
Fueling Automation

Brand: HID Global
Product Code: SMAH100167



Short Description

identiFUEL™ consists of RFID enabled components to seamlessly integrate into Fuel Management Systems (FMS) to simplify management for commercial fleet and retail fueling stations. Incorporating RFID increases line of sight into operational functions. For example, monitoring and controlling costs, accurate billing, and to uniquely identify and authorize vehicles and drivers to dispense fuel from dedicated fueling stations.

Description

Seamlessly integrate RFID into FMS

The HID Global identiFUEL™ system consists of RFID-enabled components to seamlessly integrate into Fuel Management Systems (FMS) to simplify management for commercial fleet and retail fueling stations. Incorporating RFID increases visibility into operational functions for numerous use cases. Popular examples include monitoring and controlling costs, accurate billing, and to uniquely identify as well as authorize vehicles and drivers to dispense fuel from dedicated fueling stations.

Fueling Management Systems are used for commercial fleets fueling at dedicated industrial stations. Airport maintenance, mining and construction vehicles, transportation are just a few commercial examples. Additionally, FMS can be used in retail for customer

engagement programs. Customer vehicles equipped with RFID vehicle tags and RFID-enabled gas stations can implement cashless payments, efficient fueling processes and customer loyalty programs.

Key Features

Multiple RFID Vehicle Tag form factors available – four maintenance-free tags that automate and simplify vehicle identification. Vehicle Tags are programmable with specific fuel type requirements and suitable for multiple vehicle styles.

Ultra-rugged Vehicle Unit (optional) – can be connected to the vehicle electronics to seamlessly report valuable data on vehicle utilization, distance driven, engine cycles, and other operational statistics. The optional built-in RFID reader can read driver badge or keyfob for added security and statistics.

Robust Nozzle Unit reader – is easily installed on the fueling dispenser to read and transmit vehicle tag data to the FMS for authorization.

Wireless Controller – is a programmable base station to relay data picked up by Nozzle or Vehicle Units to the FMS and activate/deactivate fuel dispensation based on FMS authorization.

identiFUEL™ Vehicle Tags

Robust LF RFID tags uniquely identify authorized vehicles in identiFUEL™ System.

Overview

identiFUEL™ Vehicle Tags

The identiFUEL™ vehicle tags are highly robust maintenance-free passive low frequency (LF) RFID tags. They are designed for easy application on most industrial or consumer vehicles to wirelessly identify authorized vehicles to use the filling station and fuel type required controlled by Fuel Management Systems (FMS).

Vehicle RFID Tags are the easiest and most cost effective approach to identify vehicles to an FMS. However, if more advanced analytics are needed identiFUEL Vehicle Units can be implemented.

identiFUEL™ vehicle tags are water and fuel-resistant and architected to withstand commercial fleet and retail fueling environments. To prevent fraudulent activities, vehicle tag models self-destruct if removed after installation.

Key Components:

Various form factors

Reports vehicle ID and fuel type to Nozzle Unit

Optional tamper protected models

Easy and durable affixation

125kHz, programmable tags

identiFUEL™ Vehicle Unit

ON-BOARD VEHICLE UNITS FOR WIRELESS VEHICLE IDENTIFICATION AND STATISTICS

Uniquely identifies the vehicle to the Fuel Management System

Optionally reports distance driven and engine running times

Built-in RFID reader for optional driver authentication

The HID Global identiFUEL™ Vehicle Unit is an automatic system designed for vehicle identification and data reporting relating to vehicle usage.

The Vehicle Unit is installed inside the managed vehicle and should be connected to the odometer and ignition for optimal functionality.

Whenever the vehicle arrives at a corresponding fueling station with identiFUEL™ Wireless Controller, the unique ID of the Vehicle Unit is reported along with the distance driven and engine running times.

This allows the Fuel Management System (FMS) operator to closely monitor vehicle utilization remotely.

The Vehicle unit is available in a rugged aluminum or standard plastic housing.

Connected to a proper antenna, the Vehicle Unit may also act as a lowfrequency (LF) reader to optionally

read an RFID badge or keyfob of the driver and / or the RFID tag on the filling nozzle (if no identiFUEL Nozzle Unit reader is used).

Two LEDs provide visual confirmation when the Vehicle Unit is scanning for tags. The tag information is sent along

with the vehicle unique ID and driving statistics to the FMS for reporting. It also enables the FMS to take more

sophisticated business rule decisions if and how much fuel shall be dispersed

based on driver and vehicle ID.

Specification

Vehicle Unit

HVU 903 / HVU 904

Base Model Number HVU903-1-1-GB-XX HVU904-1-1-GB-XX

ELECTRONIC

Operating Frequency to Wireless Controller 433.92 MHz

Operating Frequency to Driver Badge 125 kHz

Power Supply Voltage 9 V to 16 V DC; 18 V to 26 V DC

Automotive Transient Protection

Power Supply Current 20 mA idle (no load on odometer supply)

40 mA active (no load on odometer supply)

PHYSICAL

Dimensions 3.1 × 4.5 × 1.2 in (80 × 116 × 32 mm) 3.2 × 4.5 × 1.3 in (83 × 114 × 34 mm)

Mounting Method Screw

Housing Material Aluminum Glass filled Nylon (PA6)

Color Black

Weight 10.3 oz (294 g) 4.5 oz (128 g)

CHEMICAL AND MECHANICAL RESISTANCE

Water

IP62 - industrial environment. The HVU903 is sealed against water entry, however it is advisable that the connector terminals face downwards.

IP50 - Designed to work in an indoor (dry) environment. The HVU904 is not sealed against water entry.

Humidity 0 to 95% relative humidity at +104° F (+40° C) non-condensing

Drop Test 1 m (3.28 ft) drop (in packaging)

THERMAL

Storage -40° to +176° F (-40° to +80° C)

Operating -13° to +140° F (-25° to +60° C)

IGNITION INPUT

Off < 1.2 V

On > 6.4 V

ODOMETER INPUT

V/N Maximum 12 V

V,H Minimum > 2.5 V

V,L Maximum < 1.5 V

Resource Maximum 1.8 k ?

Maximum Frequency 1.25 kHz

Minimum Pulse 0.67 ms

Calibration Up to 22.000 pulses per km

Counter Maximum 9.999.999 km or minutes

RETROFIT ODOMETER SUPPLY

Output Voltage 8 V \pm 5 %

Output Current 60 mA maximum

OTHER

Standards

EN60950-1:2001, EN61000-4-3:2006, EN61000-4-6:1996+A1:2001,

EN55022:1998+A1:2000+A2:2003, EN301489-1: V1.6.1, EN301489-3: V1.4.1,

EN300220-2: V2.1.1,

EN300330-2: V1.3.1

User Interface 2 externally visible red LEDs

Quantity Per Box 1 pc.

Warranty 1 year

identiFUEL™ Nozzle Unit

LOW FREQUENCY RFID READERS TO RETRO-FIT ON FUELING NOZZLES

KEY TECHNOLOGY HIGHLIGHTS:

Simple installation on various existing nozzles

Fully encapsulated rugged , antistatic design
ATEX / IECEx compliant
Multi-year battery life
Completely wireless operation

TYPICAL APPLICATION AREAS:

Fueling stations for:
Construction vehicles
Trucks
Bus coaches
Any other commercial
fleet vehicles

Reads vehicle tag and identifies vehicle to the Fuel Management System
Automatic activation and standby mode via motion sensor
Supports a range of standard filling nozzles

The HID Global identiFUEL™ Nozzle

Unit is a ruggedized, intrinsically safe RFID reader, used for Fueling Management Systems (FMS).

Multiple Nozzle Unit form factors are available to easily mount on standard fuel filling nozzles. The unit turns a filling nozzle into an RFID reader that is automatically activated when the nozzle is tilted.

The Nozzle Unit is designed to work in combination with identiFUEL Vehicle Tags and Wireless Controllers as RFID front-end for Fuel Management Systems.

As soon as the Nozzle Unit detects a corresponding vehicle tag, the tag's unique ID and required fuel information is sent via an encrypted channel to the corresponding identiFUEL™ Wireless Controller.

The controller communicates to the FMS software, which decides if and how much fuel to dispense.

Once the nozzle is removed from the vehicle, and the vehicle tag can no longer be read, the Nozzle Unit notifies the FMS to stop the fuel dispersion.

The identiFUEL™ Nozzle Unit includes a dual-color led that indicates whether the unit is operational and a tag was successfully read. The rugged housing makes the Nozzle Unit resistant to typical fueling environments and rain water.

SPECIFICATIONS

Nozzle Unit

HBN 903 HBN 904 HBN 905

Base Model Number HBN903-1-1-GB-XX HBN904-1-1-GB-XX HBN905-1-1-GB-XX

ELECTRONIC

Operating Frequency to

Wireless Controller" 433.92 MHz

Operating Frequency to

Vehicle Tag 125 kHz

Max. Distance to

Wireless Controller 328 ft. (100 m)

Power Supply 2 x 2.6 Ah Lithium Thionyl Chloride Batteries

Power Supply Lifetime ~3 years battery life @ 200 minutes per day operation

PHYSICAL

Dimensions 5.2 × 4.5 × 3.1 in

(132 × 115 × 78 mm)

4.9 × 5.1 × 3.1 in

(126 × 130 × 79 mm)

5.8 × 4.5 × 2.9 in

(147 × 115 × 74 mm)

Mounting Method Screw (5 screws)

Fits to Nozzle Type Elaflex ZVA25, Slimline 1 OPW7H, OPW11A Elaflex Slimline 2

Housing Material Glass filled Nylon (PA6)

Color Black

Weight 17.2 oz (490 g) 17.6 oz (500 g) 16.7 oz (475 g)

CHEMICAL AND MECHANICAL RESISTANCE

Water IP66

Withstands Exposure To Fuel B, mineral oil, petroleum, salt mist, vegetable oil

Environmental Test

Conditions 68° F (20° C), 100 h

Humidity 0 to 95% relative humidity at +104° F (+40° C) non-condensing
Drop Test 1 m (3.28 ft) drop (in packaging)

THERMAL

Storage -40° to +176° F (-40° to +80° C)
Operating -13° to +140° F (-25° to +60° C)

OTHER

Standards ETSI 300 220, ETSI 300 330, EN 1127-1:2007, EN 1127-2:2002+A1:2008,
EN 60079-0:2009, EN
50303:2000, EN 60079-11:2007, ATEX/IECEX (Ex ia IIB T4 Gb)
User Interface Bi-color indication LED (red flashing - steady, green - tag read, dark -
standby mode)

Quantity Per Box 1 pc.

Warranty 1 year

identiFUEL™ Wireless Controller

WIRELESS CONTROLLER FOR FUEL MANAGEMENT SYSTEMS (FMS)

KEY TECHNOLOGY HIGHLIGHTS:

Simple installation
Outdoor environment resistant housing
Multitude of connectivity options
Triggers fuel dispersion based on FMS decision
Encrypted communication to Vehicle and Nozzle Units
In-field firmware upgradeable

TYPICAL APPLICATION AREAS:

f Fueling stations for:

- Construction vehicles
- Trucks
- Bus coaches
- Any other commercial fleet vehicles

Relays information read by Vehicle or Nozzle RFID Units to Fuel Management

Triggers fuel dispersion based on FMS decision rules
Multiple interface connection options available

The HID Global identiFUEL™ Wireless Controller (IWC) is a device that receives data from identiFUEL™ Vehicle or Nozzle Units and forwards this information to a central Fuel Management System (FMS).

The FMS software decides if and how much fuel to be dispensed based on received information and the configured business rules. The result is submitted back to the fuel pump or the Wireless Controller for execution. Using a variety of interface standards including Ethernet, RS485, RS232, Wiegand or USB, the IWC can integrate with third-party systems intended for product transfer, fueling automation or access control.

The Wireless Controller utilizes an encrypted communication channel to the identiFUEL™ Vehicle and Nozzle Units and covers a distance of up to 328 ft (100 m). Firmware upgrades are easily, possible post installation, to keep the controller up to date. Two separate relays allow triggering external devices. The identiFUEL™ Wireless Controller may either be embedded into other system components at the fueling site or be mounted externally by utilizing the optional waterproof housing.

SPECIFICATIONS

Wireless Controller Housing

IWC 900 IWE 901

Base Model Number IWC900-0-1-GB-XX IWE901-0-0-GB-XX

ELECTRONIC

Operating Frequency to
Vehicle Unit and Nozzle

Reader

433.92 MHz N/A

Network Connector RJ-45 10/100 Mbps N/A

USB Connector USB 2.0 mini-b N/A

Serial Connector RS-485 / RS-232 N/A

Magnetic Stripe Connector Wiegand N/A

Power Supply Voltage 10 V DC to 30 V DC, polarity sensitive N/A
Power Supply Current 300 mA N/A

PHYSICAL

Dimensions 5.7 × 6.69 × 2.48 in

(145 × 170 × 63 mm)

7.67 × 7.48 × 3.34 in

(195 × 190 × 82 mm)

Mounting Method Screw Screw

Housing Material N/A ABS Plastic

Housing Color N/A Grey

Weight 6.2 oz (177 g) 16.4 oz (466 g) housing only

CHEMICAL AND MECHANICAL RESISTANCE

Water N/A IP67, 68° F (20° C), 1 m × 1 h

Humidity 0 to 95% relative humidity at +104° F (+40° C)

non-condensing

0 to 95% relative humidity at +104° F (+40° C)

non-condensing

THERMAL

Storage -40° to +176° F (-40° to +80° C) -40° to +176° F (-40° to +80° C)

Operating -13° to +140° F (-25° to +60° C) -13° to +140° F (-25° to +60° C)

OTHER

Standards

IEC61000-4-2:1995 + A1:1998 + A2:2000,

IEC61000-4-3:2006, EN301489-1 V1.8.1:2008,

EN301489-3 V1.4.1:2002, EN55022:2006 Class B,

ETSI EN 300 200-1 V2.3.1:2010/02,

EN60950-1:2006 + A12:2011

N/A

Options External LF reader for ID badge identification N/A

Quantity Per Box 1 pc. 1 pc.

Warranty 1 year 1 year

