

Introduction

Purpose

This document provides instructions for installing the PA0338XXXX distribution box for G-SITE systems with competitive fueling units and card authorization terminals (CATs).

Related Documents

Document Number	Title	GOLD ^(SM) Library
FE-346	Wayne CPC Field Wiring	Engineering Diagrams
MDE-2531	Pump & Dispenser Start-Up/Service Manual	Pump & Dispenser Start-Up & Service
MDE-3620	POS Site Preparation Manual	Site Prep
MDE-3831	Competitive Pump and CRIND® (CPC) Software Plug-In	G-SITE
MDE-XXXX	Customer-specific manager/supervisor manuals	Company name (example: CITGO)
Reference	Competitive dispenser, CAT and TRAC service/installation manuals	N/A
Reference	Field wiring diagrams for competitive installation	N/A

Acronyms and Abbreviations

The following acronyms and abbreviations are used in this document:

Abbreviation/Acronym	Description
AC	Alternating Current
A, mA	Ampere, Milliampere
AMP	Ampere
AWG	American Wire Gage
CAT	Card Authorization Terminal
CAT-5	Category 5 cable
CFR	Code of Federal Regulations
CPC	Competitive Pump and CRIND
CRIND	Card Reader In Dispenser
CSA	Canadian Standards Association
D-Box	Distribution Box
DUKPT	Derived Unique Key Per Transaction
EC	Electronic Central
EMC	Environmental Management Console
G-CAT	Gilbarco® Card Authorization Terminal
ICR	Island Card Reader

Abbreviation/Acronym	Description
JP	Jumper Position
MOC	Major Oil Company
MSM	Master Security Module
MTA	Mass Terminal Assembly
NEC	National Electrical Code
NFPA	National Fire Protection Association
PCA	Printed Circuit Assembly
POS	Point Of Sale
RFI	Radio Frequency Interference
RGA	Returned Good Authorization
SPC	Submersible Pump Controller
STP	Submerged Turbine Pump
TB	Terminal Block
THHN/THWN	Thermoplastic High Heat Resistant Nylon Coated Thermoplastic Heat and Water Resistant Nylon Coated
TRAC	Transponder Activation (System)
UL	Underwriters Laboratory
V	Volt(s); voltage
VAC	Volts Alternating Current
WTC	Wayne® TRAC Controller

Recommended Tools

- nut drivers
- pliers or vice grips
- screwdriver, standard and Phillips®
- socket set

Parts Required

Part Number	Description	Quantity
PA0338XXXX	distribution box	1
Q13482-100	cable, mod jack, Cat 5, 100'	2
Q11121-01	line cord, 115 VAC	1 *
Q11736-02	line cord, 230 VAC	1 *
R19263-G1	MTA pigtail assembly	6

* Either 115 VAC or 230 VAC line cord provided, depending on input voltage available.

Additional Wayne Equipment Required

- Wayne EC and MSM for non-encrypted dispenser keypads
- Encrypted dispenser keypads (if upgrading to DUKPT)

If controlling Wayne TRAC (TRIND), the following equipment is required:

- third-party Wayne TRAC Controller -- Wayne part number 886548-003
- Wayne Sub Pump Controller

Important Safety Information

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.

The first and most important information you must know is how to stop all fuel flow to the pump and island.

Emergency Total Electrical Shut-Off

Locate the switch or circuit breakers that shut-off all power to all fueling equipment, dispensary devices, and submerged turbine pumps (STPs). These you must operate in the event of an emergency.

 WARNING	
	<p>The EMERGENCY STOP, ALL STOP, and PUMP STOP buttons at the cashier's station WILL NOT shut off electrical power to the pump/dispenser.</p> <p>This means that even if you activate these stops, fuel may continue to flow uncontrolled.</p> <p>You must use the TOTAL ELECTRICAL SHUT-OFF in the case of an emergency and not only these cashier station "stops."</p>





Total Electrical Shut-Off Before Access

Any procedure requiring access to electrical components or the electronics of the dispenser requires total electrical shut-off of that unit.

NFPA 30A, Section 4-1.2, published by the National Fire Protection Association, requires the installation of an easily accessible switch or circuit breaker to shut-off the power to all fueling equipment, dispensing devices and STPs in the event of an emergency. Know the function and location of this switch or circuit breaker before inspecting, installing, maintaining, or servicing Gilbarco equipment.

Evacuation, Barricading and Shut-Off

Any procedures requiring accessing the pump/dispenser or STPs require the following three actions:

-   An evacuation of all unauthorized persons and vehicles
-  Using safety tape or cones as barricades to the effected units
-  A total electrical shut-off of that unit

Read the Manual

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


Follow the Regulations

There is applicable information in: NFPA 30A: *Automotive and Marine Service Code*; NFPA 70: *National Electrical Code (NEC)*; OSHA regulations; and federal, state, and local codes which 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.

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

The signal words used in this manual and on warning labels alert you to the seriousness of particular safety hazards. You should adhere to the following precautions to prevent death, injury, or damage to the equipment.

DANGER

This signal word is used to alert you to a hazard or unsafe practice which **will** result in **death or serious injury**.

WARNING

This signal word alerts you to a hazard or unsafe practice that **could** result in **death or serious injury**.

CAUTION

This signal word designates a hazard or unsafe practice which **may** result in **minor injury**.

CAUTION

When used by itself, CAUTION designates a hazard or unsafe practice which may result in **property or equipment damage**.

Prevent Explosions and Fires

Fuels and their vapors will become explosive if ignited. Spilled or leaking fuels cause vapors. Even filling customer tanks will cause explosive vapors in the vicinity of dispenser or island.

No Open Flames



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 fuels and their vapors. After getting out of a vehicle, touch the metal of your vehicle to discharge any electrostatic charge before you approach the dispenser island.


Prevent Electrical Shock and Sparks

Dispensing devices use high voltage. A potential shock hazard exists when working on or around a dispensing device.

Follow OSHA lock-out and tag-out procedures.

Always turn OFF power to the dispensing device and associated submerged turbine pumps (STPs) when servicing or making electrical wiring connections. Multiple disconnects may be required.

 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 only these cashier station "stops."

Close Junction Boxes Tightly

Spilled or leaking fuels in the vicinity of electrical junction boxes can be hazardous if boxes are not properly closed. Replace all bolts and tighten junction box cover before turning on AC power. Do not use gaskets on junction box covers.

Field Wiring

Poorly wired pumps or dispensers could cause a fire, explosion, or electrical shock. Place all power and lighting wires in threaded, rigid metal conduits. Plug all unused junction box holes. Never use knockout boxes or flexible conduit. Tighten all threaded connections and covers. Do not use gaskets with junction box covers. Do not disturb sealing compound around wires at junction box entrances. Use factory method of routing wires. Use tie wraps to keep unruly wires away from pinch point and hinges. Tuck wires into enclosure before closing doors, bezels, junction boxes, covers and breaker panels. Follow wiring recommendations in installation or service manuals.

Proper Grounding is Required

Proper grounding is required for safe operation. See installation manual and applicable NEC, NFPA and local electrical codes for requirements.

Avoid Pinched Wires

Pinched or cut wires (cables) may damage components. Exposed wires could create sparks and electrical shorts when applying power.

Hydraulic Pressure Releases and Fuel Leakage

Working on hydraulic systems can result in leakage of fuel that may also be under pressure.



Turn off all circuit breakers for unit being worked on, all dispensers using the same grades of fuel, and all associated STPs.

Do not allow unauthorized or untrained individuals to service hydraulic equipment.

Shear valves, required by NFPA 30A, are intended to shut-off the flow of fuel at the dispenser base (hydraulics area) during vehicle impact or fires. A single-poppet shear valve prevents fuel from flowing from the underground tank. A double-poppet shear valve prevents fuel from flowing from the underground tank and from the dispenser.

Protect Your Eyes




Spraying fuel from residual pressure in lines can cause serious eye injuries. Always wear eye protection. Gasoline spilled in eyes may cause burns to eye tissue. Rinse eyes with water for approximately 15 minutes. Seek medical advice immediately. It is not necessary to wear eye protection unless performing hydraulic service.

React Quickly to Fuel Spills, Fires, or Vehicle Impact

Follow these steps in the event of a fuel spill, fire, or vehicle impact.






- 1 Use station EMERGENCY TOTAL ELECTRICAL SHUT-OFF immediately. Turn off all system circuit breakers to the island.

⚠ 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 only these cashier station "stops."

- 2 Call emergency numbers for fires, vehicle impact, or any significant spills.
- 3  Use safety tape, cones, or barricades to block the work area. Do not go near fuel spill or allow anyone else in the area.
- 4     Take precautions to avoid igniting fuel. Do not allow starting of vehicles in the area and immediately stop use of open flames, smoking, or power tools in the area.

- 5 Provide emergency and first aid assistance.

⚠ WARNING

If any gasoline has been inhaled, seek emergency help immediately.

Inhaled gasoline may cause unconsciousness and burns to lips, mouth, and lungs.

⚠ WARNING

Gasoline spilled on skin may cause burns.

Wash area thoroughly with clean water.

Seek medical advice immediately.

- 6 Use approved and safe procedures to clean up all spills with a “fuel or gasoline absorbent” material approved by your local regulatory agencies. (Dispose of fuel and hazardous absorbent material promptly and according to the requirements of the fire department, local EPA, and federal, state, or local resources.)

Use Electrostatic Discharge Precautions



CAUTION

Working on console electronics without connecting to a ground or discharging static can damage electronic parts. Use a wrist strap and store parts in antistatic storage bags.

Emergency and First Aid Information

Refer to phone book for emergency phone numbers. If needed, follow first aid instructions as outlined in American Red Cross Standard First Aid manuals.

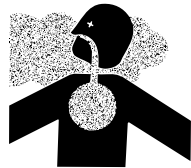
WARNING



Gasoline Ingestion

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

WARNING



Gasoline Vapor Inhalation

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

WARNING



Gasoline In Eyes

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

WARNING



Gasoline On Skin

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

Warning Labels

Several types of warning labels appear on Gilbarco products to inform and remind users of important safety information. Read, understand, and follow these warnings.

Sample Warning Label

The following labels are typical of those you may find on Gilbarco's products:

Warning	Mise en garde	Advertencia																																																
<p>Electrical shock hazard Each electrical component within this unit may have its own circuit breaker or disconnect switch. Before servicing, turn off all circuit breakers and switches associated with this unit.</p>	<p>Danger de décharge électrique Chaque composant électrique au sein de cet élément a son propre disjoncteur ou interrupteur pour couper l'électricité. Avant tout service d'entretien, couper tous les disjoncteurs et les interrupteurs contrôlant cet élément.</p>	<p>Peligro de shock eléctrico Cada componente eléctrico en esta unidad puede tener su propio interruptor de circuito o interruptor para desconectar. Antes de darle mantenimiento, apague todos los interruptores asociados con esta unidad.</p>																																																
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Working Alone

It is highly recommended that someone who is capable of rendering first aid be present during servicing. Be familiar with Cardiopulmonary Resuscitation (CPR) methods if you are working 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 tag out and lock out procedures discussed later in this section.

Contacting Emergency Personnel

Keep the following emergency phone numbers at hand.

Ambulance: _____

Fire: _____

Police: _____

Poison Control Center: _____

Informing Emergency Personnel

Compile the following information for emergency personnel:

- Location of accident (e.g. address, front/back of building, etc.)
- Nature of accident (e.g. possible heart attack, hit by a car, burns, etc.)
- Age of victim (e.g. baby, teenager, middle-age, elderly)
- Whether or not victim has received first aid (e.g. stopped bleeding by pressure, etc.)
- Whether or not victim has vomited (e.g. if swallowed or inhaled something, etc.)

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

Other Useful Safety Information

This subsection provides additional safety information.

OSHA Lock-Out and Tag-Out Requirements

OSHA Standard 29 CFR 1910-147 Control of Hazardous Energy Sources (Lock-Out/Tag-Out) covers ways to avoid personal injury because power was turned on or fuel pressure was applied **unexpectedly** while servicing equipment. The rule requires:

- (1) Turning off equipment power and fuel under pressure
- (2) Use of a locking device (breaker, valve, etc.) or label device with a warning tag.

Station employees and service contractors need to understand and comply with this program completely to ensure safety while the equipment is down.

Breakaways

Required by NFPA 30A, breakaways are emergency devices designed to retain liquid on both sides of the breakaway point installed on each hose. Refer to manufacturer's instructions for proper installation.

Collection of Fuel in Approved Containers

NFPA 30A, Section 2, requires use of approved containers to collect, transport, and dispose of fuel. Containers must be specifically designed and labeled for handling hazardous fuels.

Read Material Safety Data Sheets (MSDS)

Before working with any chemicals or fuels in and around a dispensing facility, read the MSDS pertaining to those chemicals as prescribed in the Occupational Safety and Health Administration Standard, 29 CFR 1910.1200. Refer to the supplier's literature.

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.

Installation Overview

PA03380000 Distribution Box

The PA03380000 D-Box provides interface between Gilbarco PC G-SITE systems (Pentium® II and above) and Wayne CATs and dispensers. The current loop to the Wayne dispensers is set to 34 mA, JP10 installed. The G-SITE system to the D-Box current loop is set to 45mA and cannot be changed.

The D-Box supports 8 Wayne pump loops (8 dual-sided dispensers for a total of 16 fueling positions) and 16 Wayne CAT (CRIND) pairs. If there is an SPC on-site, it will require one pump loop (reducing the supported dispensers to 7 dual-sided dispensers with 14 fueling positions).

T19547-G1 and T20488-G2 Boards

The D-Box houses one transformer and a removable tray with two printed circuit boards (one T19547-G1 and one T20488-G2). Each printed circuit board contains an on-board power supply, an opto-coupled current loop interface, and automatic isolation circuitry between output loops.

- For those sites with a Wayne SPC, the SPC will take one 2-wire loop on the T19547-G1, leaving seven 2-wire loops (up to 14 dispenser fueling positions) available.
 - The TB2 Pin 1 is connected to “+” on the T19547-G1.
 - The TB2 Pin 2 is connected to the “-” on the T19547-G1.
- The T20488-G2 board provides four 4-channel (16 channels) MTA connectors for field wiring. The four MTA connectors on this board are capable of driving 16 Wayne RS-485 CATs, and are also used to connect to a Wayne MSM or Wayne TRAC™ controller.
 - Wayne MSM “+” (from the Wayne EC cabinet odd-numbered terminal) is connected to T20488-G2 “+”
 - Wayne MSM “-” (from the Wayne EC cabinet even-numbered terminal) is connected to T20488-G2 “-”
 - Wayne TRAC Controller J4 Pin 1 is connected to T20488-G2 “+”
 - Wayne TRAC Controller J4 Pin 2 is connected to T20488-G2 “-”

Note: Refer to FE-346 Wayne CPC Field Wiring for a diagram of these connections.

Note: Each distribution board must be dedicated for use with either Gilbarco 45mA dispensing units, CRIND/EMCs or consoles, 20mA G-CATs, or 34mA Wayne UL-listed dispensers. Do not mix equipment of different current loops on same distribution board.

Important

Connect only one dispenser to any one data loop channel. The wiring length between the D-Box and dispensers is not to exceed 800 feet, and requires stranded 14AWG wire.

Note: Daisy chaining of the two wire loops is not allowed with this unit.

An exception to this rule is that the MSM and Wayne TRAC Controller (WTC) may be connected in parallel to a CAT pair. To optimize communications, each of these devices should be connected in parallel to the two CATs closest to the D-Box. The total length of the TRAC controller or MSM data wiring plus the CAT data wiring should not exceed 800 feet.

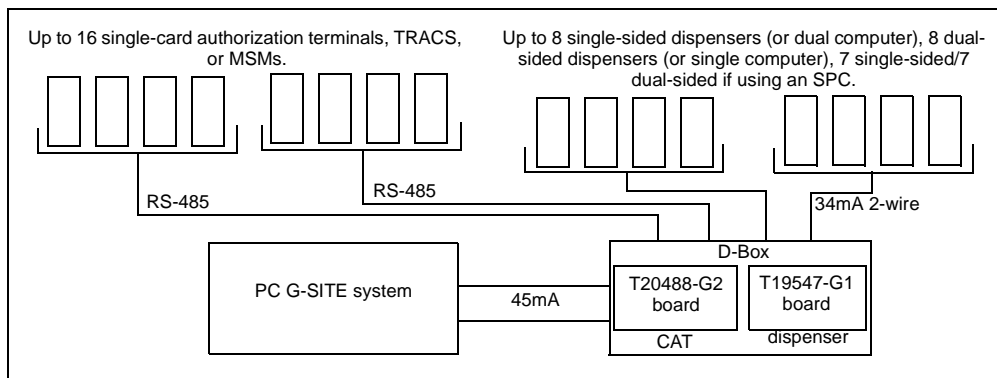
Additional Pump Loops Required

In the event that additional Wayne pump loops are required, a PA03060020 D-Box configured for 34 mA may be used. This D-Box provides support for 16 two-wire loops. Refer to the table below.

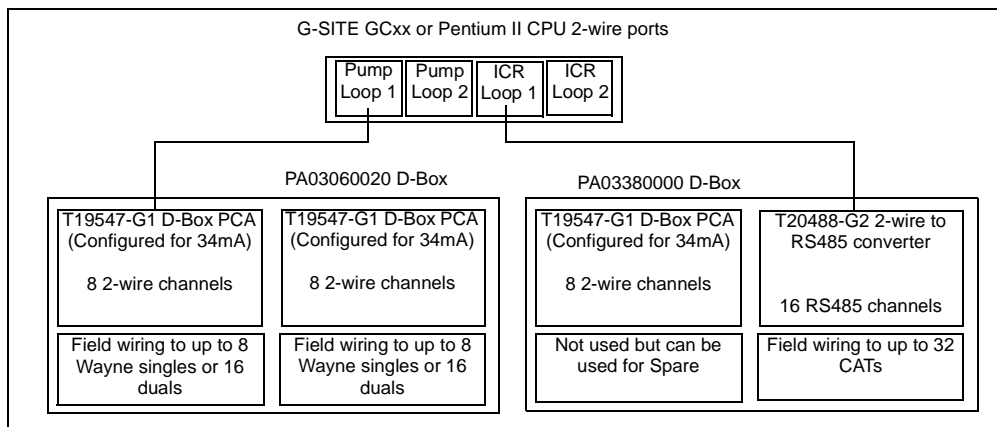
D-Box	Competitive Fueling Positions				Gilbarco Fueling Positions	
	With SPC		Without SPC			
	<= 7 singles or 16 duals	> 7 singles or 14 duals*	<= 8 singles or 16 duals	> 8 singles or 16 duals*	<= 16 singles or 32 duals*	> 16 singles *
PA03380000	1	1	1	1	0	0
PA03060020	0	1	1	1	1	2

* The CPC Plug-In does not support more than 16 competitive fueling positions at this time. The G-SITE system does not support more than 32 fueling positions total (Competitive + Gilbarco).

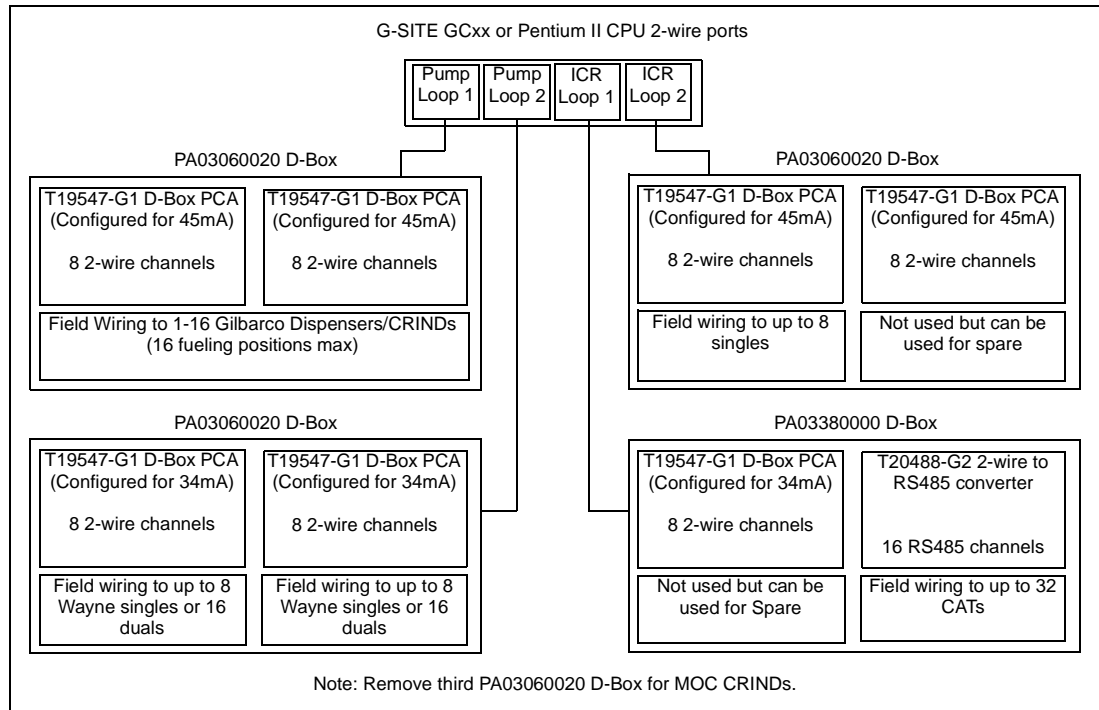
PC-Based G-SITE System with Wayne UL-Listed Dispensers, 34mA Interface



16 Competitive Fueling Positions (Eight 2-wire channels)



Combinations of Gilbarco/Competitive Dispensers or CRIND Devices



PA03380000 Specifications

Dimensions

Height	7-13/16" or 19.84 cm
Width	16-9/32" or 41.35 cm
Depth	5-15/32" or 13.89 cm
Weight	5 lbs or 2.27 kg

Dedicated Isolated Ground Receptacle

USA/Canada	115 volts VAC nominal, 50/60 Hz
International	230 volts VAC nominal, 50/60 Hz

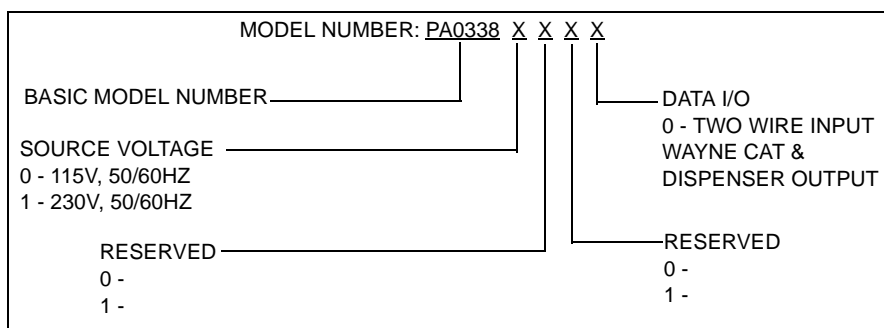
Current

0.5 AMP @ 115 VAC
0.25 AMP @ 230 VAC

Operating Environment

Minimum Temperature	32 degrees F (0 degrees C)
Maximum Temperature	130 degrees F (55 degrees C)
Humidity	5-95% Rh (non-condensing)

Model Numbers



Preparing for Installation

Unpacking Equipment

When the equipment arrives at the installation site, each unit should be unpacked and inspected for possible shipping damage. Report any damage to the carrier. Shipping damage is not covered under Gilbarco warranty policy. After visual inspection, place the unit back in the shipping carton and store it indoors until its ready for installation.

Returning Components

Components returned to Gilbarco under warranty or for repairs are subject to severe shipping damage if not packaged properly. If original packing materials are unavailable, use a durable reinforced corrugated box and obtain suitable packing material such as “PAKON” polyfoam chips, polyurethane foam chips, or polystyrene foam chips. Fill the bottom of the box with at least two inches of packing material. Make certain the component is firmly packed. It is also recommended that the package be fully insured.

All returned items must be accompanied by a Returned Goods Authorization (RGA) form. Remember to include return shipping information and a description of the malfunction.

If the component arrives at Gilbarco in a damaged condition and it is determined that the damage was a direct result of improper packing, such damage will not be covered under the original factory warranty and the customer will be held responsible for the cost of necessary repairs.

Basic Site Criteria

D-Box installation must be in accordance with National Electrical Code NFPA 70, Automotive and Marine Service Station Code NFPA 30A, and state/local electrical requirements. For Canadian installations use Canadian Electrical Code CSA C22.1.

The site must be equipped with electric service allowing compliance with all installation requirements of a complete fueling system and with MDE-3620, Gilbarco POS Console Site Preparation Manual.

Install the D-Box indoors. The ambient room temperature must not exceed 130 degrees F (55 degrees C). This maximum temperature is allowed only if the equipment is allowed free air flow.

Check the field wiring for shorts with an Ohm meter prior to connecting the wires to the D-Box.

Data cabling between the D-Box and G-SITE system controller must be kept separate from all other power and control lines.

Physical Placement

Locate the D-Box in an area not subjected to extreme temperature variations. The ambient temperature must remain relatively constant. Do not install the D-Box in a position subject to direct sunlight. If conditions so dictate, provide a suitable sunscreen.

PA0338XXXX D-Box is suitable for use over hazardous locations. The box must be installed at least 18 inches above the floor. Locate the D-Box in an area which minimizes the possibility of liquids being spilled onto it.

Allow several inches clearance on the left side of the D-Box for the AC power cord. Allow two inches clearance above the box for removing the cover.

Electrical Wiring Requirements

The receptacle providing power to the D-Box must be a properly installed isolated ground receptacle (Hubbell® #IG5261 or equivalent). This type of receptacle is easily identified by its bright orange color and by the triangle embossed into the face of the outlet. The green grounding screw must be attached to the grounding conductor.

- All electrical wiring must conform to the National Electrical Code (NEC) and local wiring codes, as well as the criteria in this manual.
- One conduit from the breaker panel to the D-Box location is required. The conduit must contain a dedicated/isolated circuit with three 14 AWG wires: 115VAC hot, neutral, and ground; or 230VAC L1, L2, and ground. Do not use the electrical conduit to provide an earth ground. It is necessary to have the D-Box on the same phase as the CATs.
- The circuit powering D-Box must not power other devices. The circuit must not share a conduit with wiring for devices drawing high amperage (compressor, freezer, etc.) or devices that are sources of RFI (TV, microwave, intercom, etc.).
- An AC outlet must be within six feet of the D-Box. Do not use extension cords.

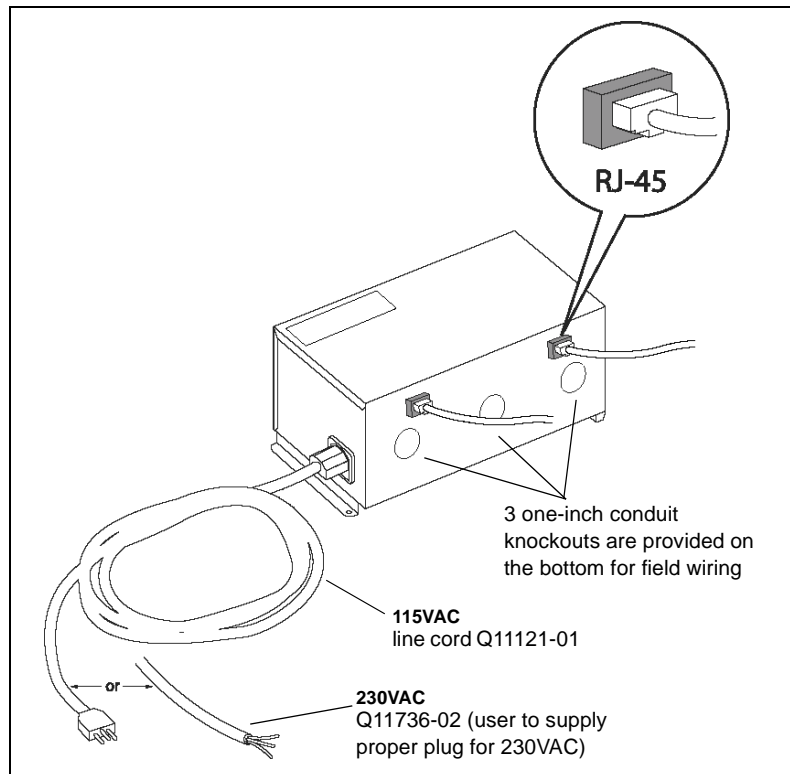
Note: For 230VAC operation, a nine-foot detachable line cord is provided. It is the customer's responsibility to supply a plug for the cord which meets local electrical codes and UL requirements.

Emergency Power Cutoff



NFPA30A and Gilbarco require that an emergency power cutoff be installed. An emergency power cutoff is a single control that removes AC power from all site fueling equipment and submerged turbine pumps (STPs). Ensure that the control is accessible, labeled clearly, and installed away from the dispensers. Make certain that all station employees know where the emergency power cutoff is located and how to operate it.

Interface Cabling Between the D-Box and Controller



Note: The user must supply a proper receptacle that meets local electrical code requirements. The receptacle providing power to PA0338XXXX must be a properly isolated ground receptacle (Hubbell #IG5261 or equivalent). This type of receptacle is easily identified by its bright orange color and by the triangle embossed into the face of the outlet. The green grounding screw must be attached to the grounding conductor.

Data Cabling Requirements

Install the cables so that they are protected from damage or accidental disconnection. Route cables along a wall or under a counter, and secure them with cable ties or cable clamps. Do not route data wires over fluorescent light, compressor wiring, or near sources of interference.

Field Wiring Requirements

A wiring trough will be required in the vicinity of the D-Box for terminating the conduit runs from the dispensers. Three one-inch knockouts are provided on the bottom of the D-Box for running the conduit between the box and the wiring trough.

Use 14AWG THHN/THWN stranded wire for data wires to the Gilbarco dispensing equipment. Leave plenty of wire exposed as a service loop in the wiring trough. Sixteen inches of exposed wire will be needed inside the D-Box.

When pulling the wires, be careful to avoid damage to the insulation.

When connecting to a WTC, the WTC must be configured as an outdoor TRAC controller by installing the upgrade kit.

TRAC Controller Kit Parts List

Part	Part number
WTC Firmware, Revision 1.53	886281-002
Cable, WTC to SC	887787-001
Cable, CAT to I/F	886713-001

Field wiring will need to be pulled to connect from the 886752-001 cable between the 886547-001 I/O board and the J4 of the 883970-R21 or 021 logic board (J4 Pin Out; Pin1= +, Pin2= -).

When connecting to a Wayne MSM, the MSM must be left in the Wayne electronics cabinet as it provides the MSM with power and a UL recognized enclosure. The MSM's two data wires must be disconnected from channel 7 of the terminal block and field wiring installed between these wires and the PA0338XXXX D-Box. Do not disconnect the power connectors to the MSM.

Installing the PA0338XXXX Distribution Box

Preparing the D-Box

- 1 Loosen the two screws on the bottom front of the D-Box and lift the lid.
- 2 Carefully remove and discard any packing material from the D-Box.
- 3 Disconnect the cable from the distribution board(s) at P101. See “Jumper Settings” on page 22. for connector locations.
- 4 Slide the distribution board mounting plate and boards up and out of the D-Box to avoid unnecessary damage to the components while mounting the unit to the wall.

Installing the D-Box

- 1 Power down the equipment to which the D-Box will be connected (CATS, dispensers, TRAC Controller, SPC, etc.) to ensure there is no damage to their inputs and that they initialize properly with G-SITE system.
- 2 Mount the D-Box to the wall.
 - Allow clearance on the left side to connect the AC cable.
 - Allow clearance above the D-Box so that the cover can be removed.
- 3 Mount the AC receptacle within six feet of the D-Box.
- 4 Install the conduit for the data wires between the wiring trough and the D-Box. Pull the data wires up into the D-Box leaving 16 inches of wire inside the D-Box. This allows for easy installation of the wiring pigtails.
- 5 Connect the data wires to the R19263-G1 wiring pigtails. See “Field Wiring to the MTA Pigtails” on page 21.

Note: If jumpers are installed in the unused pigtail positions then you will need to cut the unused pigtail loops connected to the T20488-G2 Board and cap the wires with wire nuts. If jumpers are not installed in the unused pigtail positions then do not cut the unused pigtail loops.

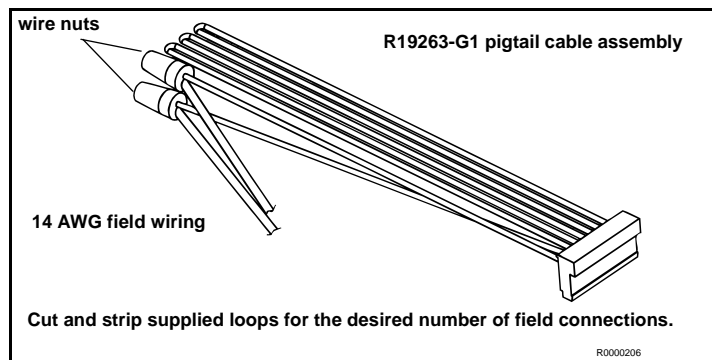
CAUTION

Failure to follow one of the jumper methods described in the note above will result in communication problems with the CATs.

- 6 Replace the distribution board mounting plate. Reconnect P101. Connect P106, P107, P108, and P109 as required to the board(s).
- 7 Connect the data cable(s) to the 8-pin modular jack connectors.
- 8 Verify the jumper settings. See “Jumper Settings” on page 22.

- 9 Plug in the AC power cord.
- 10 **Warmstart each Wayne dispenser at this time.**
- 11 Install the jump jacks (JP1-JP8, Q13804-01) one at a time for those positions being used (the jumper may be offset 2 positions to connect only one pair).
 - Verify that all positions on JP1-JP8 installed on the T20488-G2 board are connected to CATs or MSMs.
 - Do not install jump jacks in positions that are not connected to CATs or MSMs.
 - Verify operation of the card readers and/or dispensing units.
- 12 Replace the D-Box cover and secure it with screws.

Field Wiring to the MTA Pigtails

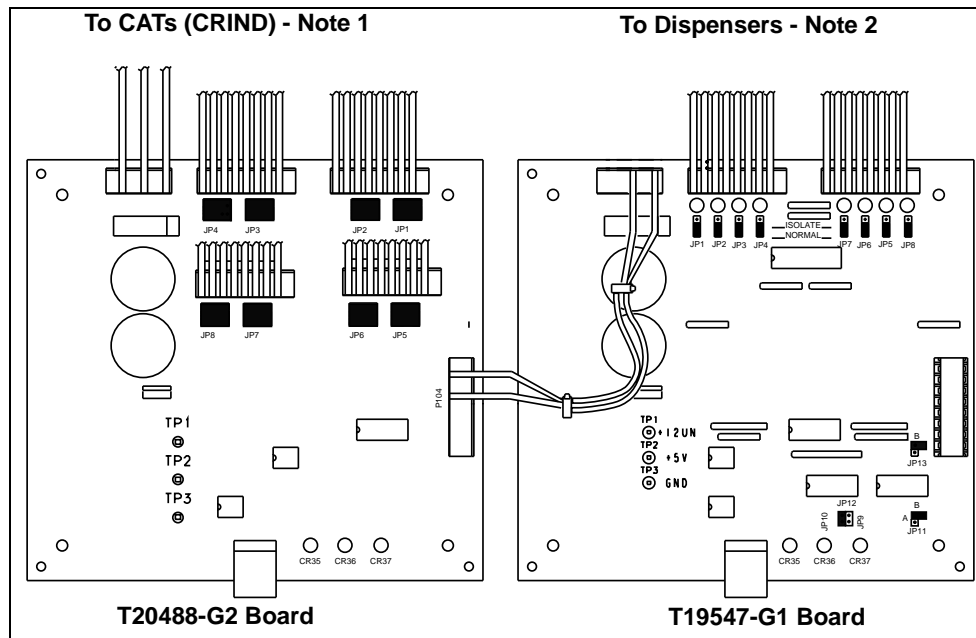


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CAUTION

Failure to follow one of the jumper methods described in the note above will result in communication problems with the CATs.

Jumper Settings



Note: T20488-G2 P106-109 pigtails connect to the Wayne CATs through wires removed from the Wayne controller TB5 terminal block (even number = -, odd number = +).
 T19547-G1 pigtails connect to the Wayne dispensers through wires removed from the Wayne D-Box (+ = +, - = -).

Description of Jumper Settings

Description	T19547-G1 Board Jumper Settings	T20488-G2 Board Jumper Settings
2 boards, 2 input, 8 loops, 34mA for Wayne UL Listed dispensers.	JP10 "In" JP11B "In" JP13B "In"	<ul style="list-style-type: none"> JP1-JP8 "In" on positions connected to CATs or MSMs. JP1-JP8 "Out" on positions not connected to CATs or MSMs.
Interfaces, 16 pairs RS485 for Wayne UL-listed Card Authorization Terminals to 45mA G-SITE system.		

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