



CFN Series

Gilbarco® Pump PC Interface

**For Site Controller III with
Windows NT® or Windows® XPE**

**MDE-4634
(formerly C35929)**

Computer Programs and Documentation

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Federal Communications Commission (FCC) Warning

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

Approvals

Gasboy, Greensboro, is an ISO 9001:2000 registered facility.

Underwriters Laboratories (UL):

UL File#	Products listed with UL
MH4314	All dispensers and self-contained pumping units
MH6418	Power operated Transfer Pump Models 25, 25C, 26, 27, 28, 72, 72S, 72SP, 72X, 73 and 1820
MH7404	Hand operated Transfer Pump Models 1230 Series, 1243 Series, 1520 and 1720 Series
MH10581	Key control unit, Model GKE-B Series Card reader terminals, Models 1000, 1000P Site controller, Model 2000S CFN Series Data entry terminals, Model TPK-900 Series Fuel Point Reader System

New York City Fire Department (NYFD):

NYFD C of A #	Product
4823	9100A, 9140A, 9152A, 9153A, 9800A, 9840A, 9850A, 9852A, 9853A, 9140
4997	9822A, 9823A
5046	9100Q, 9140Q, 9152Q, 9153Q, 9800Q, 9840Q, 9852Q, 9853Q
5087	8753K, 8853K, 9153K, 9853K (restricted to diesel and non-retail gasoline sales)

California Air Resources Board (CARB):

Executive Order #	Product
G-70-52-AM	Balance Vapor Recovery
G-70-150-AE	VaporVac

National Conference of Weights and Measures (NCWM) - Certificate of Compliance (CoC):

Gasboy pumps and dispensers are evaluated by NCWM under the National Type Evaluation Program (NTEP). NCWM has issued the following CoC:

CoC#	Product	Model #	CoC#	Product	Model #
95-179A2	Dispenser	9100 Retail Series, 8700 Series, 9700 Series	91-019A2	Dispenser	9100 Commercial Series
95-136A5	Dispenser	9800 Series	91-057A3	Controller	1000 Series FMS, 2000S-CFN Series

Patents

Gasboy products are manufactured or sold under one or more of the following US patents:

Dispensers

5,257,720

Point of Sale/Back Office Equipment

D335,673

Additional US and foreign patents pending.

Trademarks

Non-registered trademarks

Atlas™
Console™
Infinity™

Registered trademarks

ASTRA®
Fuel Point®
Gasboy®
Keytrol®
Slimline®

Additional US and foreign trademarks pending.

Other brand or product names shown may be trademarks or registered trademarks of their respective holders.

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1 – Introduction

Purpose

This manual is intended for technicians and field engineers who set up Gilbarco® pumps with Gasboy® systems, using Gasboy's Gilbarco Pump PC Interface. This interface connects directly to the Gilbarco Distribution Box and eliminates the need for the Gasboy Current Loop Interface box or a Gilbarco Pump Access Module (PAM™). It allows Gasboy Site Controller III to control up to 16 dual or 32 single-sided Gilbarco dispensers.

The Gasboy Gilbarco Pump PC Interface uses the SC III PC Communication ports. COM port availability must be determined prior to the installation of the interface.

Related Documents

CFN III - Version 3.4 and above

Document Number	Title	GOLD Library
C09204	Check Point Reference Manual	Archive
MDE-4483	CFN III Quick Reference Guide v3.3	CFN Series Controllers and POS
C35923	Point of Sale and Shift Change, version 003	CFN Series Controllers and POS
MDE-4313	CFN III Manager's Manual for Windows NT®, version 3.4	CFN Series Controllers and POS
MDE-4314	CFN III Configuration Manual for Windows NT, version 3.4	CFN Series Controllers and POS
MDE-4355	Profit Point Clerk's Manual	CFN Series Controllers and POS
MDE-4356	Profit Point Reference Manual	CFN Series Controllers and POS

Pump Interface

Document Number	Title	GOLD Library
C01745	Gilbarco Interface Unit	CFN Series Networks, Card Handlers and Pump Interface
C09146	Pump Interface Manual	CFN Series Networks, Card Handlers and Pump Interface
C35849	SDI/Wayne® CAT Interface	CFN Series Networks, Card Handlers and Pump Interface
C35924	SDI/Unitec® Interface	CFN Series Networks, Card Handlers and Pump Interface
MDE-4559	Insight Interface	CFN Series Networks, Card Handlers and Pump Interface

Technical Publications

Document Number	Title	GOLD Library
C01759	CFN Diagnostic Manual	CFN Series Controllers and POS

Abbreviations and Acronyms

Term	Description
CFN	Cash Flow Network
PAM	Pump Access Module
PC	Personal Computer
PCU	Pump Control Unit
SC	Site Controller

Warranty

For information on warranty, refer to MDE-4255 Gasboy's Warranty Policy Statement. If you have any warranty-related questions, contact Gasboy's Warranty Department at its Greensboro location.

2 – 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.

Emergency Total Electrical Shut-Off

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

WARNING



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

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

Total Electrical Shut-Off Before Access

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

Evacuating, Barricading and Shutting Off

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



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

Read the Manual

Read, understand and follow this manual and any other labels or related materials supplied with this equipment. If you do not understand a procedure, call a Gasboy Authorized Service Contractor or call the Gasboy Service Center at 1-800-444-5529. It is imperative to your safety and the safety of others to understand the procedures before beginning work.

Follow the Regulations

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

Replacement Parts

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

Safety Symbols and Warning Words

This section provides important information about warning symbols and boxes.

Alert Symbol



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

Signal Words

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



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



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



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

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

Working With Fuels and Electrical Energy

Prevent Explosions and Fires

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

No Open Fire



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



No Sparks - No Smoking

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

Working Alone

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

Working With Electricity Safely

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

Hazardous Materials

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

WARNING

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

WARNING

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

In an Emergency

Inform Emergency Personnel

Compile the following information and inform emergency personnel:

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

WARNING



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

WARNING



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

WARNING



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

WARNING



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

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.

3 – Configuration

Setup for NT Based Application Using SC III

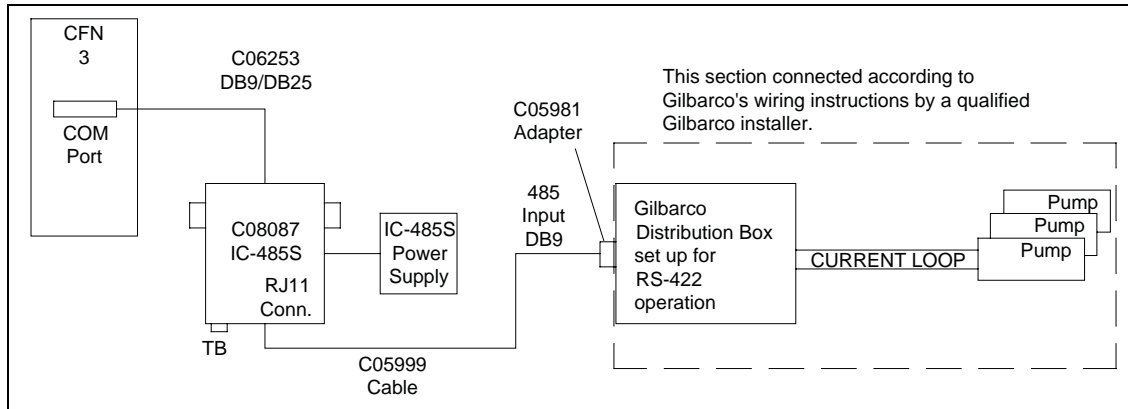
To configure the pumps in the site controller, use the PUMP.BIN program, menu 3 and set the pump options. Some prepackaged sets of options may be available in the menu. However, in most sites you will have to add or remove options, to account for the variations that may be found. New pump types may be created if none exist with the desired options, or if some exist with one set of options and others with another set.

If the description in the table describes an optional feature you want for the pump, use menu 3 of the PUMP command to add the option. Follow the instruction on the screen, and when you are prompted for pump options, enter +xx (to add option xx) or -xx (to remove option xx). For more information on adding or modifying pumps using the pump.bin configuration program, refer to MDE-4314 Site Controller III Configuration Manual for Windows Version 3.3.

Option	Description
3	Use CASH/CREDIT pricing when it is not specified (it will be set automatically, if the pump requires it).
17	Use this option if you want the “remove nozzle” type prompt to include “press START”. <i>Note: This is for pumps that have a START button.</i> To use this option, ensure that: <ul style="list-style-type: none"> • An “S” is not present anywhere in the CRIND keypad string set in sys_par. • Site software 3.4K or above is installed.
18	Emits a beep at the console when taken off-hook without requiring the payment type selection.
19	Multiple grade buttons (prompts customer to press GRADE).
20	Emits a beep at the console when taken off-hook before START is pressed.
21	Pump has lever (prompts the customer to lift lever).
22	Pump is master of pump chain.

Hardware Connections

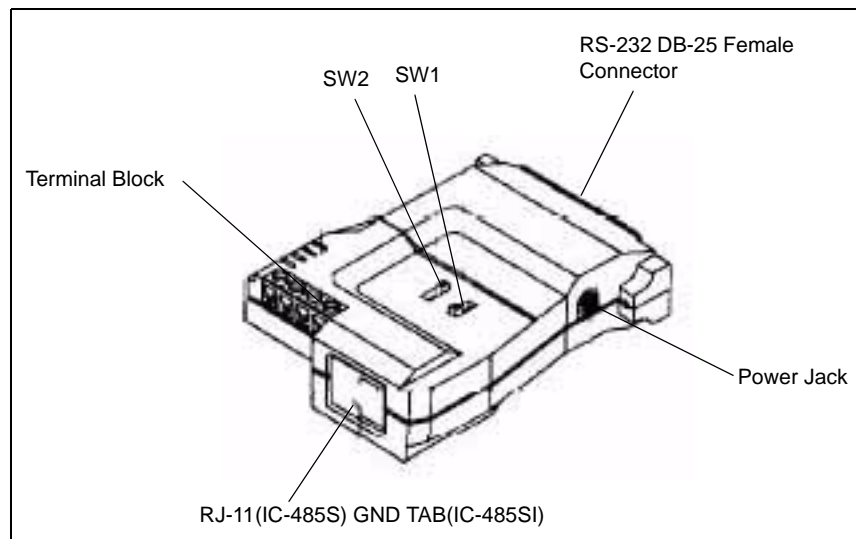
Use a standard PC DB9 to DB25 cable (Gasboy part number C06253) to connect the selected PC COM port to the DB25 connector of the IC-485S (Gasboy part number C08087). The following illustration provides an overview of the connections.



SW1 and SW2 of the IC-485S Converter should be set to DCE and T-on R-on. Connect the power supply to the power jack of the converter and plug the standard outlet cable into an available outlet, preferably on a backup power supply or power conditioner.

Determining the Correct Positions for SW1 and SW2

The following figure provides the external view of IC-485.



Two side switches are used to configure its operation mode, contention control, and assignment of the RS-232.

Note: For the correct location of SW1 and SW2, see the figure above.

IC-485S:

Position	SW1	SW2
1	DCE	TxON, RxON
2	DTE	TxRTS, RxRTS
3	Monitor	TxTRS, RxON

SW 1: Device Mode Selection

Position 1: If set to DCE, it indicates that the IC-485 is set to the DCE mode and it must be connected to a DTE device.

SW2: Transmitting and Receiving mode selection

Position 1: If set to TxON, RxON, it indicates that the IC-485 is always in Transmitting mode and Receiving mode (Point-to-Point mode).

The Gilbarco Distribution Box must be set up for RS-422 operation. Refer to Gilbarco documentation for the correct jumper settings and connections.

CAUTION

The Distribution Box must be set up correctly before you make the connections. Else, component damage may occur.

If the distance between the SC III and the Gilbarco Distribution Box is greater than 8 feet, the cable may be extended using an RJ11 1:1 cable, or with the help of the following pinout. This pinout allows you to hard wire the DB9 connector of the D-Box, to the terminal block of the converter.

Converter TB Position		D-Box Connection
1	_____	3
2	_____	7
3	_____	6
4	_____	2

Software Installation

To install the software, proceed as follows:

- 1 Log on as administrator.
- 2 If SC III is running, press **ALT-X** to shut down the site and end the session.
- 3 Place the diskette named **gilpump** into the disk drive.

- 4 In the Taskbar, click **Start >Run >A:\install**.
- 5 Press **y** for yes to the prompt, “Are you connecting Gilbarco pumps to any COM ports?”
- 6 Enter the COM port number, when prompted.
- 7 Edit the parameter file to match your site setup when prompted by the Installation program. You can edit this file later if necessary, in the XBIN directory.
- 8 If you have multiple COM ports for Gilbarco pumps, enter the next COM port number when prompted, or press **ENTER** to end the program.

When SC III is started, it will automatically start the gilpump program on the selected ports. The session will be titled as “Gilbarco pump session on COM x” where “x” is the selected COM port.

The parameter file is **C:SC3\XBIN\GILPUMP.A0x**, where **x** is the selected COM port. The file can be edited with any text editor.

Checking the Software Installation

To check the installation, proceed as follows:

- 1 Start the SC III program.
- 2 If the pumps do not come up, switch to the **Gilbarco Pump session** window and press **1**. If there are communication problems, error messages will be displayed on the screen. A message will be displayed at least once every 10 seconds.
- 3 Press **2** to show all messages; successful or otherwise. If none of the pumps come up, check the number of site polls. If it is 0, then the site is not polling for any pumps in the range specified in the parameter file. If some come up but others do not, verify if those addresses are in the range shown in the parameter file.

NT Applications

For NT applications, the Gilbarco pumps are controlled by the Gilbarco program, which uses a **GILPUMP.axx** parameter file that is located in **C:SC3\XBIN**. NT applications do not require **a.Bxx** file.

Note: The gilpump program only reads this parameter file when it starts, so you must restart the program, using ALT-R, whenever a change is made.

The GILPUMP.axx file contains the following parameters. These are sample settings and the information after “=” may vary between systems.

FIRST_ADDRESS= and **LAST_ADDRESS=** refer to the pump address range to be controlled.

FIRST_ADDRESS=1

LAST_ADDRESS=16

FIRST_CHANNEL_LAST_ADDRESS=16

For the first 16 pumps, set the address inside the pump to the pump number you want on the system. For example, inside pump 5, set the address to 5. Each GILPUMP session can only address 16 pumps. If the site has more than 16 pumps, it will be necessary to run two GILPUMP sessions. In the second session's parameter file (that is, GILPUMP.a02 with 02 being the channel or COM port on the PC), set **FIRST_ADDRESS=17** **LAST_ADDRESS=32**, and **FIRST_CHANNEL_LAST_ADDRESS=16**. Since the pumps can only be addressed from 1 to 16, the pumps controlled via the second session will have to be within this address range. To determine the pump number of the pumps on the second session, add the **FIRST_CHANNEL_LAST_ADDRESS** number to the address set inside the pump. For example, if the pump controlled by the second session is set to address 5 inside the pump and the **FIRST_CHANNEL_LAST_ADDRESS** is 16, it will be pump number 21 (5 + 16) on the system.

Troubleshooting Tips

Gilbarco Pump Session Does Not Open Up with the CFN III Session

The **gilpump.exe** may not be installed. Reinstall the gilpump files by typing **a:install** from the gilpump installation disk. It could also indicate that the site controller program is not running or has crashed. Verify if the site controller window is up and running.

Pumps are Not Communicating with the Site Controller

Verify if the cable connected to COM 1 of the Site Controller and the Gilbarco Distribution Box is securely connected. Also, ensure that the connection between the pump and Gilbarco Distribution Box is made as per Gilbarco's installation manual.

Some of the Pumps Do Not Come Online

Check the first and last address in the gilpump parameter file. If you have eight pumps, then the first and last pump address will need to be set to 1 and 8 respectively for all of the pumps to come up. If the addresses are set correctly, recheck the wiring and validity of the hardware for the pumps.

Technical Debug Options

At the gilpump session (on NT), the following keystrokes are used as debug options.

- 0 = debug off (default)
- 1 = debug level 1, only display errors
- 2 = debug level 2, display all Gilbarco pump traffic
- 3 = debug level 3, display all Gilbarco pump and site traffic
- s = send debug output to the screen (default)
- f = send debug output to the file `gil_log.cxx` (described below)
- ' ' (space) = toggles the display ON and OFF when debug output is going to the screen
- ALT-R = restarts the Gilbarco pump session

Debug Log File

All the log files are in a sub-directory named: `c:\sc3\gil_log`. Each debug log file is saved as *gil_log.cxx*, where:

c = COM port number

xx = cycles from 00 to 99, then 00 over again

When you start for the first time on COM 1 and press **f**, the logging will go to:

`gil_log.100` for 1 Meg of data, then to

`gil_log.101` for another 1 Meg, then

.

.

.

`gil_log.199` for another 1 Meg, then

`gil_log.100` and cycles through again.

It is possible to have logging on two sessions, at once. For COM 2, the file would start at `gil_log.200` following the same format as COM 1.

If you restart the Gilbarco pump session, it starts with the file that is next in sequence to the one that was last written. For example, if you quit during `gil_log.123` with (**ALT-X**) and start over or restart (**ALT-R**), and turn on file logging again, it will begin with `gil_log.124`.

Example GILPUMP.Axx File

The following files are examples only. Your files will differ depending on your specific site requirements.

```
FIRST_ADDRESS=1
LAST_ADDRESS=16
FIRST_CHANNEL_LAST_ADDRESS=16
```

```
FIRST_ADDRESS=17
LAST_ADDRESS=32
FIRST_CHANNEL_LAST_ADDRESS=16
```

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GASBOY

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