



1 **EC TYPE-EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 08ATEX2188** Issue: **1**

4 Equipment: **9491-PS 12VDC IS Power Supply Module**

5 Applicant: **Controlled Systems Limited**

6 Address: Unit 1 Ryder Close
Swadlincote
Derbyshire DE11 9EU
UK

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 60079-0:2006 IEC 60079-26:2006 (for guidance on 'Ma' and 'Ga' marking) EN 61241-0:2006
EN 60079-11:2007 IEC 61241-11:2005

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 (1/2) GD
(Ga) [Ex ia] IIB
(Gb) [Ex ib] IIB
[Ex iaD]
[Ex ibD]
Ta = 0°C to +70°C

and/or



I (M1/M2)
(Ma) [Ex ia] I
(Mb) [Ex ib] I

Project Number 52A16409
C. Index 16

C. Ellaby
Certification Officer

This certificate and its schedules may only be reproduced in its entirety and without change.



SCHEDULE

EC TYPE-EXAMINATION CERTIFICATE

**Sira 08ATEX2188
Issue 1**

13 DESCRIPTION OF EQUIPMENT

The 9491-PS 12VDC IS Power Supply Module is an intrinsically safe power supply intended to power equipment in the hazardous area. It consists of a printed circuit board assembly mounted in a plastic enclosure. There are two separate intrinsically safe outputs, one 'ia' and one 'ib'.

The power supply is intended to be either DIN rail mounted or backplane mounted.

External I.S. connections are made via 'plug-in' terminals at the top of the enclosure, one for each of the two separate I.S. circuits.

External non-I.S. connections are made via either 'plug-in' terminals at the side of the enclosure when the power supply is DIN rail mounted, or via a connector at the bottom of the enclosure when the equipment is backplane mounted.

The equipment must either only be installed in clean, dry, well-ventilated environments or fitted in an additional enclosure that has an IP rating suitable for the environment of use.

The power supply electrical parameters are:

Terminals 13 and 14 or 8 pin connector			
Um	250 V		
Terminals 1 and 3 (linear characteristic, resistive current limit, source) certification code (Ga) [Ex ia] IIB, [Ex iaD], (Ma) [Ex ia] I			
Uo	12.4 V		
Io	2.67 A		
Po	8.27 W		
Co	Group IIB	Group IIA	Group I
	7.9 µF	30.0 µF	31.0 µF
Lo/Ro	Group IIB	Group IIA	Group I
	17.2 µH/Ω	34.4 µH/Ω	56.4 µH/Ω
Terminals 5 and 6 (non-linear, active current 'switch-off', source) certification code (Gb) [Ex ib] IIB, [Ex ibD], (Mb) [Ex ib] I			
Uo	12.4 V		
Io	505 mA		
Po	6.3 W		
Co	500 nF		
Lo	100 µH		

This certificate and its schedules may only be reproduced in its entirety and without change.



SCHEDULE

EC TYPE-EXAMINATION CERTIFICATE

Sira 08ATEX2188
Issue 1

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report no.	Comment
0	31 July 2008	R52A16409B	The release of the prime certificate.
1	28 August 2008	R52A16409C	This Issue allowed report number R52A16409C to replace report number R52A16409B, the safety parameters were adjusted accordingly.

15 SPECIAL CONDITIONS FOR SAFE USE (denoted by X after the certificate number)

15.1 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.

17.3 The following routine test shall be carried out on transformers TX1 and TX2 (TRF305).

As required by clause 11.2 of EN 60079-11:2007, a voltage of 1500 Vrms shall be applied for 60 seconds between:

- the primary and secondary (1) windings
- the primary and secondary (2) windings
- the secondary (1) and secondary (2) windings

17.4 The values of resistors RA, RB, RC, RD, RE, RF, RG, RH, RJ, RK, RL and RM shall be chosen such that the crowbar triggering voltage of each of the two crowbar circuits associated with IC6 and IC7 occurs at a voltage less than, or equal to, 12.4 V. Each of the two crowbar circuits shall be subjected to routine tests to establish that the requirement above has been met.

17.5 Each of the two active current switch-off circuits associated with IC4 and IC5 shall be subjected to routine tests to establish that current switch-off (i.e. circuit switching state) occurs at a load current less than, or equal to, 505 mA.

This certificate and its schedules may only be reproduced in its entirety and without change.

Certificate Annexe

Certificate Number: Sira 08ATEX2188
Equipment: 9491-PS 12VDC IS Power Supply Module
Applicant: Controlled Systems Limited



Issue 0

Number	Sheet	Rev.	Date	Description
9491-PSU	1 of 1	4	16 Jul 2008	Power Supply Circuit Diagram
9491-ASSY	1 of 1	1	17 Jul 2008	General Assembly
9491-LABEL ATEX SAFE	1 of 1	1	31 Jul 2008	Certification Label Details
9491-PSU PCB	1 of 1	4	21 Jul 2008	Printed Circuit Board Artworks
TRF305	1 of 2	2	10 Dec 2007	Transformer Type TFR305 Details
TRF305	2 of 2	2	10 Dec 2007	Transformer Type TFR305 Details

This certificate and its schedules may only be reproduced in its entirety and without change.