



Australian Government
**National Measurement
Institute**

Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

NMI 5/6A/213

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.

PEC Model Fleetpec D11S Fuel Dispenser for Motor Vehicles

submitted by Gallagher Fuel Systems Ltd
 2 Station Road
 Marton 4741 NEW ZEALAND

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 117-1, Measuring Systems for Liquids Other than Water, dated July 2004.

This approval becomes subject to review on **1/11/16**, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variants 1 to 3 approved – interim certificate issued	26/10/06
1	Pattern & variants 1 to 3 approved – certificate issued	23/03/07
2	Variants 4 to 6 approved – certificate issued	12/07/07
3	Pattern amended – notification of change issued	22/10/10
4	Pattern amended – notification of change issued	15/09/11
5	Pattern & variants 1 to 6 reviewed & updated – certificate issued	10/05/12

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with approval number 'NMI 5/6A/213' 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 Certificates No S1/0/A or No S1/0B.

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

A handwritten signature in black ink, consisting of a series of loops and a long horizontal stroke at the bottom.

TECHNICAL SCHEDULE No 5/6A/213

1. Description of Pattern approved on 26/10/06

A PEC model Fleetpec D11S fuel dispenser for motor vehicles (Figures 1 and 2, & Table 1) approved to dispense distillate or various grades of petrol, for pre-designated fleet vehicles over a flow rate range of 5 to 50 L/min. May also be known as Gallagher' instruments of the same model.

1.1 Field of Operation

The field of operation of the measuring system is determined by the following characteristics:

- | | | |
|--|-----------------|------|
| • Minimum measured quantity, V_{min} | 2 L | |
| • Maximum flow rate, Q_{max} | 50 L/min | |
| • Minimum flow rate, Q_{min} | 5 L/min | |
| • Maximum pressure of the liquid, P_{max} | 300 kPa | |
| • Minimum pressure of the liquid, P_{min} | 100 kPa | (#1) |
| • Range of liquids viscosity (at 20°C) | 0.5 to 20 mPa.s | (#2) |
| • Maximum temperature of the liquid, T_{max} | 40°C | |
| • Minimum temperature of the liquid, T_{min} | 5°C | |
| • Ambient temperature range | -10°C to 55°C | |
| • Accuracy class | 0.5 | |
- (#1) Minimum pressure required for effective operation of the gas elimination device.
- (#2) The flowmeter is adjusted for use with one product viscosity.

1.2 Description of the Metering System

A single grade of fuel is supplied through a Goodyear model Steelflex 19 mm hose to a 19 mm ZVA nozzle (*). The measuring system incorporates the following components:

- (i) The supply line for each grade of fuel is connected to a Tatsuno model PGS-0257 or model FP 1001 pump/strainer/gas separator.
A gas/air test valve is provided for checking the operation of the gas elimination device.
- (*) the submittor should be consulted regarding the acceptability of alternatives.
- (ii) The measuring transducer is a Tatsuno model MP-02515 4-piston positive displacement meter (Figure 2). The meter is fitted with a PEC model #07434 or model 2A90930 pulse generator that communicates the volume of fluid measured to the indicator.
- (iii) Control to the flow of each nozzle is achieved with an Asco 1" single stage solenoid valve.

1.3 Indicator/Calculator

A PEC model MHP indicator/calculator (Figure 2) comprises a computing unit and a display unit. A single display is provided for volume and the electromechanical totaliser. The indicators display the following maximum values:

Volume 000.00 L to 999.99 L in 0.01 L increments
Totaliser to 9999999 L

The software version number for the calculator/indicator is 4.60A, which can only be viewed at power on (start up).

1.4 Checking Facilities

Removing the nozzle from its normal hang-up position initiates a segment check of the price, volume and unit price displays.

- Delivery is stopped if excessive amounts of air/vapour are detected.
- In the event of a power failure, the displayed value for a delivery is retained.
- Delivery is halted and an error code displayed if an error in pulse output is detected.

1.3 Verification Provision

Provision is made for the application of a verification mark.

1.4 Sealing Provision

The meters (Figure 3) and the gas separator test valve have provision for sealing.

1.7 Markings

Instruments are marked with the following data, together in one location on a data plate:

Pattern approval sign	5/6A/213	
Manufacturer's identification mark or trade mark	.....
Manufacturer's designation (model number)	.....
Serial number	.....
Year of manufacture	.....
Maximum flow rate (Q_{max})	..... L/min	
Minimum flow rate (Q_{min})	..... L/min	
Minimum measured quantity (V_{min})	..... L	(#1)
Maximum operating pressure (P_{max})	..... kPa	
Minimum operating pressure (P_{min})	..... kPa	
Nature of liquids to be measured	.....	(#2)
Maximum temperature of the liquid, T_{max}	40°C	
Minimum temperature of the liquid, T_{min}	5°C	
Environmental class	class C	

(#1) In addition, the minimum measured quantity (v_{min}) shall be clearly visible on any indicating device visible to the user during measurement, in the form 'Minimum delivery 2 L'.

(#2) e.g. distillate or D.

2. Description of Variant 1 **approved on 26/10/06**

Certain other models and configurations of the Fleetpec series of fuel dispensers identified using Table 1, including dispensers with two meters/hoses/nozzles.

3. Description of Variant 2 **approved on 26/10/06**

With a standard pump as described for the pattern, but with 25 mm piping, a Goodyear 25 mm model Flexsteel hose (or any other compatible hose), and a ZVA 25 mm nozzle (*). The fuel dispenser then has the following field of operation:

- Maximum flow rate (Q_{max}) 90 L/min
- Minimum flow rate (Q_{min}) 9 L/min
- Minimum measured quantity (V_{min}) 5 L

(*) the submittor should be consulted regarding the acceptability of alternatives.

4. Description of Variant 3 **approved on 26/10/06**

With one or more compatible submersible turbine pumps (STPs) incorporating a leak detection system. The STP replaces the equivalent components (i.e. motor, pump/strainer/gas separator, and associated pipework) in certain fuel dispensers covered by this approval (refer to Table 1). Figure 4 shows a typical fuel dispenser with a submersible turbine pump system.

More than one fuel dispenser may be connected to the same submersible turbine pump.

Dispensers may operate with the standard maximum flow rate, Q_{max} of 50 L/min, or with the high maximum flow rate, Q_{max} of 90 L/min.

TABLE 1

Meaning of model designations for the Fleetpec series of fuel dispensers:

First digit	Series, namely D = Fleetpec
Second digit	Number of hoses, 1 or 2
Third digit	Hydraulic system type 0 = submersible turbine pump (STP) system 1 = single integral pump 2 = two integral pumps
Fourth digit	Maximum flow rate S ('standard') = 50 L/min H ('high') = 90 L/min

5. Description of Variant 4 **approved on 12/07/07**

With an alternative calculator/indicator with increased display capabilities as detailed below.

- Volume 0000.00 L to approximately 9990.00 L (*) in 0.01 L increments.

(*) Always less than 9999.99 L.

6. Description of Variant 5 **approved on 12/07/07**

The pattern and variants for use to dispense various grades of petrol which may include up to 10% ethanol ('E10').

7. Description of Variant 6 **approved on 12/07/07**

The pattern and variants constructed for use to dispense various grades of pure biodiesel and biodiesel/distillate blends (to Australian government standard).

TEST PROCEDURE No 5/6A/213

Instruments shall be tested in accordance with any relevant tests specified in the National Instrument Test Procedures.

Tests should be conducted in conjunction with any tests specified in the approval documentation for any components used, including indicator/controller and submersible turbine pump (STP) hydraulic systems.

Maximum Permissible Errors

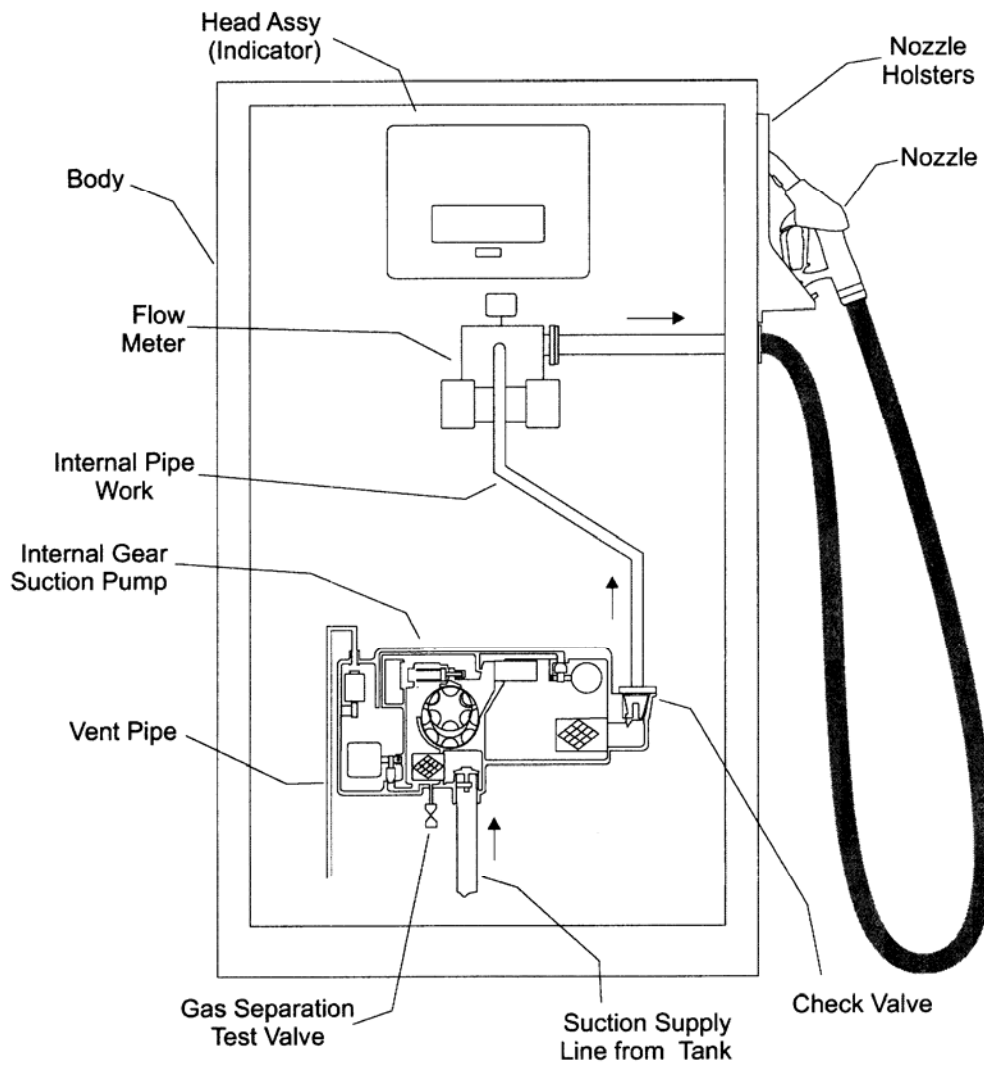
The maximum permissible errors are specified in Schedule 1 of the *National Trade Measurement Regulations 2009*.

FIGURE 5/6A/213 – 1



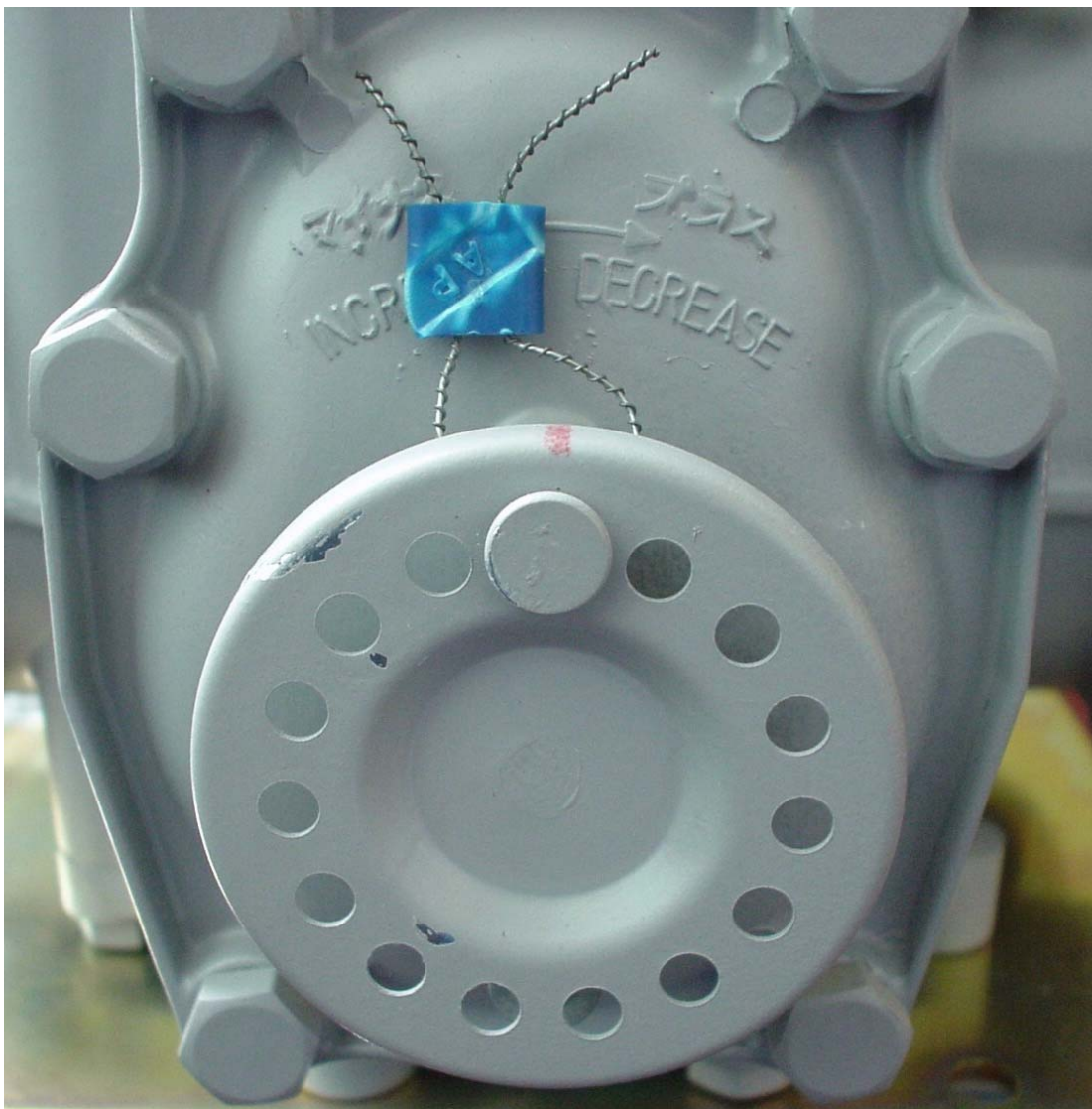
PEC Model Fleetpec D11S Fuel Dispenser for Motor Vehicles

FIGURE 5/6A/213 – 2



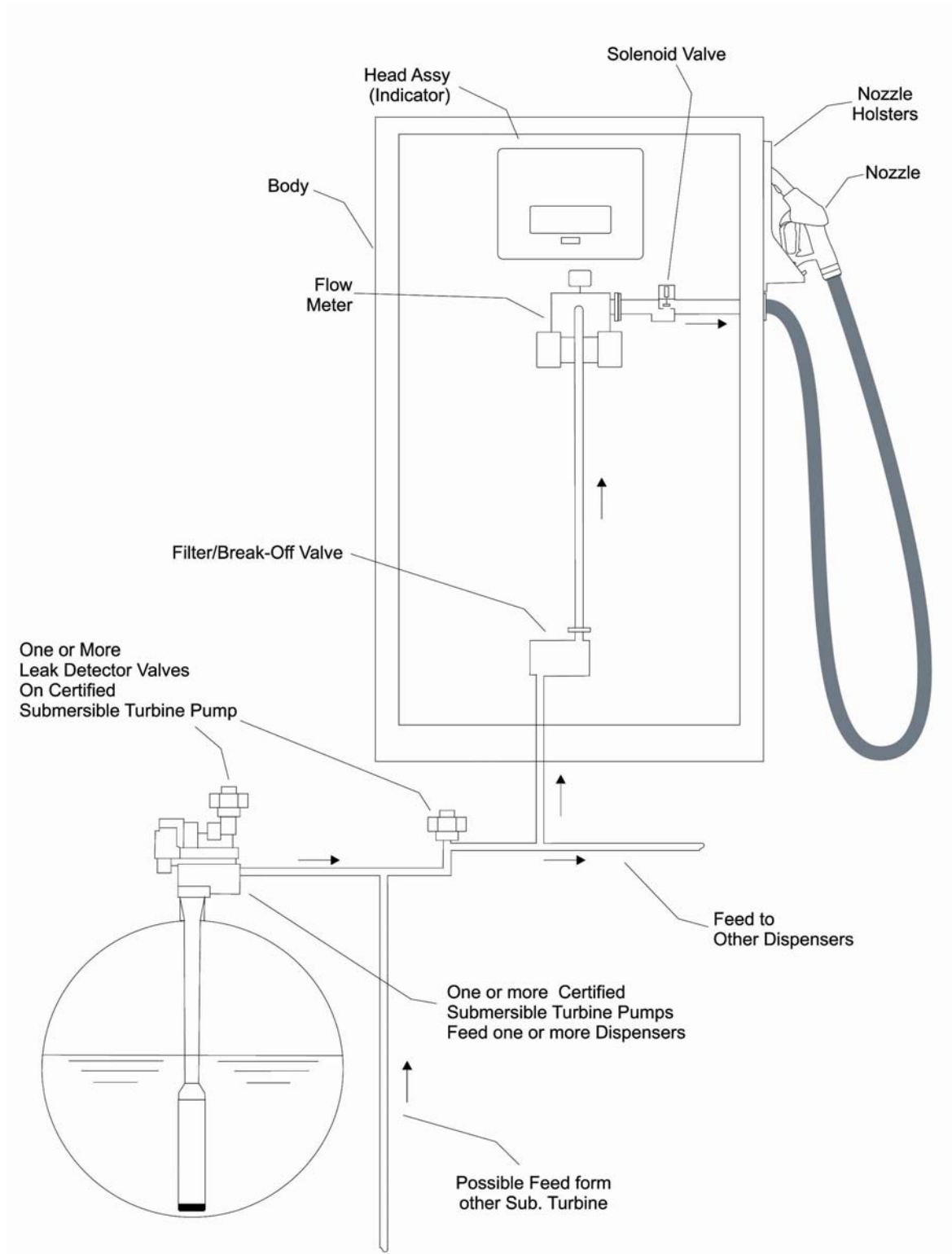
PEC Model Fleetpec D11S Fuel Dispenser for Motor Vehicles

FIGURE 5/6A/213 – 3



Typical Sealing Method the Meters

FIGURE 5/6A/213 – 4



Typical Submersible Turbine Pump System