

## Introduction

### Purpose

This document provides instructions for the installation of the Satellite Indicator Light with Valve Control Kit(s) in the Encore® 300, Encore 500 and Encore 500 S Ultra-Hi™ units in Master or Combo configurations. The Satellite Indicator Light is illuminated when the handle on the satellite is raised, signalling the customer that the satellite unit is ready to dispense. If customers need to use only the master unit, the indicator light allows them to monitor if the satellite is being accessed.

The valve control portion of this board is used to obtain independent operation, allowing dispensing of fuel from either the satellite or master, but not both at the same time. In this configuration, the master will stop dispensing as long as the satellite pump handle is lifted. Master operation will resume when the satellite pump handle has been lowered. Simultaneous operation (that is, both master and satellite will dispense at the same time), can be achieved by leaving the P322 connector and jumper in place.

### Table of Contents

| <b>Topic</b>   | <b>Page</b> |
|--|-------------|
| <a href="#">Introduction</a>                         | 1           |
| <a href="#">Important Safety Information</a>         | 3           |
| <a href="#">Installation for Encore Non-S Bezels</a> | 5           |
| <a href="#">Installation for Encore S Bezels</a>     | 11          |

### Recommended Tools

The following tools are required for the installation of the kit:

- Nutdriver set (Metric)
- Pin extractor
- Pliers
- Screwdriver, Phillips®
- Wire strippers

## Parts List

The installation kit for M04239K001 contains the parts listed below for one unit but does not contain the graphic panel. Refer to “[Important Ordering Information](#)” on [page 2](#).

### Kits Required for System Type

The following table lists the kit requirements for each system type.

| Dispenser Type | Number of Kits |
|----------------|----------------|
| Dual Master    | 2              |
| Single Master  | 1              |
| Combo          | 1              |

### Important Ordering Information

Graphic panels are specific to customer requirements. A new graphic panel must be ordered separately and may require a new template. See [Figure 1](#) on [page 5](#) for the location on the unit.

| Item | Description  | Part Number | Quantity |
|------|--|-------------|----------|
| 1    | Decal  | K93526      | 1        |
| 2    | Transformer Assembly   | M02370A001  | 1        |
| 3    | Cable, Valve Intercept   | M04218A001  | 1        |
| 4    | Cable, Satellite Indicator   | M02371A001  | 1        |
| 5    | Indicator, Encore Ultra-Hi PCA                                       | M02652A011  | 1        |
| 6    | Screw, Hex 6-20X   | Q11677-24   | 1        |
| 7    | Nut, Hex, Metric (KEPS)  | Q12885-03   | 2        |
| 8    | Cover, IS Barrier  | M02374B001  | 1        |
| 9    | Screw, Metric, Thread Forming Hex Washer Head and Pozidrive Pan Head | M00417B101  | 2        |
| 10   | Cable, Satellite PPU Door Node II Interface                          | M04633A001  | 1        |
| 11   | Cable, Satellite Encore Ultra-Hi                                     | M02371A002  | 1        |
| 12   | Cable, Valve Intercept Encore Ultra-Hi                               | M04218A002  | 1        |
| 13   | Dual Locking Support Post  | Q10651-39   | 3        |

## Related Documents

| Document Number | Title   | GOLD Library   |
|-----------------|---|--|
| MDE-3804        | Encore and Eclipse® Start-Up/Service Manual                                       | <ul style="list-style-type: none"> <li>• Encore and Eclipse</li> <li>• Service Manual</li> </ul> |
| MDE-4625        | Graphic Panel Application for The Advantage® Series, Encore, Eclipse and Encore S | The Advantage and Legacy Models  |
| PT-1936         | Encore Series Pump and Dispenser Illustrated Parts Manual                         | Parts Manual   |

## Abbreviations and Acronyms

| Term | Description              |
|------|--------------------------|
| PCA  | Printed Circuit Assembly |
| PPU  | Price Per Unit           |

# Important Safety Information

**Note: Save this Important Safety Information section in a readily accessible location.**

This section introduces the hazards and safety precautions associated with installing, inspecting, maintaining or servicing this product. Before performing any task on this product, read this safety information and the applicable sections in this manual, where additional hazards and safety precautions for your task will be found. Fire, explosion, electrical shock or pressure release could occur and cause death or serious injury, if these safe service procedures are not followed.


## Preliminary Precautions


You are working in a potentially dangerous environment of flammable fuels, vapors, and high voltage or pressures. Only trained or authorized individuals knowledgeable in the related procedures should install, inspect, maintain or service this equipment.

## Emergency Total Electrical Shut-Off

The first and most important information you must know is how to stop all fuel flow to the pump/dispenser and island. Locate the switch or circuit breakers that shut off all power to all fueling equipment, dispensing devices, and Submerged Turbine Pumps (STPs).

**⚠ WARNING**

 The EMERGENCY STOP, ALL STOP, and PUMP STOP buttons at the cashier's station WILL NOT shut off electrical power to the pump/dispenser. This means that even if you activate these stops, fuel may continue to flow uncontrolled.

 You must use the TOTAL ELECTRICAL SHUT-OFF in the case of an emergency and not the console's ALL STOP and PUMP STOP or similar keys.

## Total Electrical Shut-Off Before Access

Any procedure that requires access to electrical components or the electronics of the dispenser requires total electrical shut off of that unit. Understand the function and location of this switch or circuit breaker before inspecting, installing, maintaining, or servicing Gilbarco equipment.

## Evacuating, Barricading and Shutting Off

Any procedure that requires access to the pump/dispenser or STPs requires the following actions:



- An evacuation of all unauthorized persons and vehicles from the work area
- Use of safety tape, cones or barricades at the affected unit(s)
- A total electrical shut-off of the affected unit(s)

## Read the Manual

Read, understand and follow this manual and any other labels or related materials supplied with this equipment. If you do not understand a procedure, call a Gilbarco Authorized Service Contractor or call the Gilbarco Support Center at 1-800-800-7498. It is imperative to your safety and the safety of others to understand the procedures before beginning work.

## Follow the Regulations

Applicable information is available in National Fire Protection Association (NFPA) 30A; *Code for Motor Fuel Dispensing Facilities and Repair Garages*, NFPA 70; *National Electrical Code (NEC)*, Occupational Safety and Hazard Association (OSHA) regulations and federal, state, and local codes. All these regulations must be followed. Failure to install, inspect, maintain or service this equipment in accordance with these codes, regulations and standards may lead to legal citations with penalties or affect the safe use and operation of the equipment.

## Replacement Parts

Use only genuine Gilbarco replacement parts and retrofit kits on your pump/dispenser. Using parts other than genuine Gilbarco replacement parts could create a safety hazard and violate local regulations.

## Safety Symbols and Warning Words

This section provides important information about warning symbols and boxes.

### Alert Symbol



This safety alert symbol is used in this manual and on warning labels to alert you to a precaution which must be followed to prevent potential personal safety hazards. Obey safety directives that follow this symbol to avoid possible injury or death.

### Signal Words

These signal words used in this manual and on warning labels tell you the seriousness of particular safety hazards. The precautions below must be followed to prevent death, injury or damage to the equipment:



**DANGER:** Alerts you to a hazard or unsafe practice which will result in death or serious injury.



**WARNING:** Alerts you to a hazard or unsafe practice that could result in death or serious injury.



**CAUTION with Alert symbol:** Designates a hazard or unsafe practice which may result in minor injury.

**CAUTION without Alert symbol:** Designates a hazard or unsafe practice which may result in property or equipment damage

## Working With Fuels and Electrical Energy

### Prevent Explosions and Fires

Fuels and their vapors will explode or burn, if ignited. Spilled or leaking fuels cause vapors. Even filling customer tanks will cause potentially dangerous vapors in the vicinity of the dispenser or island.

DEF is non-flammable. Therefore, explosion and fire safety warnings do not apply to DEF lines.

## Important Safety Information

### No Open Fire



Open flames from matches, lighters, welding torches or other sources can ignite fuels and their vapors.

### No Sparks - No Smoking



Sparks from starting vehicles, starting or using power tools, burning cigarettes, cigars or pipes can also ignite fuels and their vapors. Static electricity, including an electrostatic charge on your body, can cause a spark sufficient to ignite fuel vapors. Every time you get out of a vehicle, touch the metal of your vehicle, to discharge any electrostatic charge before you approach the dispenser island.

### Working Alone

It is highly recommended that someone who is capable of rendering first aid be present during servicing. Familiarize yourself with Cardiopulmonary Resuscitation (CPR) methods, if you work with or around high voltages. This information is available from the American Red Cross. Always advise the station personnel about where you will be working, and caution them not to activate power while you are working on the equipment. Use the OSHA Lockout/ Tagout procedures. If you are not familiar with this requirement, refer to this information in the service manual and OSHA documentation.

### Working With Electricity Safely

Ensure that you use safe and established practices in working with electrical devices. Poorly wired devices may cause a fire, explosion or electrical shock. Ensure that grounding connections are properly made. Take care that sealing devices and compounds are in place. Ensure that you do not pinch wires when replacing covers. Follow OSHA Lockout/Tagout requirements. Station employees and service contractors need to understand and comply with this program completely to ensure safety while the equipment is down.

### Hazardous Materials

Some materials present inside electronic enclosures may present a health hazard if not handled correctly. Ensure that you clean hands after handling equipment. Do not place any equipment in the mouth.

#### WARNING

The pump/dispenser contains a chemical known to the State of California to cause cancer.

#### WARNING

The pump/dispenser contains a chemical known to the State of California to cause birth defects or other reproductive harm.

## In an Emergency

### Inform Emergency Personnel

Compile the following information and inform emergency personnel:

- Location of accident (for example, address, front/back of building, and so on)
- Nature of accident (for example, possible heart attack, run over by car, burns, and so on)
- Age of victim (for example, baby, teenager, middle-age, elderly)
- Whether or not victim has received first aid (for example, stopped bleeding by pressure, and so on)
- Whether or not a victim has vomited (for example, if swallowed or inhaled something, and so on)

#### WARNING



Gasoline ingested may cause unconsciousness and burns to internal organs. Do not induce vomiting. Keep airway open. Oxygen may be needed at scene. Seek medical advice immediately.

#### WARNING



Gasoline inhaled may cause unconsciousness and burns to lips, mouth and lungs. Keep airway open. Seek medical advice immediately.

#### WARNING



Gasoline spilled in eyes may cause burns to eye tissue. Irrigate eyes with water for approximately 15 minutes. Seek medical advice immediately.

#### WARNING



Gasoline spilled on skin may cause burns. Wash area thoroughly with clear water. Seek medical advice immediately.

#### WARNING

DEF is mildly corrosive. Avoid contact with eyes, skin, and clothing. Ensure that eyewash stations and safety showers are close to the work location. Seek medical advice/recommended treatment if DEF spills into eyes.

**IMPORTANT:** Oxygen may be needed at scene if gasoline has been ingested or inhaled. Seek medical advice immediately.

### Lockout/Tagout

Lockout/Tagout covers servicing and maintenance of machines and equipment in which the unexpected energization or start-up of the machine(s) or equipment or release of stored energy could cause injury to employees or personnel. Lockout/Tagout applies to all mechanical, hydraulic, chemical, or other energy, but does not cover electrical hazards. Subpart S of 29 CFR Part 1910 - Electrical Hazards, 29 CFR Part 1910.333 contains specific Lockout/Tagout provision for electrical hazards.

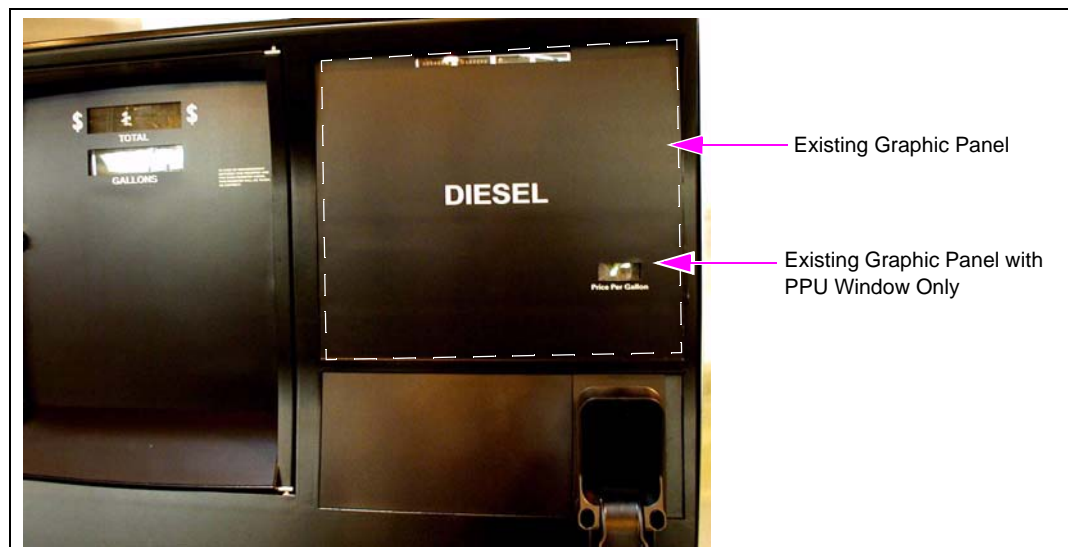
## Installation for Encore Non-S Bezels

The following sections provide information on installing the Satellite Indicator Light with the Valve Control Assembly on the master side of Encore Ultra-Hi unit connected to a satellite dispensing unit.

### Replacing the Graphic Panel

In most cases, the existing graphic panel will be replaced with a new panel (ordered separately) that contains a window for viewing the Satellite Indicator Light. Positioning of the Satellite Indicator Light Printed Circuit Assembly (PCA) on the inside of the door is dependent on where the opening in the new graphic panel is placed for your specific application.

**Figure 1: Graphic Panel with Price Per Unit (PPU) Window**



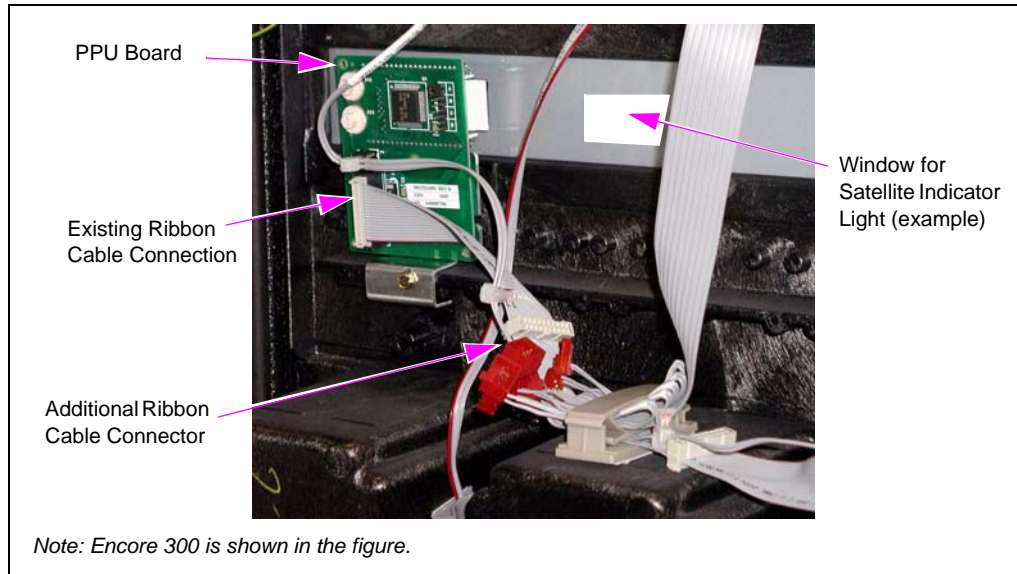
If the graphic panel on the door is to be replaced during the installation, refer to MDE-4625 Graphic Panel Application for The Advantage Series, Encore, Eclipse and Encore S for detailed information regarding removing and installing graphic panels.

To replace the graphic panel, proceed as follows:

- 1 Shut off all power to the unit.
- 2 Remove the existing graphic panel.
- 3 Ensure that the surface is clean.
- 4 Apply the new graphic panel.

- 5 Ensure that a window is available for the Satellite Indicator Light (see [Figure 2](#) on [page 6](#)).

**Figure 2: Existing Components Inside the Door**



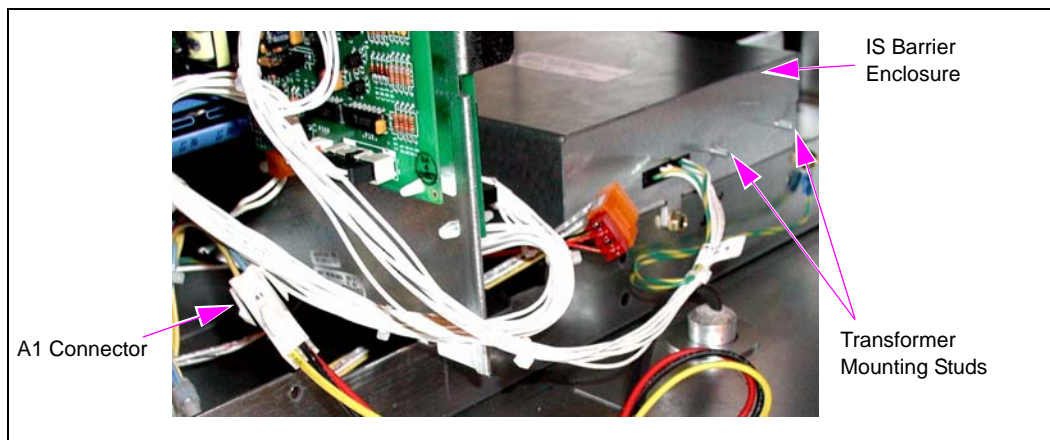
## Installing the Hardware

### Installing the Transformer

To install the transformer, proceed as follows:

- 1 Locate the Intrinsically Safe (IS) barrier enclosure and the mounting studs for the transformer assembly as shown in [Figure 3](#).

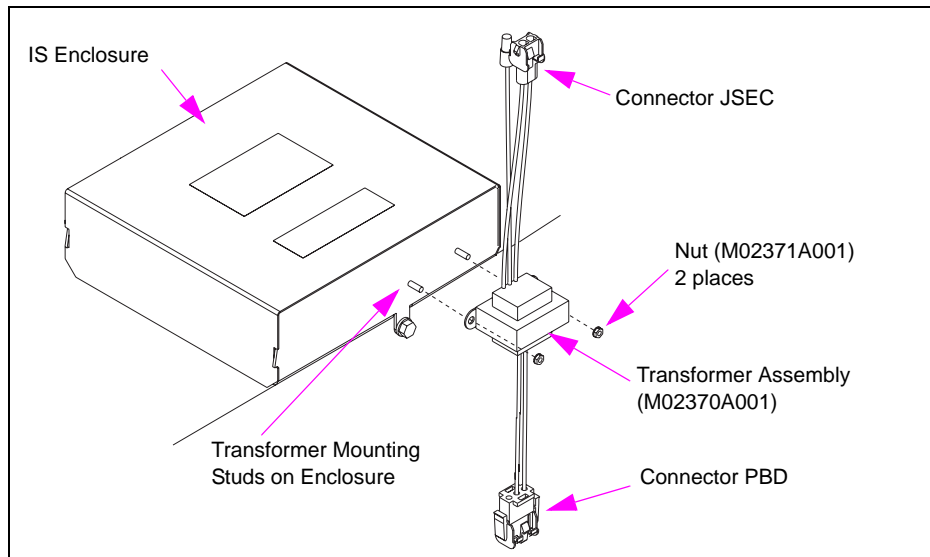
**Figure 3: Transformer Mounting Studs**



- 2 Install the transformer assembly (M02370A001) on the mounting studs using hex nuts (Q12885-03) (see [Figure 4](#) on [page 7](#)).

- 3 Separate the valve connector A1.

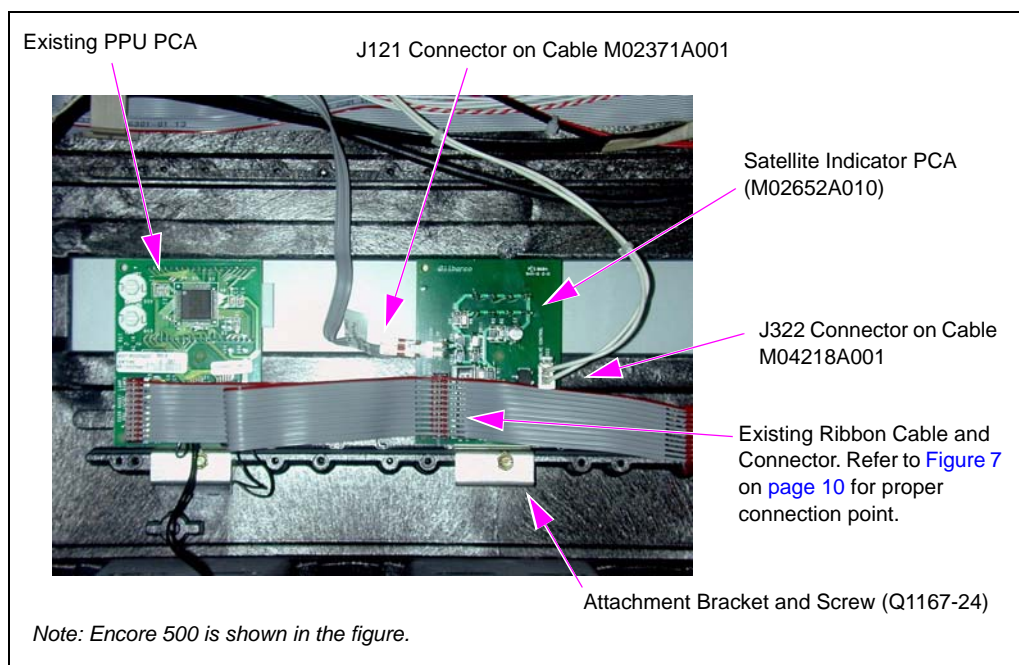
**Figure 4: Transformer Assembly and Cables**



### Installing the Indicator Light PCA on the Door

Placement of the Satellite Indicator Light PCA depends on the window available (that allows the user to see the indicator light).

**Figure 5: Satellite Indicator and Cables Installed**





To install the Indicator Light PCA on the door, proceed as follows:

- 1 Locate the appropriate window in the door graphic. See [Figure 2](#) on [page 6](#) for an example.
- 2 Use the screw (Q11677-24) to secure the Satellite Indicator Light PCA (M02652A011) to the door at the location of this window. See mounting bracket and screw in [Figure 5](#) on [page 7](#) for details.

## Making Wiring Connections

See [Figure 6](#) on [page 9](#) and [Figure 7](#) on [page 10](#) to make connections.

### Indicator Light Wiring

The A1 connector that was separated in step 3 separates the existing M02338A001 Cable from valve A1 (see [Figure 3](#) on [page 6](#)).

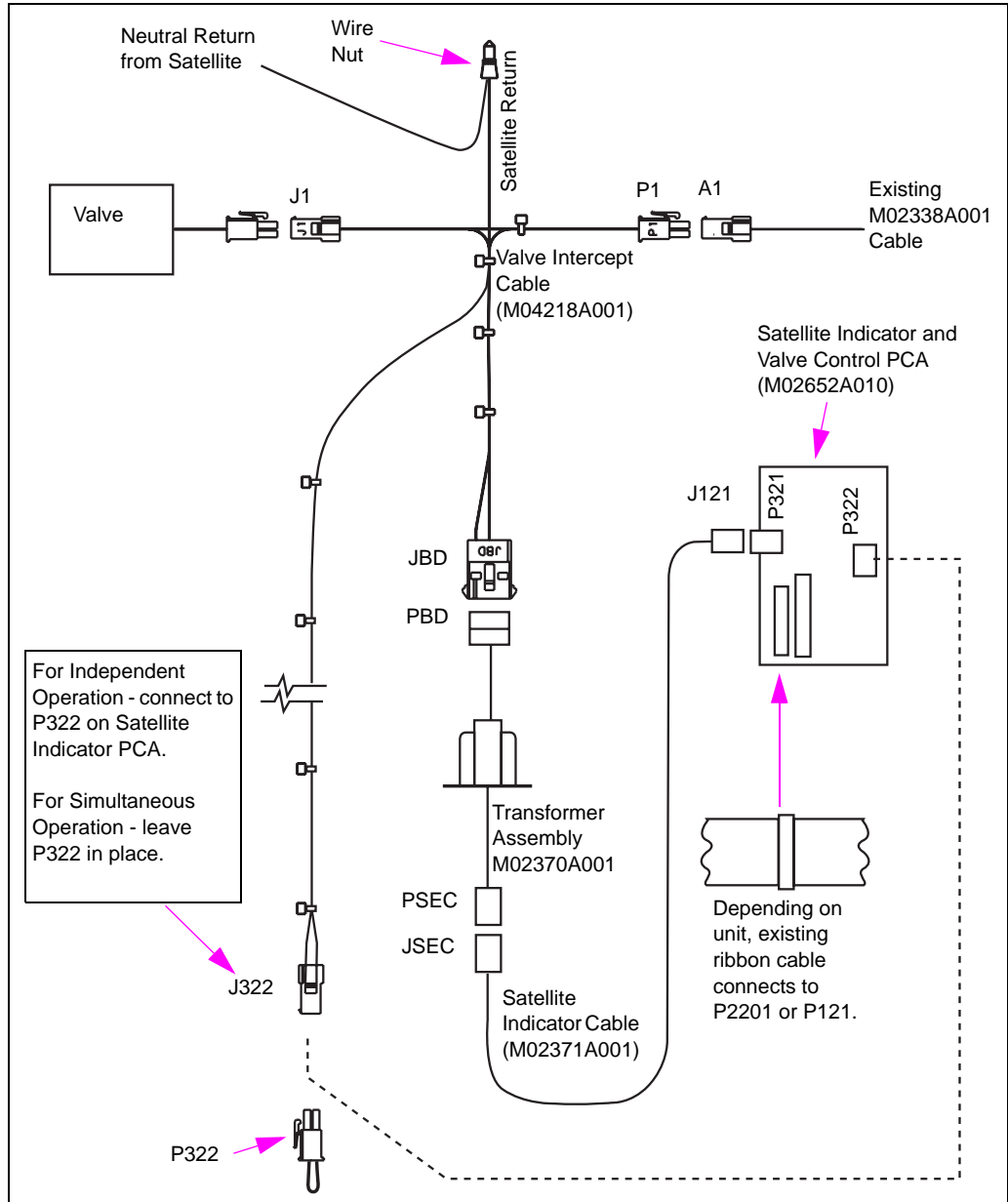
To make the appropriate indicator light wiring connections, proceed as follows:

- 1 Use the Valve Intercept Cable (M04218A001) to insert P1 into the Flow Valve Connector and J1 into the existing M02338A001 Cable Connector.
- 2 Connect JBD of the Valve Intercept Cable (M4218A001) to the PBD of the Transformer Assembly (M02370A001).
- 3 Use the Satellite Indicator Cable (M02371A001) to connect the PSEC to the JSEC of the Transformer Assembly (M02370A001).
- 4 Cut the wire nut of the SAT RTN wire from the Valve Intercept Cable (M04218A001) and discard.
- 5 Connect the Neutral Return (spare wire) from the satellite to the SAT RTN wire with the new wire nut.
- 6 Route the Satellite Indicator Cable (M02371A001) along the door and install the connector J121 to P321.



- 7 Route all cables through existing cable clamps. Ensure that the cables are not pulled on opening or pinched on closing the door.

**Figure 6: Satellite Indicator with Valve Control Wiring Diagram**

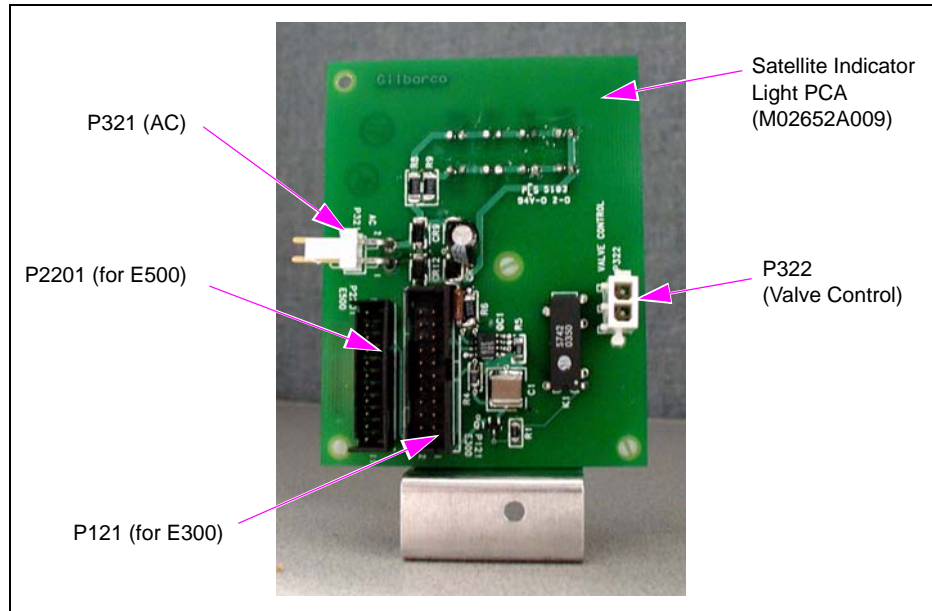


## Valve Control Wiring

For wiring of units that require valve control, proceed as follows:

- 1 Unplug P322 from connector J322 on M04218A001 Cable.
- 2 Insert the two-position J322 connector from M04218A001 Cable to the two-position header at connector P322 on the Satellite Indicator PCA (see [Figure 7](#) on [page 10](#)).

**Figure 7: Satellite Indicator PCA Wiring Connections**



- 3 Route all cables through the existing cable clamps. Ensure that the cables are not pulled on opening or pinched on closing the door.

## Applying Decal

If the new graphic panel does not contain information regarding the purpose of the indicator light, then apply decal (K93526) “ON When Satellite in Service” just below the Satellite Indicator Light window.

*Note: Applying this decal may not be necessary if the new graphic panel already contains information about the satellite light.*

## Returning the Unit to Operation and Testing

To return the unit to operation, proceed as follows:

- 1 Restore power to the dispensing unit that is being serviced.
- 2 Ensure proper operation of the Satellite Indicator Light by authorizing the master and raising the pump handle on the master. The Satellite Indicator Light must be lit when the satellite pump handle is activated while the master pump handle is up.

*Note: This does not indicate flow, but only that the satellite pump handle is in the raised position.*

- 3 If valve control is used, authorize the master and raise the pump handle on the master, then also raise the satellite pump handle. In this state, the satellite should dispense, but not the master. Lowering the satellite pump handle should allow the master to resume dispensing.

## Installation for Encore S Bezels

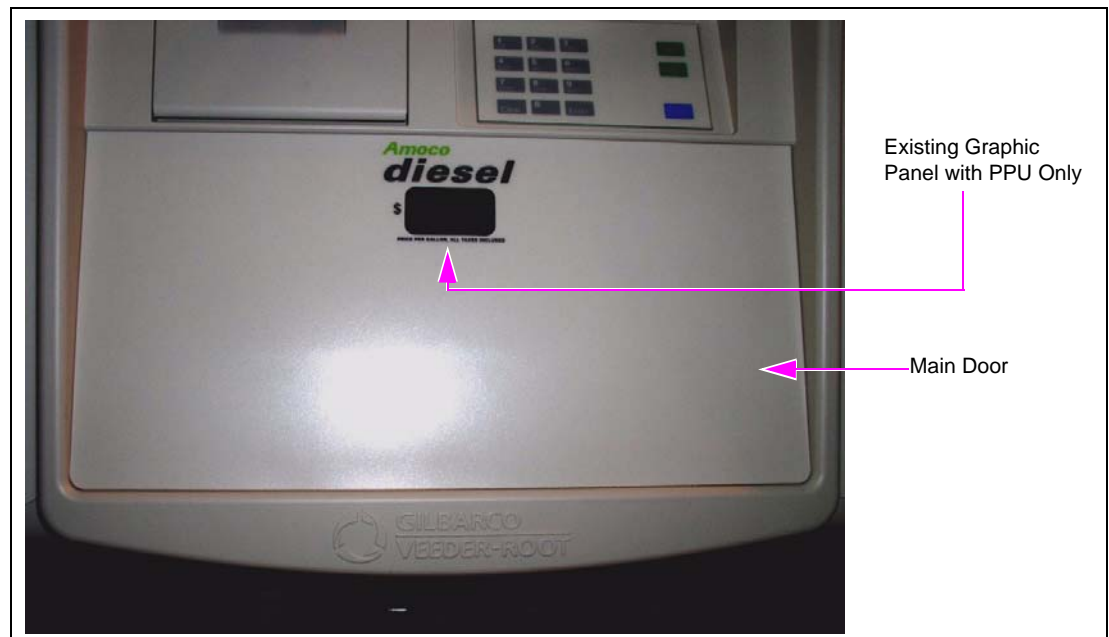
The following sections provide information on installing the Satellite Indicator Light on the master side of Encore S unit connected to a satellite dispensing unit.

### Installing the Indicator Light PCA on the Door

To install the indicator light PCA on the door, proceed as follows:

- 1 Shut off all power to the unit.
- 2 Open the main door (see [Figure 8](#)).  
*Note: This requires removal of the lower hydraulic panel (prior to opening the main door).*

**Figure 8: Graphic Panel with Price Per Unit (PPU) Window**

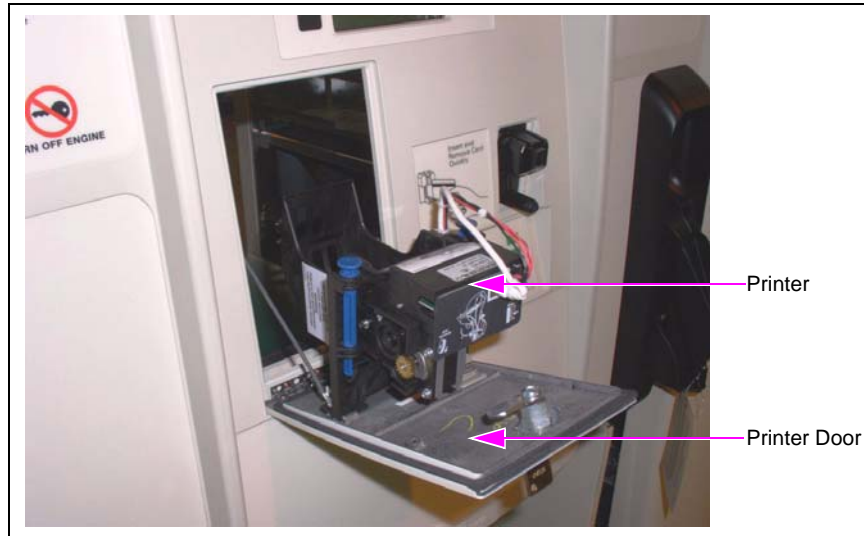


- 3 Open the lower door and set aside.

- 4 Open the printer door (see to [Figure 9](#)).

*Note: Opening the printer door is necessary in order to remove the PPU Panel.*

**Figure 9: Open Printer Door**



- 5 If the graphic panel on the door is to be replaced during the installation, refer to MDE-4625 Graphic Panel Application for The Advantage Series, Encore, Eclipse and Encore S on removing and installing graphic panels.
  - a Remove the existing graphic panel.
  - b Ensure that the surface is clean.
  - c Apply the new graphic panel.
  - d Ensure that a window is available for the Satellite Indicator Light (see [Figure 2](#) on [page 6](#)).

- Using a screwdriver, remove the three screws that secure the PPU panel to the rear portion of the main door (see [Figure 10](#)).

**Figure 10: Removing the PPU Panel**



- Place the PCA, Satellite Indicator w/Valve Control (M04570A001) (see [Figure 11](#) and [Figure 12](#) on [page 14](#)) on the slots in the panel and secure using the dual locking support posts (Q10651-39) (see [Figure 13](#) on [page 14](#) and [Figure 14](#) on [page 15](#)).

**Figure 11: Satellite Indicator PCA (Front View)**



Figure 12: Satellite Indicator PCA (Rear View)

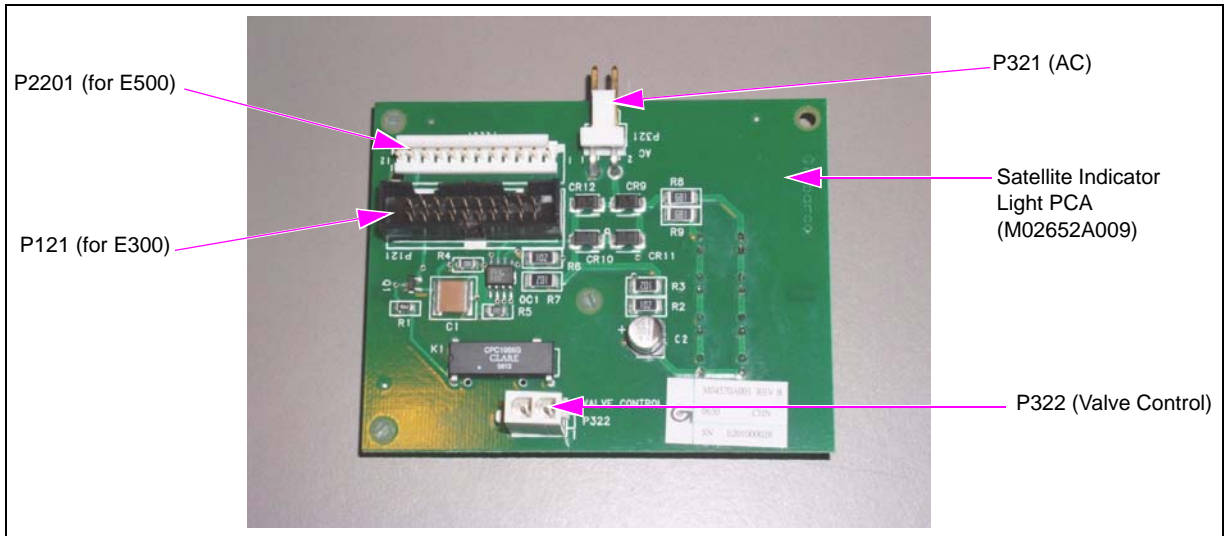
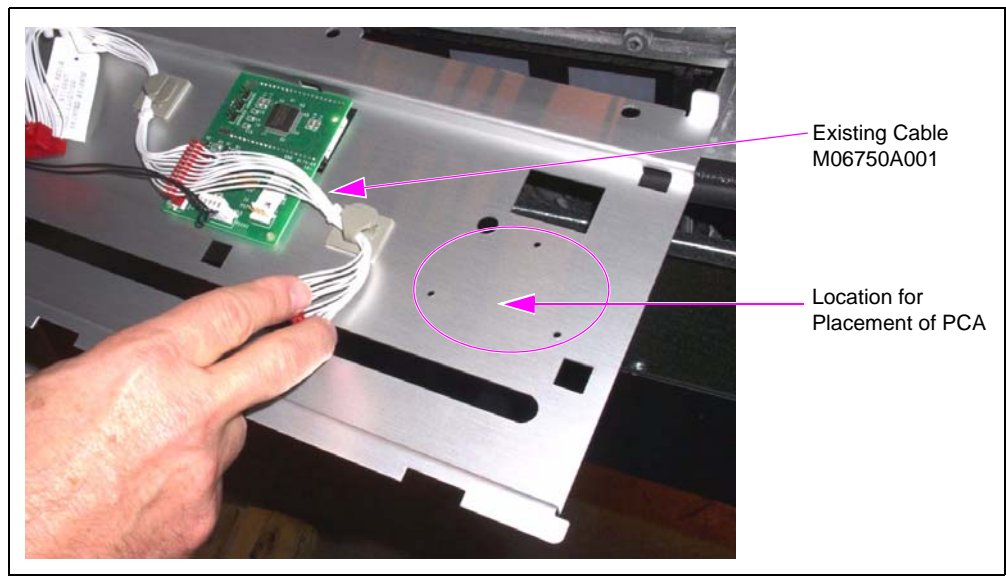
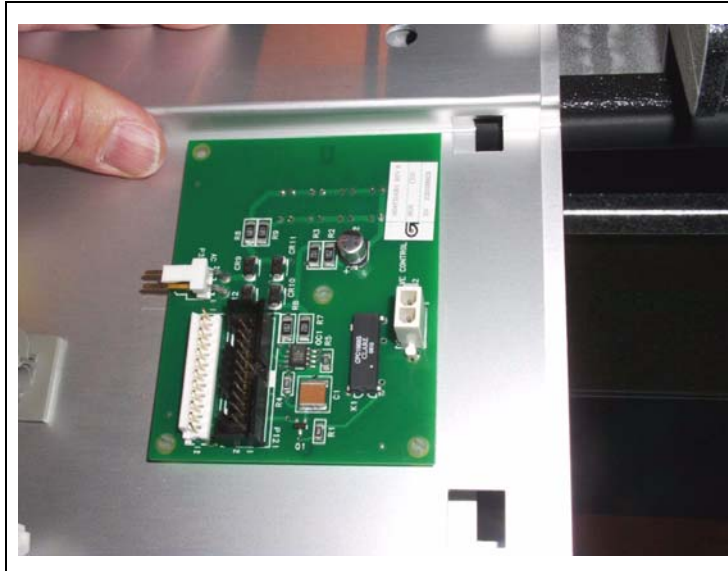


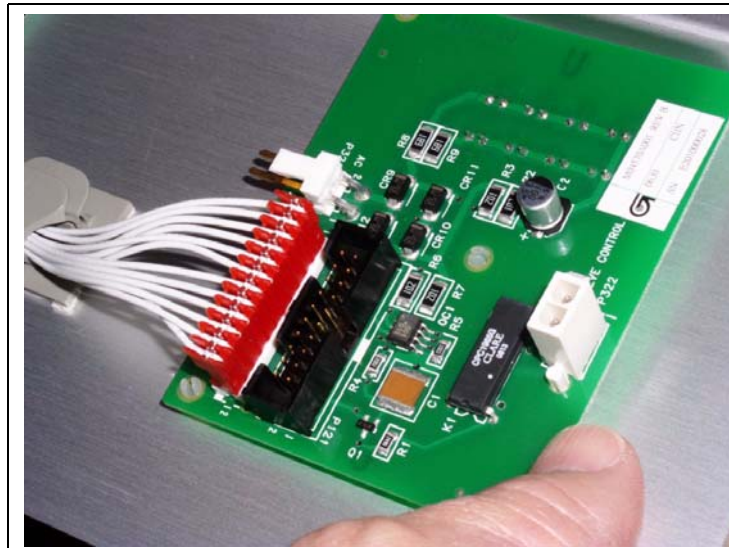
Figure 13: Slots for Ultra-Hi Satellite Light





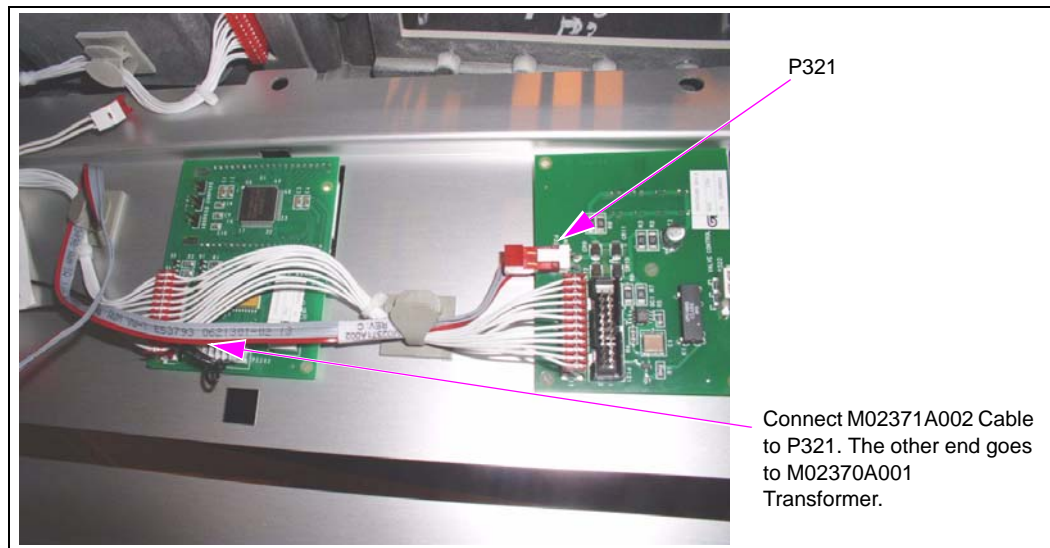
**Figure 14: Ultra-Hi Satellite Light in the Slot**

- 8 Make the appropriate cable connections as shown in [Figure 15](#), [Figure 16](#) on [page 16](#), and [Figure 17](#) on [page 16](#).

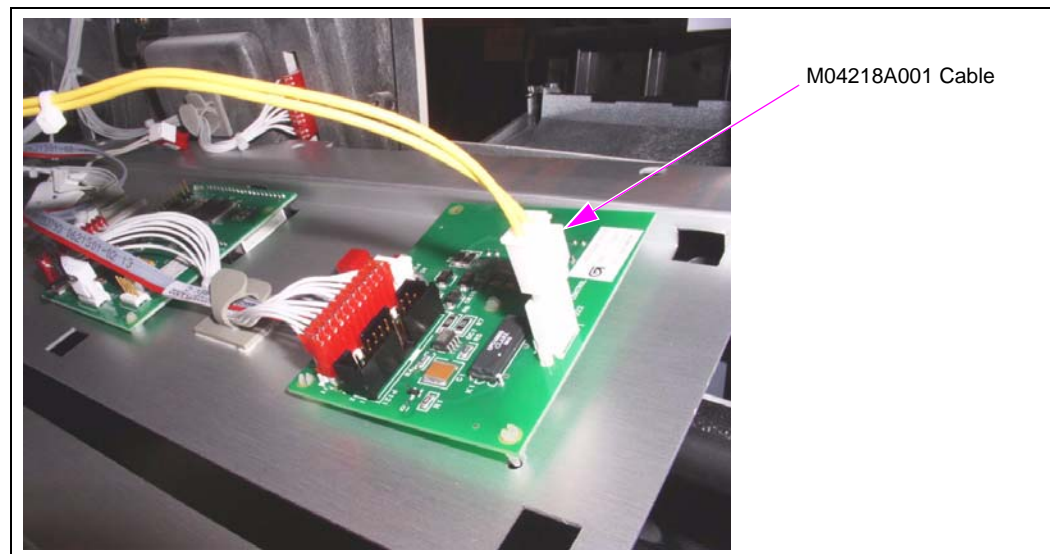
**Figure 15: Connecting J2201A to P2201 of Cable M06750A001**



**Figure 16: Connecting the M02371A002 Cable to P321**



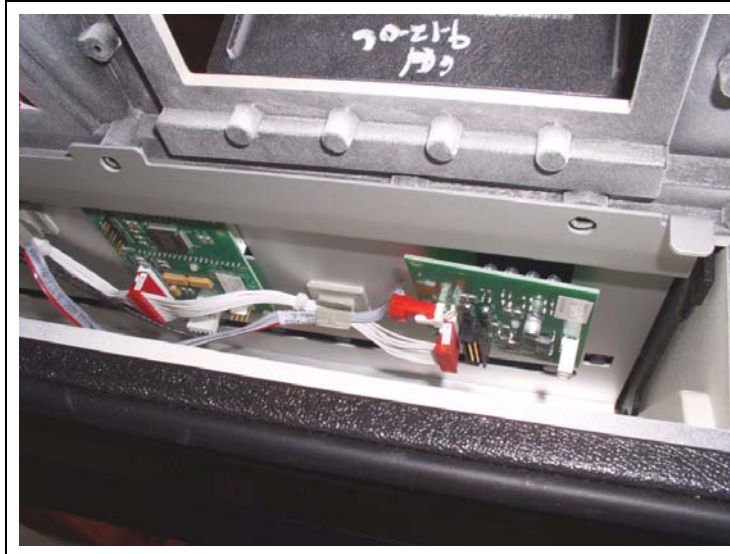
**Figure 17: Connecting the M04218A001 Cable**



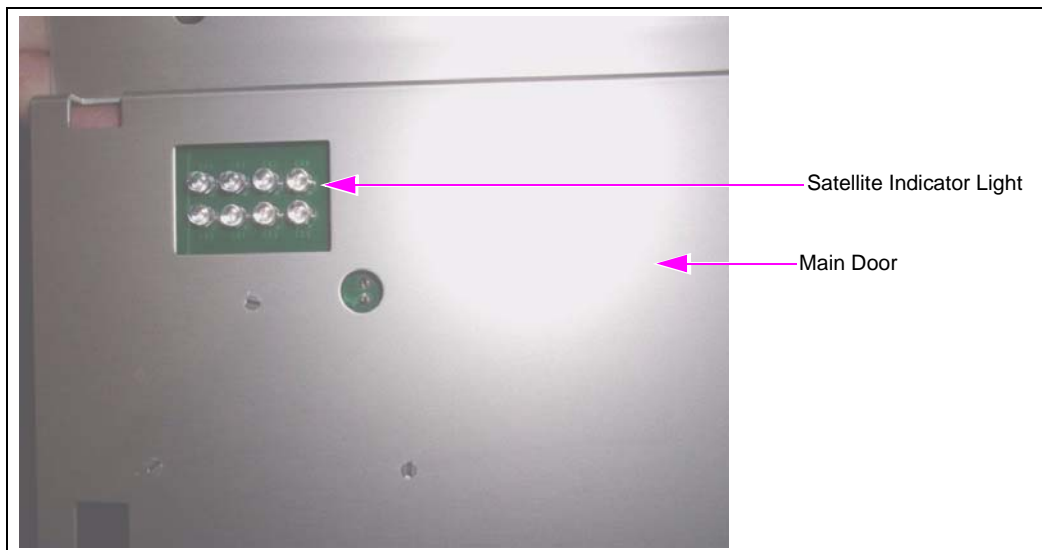
*Note: Connect this cable only if the unit requires valve control. Refer to “[Valve Control Wiring](#)” on [page 10](#) for more details.*

- 9 Place the PPU panel on the rear portion of the main door and fasten using the three screws that you removed in step 6 (see [Figure 18](#)).

**Figure 18: Placement of the Panel**



**Figure 19: View after Fixing the Panel on the Main Door**



## Returning Unit to Operation and Testing

To return the unit to operation, proceed as follows:

- 1 Restore power to the dispensing unit that is being serviced.
- 2 Ensure proper operation of the Satellite Indicator Light by authorizing the master and raising the pump handle on the master. The Satellite Indicator Light must be lit when the satellite pump handle is activated while the master pump handle is up.  
*Note: This does not indicate flow, but only that the satellite pump handle is in the raised position.*
- 3 If valve control is used, authorize the master and raise the pump handle on the master, then also raise the satellite pump handle. In this state, the satellite should dispense, but not the master. Lowering the satellite pump handle should allow the master to resume dispensing.

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