

1 EU-TYPE EXAMINATION CERTIFICATE



2 **Equipment or Protective systems intended for use in Potentially Explosive Atmospheres - Directive 2014/34/EU**

3 **EC-Type Examination Certificate No:** FM11ATEX0060X

4 **Equipment or protective system:** SmartPurge2 Purge Control Unit and SmartPurge2 Remote Control Terminal
(Type Reference and Name)

5 **Name of Applicant:** Expo Technologies Limited

6 **Address of Applicant:** Unit 2, The Summit,
Hanworth Road,
Sunbury on Thames,
Surrey, TW16 5DB,
United Kingdom

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

8 FM Approvals Europe Ltd, notified body number 2809 in accordance with Article 17 of Directive 2014/34/EU of 26 February 2014, 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 confidential report number:

3041589EC dated 23rd March 2012

9 Compliance with the Essential Health and Safety Requirements, with the exception of those identified in item 15 of the schedule to this certificate, has been assessed by compliance with the following documents:

EN IEC 60079-0:2018, EN 60079-2:2014, EN IEC 60079-7:2015+A1:2018, EN 60079-11:2012,
EN 60079-18:2015+A1:2017, EN 60079-31:2014 and EN 60529:1991+A1:2000+A2:2013

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 EU-Type Examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include:



SmartPurge2 Purge Control Unit

II 2 (2) G Ex eb ib mb [ib Gb] [p] IIC T4 Gb -20 °C ≤ Ta ≤ 60 °C

II 2 (2) D Ex tb [p] IIIC 135°C Db -20 °C ≤ Ta ≤ 60 °C



SmartPurge 2 Remote Control Terminal

II 2 G Ex ib IIC T4 Gb -20 °C ≤ Ta ≤ 60 °C

Richard Zammit
Certification Manager, FM Approvals Europe Ltd.

Issue date: 12th April 2019

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

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SCHEDULE



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to EU-Type Examination Certificate No. FM11ATEX0060X

13 Description of Equipment or Protective System:

The SmartPurge 2 (SP2) is an electronic purge and pressurization control system consisting of a Control Unit containing the following: a power supply and switching module, a flow and pressure measuring unit and an electronic control unit. A display is provided for monitoring the status and for use during set-up.

Two versions of the SmartPurge2 are available, as a purge and pressurize control unit (P) and as a fan control unit (F). Both these versions are available with a universal voltage (M) or a low voltage (L) power supply. The SmartPurge 2 is housed within a stainless steel enclosure with an ingress protection rating of IP64.

The system can be connected to an optional Remote Panel which is housed in an aluminium enclosure.

The maximum service temperature is 60 °C.

SP2-ab-ss SmartPurge2 Purge Control Unit

a = P, or F

b = M, or L

Power Supply (Terminals 1, 2): 90-254 Vac or 11-28 Vdc;
Um = 254 Vac

Alarm Contact ratings (Terminals 5, 6 and 7, 8): 250V, 1A
Fuse type (Terminals 9, 10): 100mA (when b = M)
500mA (when b = L)

Power Switching (Terminals 3, 4) 6A at 250 Vac
5A at 30 Vdc

Energy Limitation Parameters

	Terminal TB1	Uo (Vdc)	Io (mA)	Co (µF)	Lo (mH)	Po (W)
SOV	1, 2	23.58	165.5	0.091	2.9	0.975
IP	3, 4	23.58	165.5	0.091	2.9	0.975
Remote Output	9, 10, 11, 12	8.465	405.1	5.145	0.48	0.857
External alarm	5, 6	5.88	5.9	Negligible	0	0.009
Over-ride	7, 8	5.88	5.9	Negligible	0	0.009

SmartPurge2 Purge Remote Panel

SP2-RP

Energy Limitation Parameters

Ui (Vdc)	Ii (mA)	Ci (µF)	Li (mH)	Pi (W)
8.465	405.1	5.145	0.48	0.857

14 Specific Conditions of Use:

The painted surface and the non-metallic window of the SmartPurge II may store electrostatic charge and become a source of ignition in applications with a low relative humidity <~30% relative humidity where the painted surface is relatively free of surface contamination such as dirt, dust, or oil. Guidance on protection against the risk of ignition due to electrostatic discharge can be found in EN TS 60079-32-1. Cleaning of the painted surface should only be done with a damp cloth.

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15 Essential Health and Safety Requirements:

The relevant EHSRs that have not been addressed by the standards listed in this certificate have been identified and assessed in the confidential report identified in item 8.

16 Test and Assessment Procedure and Conditions:

This EU-Type Examination Certificate is the result of testing of a sample of the product submitted, in accordance with the provisions of the relevant specific standard(s), and assessment of supporting documentation. It does not imply an assessment of the whole production.

Whilst this certificate may be used in support of a manufacturer's claim for CE Marking, FM Approvals Europe Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

This Certificate has been issued in accordance with FM Approvals Europe Ltd's ATEX Certification Scheme.

17 Schedule Drawings

A list of the significant parts of the technical documentation is annexed to this certificate and a copy has been kept by the Notified Body.

18 Certificate History

Details of the supplements to this certificate are described below:

Date	Description
5 th April 2012	Original Issue.
2 nd April 2013	<u>Supplement 1:</u> Report Reference: – 3041590rev120910 dated 25 th March, 2013. Description of the Change: 1. Address of Applicant change from: Summer Road, Thames Ditton, Surrey, KT7 0RH, UK. Update to Approved drawings due to address change.
3 rd June 2015	<u>Supplement 2:</u> Report Reference: RR201328 dated 2 nd June 2015 Description of the Change: Minor documentation update.
14 th June 2016	<u>Supplement 3:</u> Report Reference: – RR205060 dated 26 th May 2016 Description of the Change: Update standards to the latest edition (EN 60079-0: 2009 to 2012 + A11:2013, EN 60079-11: 2007 to 2012), and minor documentation update. Updated to EU certificate.
29 th June 2017	<u>Supplement 4:</u> Report Reference: – RR209790 dated 13 th June 2017 Description of the Change: Documentation updates.
12 th April 2019	<u>Supplement 5:</u> Report Reference: – PR452625 dated 22 nd March 2019 Description of the Change: Update to standards used; EN 60079-2, EN 60079-7, EN 60079-18, EN 60079-31 and EN 60529. Certificate transferred from FM Approvals Ltd., notified body No. 1725, to FM Approvals Europe Ltd., notified body No. 2809.

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Blueprint Report

Expo Technologies Ltd (1000002806)

Class No 3620

Original Project I.D. 3041589

Certificate I.D. FM11ATEX0060X

<u>Drawing No.</u>	<u>Revision Level</u>	<u>Drawing Title</u>	<u>Last Report</u>
BAS01ATEX1278U-3	-	Component Certificate, Opto Couplers	3041590
EPC-BGB0-001	2	SmartPurge2 UV LV PSU PCB Data Files	3041590
EPC-BGB0-002	1	Standard Transducer PCB Data Files	3041590
EPC-BGB0-003	2	Front Panel PCB Data Files	3041590
EPC-BGB0-004	1	Remote Panel PCB Data Files	3041590
EPC-BGB0-006	1	SmartPurge2 PSU LV Daughter PCB Data Files	3041590
EPC-BGB0-008	4	Prime Transducer PCB Data Files	3041590
EPC-BGB0-009	2	Logic PCB Data Files V1	3041590
EPC-BGB0-010	1	Corrected Logic Board EPC-BGB0-010	3041590
EPC-BGB0-011	1	Mod-board Retrofit	3041590
IECEX KEM07.0023U	-	Component Certificate, Terminal Blocks	3041590
PTB Ex 91.C.3123U	-	Component Certificate, Earth Terminal	3041590
SD7272	3	Remote Panel Block Diagram	3041590
SD7273	3	Logic Electronics Block Diagram	3041590
SD7274	3	System Block Diagram	PR452625
SD7306	2	Operational Sequences Document Part 3	3041590
SD7571	2	Transformer, PSU LV	3041590
SD7617	1	Design Document Part 1	3041590
SD7618	2	Design Document Part 2	PR452625
SD7619	5	Certification Labelling	PR452625
SD7816	2	General Assembly - steel	3041590
SD7817	5	Enclosure - steel	PR452625
SD7818	1	Terminal Block Clearances - steel	3041590
SD7819	2	Spark Arrestor	3041590
SD7820	2	Lid: Window & Sealing - steel	3041590
SD7821	2	Lid: Display - steel	RR209790
SD7822	1	LCD Module	3041590
SD7823	2	Flow Sensor Block - steel	PR452625
SD7824	1	Type FN Sensor Block - steel	3041590
SD7825	2	Earth Terminal - steel	3041590
SD7923	1	Transformer, PSU UV	3041590
SD7924	1	PSU Block Diagram	3041590
SD7925	1	External Connections	3041590
SD7926	1	PCB Interconnection	3041590
SD7933	3	SmartPurge2 LV PSU Circuit Diagram	PR452625
SD7934	1	SmartPurge2 LV PSU Daughter / Circuit Diagram	3041590
SD7936	2	SmartPurge2 UV PSU Circuit Diagram	3041590
SD7942	2	UV Fuse Assembly	3041590
SD7943	2	LV Fuse Assembly	3041590
SD7944	4	CERT Label UV Fuse	RR205060
SD7945	3	CERT Label LV Fuse	RR205060
SD7977	2	SmartPurge2 Power Supply Encapsulation Procedure	PR452625
SD7981	3	UV Power Supply Parts List	3041590
SD7983	2	LV Power Supply Parts List	3041590
SD7984	1	SP2 Fuse Assembly Encapsulation Process	3041590
SD7985	2	Logic Assembly / Circuit Diagram	3041590
SD7986	2	Logic Board Parts List	3041590
SD7987	2	Prime Transducer Board PCB / Circuit Diagram	3041590
SD7988	1	Prime Transducer Board Parts List	3041590

SD7989	1	Standard Transducer Board PCB / Circuit Diagram	3041590
SD7990	1	Standard Transducer Board Parts List	3041590
SD7991	2	Front Panel Parts List	3041590
SD7992	2	Front Panel PCB / Circuit Diagram	3041590
SD7993	2	Remote Panel Parts List	PR452625
SD7994	1	Remote Panel PCB / Circuit Diagram	3041590
SD7995	1	LV PSU Daughter Board Parts List	3041590
SD7997	2	SmartPurge2 External Connections (LED)	3041590
SD8009	3	SP2 Retrofit Mod Board for Logic Board	RR209790
SD8374	1	Instruction Manual Extracts	PR452625