

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:** FM11ATEX0060

4 **Equipment or protective system:** SmartPurge2 Purge Control Unit
(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 Ltd, notified body number 1725 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 23 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:

EN60079-0:2012/A11:2013, EN60079-2:2007, EN60079-7:2007, EN60079-11:2012, EN60079-18:2009, EN60079-31:2009, EN61241-4:2006 and EN60529:1991 + A1:2000

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 e ib mb [p] IIC T4 -20°C ≤ Ta ≤ 60°C Gb

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



SmartPurge 2 Remote Control Terminal

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



cn=Mick Gower, o=FM Approvals,
ou,
email=mick.gower@fmapprovals.
com, c=GB
2016.06.14 09:16:21 +01'00'

Mick Gower
Certification Manager, FM Approvals Ltd.

Issue date: 14th June 2016

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

FM Approvals Ltd. 1 Windsor Dials, Windsor, Berkshire, UK. SL4 1RS
T: +44 (0) 1753 750 000 F: +44 (0) 1753 868 700 E-mail: atex@fmapprovals.com www.fmapprovals.com

SCHEDULE

to EU-Type Examination Certificate No. FM11ATEX0060

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 either stainless steel (ss) or aluminium enclosures (al) and with a universal voltage (M) or a low voltage (L) power supply.

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-c SmartPurge2 Purge Control Unit

a = P, or F
b = M, or L
c = ss, or al

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)

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

SRP-2

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:

None

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.

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

SCHEDULE

to EU-Type Examination Certificate No. FM11ATEX0060

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 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 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 (EN60079-0: 2009 to 2012, EN6079-11: 2007 to 2012), and minor documentation update. Updated to EU certificate.

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

Blueprint Report

Expo Technologies Ltd (1000002806)

Class No 3620

Original Project I.D. 3041589

Certificate I.D. FM11ATEX0060

<u>Drawing No.</u>	<u>Revision Level</u>	<u>Drawing Title</u>	<u>Last Report</u>	<u>Electronic Drawing</u>
BAS01ATEX1278U-3	-	Component Certificate, Opto Couplers	3041590	Yes (pdf)
EPC-BGB0-001	2	SmartPurge2 UV LV PSU PCB Data Files	3041590	Yes (zip)
EPC-BGB0-002	1	Standard Transducer PCB Data Files	3041590	Yes (zip)
EPC-BGB0-003	2	Front Panel PCB Data Files	3041590	Yes (zip)
EPC-BGB0-004	1	Remote Panel PCB Data Files	3041590	Yes (zip)
EPC-BGB0-006	1	SmartPurge2 PSU LV Daughter PCB Data Files	3041590	Yes (zip)
EPC-BGB0-008	4	Prime Transducer PCB Data Files	3041590	Yes (zip)
EPC-BGB0-009	2	Logic PCB Data Files V1	3041590	Yes (zip)
EPC-BGB0-010	1	Corrected Logic Board EPC-BGB0-010	3041590	Yes (zip)
EPC-BGB0-011	1	Mod-board Retrofit	3041590	Yes (zip)
IECEX KEM07.0023U	-	Component Certificate, Terminal Blocks	3041590	Yes (pdf)
PTB 98 ATEX 3101U	-	Earth Terminal	3041590	Yes (pdf)
PTB Ex 91.C.3123U	-	Component Certificate, Enclosure (ABTECH)	3041590	Yes (pdf)
SD7272	3	Remote Panel Block Diagram	3041590	Yes (pdf)
SD7273	3	Logic Electronics Block Diagram	3041590	Yes (pdf)
SD7274	3	System Block Diagram	3041590	Yes (pdf)
SD7285	4	Enclosure - aluminium	3041590	Yes (pdf)
SD7287	3	Flow Sensor Block - aluminium	3041590	Yes (pdf)
SD7296	3	Lid: Window & Sealing - aluminium	3041590	Yes (pdf)
SD7305	2	Earth Terminal - aluminium	3041590	Yes (pdf)
SD7306	2	Operational Sequences Document Part 3	3041590	Yes (pdf)
SD7310	3	Terminal Block Clearances - aluminium	3041590	Yes (pdf)
SD7311	2	Lid: Display - aluminium	3041590	Yes (pdf)
SD7567	1	Type FN Sensor Block - aluminium	3041590	Yes (pdf)
SD7571	1	Transformer, PSU LV	3041590	Yes (pdf)
SD7617	1	Design Document Part 1	3041590	Yes (pdf)
SD7618	1	Design Document Part 2	3041590	Yes (pdf)
SD7619	3	Certification Labelling	9/10/12	Yes (pdf)
SD7816	2	General Assembly - steel	3041590	Yes (pdf)
SD7817	2	Enclosure - steel	3041590	Yes (pdf)
SD7818	1	Terminal Block Clearances - steel	3041590	Yes (pdf)
SD7819	2	Spark Arrestor	3041590	Yes (pdf)
SD7820	2	Lid: Window & Sealing - steel	3041590	Yes (pdf)
SD7821	3	Lid: Display - steel	3041590	Yes (pdf)
SD7822	1	LCD Module	3041590	Yes (pdf)
SD7823	1	Flow Sensor Block - steel	3041590	Yes (pdf)
SD7824	1	Type FN Sensor Block - steel	3041590	Yes (pdf)
SD7825	2	Earth Terminal - steel	3041590	Yes (pdf)
SD7923	1	Transformer, PSU UV	3041590	Yes (pdf)
SD7924	1	PSU Block Diagram	3041590	Yes (pdf)
SD7925	1	External Connections	3041590	Yes (pdf)
SD7926	1	PCB Interconnection	3041590	Yes (pdf)
SD7933	2	SmartPurge2 LV PSU Circuit Diagram	3041590	Yes (pdf)

SD7934	1	SmartPurge2 LV PSU Daughter / Circuit Diagram	3041590	Yes (pdf)
SD7936	2	SmartPurge2 UV PSU Circuit Diagram	3041590	Yes (pdf)
SD7942	2	UV Fuse Assembly	3041590	Yes (pdf)
SD7943	2	LV Fuse Assembly	3041590	Yes (pdf)
SD7944	4	CERT Label UV Fuse	RR205060	Yes (pdf)
SD7945	3	CERT Label LV Fuse	RR205060	Yes (pdf)
SD7962	2	General Assembly - aluminium	3041590	Yes (pdf)
SD7977	1	SmartPurge2 Power Supply Encapsulation Procedure	3041590	Yes (pdf)
SD7981	3	UV Power Supply Parts List	3041590	Yes (pdf)
SD7983	2	LV Power Supply Parts List	3041590	Yes (pdf)
SD7984	1	SP2 Fuse Assembly Encapsulation Process	3041590	Yes (pdf)
SD7985	2	Logic Assembly / Circuit Diagram	3041590	Yes (pdf)
SD7986	2	Logic Board Parts List	3041590	Yes (pdf)
SD7987	2	Prime Transducer Board PCB / Circuit Diagram	3041590	Yes (pdf)
SD7988	1	Prime Transducer Board Parts List	3041590	Yes (pdf)
SD7989	1	Standard Transducer Board PCB / Circuit Diagram	3041590	Yes (pdf)
SD7990	1	Standard Transducer Board Parts List	3041590	Yes (pdf)
SD7991	2	Front Panel Parts List	3041590	Yes (pdf)
SD7992	2	Front Panel PCB / Circuit Diagram	3041590	Yes (pdf)
SD7993	1	Remote Panel Parts List	3041590	Yes (pdf)
SD7994	1	Remote Panel PCB / Circuit Diagram	3041590	Yes (pdf)
SD7995	1	LV PSU Daughter Board Parts List	3041590	Yes (pdf)
SD7997	2	SmartPurge2 External Connections (LED)	3041590	Yes (pdf)
SD8004	V4	Instruction Manual Extracts	RR201328	Yes (pdf)
SIRA 99 ATEX 3174U	-	Component Certificate, Enclosure (Phoenix)	3041590	Yes (pdf)