GASBOY

ForeHB

Islander PRIME Installation Manual

This manual supports released version 6.4.410.XX

POWERED BY

ORPAK

SAFETY CONSIDERATIONS

Read all warning notes and instructions carefully. They are included to help you installing the Product safely in the highly flammable environment of the fuel station. Disregarding these warning notes and instructions could result in serious injury or property damage. It is the installer responsibility to install, operate and maintain the equipment according to the instructions given in this manual, and to conform to all applicable codes, regulations and safety measures. Failure to do so could void all warranties associated with this equipment.

Remember that the fuel station environment is highly flammable and combustible. Therefore, make sure that actual installation is performed by experienced personnel, licensed to perform work in fuel station and at a flammable environment, according to the local regulations and relevant standards.

WARNING - EXPLOSION HAZARD

Use separate conduit for the intrinsically safe. Do not run any other wires or cables through this conduit, because this could create an explosion hazard.

Use standard test equipment only in the non- hazardous area of the fuel station, and approved test equipment for the hazardous areas.

In the installation and maintenance of the Product, comply with all applicable requirements of the National Fire Protection Association NFPA30 "Flammable and Combustible Liquids Code", NFPA 30A "Code for Motor Fuel Dispensing Facilities and Repair Garages", NFPA 70® "National Electric Code", federal, state and local codes and any other applicable safety codes and   regulations.

Do not perform metal work in a hazardous area. Sparks generated by drilling, tapping and other metal work operations could ignite fuel vapors and flammable liquids, resulting in death, serious personal injury, property loss and damage to you and other persons.

CAUTION - SHOCK HAZARD

Dangerous AC voltages that could cause death or serious personal injury are used to power the Product. Always disconnect power before starting any work. The Product has more than one power supply connection points. Disconnect all power before servicing.

WARNING - PASSING VEHICLES

When working in any open area of fuel station, beware of passing vehicles that could hit you. Block off the work area to protect yourself and other persons. Use safety cones or other signaling devices.

WARNING

Components substitutions could impair intrinsic safety.
Attaching unauthorized components or equipment will void your warranties.

CAUTION

PROPRIETY NOTICE

DISCLAIMER

FCC COMPLIANCE STATEMENT

FCC WARNING

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1 – Introduction

1.1 General

This manual describes the Islander PRIME Fuel Island Controller, which is part of the ForeHB solution. It provides a general description of the product, a detailed description of the modules, as well as installation and maintenance guidelines.

1.2 Solution Description

Gasboy®'s end-to-end ForeHB homebase fleet fueling solution extends from the station to the head office, giving fleet managers the power and flexibility to monitor fuel levels and authorize fueling activity. All site activity is controlled using Gasboy's innovative Islander PRIME Fuel Island Controller, which is an all-in-one weather-resistant cabinet that provides a complete forecourt island solution. Islander PRIME is a core component of the ForeHB solution for homebase refueling and provides automation and control over all forecourt equipment at the station such as:
  • Automatic Vehicle Identification system
  • Transaction data storage
  • Control over dispensers
  • Reads Automated Tank Gauge (ATG)

Islander PRIME ruggedized pedestal and user-friendly interface, increases fleet operating margins, provides efficient vehicle refueling, offers real-time information on fuel utilization, prevents fuel loss and misuse, and gives homebase managers better control over inventory and delivery. The Islander PRIME is equipped with the following components:
  • Embedded Linux controller
  • OrPAY1000 Payment Terminal
  • Communication interface modules mechanical/electronic/mixed
  • Optional outdoor receipt printer
  • Modular software licensing allowing different pricing by number of pumps, ATG, Fuel Point PLUS integration
  • Optional EMV® card reader and PIN Pad
  • nOrCU full station automation
  • WiFi and/or cellular connectivity with the addition of an optional modem add-on

Figure 1: Islander PRIME

1.3 System Architecture

Figure 2 shows a basic diagram of ForeHB system architecture:

Figure 2: System Architecture
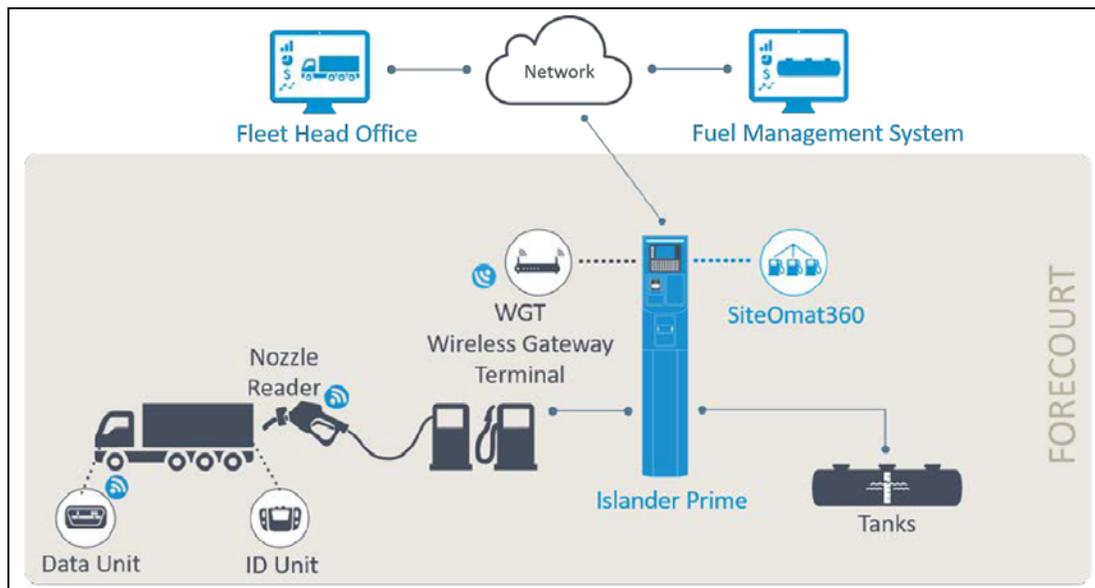
1.4 Manual Structure

Section 1: Introduction
This section provides a general description of the system.

Section 2: System Overview
This section provides a general description of the Islander PRIME system.

Section 3: Preliminary Guidelines
This section provides the preliminary installation requirements and procedures to be performed before installing the Islander PRIME system.

Section 4: Installation Procedures
This section provides a detailed description of the Islander PRIME installation requirements and procedures.

Section 5: Maintenance
This section provides general maintenance instructions for Islander PRIME.

Section 6: Troubleshooting
This section provides a comprehensive troubleshooting guide for Islander PRIME.

1.5 References

This manual provides installation instructions for the Islander PRIME Fuel Island Controller and integrated modules.

For specific installation and setup instructions not included in this manual, refer to the following manuals:
  • *MDE-4868 FuelPoint® PLUS Vehicle Installation And Programming Manual*
  • *MDE-4817 SiteOmat In-House Station Controller Setup and Maintenance Manual*
  • *G2 Panel Printer Installation and Setup Manual, P/N 800919900*

1.6 Documentation Conventions

This manual uses the following conventions:

⚠ WARNING

An operating procedure, practice, etc., which if not correctly followed, could result in injury or loss of life.

Les consignes d'avertissement contiennent des informations qui, à moins d'être strictement respectées, peuvent entraîner des blessures ou la mort.

CAUTION

An operating procedure, practice, etc, which if not strictly observed, could result in damage to, or destruction of the equipment.

Les consignes de mise en garde contiennent des informations qui, à moins d'être strictement respectées, peuvent entraîner des dommages ou la destruction de l'équipement ou des risques à long terme pour la santé du personnel.

TIP

A useful guidance, whose purpose is to use the system in a more efficient way.

INSIGHT

More detailed technical/functional information regarding relevant issues.

2 – 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 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. Replace with the following information: If you do not understand a procedure, call the Gasboy Technical Support 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 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 fluid 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**

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.

Hazards and Actions

⚠	**WARNING**
🚶💥	Spilled fuels, accidents involving pumps/dispensers, or uncontrolled fuel flow create a serious hazard.
🚶💧	Fire or explosion may result, causing serious injury or death. Follow established emergency procedures. DEF is non-flammable. However it can create a slip hazard. Clean up spills promptly.

The following actions are recommended regarding these hazards:

Collision of a Vehicle with Unit   Fire at Island   Fuel Spill
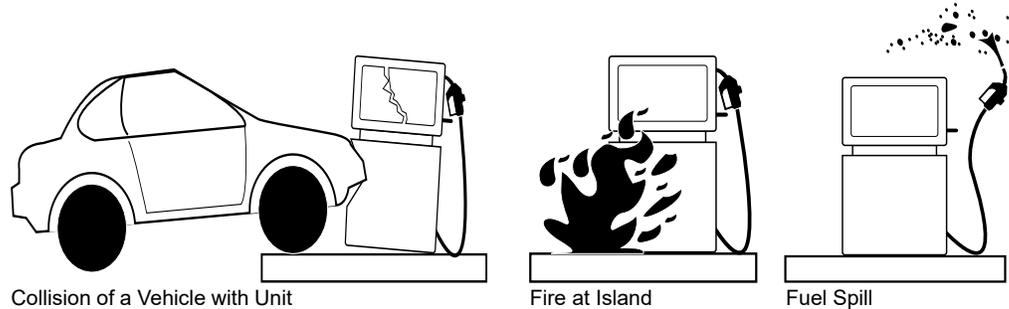
- Do not go near a fuel spill or allow anyone else in the area.
- Use station EMERGENCY CUTOFF immediately. Turn off all system circuit breakers to the island(s).
- Do not use console E-STOP, ALL STOP, and PUMP STOP to shut off power. These keys do not remove AC power and do not always stop product flow.
- Take precautions to avoid igniting fuel. Do not allow starting of vehicles in the area. Do not allow open flames, smoking or power tools in the area.
- Do not expose yourself to hazardous conditions such as fire, spilled fuel or exposed wiring.
- Call emergency numbers.

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3 – System Overview

3.1 General

This section provides a detailed description of the Islander PRIME system, as well as the available configurations, system specifications, and communication standards.

3.2 System Description

The following describes the modules that make up the Islander PRIME Fuel Island Controller.

Islander PRIME is an innovative controller that enables refueling in homebase stations for fleets authorized vehicles or drivers. Islander PRIME electronically locks all dispensers and pumps thereby ensuring that only authorized vehicles receive the required fuel. The system also ensures accurate recording of each transaction.

The heart of the ForeHB solution is the SiteOmat automation software. SiteOmat runs on an embedded operating system on the nOrCU (Gasboy Controller Unit). nOrCU is an embedded hardware platform designed to withstand the harsh gas station environment. It uses a solid state Flash disk and RTC (Real Time Clock) with back up, along with surge suppressors for transient and noise immunity. The system also includes power fail recovery mechanisms.

3.2.1 Fuel Point PLUS - Automatic Vehicle Identification

Gasboy's Fuel Point PLUS Automatic Vehicle Identification is an optional feature for maximal control and savings of fuel expenditures. The dispenser is authorized to fuel after a positive identification of the vehicle and only while the nozzle is inside the fuel inlet of the identified vehicle. All transaction information is automatically recorded. Combined vehicle and driver identification is also possible for more detailed tracking.

3.2.2 Remote Web Access

Remote Web-based capabilities for monitoring, management and maintenance are available. A standard PC with an Internet browser is used for management of the site either locally or remotely (secured). A software license is provided with the Islander PRIME system in order to access these features.

3.2.3 Head Office

Centralized management is provided by the optional Fleet and Fuel Head Office server. The Fleet and Fuel Head Office consolidates the data from multiple sites and generates reports. It also enables control over limits and restrictions placed on the various fleet vehicles. Furthermore, authorized fleet personnel are able to log in remotely and have full control over the forecourt. Head Office enables authorized users to control and manage wet stock inventory on all stations including orders, deliveries, and reports.

3.2.4 Restrictions and Limits

Control of a fleet's fuel expenses can be controlled by defining limits (day, week, month), maximum number of fuel transactions (day, week, month), and setting restrictions (days of the week, fuel type, stations, time intervals). In case of system configuration for multiple sites, the centralized Fleet Head Office needs to synchronize the data between all sites so that the limits can be applied to a whole system rather than to an individual site. In case of communication failure, the specific site will be able to refuel for a predefined period using the most recent limits stored in the database.

3.2.5 Islander PRIME Capabilities for Forecourt Management

Islander PRIME provides the following operational features for comprehensive forecourt management:

- Supports over 50 different types of dispensers used around the world. This product has only been evaluated for use with Underwriters' Laboratories (UL®) Listed Dispensers.
- Advanced electronic support for mechanical dispensers, enabling pump with totalizer, preset and price update.
- Tank Level Gauging System (TLG) available for several brands. This product has only been evaluated for use with UL Listed TLGs.
- Support for a wide variety of communication links: cellular, dial-in modem, VPN, satellite, ADSL, and more.

3.2.6 System Workflow

The following provide examples of an operational workflow for self-service at the homebase station.

Note: In both options, the driver may print a transaction ticket from the Islander PRIME G2 Panel Printer (optional).

3.2.6.1 Refueling Scenario with Fuel Ring

A driver stops for fuel at the station. The authorization device for the refueling transaction is a Fuel Ring mounted in the vehicle. The driver lifts the nozzle and inserts it in the car inlet.

The Fuel Ring information is automatically read and sent to the Site Controller (nOrCU) for authentication and approval. Upon approval, the fueling transaction starts. At the end of the transaction, the data is stored internally and transfer to the Fuel Head Office (FHO) for future billing. Once the refueling is completed, the driver replaces the nozzle.

3.2.6.2 Refueling Scenario with Magnetic Cards

A driver stops for fuel at the station. The authorization device for the fueling transaction is a magnetic card. The driver inserts the card through the magnetic card reader on the payment panel.

The magnetic card information is read and sent to the site controller (nOrCU) for authentication and approval. The driver lifts the nozzle and inserts it in the car inlet. Upon approval, the fueling transaction starts. At the end of the transaction, the data is stored internally and transfer to the FHO for future billing.

The client may add more data to the transaction by manually entering the information using the payment panel keyboard, or by scanning a barcode using the barcode reader (optional) on the front panel. Once the refueling is completed, the driver replaces the nozzle.

3.3 Islander PRIME Structure

The following describes the components that are part of the Islander PRIME structure, including their location and configuration.

3.3.1 Main Components

The following provides a description of Islander PRIME's main sub units.

3.3.1.1 Gasboy Controller Unit (nOrCU)

Gasboy Controller Unit (nOrCU) is a complete forecourt controller with its own embedded operating system. The unit consists of an embedded hardware platform with a solid state flash storage, Real Time Clock (RTC) with a backup. nOrCU features two separate and isolated networks (TCP/IP over Ethernet®). One network links the Islander PRIME system components. The second network is intended for external remote communication (Head Office, third-party systems). This network is protected by SSL security.

nOrCU includes a built-in server for Web access through an Internet browser.

Figure 3: nOrCU
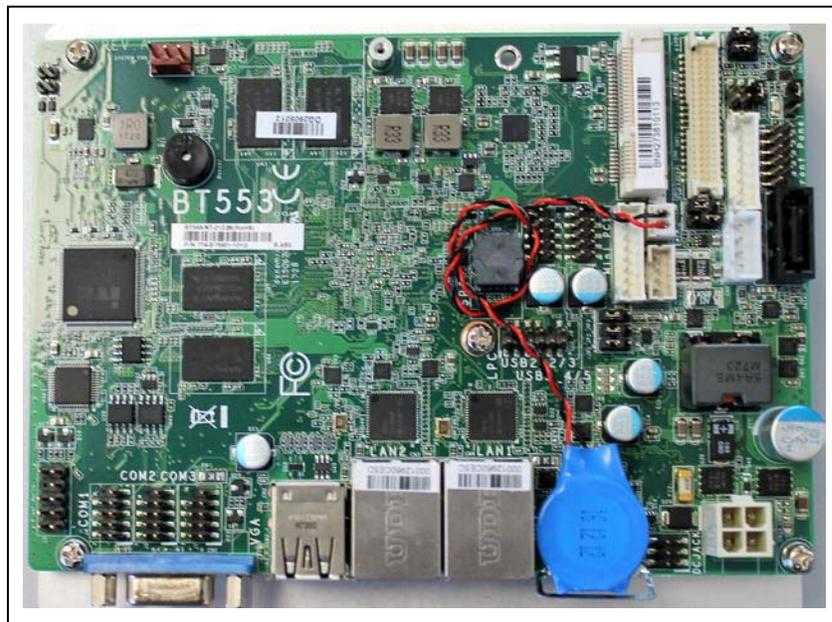
3.3.1.2 OrPAY1000

OrPAY1000 is Gasboy's cost-effective outdoor payment terminal installed directly onto the dispenser or wall mounted next to it for both attended and unattended activities. The terminal's features suit both retail and commercial fleet markets as a pay-at-the-pump solution for fuel card purchases, forecourt promotions, local accounts, loyalty programs, attendant management, and more.

The OrPAY1000 terminal is small enough to fit in any standard pump head or pedestal, yet provides an efficient and advanced user interface with its 4.3-inch multimedia color Liquid Crystal Display (LCD) display, four addressable screen keys, and a full alphanumeric vandal-proof 40-key keyboard.

Figure 4: OrPAY1000

3.3.1.3 G2 Panel Printer

Islander PRIME includes an optional printer for receipts printout, as well as data output. The printer is linked to the central payment terminal that sends to it the transaction data for printout.

The thermal printer is installed at the center of the Islander PRIME pedestal door. It includes an integrated paper cutter, paper feeder, paper spool, and an "End of paper" warning sensor.

Figure 5: G2 Panel Printer

3.3.1.4 Communication Interfaces

Islander PRIME contains three slots for the various optional communication interfaces (1, 2, and 3). There are two types of communication interfaces that can be inserted into the slots; mechanical and electronic. Slots 1 and 2 can house both mechanical and electronic communication interfaces, and slot 3 can only house an electronic communication interface. The mechanical interfaces contain up to four onboard bypass switches.

Figure 6: Communication Interfaces in the Slots

3.3.2 Internal Configuration

The following is an example of the Islander PRIME internal configuration (see Figure 7).

Figure 7: Internal Configuration Diagram
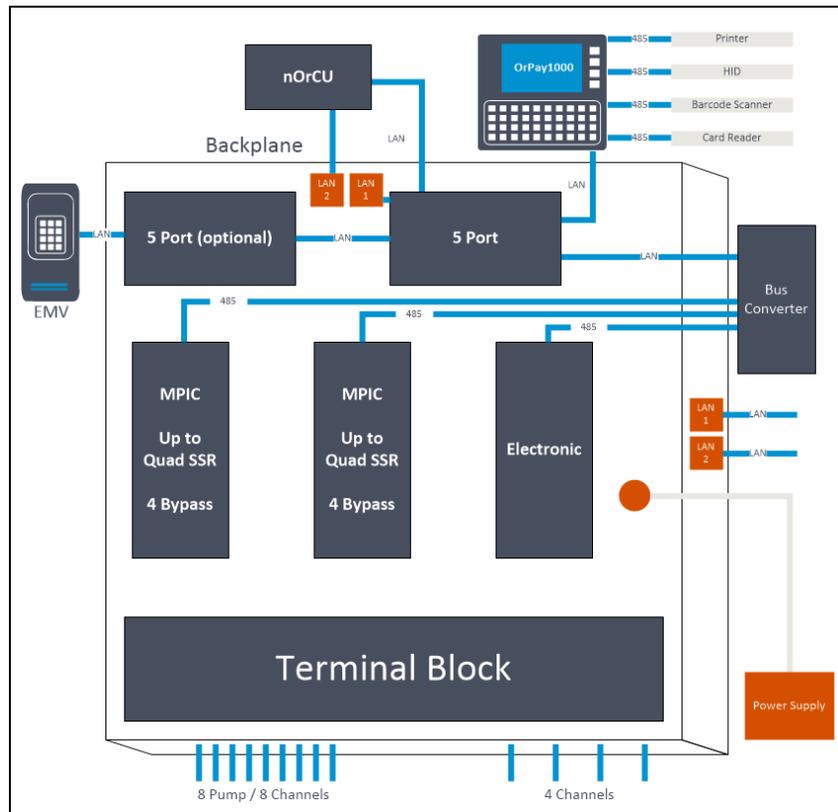
3.4 Available Configurations

Islander PRIME is available in several configurations, in accordance with its intended use and the components installed. All the configurations are manufactured in accordance with the specific customer request. The following section describes the several configurations and the specific device composition.

The following describes the configurations available for the Islander PRIME Fuel Island Controller.

3.4.1 Islander PRIME

Islander PRIME is supplied with the nOrCU (the Gasboy Controller Unit) embedded in the unit. In this configuration, nOrCU acts as a full station controller, providing functions such as authorization unit, central forecourt devices controller, linked to the Head Office, etc.

3.4.2 Automatic Vehicle Identification

The following options are available for automatic vehicle identification in Islander PRIME:
- Fuel Point PLUS: The software license embedded in the OrPAY1000 is a vehicle identification process performed in a wireless mode. The software receives DataPass and/or Fuel Ring data, decrypts their information and transmits it to the nOrCU in a secure manner over an RF signal. This setup enables the RF signal to travel through various routes and bypass possible interferences (such as large trucks).
- No vehicle identification unit: The vehicle identification process will be done manually by the driver with any accepted authorization devices such as cards, tags, or manual data entry.

3.4.3 Dispensers

Islander PRIME can support either mechanical or electronic dispensers, in accordance with its configuration.

Mechanical dispensers require the installation of an MPI-C interface blade. Electronic dispensers (Tokheim®, Current Loop, RS-485, RS-422, RS-232) require installation of relevant interface blades.

3.4.4 Barcode Reader Option

The pedestal can be supplied with an optional barcode reader (P/N M15778B009) for reading barcodes.

3.4.5 Insert Card Reader Option

The pedestal is designed to support an optional standard insert card reader (P/N M15778B007) tointerface with magnetic cards, such as loyalty and fuel cards.

3.4.6 Human Interface Device (HID) Option

The pedestal is designed to support an optional HID Reader (P/N M09680B134) set for payment with HID cards.

3.4.7 Cellular Modem Option

The pedestal is designed to support an optional AvaLAN (model: AW-NetdropLTE) cellular modem for remote access communication.

3.4.8 Receipt Printer Option

The pedestal is designed to support the G2 Panel Printer (P/N M15778B008). The printer issues a printout of transactions to the driver.

3.4.9 EMV Option

The pedestal can be supplied with an optional EMV reader set for payment with bank cards. This feature is not currently offered, but will be available at a future date.

3.4.10 Communication Interfaces

Islander PRIME comes equipped with three slots to house communication interfaces embedded in slot blades. Slots 1 and 2 may house either mechanical or electronic interfaces, and slot 3 may only house electronic interfaces. In the order form, it is also required to define the part number for the specific communication interface blades in use. The following communication interfaces are available (see Table 1):

Table 1: Communication Interfaces

No.	Pump Interface Blade	Part Number
1	Islander PRIME 2M Blade	M15778B001
2	Islander PRIME 4M Blade	M15778B001
3	Islander PRIME 4x 485 Blade	M15778B001
4	Islander PRIME 4x Tokheim Blade	M15778B001
5	Islander PRIME 4x Current Loop Blade	M15778B001
6	Islander PRIME 2x 422 + 2x 232 Blade	M15778B001

3.5 Security and Protection

All transactions performed in Islander PRIME are secured and protected. The following describes the security features of Islander PRIME in detail.

3.5.1 Authorization

The contactless tags include Triple DES encrypted data for user identification and billing. Consequently, Islander PRIME includes a special Security Access Module (SAM) for decryption and matching identification. Upon tag reading, Islander PRIME attempts to decrypt the string from the tag and disregards tags whose security scheme does not match the Islander PRIME internal SAM.

3.5.2 Network

The Ethernet LAN is isolated from the external Wide Area Network (WAN) by the nOrCU. In case of remote maintenance, a firewall should be applied either at the router level or preferably at the homebase station level.

3.5.3 RF Network

Islander PRIME IEE 802.15.4 RF network is encrypted, using the AES 128 security standard.

3.5.4 Maintenance

Islander PRIME maintenance and setup procedures require inserting a user name and password for access. For more information, refer to the *MDE-4817 SiteOmat In-House Station Controller Setup and Maintenance Manual*.

3.6 Housing

The Islander PRIME system enclosure is made of a metal cabinet, with plastic panels, in the form of a pedestal. The enclosure is weather resistant in order to sustain the harsh environment of a homebase Station. It is also waterproof with a certified Ingress Protection (IP) rating of IP54. The payment panel of the Islander PRIME is made of rugged plastic. The devices in the front panel are sealed to prevent humidity and dust penetration.

Note: Do not pressure wash the Islander PRIME.

Islander PRIME pedestal is locked by key for safety and security. The key should be kept in a secure and safe place.

The following displays the Islander PRIME dimensions (see Figure 8):

Figure 8: Islander PRIME Dimensions
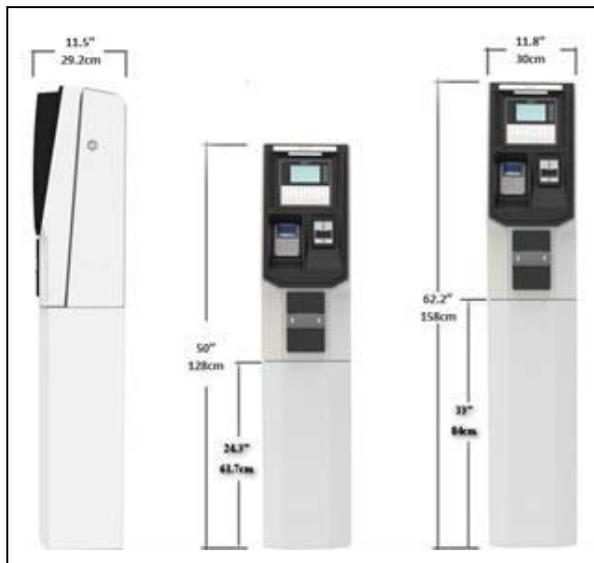
The left side and right side pedestals display the standard Islander PRIME height, the center pedestal displays the ADA accessible Islander PRIME height. The width and depth are identical in both configurations. For detailed internal dimensions, see "5.3 Installing the Pedestal Base" on page 38.

3.7 Technical Specifications and Standards

The following details the technical specifications, as well as the communication and security standards for the Islander PRIME.

3.7.1 Islander PRIME Technical Specifications

The following details the physical, electrical, and environmental specifications of the Islander PRIME (see Table 2):

Table 2: Islander PRIME Technical Specifications

Parameter	Value
Dimensions (H x W x D)	**Standard:** 158 x 30 x 29 cm | 62.2-inch x 11.8-inch x 29.2-inch in. **ADA accessible**: 128 x 30 x 29 cm | 50-inch x 11.8-inch x 29.2-inch.
Supply Voltage	100 - 240 VAC
Power Consumption	2A max
Operating Temperature	**Without Printer**: -40° to +65°C | -40° to +149°F **With Printer**: -40° to +50°C | -40° to +122°F **With Barcorde**: -30° to +60°C | -22° to +140°F
Storage Temperature	-40° to +70°C |-40° to +158°F
Humidity	80% Non-condensing
Communication Interface	• RS-485 • RS-232 • RS-422 • LAN
Pump Communication Interface	• RS-485 • RS-422 • Current Loop • MPI-C • Tokheim
Wireless Communication	Optional wireless communication IEEE802.15.4 with proprietary mesh network (License)
Pump Control Maximum Current (4 Solid State Relay Channels)	Maximum of 380mA current for each channel, either for driving the external relay of the pump motor or for driving the solenoid valve
Power supply output voltage to Pulser unit	12 VDC +/- 20% 50mA
Power Supply Maximum Output Current	8 A max
Pulser Input High level Voltage	9 to 15 VDC
Pulser Input Low level sink current (@15V)	3mA max.
In use "On" level (Input)	100 – 240 VAC, 50/60 Hz, 5mA
In use "Off" level (Input)	0 to 10 VAC
Certifications	ETL, CE, FCC, cETLus
Optional Accessories	• Printer • EMV Card Reader and Payment • Insert Card Reader • HID Card Reader • Barcode Reader • ADA (Americans with Disabilities Act) Pedestal • Stainless Steel Pedestal

3.7.2 Communication and Security Standards

Islander PRIME communicates over the following standards:

- RS-232 link
- RS-485 link
- TCP/IP over Ethernet
- IEEE 802.15.4
- AES 128 for RF Network Communication

4 – Preliminary Guidelines

4.1 General

This section provides preliminary guidelines for Islander PRIME. These include:
- Preliminary instructions
- Wiring and wire conduits requirements
- Installation procedures and requirements depend on the specific fuel dispenser models and the site layout. Therefore, use the information in this section to develop installation plans for each specific installation.
- Since installation requirements vary from case to case, no installation hardware is supplied by the equipment manufacturer, and installation planners must develop their own requirements.
- It is the customer's responsibility to provide an installation plan designed by an authorized engineer, and ensure that it adheres to all local standards. This plan design should reflect the existing electric infrastructure of the site.

TIP
Perform a site survey of the station prior to installation.

4.2 Precautions and Safety Notes
Précautions et consignes de sécurité

Prior to any installation activities, carefully observe the precautions and safety notes below.

Avant toute activité d'installation, observez avec soin les précautions et les consignes de sécurité ci- dessous.

⚠ WARNING

Before installing or servicing equipment, carefully observe the warnings and precautions provided at the beginning of this manual.

Avant l'installation ou l'entretien de l'équipement, observez avec soin les avertissements et les précautions mentionnés au début de ce manuel.

The homebase environment is highly flammable and combustible. Therefore, make sure that the installation is performed by experienced personnel, licensed to perform work in a homebase station and capable of implementing all applicable requirements of the National Fire Protection Association NFPA-30 "Flammable and Combustible Liquids Code", NFPA-30A "Code for Motor Fuel Dispensing Facilities and Repair Garages", NFPA-70A "National Electric Code", federal, state, local codes, and any other applicable safety codes and regulations.

L'environnement de base est hautement inflammable et combustible. Par conséquent, assurez-vous que l'installation soit réalisée par un personnel expérimenté, autorisé à travailler dans une station de base et capable de mettre en œuvre toutes les exigences applicable du "Code sur les liquides inflammables et combustibles" NFPA-30, le "Code for Motor Fuel Dispensing Facilities and Repair Garages" NFPA-30A et le "National Electric Code" NFPA-70 de la National Fire Protection Association, les codes fédéraux, nationaux et locaux et tous autres codes et réglementations de sécurité.

System power may come from more than one source. Disconnect all power sources, including pumps, before attempting to work on the system.

L'alimentation du système peut provenir de plus d'une source. Débranchez toutes les sources d'alimentation, les pompes comprises, avant de travailler sur le système.

Install Islander PRIME in an area in accordance with the safety restrictions (see Figure 9).

Installez Islander PRIME dans une zone conforme aux restrictions en matière de sécurité (voir Figure 9).

Figure 9: Installation Control
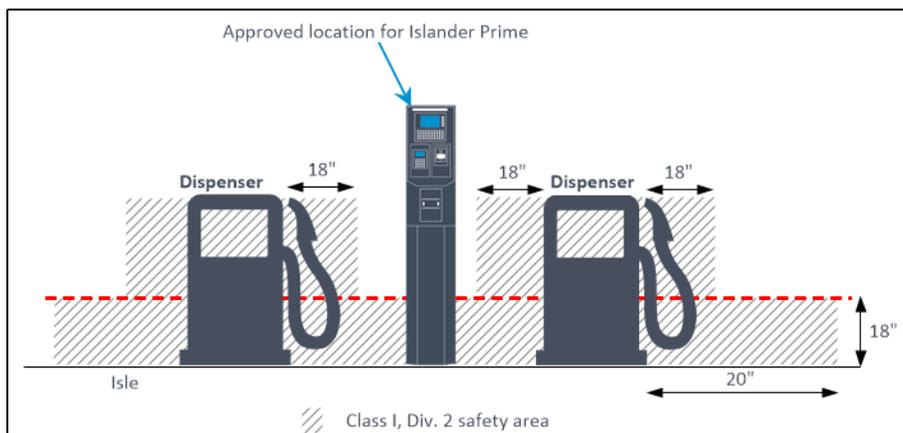
<table>
<tr><td colspan="2">

⚠ **WARNING**

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The Islander PRIME site preparation is the customer's responsibility.
La préparation du site d'Islander PRIME est de la responsabilité du client.

Do not connect power to Islander PRIME and other peripherals, including pumps, until complete installation is inspected and certified.

Ne branchez pas l'alimentation électrique d'Islander PRIME et d'autres périphériques, les pompes comprises, tant que toute l'installation n'a pas été contrôlée et certifiée.

Do not perform any metal work in the hazardous area. Sparks generated by drilling, tapping, and metal work operations could ignite fuel vapors and flammable liquids. This may result in death, serious personal injury, property loss, and damage to you and other persons.

N'exécutez aucun travail sur des métaux dans la zone dangereuse. Les étincelles générées par le perçage, l'entaillage et d'autres opérations du travail des métaux peuvent enflammer les vapeurs de carburant et les liquides inflammables, entraînant la mort, des blessures sérieuses, des pertes ou des dégâts de matériel pour vous ou d'autres personnes.

When working in any open area of the homebase station, beware of passing vehicles. Block off the work area to protect yourself and other persons using safety cones or other signaling devices.

Lors du travail dans une zone ouverte de la station de base, faites attention aux véhicules de passage. Délimitez la zone de travail pour vous protéger vous et les autres personnes à l'aide de cône de sécurité ou d'autres dispositifs de signalisation.

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4.3 Station Survey

Prior to installation, you are required to perform a survey of the homebase station functional architecture. This survey is required in order to draw an architecture diagram with all components and their communication links.

4.3.1 Station Architecture

The homebase station functional architecture consists of the following levels:
- Main Power Cabinet and homebase station forecourt
- FHO

4.3.1.1. Main Power Cabinet

The Main Power Cabinet includes the following components:
- Mains Circuit Control Box (MCC)
- Uninterruptible Power Supply [UPS (when required)]
- TLG Controller

4.3.1.2 Homebase Forecourt

The Homebase Forecourt includes the following components:
- Islander PRIME
- Electronic or mechanical dispensers. This product has only been evaluated for use with UL Listed Dispensers.
- One or more fuel tanks
- TLG probe for each fuel tank. This product has only been evaluated for use with UL Listed TLGs.

4.3.1.3 Head Office System (Optional)

The Head Office system consists of a fully integrated management hardware and software tool that supports homebase stations and small fuel stations with their sale management of products including inventory management and reporting.

The Head Office system is a remote control center that stores, processes, and analyzes all the transactions at the homebase station. The Head Office Station provides an integrated retail solution.

4.3.2 Locating All Objects
- Locate the roads around the site
- Locate the islands and their dispensers
- Locate the fuel tanks
- Locate the intended position of the Islander PRIME pedestal
- Draw a basic map of the site with all the objects

4.3.3 Assigning Logical IDs

When performing a station survey, assign Logical IDs as described below

4.3.3.1 Fuel Tanks
- Assign the tank sequential number (coordinated with the station manager)
- Assign its fuel code and name
- Assign its TLG Probe (AP) ID

4.3.3.2 Dispenser Units
- Assign an ID to every dispenser name and pump server
- Assign an ID to every dispenser pump (P)
- Assign an ID to every pump CPU addresses if any
- Assign an ID to its nozzles (N)
- Assign to each nozzle the tank (T) ID to which it is linked

4.3.3.3 Islander PRIME Pedestal
- Assign the Islander PRIME its ID
- Assign the Panel Printer (PP) its ID
- Assign their IDs in an ascending order with the dispenser unit IDs

4.3.3.4 Mapping
• Draw a map of the site.
Note: The map methodology and IDs will be used for setup configuration.

4.3.4 Connections

All connections to Islander PRIME must be performed to the terminal block and to the Ethernet port located at the bottom of the Islander PRIME pedestal (see Figure 10).

Figure 10: Terminal Block, Power, and LAN Connections (8 Pumps)
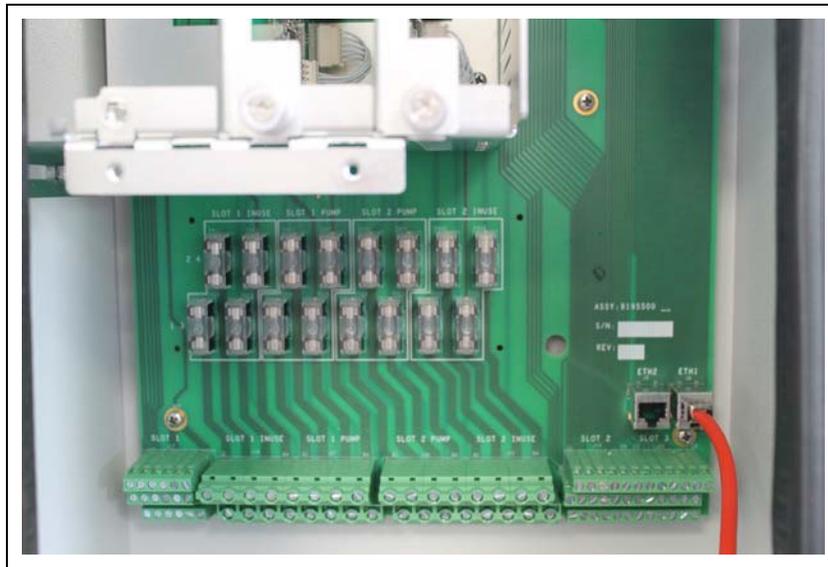
The required connections are as follows:
• Dispenser wiring connections
  - Pulser (Low Voltage)
  - In Use signal (High voltage)
  - Valve (High voltage)
• Communications
  - RS-232/LAN to TLG console to fuel tank
  - RS-485 for Gasboy peripheral device
  - Pump communication line (e.g. Current Loop, RS-485, Tokheim, RS-422)
• Mains AC Power and Ground
• LAN connection
• ETH1 for technician and maintenance
• ETH2 secured WAN

4.4 Conduits

The installation of Islander PRIME requires preparing the cable layout in the homebase station in advance. This procedure consists of installing conduits within the island, inserting the proper cables, and setting the power equipment and sensors.

This section provides the procedures for infrastructure groundwork. These procedures are presented in the order in which they should be performed:
- Wire conduits installation
- Cable routing within the conduits
- Power equipment setup
- Forecourt equipment wiring

4.4.1 Requirements

The installation of Islander PRIME in the island requires digging and setting several conduits in the station ground. The conduits are required for the routing and protection of the different types of cables used in a homebase station with Islander PRIME.

In sites where the infrastructure is already set up, you can use the existing conduits only if they meet the requirements defined below.

Conduits must comply with the following requirements:
- All conduits must be made and installed according to local regulations.
- High-voltage AC and low-voltage DC must NOT be combined in a common conduit, junction box, or wire trough.
- RS-485 or LAN communication must not exceed 330 feet (100 m). Cables must be inserted in a separate low voltage conduit, away from AC wires. Communication range can be extended using third party devices.
- RS-232 communication must not exceed 50 feet (15 m). RS-232 communication shielded cable must be inserted in a separate low voltage conduit, away from AC wires. Communication range can be extended using third party devices.
- Antenna wires must not exceed 330 feet (100 m) in case the VIU is in use, and 50 feet (15 m) in case the Fuel Ring is used. Antenna wires must be inserted in a separate low voltage conduit, away from AC wires.
- All conduits must be inserted in the Islander PRIME pedestal through the holes and knockouts provided in the lower protective plate (see).

Figure 11: Lower Protective Plate
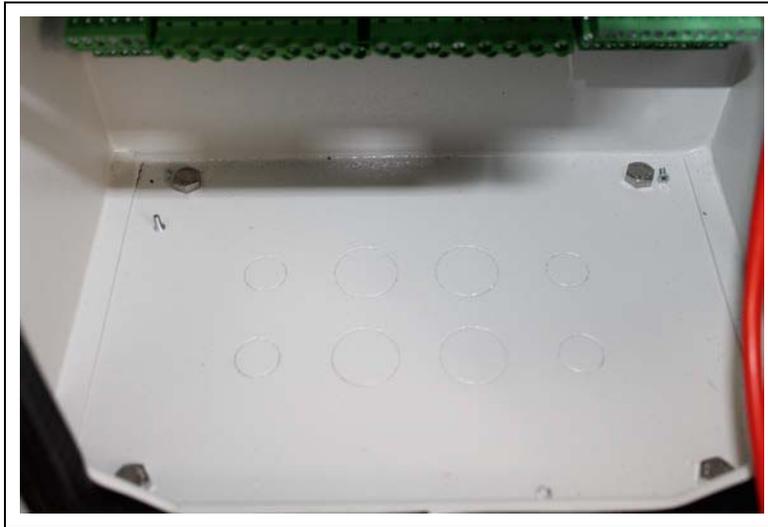
- Do not make any holes in the unit other than the ones available as knockout plates. If you must make holes at locations other than those provided, contact Gasboy Customer Support for approval.
- After completing the installation, all open holes should be resealed.

4.4.2 Protective Plate

Islander PRIME includes a protective plate below the terminal block in the installation pole. The plate is perforated enabling the insertion of four conduits.
- Four conduits of 1-inch diameter
- Four conduits of 1/2-inch diameter

The following explains what the conduits are used for:
- Two conduits of 1-inch diameter are intended for high voltage cables.
- One conduit of 1-inch is intended for low voltage conduit.

The cables and wires to/from the other units in the forecourt are connected to the terminal block.

The cables and wires are inserted through the conduits in accordance with their types and routed to their sources.

4.4.3 Required Conduits

The types of conduits in the island are a function of the different equipment and location in the island. There are two functional conduits:
• High voltage conduits
• Low voltage conduits

The following conduits are required in the Island:
• High voltage conduits
- AC power for Islander PRIME
- Pump control from mechanical pumps to Islander PRIME
- Pump In-use signal from mechanical pumps to Islander PRIME
• Low voltage conduits
- Internet line from LAN at Office to Islander PRIME
- RS-232 communication line from TLG at office to Islander PRIME
- RS-485/422/C.L. or Tokheim
- Pulser from pumps to Islander PRIME
• Grounding
- At least 10 mm (OOO AWG) Grounding cable to pump chassis
- At least 10 mm (OOO AWG) Grounding cable to Islander PRIME pole (Connected to the external chassis grounding post)
- Grounding cable to TLG – in accordance with TLG manufacturer instructions
• Tank conduit
- TLG Probe

4.4.4 Layout

Four conduits can be inserted in Islander PRIME, each carrying specific wires (see Table 3).

Table 3: Conduits into Islander PRIME

No.	Conduit Type	Type
1	Low voltage	Pulser, TLG, LAN
2	High voltage	AC power, GND, In-use
3	High voltage	Control

The following is a diagram of the conduit layout for Islander PRIME using a mechanical pump (see Figure 12):

Figure 12: Conduit Layout for Mechanical Pump
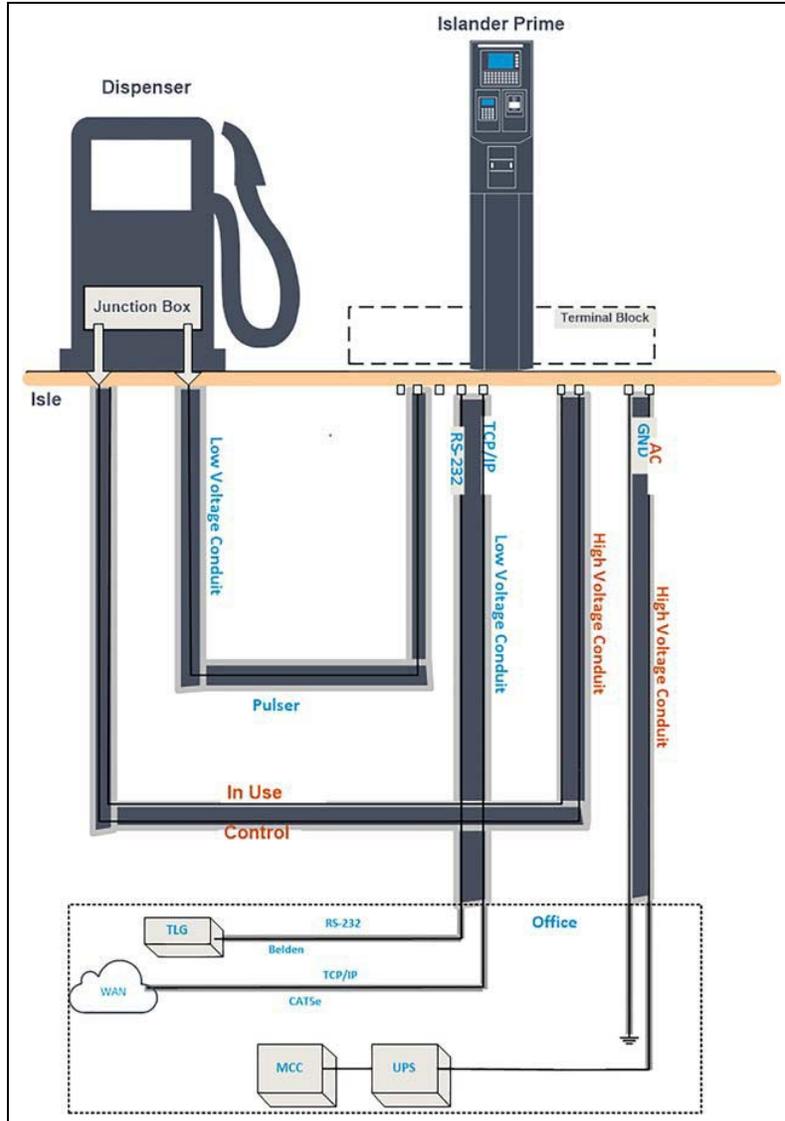
The following is a diagram of the conduit layout for Islander PRIME using an electronic pump (see Figure 13):

Figure 13: Conduits Layout for Electronic Pump
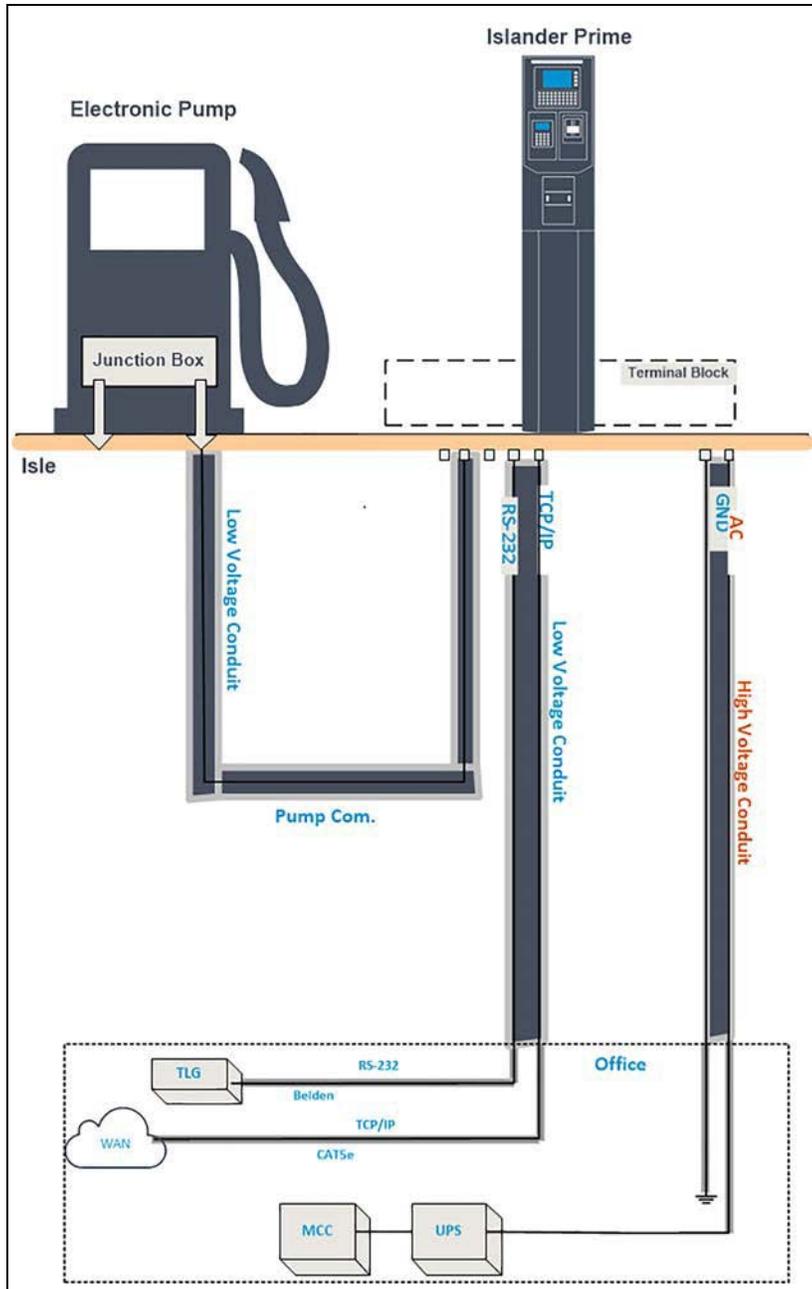
4.4.5 Installation

To install conduits in the island, proceed as follows:

1   Determine the location of the Islander PRIME pedestal in the island.

2   Dig and prepare passageways for the necessary conduits.

3   Take care to route the following conduits to the junction boxes (J-box):
- Low voltage cables J-box:
  - One conduit to the office (control room)
  - One conduit to each pump
  - Two conduits to Islander PRIME
- High voltage cables J-box:
  - One conduit to the office (control room)
  - One conduit to each pump
  - Two conduits to Islander PRIME

4.4.6 Sealing

The conduits must be sealed in accordance with NFPA requirements and local regulations, to prevent the passage of gases through conduits, cables, and conductors. Fittings are required wherever volatile liquids or gases are present in the surroundings.

Note: Install the seal under the barrier plate with the threaded end protruding through the knockout opening.

4.5 Cable Insertion

The following describes the requirements and procedures for the insertion of cables in the conduits.

Notes:1) All devices in the system must be connected to the same electric power phase.
2) The type of cable needed varies in accordance with the device it connects to. The wire used must be stranded and not a solid core. Select a cable specification in accordance with local environment conditions.

⚠ **WARNING**

For supply connections, use wires suitable for at least 90°C / 194°F. Signal wiring connected in this box must be rated at least 300V.

Avertissement: Pour les raccordements d'alimentation, utilisez des fils convenant à au moins 90°C / 194°F. Le câblage de signal raccordé dans cette doit être conçu pour au moins 300V.

4.5.1 Cable Types

The following are the types of cables used for the wiring of the Islander PRIME system (see Table 4):

Table 4: Islander PRIME Cable Types

No	Function	Type
1	AC Power from Office	Power cable, 3x1.5 mm^2 0.118 x 0.06-inch^2 / NYY (14 AWG), in accordance with local standards.
	Control to pumps (valves or engine)	
	In-use signal	
2	Coil (Barrier)	Data communication cable, 300 V RMS, 90°C /194°F, shielded twisted pair, oil resistant, 24 AWG, low capacitance below 60 PF/meter (3.3') similar to Belden 9729 cable.
	Pulser	
	TLG (RS-232)	
3	LAN	CAT5E, Shielded, 300 V RMS, 90°C/194°F similar to Belden 121700A.
4	GND	Ground cable 0.4-inch (10.8-mm^2).

4.5.2 Cable Routing

Route the cables from the peripherals and the office to Islander PRIME as shown below (see Table 5):

Table 5: Islander PRIME Cable Routing

No.	Functional Description	From	Through Insert	Cable Type
1	Power AC	Office	High voltage conduit	1
2	GND	Office	High voltage conduit	4
3	TLG	Office	Low voltage conduit	2
4	LAN	Office	Low voltage conduit	3
5	Control, Pump A	Pump A	High voltage conduit	1
6	In-use, Pump A	Pump A	High voltage conduit	1
7	GND	Pump A	Low voltage conduit	2

Note: The cable type number refers to the table in the above section (see Table 4).

4.6 Power Setup

The power equipment must be installed in the main power cabinet. It should include the following:
  • Mains Circuit Control (MCC) Box includes dedicated circuit breaker for the pedestal
  • Uninterruptible Power Supply (UPS) - Online ("True") UPS

4.6.1 Connection Diagram

The following diagram shows the requested connections of the power equipment
(see Figure 14):

Figure 14: Power Equipment Connections
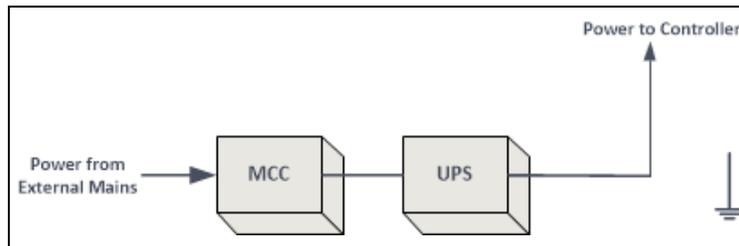
Apart from the power equipment, other components should be connected to the power supply
such as the TLG and dispensers.

4.6.2 Power Supply Setup

The Islander PRIME power supply can be connected 110 VAC - 220 VAC. The mains cable is
first connected to the terminal block. Between the terminal block and power supply, the
system uses a line filter in order to attenuate conducted radio frequencies - RFI,
Electromagnetic Interference (EMI) - between the line and the equipment (see Figure 15).

Figure 15: Power Supply Components
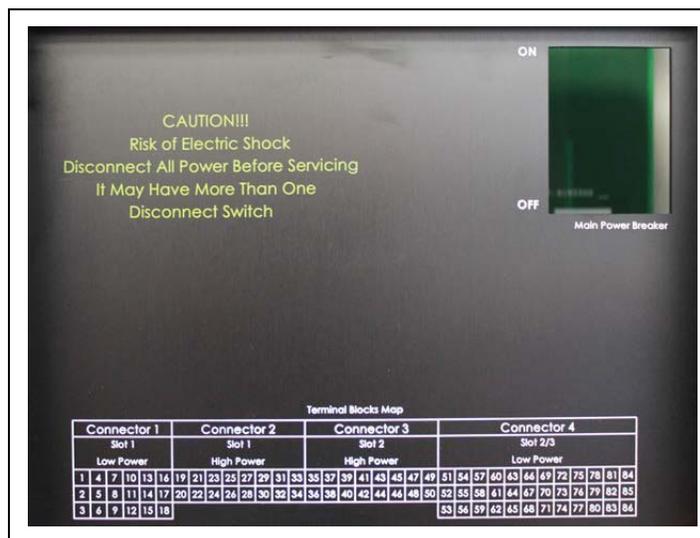
4.6.3 Connecting the Power Equipment

To connect the power equipment, proceed as follows:
- External Mains
  1 Connect Mains power to the Mains Circuit Control Box (MCC).
  2 Wire one 0.4-inch (10-mm) ground cable from the mains ground connection to the MCC.

- Uninterruptible Power Supply (UPS)
  Connect the MCC to the UPS.

Note: If there is any doubt concerning grounding, ask for a ground test, which must be performed by a qualified electrician.

4.6.4 Grounding

Proper system grounding is an extremely important part of the system installation.

As with the AC power, the grounds for all system components should return to the same circuit breaker panel. This helps you assure a common ground throughout the system, which is necessary for protection of the RS-485 data loop circuitry.

Grounding for all system devices should be wired to the breaker panel ground bus bar, which in turn should be grounded to a ground rod. A conduit ground does not provide sufficient grounding. It is recommended that the neutral and ground bus bars be bonded together when it is not prohibited by local codes.

4.7 Wiring the Peripherals

The following describes the wiring procedures for Islander PRIME peripherals.

4.7.1 Pump Wiring

Islander PRIME is capable of driving pump motors through an additional external relay. A separate circuit breaker should be supplied for each dispenser.

Note: The protection in communication circuits is part of the operator's responsibility.

To wire the pump, proceed as follows:

1 Wire one mains AC cable from the UPS MCC to the pump enclosure, intended for the pump motor.
- For an electronic pump, wire RS-485/Current Loop/Tokheim communication cable from Islander PRIME to the pump head.

2 Wire one 0.4-inch (10-mm) ground cable from the mains ground connection to the pump chassis.

The communication cable shield must be grounded at one end-side only, preferably at the controller installation side (see Figure 16).

Figure 16: Communications Cable Wiring
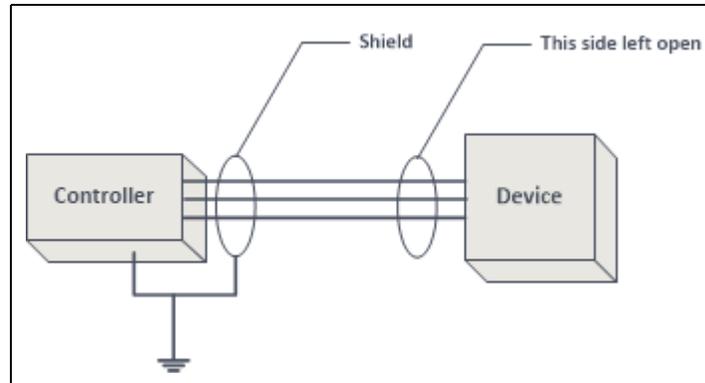
4.7.2 TLG Wiring

RS-232/LAN is used for communication between the TLG and Islander PRIME.

Follow these installation requirements when installing the RS-232/LAN communication lines:

Note: These requirements must be compatible with the recommendations of the TLG manufacturer.

- **Distance**: The following distances must be adhered to when installing the communication lines:
  - RS-232: 1 - 50 feet (1 - 15 m) for direct connection to a TLG device
  - LAN: 1- 330 feet (100 m) for direct connection to a TLG device
- **Conduit**: All direct connect RS-232/LAN cable must be in a low voltage conduit away from any AC wires.
- **Cable**: The type of cable used is determined by the device to which it is connected. The wire used must be stranded and not a solid core. Select a cable specification in accordance with local environment conditions.

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5 – Installation

5.1 General

This section provides the installation procedures for Islander PRIME. These procedures include:

5.2 Installation Guidelines

Installation procedures and requirements depend on the specific fuel dispenser models and the site layout. Therefore, use the information in this section to develop installation plans for each specific installation. Since installation requirements vary from case to case, no installation hardware is supplied by the equipment manufacturer, and installation planners must develop their own requirements.

The customer should provide an installation plan, designed by an authorized engineer. This plan design should reflect the existing electric infrastructure of the site.

5.2.1 Precautions and Safety Notes

Prior to actual installation activities, carefully observe the precautions and safety notes detailed in Precautions and Safety Notes and Requirements.

5.2.2 Safety Distances

The following shows the safety distances required for the installation of Islander PRIME adjacent to the dispensers (see Figure 17).

Figure 17: Base Plate Dimensions
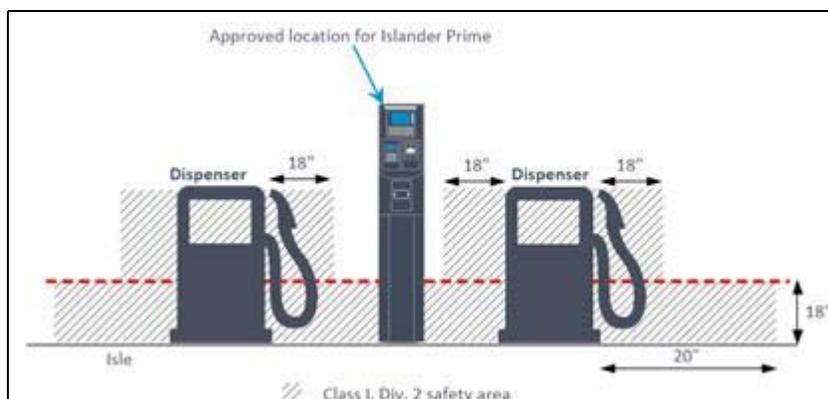
When mounting Islander PRIME, a minimum clearance of 18-inches (0.5-m) between the unit and any of the pumps or the dispensers must be maintained. This clearance ensures that a safe amount of room is available for the wiring and maintenance of the system, and that the system complies with fire codes.

Islander PRIME is designed and approved for installation and use at a convenient location at or near the fuel Island in the appropriate hazardous (classified) location:
- Where hazardous location is classified as Class 1, Division 2, and it does not extend higher than 18-inches (0.5-m) from surface.
- A minimum safety separation of 18 inches (0.5-m) from any nearest pump or dispenser.

5.3 Installing the Pedestal Base

The Islander PRIME pedestal is mounted in the homebase station on a base plate that is fastened to the homebase station concrete floor (see Figure 18, Table 6). The upper side of the base plate includes four holding screws set in the homebase station concrete floor.

Figure 18: Base Plate Dimensions
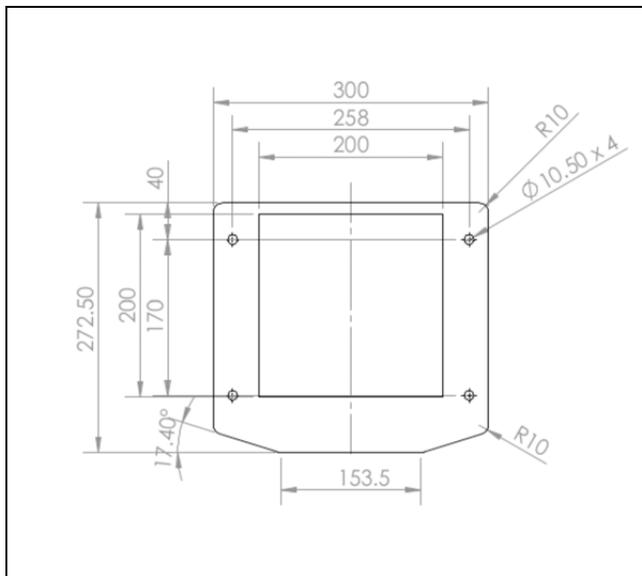
Table 6: Islander PRIME Base Plate Dimensions

Measurement	Dimension
Anchor Bolt Holes	10.50 mm x 4 **|** 0.41 in. x 4
Base Plate Central Opening	200 x 200 mm **|** 7.87 x 7.87 inch

5.3.1 Installation Procedure

Installation of the Islander PRIME pedestal consists of the following general steps:
- Running conduits to the pedestal site
- Installing the base plate
- Installing the pedestal base
- Installing the pedestal
- Running the cable conduits to the installation hole and filling all open holes

5.3.2 Preliminary Setup

To perform the preliminary setup procedures for the pedestal site, proceed as follows:

1 Determine the exact location for the Islander PRIME pedestal installation.

2 Run cable conduits for each type of cables to the Islander PRIME location:
- One High Voltage conduit from the dispenser
- One Low Voltage conduit from the dispenser
- One Low Voltage conduit from the office
- One High Voltage conduit from the Mains Distribution Box

3 Run the cable conduits to the hole.

Notes:1) All conduits must be sealed when the unit is installed.
2) Ensure that the conduits are the right length to reach above the pedestal base into the pedestal itself. Various pedestal base heights are available; refer to the specifications of the configuration that you have ordered to determine how far the conduits must reach.

5.3.3 Assembly Parts

The following table lists the assembly parts required for the Islander PRIME installation (see Table 7):

Table 7: Islander PRIME Assembly Parts

Item No.	Description	Qty	P/N
1	Bolt, ICU	4	814904200
2	Nut, M10	8	815103000
3	Washer, Flat, SM10	8	815300200
4	Base plate	1	814353700

5.3.4 Base Plate

To install the base plate, proceed as follows:

1   Prepare the bottom plate with four ICU bolts attached to it with M10 nuts (step 1 in Figure 19 and Figure 20). Check that the bolts protrude from the plate by 1.4-inch (35-mm).

Figure 19: Base Plate Installation
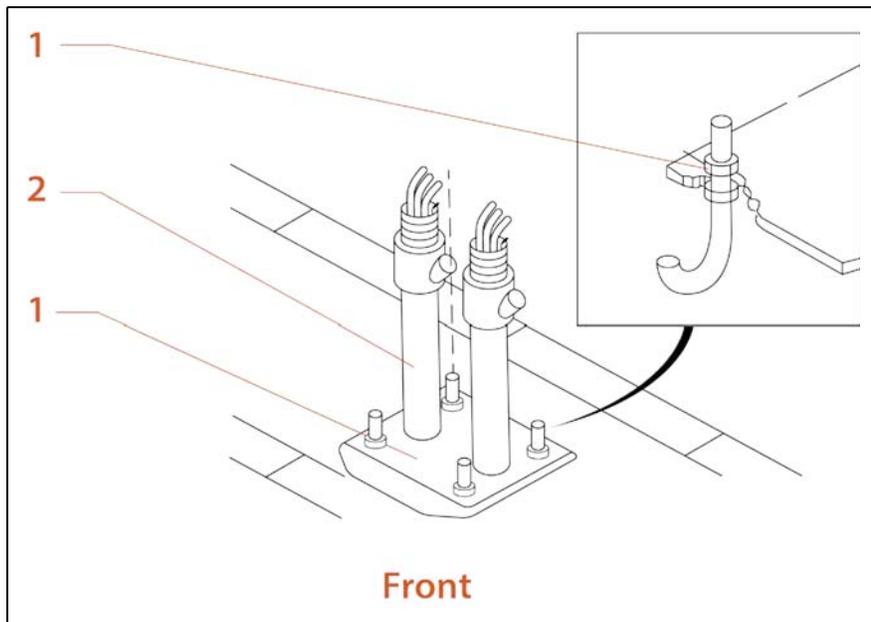
2   Insert the bottom plate in the hole.

3   Take care that all power and communication conduits pass through the central hole in the bottom plate (step 2 in Figure 19, 3 in Figure 20).

4   Pour concrete type B200 in the hole as a support base for the pole.

5   Take care that as the concrete fills the hole, the bottom plate is on a same level as the ground (asphalt, pedestal) on which it is installed. Check that the bottom plate is leveled. Otherwise make the necessary adjustments so the plate is leveled.

6   Wait the necessary time for the concrete to harden and dry (as per local practice), and then check again that the bottom plate is leveled.

5.3.5 Pedestal

To install the pedestal, proceed as follows:

1 Remove the four M10 nuts from the four bolts attached to the bottom plate (step 2 in Figure 20).

Figure 20: Pedestal Base Installation
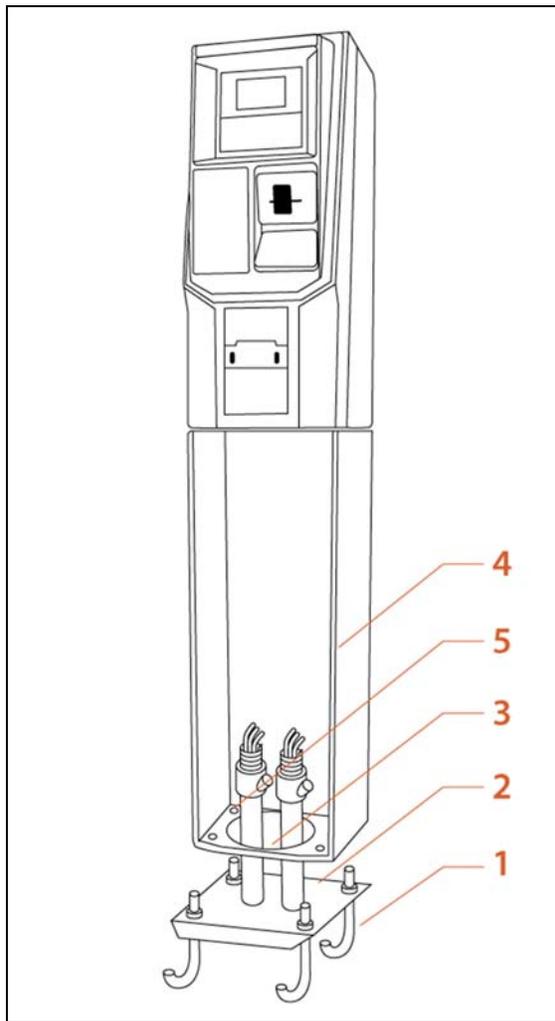
2   Remove the front panel of the pedestal base to enable you to reach the bolts inside.

3 Install the pedestal base on top of the bottom plate (step 4 in Figure 20).

4 Anchor the pedestal base onto the base plate with the four bolts protruding from the inner ground.

5 Secure the pedestal base to the base plate with four M10 flat washers and M10 nuts (step 5 in Figure 20).

6 Mount the pedestal on top of the pedestal base, using the 4 sets of bolts provided with the pedestal to fasten the pedestal to the base.

7 Fasten the front panel to the pedestal base.

5.3.6 Sealing Conduits

The conduits shall be sealed in accordance with NFPA requirements and local regulations, to prevent the passage of gases through conduits, cables and conductors. The fittings are required wherever volatile liquids or gases are present in the surroundings.

Note: Install the seal under the barrier plate with the threaded end protruding through the knockout opening.

5.4 Installing Options

Islander PRIME can be provided in a number of configurations that include a variety of optional add-ons. The following optional add-ons are available:
- Barcode reader
- HID Reader
- Card reader
- Cellular modem
- Receipt printer

Depending upon customer requirements, the Islander PRIME may be delivered pre-assembled with all add-ons installed offsite, or it may be delivered empty, with all openings on the front of the pole covered by removable panels (see Figure 21). If the add-ons shall be assembled on site, the panels are removed as needed to install each add-on. Installation directions for each add-on are detailed below.

Figure 21: Islander PRIME Pole Door
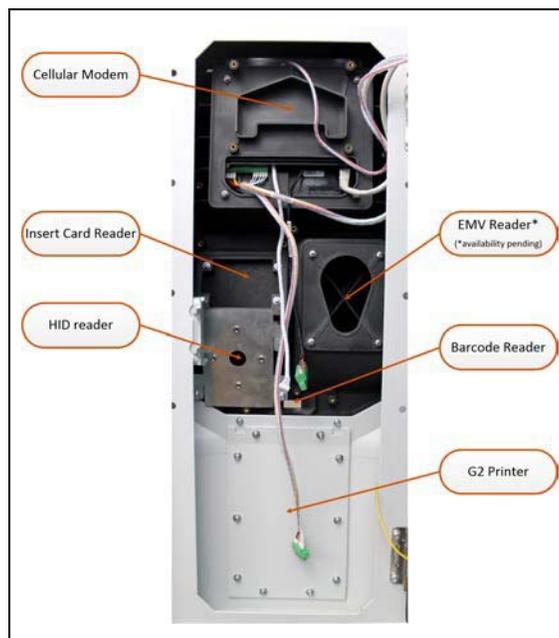
Note: *Refer to the MDE-5415 SiteOmat360 User Manual for setup details for each add-on;*
refer to the G2 Panel Printer User Manual for setup details for the G2 Panel Printer.

5.4.1 Barcode Reader Installation

The barcode reader (P/N M15778B009) is provided with the following assembly kit
components (see Table 8, Figure 22).

Table 8: Barcode Reader Assembly Kit

Item #	Description	Qt
1	Barcode Reader	1
2	Barcode Reader Harness	1
3	Screw, M4x10 SST+2 Washers	2

Figure 22: Barcode Reader Installation Kit
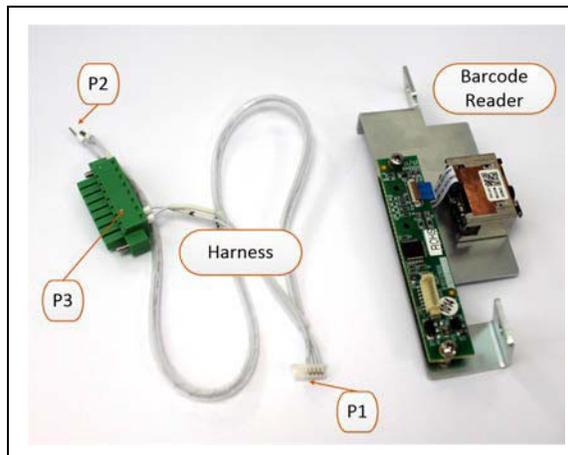
To install a barcode reader in the Islander PRIME, proceed as follows:

1 Remove the opaque panel covering the glass window in the Islander PRIME pole door.

2 Place the barcode reader inside the pole door lined up against the glass window in the door of the Islander PRIME pole (see Figure 23):

Figure 23: Barcode Reader in Islander PRIME Pole Door
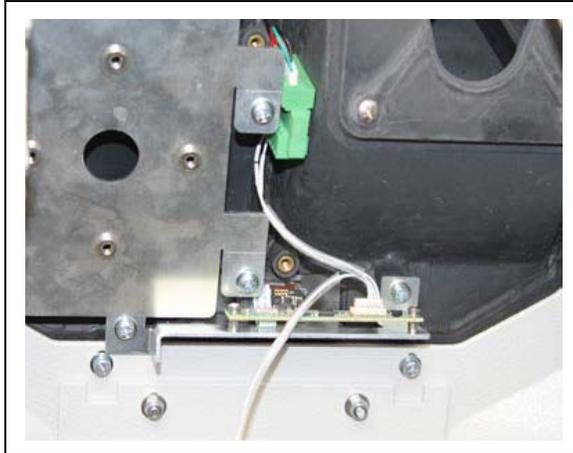
3 Use the screws provided in the installation kit to secure the barcode reader to the Islander PRIME.

4 Connect barcode harness P1 to the socket in the barcode reader.

5 Remove the power harness from the OrPAY1000, and wire the barcode reader harness P2 to the respective pins 7 and 8 in the OrPAY1000 power harness as follows (see Figure 24).

Figure 24: Barcode Reader Wiring to OrPAY1000
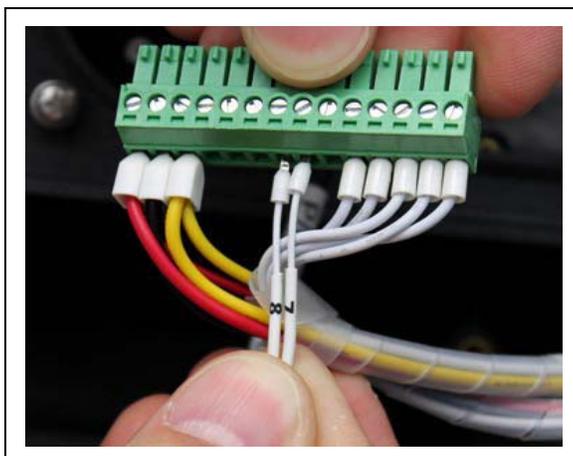
6   Place the connector in the aperture behind the OrPAY1000 as follows (see Figure 25).

Figure 25: Barcode Reader Wiring to OrPAY1000

7   Wire barcode reader harness P3 to the OrPAY1000 HID harness.

5.4.2 HID Reader Installation

The HID Reader (P/N M09680B134) is provided alone, without an assembly kit; it is installed using components already in the Islander PRIME pole door (see Figure 29).

Figure 26: HID Reader

To install an HID Reader in the Islander PRIME, proceed as follows:

1 Remove the screws affixing the HID Bracket to the Islander PRIME pole door.

2 Remove the back plate from the HID Reader.

3 Fasten the HID Reader back plate to the HID Bracket using the flat head screws provided in the installation kit as follows (see Figure 27).

Figure 27: HID Reader Back Plate

4 Pull the HID connector harness cable through the HID bracket, and mount the HID Reader to the bracket as follows (see Figure 28).

Figure 28: HID Reader on Back Plate

5 Connect the HID Reader harness to the OrPAY1000 HID Reader harness. When installing both a Barcode Reader and an HID Reader, connect the Barcode Reader harness to the HID Reader harness as follows (see Figure 29).

Figure 29: HID Reader Wiring
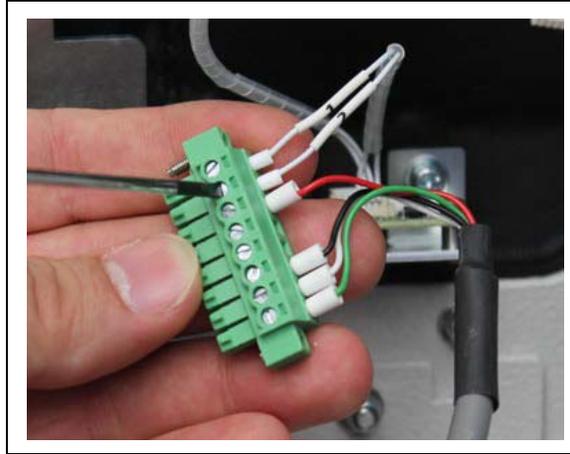
6 Use the screws provided to secure the HID Reader to the Islander PRIME as follows (see Figure 30).

Figure 30: HID Reader in Islander PRIME Pole
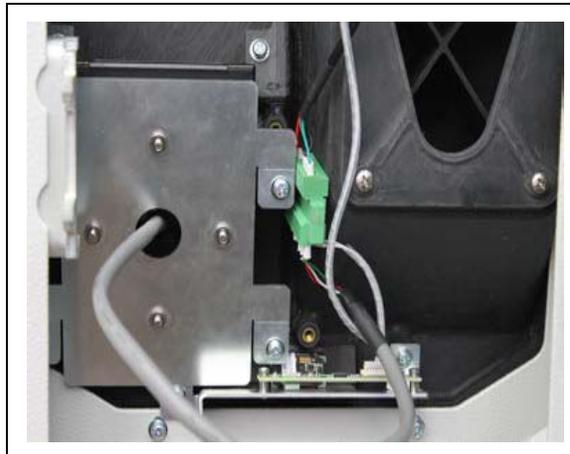
## 5.4.3 Insertion Card Reader Installation

The insertion card reader (P/N M15778B007) is provided with the following assembly kit components (see Table 9, Figure 31, Figure 32, and Figure 33).

Table 9: Insertion Card Reader Assembly Kit

Item No.	Description	Qty
1	Barcode Reader	1
2	Screw, M4x10 SST+2 Washers	4

Figure 31: Insertion Card Reader

Figure 32: Insertion Card Reader (Inside Top View)

Figure 33: Insertion Card Reader Label

To install an insertion card reader in the Islander PRIME, proceed as follows:

1 Remove the screws affixing the front panel to the Islander PRIME pole.

2 Place the insertion card reader into the opening light stripe side up.

3 Use the screws provided in the installation kit to secure the insertion card reader to the Islander PRIME pole door.

4 Connect the insertion card reader cable from the OrPAY1000 to the socket on the insertion card reader device (see Figure 34).

Figure 34: Insertion Card Reader Mounted in Islander PRIME
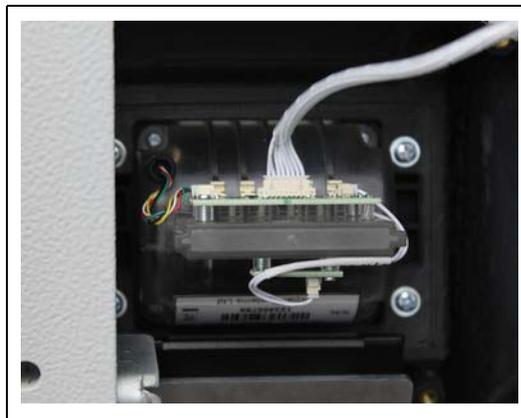
5.4.4 Cellular Modem Installation

Users have the option to install their own Cellular Modem in the Islander PRIME pole door. Gasboy provides a bracket that can be used to mount the Cellular Modem in the pole door. The Cellular Modem installation kit (P/N 819250110) includes the following components (see Table 10).

Table 10: Cellular Modem Installation Kit

Item No.	Description	Qty	P/N
1	Bracket	1	819250100
2	Screw, M4x10 SST+2 Washers	4	815228200

To install a Cellular Modem in the Islander PRIME, proceed as follows:

1 Remove the original small plastic bracket from the modem as follows (see Figure 35).

Figure 35: Cellular Modem Back Plate
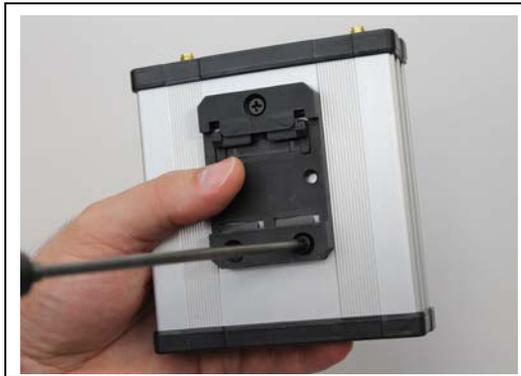
2 Slide the modem into the metal bracket provided in the installation kit.

3 Use the screws provided in the installation kit to secure the cellular modem to the Islander PRIME as follows (see Figure 36).

Figure 36: Cellular Modem in Islander PRIME Pole

4 Connect the two modem antennae to the cellular modem using cables provided in the installation kit.

5 Anchor the modem antennas in the designated apertures as follows (see Figure 37).

Figure 37: Cellular Modem Antenna (Left Side Example)

6 Use the modem harness provided in the installation kit to connect the cellular modem to the Islander PRIME.

7 Use the Ethernet cable provided in the installation kit to connect the cellular modem to the Islander PRIME 5-port Ethernet switch.

5.4.5 G2 Panel Printer Installation

The G2 Panel Printer (P/N M15778B008) is provided with the following assembly kit components (see Figure 38):

Figure 38: G2 Panel Printer

To install a G2 Panel Printer in the Islander PRIME, proceed as follows:

1 Disconnect the grounding wire connection in the Islander PRIME pole door as follows (see Figure 39):

Figure 39: Disconnect Grounding Cable

2 Remove the screws affixing the panel covering the printer opening to the Islander PRIME pole door.

3 Place the printer into the opening from the outside.

4 Use the screws provided to secure the printer to the inside of the Islander PRIME in the provided bracket as follows (see Figure 40):

Figure 40: Panel Printer in Islander PRIME Pole

5 Connect the printer ground cable to the ground stud in the Islander PRIME pole door together with the main grounding cable as follows (see Figure 41):

Figure 41: Reconnect Grounding Cable

5.5 Installing Communication Interfaces

The Islander PRIME pedestal pole has three slots in which communication interface cards can be added. Each communication interface card is embedded into a blade, which slides into the slot. Slot 1 and Slot 2 can support either mechanical or electronic interfaces, and Slot 3 supports only electronic interfaces.

Detailed below are instructions on how to insert communication interface blades into the slots, followed by wiring procedures for each specific type of interface. The wiring is performed in the Islander PRIME terminal block only. The wires should be pulled from the conduits that protrude from the installation base, or in the opposite direction, from the terminal block to the device in the homebase station.

The maximum load for each bus is 8 devices/pumps.

TIP
For optimum configuration, each line should be connected to up to 6 devices.

5.5.1 Adding Communication Interface Blades to the Pedestal

To add a communication interface blade to the Islander PRIME pedestal, proceed as follows:

1 Turn off all power to the pedestal and the pumps, and fully disconnect all power sources.

CAUTION
Caution: Risk of electric shock. Disconnect all power before servicing; there may be more than one disconnect switch.
Attention: Risque de choc électrique. Débrancher toute l'alimentation avant l'entretien, il peut y avoir plus d'un sectionneur.

2 Remove the protective panel covering the communication interface slots (see Figure 42 and Figure 43).

Figure 42: Communication Interface Protective Panel

Figure 43: Communication Interface Slots (Empty)

3   Hold the blade by the front screws that are provided pre-inserted into the front of the blade.

4   Slide the blade into the slot (see).

Figure 44: Communication Interface Blades in Slots

> *Note:*   *If you are adding a mechanical interface, it may be inserted into slot 1 or*
> *slot 2 only.*

5   Tighten the front screws in each blade.

6 Replace the protective panel in front of the slots (see Figure 45).

Figure 45: Communication Interface Protective Panel With Interface

5.5.2 Wiring Requirements

TIP
Mark each cable at both ends with a number or sign that will identify its functionality.

5.5.3 Mechanical Dispenser Connections

Mechanical dispenser interfaces (see Figure 46) may be installed in either Slot 1 or Slot 2 of the Islander PRIME. The following describes the required wiring connections between the mechanical dispenser interface and Islander PRIME.

Figure 46: Mechanical Dispenser Interface
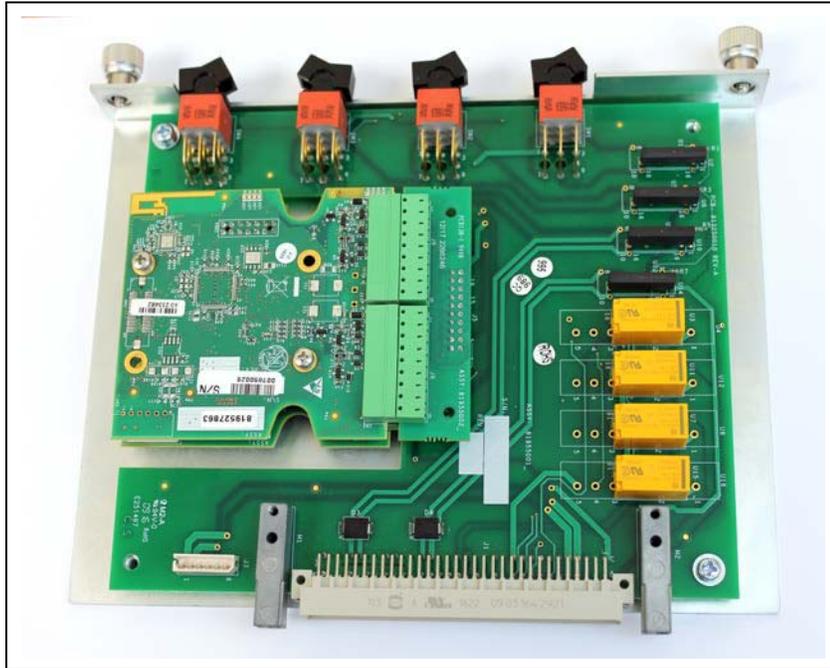
The following is a detailed wiring diagram between Islander PRIME terminal block and the pump components (see Figure 47):

Figure 47: Mechanical Dispenser Wiring Diagram
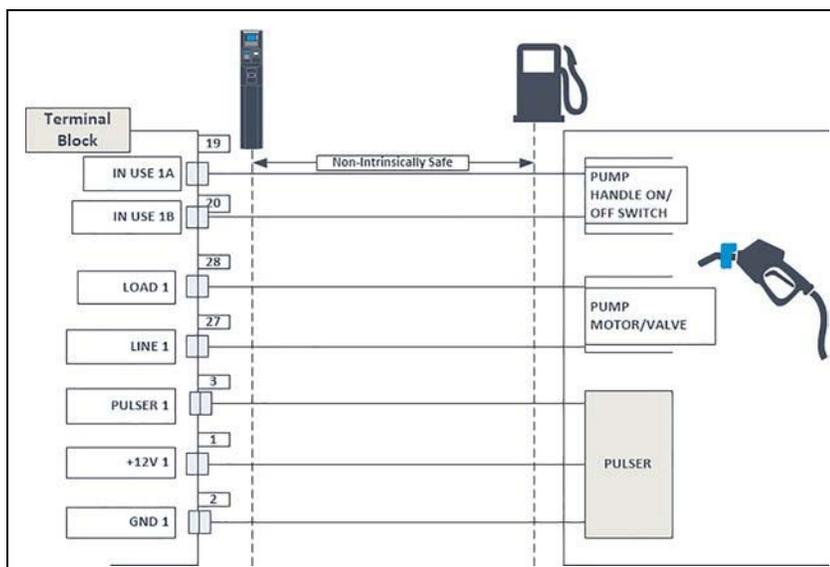
5.5.3.1 Pulse Input Wires

The dispenser outputs pulses to the system by means of the pulser unit, installed in accordance with manufacturer instructions. The pulse rate per volume (liter/gallon) is determined by the pulser unit. It is programmed as a "factor" by the Head Office controller.

5.5.3.2 Handle Status Input Wires

The handle signal is used to signal to the system that the pump is in "In Use" mode. When the dispenser handle is lifted this contact will close. This should signal to the system that the pump is "In Use" or that the transaction has ended.

5.5.3.3 Authorization Output Wires

The dispenser requires an authorization signal from Islander PRIME to start a sales transaction. Without this authorization signal, the electric valve (or pump) will not open and the sales transaction will not begin. Islander PRIME switches the AC power signal to the valve. When the dispenser receives the authorization signal, it enables the fuel flow.

5.5.3.4 MPI-C Pinouts

The following tables provide MPI-C pinout connection details, based on the Terminal Block Map found on the power supply protective panel (see Table 11, Table 12, and Table 13). The tables are laid out as follows:

- The pin number for each cell corresponds with the pin numbers displayed in the Terminal Block Map found on the inner wall of the Islander PRIME unit.
- Each block of cells shows the channels for that configuration, as follows:
  - (Green): Channel #1
  - (Peach): Channel #2
  - (Purple): Channel #3
  - (Beige): Channel #4

Each cell defines the signal that is sent over that pin in the terminal block port.

Table 11: MPI-C Channels

PLS_V1	PLS_V2	CHSS	PLS_V3	PLS_V4	CHSS
PLS_G1	PLS_G2	n.c.	PLS_G3	PLS_G4	n.c.
PLS_IN1	PLS_IN2	n.c.	PLS_IN3	PLS_IN4	n.c.

5.5.3.5 Fuses

Mechanical pumps are supplied with power via fuses located below the pump slots (see Figure 48, Table 12, Table 13):

Figure 48: MPI-C Fuses Diagram
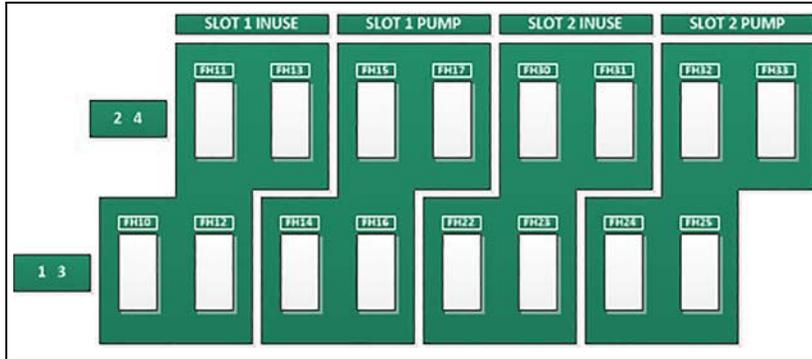
Table 12: MPI-C Fuses Slot #1- In Use/Pump

In Use				Pump			
INUSE1_A	INUSE2_A	INUSE3_A	INUSE4_A	LINE1	LINE2	LINE3	LINE4
INUSE1_B	INUSE2_B	INUSE3_B	INUSE4_B	LOAD1	LOAD2	LOAD3	LOAD4

Table 13: MPI-C Fuses Slot #2 - Pump/In Use

In Use				Pump			
LINE1	LINE2	LINE3	LINE4	INUSE1_A	INUSE2_A	INUSE3_A	INUSE4_A
LOAD1	LOAD2	LOAD3	LOAD4	INUSE1_B	INUSE2_B	INUSE3_B	INUSE4_B

5.5.4 Pulser Connections

The following describes the required wiring connections between the pulser in the mechanical pump and Islander PRIME. The system can accept many types of pulsers; contact Gasboy for more information. There are two types of pulser:

- Electronic pulser
- Mechanical pulser

Connect Islander PRIME to the pulser in accordance to its characteristics.

Note: Pulsers should be installed in accordance with the pulser manufacturer's instructions. Some pulsers do not have a barrier; in that case, you must add a pulser barrier. Barriers are not provided with Islander PRIME.

5.5.4.1 Electronic Pulser - Three-Wire Pulser

Note: A three-wire pulser requires an external power source (12 V) in order to operate.

The following is a schematic diagram of the connections between the terminal block and a three-wire pulser (see Figure 49):

Figure 49: Three-Wire Pulser Wiring Connections
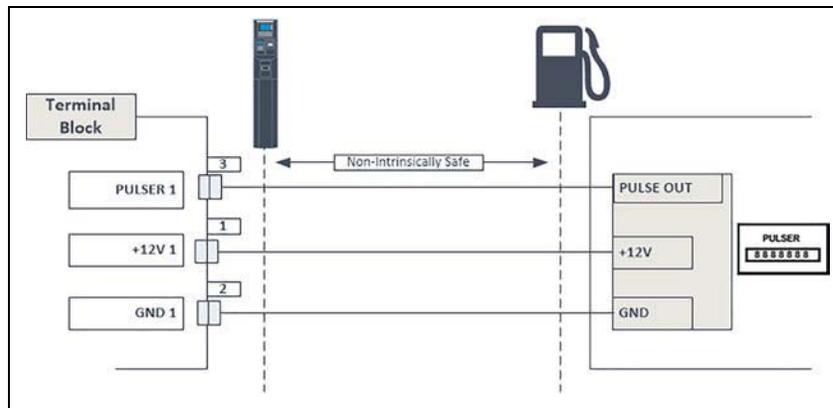
5.5.4.2 Mechanical Pulser - Two-Wire Pulser

The following is a schematic diagram of the connections between the terminal block and a two-wire pulser (see Figure 50):

Figure 50: Two-Wire Pulser Wiring Connections
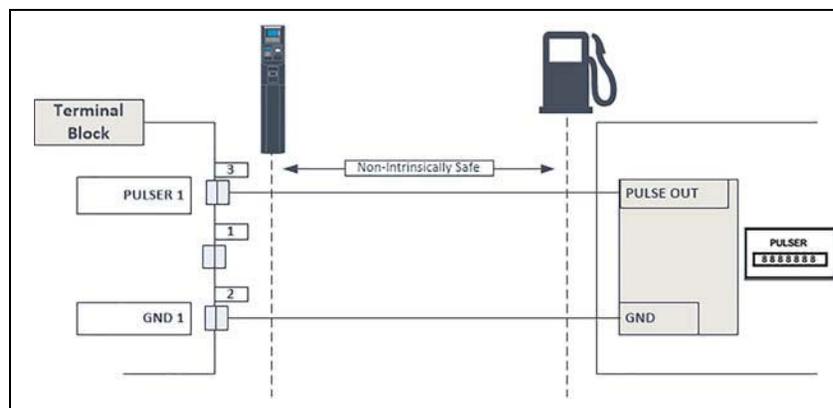
5.5.5 Electronic Dispenser Connections

The wiring in the terminal block differs in accordance with the type of electronic pump installed in the homebase station. There are several types of electronic pumps. Electronic dispenser interfaces may be installed in any of the three slots in the Islander PRIME. The following describes the wiring connections of the available pumps.

Each interface wiring description includes a pinout scheme. The pinout schemes are laid out as follows:
- The pin number for each cell corresponds with the pin numbers displayed in the Terminal Block Map found on the inner wall of the Islander PRIME unit.
- Each block of cells shows the channels for each interface type, as follows:
  - (Green): Channel #1
  - (Peach): Channel #2
  - (Purple): Channel #3
  - (Beige): Channel #4
- Each cell defines the signal that is sent over that pin in the terminal block port.

5.5.5.1 Tokheim

The Tokheim electronic interface appears as follows (see Figure 51):

Figure 51: Tokheim Electronic Interface
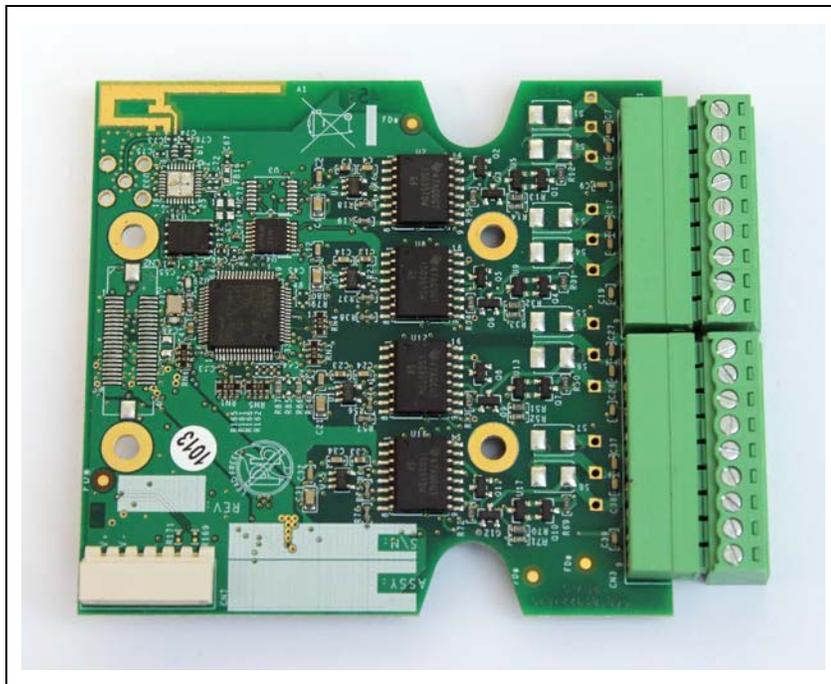
The following shows the specific wiring connections between Islander PRIME and the Tokheim pump nozzle, and the terminals that differ from the mechanical pump (see Figure 52):

Figure 52: Tokheim Electronic Interface - Wiring Diagram
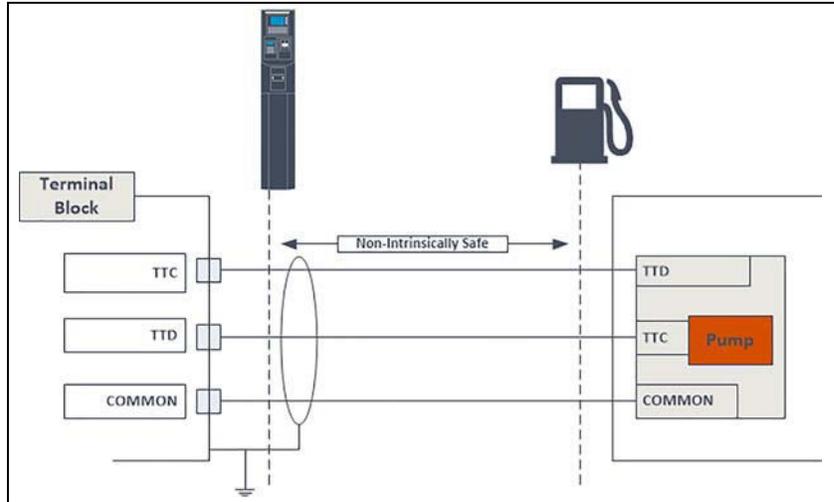
The Tokheim electronic communication interface is wired according to the following pinout scheme (see Table 14):

Table 14: Tokheim Pinouts

GND1	GND2	CHSS	GND3	GND4	CHSS
TTD_1	TTD_2	n.c.	TTD_3	TTD_4	n.c.
TTC_1	TTC_2	n.c.	TTC_3	TTC_4	n.c.

5.5.5.2 Current Loop

The following shows the specific wiring connections between Islander PRIME and the Current Loop pump nozzle, the terminals that differ from the mechanical pump, and the serial connection between two Current Loop pumps and the terminal block (see Figure 53):

Figure 53: Current Loop Electronic Pump - Wiring Diagram
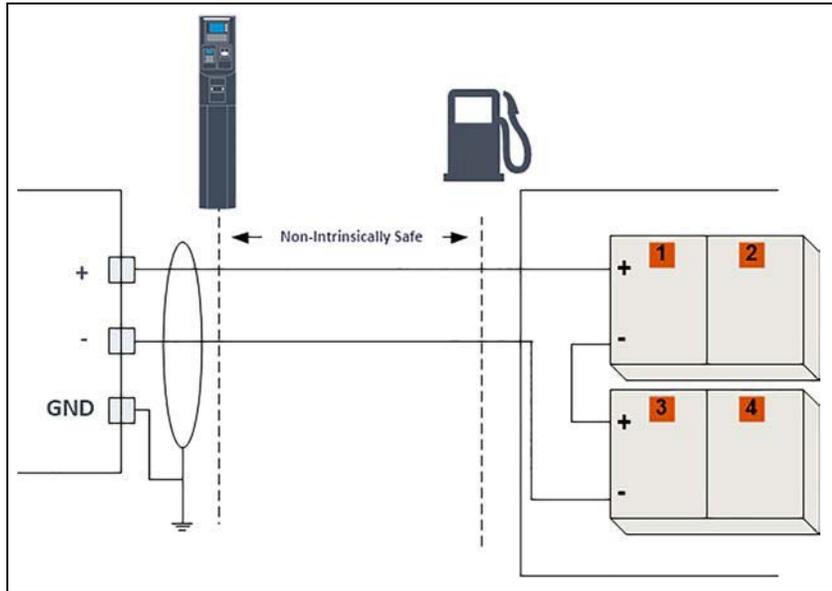
The Current Loop electronic communication interface is wired according to the following pinout scheme (see Table 15):

Table 15: Current Loop Pinouts

GND1	GND2	CHSS	GND3	GND4	CHSS
CLI_1	CLI_2	n.c.	CLI_3	CLI_4	n.c.
CLO_1	CLO_2	n.c.	CLO_3	CLO_4	n.c.

5.5.5.3 RS-485

The RS-485 electronic interface appears as follows (see Figure 54):

Figure 54: RS-485 Electronic Interface
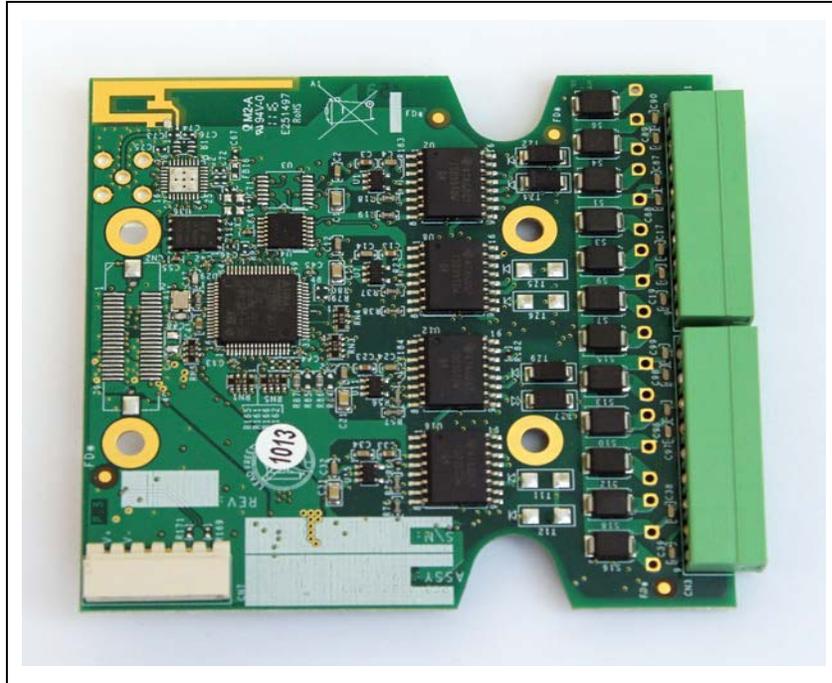
The following show the parallel connection between two Gasboy RS-485 pumps and the terminal block (see Figure 55):

Figure 55: RS-485 Device - Wiring Diagram
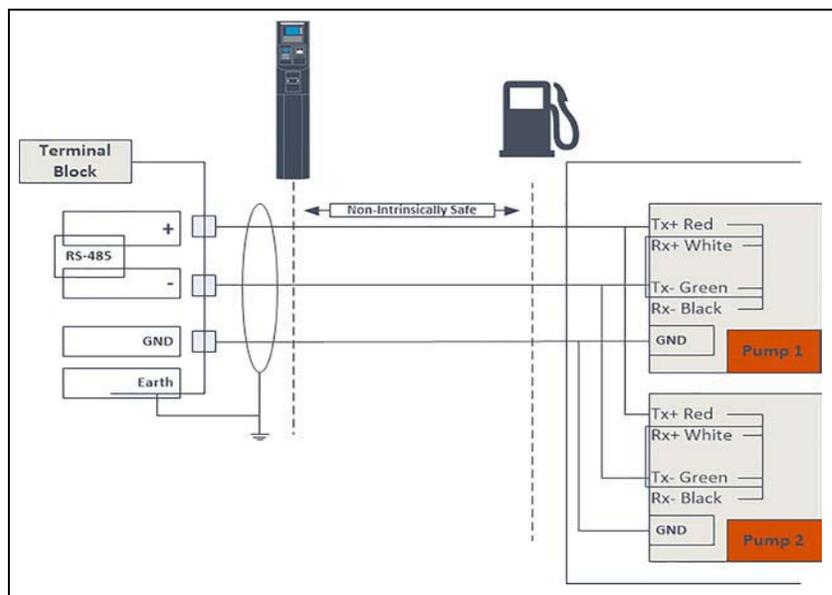
- In the junction box for the Gasboy electronic pump, connect the Red Tx+ to the White Rx+, and connect the Green Tx- to the Black Rx.
- Run one wire from the + and one wire from the - to the proper terminal blocks in the Islander PRIME unit.

The RS-485 electronic communication interface is wired according to the following pinout scheme (see Table 16):

Table 16: RS-485 Pinouts

GND1	GND2	CHSS	GND3	GND4	CHSS
485_1−	485_2−	n. c.	485_3−	485_4−	n. c.
485_1+	485_2+	n. c.	485_3+	485_4+	n. c.

5.5.5.4 TLG Controller

The following is an example of an RS-232/RS-422 electronic interface, which is used by the TLG Controller (see Figure 56):

Figure 56: RS-232/RS-422 Electronic Interface
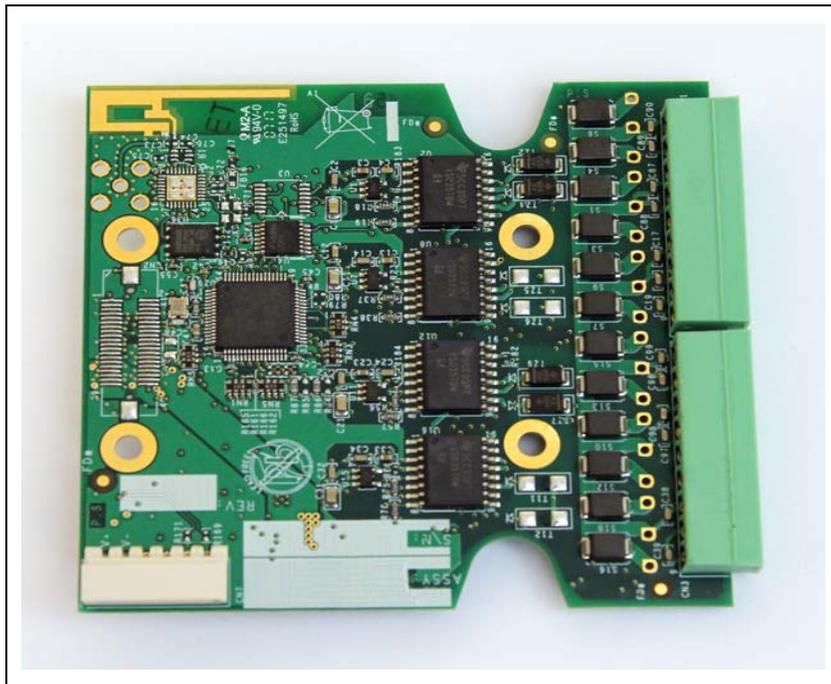
The following shows the required connection between the TLG controller at the site and the Islander PRIME terminal block (see Figure 57):

Figure 57: TLG Wiring Link
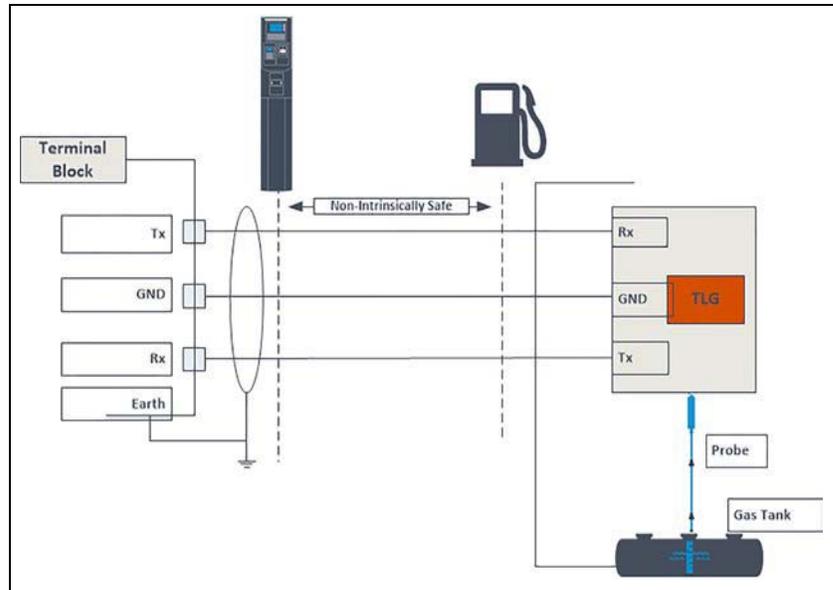
The TLG controller communicates via RS-232/422 channels. The RS-232/422 electronic communication interface is wired according to the following pinout scheme (see Table 17):

Table 17: RS-232/422 Pinouts

RX_1+	RX_2	CHSS	RX_3+	RX_4	CHSS
TX_1−	TX_2	GND2	TX_3−	TX_4	GND4
TX_1+	GND1	RX_1−	TX_3+	GND3	RX_3+

5.6 Post-Installation Checklist

After completing the installation procedure, carefully inspect the connection between Islander PRIME and the external power mains and the data sources.

In particular, pay attention to the following:
- Correct wiring
  - Is all of the wiring inserted within metal conduits?
  - Is the AC and the DC wiring inserted in separate conduits, troughs, etc.?
  - Is the system / peripheral equipment powered on a separate dedicated 20 Amp breaker?
  - Is the system grounded properly?
  - Are the cables correctly routed in the island?
  - Are the communication lines under the maximum allowable distance?
    o RS-232: 50 feet (15 m)
    o RS-485: 330 feet (100 m)

o Antenna wire:
   > 330 feet (100 m) for VIU
   > 50 feet (15 m) for Fuel Ring
• Clean dirt and wire remnants

In case problems are detected after installation or during operation, repeat the post-installation checks listed above.

CAUTION

The OrPAY1000 display should not be exposed to direct sunlight. It is therefore highly recommended to add an awning.

5.7 Islander PRIME Setup

For information on how to set up Islander PRIME once installed, refer to the *MDE-4817 SiteOmat In-House Station Controller Setup and Maintenance Manual*.

6 – LAN CommVerter Setup

6.1 General

This section provides instructions for setting up the Islander PRIME LAN CommVerter.

To access the setup site for Islander PRIME, proceed as follows:

Open an Internet browser and enter the default IP address provided by Gasboy. The CommVerter Setup homepage opens with a login dialog box (see Figure 58).

Figure 58: Islander PRIME CommVerter Setup Login
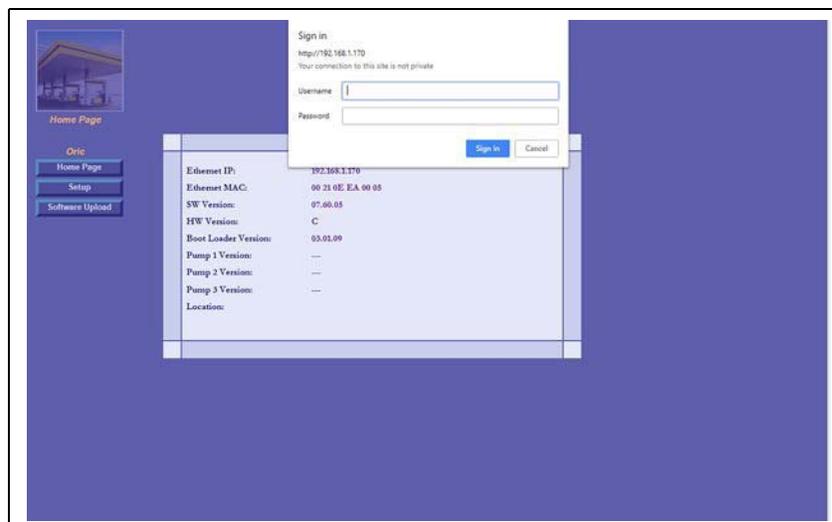
Enter the **Username** and **Password** provided by Gasboy and click **Sign In**. The following screen is displayed (see Figure 59):

Figure 59: Islander PRIME CommVerter Setup Homepage

The CommVerter settings page has the following navigation buttons on the left side of the screen:
- Home Page: Basic device information
- Setup: Main device settings
- Software Upload: Uploads configuration files and software/firmware updates

6.2 Home Page

The Home page displays current device information (see Figure 59, Table 18):

Table 18: Device Information

Field	Description
Ethernet IP	Ethernet IP address
Ethernet MAC	Ethernet MAC address
SW Version	Software version installed on the device
HW Version	Hardware version installed on the device
Boot Loader Version	Boot Loader Version installed on the device
Pump 1 Version	Pump software version for the PI in Slot 1
Pump 2 Version	Pump software version for the PI in Slot 2
Pump 3 Version	Pump software version for the PI in Slot 3
Location	Location of the Islander PRIME

6.3 Setup

The Setup page is comprised of five tabs: Minimal Setup, General Setup, OrIC Config, Log Level, and Save. Click **Setup** to view and define the parameters in each tab.

6.3.1 Minimal Setup

The Setup page opens with the Minimal Setup tab selected (see Figure 60).

Figure 60: Minimal Setup Tab
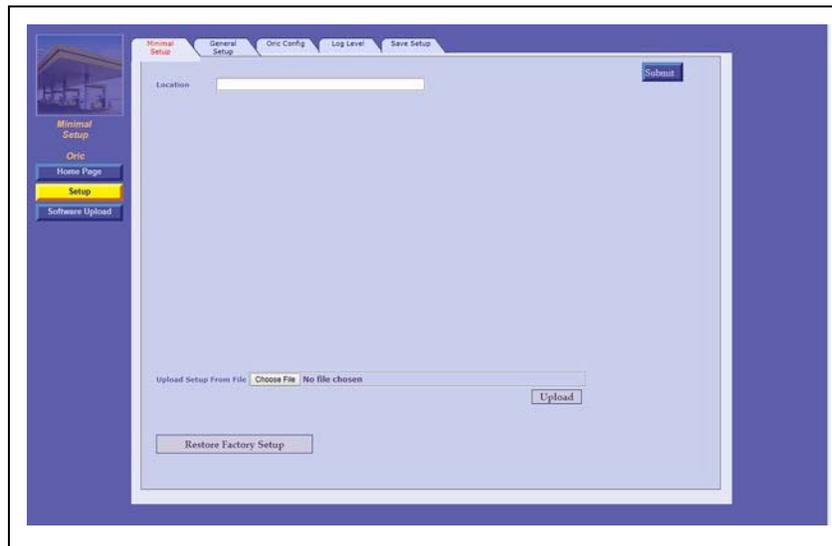
The following actions are available:
- In the **Location** field, enter a description for the location of the device (optional).
- In **Upload Setup From File**, click **Choose File** to launch a file browser, and select a previously downloaded setup to apply to the current configuration; then, click **Upload** (optional).
- Click **Restore Factory Setup** to reset the device to the factory defaults (optional).

> **CAUTION**
>
> All previously defined settings will be overwritten.

- Click **Submit** to save the changes locally.
  *Note: Clicking **Submit** saves the configuration temporarily on a local level. To commit the changes permanently, ensure to save everything via the **Save** tab.*

6.3.2 General Setup

Click the **General Setup** tab. The following screen opens (see Figure 61):

Figure 61: General Setup Tab

The following actions are available:
- Define the **General Setup** fields (see Table 19).
- Click **Submit** to save the changes locally.
  *Note: Clicking **Submit** saves the configuration temporarily on a local level. To commit the changes permanently, ensure to save everything via the **Save** tab.*

Table 19: General Setup Fields

Field	Description
Ethernet Configuration	
IP Address	Device IP Address
Subnet Mask	Subnet Mask address
Gateway	Gateway
DHCP	Not currently available
MAC	MAC address
RTC	
Date (dd/mm/yyyy)	Date
Time (hh:mm:ss)	Time
FCC Communication	
NoData Reset	**Enable**: The controller checks the TCP/IP at regular intervals; if no communication is detected within the timeout interval, the device will automatically reset. **Disable**: Device will not automatically reset.
NoData Timeout (sec)	No Data Timeout timeout interval, in seconds.
Note: Make sure that no pumps at the station are actively fueling before changing the date or time.	

6.3.3 OrIC Config

Click the **OrIC Config** tab. The following screen opens (see Figure 62):

Figure 62: OrIC Config Tab
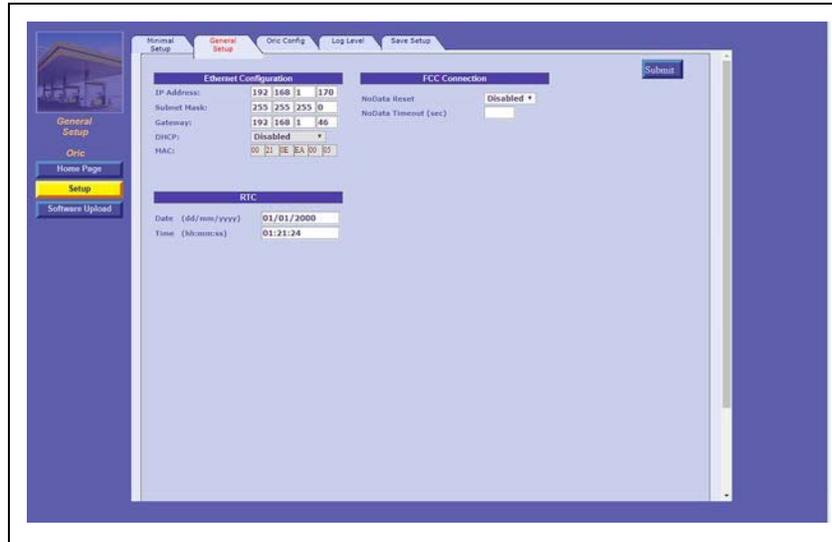
The following additional actions are available:
- Click **Add Channel** to add another channel.
- Click **Remove Channel** to remove the last channel from the list.
- Click **Copy Channel** to add another channel with the same settings as the last channel on the list.
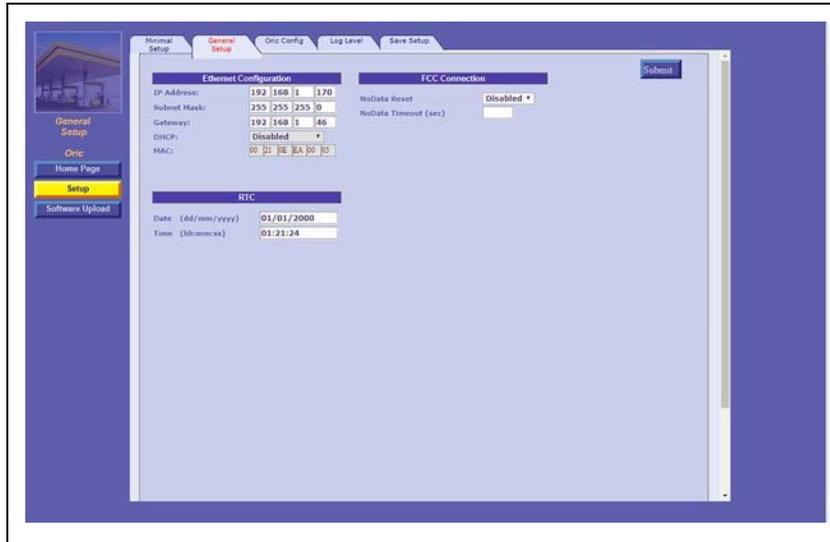- Define the channel fields (see Table 20).
- Click **Submit** to save the changes locally.
  *Note: Clicking **Submit** saves the configuration temporarily on a local level. To commit the changes permanently, make sure to save everything via the **Save** tab.*

Table 20: OrIC Config Channels Fields

Field	Description
Host	
TCP/IP Port	Host TCP/IP Port
Device Name	Device Name (Ideally should reflect the corresponding destination, i.e. "CL" for Current Loop destinations)
Destination	
OrIC Number	Channel number between 1-12 (up to 4 per PI)
Comm. Type	Communication protocol for the interface Current Loop • RS-232 • RS-422 • RS-485 • Tokheim • MPI-Primary • MPI-Secondary RS-232 and RS-422 channels are configured on the same PI- channels 1/2 are RS-232 and channels 3/4 are RS-422 MPI-Primary and -Secondary are used for mechanical PIs; MPI-Secondary is used for channels 3/4 in configurations that enable 4 MPI-C channels.
Baud Rate	Communication Interface details
Data Bits	
Parity	
Stop Bits	
RS-485 Echo	(RS-485 channels only)
Current Select	(Current Loop channels only) Type of current used by the channel
Frame Timeout	Longest pause in milliseconds between received bits before destination interface interprets the pause as the end of one message, and interprets further transmissions as a new message (0 = 4 bytes of silence).
No Data Timeout	The controller checks communication at regular intervals. If no communication is detected within the timeout interval, the channel will automatically reset. If set to 0, the channel will not reset.

Note: If the channel configuration is not displayed properly after saving all changes and resetting the device, clear your browser cache and reload the page.

6.3.4 Log Level

Click the **Log Level** tab. The following screen opens (see Figure 63):

Figure 63: Log Level Tab
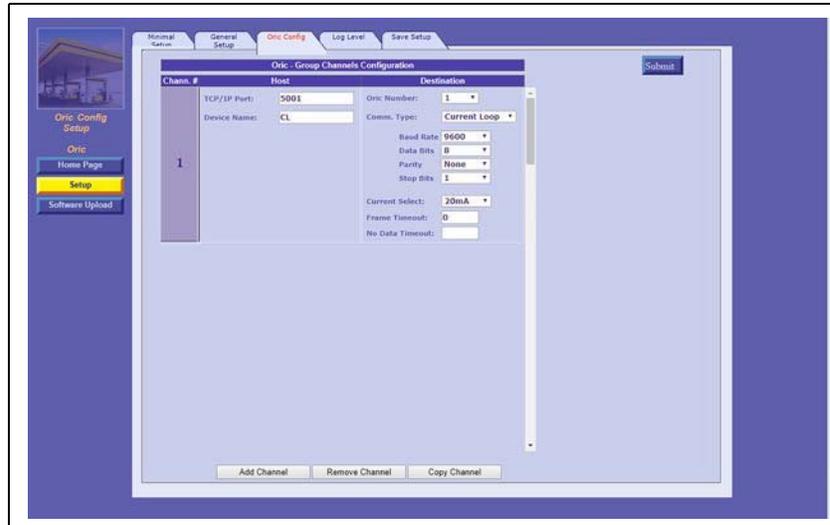
The Log Levels section defines settings for logs that are sent to Gasboy.
Note: Consult with Gasboy's Customer Services prior to defining the Log Levels settings.

The following actions are available:
   • Define the Log Level fields (see Table 21).
   • In the Debug Port Interface drop-down, select the port that the log will be transferred through.
      - None: Logs are not transferred
      - Com: Transfers the logs via RS-232
      - TCP/IP: Transfers the logs via LAN connection
   • Click the **Submit** button to save the changes locally.
   *Note: Clicking **Submit** saves the configuration temporarily on a local level. To commit the changes permanently, ensure that you save everything via the **Save** tab.*

Table 21: CommVerter Log Levels

Field	Description
General	
Debug Port Interface	**None**: Logs are not transferred **Com**: Transfers logs via RS-232 **TCP IP**: Transfers logs via LAN
Log Levels: Select Debug Information	

Source	Logs:
	   • TcpS
	   • TcpC
	   • DIAG
	   • ADMIN
	   • ORIC

Log Levels	• Data
	   • Debug
	   • Info

6.3.5 Save

After you have completed and submitted all configuration details, you must save all changes in the Save tab in order to write the changes to the flash memory and save the configuration permanently. To save changes, proceed as follows:

1 Click the **Save** tab. The following screen opens (see Figure 64):

Figure 64: Save Tab
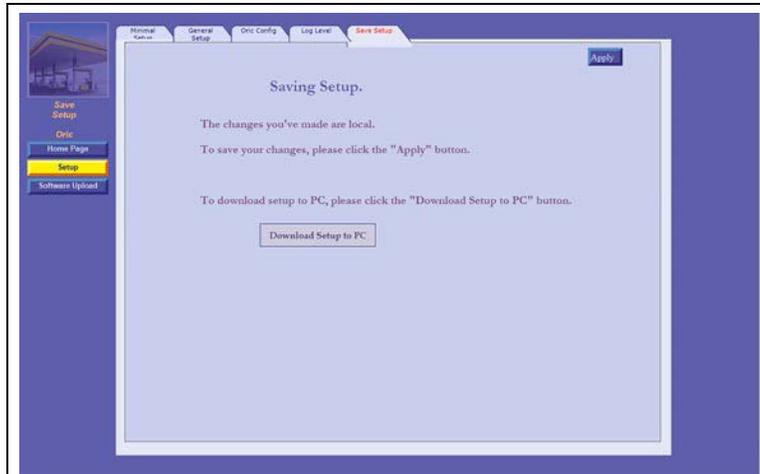
2 Click **Apply**. The following dialog box opens (see Figure 65):

Figure 65: Confirm Save Dialog Box
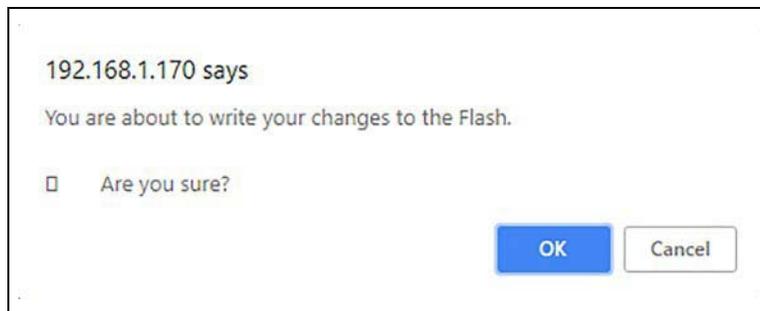
3 Click **OK** to continue. The following dialog box opens (see Figure 66):

Figure 66: Reset Device Dialog Box

4 Click **OK** to complete the save process.

5 To download an XML file containing all of the settings defined on the Setup page to the local machine, click **Download Setup to PC**. The following dialog box opens (see Figure 67):

Figure 67: Download Setup File
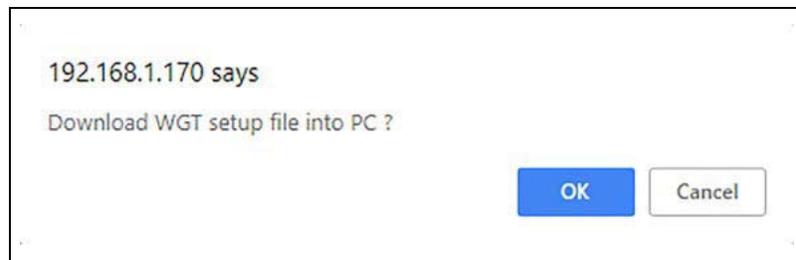
6 Click **OK** to confirm.
  Note: The dialog box screenshots in this procedure are for demonstration purposes only, including the IP address in the headers. Use the IP address provided to you by Gasboy when performing this procedure.

6.4 Software Upload

Click **Software Upload** navigation button. The following screen opens (see Figure 68):

Figure 68: Software Upload Screen
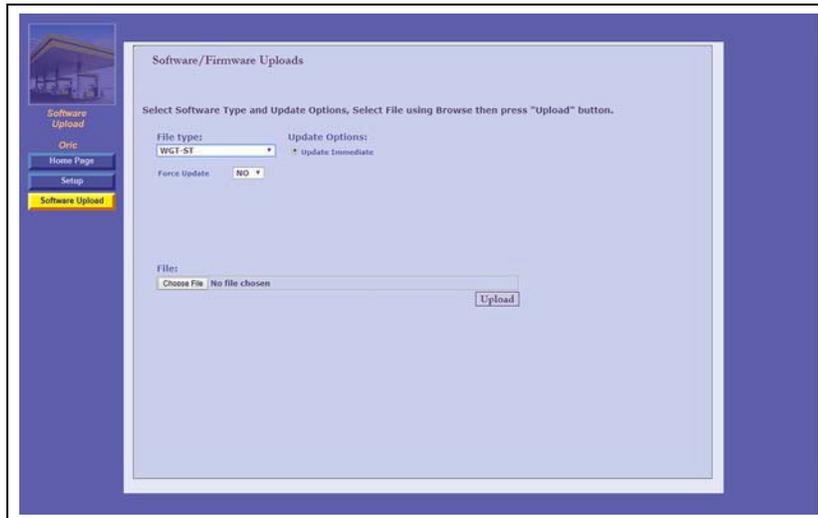
The Software Upload screen enables uploading the newest software and firmware versions provided by Gasboy (see Table 22).

Table 22: Software Upload Fields

Field	Description
File Type	• Wireless Gateway-ST • Boot Loader • Pump Mezzanine
Update Options	Currently only **Update Immediate** is available.
Choose File	Opens a browser to select a file for upload.
Force Update	When enabled, forces a software update.

To upload a file to the device, proceed as follows:

1 From the **File Type** drop-down, select the file type that you want to upload.

2 Click **Choose File** to launch a browser window, and browse to the file path of the software version to upload.

3 Select the file and click **Open**.

4   Click **Upload**. The following dialog box opens (see Figure 69):

Figure 69: Confirm Upload Dialog Box
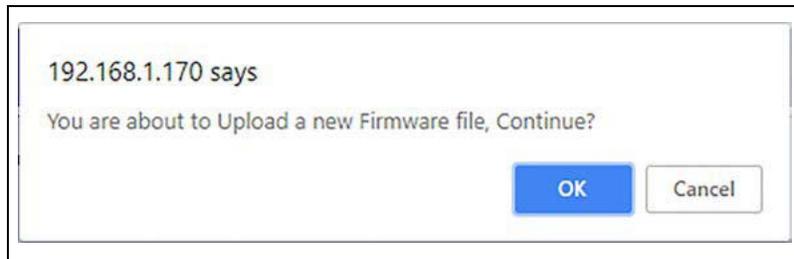
5   Click **OK** to confirm and upload the file.

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7 – Maintenance

7.1 General

Islander PRIME itself as a standalone unit should be cleaned periodically at short intervals, due to the harsh environment of the homebase station where it operates.

7.2 OrPAY1000 and Islander PRIME

The following instructions are valid for the OrPAY1000 front panel and the Islander PRIME pedestal.

- Clean the OrPAY1000 front plastic panel with a lightly moistened cloth with WD-40 or any other similar lubricant.
- Clean the pedestal metallic enclosure using a damp cloth and cleaning spray.

CAUTION

Caution:
- DO NOT use any solvents such as thinner or benzene.
- Do not pressure wash the pedestal.

Mise en garde:
- NE PAS utiliser de solvants tels qu'un diluant ou du benzène.
- Ne pas utiliser un lavage sous pression pour nettoyer le piédestal.

7.3 Magnetic Card Reader

The Card Reader should be cleaned periodically, preferably once every two weeks, in order to ensure proper operation. The purpose of cleaning is to remove any dust that may harm the reader and consequently prevent the completion of a sale.

To clean the magnetic card reader, proceed as follows:

1   Remove the cleaning card from its packing.

2   Insert the cleaning card all the way in the reader, and then pull it out slowly.

3   Perform steps 1 and 2 several times until the card is dry.

4   Insert any magnetic card and verify that its stored data is read by the magnetic card reader.

7.4 Printer

Due to the harsh environment of the homebase station, the printer should be cleaned periodically.

Note: Clean the printer front panel with a damp cloth only. DO NOT use any solvents such as thinner or benzene to clean the printer front panel.

The following describes the cleaning procedures for the thermal printer head in the printer. The cleaning is performed with the printer cleaning card. The printer cleaning card is provided in a protective package to prevent dryness.

The cleaning procedure shall be performed whenever ink is faded on a receipt.

Note: The cleaning procedure must be done quickly as the substance in the cleaning card evaporates over a short period of time.

To clean the thermal printer head, proceed as follows:

1 Turn on the printer.

2 Insert paper in the printer slot, and make sure that the printer guillotine cuts the paper protruding from the printer.
Note: This procedure ensures that the guillotine will not cut the cleaning card.

3 Press the green paper-lock lever and pull out the paper from the printer (see Figure 70).

Figure 70: Paper Lock Lever
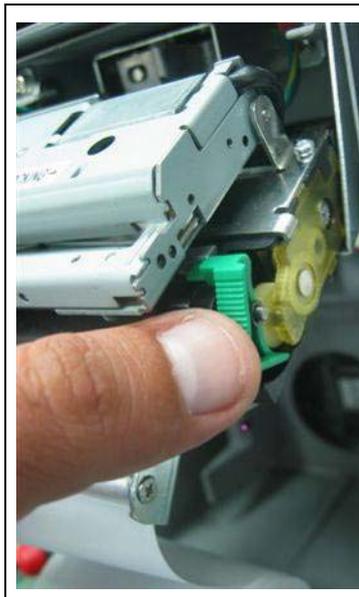
4 Remove the cleaning card from its packaging.

5 Insert the cleaning card manually into the printer paper slot.

6 Press the green paper-lock lever back to its initial position.

7 Push and pull the cleaning card so that the printer head is cleaned.

8 Verify that the cleaning card has been removed from the printer guillotine without being affected.

9 Verify that the cleaning card rolls out from the paper slot.

10 Pull the cleaning card gently, and repeat steps 5 to 9 with the same cleaning card now tilted to the left.

11 Repeat the above several times in order to obtain the best cleaning results.

12 Stop when the cleaning card is dry.

13 Press the green paper-lock lever and insert thermal paper in the printer from the paper roll.

14 Press the green paper-lock lever back.

15 Print a receipt with at least ten rows of text.

16 Check readability and verify the text font is clear.
Note: If readability is still poor, repeat the cleaning procedure with a new cleaning card.

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8 – Troubleshooting

8.1 General

This section provides a list of common pump/system problems that may be encountered when using the Islander PRIME system, as well as corrective actions for problems related to the system and its peripherals.

8.2 Islander PRIME

The following describes Islander PRIME troubleshooting procedures and appropriate corrective actions.

8.2.1 System Down

The following table describes the Islander PRIME troubleshooting procedure and appropriate corrective actions when the system is down (see Table 23):

Table 23: System is Down

Fault	Probable Cause	Checks	Corrective Action
• LCD display is blank. • Doesn't accept Key/ Card/Keypad input. • No communication. • nOrCU LEDs are not lit.	Islander PRIME main switch is off		Turn on the main switch.
	No 115 VAC feed to the unit	1 Check power at breaker panel. 2 Check cabling from breaker panel to the unit. 3 Verify that the power cable is properly connected to unit terminal block. 4 Verify 115 V measured at the power input terminal block.	Correct wiring problems if 115VAC is not measured.
	Power failure	Does the unit shut down immediately after being turned on?	1 Check for shorts in the power line cable. 2 Check grounding.
	Circuit breaker is off	Is the breaker off or tripped?	Turn the breaker on, if off.
		Is 115 V being switched through breaker?	Replace breaker if 115 V is not being switched.
		Is 115 V measured at the power input terminal block?	Correct wiring problems if 115 V is not measured.
		Does the breaker turn off immediately after being turned on?	Check for loads or shorts in the power line.
	Internal fuse blown	Check the pico fuse using an ohmmeter.	Replace the fuse if it is blown.
	Power supply failure	Verify that green LED on power supply is lit.	Replace power supply.
	OrPAY1000 is incorrectly set up	Check communication parameters.	Set communication parameters.
	nOrCU is incorrectly set up	Check bus and parameters setup.	Set communication parameters.

8.2.2 Mechanical Pump Does Not Fuel

The following table describes the Islander PRIME troubleshooting procedure and appropriate corrective actions when the mechanical pump does not fuel (see Table 24):

Table 24: Mechanical Pump Does Not Fuel

Fault	Probable	Check	Corrective Action
Pump does not supply fuel.	Pump setup is incorrect	Check pump setup: • Pump server Buses • Prices Pulse Rate	1 Set pump parameters. 2 Save and reload. 3 Check again.
	Faulty connection to pump	Check Control cables from Islander PRIME to pump.	Make a secure electrical connection.
	LAN to 3x 485 CommVerter	Verify that Power LED is lit.	If it is off, use a voltmeter to check power supply to the unit: If power supply is OK, then replace the LAN to 3x 485 CommVerter board. If power supply is faulty, replace the power supply.
		Verify that the Control red LED on MPI-C board is lit.	1 Replace MPI-C board. 1 Replace LAN to 3x 485 CommVerter.
	Pump malfunction	Turn the Islander PRIME bypass switch on; lift the nozzle, and check that the pump supplies fuel.	If the problem persists: 1 Check Handle-on switch. 2 Repair pump.
	Handle-on switch problem	Is the In Use red LED MPI-C board lit when nozzle is lifted?	1 Check In Use cable and repair (if necessary). 2 Check terminal wires and repair (if necessary). 3 Check In Use switch in the pump and repair (if necessary).
Pump is authorized but call state is not detected (nozzle icon in SiteOmat Status screen does not display call state).	Faulty in-use switch in pump	Power off the pump; then, using an ohmmeter, measure the switch in on and off states.	Replace pump switch in cases where no short was detected.
	Faulty connections	• Check In Use cable. • Check In Use terminal block connections.	Make good electrical connection if faulty one exists.
	Faulty In Use terminal block		Replace In-use terminal block.
	Faulty MPI-C board	Verify that the Call red LED is lit when nozzle is lifted.	• If the red LED is not lit, replace the MPI-C board. • If the LED is lit, the problem is external to the controller.
	Faulty LAN to 3x 485 CommVerter		Replace the LAN to 3x 485 CommVerter.
Pump is authorized, pump motor is running, but no fuel is supplied.	• Faulty solenoid valve • Faulty pump	Does the pump solenoid valve produce a clicking sound?	• Replace valve • Repair pump

Fault	Probable Cause	Checks	Corrective Action
Payment device (card, key, tag, Fuel Ring) is not accepted.	Communication fault between OrPAY1000 and SiteOmat.	1 Check LAN cable. 2 Check OrPAY1000 setup. 3 Check SiteOmat setup.	1 Replace LAN cable, if necessary. 2 Set OrPAY1000 parameters properly. 3 Set SiteOmat parameters properly.
	Communication fault between FHO and SiteOmat.	1 Check connection path with FHO. 2 Verify that the station is available and synchronized with FHO in FHO Stations Status screen.	Repair communication between FHO and SiteOmat, providing a reliable communication line.
	Device was not defined or is defined incorrectly in FHO.	1 Log into FHO as Fleet Manager. 2 Check that the device is defined. 3 Check device parameters. 4 Check that the device rules do not limit refueling.	Define the device parameters in FHO properly.
	Device limit was passed.	Verify that the device is within the limits of its rule.	For testing only, remove any rule associated to this device.
	Device was set as Driver.	1 Log into FHO and go to Device Management. 2 Select the specific device and check it was configured as a Driver.	Change the device setting to vehicle.
	Device is blocked.	Log into FHO and go to Devices Management. Check the status of the device in the Status column in the Devices grid (blocked/unblocked). Change device status to Unblocked.	
Pump is refueling but volume remains zero.	Pulse factor is zero.	Check SO pump setup.	Change Pump Settings to correct the factor for the relevant pump.
	• Faulty MPI-C board • Faulty pulser	Disconnect the pulser and short the pulse-in wires to simulate pulses.	If pulses are received during refueling, replace pump pulser. If not, replace MPI-C board.

8.2.3 No Control Over Fueling

The following table describes the Islander PRIME troubleshooting procedure and appropriate corrective actions when there is no control over fueling (see Table 25):

Table 25: No Control Over Fueling

Fault	Probable Cause	Checks	Corrective Action
Pump is refueling without any control.	Pump is in bypass	Verify that the Islander PRIME bypass switch is off.	Turn bypass switch off, if it is on.
	Faulty SSR		Replace the relevant SSR unit inside Islander PRIME.
	If an external relay is used to control the pump / valve, it may be stuck due to a small current leak.		Add a snubber (capacitor + pull up resistor) in parallel to relay input.

8.3 OrPAY1000

The following table describes the OrPAY1000 troubleshooting procedure and appropriate corrective actions (see Table 26):

Table 26: OrPAY1000 Troubleshooting

Fault	Probable Cause	Checks	Corrective Action
	OrPAY1000 Display Is Not Lit		
OrPAY1000 display is blank.	Internal fuse blown	Check the mini fuse at the bottom of the power supply using an ohmmeter.	Replace the fuse if it is blown.
	Power supply failure	Verify that the green LED on the power supply is lit.	Replace power supply.
	Faulty OrPAY1000	Does the unit shut down immediately after being turned on?	Replace OrPAY1000.
	OrPAY1000 Does Not Accept Card		
OrPAY1000 display does not respond correctly to cards.	Bad card	Present several cards to see if problem is consistent.	Replace card and test again.
	Dirty card reader	Verify that the card reader is clean.	Clean the card reader using a cleaner card and try again.
	OrPAY1000 is busy performing another task.	Verify that the display presents the idle message.	Press Cancel. Present the card while the idle message is displayed.
	Faulty card reader		Replace OrPAY1000.
Fault	Probable Cause	Checks	Corrective Action
	OrPAY1000 Does Not Accept RFID Tag		
OrPAY1000 display does not respond correctly to tags.	Bad tag		Replace tag and test again.
	Tag is not close enough to the OrPAY1000 antenna.		Bring the key close to the antenna located on the red circle.
	OrPAY1000 is busy performing another task.		1 Press Cancel. 2 Present the tag while the idle message is displayed.
	Faulty OrPAY1000		Replace OrPAY1000.

OrPAY1000 Does Not Respond to Keypad Entries			
Pressing the keypad buttons does not generate any sound and does not affect the display.	Dirty keyboard		Clean the keyboard.
	Damaged keypad	Check the keypad surface for any damage.	Replace keypad if any damage is found.
	OrPAY1000 is busy performing another task.	Verify that the display presents the idle message.	1 Press Cancel. 2 Use the keypad while the idle message is displayed.
	Faulty OrPAY1000		Replace OrPAY1000.
OrPAY1000 Does Not Accept EMV Card			
OrPAY1000 display does not respond correctly to EMV cards.	Bad card		Replace the card and test again.
	Faulty connection	Open the Islander PRIME door and check the cable which connects the OrPAY EMV reader to the OrPAY1000 terminal.	Make a secure electrical connection if faulty one exists.
	OrPAY1000 is busy performing another task.	Verify that the display presents the idle message.	1 Press Cancel. 2 Present the card while the idle message is displayed.
	Faulty OrPAY1000		Replace OrPAY1000.
OrPAY1000 Displays "No Communication" Message			
	Communication disconnected	Open the Islander PRIME door and check the LAN cable from the OrPAY1000 to the 5-LAN switch.	Make a secure connection if it was setup incorrectly.
5-port LAN switch is not functional	No power to LAN to 3x 485 CommVerter.	Are the LAN to 3x 485 CommVerter LEDs lit/ blinking?	1 Check power connector to the LAN to 3x 485 CommVerter. 2 Replace the LAN to 3x 485 CommVerter.
		Are the 5-LAN switch LEDs are lit/blinking?	1 Check the connection of the LAN switch on the LAN to 3x 485 CommVerter. It should be inserted in a socket on the LAN to 3x 485 CommVerter main board. 2 Replace the 5-LAN switch.

Fault	Probable Cause	Checks	Corrective Action
Problem with the nOrCU	Faulty connection	Check power to the nOrCU.	Verify that the white power connector is plugged into the nOrCU power socket.
	Power supply failure	Is the power supply on?	1 Replace the fuse. 2 Replace the power supply.
	Faulty nOrCU		Replace the nOrCU.
	Incorrect SiteOmat setup	Verify that the OrPAY1000 parameters defined in SiteOmat match the values presented in OrPAY1000 display at power-on.	Set the OrPAY1000 bus and parameters according to the OrPAY1000 values presented in OrPAY1000 display at power-on.
	Incorrect nOrCU setup	Log into OrPAY1000 and verify that all parameters match the nOrCU setup.	Log into OrPAY1000 and amend the setup so that it matches the nOrCU setup.

8.4 Printer

The following table describes the printer troubleshooting procedure and appropriate corrective actions (see Table 27):

Table 27: Printer Troubleshooting

Fault	Probable Cause	Checks	Corrective Action
		Printer Does Not Print	
No printed summary at the end of transaction.	Printer is out of paper.	Check paper roll.	Replace paper roll.
	Paper Lock switch is open.	Check Paper Lock switch position.	Close Paper Lock switch.
	Paper jam		Release paper.
	Incorrect SiteOmat setting.	Check SiteOmat printer settings.	Set printer parameters properly.
	Faulty printer		Replace printer.
		No Power to the Printer	
No printing; printer doesn't produce a beep sound at power on.	Power cable is disconnected.	Check power cable connections between the printer and OrPAY1000.	Make correct and good connection if it was incorrect.
	Faulty power supply	Check power supply outputs using a digital voltmeter. The output voltage should be 24 VDC.	Replace power supply.
	Faulty printer		Replace the printer.

Fault	Probable Cause	Checks	Corrective Action
No Communication with the Printer			
	RS-485 cable is disconnected.	Check the RS-485 cable connections between the printer and OrPAY1000.	Make correct and good connection if it was incorrect.
	LAN Cable is disconnected.	Check the OrPAY1000 LAN cable.	Make correct and good connection if it was incorrect.
	Incorrect Address settings	Check printer address jumpers (no jumper means that the address is 70HEX).	Set the correct Hex address in SiteOmat.
	Faulty printer		Replace the printer.
Paper is Not Automatically Cut			
Paper is not being cut at the end of the printing.	Incorrect SiteOmat setting	Check SiteOmat printing settings.	Set SiteOmat printing settings accordingly.
	Faulty printer cutter		Replace printer cutter.
	Faulty printer		Replace printer.

8.5 Communication

The following table describes problems related to communication to peripherals and consequent corrective actions (see Table 28):

Table 28: Communication Troubleshooting

Fault	Probable Cause	Check	Corrective Action
No Communication between FHO and SO Controller			
No connection to the station from FHO Stations screen.	Cabling issue	Inspect the network cable to LAN2.	1 Verify that the LAN2 Port LED is blinking. 2 Unplug the cable and plug it back in. 3 Replace the LAN cable (if necessary). 4 If the cable is in a good condition; contact the IT department to confirm that the switch/router connected to the LAN cable is installed properly. 5 Check the controller network settings (IP addresses, mask, gateway, etc.).
No Communication with the Pumps (LAN to 3x 485 CommVerter)			
Warning signs displayed for all pumps on the SiteOmat Status screen.	Incorrect LAN to 3x 485 CommVerter setup.	• Check the physical connection of the LAN to 3x 485. • CommVerter to the local network (5- port switch activity). • Check network connectivity by performing a "ping" command locally or remotely, through PuTTY application.	1 If there is no activity on the LAN port connected to the LAN to 3x 485 CommVerter, replace the short Ethernet cable and/or change the LAN port to confirm normal operation. 2 Check the status of the LEDs on the LAN to 3x 485 CommVerter (upper right corner of the board): the first and the third LED should be lit to confirm power and network connection, while second LED should blink to confirm network activity. The last two LEDs (from left to right) should be blinking constantly, to confirm communication with controller. 3 In cases where all LEDs are lit periodically (every 30 seconds) the unit is resetting due to connection loss to the controller. 4 Reset the IP and reconfigure the Pump Server (PS) in controller setup.
No Communication with the Nozzles			
Can't read the vehicles and/or no authorization at the pumps.	No communication with the FHO. Incorrect nozzle reader setup.	• Check the software license is correct. • Check the programming of the WNRs.	1 Re-enter the software license. 2 If no activity on the LAN port, check the cable and/or change the port on the 5-port switch.

Fault	Probable Cause	Check	Corrective Action
No Communication with OrPAY1000			
OrPAY1000 displays "No Host Communication" message.	Incorrect OrPAY1000 communication and/or physical network setup.	• Check the network cable for activity on 5-port switch. • Ping the OrPAY1000 to confirm proper settings in the controller.	1 If no activity on the LAN port, check the cable and/or change the port on the 5-port switch. 2 Reset the OrPAY1000 and follow the main screen messages for the IP address. 3 Change the configuration of the OrPAY1000 according to the site setup (controller).
No Communication with the TLS			
"Warning" signs displayed for all tanks on the SiteOmat Tank Status screen.	Incorrect TLS communication and / or physical network setup.	• Ping the TLS from controller (PuTTY). • Check network/ RS- 232 port on the TLS.	1 If no response to the ping command from controller, check the IP address of the TLS. Contact the IT department in cases where there is no communication to the unit (if connected over the WAN). 2 Check the physical layer (Ethernet cable) and port activity to the TLS (if connected over the LAN). 3 Connect to the TLS network interface through telnet ("telnet XXX.XXX.XXX.XXX 9999") and check the configuration. Confirm proper network settings and serial port settings (should be 9600, 8, None, 1, None and D6 as connection type). By default the port is set to 10001 – confirm similar setting for the TLS bus in the controller setup.

8.6 FuelPoint

The following table describes the printer troubleshooting procedure and appropriate corrective actions (see):

Table 29: FuelPoint Troubleshooting

Fault	Probable Cause	Checks	Corrective Action
FuelPoint does not Power Up			
OrPAY1000 is off internal LEDs are off.	No power	• Check that unit is getting 220/110Vac from mains. • Check that power is going to the correct terminals on the unit.	Apply power to the unit.
	Loose cable	• Check power cable & socket. • Check ifpower wires are loose in the terminal block. • Check that all wires are firmly connected on the terminal block.	Firmly insert all connecters into their sockets.
	Power switch is off.		Turn on power switch.
	Bad power supply	Check that power supply in and out wires are firmly connected.	Replace power supply.
CPU board is off.	Power to CPU	Check that the power wire from main board J13 is connected.	Connect the wire from J13 to DFI CPU board.
			Replace CPU.
CommVerter board is off.	Power to the board	Power harness from main board J23 is connected.	Connect harness from J23 to commVerter board.
			Replace commVerter board.
OrPAY1000 is off, and internal devices are on.	Power wire	Check power cable from main board J4 is connected.	Connect harness from J4.
			Replace OrPAY1000.
No Communication from Outside PC to the nOrCU			
Can't communicate with nOrCUor other devices. No ping.	LAN cables are loose.	Check that all LAN cables are firmly connected.	
	Bad 5-port LAN switch	Check whether the LEDs on the board are on/blinking.	If LEDs are not on: Replace switch board.
			If LEDs are on: Check connection between the PC and the CPU directly using a LAN cable.
	Bad CPU	Check network setup.	Replace CPU.
			Adapt network setup to PRIME network setup.

Fault	Probable Cause	Checks	Corrective Action
No Communication to Devices (Pumps, OrTR, etc.)			
None of the devices connected are able to communicate with the CPU.	Cable	Check LAN cables: • From CPU to LAN switch • From OrPAY1000 to • LAN switch • From main board ETH1/2 to LAN switch • From LAN to PC • From com card to LAN switch • From com card to main board J23	Replace cable/harness.