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Retrofit InvencoLink (US & Canada) Installation Guide		

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Kit Part Number: RF00033-XX



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Retrofit InvencoLink (US & Canada) Installation Guide

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



Document Number	DCV-00465
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Retrofit InvencoLink (US & Canada) Installation Guide

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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
17	Michael Doh	17-Nov-2021	Additions to the RFK kits list table in the introduction section
18	Shibani Joshi	06-Dec-2021	Revised kits list and removed alternative Vista 4V PSU plate
19	Shibani Joshi	09-Dec-2021	Updated Retro-Fit Kit Descriptions based on UL's feedback
20	Shibani Joshi	09-Mar-2022	Added the Encore 500S Non-ECIM kits
21	Michael Doh	05-Apr-2022	Added Harmony kit RF00089-XX
22	Michael Doh	02-May-2022	Added Tokheim Preimere B and C kits. Moved power cable to PSU assembly.
23	Michael Doh	13-Jul-2022	NCR kit part numbers removed and added RF00079-XX
24	Michael Doh	18-Jul-2022	Corrections and added steps 2 and 6.
25	Shibani Joshi	25-Jul-2022	Added new G7 Encore 300/500 painted Canada kit
26	Shibani Joshi	1-Nov-2022	Added new G7 Helix 2 Headless kit
27	Michael Doh	15-Dec-2022	Revise the Helix 2 kits description (US only)

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Document Number	DCV-00465
Date Released	Dec 2022
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Retrofit InvencoLink (US & Canada) Installation Guide

Contents

Release History.....	2
1 Introduction.....	5
1.1 Tools Required	7
1.2 Installation Kit Contents	7
2 Safety & Compliance Information.....	8
2.1 Preliminary Precautions	8
2.2 Emergency Total Electrical Shut-Off	8
2.3 Total Electrical Shut-Off Before Access	8
2.4 Evacuation, Barricading and Shut-Off	8
2.5 Read the Manual	8
2.6 Follow the Regulations.....	9
2.7 Replacement Parts	9
3 Safety Symbols and Terminology.....	9
3.1 Prevent Explosions and Fires	9
3.1.1 No Open Flames.....	10
3.1.2 No Sparks - No Smoking	10
3.1.3 Working Alone	10
3.1.4 Working with Electricity Safety	10
3.1.5 Hazardous Materials.....	10
3.1.6 In an Emergency.....	11
3.1.7 Approvals.....	11
3.2 Computer Programs and Documentation	11
4 Installation Guide	12
4.1 Installation Procedure	12



Document Number	DCV-00465
Date Released	Dec 2022
Revision Number/Security level	R27 S2

Retrofit InvencoLink (US & Canada) Installation Guide

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.

IMPORTANT NOTE: The installer must review the entire installation guide prior to starting any work on the dispenser. If the construction of the dispenser in the installation guide does not match the construction of the dispenser being retrofitted, then do not proceed with the installation and contact customer service.

In particular, an earlier revision of the below Retrofit kit may not have the InvencoLink DC power cable fitted on the PSU assembly. If this is the case, stop the installation and contact technical support to obtain the correct matching revision of the kit.

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	RF-00089-XX	Wayne Harmony with G6-300 (US)
MH61528	RF00019-XX	Wayne Vista 1V, 2V 3V, for G6-300, BLACK (US)
MH61528	RF00001-XX	Wayne Vista 4V or 3V converted to 4V, for G6-300, BLACK (US)
MH61528	RF00056-XX	Wayne Vista 4V or 3V converted to 4V, for G6-300, COLOR (US)
MH61528	RF00079-XX	Wayne Helix 1 Standard, G6-300
MH61528	RF00084-XX	Wayne Helix 2 Standard, G6-300
MH61528	RF00091-XX	Wayne Helix 2 Headless, G6-300
MH61528	RF00074-XX	Gilbarco Encore 500S Non-ECIM with G6-300, BLACK (US)
MH61528	RF00028-XX	Wayne Ovation 1, with G7, BLACK (US & Canada)



Document Number	DCV-00465
Date Released	Dec 2022
Revision Number/Security level	R27 S2

Retrofit InvencoLink (US & Canada) Installation Guide

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)
MH61528	RF00092-XX	G7 15 inch Wayne Helix 2 Headless, Black (US)
MH61528	RF00072-XX	Gilbarco Encore 500S Non-ECIM, with G7, BLACK (US)
MH61528	RF00077-XX	Gilbarco Encore 500S, Non-ECIM with G7 15-Inch SDC, BLACK (US)
MH61528	RF00036-XX	Tokheim Premiere B, with G6-300, (US)
MH61528	RF00037-XX	Tokheim Premiere C, with G6-300, (US)
MH61528	RF00110-XX	Gilbarco Encore 500S, 700S with G7-15 inch SDC, Coloured (US & Canada)
MH61528	RF00115-XX	G7 Wayne Helix 2 Headless (US)

Retrofit InvencoLink (US & Canada) Installation Guide

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):	
Sundry Parts	
Comprising:	
4	MS0143 6-32 x 1/4" machine screws

Retrofit InvencoLink (US & Canada) Installation Guide

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.

Retrofit InvencoLink (US & Canada) Installation Guide

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.

Retrofit InvencoLink (US & Canada) Installation Guide

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.

	Document Number	DCV-00465
	Date Released	Dec 2022
	Revision Number/Security level	R27 S2
Retrofit InvencoLink (US & Canada) Installation Guide		

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.

Retrofit InvencoLink (US & Canada) Installation Guide

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

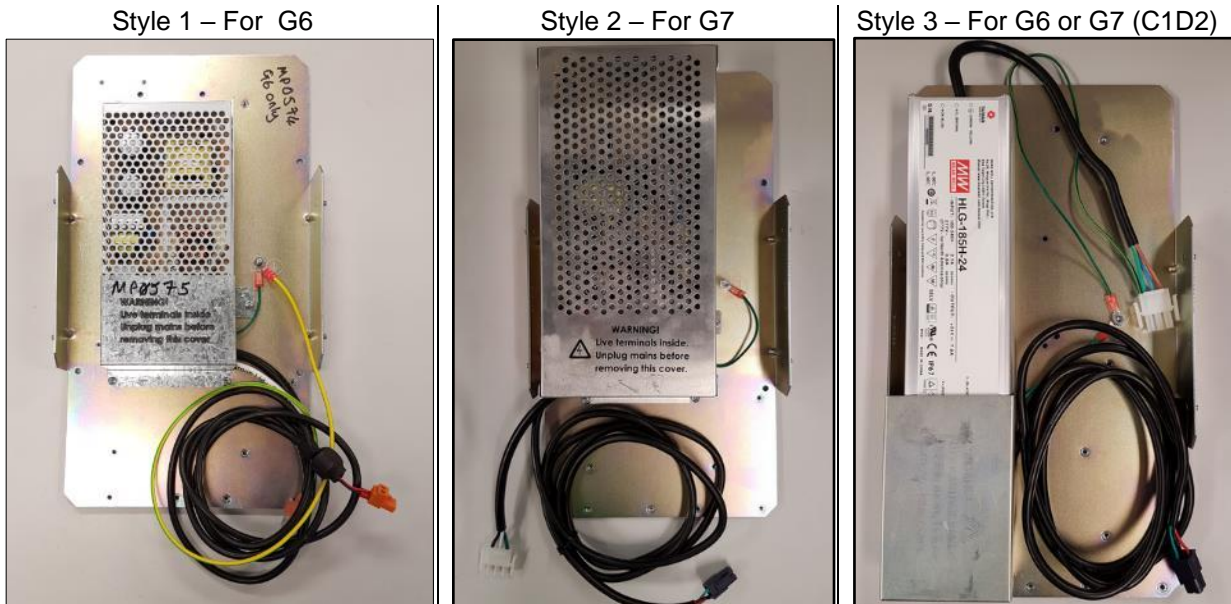
Failure to turn off the unit during installation of the kit may cause injury or bodily harm from electrical shock. Ensure that all power to the unit is switched off before opening the door of the unit and during kit installation.

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.

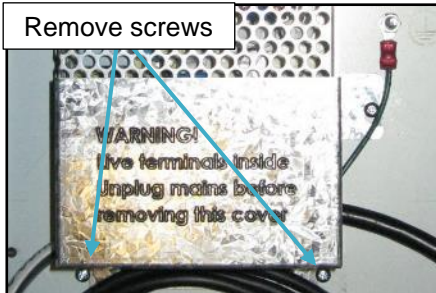
Please note which style you have and follow the appropriate instruction column.

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.

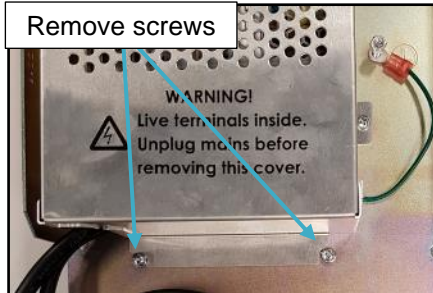


Retrofit InvencoLink (US & Canada) Installation Guide

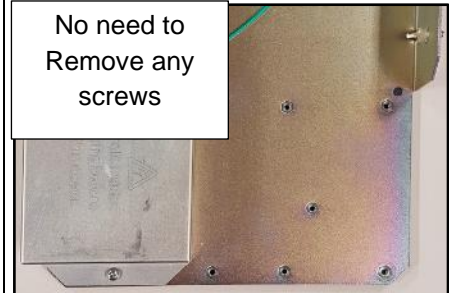
2. Use a Philips-head screwdriver to remove two of the #6 machine screws on the Terminal Cover on the following PSU Plate Assemblies. These screws can be discarded.



Note: discard two of the screws



Note: discard two of the screws

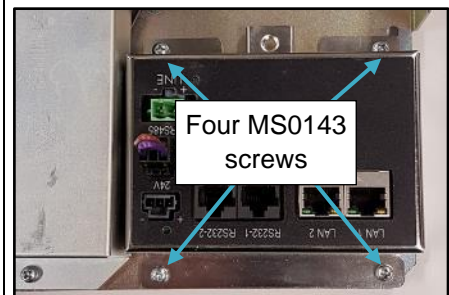


Note how the existing cables exit the Terminal Cover – you will need to restore this arrangement during reassembly.

3. 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:



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



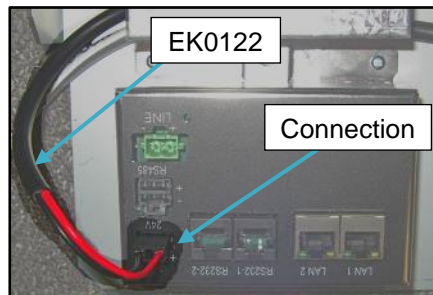
5. Tighten all four screws carefully to secure the terminal cover and InvencoLink converter in place. You may need to jiggle the parts a little to get a nice alignment.

Retrofit InvencoLink (US & Canada) Installation Guide

6. From the PSU plate assembly, identify the EK0122 DC cable for connection to the InvencoLink.



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



8. 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.