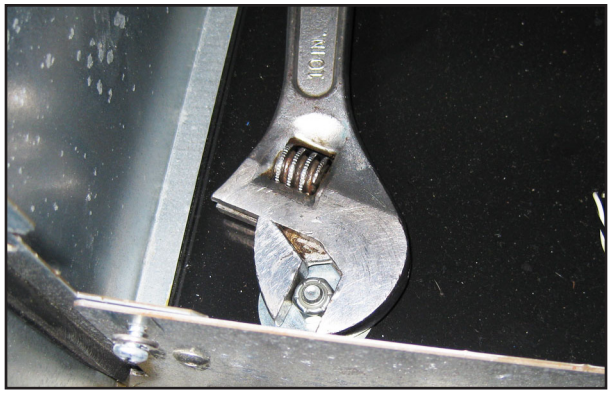


Figure 3: Remove Hole Plug

8. Find potted nipple assembly, 131610. Open wire ties and unwind wiring.
9. Remove and dispose of rubber washer from assembly.
10. Remove top nut from potted nipple and remove nut and one washer by pulling over wire leads. Keep nut and washer for future use.
11. Pull top wires of potted nipple assembly from the hydraulics enclosure to the electrical enclosure. Ensure that wiring is not damaged by sharp edges.
12. Pull top of potted nipple assembly through opening in electrical enclosure. Route wires inside electrical enclosure through washer and nut retained in step 10. Attach potted nipple assembly by tightening nut.

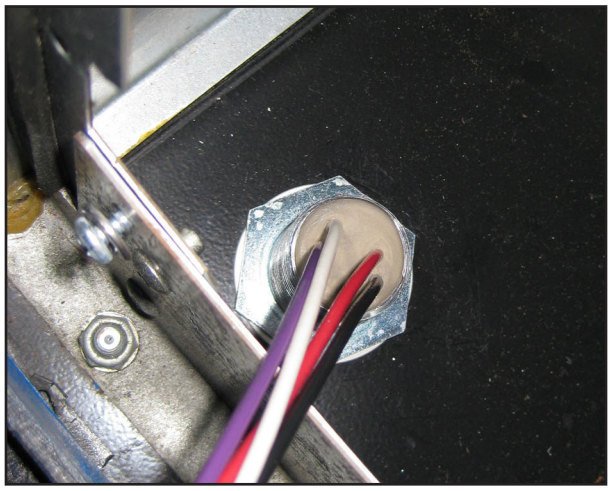


Figure 4: Potted Nipple Installed

13. Find reducer from IS conduit kit, 020-1513. From electrical enclosure, pull wires from the potted nipple assembly through ¾” opening of reducer and attach reducer to the top of the nipple assembly.
14. From electrical enclosure, pull wires from the potted nipple assembly through opening of straight conduit. Attach straight conduit fitting onto reducer.

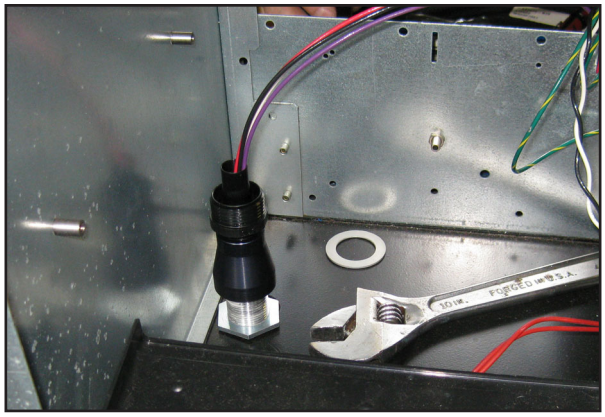


Figure 5: Straight Conduit Installed

15. Find TS-DTU/P kit and remove brackets, DTU, and hardware from box.
16. Remove cover from DTU.
17. Attach mounting bracket to DTU with two screws, nuts and washers from hardware provided with DTU as described in the General Information Section. Ensure that bracket is installed on correct side as shown in Figure 6.

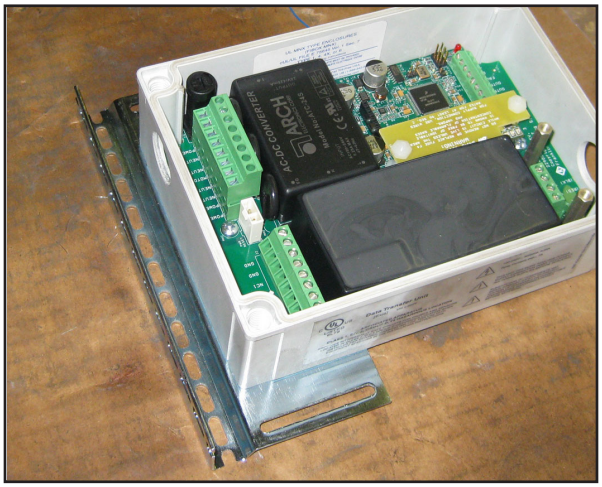


Figure 6: Mounting Bracket on DTU

18. Remove two screws from IS wiring cover inside the DTU and remove cover. Keep cover and screws for reassembly.
19. Find 90-degree fitting in IS conduit kit, 020-1513. Remove nut from 90-degree fitting. Attach fitting to opening nearest IS wiring terminal block of DTU using nut previously removed.

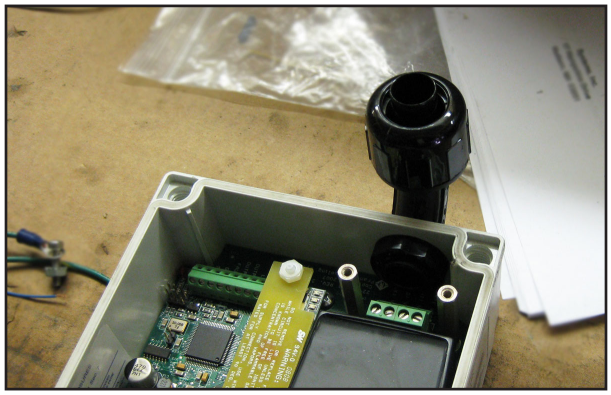


Figure 7: 90-Degree Fitting Installed

Note: The installation of the DTU in the dispenser will occur after all connections have been made to the DTU.

20. Find power harness kit part number 600-0165. Find the Wayne power harness and ground wire with ring terminal as shown in figure 4 of the Parts List. Remove tie-wraps and uncoil.
21. Push wiring harness end with crimp connector through opening in DTU nearest power terminal block J1. Attach white lead to terminal block position labeled NEUTRAL and black lead to terminal block position labeled L1 on terminal block J1 of DTU. Attach ground wire to terminal block position labeled GND of J2 on DTU.

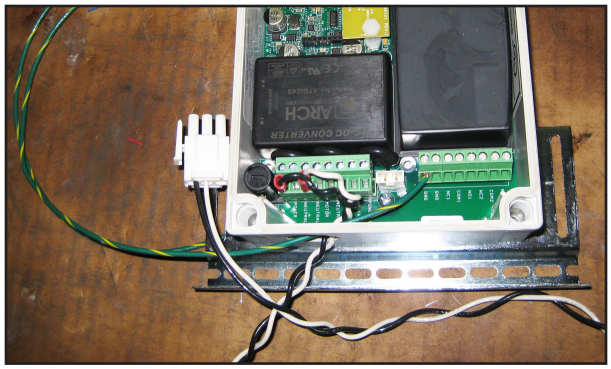


Figure 8: DTU Wiring

22. Cut connector off the Wayne power harness kit. Strip wire insulation 3/8” from the end of the wire.
23. Pull wire underneath bracket, along bottom of dispenser and through wire bushing in display assembly.

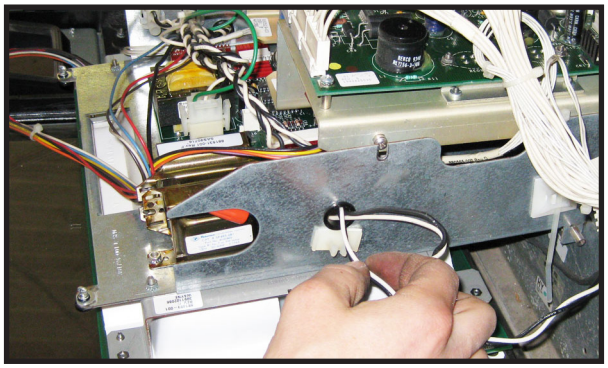


Figure 9: Power Harness Wiring

24. Find black/white pair of twisted wires inside display assembly. Cut wires, forming four leads and uncoil. Strip wire insulation 3/8” from the end of the wire.

25. Using wire nuts provided, connect all three white wires together. Connect three black wires together.

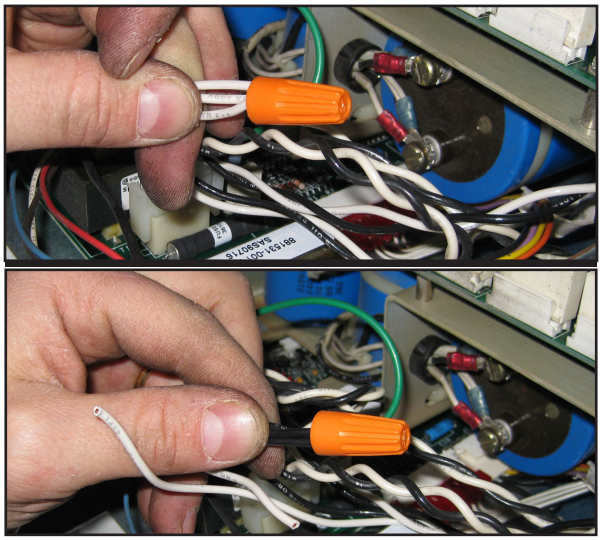


Figure 10: Connect Wires

26. Use tie-wrap to attach connections together.

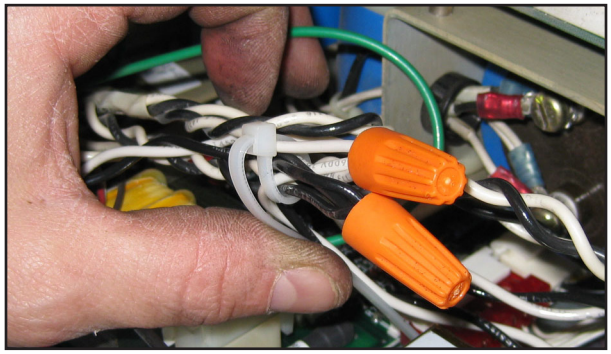


Figure 11: Wrap Wires

27. Attach wiring from power wiring harness to the side of the display assembly using adhesive backed anchor and wire tie.

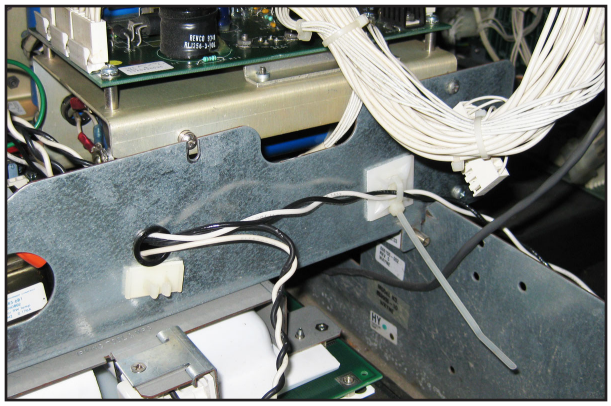


Figure 12: Attach Power Wiring Harness

28. Close display assembly and firmly attach using two screws. Ensure that all wiring is free of sharp edges and pinching when doors close. If sharp edges or pinching is observes, use additional tie wraps and anchors to reroute wiring as necessary.
29. Attach ring terminal of ground wire to dispenser bracket using screw and nut as shown. Wind excess wiring and firmly attach with tie wraps to ensure that it does not interfere with door closing.
30. Find straight conduit fitting and flexible conduit from IS conduit kit, 020-1513. Remove nut and bushing from straight conduit fitting. Push bushing on one end of flexible conduit. Pull wires from nipple assembly through bushing / flexible conduit and attach flexible conduit to straight conduit fitting using nut.

Figure 13: Attach Flexible Conduit

31. Remove nut and bushing from the 90-degree conduit fitting and feed flexible conduit through nut. Put bushing on unattached end of flexible conduit. Pull wires from flexible conduit through the 90-degree conduit fitting and pull excess wire into DTU. Use nut to attach flexible conduit to 90-degree fitting.

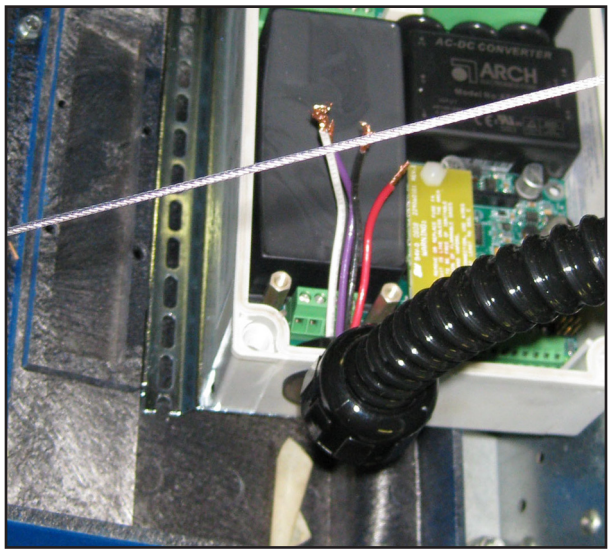


Figure 14: Flexible Conduit DTU Connection

32. Cut excess wire inside DTU allowing a length of 2” for terminal block wiring. Strip wire insulation 3/8” from the end of the wire.

33. Attach wires to DTU terminal block as follows

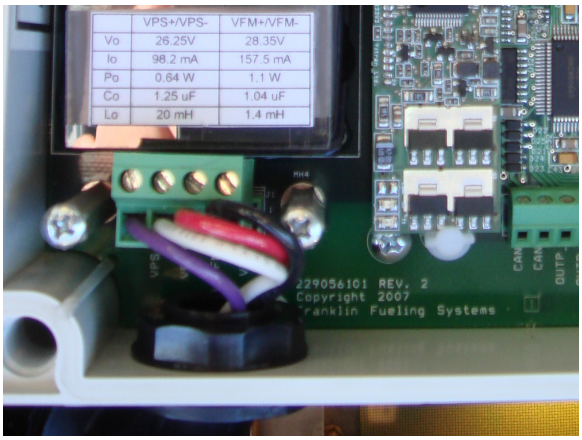


Figure 15: Wires Connected to DTU

34. Reinstall barrier cover using screws that were removed in step 20.
35. Replace DTU cover.
36. Install the DTU assembly on the horizontal cross bracket as shown in Figure 16. Use the two screws, washers, and nuts as supplied in the TS-DTU/P hardware kit. Take care that the flexible conduit does not interfere with the electronics on the side of the dispenser.

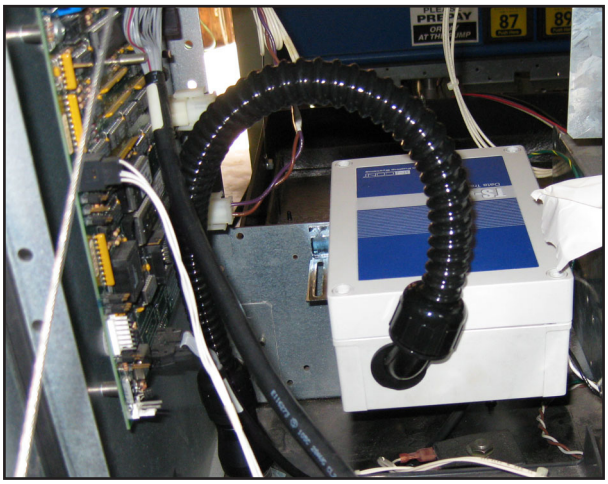


Figure 16: DTU Installed with Cover On

Note: Moving the 90-degree conduit fitting on DTU slightly away from the dispenser PCB board will aid in separating the conduit from the that board.

37. Find cable assembly extending from TS-VFM vapor meter in dispenser hydraulics enclosure.
38. Find wiring from previously installed potted nipple assembly inside hydraulics enclosure.
39. Find two wire splice connector kits. Inside hydraulics enclosure, connect black wire from potted nipple assembly to black wire from TS-VFM flow meter by placing each lead into an opening in the wire splice connector and push fitting closed to lock.
40. Locate cable extending from TS-VPS inside hydraulics enclosure. Cut yellow and blue leads from end of cable.
41. Find purple and white wires from potted nipple assembly in hydraulics enclosure. Strip wire insulation 3/8” from the end of the wire.
42. Using wire nuts provided with kit, attach purple wire from potted nipple assembly to black wire of TS-VPS. Attach white wire from potted nipple assembly to white wire of the TS-VPS.
43. Reinstall lower hydraulic door using key-lock
44. Reinstall all connectors removed in step 3 & 4.
45. Close the bezel on the dispenser and secure using two thumb screws from each side of the bezel.
46. Repeat steps 44 & 45 for the opposite side of the dispenser.

Wayne Vista 2

This section illustrates the basic components needed to retrofit a TS-DTU module into an existing dispenser. This system can be installed in any “Non-Vapor or Vapor Ready” dispenser including dispensers with existing “Balance” or “VacAssist” piping.

1. Using key-lock, remove lower door on B side of dispenser. B side of the dispenser does not have dispenser marking at the base.
2. Open upper dispenser door on both sides by loosening two screws on each door.

Figure 1: Open Upper Dispenser Door

3. On “B” side, remove two screws holding display assembly and carefully lower into resting position.

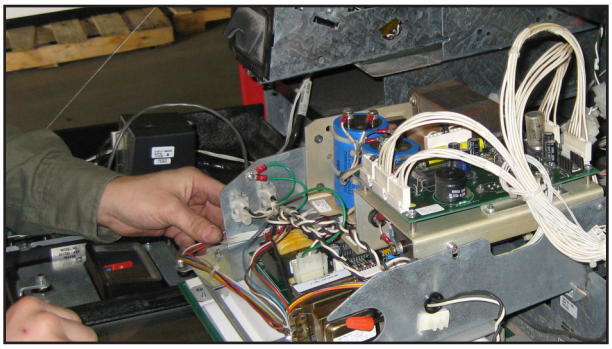


Figure 2: Carefully Lower Door

4. DTU will be installed in the location shown below. (The DTU will not be installed until step 21) Examine the bottom of the electrical enclosure to determine location of unused hole plugs and choose the appropriate side of dispenser.

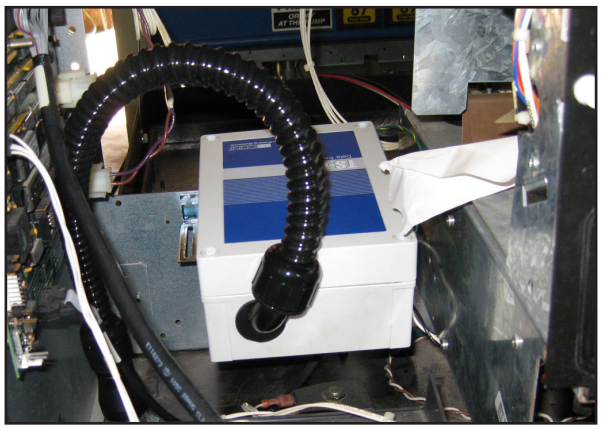


Figure 3: DTU Installed

Note: Hole plugs beneath plastic catch pans cannot be used as there is not enough clearance to install conduit fittings.

5. Remove lower dispenser door using key lock closest to the hole plug chosen in step 2.
6. Using two wrenches, remove nut from hole plug found at the bottom of the electrical enclosure. Remove bolt, nut, and washers and dispose of them.

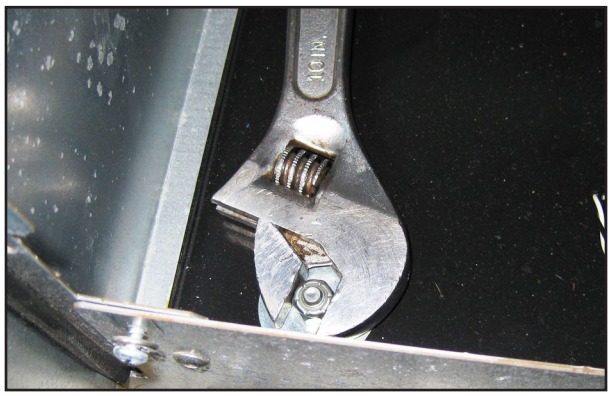


Figure 4: Remove Hole Plug

7. Find potted nipple assembly, 131610. Open wire ties and unwind wiring.
8. Remove and dispose of rubber washer from assembly.
9. Remove top nut from potted nipple and remove nut and one washer by pulling over wire leads. Keep nut and washer for future use.
10. Pull top wires of potted nipple assembly from the hydraulics enclosure to the electrical enclosure. Ensure that wiring is not damaged by sharp edges.
11. Pull top of potted nipple assembly through opening in electrical enclosure. Route wires inside electrical enclosure through washer and nut retained in step 9. Attach potted nipple assembly by tightening nut.

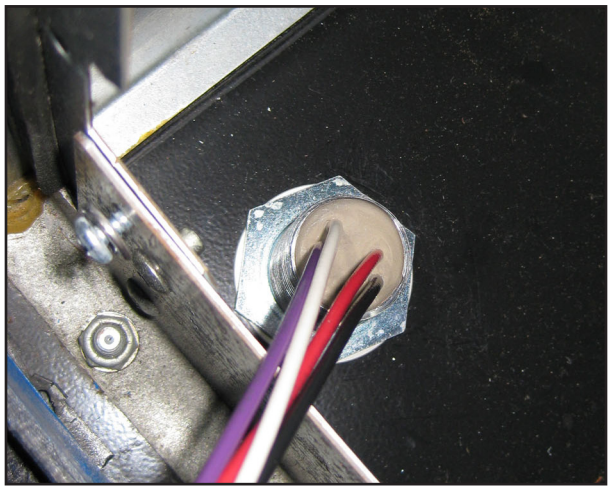


Figure 5: Potted Nipple Installed

12. Find reducer from IS conduit kit, 020-1513. From electrical enclosure, pull wires from the potted nipple assembly through ¾” opening of reducer and attach reducer to the top of the nipple assembly.

13. From electrical enclosure, pull wires from the potted nipple assembly through opening of straight conduit. Attach straight conduit fitting onto reducer.

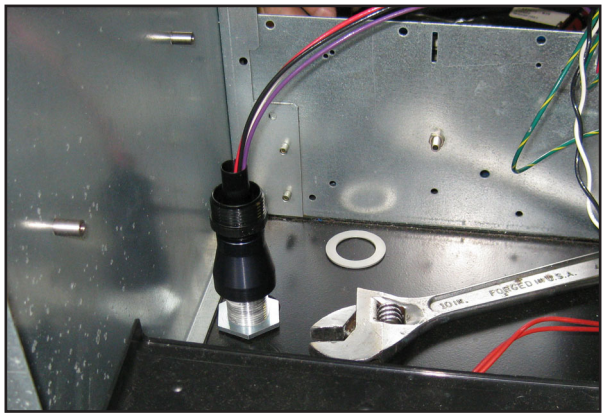


Figure 6: Straight Conduit Installed

14. Find TS-DTU/P kit and remove brackets, DTU, and hardware from box.
15. Remove cover from DTU.
16. Install mounting bracket to DTU with two screws, nuts and washers from hardware provided with DTU, as described in the General Information Section. Make sure that bracket is installed on correct side as shown in Figure 7.

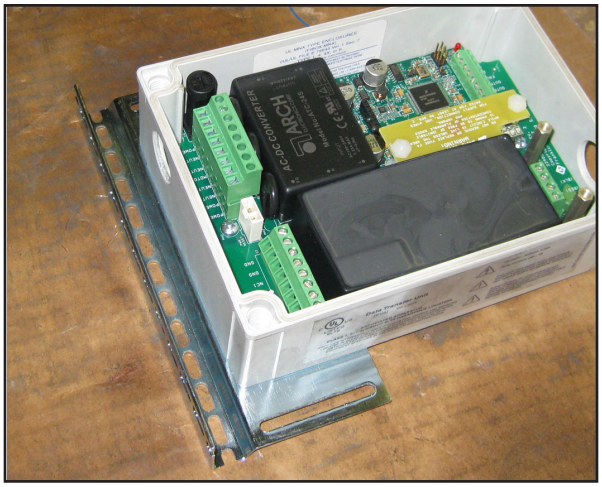


Figure 7: Mounting Bracket on DTU

17. Remove two screws from IS wiring cover inside the DTU and remove cover. Keep cover and screws for reassembly.
18. Find 90-degree fitting in IS conduit kit, 020-1513. Remove nut from 90-degree fitting. Attach fitting to opening nearest IS wiring terminal block of DTU using nut previously removed.

Note: The installation of the DTU in the dispenser will occur after all connections have been made to the DTU.

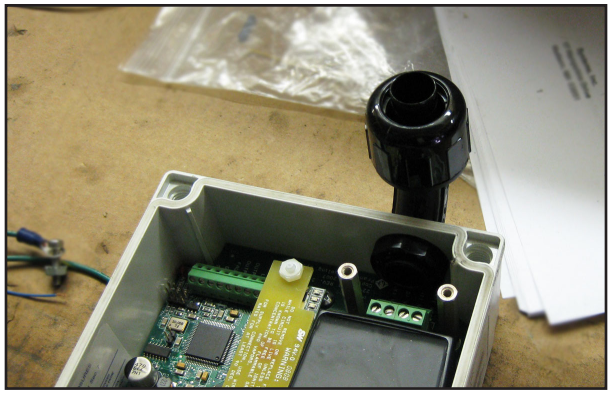


Figure 8: 90-Degree Fitting Installed

19. Find power harness kit part number 600-0165. Find the Wayne power harness and ground wire with ring terminal as shown in figure 4 of the Parts List. Remove tie-wraps and uncoil.
20. Push wiring harness end with crimp connector through opening in DTU nearest power terminal block J1. Attach white lead to terminal block position labeled NEUTRAL and black lead to terminal block position labeled L1 on terminal block J1 of DTU. Attach ground wire to terminal block position labeled GND of J2 on DTU.

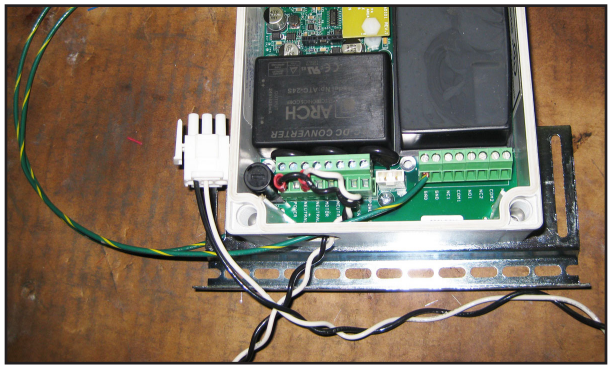


Figure 9: DTU Wiring

21. Cut connector off the Wayne power harness kit. Strip wire insulation 3/8” from the end of the wire.
22. Pull wire underneath bracket, along bottom of dispenser and through wire bushing in display assembly.

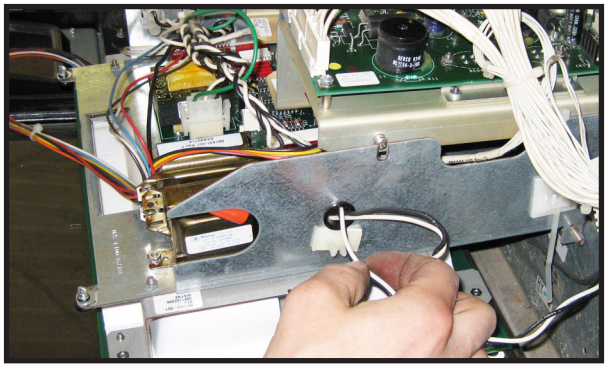


Figure 10: Power Harness Wiring

23. Find black/white pair of twisted wires inside display assembly. Cut wires, forming four leads and uncoil. Strip wire insulation 3/8” from the end of the wire.

24. Using wire nuts provided, connect all three white wires together. Connect three black wires together.

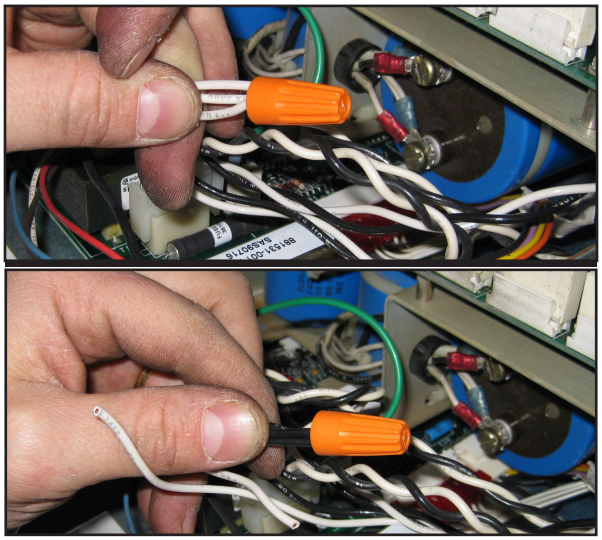


Figure 11: Connect Wires

25. Use tie-wrap to attach connections together.

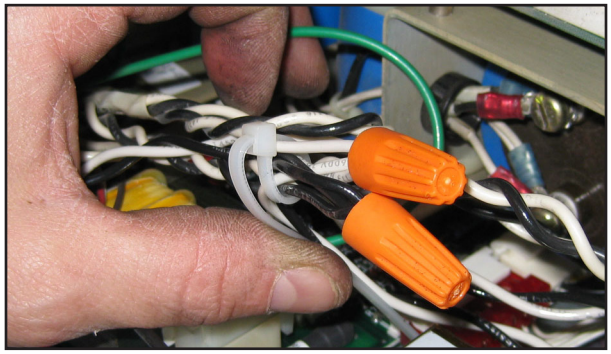


Figure 12: Wrap Wires

26. Attach wiring from power wiring harness to the side of the display assembly using adhesive backed anchor and wire tie.

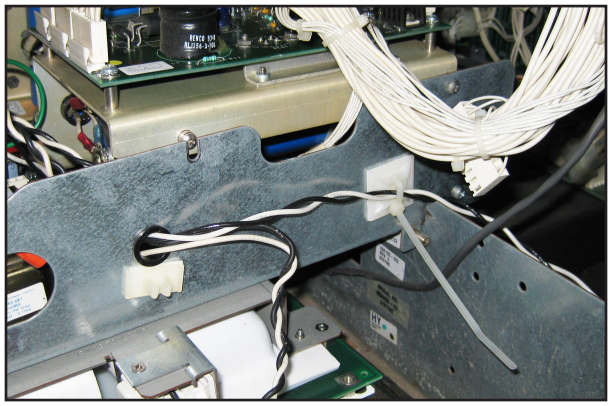


Figure 13: Attach Power Wiring Harness

27. Close display assembly and firmly attach using two screws. Ensure that all wiring is free of sharp edges and pinching when doors close. If sharp edges or pinching is observes, use additional tie wraps and anchors to reroute wiring as necessary.
28. Attach ring terminal of ground wire to dispenser bracket using screw and nut as shown. Wind excess wiring and firmly attach with tie wraps to ensure that it does not interfere with door closing.
29. Find straight conduit fitting and flexible conduit from IS conduit kit, 020-1513. Remove nut and bushing from straight conduit fitting. Push bushing on one end of flexible conduit. Pull wires from nipple assembly through bushing / flexible conduit and attach flexible conduit to straight conduit fitting using nut.

Figure 14: Attach Flexible Conduit

30. Remove nut and bushing from the 90-degree conduit fitting and feed flexible conduit through nut. Put bushing on unattached end of flexible conduit. Pull wires from flexible conduit through the 90-degree conduit fitting and pull excess wire into DTU. Use nut to attach flexible conduit to 90-degree fitting.

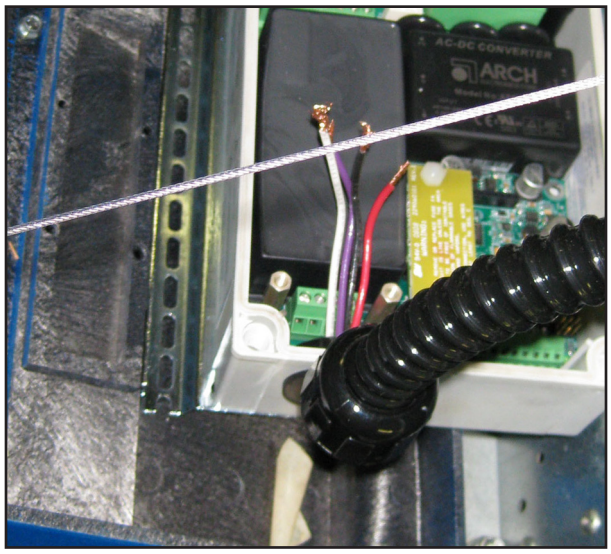


Figure 15: Flexible Conduit DTU Connection

31. Cut excess wire inside DTU allowing a length of 2” for terminal block wiring. Strip wire insulation 3/8” from the end of the wire.

32. Attach wires to DTU terminal block as follows

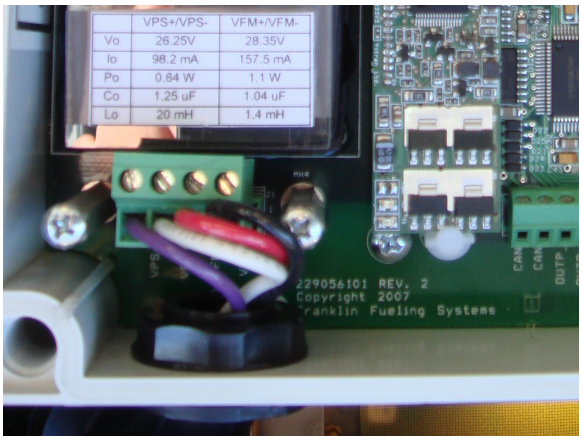


Figure 16: Wires Connected to DTU

33. Reinstall barrier cover using screws that were removed in step 20.
34. Replace DTU cover.
35. Install the DTU assembly on the horizontal cross bracket as shown in Figure 17. Use the two screws, washers, and nuts as supplied in the TS-DTU/P hardware kit. Make sure the flexible conduit does not interfere with electronics inside dispenser.

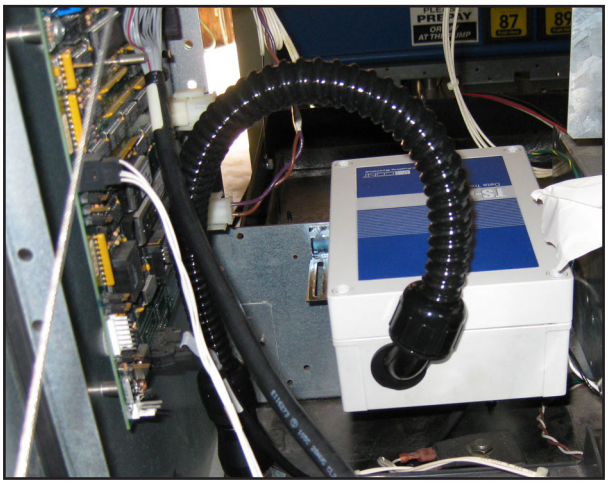


Figure 17: DTU Installed with Cover On

Note: Moving the 90-degree conduit fitting on DTU slightly away from the dispenser PCB board will aid in separating the conduit from the that board.

36. Find cable assembly extending from TS-VFM vapor meter in dispenser hydraulics enclosure.
37. Find wiring from previously installed potted nipple assembly inside hydraulics enclosure.
38. Find two wire splice connector kits. Inside hydraulics enclosure, connect black wire from potted nipple assembly to black wire from TS-VFM flow meter by placing each lead into an opening in the wire splice connector and push fitting closed to lock.
39. Locate cable extending from TS-VPS inside hydraulics enclosure. Cut yellow and blue leads from end of cable.
40. Find purple and white wires from potted nipple assembly in hydraulics enclosure. Strip wire insulation 3/8” from the end of the wire.
41. Using wire nuts provided with kit, attach purple wire from potted nipple assembly to black wire of TS-VPS. Attach white wire from potted nipple assembly to white wire of the TS-VPS.
42. Reinstall lower hydraulic door using key-lock
43. Close upper dispenser door on each side by tightening two screws, refer to figure 1.

Wayne Vista 3

This section illustrates the basic components needed to retrofit a TS-DTU module into an existing dispenser. This system can be installed in any “Non-Vapor or Vapor Ready” dispenser including dispensers with existing “Balance” or “VacAssist” piping.

1. Open upper dispenser door on both sides by loosening two screws on each door.

Figure 1: Open Door

2. Find the location where the DTU will be installed. (The DTU will not be installed until step 21). Examine the bottom of the electrical enclosure to determine location of unused hole plugs and choose the appropriate side of dispenser.

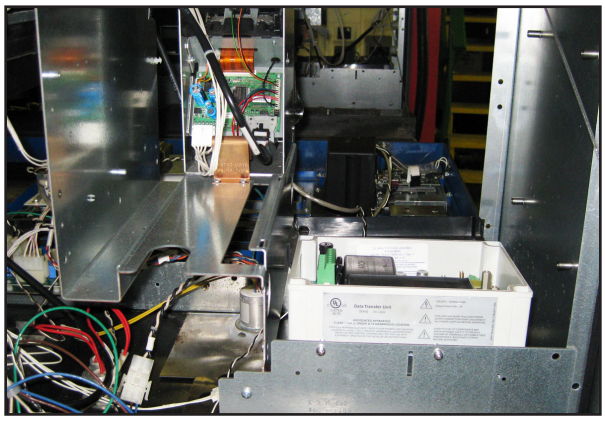


Figure 2: DTU Location

Note: Hole plugs beneath plastic catch pans cannot be used as there is not significant clearance to install conduit fittings.

3. Remove lower dispenser door using key lock closest to the hole plug chosen in step 2.

Figure 3: Unlock Lower Door

4. Using two wrenches, remove nut from hole plug located at the bottom of the electrical enclosure. Remove bolt, nut, and washers and dispose of them.

Figure 4: Removing Hole Plug

Note: Opening created in the bottom of the electrical enclosure may be ½” or ¾”. If hole is ½”, it will need to be increased in ¾” in step 5. For openings that are ¾”, skip to Step 6.

5. Using ¾” conduit hole punch, increase size of ½” hole to ¾”.
6. Find and remove potted nipple assembly, 131610.
7. Remove wire ties and unwind wiring.
8. Remove and dispose of rubber washer from assembly.
9. Remove top nut from potted nipple and remove nut and one washer by pulling over wire leads. Keep nut and washer for future use.
10. Pull top wires of potted nipple assembly from the hydraulics enclosure to the electrical enclosure. Ensure that wiring is not damaged by sharp edges.
11. Pull top of potted nipple assembly through opening in electrical enclosure. Pull wires inside electrical enclosure through washer and nut retained in step 8. Firmly attach potted nipple assembly by tightening nut.

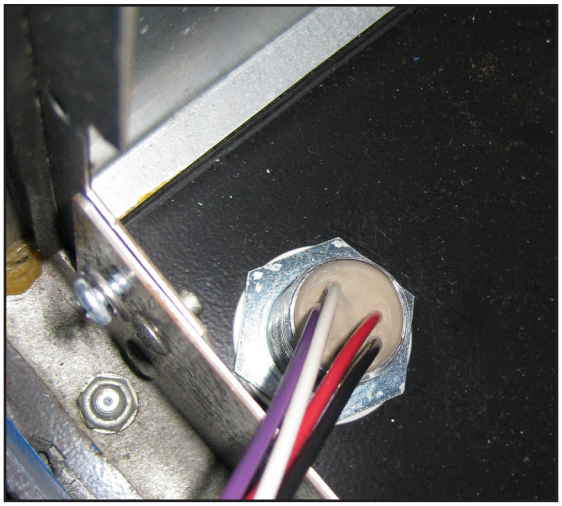


Figure 5: Potted Conduit Installed

12. Find reducer from IS conduit kit PN 020-1513. From electrical enclosure, pull wires from the potted nipple assembly through ¾" opening of reducer and thread reducer to the top of the nipple assembly.
13. Find straight conduit fitting from IS conduit kit 020-1513. From electrical enclosure, pull wires from the potted nipple fitting through opening of straight conduit fitting. Turn straight conduit fitting clockwise onto reducer.

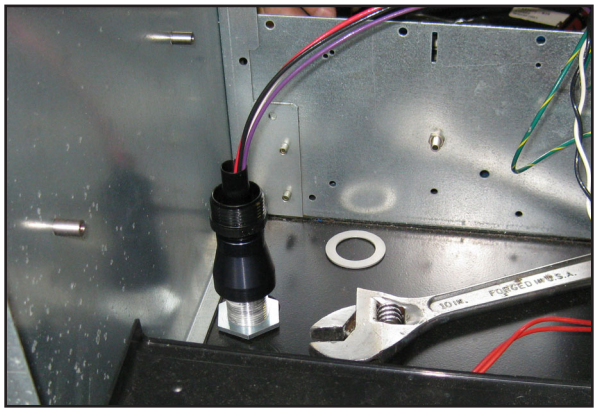


Figure 6: Straight Conduit Installed

14. Find TS-DTU/P from kit and remove brackets, DTU, and hardware from box.
15. Remove cover from DTU.
16. Install mounting bracket to DTU with two screws, nuts and washers from hardware provided with DTU as described in the general Information Section. Ensure that bracket is installed on correct side as shown.

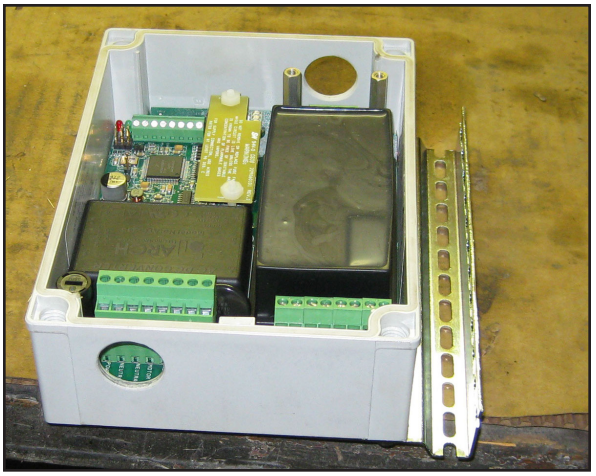


Figure 7: DTU Mounting Bracket Installed

17. Remove two screws from IS wiring cover inside the DTU and remove cover. Keep cover and screws for future reassembly.
18. Find 90-degree fitting from IS wiring kit. Remove nut from 90-degree fitting. Attach fitting to opening nearest IS wiring terminal block of DTU using nut previously removed.

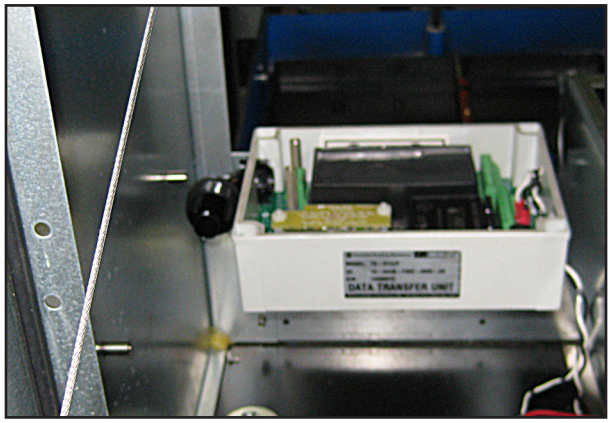


Figure 8: 90-Degree Fitting Installed

Note: The installation of the DTU in the dispenser will occur after all connections have been made to the DTU.

19. Find power harness kit part number 600-0165. Find the Wayne power harness and ground wire with ring terminal as shown in figure 4 of the Parts List. Remove tie-wraps and uncoil.
20. Push wiring harness end with crimp connector through opening in DTU nearest power terminal block J1. Attach white lead to terminal block position labeled NEUTRAL and black lead to terminal block position labeled L1 on terminal block J1 of DTU. Attach ground wire to terminal block position labeled GND of J2 on DTU.

21. Put power cable along bottom of electrical enclosure to AC power distribution board as shown. Ensure that wiring is kept away from sharp edges and will not interfere with door closing.
22. Attach white connector on harness to available connector on AC power distribution board.

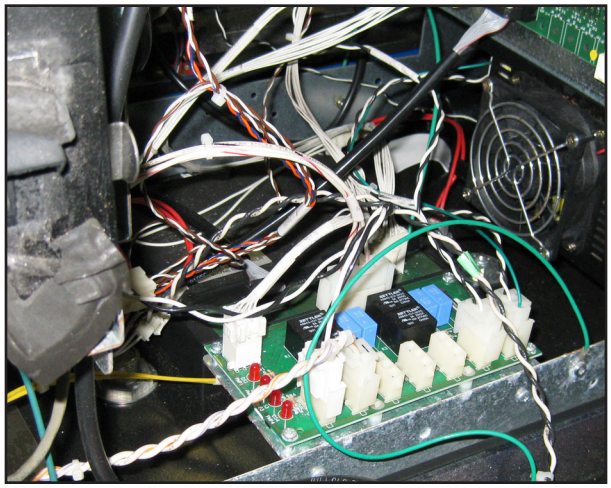


Figure 9: Attach White Connector

23. Find straight conduit fitting and flexible conduit from IS conduit kit, 020-1513. Remove nut and bushing from straight conduit fitting. Put bushing on one end of flexible conduit.
24. Determine length of flexible conduit needed and cut to fit.
25. Push wires from nipple assembly through bushing / flexible conduit and attach flexible conduit to straight conduit fitting using nut.

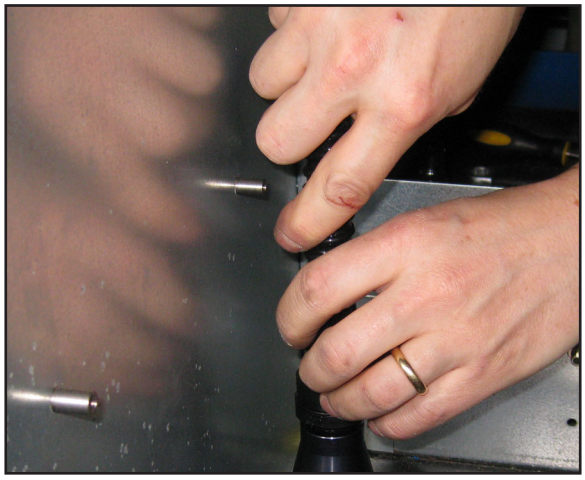


Figure 10: Flexible Conduit Installation

26. Remove nut and bushing from 90-degree conduit fitting and push flexible conduit through nut. Push bushing on unattached end of flexible conduit. Pull wires from flexible conduit through the 90-degree conduit fitting and pull excess wire into DTU. Attach flexible conduit to 90-degree fitting with nut.

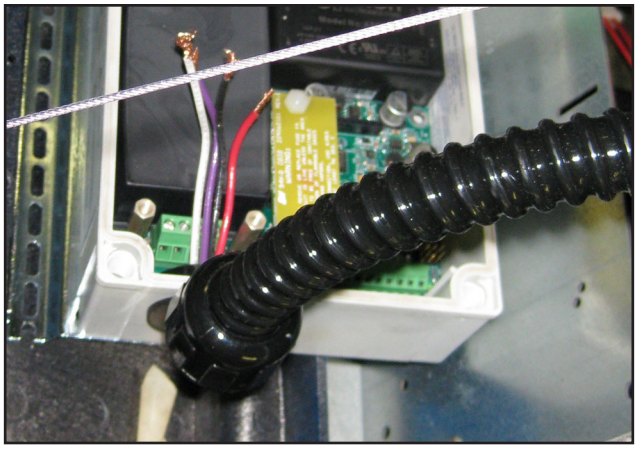


Figure 11: 90-Degree Fitting Installed

27. Cut excess wire inside DTU allowing a length of 2” for terminal block wiring. Strip wire insulation 3/8” from end of wire. Attach wires to DTU terminal block as follows.

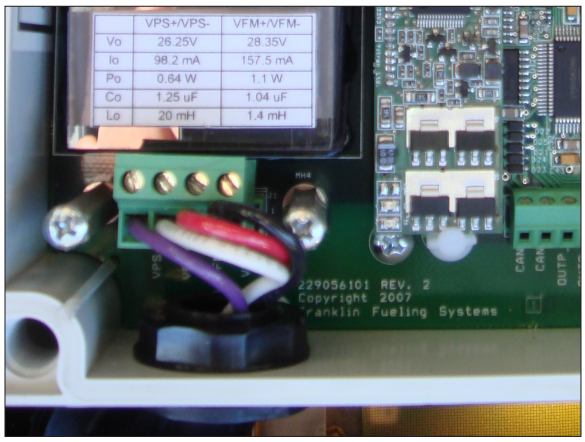


Figure 12: Wires attached to DTU

28. Reinstall barrier cover using screws set aside in step 17.
29. Replace DTU cover.
30. Install the DTU assembly on the horizontal cross bracket as shown in Figure 13. Use the two screws, washers, and nuts as supplied in the TS-DTU/P hardware kit.

Figure 13: DTU Mounted

31. Attach ring terminal of ground wire to dispenser bracket using screw and nut as shown. Coil excess wiring and firmly attach with tie wraps to ensure that it does not interfere with door closing.

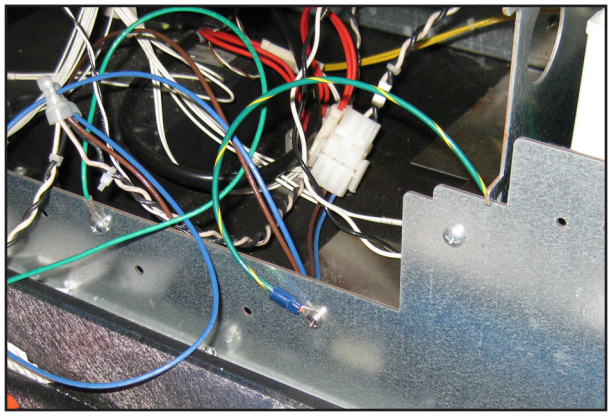


Figure 14: Ground Wire Connected

32. Find cable assembly extending from TS-VFM vapor meter in dispenser hydraulics enclosure.
33. Find wiring from previously installed potted nipple assembly inside hydraulics enclosure.
34. Find two wire splice connector kits. Inside hydraulics enclosure, connect black wire from potted nipple assembly to black wire from TS-VFM flow meter by putting each lead into an opening in the wire splice connector and push fitting closed to lock.
35. Find cable from TS-VPS inside hydraulics enclosure. Clip yellow and blue leads from end of cable.
36. Find purple and white wires from potted nipple assembly in hydraulics enclosure. Strip wiring insulation 3/8” from end of wire.
37. Using wire nuts provided with kit connect purple wire from potted nipple assembly to black wire of TS-VPS. Connect white wire from potted nipple assembly to white wire of the TS-VPS.
38. Reinstall lower hydraulic door using key-lock.
39. Close dispenser doors on each side of the unit and firmly attach with two screws located in each door.

Franklin Fueling Systems
www.franklinfueling.com

3760 Marsh Road • Madison, WI 53718, U.S.A.
Tel: +1 608 838 8786 • Fax: +1 608 838 6433
Tel: USA & Canada 1 800 225 9787 • Tel: México 001 800 738 7610

Franklin Fueling Systems GmbH
Rudolf-Diesel-Strasse 20 • 54516 Wittlich, GERMANY
Tel: +49-6571-105-380 • Fax: +49-6571-105-510

©2008 FFS 000-2146 rev A