



1 **EC TYPE-EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 04ATEX2110** Issue: **1**

4 Equipment: **Pulsar Guard 2001 Ultrasonic Sensor**

5 Applicant: **Pulsar Process Measurement Ltd**

6 Address: **Cardinal Building
Enigma Commercial Centre
Sandy's Road
Malvern
Worcestershire WR14 1JJ
England**

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 50014:1997

EN 50020:2002

EN 50284:1999

The above list of documents may detail standards that do not appear on the UKAS Scope of Accreditation, but have been added through Sira's flexible scope of accreditation, which is available on request.

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 1 G

EEx ia IIC T4 (Tamb = -20°C to +80°C)

Project Number 28592

D R Stubbings BA MIET
Certification Manager

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SCHEDULE

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13 DESCRIPTION OF EQUIPMENT

The Pulsar Guard 2001 Ultrasonic Sensor contains a piezo-electric transducer that is energised via an integral printed wiring board; these electrical circuits being encased in a potting compound. A terminal block, two LEDs and a push button switch protrude from the potting compound. This assembly is then housed inside a cast stainless steel enclosure that affords a degree of protection of at least IP54.

The 3 way terminal block, J1, provides the facility to connect to suitably certified, intrinsically safe, shunt zener diode safety barriers or alternatively galvanic isolators whose output parameters must not exceed the following input parameters of the Pulsar Guard 2001 Ultrasonic Sensor:

Terminal block J1			
Terminals 2 and 3		Terminals 1 and 3	
U_i	= 28 V	U_i	= 28 V
I_i	= 93 mA	I_i	= 200 mA
P_i	= 0.65 W	P_i	= 0.5 W

Additionally for all three terminals combined

Terminals 1, 2, and 3

$C_i = 15.6\text{nF}$

$L_i = 0\mu\text{H}$

Variation 1 - This variation introduced the following changes:

- An increase in the input voltage to terminals 1 and 3 from $U_i=10\text{V}$ to $U_i=28\text{V}$.
- The inclusion of $C_i = 15.6\text{nF}$ and $L_i=0\mu\text{H}$ to terminals 1, 2 and 3.
- In addition to the suitably certified shunt zener diode safety barriers in the equipment description, galvanic isolators are to be included.
- The change of company address from Pulsar Process Measurement Ltd, Oak House, Bromyard Road, Worcester, WR2 5HP, England to that currently shown

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report number	Comment
0	28 April 2004	R52A10595A	The release of the prime certificate.
1	04 September 2012	R28592A/00	This Issue covers the following changes: <ul style="list-style-type: none">All previously issued certification was rationalised into a single certificate, Issue 1, Issue 0 referenced above is only intended to reflect the history of the previous certification and has not been issued as a document in this format.The introduction of Variation 1

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- 15 **SPECIAL CONDITIONS FOR SAFE USE** (denoted by X after the certificate number)
None
- 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.

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Certificate Annexe

Certificate Number: Sira 04ATEX2110
Equipment: Pulsar Guard 2001 Ultrasonic Sensor
Applicant: Pulsar Process Measurement Ltd



Issue 0

Drawing No.	Sheet	Rev.	Date	Description
D-804-0402-B	1 of 1	B	14 Jul 98	Pulsar 2XXX IS, block diagram
D-804-0403-A	1 of 3	A	14 Jul 98	Pulsar 2XXX IS, schematic
D-804-0403-A	2 of 3	A	14 Jul 98	Pulsar 2XXX IS, schematic
D-804-0403-A	3 of 3	A	14 Jul 98	Pulsar 2XXX IS, schematic
D-804-0404-A	1 of 2	A	14 Jul 98	Pulsar 2XXX IS, PCB
D-804-0404-A	2 of 2	A	14 Jul 98	Pulsar 2XXX IS, PCB
D-804-0405-A	1 of 2	A	14 Jul 98	Pulsar 2XXX IS, assembly detail
D-804-0405-A	2 of 2	A	14 Jul 98	Pulsar 2XXX IS, assembly plan view
D-804-0406-B	1 of 2	B	27 Oct 98	Pulsar 2XXX IS, BOM
D-804-0406-B	2 of 2	B	27 Oct 98	Pulsar 2XXX IS, BOM
D-804-0594-A	1 of 1	A	22 Mar 04	Pulsar Guard 2XXX IS, ATEX external label

Issue 1

Drawing No.	Sheets	Rev.	Date (Sira stamp)	Title
D-804-0402-C	1 of 1	C	31 Aug 2012	Pulsar 2xxx IS Block Diagram

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