

Australian Government

National Measurement Institute Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

NMI 5/6A/214

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.

Gilbarco Model T334EG Fleetline Mk4 Fuel Dispenser for Motor Vehicles

submitted by	Gilbarco Australia Limited 20 Highgate Street		
-			
	AUBŬRŇ	NSW	2144

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 **1/03/17**, and then every 5 years thereafter.

Rev	Reason/Details	Date
0	Pattern & variants 1 to 5 approved – certificate issued	20/03/07
1	Variant 6 approved – interim certificate issued	10/04/08
2	Variant 6 – certificate issued	16/06/08
3	Pattern amended – notification of change issued	3/09/08
4	Pattern & variants 1 to 5 reviewed & updated – certificate issued	26/10//11

DOCUMENT HISTORY

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with approval number 'NMI 5/6A/214' and only by persons authorised by the submittor.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI 5/6A/214' in addition to the approval number of the instrument, and only by persons authorised by the submittor.

It is the submittor'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*.

TECHNICAL SCHEDULE No 5/6A/214

1. Description of Pattern

approved on 20/03/07

A Gilbarco model T334EG Fleetline Mk4 single fuel dispenser for motor vehicles is approved to dispense various grades of fuels (*), in attendant-operated mode, or in attended self-service mode using any compatible (#) approved control console. The meter is adjusted to be correct for the liquid for which it is to be verified.

- (*) including up to 10% ethanol (E10) and various grades of pure biodiesel and biodiesel/distillate blends (to Australian government standard).
- (#) 'Compatible' is defined to mean that no additions/changes to hardware/software are required for satisfactory operation of the complete system including all checking facilities.

1.1 Field of Operation

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

•	Minimum measured quantity, Vmin	2 L	
•	Maximum flow rate, Qmax	50 L/min	
•	Minimum flow rate, Q _{min}	5 L/min	
•	Maximum pressure of the liquid, Pmax	350 kPa	
•	Minimum pressure of the liquid, <i>P</i> _{min}	140 kPa	(#1)
•	Range of liquids viscosity	0.5 to 20 mPa.s (at 20°C)	(#2)
•	Maximum temperature of the liquid, Tmax	50°C	
•	Minimum temperature of the liquid, T_{min}	-10°C	
•	Ambient temperature range	-25 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. Fuels include kerosene, distillate and various grades of petrol (which may include up to 10% ethanol). The pattern and variants constructed for use to dispense various grades of pure biodiesel and biodiesel/distillate blends (to Australian government standard).

1.2 Description of the Metering System

The instrument (Figure 1) incorporates the following components:

- (i) A Gilbarco model GPU-90 pumping unit (Figure 2) as described in the documentation of approval NMI S455.
- (ii) A measurement transducer comprising a Gilbarco model T262 (PA024) four piston positive displacement meter (Figure 3a) fitted with a Transponder Technologies model T5 TTSTM pulse generator (Figure 3b); the pulse generator is also described in documentation of approval NMI S447.
- (iii) A hose/nozzle, mounted on the side of the dispenser housing. The nozzle used is a 16 mm ZVA Evaflex, or Elaflex model 'Slimline 2' ZVA nozzle, or any other compatible (##) approved nozzle.
- (##) Note that the submittor should be consulted regarding the acceptability of any alternative nozzles.

(iv) A Transponder Technologies model T5-FLR calculator/indicator which has a single display for indicating volume only (Figure 4a); the indicator is also described in documentation of approval NSC S414.

The instrument is approved with version 01214 software, which can be viewed using the push-button marked SW1

1.2 Checking Facilities

An automatic segment test is performed at the start of each delivery.

The calculator monitors the presence and correct transmission of signal from the measurement transducer, and in the event of detecting a fault the instrument indicates an error code and has provision for controlling electrically-operated valves to stop the delivery.

1.4 Sealing Provision

The gas separator test valve has provision for sealing. The meter is sealed as shown in Figure 4b.

1.5 Verification Provision

Provision is made for the application of a verification mark.

1.6 Descriptive Markings and Notices

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

Pattern approval sign	5/6A/214	
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 (Qmin)	L/min	
Minimum measured quantity (Vmin)	L	(#1)
Maximum operating pressure (<i>P</i> max)	kPa	
Minimum operating pressure (<i>P</i> _{min})	kPa	
Nature of liquids to be measured		(#2)
Maximum temperature of the liquid, T_{max}		(#3)
Minimum temperature of the liquid, <i>T_{min}</i>		(#3)
Environmental class	class C	. ,

- (#1) In addition, the minimum measured quantity (*Vmin*) shall be clearly visible on any indicating device visible to the user during measurement, in the form 'Minimum delivery 2 L' or '... 2/5 L'.
- (#2) e.g. distillate or D.
- (#3) Required if liquid temperature range differs from -10°C to 50°C.

Page 5 of 13

2. Description of Variant 1

Certain other models and configurations of the T334E Fleetline Mk4 series of fuel dispensers identified using Table 1 below.

TABLE 1

Meaning of model designations for the Fleetline Mk4 series of fuel dispensers:

First five digits	Series, namely T334E = Fleetline Mk4
Sixth digit	A = High flow rate (90 L/min), no flex mast C = Normal flow rate (50 L/min), no flex mast E = High flow rate (90 L/min), flex mast G = Normal flow rate (50 L/min), flex mast
Seventh digit	Hydraulic system type 'Blank' = integral pump D = submersible turbine pump (STP) system

3. Description of Variant 2

With a standard pump as described for the pattern, but with 25 mm piping, a 25 mm hose, and a ZVA Elaflex 25 mm nozzle (##). The fuel dispenser then has the following field of operation:

•	For use with distillate	
•	Maximum flow rate (Q _{max})	90 L/min
•	Minimum flow rate (Q _{min})	9 L/min
•	Minimum measured quantity (V_{min})	5 L

(##) Note that the submittor should be consulted regarding the acceptability of any alternative nozzles.

4. Description of Variant 3

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 5 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 dispensers for use with distillate may be used with the high maximum flow rate, Q_{max} of 90 L/min.

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5. Description of Variant 4

approved on 26/10/11

For use with a Gilbarco model T20150 four-piston flowmeter (Figure 6) which is similar to the meter of the pattern accept the outlet is at the bottom of the meter.

6. Description of Variant 5

approved on 26/10/11

With a Fitsafe model FS-14ILA3\4BSPT in-line cartridge filter installed downstream of the meter and outside the fuel dispenser housing (Figure 7).

The filter may be installed on any model dispenser of this approval and used with any liquid hydrocarbon for which the dispenser is approved.

The filter unit is sealed to prevent any drainage of the product between the inlet of the filter and the nozzle of the fuel dispenser.

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

When the filter is changed the system is required to be primed with liquid up to the nozzle, and then the filter is to be sealed.

If a filter is installed after the fuel dispenser has been verified, then the dispenser <u>must</u> be tested and certified again after the filter has been installed. Similarly if the filter is removed then the dispenser must again be tested and certified.

A destructible adhesive label should be applied after verification.

TEST PROCEDURE No 5/6A/214

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*.



Gilbarco Model T334EG Fleetline Mk4 Fuel Dispenser for Motor Vehicles



Gilbarco Model GPU-90 Pumping Unit



(a) A Gilbarco Model T262 (PA024) Meter



(b) A Transponder Technologies Model T5 TTSTM Pulse Generator



Power Supply and Driv

(a) Transponder Technologies Model T5-FLR Calculator/Indicator



(b) Showing Meter Sealing



Typical Dispenser With an STP System



A Gilbarco Model T20150 Flowmeter



Typical Fitsafe Filter Installation

~ End of Document ~