



Australian Government
Department of Industry,
Innovation and Science

National Measurement Institute

36 Bradfield Road, West Lindfield NSW 2070

Supplementary Certificate of Approval NMI S736

Issued by the Chief Metrologist under Regulation 60
of the
National Measurement Regulations 1999

This is to certify that an approval for use for trade has been granted in respect of the instruments herein described.

Petro Industrial Model iPETRO FMS PRO Control System for Fuel Dispensers for Motor Vehicles

submitted by PETRO Industrial Pty Ltd
 2/106 Potassium Street
 Narangba QLD 4504

NOTE: This Certificate relates to the suitability of the pattern of the instrument for use for trade only in respect of its metrological characteristics. This Certificate does not constitute or imply any guarantee of compliance by the manufacturer or any other person with any requirements regarding safety.

This approval has been granted with reference to document NMI R 117 Measuring Systems for Liquids Other than Water, dated June 2011.

This approval becomes subject to review on 1/12/21, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variant 1 approved – certificate issued	24/11/16
1	Variant 2 approved – certificate issued	28/08/18

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI S736' and only by persons authorised by the submitter.

It is the submitter's responsibility to ensure that all instruments marked with this approval number are constructed as described in the documentation lodged with the National Measurement Institute (NMI) and with the relevant Certificate of Approval and Technical Schedule. Failure to comply with this Condition may attract penalties under Section 19B of the National Measurement Act and may result in cancellation or withdrawal of the approval, in accordance with document NMI P 106.

Auxiliary devices used with this instrument shall comply with the requirements of General Supplementary Certificate No S1/0B.

Signed by a person authorised by the Chief Metrologist to exercise their powers under Regulation 60 of the *National Measurement Regulations 1999*.



Darryl Hines
Manager
Pattern Approval, Policy and
Licensing Section

TECHNICAL SCHEDULE No S736

1. Description of Pattern **approved on 24/11/16**

A Petro Industrial model iPETRO FMS PRO control system (Figure 1) to provide unattended self-service facility for compatible (#) NMI-approved fuel dispensers for motor vehicles for registered account customers only.

(#) 'Compatible' is defined to mean that no additions/changes to hardware/software are required for satisfactory operation of the complete system.

1.1 Field of Operation

- The Petro Industrial model iPETRO FMS PRO authorisation terminal may provide unattended self-service facility for registered account customers only.
- The Petro Industrial model iPETRO FMS PRO terminal is approved for outdoor use between -40°C and 55°C.
- The system can provide unattended self-service arrangement for approved Compac model MR40P fuel dispensers (as described in the documentation of approval NMI 5/6A/91B) or other compatible (#) NMI-approved fuel dispensers.
- The nominal supply voltage is 240 V AC.

1.2 System Description

The Petro Industrial model iPETRO FMS PRO terminal (Figure 2) is a standalone card-operated terminal that allows unattended self-service operation of fuel dispensers.

Measurement is authorised prior to delivering fuel via a magnetic-stripe card, key reader (proximity type of various OEM) and/or by keyboard entry.

The iPETRO FMS PRO terminal records measurement transactions and transfers the data to the iPETRO Cloud website using an internet connection (Figure 1).

The iPETRO FMS PRO terminal is housed in a weatherproof housing for outdoor use, and includes a magnetic-stripe card or key reader, a keypad, and a liquid-crystal display (LCD), in a single unit.

An iPETRO SapCom Interface is connected to the terminal to provide the communication interface to the fuel dispensers the (Figure 3).

The iPETRO FMS PRO terminal operates software modules with the following version numbers:

Software Module	Version Number
Application Loader	AppLoader-A:2.4.3-B:xxx-xxxxxxx
Fuel Application	SAP.xxxxxx-A:1.01-B:xxx-xxxxxxx-N:x.xx
SCCard	SCCard-A:4.6.3-B:xxx-xxxxxxx

1.3 Checking Facilities

(i) Power Supply

The battery backup system monitors the condition of the power supply, and if a power failure is detected, all transactions in progress are stopped and the system shuts down. No new transactions can be authorised. Measurement data is stored on a non-volatile memory.

1.4 Verification Provision

The Petro Industrial model iPETRO FMS PRO terminal has provision for a verification mark.

1.5 Sealing Provision

The Petro Industrial model iPETRO FMS PRO control system does not require sealing.

1.6 Descriptive Markings

The terminal is marked with the following data, together in one location:

Manufacturer's name or mark	Petro Industrial
Manufacturer's designation (model number)
Year of manufacture
Serial number or other unique identifier
Pattern approval mark	NMI S736
Environmental class	-40°C and 55°C

2. Description of Variant 1

approved on 24/11/16

The iPETRO FMS LITE terminal which is similar to the pattern with measurement transactions transferred to the iPETRO cloud website using an encrypted USB memory stick (Figure 4).

3. Description of Variant 2

approved on 28/08/18

The iPETRO BANK terminal (Figure 5) which is similar to the pattern but incorporates a Payment Express POS Terminal to provide payment facility. This variant allows authorisation of fuel by customers without a pre-existing arrangement with the supplier.

In addition to the terminal the iPETRO BANK includes a receipt printer and a MEANWELL model DRC-100B or equivalent (*) uninterruptible power supply. A sample receipt is shown in Figure 6.

(*) 'Equivalent' is defined to mean other proprietary equipment of the same or better specifications requiring no changes to software for satisfactory operation of the complete system.

The iPETRO Bank terminal operates the same software as the pattern with the Terminal program PWPXXXB.exe with the B in the file name indicating the Bank Terminal software.

3.1 Checking Facilities

(i) Power Supply

If an error or power failure is detected the system will terminate any deliveries in progress and provide a receipt. The ability to authorise a further transactions will be prevented until the detected error condition is resolved.

(ii) Receipt Printer

The system monitors the condition of the receipt printer and provides a visual warning of an error. If the receipt printer is unavailable or out of paper the iPETRO BANK terminal will indicate that a receipt will not be available before a user agrees to authorise a fuel dispenser and continue with a fuel delivery.

TEST PROCEDURE

Instruments shall be tested in conjunction with any tests specified in the approval documentation for the instruments (fuel dispensers) to which the pattern is connected, as appropriate, and in accordance with any relevant tests specified in the National Instrument Test Procedures.

The maximum permissible errors are specified in Schedule 1 of the *National Trade Measurement Regulations 2009*.

The maximum permissible errors applicable are those applicable to the fuel dispenser to which the instrument approved herein is fitted.

Note: Testing should be carried out on initial installation. Thereafter, it need not be done at every verification/certification of the fuel dispensers but may be done periodically at the discretion of the verifying authority. Operation with an authorised test card can only be done in the presence of a representative of the submitter.

The Petro Industrial Model iPETRO FMS terminal shall be tested as follows:

1. Check the iPETRO FMS software version number.

The Software Module version numbers are shown at the front display during the power on initialisation sequence.

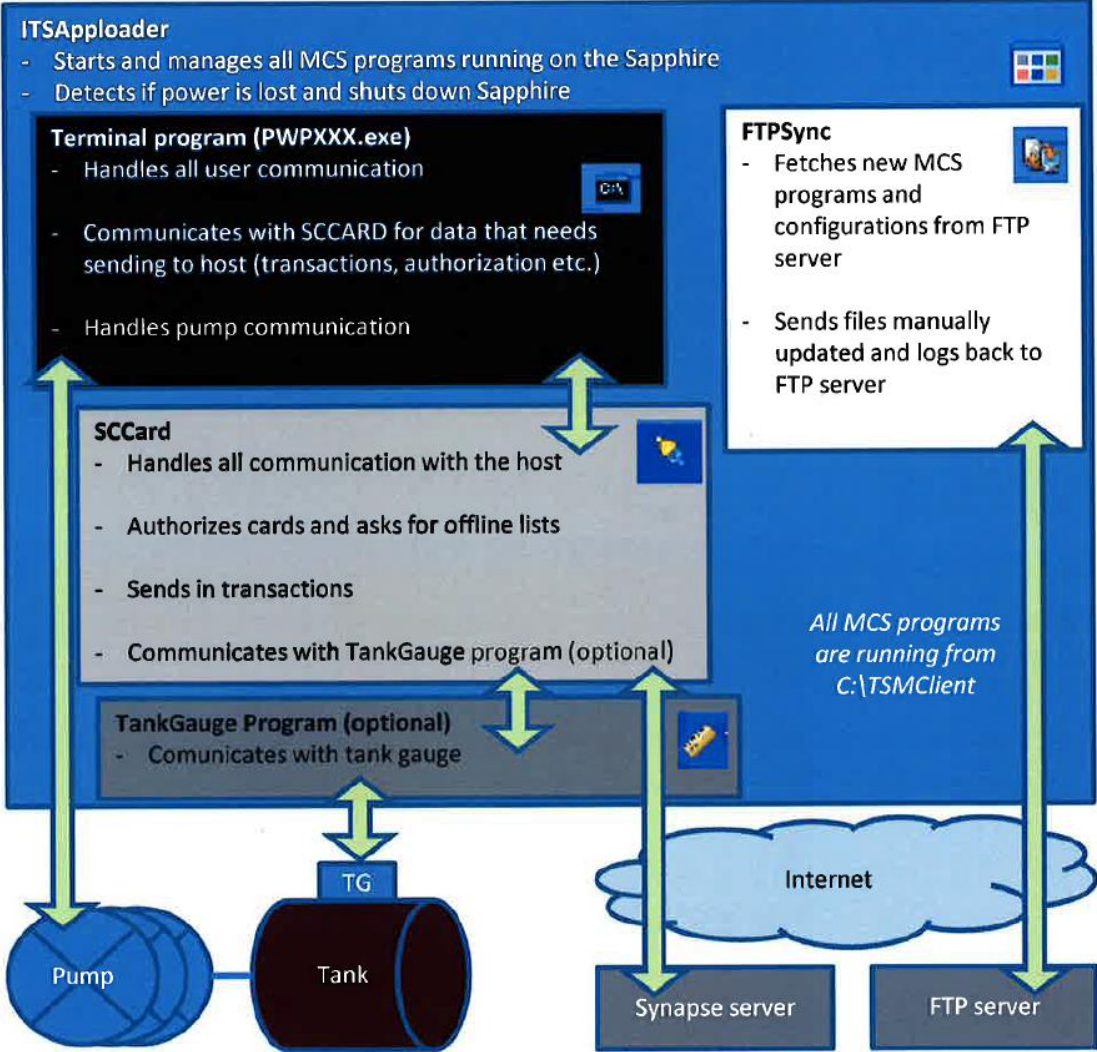
It shows the version numbers one by one, 3 seconds per program. If at any stage during this sequence the 'V' button is pressed, the version will be shown for an extended time period, giving time to read the information carefully. Each Software Module will then be shown for 1 minute. Progress in procedure can be done by pressing a key. For each key press, the next Software Module is shown.

2. Check that the unit price change for the grade of fuel is implemented to the allocated fuel dispensers when they are available for authorisation.
3. Authorise a delivery and check that the delivery details on the fuel dispenser agree with the value indicated by the iPETRO FMS terminal.
4. Authorise a delivery and check that the corresponding number allocated to the fuel dispenser and the delivery details on the fuel dispenser, agree with the values recorded in the iPETRO cloud website against the delivery including time/date, Vehicle ID, Litres, \$ and price per litre. Access to iPETRO cloud website requires a valid login, in order to check the delivery details and extract reports. Last delivered volume is also visible on the display of the iPETRO FMS terminal, for verification.

The Petro Industrial Model iPETRO Bank terminal (**Variant 2**) shall be tested as follows:

5. Check that the system identifies, displays and prints the correct data for the corresponding number allocated to the fuel dispenser.
6. Authorise a delivery and check that the delivery details on the fuel dispenser agree with the receipt obtained.
7. Remove paper from the receipt printer to check that when the receipt printer is unavailable, a warning is provided before authorisation of a fuel dispenser can occur.

FIGURE S736 – 1



Petro Industrial Model iPETRO FMS PRO Control System – Typical System Overview (Pattern)

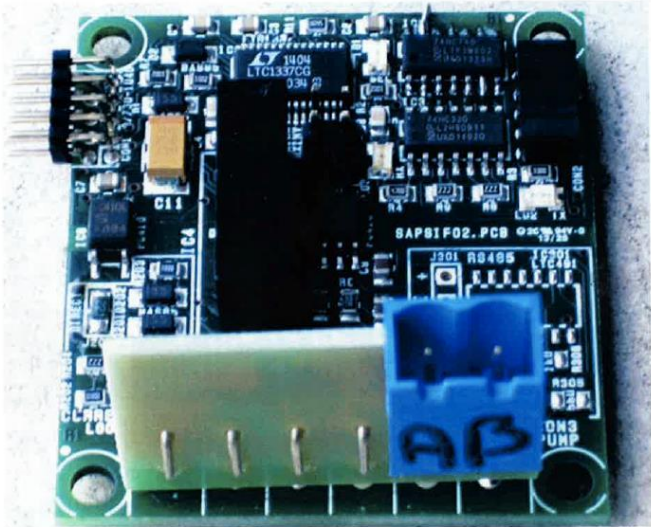
FIGURE S736 – 2



Petro Industrial Model iPETRO FMS PRO Terminal
(Pattern)

FIGURE S736 – 3

Connecting Compac pump to Sapphire using SapCom interface:



Connect pump using pin A (+) and pin B (-)
Please note that other pump interfaces are also available on request for among others Gilbarco, Wayne and Tatsuno protocol pumps.

Petro Industrial Model iPETRO FMS PRO SapCom Interface
(Pattern)

FIGURE S736 – 4



Petro Industrial Model iPETRO FMS LITE Control System
(Variant 1)

FIGURE S736 – 5



Petro Industrial Model iPETRO Bank Control System
(Variant 2)

FIGURE S736 – 5



A Typical Receipt (Variant 2)

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