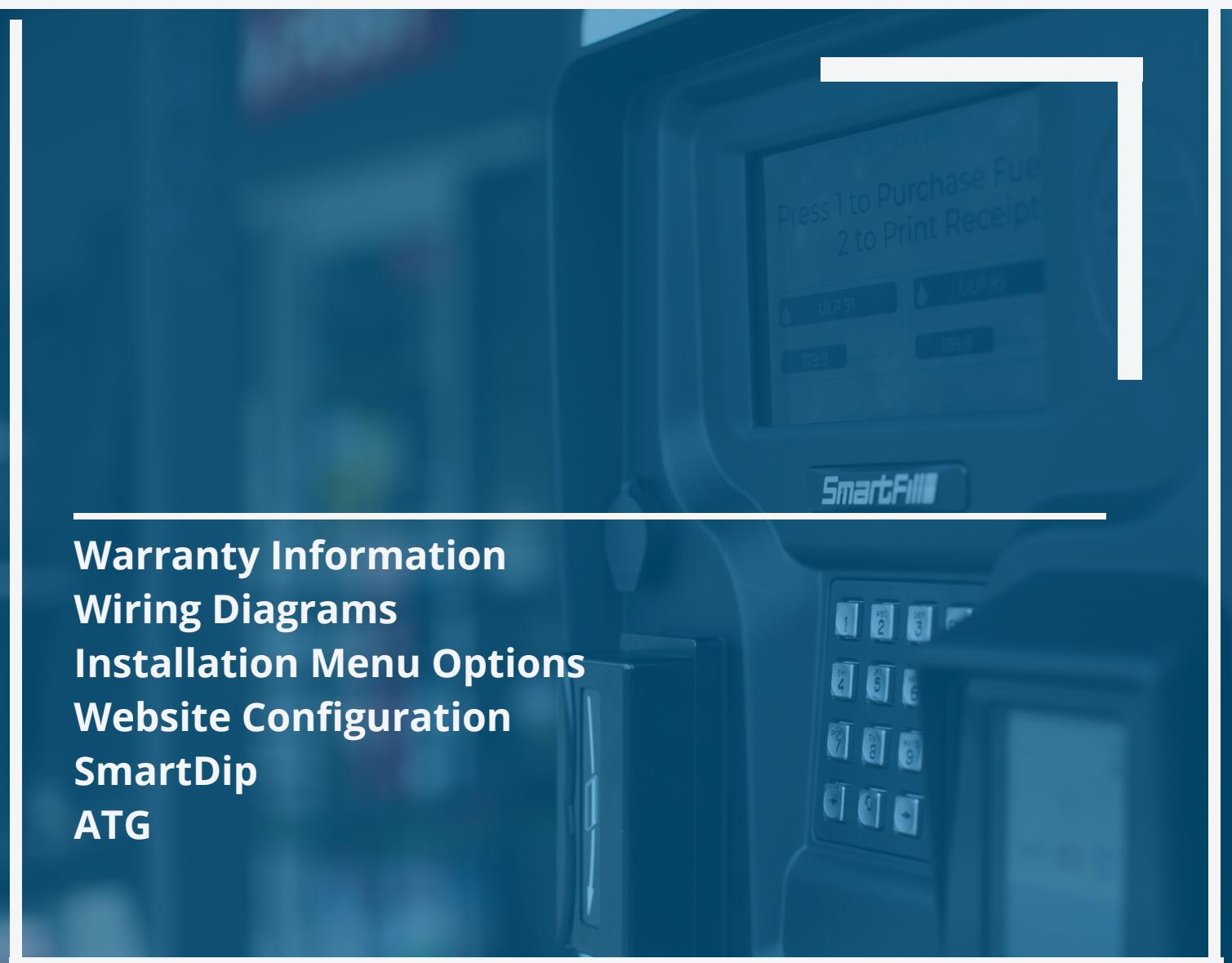




SmartFill Gen 3 OPT Installer Manual

A close-up photograph of a SmartFill Gen 3 OPT fuel pump. The pump is dark-colored with a large, illuminated touchscreen display on the right side. The display shows the text "Press 1 to Purchase Fuel" and "2 to Print Receipt". Below the display, there are two buttons labeled "ULP 91" and "ULP 95". At the bottom of the pump, there is a numeric keypad with buttons for numbers 0-9 and a "SmartDip" button. A small "SmartFill" logo is visible on the side of the pump. To the left of the pump, there is a list of links in white text.

- [Warranty Information](#)
- [Wiring Diagrams](#)
- [Installation Menu Options](#)
- [Website Configuration](#)
- [SmartDip](#)
- [ATG](#)

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Chapter 1

General Information

1.1 Introduction

This manual provides step-by-step instructions for installing a SmartFill OPT system, in the order that the tasks are typically completed during a normal installation. If you have any suggestions or notice any errors in the manual, please contact the manufacturer.

Throughout the manual, you will see the following icons, which are used to highlight important information:

WARNING



WARNING: This icon indicates a potential hazard or mishap that may occur if you do not read and follow the advice provided. It is extremely important that you pay attention to and fully understand any information following a Warning icon.

TIP



TIP: This icon provides helpful tips, suggestions, or shortcuts to improve the installation process.

1.2 Overview

The SmartFill OPT is a sophisticated fuel management system that is built to withstand even the most challenging environments. It is housed in a rugged metal enclosure, and its modular design makes it easy to install, upgrade, and repair. To access fuel, users can start a transaction and select the desired purchase amount using a credit card (note: this will place a preauthorization on the user's credit card, but they will not be charged until the transaction is complete). Unit owners can also add keys to the system. All transactions are logged and include the time and date, the amount of fuel dispensed, the pump from which the fuel was taken, and (if applicable) the key or code used.

The unit stores all data locally and can also send it automatically to a secure website (www.fmtdata.com) if it is connected to the internet via Ethernet or a 3G/4G connection. The unit can be configured either through the keypad and on-screen menus or through the website.

1.3 Terminology

Term	Meaning
Key	Swipe card or NFC card/Fob used to identify a driver or vehicle
Module	A plug in module that is used in the unit e.g pump module
AC	Alternating Current - normally 240VAC/Mains power



Figure 1.1: SmartFill OPT Payment Hardware

1.4 Safety Warnings.

WARNING



- **HIGH VOLTAGE WARNING** - Some SmartFill OPT systems involve / require hazardous electrical voltages to be present. Any electrical installation, testing, maintenance or repairs MUST be carried out by a suitably licensed electrician.
- To help prevent electrical shock, connect the SmartFill OPT into properly grounded sources.
- To help avoid possible damage to the SmartFill OPT and or other interfacing equipment, wait 5 seconds after turning off all equipment before disconnecting any interconnecting cables.
- To help protect your SmartFill OPT from sudden, transient electrical increases, your SmartFill OPT is equipped with surge protection. All equipment connected to the SmartFill OPT needs to use a surge suppressor, line conditioner, or un-interruptable power supply (UPS).
- Be sure nothing rests on your SmartFill OPT cables and that the cables are not located anywhere where they can be stepped on or tripped over.
- Do not push any objects into the openings of your SmartFill OPT. Doing so can cause fire or electrical shock by shorting-out internal components.
- In addition, take note of these safety guidelines when appropriate:
 - When you disconnect a cable, pull on its connector or its strain-relief loop, not on the cable itself. Some cables have a connector with locking tabs. To disconnect this type of cable, press in the locking tabs before disconnecting the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before you connect a cable, make sure both connectors are correctly oriented and aligned.
 - Hold components by their edges or by their metal mounting brackets.
- Any safety concerns about the system should be immediately reported to your SmartFill OPT supplier and the manufacturer.
- The system must be marked as out of order, suitably tagged as dangerous or out of service and must not be used if any safety concerns arise.

- The SmartFill OPT manufacturer's bear no responsibility / liability for any work carried out by unqualified service personnel.
- All wiring MUST be in accordance with the relevant local / state / national regulations as required, and in accordance with AS/NZS 3000:2000.
- Special care must be taken to ensure that the wiring and location of SmartFill OPT systems is in accordance with the relevant regulations and authorities for that particular location.
- Special attention must be paid to locating equipment in possibly hazardous areas.
- The manufacturer can not provide advice or specifications for correct wiring or hazardous area regulations, and in no way implies its suitability for use in any given area, this information MUST be sought by the installer, from the relevant authorities.
- SmartFill OPT enclosures are not rated for use in hazardous areas, and as such the SmartFill OPT must only be operated in a non-hazardous area.

1.4.1 Installing Company / Personnel Requirements.

- The quality of the installation has a lasting effect on the performance of the equipment, and the value the end user receives from the system. We can not stress enough the importance of safe and high standard installation and commissioning practice's. Thorough initial basic training of the client is also crucial to the client getting the best value from the equipment. Obviously, adequate initial training also reduces the number of support calls that the installer receives.
- The installing company is responsible for ensuring that installation staff are competent, they are suitably qualified and that work is performed in a safe manner to a high standard.

1.4.2 Power Conditioners/Voltage Regulators

In locales where power sources fluctuate significantly and over voltages or brownouts occur, power conditioners or voltage regulators may be installed between the SmartFill OPT and its power source for protection against high or low power inputs. These devices condition or regulate power to a constant or maximum output. Power conditioners maintain a constant power input when voltage may otherwise fluctuate between highs and lows which may not be acceptable to SmartFill OPT. Voltage regulators protect SmartFill OPT from high voltage inputs similar to what may occur when an unregulated generator is initially turned on. Power conditioners are more complex and substantially more expensive to purchase.

1.4.3 Backup Generators

Some facilities are equipped with backup generators to supply AC power when the regular power supply goes down. During start-up of the backup generator the initial power surge may be extremely high until all connected equipment is restored to operation. This power surge has the same potential for damage to the SmartFill OPT equipment as a lightning strike. Ensure the installed equipment is protected (regulated) from current surges during start-up of the backup power source. If possible, turn off the SmartFill OPT power until non-regulated generator power stabilizes.

1.5 Ratings

	AC	DC
Operating Voltage	90 - 250 VAC	10 - 36 VDC
Operating Current	0.38A - 0.15A	2A - 0.6A
Pulser	15V @ 2.5mA	15V @ 2.5mA
Nozzle Switch	3.3V @ 0.2mA	3.3V @ 0.2mA
Fuse Rating	1A	2A
Maximum Switching	250VAC @ 10A	24VDC @ 5A
Delay Power Switch	N/A	36V @ 2A

1.6 Certifications/Approvals

Figure 1.2 illustrates the boundaries of a hazardous location which dispenses flammable liquids such as gasoline and E85. These standards are defined in Australian Standard AS/NZS 60079.10.1:2009

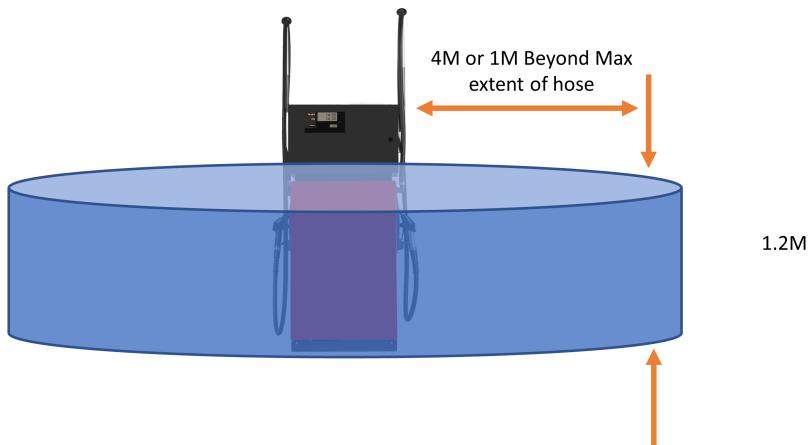


Figure 1.2: Boundaries for Hazardous Locations

The boundary area around a compressed natural gas (CNG) dispenser is different. It extends 5 feet from, and above, the dispenser. Any electrical device installed within these boundaries must be intrinsically safe or must be enclosed within an explosion-proof enclosure. Intrinsically safe devices are generally limited to very low voltage and low current devices, such as that portion of a pulser before the barrier. Examples of explosion-proof enclosures are rigid metal conduit, and junction boxes and conduit fittings approved for use in hazardous locations. If the electrical device is not intrinsically safe, or is not explosion-proof, then it must be installed outside the hazardous area.

1.6.1 Regulatory Compliance and RF Exposure Information (U.S. Only)

1.6.1.1 FCC Compliance Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

1.6.1.2 RF Exposure Statement (FCC KDB 784748 Section A.8)

To satisfy FCC RF exposure requirements, this device and its 4G/LTE antenna must be installed and operated with a minimum separation distance of 20 cm (approximately 8 inches) between the antenna and all persons during normal operation.

Note: While the device includes an NFC reader designed for close-range interaction (e.g., under 1 cm), the 4G/LTE antenna is physically located more than 20 cm away from the user interaction area. This ensures compliance with RF exposure limits.

1.6.1.3 Detachable Antenna Notice

This device is designed to operate only with the manufacturer-provided detachable antenna. Use of any other antenna is strictly prohibited and may result in non-compliance with FCC regulations.

1.6.1.4 Approved Antenna Information

Antenna Type	Connector Type	Max Gain (dBi)	Impedance (Ω)
4G/LTE External Fiberglass Antenna	SMA Male	1.66	50

1.7 Warranty Information

1.7.1 WARRANTY

1.7.1.1 FMT shall provide to the Customer a warranty for all Goods against defects in materials and workmanship for a two-year period (the Warranty Period) commencing on the sale date to the Customer (the Warranty Commencement Date) of the relevant Goods.

1.7.1.2 The Product Warranty only applies to the Customer who originally purchased the Goods. It is personal and may not be assigned or transferred without the prior written consent of FMT.

1.7.1.3 Subject to Clause 1.7.2, FMT (at its option) will replace or repair for the Customer, free of charge, any part or parts, found upon examination by FMT, to be eligible for this Product Warranty. If any Goods or part is replaced or repaired under this Product Warranty, that Goods or part will carry the remainder of the Product Warranty from the Warranty Commencement Date.

1.7.1.4 The Product Warranty is in addition to any consumer guarantees existing available to the Customer at law and the Product Warranty does not exclude such consumer guarantees.

1.7.1.5 All enquiries regarding the Product Warranty may be directed to FMT at +61 8 8240 5585.

1.7.2 WARRANTY CLAIM PROCEDURE

1.7.2.1 In order to make a claim under the Product Warranty, the Customer must notify FMT in writing of any defect in the Goods discovered during the Warranty Period as soon as the Customer becomes aware of the alleged defect specifying in reasonable detail the nature of the defect. Such notice may be made by any one or more of the following methods:

i. By Post addressed to: Fluid Management Technology Pty Ltd, PO Box 1224, Beverley, South Australia, 5009, Australia

ii. By Email to: sales@fluidmt.com.

1.7.2.2 Upon FMT verifying the validity and currency of the Product Warranty in respect of the Customer's claim, the Customer must upon request by FMT send the Goods to FMT.

1.7.2.3 The Customer must ensure that the Goods are properly packaged so as to ensure that no damage occurs to the Goods during transit. The Customer is responsible for all posting, shipping, freight and insurance charges in respect of the Goods returned to FMT. Whilst in transit, the Goods remains at the Customer's risk.

1.7.2.4 FMT may, in its absolute discretion reimburse the Customer for the Customer's cost to undertake such repairs to the Goods, provided that the Customer has first provided to FMT a written quote as to the estimated costs of the Customer undertaking such repair, and FMT has approved (in writing) the Customer to proceed with such repairs up to that agreed estimated cost.

1.7.2.5 Upon receiving the Customer's written quote, the Customer acknowledges that FMT shall have sole discretion as to whether FMT engages its own contractors to undertake the required repairs, or if the Customer may undertake such repairs.

1.7.2.6 The Customer agrees that FMT shall have no obligation or liability to reimburse the Customer for the costs of any repairs undertaken by the Customer that have not been agreed in writing with FMT beforehand.

1.7.2.7 FMT reserves the right at its sole discretion to determine whether to replace or repair, free of charge, any part or parts, or the entire Goods.

1.7.2.8 The Customer is responsible for all packaging, posting, shipping, freight and insurance charges in respect of any Goods returned by FMT to the Customer. The Customer agrees to pay such charges upon the same payment terms as apply to FMT's sales of Goods current at the time of the Product Warranty claim. Whilst in transit, the Goods remains at the Customer's risk.

1.7.3 GENERAL EXCLUSIONS AND LIMITATIONS OF THE WARRANTY

1.7.3.1 The Product Warranty is limited to replacement or repair of defective parts or defects in workmanship and does not include any labour costs (whether such labour costs are supplied by FMT or the Customer).

1.7.3.2 In the event that no identical parts are available to repair the defective Goods, FMT has the right to replace the Goods with similar Goods of equal age and condition as the defective Goods, or offer the Customer the choice to upgrade the defective Goods. These may incur additional costs to the Customer and the Customer in those circumstances agrees to pay those additional costs upon the same payment terms as apply to FMT's sales of Goods current at the time of the Product Warranty claim.

1.7.3.3 Replacement Goods or parts may include remanufactured or refurbished parts or components. Repaired or replaced Goods will continue be warranted for the remainder of the Product Warranty from the Warranty Commencement Date.

1.7.3.4 The Product Warranty does not cover consumables, including but not limited to batteries and surge protectors.

1.7.3.5 The Warranty will not apply, and FMT will be under no obligation or liability whatsoever if, in the opinion of FMT, the Goods have been:

i. installed and maintained other than in compliance with FMT's product specifications, instructions and directions;

ii. installed or used other than in a manner approved by FMT as suitable for the Goods;

iii. handled in a manner which contravenes any direction, instruction or warning issued by FMT from time to time;

iv. misused, abused, altered or damaged in any way;

v. tampered with, including if any factory applied serial number has been altered or removed from the Goods;

vi. damaged through normal wear and tear including exposure to the elements (on both exposed and unexposed surfaces), exposure to abnormally corrosive conditions, rust, or entry by any insect, vermin or foreign object in the Goods; or