1 **EC TYPE-EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 07ATEX9275X** Issue: **4**

4 Equipment: **Quantium 510 LPG (aka 500T*n* LPG) Liquid Fuel Dispenser**

5 Applicant: **Tokheim UK Limited** **Tokheim Sofitam Applications**

6 Address: Unit 3 Baker Road
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Route de Soliers
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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 13617-1:2004 EN 14678:2006

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:

II 2 G

Project Number 32008

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Deputy Certification Manager

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13 **DESCRIPTION OF EQUIPMENT**

The **Quantium 510 LPG (aka 500T*n* LPG) - Type A** is a liquid fuel dispenser, rated at 230 V, single phase for automotive LPG on a garage forecourt. The equipment comprises a fabricated steel frame clad with steel panels to form a hydraulic housing, hose support column and display control unit.

The hydraulic housing contains a hydraulic circuit, comprising 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 (flow) valves maintain the circuit integrity. A pressure gauge is fitted to enable the monitoring of system pressure. The outlet pipe passes out of the hydraulic housing and is connected to a suitable dispenser hose. The hose is fitted with a breakaway coupling and dispensing nozzle. The component parts and system configuration is shown on Tokheim drawing Nos. 903111-003 sheet 1, 903111-013 and 903111-006.

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. A positive liquid/vapour pressure of approximately 1 bar is maintained by the differential valve fitted at the meter outlet. Normal operating pressure is dependent on tank and temperature conditions, and is between 7 and 15 bar. The maximum system pressure is 25 bar and safety valves, venting into the hydraulic cabinet, are set to vent at either 18 bar or 23 bar depending on installation conditions.

The nozzles are located in suitable boots fitted on both sides of the dispenser and optionally actuate proximity switches as they are removed or replaced. The hoses may be fitted with sprung retractor assemblies. Delivery is only maintained whilst a manual 'dead man's switch', fitted to the cassette, is activated.

The display control unit is mounted in an electronics enclosure above the hydraulic housing and is in a non-hazardous area that is created by its positioning and the use of vapour barriers. Cables enter the unit from the hydraulic cabinet via the vapour barriers. All electrical components in the hazardous zones are suitably certified and the cabling is also appropriate for use in fuel dispensers, as specified in the schedule drawings.

All electrical and mechanical components are suitably certified, apparatus, and cabling is suitable for petroleum/LPG dispensing, as specified on the schedule drawings. The electrical circuit and enclosure metalwork are suitably earthed.

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

Design options

- Omission of contents from the electronics enclosure.
- Alternative remote dispenser arrangement. The nozzle and associated boot and nozzle switch are mounted in a separate housing adjacent to the dispenser unit.
- The fitting of a temperature measuring system as Sira 07ATEX9157U.
- Optional fabricated extension 'chair' mounted between the dispenser and forecourt to provide safety devices associated with the dispenser's installation
- Replacement of the 'dead-man's switch' by a key operated switch for attended service mode
- Optional fitting of the pressure relief valves to vent into the hose support column

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- Shared hydraulic facilities, with individual meters, for dispensing on both sides of the dispenser. The system may have one or two vapour separators.

Quantium 510 LPG (aka 500T*n* LPG) - Type B

As the Quantium 510LPG (Type A) but with modified panelwork and the omission of the calculator enclosure and associated space box. This variant is controlled from a separate Type A or Type C dispenser variant or a dispenser as Sira 03ATEX9389X.

Quantium 510 LPG (aka 500T*n* LPG) - Type C

As the Quantium 510LPG (Type A) but with modified panelwork, ventilation and cabling arrangement. Cables enter the control head via a ventilated cable duct and barrier arrangement.

Variation 1 - This variation introduced the following change:

i. The introduction of an alternative Vapour Separator Assembly.

Variation 2 - This variation introduced the following change:

i. The introduction of an optional integrated payment terminal.

Variation 3 - This variation introduced the following changes:

i. The introduction of an alternative cladding option manufactured from aluminium was approved.
ii. The introduction of alternative vapour barriers was endorsed.

Variation 4 - This variation introduced the following change:

i. The Quantium 510 LPG (aka 500T*n* LPG) Liquid Fuel Dispenser was modified to include an option that allows LPG and Petrol/Diesel products to be delivered from the same dispenser.

14 **DESCRIPTIVE DOCUMENTS**

14.1 **Drawings**

Refer to Certificate Annexe.

14.2 **Associated Sira Reports and Certificate History**

Issue	Date	Report no.	Comment
0	23 November 2007	R59M16787A	The release of the prime certificate.
1	4 August 2008	R51A18283A	The introduction of Variation 1.
2	25 March 2010	R21659A/00	The introduction of Variation 2.
3	07 June 2011	R24721A/00	The introduction of Variation 3.
4	06 December 2013	R32008A/00	The introduction of Variation 4.

15 **SPECIAL CONDITIONS FOR SAFE USE** (denoted by X after the certificate number)

15.1 The dispenser shall be supplied from a remote pressure source not exceeding 25 bar.

15.2 The installation of the dispenser shall be in accordance with EN 14678-2.

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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 hydraulic circuit of each dispenser shall be subjected to one of the following pressure tests:

- 1.1 times the maximum working pressure for fifteen minutes; in order to achieve this pressure, it will be necessary to remove the relief valves and therefore the manufacturer shall confirm by selection and/or testing that they operate at a maximum pressure of 18 bar or 25 bar, as appropriate. In addition, the pressure gauge may also be removed for this test.
- The maximum pressure at which the relief valves operate followed by 0.9 times this pressure for fifteen minutes; this test shall be performed with the relief valves and the pressure gauge in situ.

After stabilisation of the pressure, the pressure drop shall not exceed 0.5 bar.

17.4 The pressure shall then be adjusted to the maximum working pressure and maintained for at least 20s. There shall be no leakage through the system other than through the safety valve.

17.5 The electrical circuit of each type of fuel dispenser 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 07ATEX9275X**

Equipment: **Quantium 510 LPG (aka 500T*n* LPG) Liquid Fuel Dispenser**

Applicant: **Tokheim UK Limited**
Tokheim Sofitam Applications

Issue 0

Number	Sheet	Rev.	Date (Sira Stamp)	Description
903111-025	1 to 27	A	18 Nov 07	Quantium 510LPG dispenser – compliance details
903111-002	1 & 2	B	18 Nov 07	Electrical circuit diagrams
903111-003	1 to 5	B	18 Nov 07	Hydraulic system and configurations
903111-004	1 to 5	A	18 Nov 07	Component parts and joint details
903111-005	1 to 6	B	18 Nov 07	Warning and advisory labels
903111-006	1 of 1	A	18 Nov 07	Component identification
903111-008	1 of 1	A	18 Nov 07	Nozzle boot
903111-012	1 to 3	-	18 Nov 07	Component parts and joint details
903111-013	1 of 1	A	18 Nov 07	Component identification
903111-019	1 of 1	A	18 Nov 07	LPG Nozzle holder assembly
903111-020	1 of 1	B	18 Nov 07	LPG Label details
903111-027	1 of 1	A	18 Nov 07	Hydraulic system – single separator

Issue 1

Number	Sheet	Rev.	Date (Sira Stamp)	Description
903111-025	1 to 27	B	26 Jun 08	Quantium 510 LPG Dispenser
903111-030	1 to 2	A	26 Jun 08	Alternative Vapour Separator

Issue 2

Number	Sheet	Rev.	Date (Sira Stamp)	Description
903111-025	1 to 27	C	12 Feb 10	Quantium 510 LPG Dispenser
903111-033	1 to 2	A	12 Feb 10	Optional payment terminal enclosure for Quantium 510 LPG Range

Issue 3

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
903111-025	1 to 27	D	06 May 11	Quantium 510 LPG Dispenser
903111-037	1 to 2	A	06 May 11	Quantium 510 LPG Range Type 'E' Model

Issue 4

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
903111-028	1 to 6	B	28 Nov 13	Q510 Petrol/Diesel dispenser controlling Q510 LPG Dispenser

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