

(UK/0126/0073)



MI-005

United Kingdom of Great Britain and Northern Ireland

Certificate of EC type-examination of a measuring instrument

Number: UK/0126/0073 Revision 2

issued by the Secretary of State for Business, Innovation & Skills
Notified Body Number 0126

In accordance with the requirements of the Measuring Instruments (Liquid Fuel and Lubricants) Regulations 2006 (SI 2006/1266) and the Measuring Instruments (Non-Prescribed Instruments) Regulations 2006 which implement, in the United Kingdom, Council Directive 2004/22/EC, this certificate of EC type-examination has been issued to:

**Gilbarco Inc.
7300 W.Friendly Ave.
Greensboro
NC 27420
USA**

In respect of: Liquids other than water dispenser designated HORIZON

Accuracy class: 0.5

This revision replaces previous versions of the certificate.

Signatory: G Stones
for Chief Executive
National Weights & Measures Laboratory
(part of the National Measurement Office)
Department for Business, Innovation & Skills
Stanton Avenue
Teddington
Middlesex, TW11 0JZ
United Kingdom

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Reference No: T1117/0043

Descriptive Annex

1 INTRODUCTION

The Horizon family is a range of liquids other than water dispensers for use in attended or unattended mode. The housing comprises a hydraulics enclosure with an electronics enclosure above it. Hose connections are made at an overhead canopy. An example arrangement is shown in Figure 1.

The dispensers described in this certificate are suitable for use with fuels including petroleum, ethanol blends, diesel, heating oil, biodiesel and biodiesel blends.

The fuel dispensers can be combined with one or more suitably certified Gilbarco LPG or urea dispensers and share the same calculator, and optionally share the same chassis.

2 CHARACTERISTICS

Accuracy Class	0.5
Mechanical Environment Class	M2
Electromagnetic Environment Class	E1
V_{\min}	= 2 or 5 litres if $Q_{\max} \leq 60$ lpm = 2, 5 or 10 litres if $Q_{\max} > 60$ lpm Often determined by national re-verification practices.

2.1 The ambient temperature range for a dispenser is limited to a range in which the characteristics of all individual components within the dispenser are valid. Similarly, the liquid temperature range for a dispenser is limited to a range in which the characteristics of all individual components are valid.

2.2 The overall characteristic of a measuring instrument (delivery circuit) is limited to a range in which the characteristics of all the individual components within the measuring instrument are valid.

2.3 Operation at -40 °C is only valid if a heater is fitted to the electronics enclosure.

2.4 Where two meters are used in parallel, $Q_{\max} = 2 \times Q_{\max}$ for an individual meter.

2.5 Q_{\min} to Q_{\max} for a measuring instrument, as marked on the dispenser nameplate, can be selected by Gilbarco providing that $Q_{\max} / Q_{\min} \geq 10$, and that there is no conflict with the characteristics of any component associated with that instrument.

2.6 On models where two or more flowrates may be selected, Q_{\max} relates to the highest flow rate, and $Q_{\min} \leq 10\%$ of the lowest flowrate.

3 CONSTRUCTION

3.1 Prime Components and Characteristics

3.1.1 The dispenser is constructed from any combination of the following prime components providing there are no conflicting characteristics within the relevant evaluation certificates.

Table 1 Prime Component Summary

Manufacturer	Type	Evaluation Certificate	Comments
Meters			
Gilbarco	V meter	GB-1343	
Gilbarco	C global & C+ global meters	GB-1360	
Gilbarco	Ecometer	TC7143	Issued by NMI
Endress+Hauser Flowtec AG	LPGmass	TC7286	Issued by NMI Coriolis also suitable for petroleum, diesel etc
Gas Separators			
Gilbarco	GPU90g	GB-1347	
Gilbarco	GPU140g	GB-1349	
Electronic Calculator			
Gilbarco	E101g	GB-1357	
Submerge Pumps			
Red Jacket		Not required	Gas separator not required
FE-Petro		Not required	Gas separator not required
Self-service devices			
Gilbarco	Passport Europe PBox	TC7581	Issued by NMI
Torex	Lucas9730Site Controller and Lucas EPOS	GB-1327	Parts Certificate
Tokheim	Fuel-POS	TC7346	Issued by NMI

Table 2 Prime Component Characteristics

	Ambient temp	Liquid temp	Viscosity range	Qmin	Qmax	Pmax
V meter	-10°C to +55°C	-10°C to +40°C	0.4mPa.s to 17mPa.s	1.6lpm	80lpm	3.5bar
C global meter	-10°C to +55°C	-10°C to +40°C	0.4mPa.s to 17mPa.s	4lpm	80lpm	3.5bar
C+ global meter	-10°C to +55°C	-10°C to +40°C	0.4mPa.s to 17mPa.s	1.6lpm	80lpm	3.5bar
C+ global meter low temp version	-40°C to +55°C	-40°C to +40°C	0.4mPa.s to 17mPa.s	1.6lpm	80lpm	3.5bar
Ecometer	-25°C to +55°C	-10°C to +50°C	0.4mPa.s to 17mPa.s	4lpm	80lpm	3.5bar
E+H Coriolis LPGmass	-40°C to +55°C	-40°C to +55°C	-	2.4kg/min	130kg/min	100bar
GPU90g	-40°C to +55°C	-40°C to +55°C	0.4mPa.s to 1.1mPa.s	-	90lpm	1.9bar
GPU90g	-40°C to +55°C	-40°C to +55°C	1.1mPa.s to 17mPa.s	-	90lpm	2.5bar
GPU140g	-40°C to +55°C	-40°C to +55°C	1.1mPa.s to 8.0mPa.s	-	140lpm	3.5bar
E101g	-25°C to +55°C	-	-	-	-	-

3.2 Other Components and Arrangements Critical to Metrology

3.2.1 When one pump and gas separator feeds two meters, which in turn feed separate hoses, a control valve is fitted in the hydraulic circuit associated with each meter.

3.2.2 Where one meter feeds more than one hose circuit (for example Master-Satellite configurations), control valves ensure that a delivery cannot be made simultaneously from more than one hose circuit.

3.2.3 Where more than one meter shares an incoming product line, either in the same dispenser, or in the case of sites with submerged pumping units meters within other dispensers, non-return valve(s) are fitted to prevent reverse flow from each meter.

3.2.4 The combination of hose type and length is selected to ensure hose dilation does not result in a displayed quantity at the start of a transaction prior to the nozzle being operated.

3.3 Optional Components and Arrangements

3.3.1 Optional Chassis Construction

3.3.1.1 The electronics enclosure facia may be constructed of steel, aluminium, or plastic, or a combination of these materials.

3.3.1.2 The dispenser housing may be used for the construction of a satellite unit containing a hose and nozzle circuit fed from the hydraulics in a remote master dispenser. This unit may optionally house a display repeating the transaction information shown on the master. The satellite is deemed to be a nozzle of the master unit. Two satellites may share a single housing.

3.3.2 Optional Features

- Addition of Gilbarco Veeder-Root vapour recovery systems, using electronics considered as part of the calculator evaluation
- Addition of electronics for payment at the dispenser
- Electronic calibration
- Temperature compensation
- Heaters for the electronics enclosure for low temperature operation
- Preset, by self service device, or by local user interface
- Master-Satellite operation
- Delivery flowrate selection either by nozzle selection or by pushbutton
- Other options listed in the component evaluation certificates

3.3.3 Component options

- Control valves may be single stage on/off, two-stage for preset transactions, or proportional providing continuously variable flowrates.
- Hoses and nozzles are as described in the technical file supporting this certificate.
- Vapour recovery systems are as described in the technical file supporting this certificate.
- Hydraulic arrangements of the prime components are as described in the technical file supporting this certificate.

3.3.4 Options not critical to metrology

3.3.4.1 The following items may be included within the hydraulic circuits:

- Shear valves for use on dispensers
- Non-return valves separate from the pump and gas separator
- Swivels and or safety breaks in the hose assembly circuit
- Sight-glasses for non-metrological purposes in the hose assembly circuit
- Mechanical totalisers

3.3.4.2 The following items may be included within the electronics housing without being included in component evaluation certificates:

- Any electronics not associated with the sales transaction and not connected to circuits of the calculator, and which will not impact the EMC characteristics of the enclosure.

4 APPROVAL CONDITIONS

The certificate is issued subject to the following conditions:

4.1 Markings

4.1.1 Markings are in accordance with the WELMEC Guide 10.5 Issue 1. An example is shown in Figure 2. Initial verification labels including the CE_M mark are added to this nameplate; but may be removed at subsequent field verifications. The height of the CE mark and the rectangle containing the supplementary metrology mark are greater than 5mm.

4.1.2 The markings and inscriptions shall fulfil the requirements of Paragraph 9 of Annex I of the Directive 2004/22/EC.

4.2 Data sheet

4.2.1 The datasheet format is in accordance with the WELMEC Guide 10.5 Issue 1. An example is shown in figure 3.

4.3 Displays and Legends

4.3.1 Displays and legends are configured to meet the requirements of the country of installation. The text associated with the volume and price is greater than 10mm high. The text associated with unit price(s) is greater than 4mm high.

4.3.2 Text is included on or near the primary display to indicate the minimum delivery for the dispenser.

4.3.3 Where a temperature compensation system is employed, text is added on or near the primary display to indicate that the volume is “at 15°C”. Alternative words may be used to deal with national or language requirements.

5 LOCATION OF SEALS

5.1 Securing is detailed in the Documentation Files for the individual components.

5.2 Components may additionally be sealed to the dispenser frame or, alternatively, may be specifically listed by serial number on a datasheet which remains with the dispenser in the calculator enclosure.

6 SUPPORTING DOCUMENTATION

6.1 Documentation file for Horizon is held on file T1117/0043.

7 ALTERNATIVES

7.1 There are as yet no alternatives.

8 ILLUSTRATIONS

Figure 1 Horizon – typical arrangement

Figure 2 Nameplate – typical arrangement of English version

Figure 3 Datasheet – typical arrangement of English version

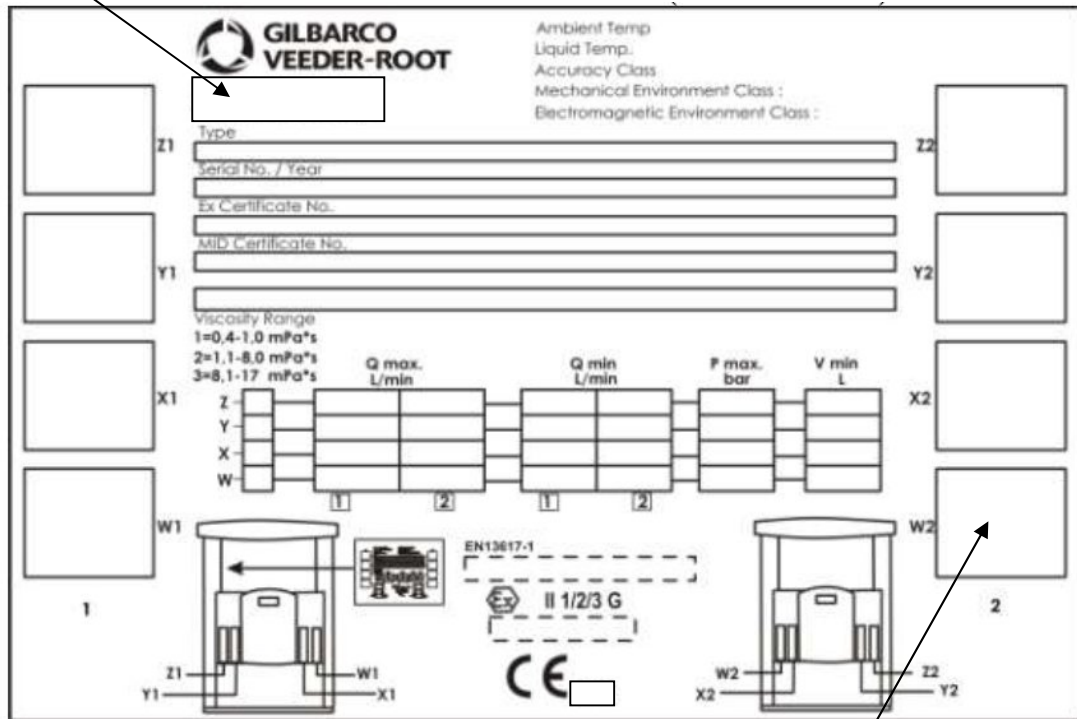
9 CERTIFICATE HISTORY

ISSUE NO.	DATE	DESCRIPTION
UK/0126/0073	05 February 2010	Type examination certificate first issued.
UK/0126/0073 Revision1	27 May 2010	Section 3.1 – Addition of C global & C+ global meters. Relevant information added to Tables 1 & 2 Figure 2 - Nameplate updated.
UK/0126/0073 Revision 2	03 September 2010	Table 1 – Addition of Tokheim Fuelpos Figure 2 – Nameplate made more generic



Figure 1 **Horizon – typical arrangement**

Manufacturing address



Typical verification mark used to put measuring instrument into use when verified in factory under Module D.

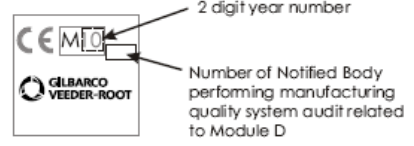


Figure 2 Nameplate – typical arrangement of English version

HORIZON data sheet



(Must be stored in the dispenser computer head)

Serial No:

MEASUREMENT TRANSDUCER										
VOLUME SENSOR										
Manufacturer										
Type										
Evaluation Report										
Serial No.										
Stamp/Sticker										
Serial No.2										
Qmax [L/min]										
Qmin [L/min]										
Pmax [bar]										
Viscosity Range										
PULSER										
Manufacturer										
Type										
Evaluation Report										
Serial No.										
Stamp/Sticker										
Serial No.2										
GAS ELIMINATION DEVICE										
Manufacturer										
Type										
Evaluation Report										
Serial No.										
Stamp/Sticker										
Qmax [L/min]										
Qmin [L/min]										
Pmin [bar]										
Pmax [bar]										
Viscosity Range										
ELECTRONIC CALCULATOR										
Manufacturer										
Type										
Evaluation Report										
Serial No.										
Stamp/Sticker										
Viscosity range: 1 =>0.4-1.0mPa*s 2=>1.1-8.0mPa*s 3=>8.1-17mPa*s @20°C										

Figure 3 Datasheet – typical arrangement of English version