1 **UNITED KINGDOM CONFORMITY ASSESSMENT**

UK TYPE EXAMINATION CERTIFICATE

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

3 Type Examination Certificate Number: **ExVeritas 21UKEX0833X** Issue: **1**

4 Product: Earth-Rite II P1 Static Earthing System

5 Manufacturer: Newson Gale Limited

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

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

8 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.

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

EN IEC 60079-0: 2018 EN IEC 60079-7:2015+A1:2018 EN60079-11:2012
EN 60079-31:2014 EN 60079-15:2010

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

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 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.

12 The marking of the equipment shall include the following:

II 3(1)G

II 2(1)D

Ex ec nC [ia Ga] IIC T4 Gc

Ex tb [ia Da] IIIC T70°C Db Ta = -40 °C to +55 °C

On behalf of ExVeritas

S Clarke CEng MSc FIET
Managing Director

UKAS PRODUCT CERTIFICATION
No. 8613

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13 Description of Product

The Earth-Rite ER II P1 Static Earthing System is intrinsically safe associated apparatus that provides an intrinsically safe output for connection to earth monitoring equipment in the hazardous area. The ER II consists of two printed circuit boards, mounted inside an IP66 GRP 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 (xxxxP1EA models) for connection to a mains supply or d.c. input (xxxxP1ED 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.

There are seven versions of the equipment:

Product code	**Mounting**	**Power supply**	**Monitoring unit board**
PLUSP1EA	terrestrial	a.c.	single mode
PLUSP1ED	mobile or terrestrial	d.c.	single mode
RTRP1EA	terrestrial	a.c.	tri mode
MGVP1ED	mobile	d.c.	tri mode
RTRP1ED	terrestrial	d.c.	tri mode
FIBCP1EA	terrestrial	a.c.	single mode
FIBCP1ED	terrestrial	d.c.	single mode

The installation must be in accordance with the relevant control drawing ERII-Q-10174 AI. The maximum input voltage (Um) is 250 V for all versions. The single mode version provides resistive-only monitoring. The tri-mode version provides capacitive and resistive monitoring. The safety description at the intrinsically safe output of the ER II depends on the version:

RTRP1EA, RTRP1ED & MGVP1ED models		PLUSP1EA & PLUSP1ED models	FIBCP1EA & FIBCP1ED 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
Uo = 8.61 V Io = 60 mA Po = 129 mW Co = 1.0 µF Lo = 9.8 mH	Simple apparatus only	Uo = 8.61 V Io = 41 mA Po = 88 mW Co = 0.361 µF Lo = 21 mH	Uo = 8.61 V Io = 0.87 mA Po = 8 mW Co = 5.9 µF Lo = 46 H

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

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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
Ui = 30V Ii = 500mA Ci = 0 Li = 0

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/2	2022-12-05	1	1. To introduce substitution of some safety critical components. 2. The Ex marking code has been amended to reflect correctness to the latest applicable standards.

14.2 Compliance Drawings:

Issue 1

Drawing No.:	Rev. Level:	Title:	Date:
AA0190R3A-CERT	A	ERII PSU AC Board	25/03/2010
AA0190R3ACB-CERT	A	ERII AC Supply PCB Layout	25/03/2010
AA0190R3ACT-CERT	A	ERII AC Supply PCB Layout	25/03/2010
AA0190R3ASS-CERT	A	ERII AC Supply PCB Layout	25/03/2010
AA0190R3B-PLC	B	*ERII PSU AC Certified Parts List	10/11/2021
BE008-0-01 R3	B	Transformer Details	08/04/2010
BE010-0-01 R1C	C	Transformer Details DC Power Transformer	13/04/2010
AA0195R1B-CERT	B	ERII CR Monitor Board Circuit	18/03/2010
AA0195R1BCB-CERT	A	ERII CR Monitor Board PCB Layout	18/03/2010
AA0195R1BCT-CERT	A	ERII CR Monitor Board PCB Layout	18/03/2010
AA0195R1BSS-CERT	A	RTR II CR Monitor Board PCB Layout	18/03/2010
AA0195R1D-PLC	D	*RTR II CR Monitor Board Certified Parts List	14/02/2022
AA0194R1B-CERT	B	ERII R Monitor Circuit	18/03/2010
AA0194R1BCB-CERT	B	RTR II R Monitor Board PCB Layout	18/03/2010
AA0194R1BCT-CERT	B	RTR II R Monitor Board PCB Layout	18/03/2010
AA0194R1BSS-CERT	B	RTR II R Monitor Board PCB Layout	18/03/2010

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Drawing No.:	Rev. Level:	Title:	Date:
AA0194R1B-PLC	B	RTR II R Monitor Board Certified Parts List	11/01/2010
AA0206R3A-CB-CERT	A	FIBC II Board PCB Layout	29/07/2011
AA0206R3A-CERT	A	FIBC II Monitor Circuit	29/07/2011
AA0206R3A-CT-CERT	A	FIBC II Board PCB Layout	29/07/2011
AA0206R3A-PLC	A	FIBC II Monitor Board Certified Parts List	01/09/2011
AA0206R3A-SS-CERT	A	FIBC II Board PCB Layout	29/07/2011
AA0189-CERT	2A	ERII DC PSU	15/09/2015
AA0189-PLC	R2C	*ERII DC PSU Certified Parts List	14/02/2022
AA0243-CERT-PCB	R5A	ER II I.S. Switching PCB Layout	17/09/2018
AA0243-PLC-ERII ISS	R5A	ER II I.S. Switching PCB Certified Parts List	17/09/2018
AA0243-SCH-CERT	R5A	ER II I.S. Switching	17/09/2018
ERII GA 004	7	ERII P1 Combined PSU-Monitor Unit	01/10/2018
ERII-Q-10174 AI	5	Earth-Rite II P1 RTR, PLUS & FIBC - Control Drawing - AC	03/12/2018
ER2 P1 LAB UKCA	AC	*UKCA CERTIFICATION DETAIL EARTH-RITE II P1 MONITORING UNIT & PSU IN APPROVED GRP ENCLOSURE UKCA	22/11/22

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

15 Specific Conditions of Use

15.1 Special Conditions for Safe Use

1. In locations where high external humidity and internal temperature variations (e.g., frequent on-off cycles) may cause condensation inside the equipment, the interior shall be periodically inspected.

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 IEC 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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