

Introduction

Purpose

This document provides instructions for installing the Pulse-Out Interface Kit (M19206K001, M19206K002), which allows the pump/dispenser to use pulse-out interface for AtlasX™ (9853/8853/9850/9862/8862) pumps/dispensers. This pulse output provides a DC output to indicate the quantity dispensed.

Required Reading

Before installing a kit, the installer must read, understand, and follow:

- This manual
- NFPA 30A, The Automotive and Marine Service Station Code
- NFPA 70®, The National Electric Code (NEC®)
- Applicable Federal, state, and local codes and regulations

Failure to do so may adversely affect the safe use and operation of the equipment.

Note: This kit must be installed by a Gasboy® Authorized Service Contractor (ASC) to ensure warranty.

Table of Contents

| Topic | Page |
|---|------|
| Introduction | 1 |
| Important Safety Information | 4 |
| Before You Begin | 6 |
| Installation | 7 |
| Configuration of Pulse-Out Function | 12 |
| Completing the Installation | 13 |

Required Tools

- Nut Driver Set (Metric)

Related Documents

| Document Number | Title | GOLD SM Library |
|-----------------|---------------------------------------|----------------------------------|
| FE-371 | AtlasX Dispenser Field Wiring Diagram | Gasboy Commercial & Retail Pumps |
| MDE-5692 | AtlasX Installation Manual | Gasboy Commercial & Retail Pumps |
| MDE-5694 | AtlasX Startup and Service Manual | Gasboy Commercial & Retail Pumps |

Parts List

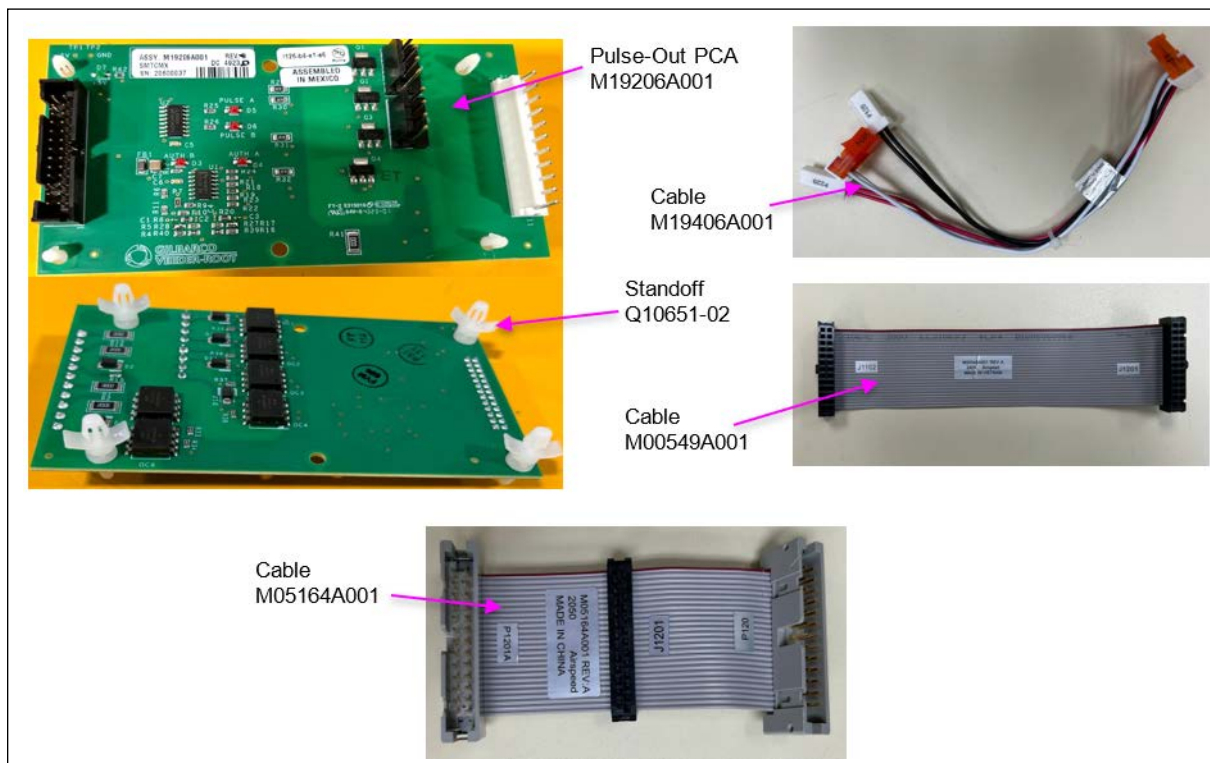
M19206K001, Pulse-Out Kit for all AtlasX Single and Dual 9853/8853/9850 Units

| Item | Description | Part Number | Quantity |
|------|---|-------------|----------|
| 1 | Cable, Pump Control Node (PCN) to Pulse-Out board | M00549A001 | 1 |
| 2 | PCA, Pulse-Out | M19206A001 | 1 |
| 3 | Cable, Auth Input AtlasX | M19406A001 | 1 |
| 4 | Support Circuit Board Locking Polycarb | Q10651-02 | 4 |
| 5 | AtlasX Pulse-Out Kit (M19206K00X) Installation Instructions | MDE-5801 | - |
| 6 | Cable Mount, Adhesive Releasable | M16064B001 | 2 |

M19206K002, Pulse-Out Kit for AtlasX 9862/8862 (DEF) Units Only

| Item | Description | Part Number | Quantity |
|------|---|-------------|----------|
| 1 | Cable, (PCN) to Pulse-Out board | M00549A001 | 1 |
| 2 | PCA, Pulse-Out | M19206A001 | 1 |
| 3 | Cable, Auth Input AtlasX | M19406A001 | 1 |
| 4 | Support Circuit Board Locking Polycarb | Q10651-02 | 4 |
| 5 | AtlasX Pulse-Out Kit (M19206K00X) Installation Instructions | MDE-5801 | - |
| 6 | Cable, E500 Simulator Valve Sense Adaptor | M05164A001 | 1 |
| 7 | Cable Mount, Adhesive Releasable | M16064B001 | 2 |

Figure 1: Pulse-Out Kit Parts



Abbreviations and Acronyms

| Term | Description |
|-------------|---|
| ASC | Authorized Service Contractor |
| CDM | Computation and Display Module |
| ESD | Electrostatic Discharge |
| DEF | Diesel Exhaust Fluid (Automotive) |
| FMS | Fuel Management System |
| GOLD | Gilbarco® Online Documentation |
| HF | Hi-Flow |
| J-box | Junction Box |
| NEC | National Electrical Code |
| NFPA | National Fire Protection Association |
| OSHA | Occupational Safety and Health Administration |
| PCA | Printed Circuit Assembly |
| PCN | Pump Control Node |
| SEMS | Pre-assembled Washers and Screws/Nuts |
| STP | Submersible Turbine Pump |
| UHF | Ultra-Hi™ Flow |
| W&M | Weights & Measures |

Important Safety Information

Notes: 1) Save this Important Safety Information section in a readily accessible location.

2) Although DEF is non-flammable, Diesel is flammable. Therefore, for DEF cabinets that are attached to Diesel dispensers, follow all the notes in this section that pertain to flammable fuels.

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 Gasboy 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 Gasboy Authorized Service Contractor or call the Gasboy Service Center at 1-800-444-5529. 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 Health Administration (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 Gasboy replacement parts and retrofit kits on your pump/dispenser. Using parts other than genuine Gasboy 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.

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

In the event of inclement weather, including snow, ice, or flooding that makes driving conditions dangerous, please avoid servicing units. Always use available door stops to secure upper doors against unwanted/unexpected movement, especially during high winds. If necessary, reschedule service to avoid damage to the equipment. Weather may change unexpectedly; be aware of local weather conditions. During service, if conditions develop making service unsafe, close the unit(s) and proceed to a safe location.

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.

Gilbarco Veeder-Root encourages the recycling of our products. Some products contain electronics, batteries, or other materials that may require special management practices depending on your location. Please refer to your local, state, or country regulations for these requirements.

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/DEF 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

DEF generates ammonia gas at higher temperatures. When opening enclosed panels, allow the unit to air out to avoid breathing vapors. If respiratory difficulties develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention.

WARNING

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

WARNING

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

WARNING

Gasoline/DEF 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.

Before You Begin

CAUTION



A properly grounded Electrostatic Discharge (ESD) wrist strap must be worn while servicing any electronic devices or components. Failure to use electrostatic precautions may damage electronic components and void warranty.

Read and understand all the safety information found in *MDE-5694 AtlasX Startup and Service Manual*.

To prepare the site and dispenser for the upgrade, proceed as follows:

- 1 Inform the store manager at the site.
- 2 Barricade the unit to be worked on.
- 3 Remove power to the master and satellite units at the breaker panel. Follow OSHA lockout/tagout procedures.
- 4 Isolate two-wire communication to the unit (If applicable).

⚠ WARNING

Failure to turn off the unit during kit installation may cause injury or bodily harm from electrical shock. Ensure that all power to the unit is switched off before opening the door to the unit and during kit installation.

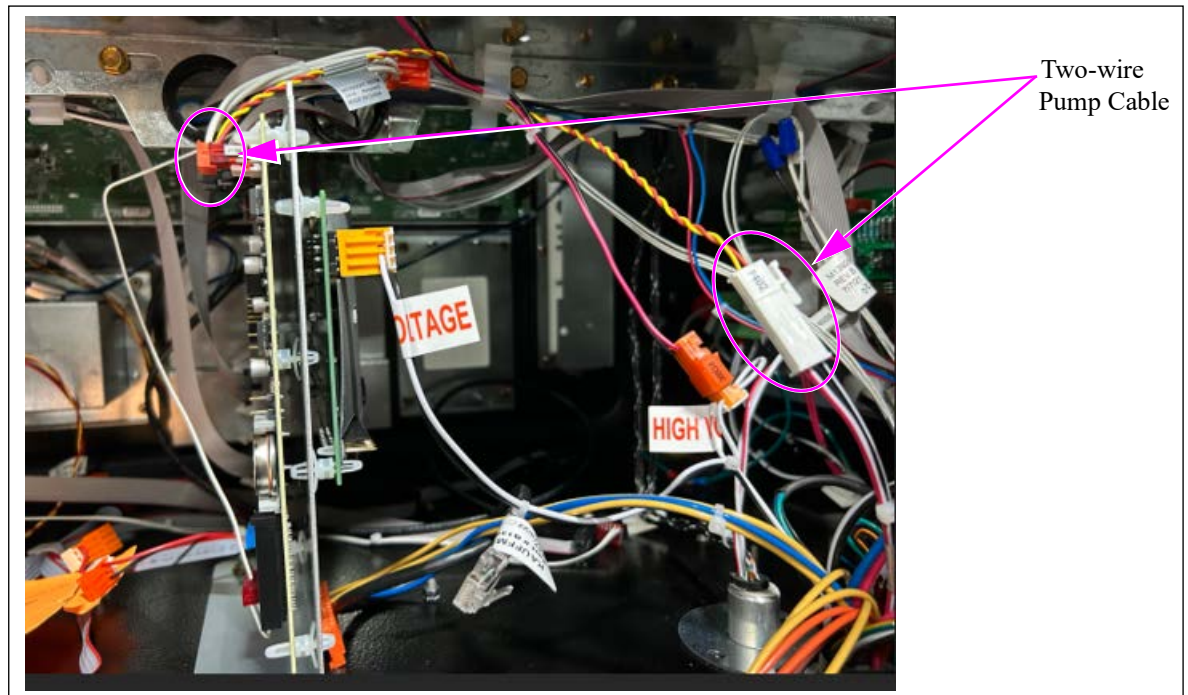
Installation

Installing the Pulse-Out Interface Board

To install the Pulse-out Board, proceed as follows:

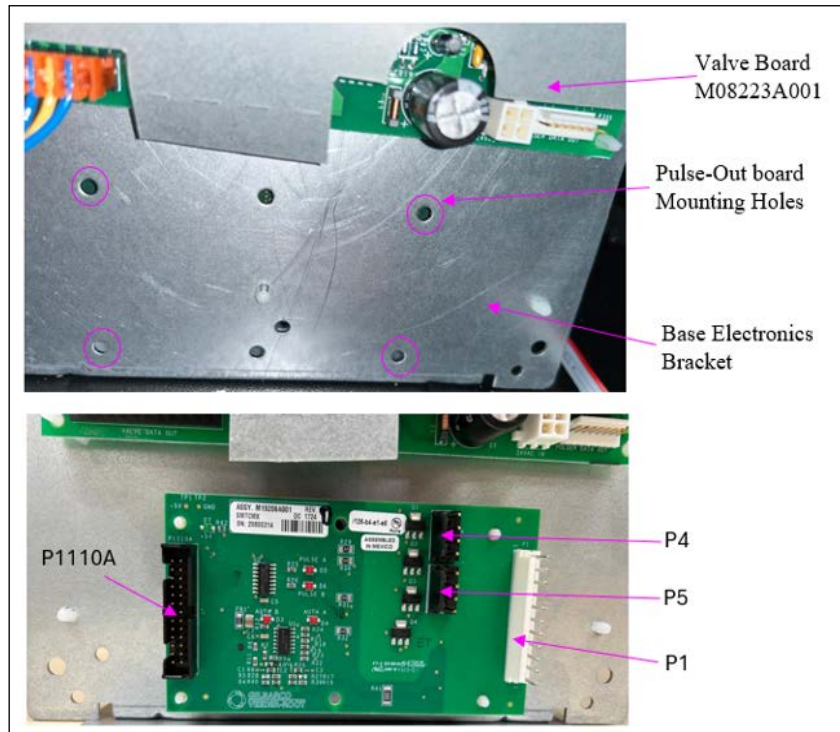
- 1 Unlock and open the bezel door until the prop rod engages.
- 2 Disconnect two-wire pump cable M02993A007 from PCN PCA (P1109)

Figure 2: Two-wire Pump Cable (M02993A007)



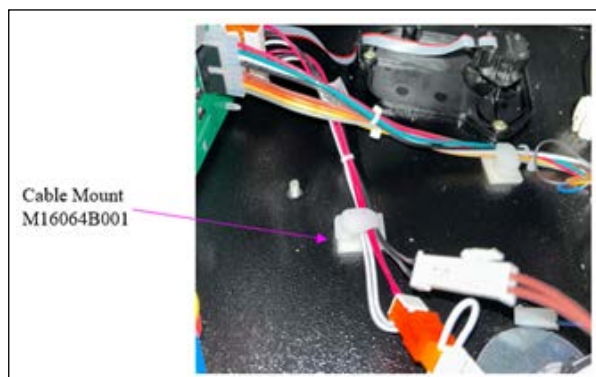
- 3 Mount the Pulse-Out board M19206A001 on the base electronics assembly right below the Valve interface board using circuit board support standoff Q10651-02.

Figure 3: Mounting of Pulse-Out Board (M19206A001)



- 4 Mount the cable M19406A001 on the Computation and Display Module (CDM) base with the adhesive releasable cable mount M16064B001.

Figure 4: Mounting of Cable (M19406A001)



- 5 Connect J1 of cable M19406A001 to P1 of Pulse-Out board M19406A001 (see [Figure 5](#) on [page 11](#)).
- 6 Connect J4 of DC conduit cable M05189A011 Hi-Flow (HF) and Ultra-Hi Flow (UHF) units or M11277A004 (DEF units) to P4 of Pulse-Out PCA. For the dual HF and UHF units connect J5 of M05189A011 to P5 of the Pulse-Out PCA (see [Figure 5](#) on [page 11](#)).

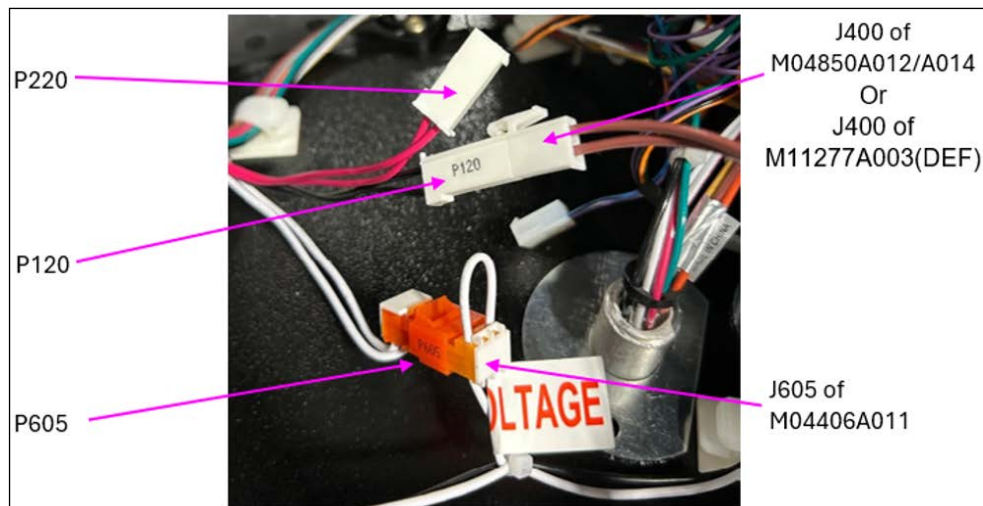
- 7 Connect J1102 of M00549A001 cable to P1110A of Pulse-Out PCA (see [Figure 5](#)).

Figure 5: Cable Connections with Pulse-Out Board



- 8 Connect P605 of M19406A001 to J605 of AC distribution cable M04406A011 (see [Figure 6](#)).
- 9 Connect J400 of Main AC conduit cable [M04850A012 (Hi-Flow, Ultra-Hi Flow)/ M04850A014 (Combo)/M11277A003 (DEF)] to P120 of M19406A001 cable for the 115V systems. For the 230V power dispenser units, connect J400 to P220 of M19406A001 (see [Figure 6](#)).

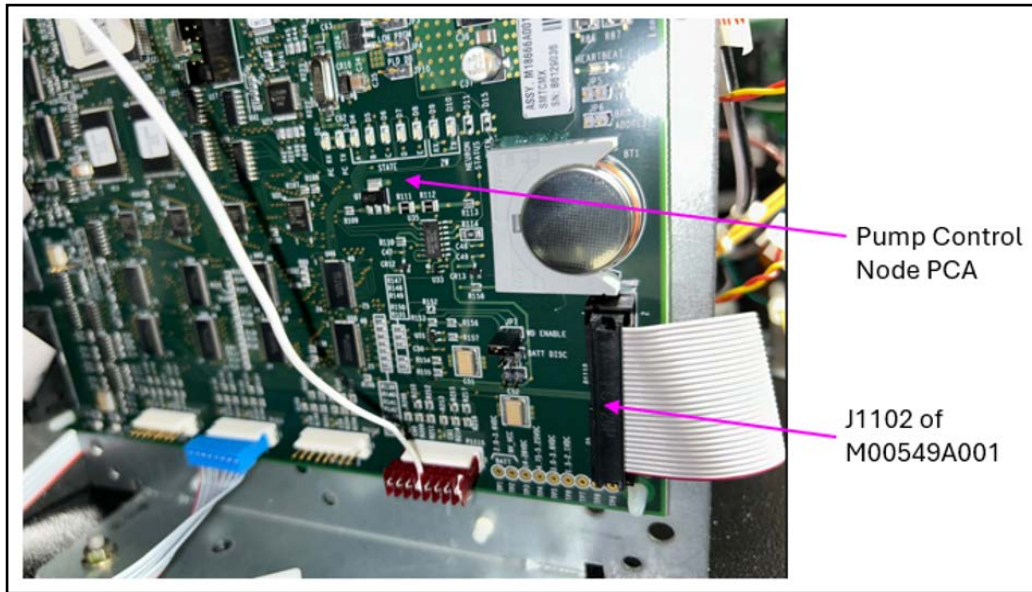
Figure 6: (M19406A001) Cable Connection



- 10 Connection of M00549A001 cable with Pump Control Node (PCN) for HF, UHF, and Combo units.

For the AtlasX HF/UHF Combo units, connect J1102 of M00549A001 cable to P1110 of PCN PCA.

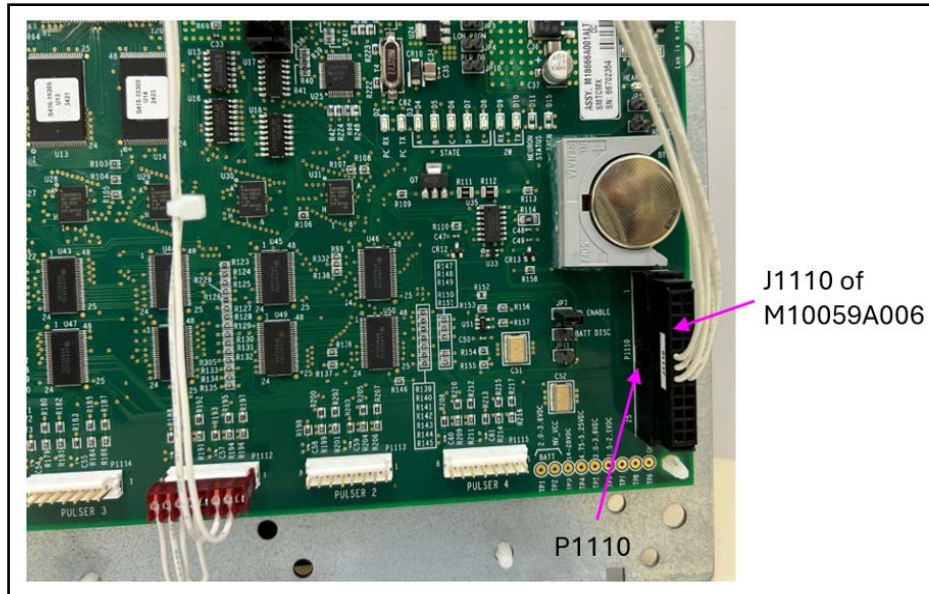
Figure 7: Connecting of (M00549A001) Cable to PCN Board (HF/UHF/Combo Units Only)



11 Connection of M00549A001 cable with PCN for DEF units.

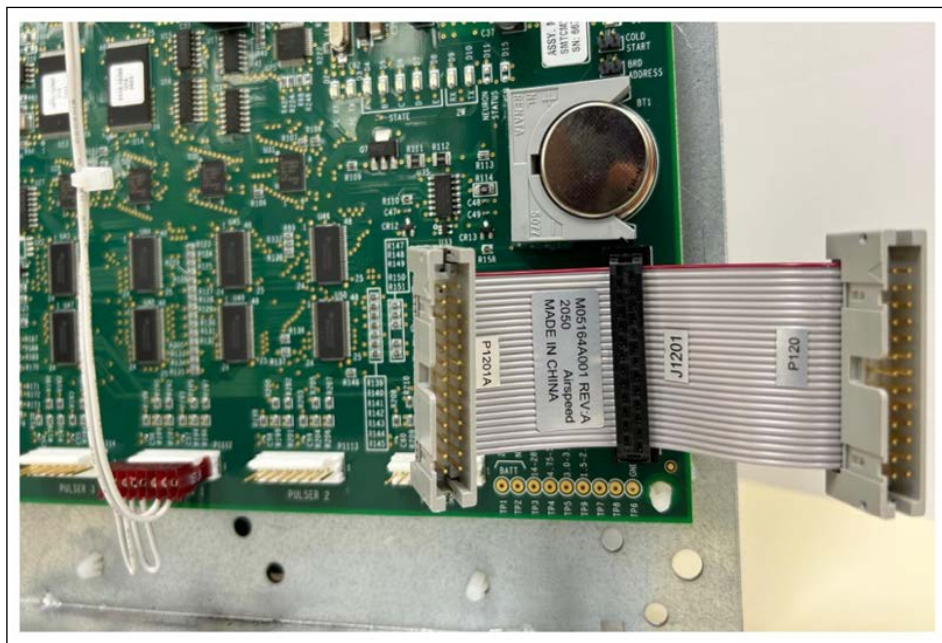
a Disconnect the J1110 of M10059A006 from P1110 of PCN PCA header.

Figure 8: Unplug J1110 of (M10059A006) from P1110 of PCN



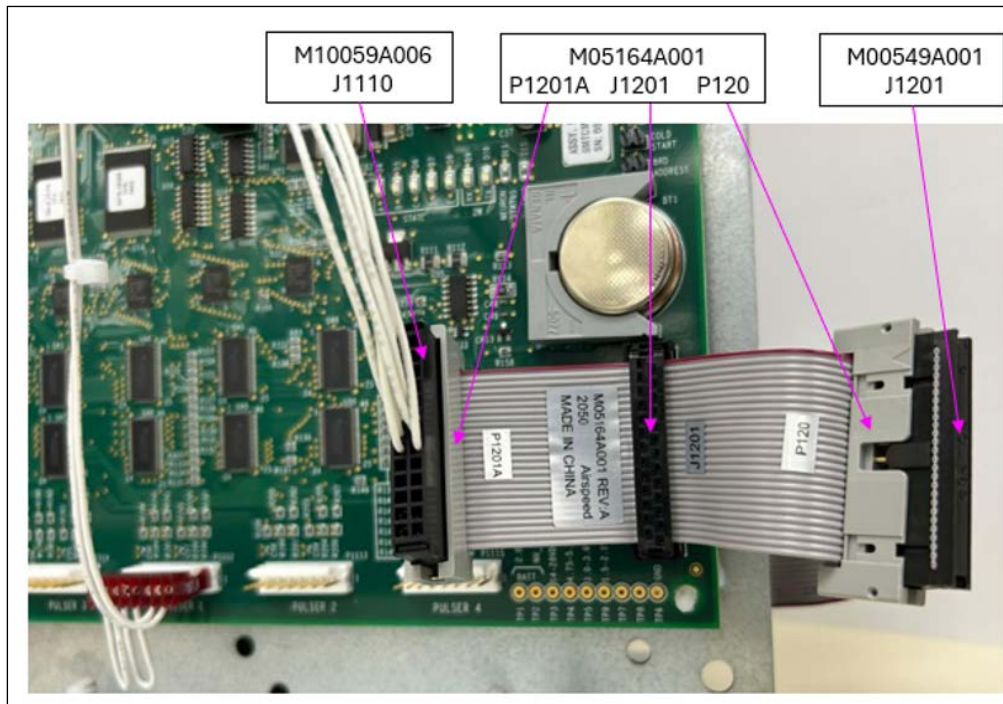
b Connect J1201 of M05164A001 cable to P1110 of PCN board.

Figure 9: Connecting (M05164A001) to P1110 of PCN Board



- c Connect J1110 of M10059A006 cable to P1201A of M05164A001. Connect J1201 of M00549A001 to P120 of M05164A001.

Figure 10: (M05164A001) Cable Connections for DEF



Configuration of Pulse-Out Function

This section provides a brief description of the command code and function codes used to configure the pulse-out function. Refer to *MDE-5694 AtlasX Start-up/Service Manual* for more complete information on unit configuration.

CAUTION



Must toggle Weights & Measures (W&M) switch to **On** position before accessing CC 19 and turn switch **Off** before pressing F2 to exit programming.

Command Code 19: Set AtlasX Pulse-Out Options

- Press **1, 9**, and then press **ENTER**.

Function Code 1: Set Pulse-Out Mode

- Press **1** and then press **ENTER**.
- Press Configuration number and then press **ENTER** where:
 - 1 = Disabled*
 - 2 = Enabled (Activate Pulse-Out Mode, unit must be set for stand-alone, CC24 set to 2)

Function Code 2: Set Pulse-Out Ratio

- Press **2** and then press **ENTER**.
 - Press Configuration number and then press **ENTER** where:
 - 0 = Not Programmed*
 - 1 = 1 Pulse per Volume Unit
 - 2 = 10 Pulse per Volume Unit
 - 3 = 100 Pulse per Volume Unit
- *Default value

Note: Ensure that Command Code 24: Operation Mode is set to 2 (Standalone) when using Pulse Output Mode.

INFORMATION

With the Pulse-Out Kit installed and connected, the system does not allow for authorization via the two-wire. The two-wire pump cable (M02993A007, refer to [Figure 2](#) on [page 7](#)) must be removed and configuration adjusted to allow the unit to authorize via pulse-out mode.

Completing the Installation

After the installation is complete, proceed as follows:

- 1 Ensure that the field wiring from Fuel Management System (FMS) is terminated to proper wire pairs in DC area of J-box as described in *FE-371 AtlasX Field Wiring Diagrams* document.
- 2 Close the Bezel door.
- 3 Secure door with the keylocks.
- 4 Return the power to the master and satellite units.
- 5 Verify the pulse-out reading at controlling/monitoring system.
- 6 Inform the manager/owner that the unit can be returned to service.

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