



1 **EC TYPE-EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

3 Certificate Number: **Sira 05ATEX9045X** Issue: **2**

4 Equipment: **Encore 510 Fuel Dispenser**

5 Applicant: **Gilbarco Veeder-Root Gilbarco GmbH Co KG**
a division of Danaher UK
Industries Ltd

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7 This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 Sira Certification Service, notified body number 0518 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 14.2.


9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:


EN 1127-1:1997 EN 13463-1:2001 EN 13617-1:2004


10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

11 This EC type-examination certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:

 **Petrol/ethanol
dispensing with
vapour recovery**
1/2/3G
EN 13617-1:2004

 **Petrol/ethanol
dispensing without
vapour recovery**
2/3G
EN 13617-1:2004

 **LPG dispensing**

2/3G
EN 14678-1

Project Number 59M17009
C. Index 09

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Certification Manager

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SCHEDULE

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13 DESCRIPTION OF EQUIPMENT

The Encore 510 Fuel Dispenser is a high hose, 'H' frame, petrol/diesel, multi-product metering pump that can dispense up to four grades of fuel. It is manufactured from a steel frame clad with steel or GRP panels. The Dispenser comprises a hydraulic housing, forming a central base, flanked on both sides by vertical hose cassette columns, which are capped by a top canopy. Approximately halfway up the columns there is a display head housing that bridges the two.

The hydraulic housing contains up to four hydraulic circuits comprising a suitably certified motor together with a pumping unit, filter, meters, solenoid check valves, pulser assemblies, air separators and associated cabling/pipework. Connection is made via outlet couplings to eight delivery hose assemblies suitable for fuel dispensing, these pass up the cassette columns, four on each side (two per column per side) and are fitted with a hose clamp connected to a reel assembly to facilitate hose retraction.

The hoses are fitted with a suitably certified, automatic, delivery nozzle and optional nozzle break device. Each automatic, delivery nozzle locates in a nozzle boot that is manufactured from glass reinforced plastic and fitted with a magnetic nozzle sensor to detect automatic, delivery nozzle's position.

The display head housing and its cable apertures are located in a non-hazardous area with the interconnecting wiring between the display head housing and the hydraulic housing passing through the columns.

Ventilation for the hydraulic housing and columns is provided by engineered gaps around the hydraulic housing and slots or louvres in the cassette column side-panels.

The equipment is rated at 400 V, 50 Hz, ac, three phase and with a flow rate between 40 - 80 l/min.

LPG Variant

Each LPG hydraulic circuit comprises an inlet shear valve, a filter unit, a vapour separator vessel, a meter, a differential valve and interconnecting pipework. Manual and electrical valves are provided to enable isolation and flow control. Non-return valves and excess pressure valves maintain the circuit integrity. The outlet pipes pass into the existing retractor housing and are connected to suitable dispenser hoses. Each hose is fitted with a breakaway coupling and dispensing nozzle. The component parts and system configuration is shown on Gilbarco drawing No. BW703901 sheets 8, 10 and 16.

Fuel is delivered to the dispenser by a remote LPG pump. Vapour is separated from liquid in the separator vessel, the vapour being returned to the storage tank. Positive liquid/vapour pressure is maintained by the differential valve fitted at the meter outlet. Normal operating pressure is dependent on tank and temperature conditions, and is between 4 and 18 bar. The maximum system pressure is 25 bar and safety valves are set to vent such that this pressure is not exceeded.

The nozzles are located in suitable boots fitted on either or both sides of the retractor housing cassette and actuate proximity switches as they are removed or replaced. Fuel delivery is only maintained whilst a manual 'dead man's switch', fitted to the housing panel, is activated. A five second 'time-out' facility, coupled to the dead man's switch, augments the existing system electronics.

The dispenser may be attendant operated, attended self-service or unattended with remote or local operation.

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Design options:

- A Vapour Recovery variant containing suitably certified pumps, motors, associated pipework and fuel/vapour splitters.
- A Hi-Flow variant with a flow rate between 120 - 140 l/min.
- A Hi-Flow Satellite variant comprising up to two remote dispensers linked to and fed from the host dispenser via underground cables and pipework, fitted with shear valves.
- A Submerged Turbine Pump variant with the pumps and motors omitted from the hydraulic housing and a shear valve fitted to the inlet riser pipe.
- A non hose-return variant where a high hose inlet joint located adjacent to the canopy is utilised and the hose clamp and reel assemblies are omitted.
- A flame arrester is fitted when the air separator vent is mounted outside the housing.
- A Card Reader Indicator (CRIND) assembly may be fitted below the display head housing.
- A suitably certified electrical junction box may be fitted inside the hydraulic housing.
- Aluminium alloy may be used as a material of construction of the cladding and the nozzle boot.
- An alternative supply rating of 230 V, ac, 50 Hz, single phase.

Variation 1 - This variation introduced the following changes:

- Modifications to allow the dispensing of automotive LPG.
- The equipment was re-categorised as either 1/2/3 G or 2/3 G as appropriate.
- The inclusion of additional ventilation louvres on the inside of the columns.
- The fitting of a temperature compensation system.
- Alternative hydraulic and electronic systems; this variant being designated the Type 510/2.
- The recognition of the range for use with E85 Ethanol (85% ethanol, 15% petrol).

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report No.	Comment
0	16 August 2005	R51A12482A	The release of prime certificate.
1	20 September 2005	R51A12482B	Re-issued to allow report number R51A12482B to replace report number R51A12482A
2	19 February 2008	R59M17009A	This Issue covers the following changes: <ul style="list-style-type: none">• All previously issued certification was rationalised into a single certificate, Issue 2, Issue 0 - 1 referenced above is only intended to reflect the history of the previous certification and has not been issued as a document in this format.• The introduction of Variation 1, as a result of these changes, special conditions for safe use were applied and an 'X' suffix was added to the certificate number.

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Issue 2**

- 15 **SPECIAL CONDITIONS FOR SAFE USE** (denoted by X after the certificate number)
- 15.1 The LPG dispensers shall be supplied from a remote pressure source not exceeding 25 bar.
- 15.2 Installation shall be in accordance with either EN 13617-1:2004 or EN 14678-2 as applicable.
- 16 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II** (EHSRs)
- The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.
- 17 **CONDITIONS OF CERTIFICATION**
- 17.1 The use of this certificate is subject to the Regulations Applicable to Holders of Sira Certificates.
- 17.2 Holders of EC type-examination certificates are required to comply with the production control requirements defined in Article 8 of directive 94/9/EC.
- 17.3 The electrical circuit of each Encore 510 Fuel Dispenser shall be subjected to the routine electrical tests required by EN 13617-1:2004 clause 6.2.1.
- 17.4 The hydraulic circuit of each Encore 510 Fuel Dispenser shall be subjected to the routine hydraulic tests required by EN 13617-1:2004 clause 6.2.2.
- 17.5 The hydraulic circuit of each LPG dispensing unit shall be subjected to the routine tests required by clause 6.2.2 of EN 14678-1:2006.
- 17.6 The electrical circuit of each type of LPG dispensing unit shall be subjected to the routine tests required by Table 1 of EN 14678-1:2006.

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Certificate Annexe

Certificate Number: Sira 05ATEX9045X
Equipment: Encore 510 Fuel Dispenser
Applicant: Gilbarco Veeder-Root / Gilbarco GmbH Co KG
a division of Danaher UK Industries Ltd



Issue 0 and 1

Drawing No.	Sheet	Rev.	Date	Description
BW703901	170	-	10 Feb 05	General Arrangement & Foundation Drawing
BW703901	171	-	10 Feb 05	General Arrangement & Zoning Encore 510
BW703901	173a	-	10 Feb 05	General Assembly
BW703901	173b	-	10 Feb 05	General Assembly
BW703901	174a	-	10 Feb 05	Hydraulic Schematics
BW703901	174b	-	10 Feb 05	Hydraulic Schematics
BW703901	176	-	10 Feb 05	Safety Critical Component Tabulation
BW703901	178	-	10 Feb 05	Hydraulic Schematics
BW703901	179	-	10 Feb 05	Hydraulic Schematics
BW703901	180	-	10 Feb 05	Vapour Recovery Hydraulic Schematics

Issue 2

Drawing no:	Sheets	Rev	Date	Description
BW703901	1 of 19	A	22 Oct 07	General Arrangement & Foundation Drawing
BW703901	2 of 19	C	22 Oct 07	General Arrangement & Zoning Encore 510 - Petrol
BW703901	3 of 19	B	22 Oct 07	General arrangement and zoning - LPG
BW703901	4 of 19	B	23 Oct 07	Typical wiring and control diagram
BW703901	5 of 19	B	23 Oct 07	Typical wiring diagram
BW703901	6 of 19	A	23 Oct 07	General Assembly
BW703901	6a of 19	-	12 Nov 07	General Assembly
BW703901	7 of 19	A	23 Oct 07	General assembly including LPG
BW703901	7a of 19	-	13 Nov 07	General assembly including LPG
BW703901	8 of 19	B	23 Oct 07	General assembly LPG
BW703901	9 of 19	C	23 Oct 07	Safety critical component tabulation - petrol
BW703901	10 of 19	B	23 Oct 07	Safety critical component tabulation - LPG
BW703901	11 of 19	A	23 Oct 07	Vapour recovery schematics
BW703901	12 of 19	A	23 Oct 07	Hydraulic schematic - petrol standard flow
BW703901	13 of 19	A	24 Oct 07	Hydraulic schematic - petrol standard flow STP
BW703901	14 of 19	A	24 Oct 07	Hydraulic schematic - petrol Ultra-high flow.
BW703901	15 of 19	A	24 Oct 07	Hydraulic schematic - petrol UHF with satellite
BW703901	16 of 19	B	24 Oct 07	Hydraulic schematic LPG
BW703901	17 of 19	B	24 Oct 07	LPG Hydraulic joints

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