

**UNITED KINGDOM CONFORMITY ASSESSMENT
UK TYPE EXAMINATION CERTIFICATE**

**Product Intended for use in Potentially Explosive Atmospheres
UKSI 2016:1107 (as amended by UKSI 2019:696) – Schedule 3A, Part 1**

Type Examination Certificate Number: ExVeritas 21UKEX0832 Issue: 1

Equipment: Earth-Rite II Exd

Manufacturer: Newson Gale Limited

Address: Omega House, Private Road 8, Colwick, Nottingham NG4 2JX, UK

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

ExVeritas Limited Approved Body number 2585, in accordance with Regulation 42 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended by UKSI 2019:696), certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Schedule 1 of the Regulations.

Compliance with the applicable Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0: 2018
EN 60079-31: 2014

EN 60079-1: 2014

EN 60079-11: 2012

Except in respect of those requirements listed at section 16 of the schedule to this certificate.

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.

This TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Regulations apply to the manufacturing process and supply of this product. These are not covered by this certificate.

The marking of the equipment shall include the following:



II 2(1)G

II 2(1)D

Ex db [ia Ga] IIC T6 Gb
Ex tb [ia Da] IIIC T80°C Db
Ta = -40 °C to +55 °C

On behalf of ExVeritas

S Clarke CEng MSc FIET
Managing Director



No. 8613

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The status of this certificate can be verified at www.exveritas.com

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Schedule

13 Description of Product

The Earth-Rite ER II Earth Monitoring Unit is intrinsically safe associated apparatus that provides an isolated intrinsically safe output for connection to earth monitoring equipment in the hazardous area. There are seven Earth-Rite ER II models:

- RTRMEA (a.c. supply, tri-mode version)
- PLUSMEA (a.c. supply, single-mode version)
- FIBCMEx (a.c. supply, single-mode version)
- RTRMED (d.c. supply, tri-mode version)
- PLUSMED (d.c. supply, single-mode version)
- FIBCMED (d.c. supply, single-mode version)
- MGVMED (d.c. supply, tri-mode version)

The ER II consists of two printed circuit boards, mounted inside an IP66 flameproof enclosure:

- A power supply board: this converts a non-intrinsically safe supply into an isolated intrinsically safe output to the monitoring board and may be a.c. input (xxxxMEA models) for connection to a mains supply or d.c. input (xxxxMED models) for connection to a nominally 12-30 Vdc supply, which may be mains-derived or from a vehicle battery.
- A monitoring unit board (either single mode or tri-mode), mounted above the power supply board, this receives an intrinsically safe input from the power supply board and provides an intrinsically safe output for connection to an earth bar and a clamp.
- An additional optional Intrinsically Safe switching PCB may also be fitted in between the power supply PCB and the monitoring PCB which can provide the facility to switch an external intrinsically safe circuit.

The tri-mode version provides capacitive and resistive monitoring. The single mode version provides resistive-only monitoring. For all versions, $U_m = 250$ V ac or dc. The models have the following safety descriptions:

RTRMEx & MGVMEx models		PLUSMEx models	FIBCMEx models
Tri-mode IS output at PL3/PL4	Tri-mode IS output at PL2	Single mode IS output at PL3/PL4	Single mode IS output at PL3/PL4
$U_o = 8.61$ V $I_o = 60$ mA $P_o = 129$ mW $C_o = 1.0$ μ F $L_o = 9.8$ mH	Simple apparatus only	$U_o = 8.61$ V $I_o = 41$ mA $P_o = 88$ mW $C_o = 0.361$ μ F $L_o = 21$ mH	$U_o = 8.61$ V $I_o = 0.87$ mA $P_o = 8$ mW $C_o = 5.9$ μ F $L_o = 46$ H

For all models, intrinsic safety is maintained if the cable connected to any intrinsically safe output terminal does not exceed 100m.

Optional Intrinsically Safe switching PCB which is used to switch an external intrinsically safe circuits or signals with the following I.S parameters:

Optional IS Switching PCB Terminal PL1
$U_i = 30$ V $I_i = 500$ mA $C_i = 0$ $L_i = 0$

Schedule

14 Descriptive Documents

14.1 Associated Report and Certificate History:

Report Number	Cert Issue Date	Issue	Comment
R3140B/1	2022-04-29	0	Initial issue of the Prime Certificate
R3770/A/1	2022-12-05	1	<ol style="list-style-type: none"> To introduce substitution of some safety critical components. The Ex marking code has been amended to reflect correctness to the latest applicable standards.

14.2 Compliance Drawings:

Issue 1

Drawing Number	Date	Issue	Description
AA0190R3A-CERT	25/03/2010	A	ERII PSU AC Board
AA0190R3ACB-CERT	25/03/2010	A	ERII AC Supply PCB Layout
AA0190R3ACT-CERT	25/03/2010	A	ERII AC Supply PCB Layout
AA0190R3ASS-CERT	25/03/2010	A	ERII AC Supply PCB Layout
AA0190R3B-PLC	10/11/2021	B	*ERII PSU AC Certified Parts List
BE008-0-01 R3	08/04/2010	B	Transformer Details
AA0189-CERT	15/09/15	R2A	ERII DC PSU
AA0189-PLC	14/02/2022	R2C	*ERII DC PSU Certified Parts List
BE010-0-01 R1C	13/04/2010	C	Transformer Details DC Power Transformer
AA0195R1B-CERT	18/03/2010	B	ERII CR Monitor Board Circuit
AA0195R1BCB-CERT	18/03/2010	A	ERII CR Monitor Board PCB Layout
AA0195R1BCT-CERT	18/03/2010	A	ERII CR Monitor Board PCB Layout
AA0195R1BSS-CERT	18/03/2010	A	RTR II CR Monitor Board PCB Layout
AA0195R1D-PLC	14/02/2022	D	*RTR II CR Monitor Board Certified Parts List
AA0194R1B-CERT	18/03/2010	B	ERII R Monitor Circuit
AA0194R1BCB-CERT	18/03/2010	B	RTR II R Monitor Board PCB Layout
AA0194R1BCT-CERT	18/03/2010	B	RTR II R Monitor Board PCB Layout
AA0194R1BSS-CERT	18/03/2010	B	RTR II R Monitor Board PCB Layout
AA0194R1B-PLC	11/01/2010	B	RTR II R Monitor Board Certified Parts List
ERII-Q-09246-2 AI	10/10/2019	5	Earth-Rite II - Ex d RTR, PLUS and FIBC - Control Drawing
ERII-Q-02939-2 AI	10/10/2019	10	Earth-Rite II – Ex d - DC – Control Drawing
AA0206R3A-CERT	29/07/2011	A	FIBC II Monitor Circuit
AA0206R3A-CB-CERT	29/07/2011	A	FIBC II Board PCB Layout
AA0206R3A-CT-CERT	29/07/2011	A	FIBC II Board PCB Layout
AA0206R3A-SS-CERT	29/07/2011	A	FIBC II Board PCB Layout
AA0206R3A-PLC	01/09/2011	A	FIBC II Monitor Board Certified Parts List
ER2 EXD LAB UKCA	22/11/2022	AD	*UKCA CERTIFICATION DETAIL ER II EXD SYSTEM
AA0243-CERT-PCB	17/09/2018	R5A	ER II I.S. Switching PCB Layout
AA0243-PLC-ERII ISS	17/09/2018	R5A	ER II I.S. Switching PCB Certified Parts List
AA0243-SCH-CERT	17/09/2018	R5A	ER II I.S. Switching
ERII GA 003	01/10/2018	8	Exd Version of ERII Monitor PSU Unit

Note: An * is included before the title of documents that are new or revised.

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Issue **1**

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Schedule

15 Specific Conditions of Use

15.1 Special Conditions for Safe Use

None

15.2 Routine tests

1. The following test shall be performed on 100% of transformers. Each transformer shall be dielectric strength tested in accordance with EN 60079-11:2012 clause 11.2 as follows: 1500 Vac shall be applied between the primary and secondary windings for a minimum of 60 s. The maximum current shall not exceed 5 mA and there shall be no evidence of insulation breakdown. Alternatively, the test may be performed at 1800 Vac for a minimum of 1 s.

16 Essential Health and Safety Requirements (Regulations Schedule 1)

Essential Health and Safety Requirements are addressed by the standards listed in section 9 and where required the report listed in section 14.1

The manufacturer shall inform ExVeritas of any modifications to the design of the product described by this schedule.

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