Retrofit InvencoLink (US & Canada) Installation Guide

Kit Part Number: RF00033-XX

Release History

Version	Prepared by	Date	Change description
0	Michael Doh	October 2019	Initial version to be approved by UL (Based on DCV-00205 R5)
1	Michael Doh	December 2019	Updated kit part number (RFKCA) Added Vista 3V, 4V and G6-300 kits
2	Michael Doh	December 2019	Added note regarding the 4V kits and corrected typing error
3	Michael Doh	December 2019	Updated G6 and kit part numbers (RFKUS) and added G7 15 inch kits
4	Michael Doh	February 2020	Corrected typing error
5	Michael Doh	March 2020	Updated kit part numbers and descriptions, corrected typing error
6	Michael Doh	April 2020	Update Vista 4V kit description and installation procedure.
7	Michael Doh	May 2020	Roll back the Vista 4V description and installation procedure changes.
8	Michael Doh	09 July 2020	Removed cable assembly process, to be done at the assembly factory instead.
9	Michael Doh	16-Jul-2020	Added new kit part numbers
10	Michael Doh	30-Jul-2020	Added step to identify the InvencoLink DC power cable and Update Vista 4V kit description and installation procedure.
11	Michael Doh	08-Aug-2020	Roll back DC power cable changes and add new kit part numbers
12	Michael Doh	11-Aug-2020	Rolled back addition of the painted kit numbers

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Version	Prepared by	Date	Change description
13	Michael Doh	14-Aug-2020	Corrected RFK kits list table in the introduction section
14	Michael Doh	09-Sep-2020	Reinstate the painted kit numbers
15	Michael Doh	19-Nov-2020	Added new painted kit numbers and replaced EK0128 with EI0447
16	Michael Doh	03-Dec-2020	Added missing kit part reference

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Contents

1 Introduction

The documentation provides some basic guidelines for adding the InvencoLink protocol converter into a Retro-Fit Kit during the process of installing that Retro-Fit Kit into various dispensers.

Note: One of the following specific "UL Listed by Report Retrofit Kits" must be installed at the same time as this kit:

UL Report Number	Kit Part Number	Retro-Fit Kit Description
MH61528	RF00020-XX	Wayne Ovation 1 with G6-300, BLACK (US & Canada)
MH61528	RF00047-XX	Wayne Ovation 1 with G6-300, Painted (US & Canada)
MH61528	RF00017-XX	Gilbarco Encore 500S, 700S, with G6-300, BLACK (US)
MH61528	RF00060-XX	Gilbarco Encore 500S, 700S, with G6-300, COLOR (US)
MH61528	RF00034-XX	Gilbarco Encore 500S, 700S, with G6-300, BLACK (US & Canada)
MH61528	RF00010-XX	Gilbarco Advantage, wide- and narrow-frame versions, for G6-300, BLACK (US)
MH61528	RF00040-XX	Gilbarco Advantage, wide- and narrow-frame versions, for G6-300, BLACK (US & Canada)
MH61528	RF00026-XX	Gilbarco Encore 300, 500 with G6-300, BLACK (US)
MH61528	RF00027-XX	Gilbarco Encore 300, 500 with G6-300, BLACK (US & Canada)
MH61528	RF00018-XX	Wayne Vista, wide- and narrow-frame versions, for G6-300, BLACK (US)
MH61528	RF00019-XX	Wayne Vista 3V, for G6-300, BLACK (US)
MH61528	RF00001-XX	Wayne Vista 4V narrow & wide, for G6-300, BLACK (US)
MH61528	RF00056-XX	Wayne Vista 4V narrow & wide, for G6-300, COLOR (US)
MH61528	RF00002-XX	Vista 3V with 4V door, Narrow-300, BLACK (US)
MH61528	RF00083-XX	Vista 3V with 4V door, Narrow-300, COLOR (US)
MH61528	RF00003-XX	Vista 3V with 4V door, Wide-300, BLACK (US)
MH61528	RF00084-XX	Vista 3V with 4V door, Wide-300, COLOR (US)
MH61528	RF00028-XX	Wayne Ovation 1, with G7, BLACK (US & Canada)
MH61528	RF00080-XX	Wayne Ovation 1, with G7, Painted (US & Canada)
MH61528	RF00021-XX	Wayne Ovation 1, with G7 15 inch SDC, BLACK (US & Canada)
MH61528	RF00048-XX	Wayne Ovation 1, with G7 15 inch SDC, Painted (US & Canada)
MH61528	RF00029-XX	Gilbarco Encore 500S, 700S, with G7, BLACK (US)
MH61528	RF00030-XX	Gilbarco Encore 500S, 700S, with G7, BLACK (US & Canada)
MH61528	RF00023-XX	Gilbarco Encore 500S, 700S, with G7 15 inch SDC, BLACK (US)

MH61528	RF00061-XX	Gilbarco Encore 500S, 700S, with G7 15 inch SDC, Color (US)
MH61528	RF00011-XX	Gilbarco Encore 500S, 700S, with G7 15 inch SDC, GREY, (US)
MH61528	RF00031-XX	Gilbarco Encore 500S, 700S, with G7 15 inch SDC, BLACK (US & Canada)
MH61528	RF00046-XX	G6-300 – Wayne Ovation 2, Black (US)
MH61528	RF00057-XX	G6-300 – Wayne Ovation 2, Color (US)
MH61528	RF00022-XX	G7 15 inch (SDC, APC, UPC, NFC) - Wayne Ovation 2, Black (US)
MH61528	RF00059-XX	G7 15 inch (SDC, APC, UPC, NFC) - Wayne Ovation 2, Black (US)
MH61528	RF00062-XX	G7 (SDC, APC, UPC, NFC) - Wayne Ovation 2, Black (US)
MH61528	RF00014-XX	Wayne Helix Standard, with G7 15 inch SDC, BLACK (US & Canada)
MH61528	RF00063-XX	Wayne Helix Standard, with G7 SDC, BLACK (US & Canada)
MH61882 & MH61528	6002-0003-8801	Optic 12 Standard (SDC, APC, UPC, NFC) - Wayne Helix
MH61882 & MH61528	6002-0004-8801	Optic 12 Standard (SDC, APC, UPC, NFC) - GVR Encore 300/500, Black
MH61882 & MH61528	6002-0005-8801	Optic 12 Standard (SDC, APC, UPC, NFC) - GVR Encore 500s Non-ECIM, Black
MH61882 & MH61528	6002-0006-8801	Optic 12 Standard (SDC, APC, UPC, NFC) - Wayne Ovation II, Black
MH61882 & MH61528	6002-0007-8801	Optic 12 - Wayne Helix, CRIND
MH61882 & MH61528	6001-0003-8801	OPTIC 5 – GVR Encore 300/500, Black
MH61882 & MH61528	6001-0006-8801	OPTIC 5 – Gilbarco Eclipse, Black
MH61882 & MH61528	6001-0008-8801	OPTIC 5 – Tokheim Premier B, Black
MH61882 & MH61528	6001-0009-8801	OPTIC 5 – Tokheim Premier C, Black
MH61882 & MH61528	6001-0011-8801	OPTIC 5 – GVR Encore 500s Non-ECIM, Black
MH61882 & MH61528	6001-0012-8801	OPTIC 5 – Wayne Ovation II, Black
MH61882	6001-0013-8801	OPTIC 5 - GVR Advantage LH, Black (NCR Edition)

1.1 Tools Required

The following tools are required to mount the InvencoLink converter:

- Philips #1 screwdriver
- Small flat-bladed screwdriver

WARNING
Do NOT use power tools if working on a fuel station forecourt.
Any spark could cause an explosion.

1.2 Installation Kit Contents

InvencoLink Adaptor (DSP232):

DC Cable (EK0122):

Sundry Parts

Comprising:

4 MS0143 6-32 x ¼" machine screws

2 Safety & Compliance Information

This section introduces the hazards and safety precautions associated with installing, inspecting, maintaining or servicing the InvencoLink converter. Before proceeding, check the relevant hazard and safety information. Fire, explosion or electrical shock could occur and cause death or serious injury if these safe service procedures are not followed.

2.1 Preliminary Precautions

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

2.2 Emergency Total Electrical Shut-Off

Locate the forecourt emergency fuel shut-off valves and electrical isolation breakers. Understand how to use these, should they be required. Locate the switch or circuit breakers that shut-off all power to all fuelling equipment and dispensing devices.

2.3 Total Electrical Shut-Off Before Access

Any procedure requiring access to electrical components or the electronics of a pump/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 the InvencoLink converter.

2.4 Evacuation, Barricading and Shut-Off

Any procedures requiring accessing a pump/dispenser head requires 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 the affected unit(s)

2.5 Read the Manual

Read, understand and follow this manual and any other labels or related materials supplied with the equipment. If you do not understand a procedure, call an Invenco Authorized Service Centre or Invenco Service Officer. It is imperative to your safety and the safety of others to understand the procedures before beginning work.

2.6 Follow the Regulations

Regulations in OSHR (Occupational Safety and Health Regulations), national, state and local codes, including customer requirements 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 and may affect the safe use and operation of the equipment.

2.7 Replacement Parts

Use only genuine Invenco replacement parts and retrofit kits on your installation. Using parts other than genuine Invenco replacement parts could create a safety hazard and violate local regulations.

3 Safety Symbols and Terminology

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 hazard. 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: Designates a hazard or unsafe practice which may result in minor injury, property or equipment damage.

Working With Fuels and Electrical Energy

3.1 Prevent Explosions and Fires

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

3.1.1 No Open Flames

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

3.1.2 No Sparks - No Smoking

Sparks from starting vehicles, starting or using power tools, burning cigarettes, cigars or pipes can also ignite fuels and their vapour. 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.

3.1.3 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 First Aid training providers. 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/Lockout procedures. If you are not familiar with this requirement, refer to information in the relevant manual and OSHA documentation.

3.1.4 Working with Electricity Safety

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 Tag-out/Lockout requirements. Station employees and service contractors need to understand and comply with this program completely to ensure safety while equipment is down.

For USA: Follow all applicable requirements in NFPA 30, 30A and 70, and those of the Local Authority Having Jurisdiction for electrical wiring.

For Canada: Follow all applicable requirements in Canadian Electrical Code (CE Code), CSA C22.1.

3.1.5 Hazardous Materials

Some materials present inside electronic enclosures may present a health hazard if not handled correctly. Be sure to clean hands after handling equipment. Do not place any equipment in mouth.

3.1.6 In an Emergency

Compile the following information in case of emergency:

- Location of accident (e.g. address, front/back of building, etc).
- Nature of accident (e.g. possible heart attack, struck by a vehicle, 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 application of 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.

3.1.7 Approvals

Invenco develops and maintains its hardware and software products using industry-standard quality processes, and is audited by various bodies.
The InvencoLink converter has UL File References of E469526 and E480135 and carries a label similar to this:

The Invenco Retro-Fit Kit has UL File Reference of MH61528.

3.2 Computer Programs and Documentation

All Invenco Group Ltd. computer programs (including software on discs and within memory chips) and documentation are copyrighted by, and shall remain the property of, Invenco Group Ltd. Such computer programs and documents may also contain trade secret information. The duplication, disclosure, modification, or unauthorized use of computer programs or documentation is strictly prohibited, unless otherwise licensed by Invenco Group Ltd.

4 Installation Guide

1. Please ensure all safety procedures are followed per requirement by the customer before installing the retrofit kit.
2. Remove power to Pump and follow the OSHA Lock-out/Tag-out procedures.

WARNING

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

4.1 Installation Procedure

There are three styles of PSU Plate Assembly; the installation procedure is the same for all of them, however the arrangement varies.

Please note which style you have and follow the appropriate instruction column.

NOTE: For the Vista 4V kit (RF00001-XX & RF00056-XX), the power supply plate is larger and the InvencoLink is secured in a different location. However, the PSU, terminal cover and the cable connection processes are the same as Style 1 – For G6 below.

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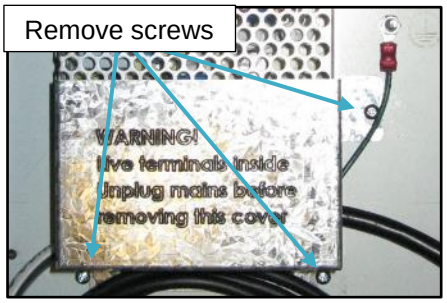
1. Select a PSU Plate Assembly. The part number of the PSU Plate Assembly may vary depending on the Retro-Fit Kit into which the InvencoLink converter is being installed.

Style 1 – For G6

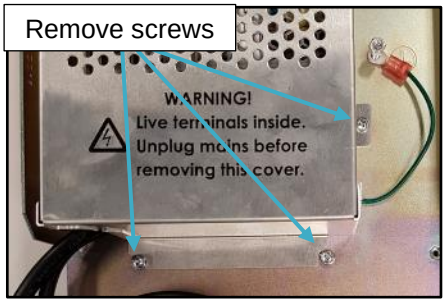
Style 2 – For G7

Style 3 – For G6 or G7 (C1D2)

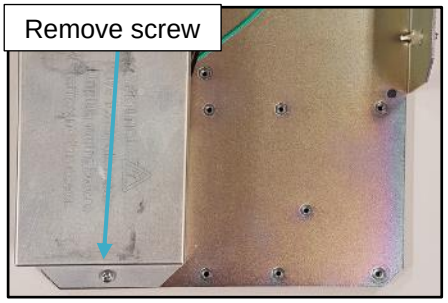
2. Use a Philips-head screwdriver to remove one or three #6 machine screws that hold down the Terminal Cover on the PSU Plate Assembly. Retain the screws for later reinstallation.



Note: discard two of the screws

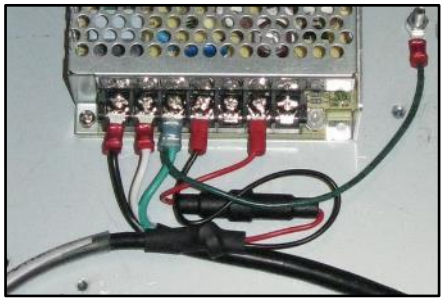


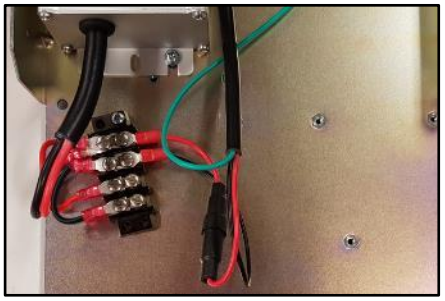
Note: discard two of the screws



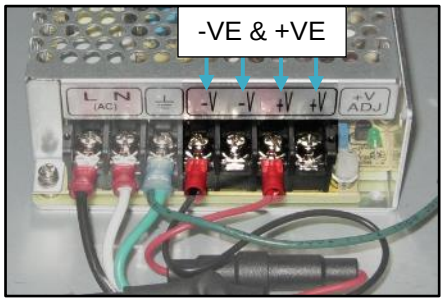
Note how the existing cables exit the Terminal Cover – you will need to restore this arrangement during reassembly.

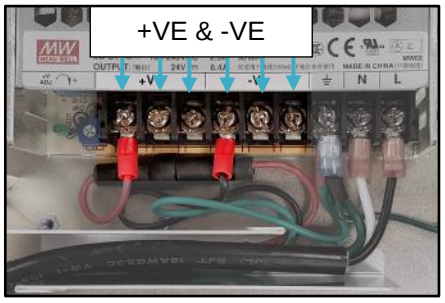
3. Carefully remove the Terminal Cover and set it aside for later reinstallation.

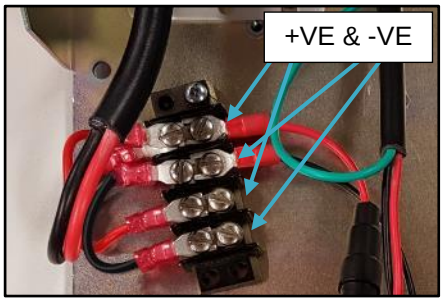




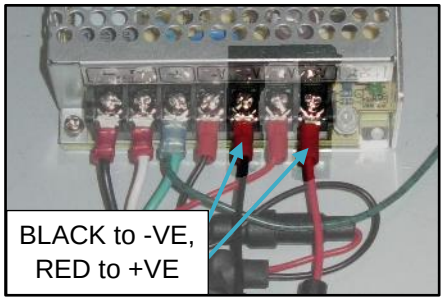
4. Locate the +VE and -VE terminals on the power supply or terminal block. Note there are at least two of each terminal; some terminals will have wires already connected. If there are terminals without wires, select those, otherwise select one of each +VE and -VE terminal with few wires already connected.

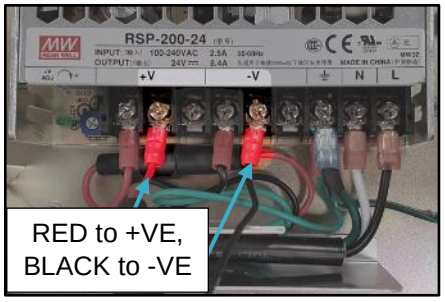






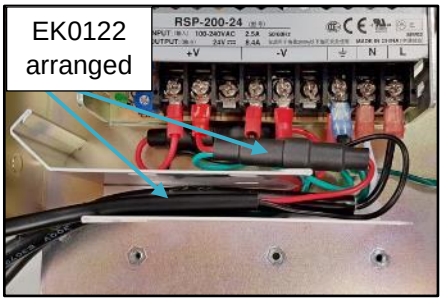
5. Loosen the screws on the selected terminals with a Philips-head screwdriver, but do not remove the screws.
6. Take the EK0122 DC cable.
   a. Insert the fork connector with the RED wire under the screw on the selected +VE terminal.
   b. Insert the fork connector with the BLACK wire under the screw on the selected -VE terminal.

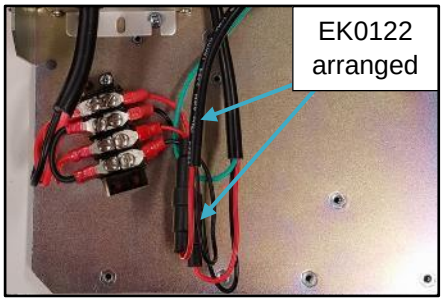




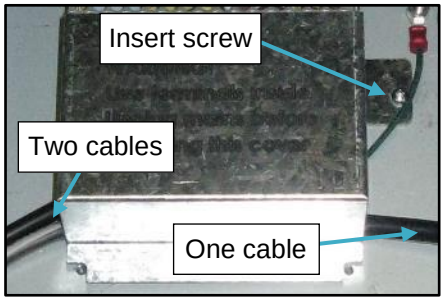
7. Tighten the terminal screws while holding the fork connectors in place.

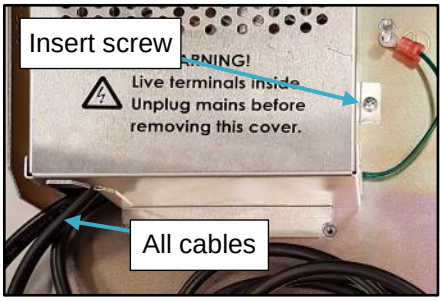
8. Arrange the EK0122 cable so that the fuse will remain inside the area normally covered, and the black connector will emerge from the left side:

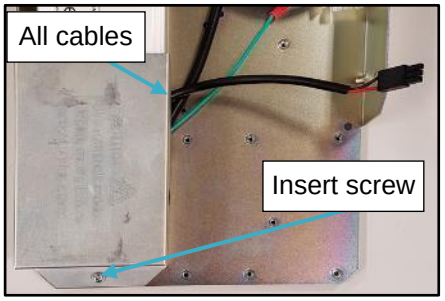




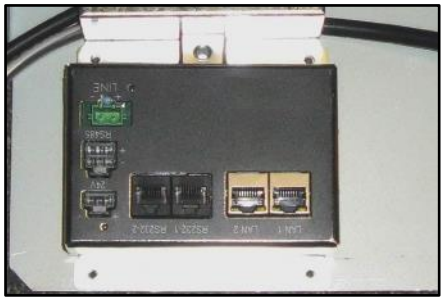
9. Ensure the existing cables are arranged as previously noted, then carefully replace the terminal cover, and loosely insert one of the screws previously removed in the hole indicated below:







10. Take the DSP232 InvencoLink converter and place it as shown onto the PSU Plate, ensuring that it is aligned with the four holes in the Plate:



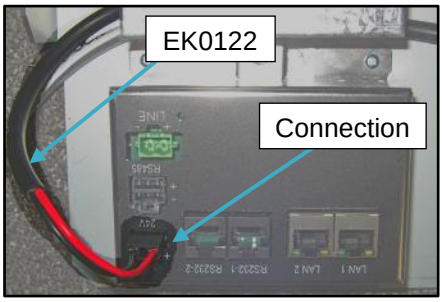
Note: Place on top of terminal cover

Note: Place on top of terminal cover

11. Take the four MS0143 Screws from the InvencoLink converter Retro-Fit Kit package and insert them into the four holes on the InvencoLink converter:

12. Tighten all five screws carefully to secure the terminal cover and InvencoLink converter in place. You may need to jiggle the parts a little to get a nice alignment.

13. Insert the black connector on the EK0122 DC cable into the 1x3-way “24V” socket on the top of the InvencoLink converter.



14. The installation of the InvencoLink converter is now complete. Discard the packaging for the InvencoLink converter, and refer back to the installation instructions for the particular OPT Retro-Fit Kit with which you were working.