



1 **EC TYPE-EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 08ATEX4310X** Issue: **0**

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

5 Applicant: **Controlled Systems Ltd.**

6 Address: Ryder Close  
Cadley Hill  
Swadlincote  
Derbyshire DE45 9EU  
United Kingdom  
(These products may be manufactured at any facility listed on Quality Assurance Notification Sira 98 ATEX M 034 that has been audited for the manufacture of the type of protection listed)

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      EN 60079-11:2007      EN 60079-15:2005      EN 60079-26:2007  
IEC 60079-0:2007 (for guidance on marking)

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 3G (1)G (2)G  
Ex nAc [ia] [ib] IIB T4  
(Ta = 0°C to +70°C)

Project Number 52L19071  
C. Index 16

C Ellaby  
Certification Officer

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**SCHEDULE**

**EC TYPE-EXAMINATION CERTIFICATE**

**Sira 08ATEX4310X  
Issue 0**

**13 DESCRIPTION OF EQUIPMENT**

The 9491-PS 12VDC IS Power Supply Module is an intrinsically safe power supply intended to be mounted in a Zone 2 hazardous area. It consists of a printed circuit board assembly mounted within 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 (the backplane does not form part of this certified equipment).

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 parameters for the power supply are as follows:

Terminals 13 and 14 or 8 pin connector		
Rated voltage	30V d.c.	
Um	250 V	
Terminals 1 and 3 (linear characteristic, resistive current limit, source) Certification code Ex [ia IIB]		
Uo	12.4 V	
Io	2.67 A	
Po	8.27 W	
Co	Group IIB	7.9 µF
	Group IIA	30 µF
Lo/Ro	Group IIB	17.2 µH/Ω
	Group IIA	34.4 µH/Ω
Terminals 5 and 6 (non-linear, active current 'switch-off', source) Certification code Ex [ib IIB]		
Uo	12.4 V	
Io	505 mA	
Po	6.3 W	
Co	500 nF	
Lo	100 µH	

**14 DESCRIPTIVE DOCUMENTS**

**14.1 Drawings**

Refer to Certificate Annexe.

**14.2 Associated Sira Reports and Certificate History**

Issue	Date	Report no.	Comment
0	10 December 2008	R52L19701A	The release of the prime certificate.

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**Sira Certification Service**

Rake Lane, Eccleston, Chester, CH4 9JN, England

Tel: +44 (0) 1244 670900  
 Fax: +44 (0) 1244 681330  
 Email: [info@siracertification.com](mailto:info@siracertification.com)  
 Web: [www.siracertification.com](http://www.siracertification.com)



## SCHEDULE

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**Sira 08ATEX4310X**  
**Issue 0**

- 15 **SPECIAL CONDITIONS FOR SAFE USE** (denoted by X after the certificate number)
- 15.1 The equipment shall be installed in an additional enclosure that is certified as meeting or exceeding the enclosure requirements of EN/IEC 60079-0 and EN/IEC 60079-15 (e.g. a certified Ex e enclosure). The minimum level of ingress protection provided shall be IP 54.
- 15.2 When using the option to connect the power supply module to an external backplane via connector X1, the following conditions apply:
- The external backplane shall be fitted with two retention clips type MTL 012-533 (Honeywell part no. 51153961-100) that allow the power supply module to be 'clipped' to the backplane.
  - The power supply module being 'clipped' to the backplane forms part of the hazardous area protection and as such the retention clips shall always be in place when the power supply module is energised.
  - Any backplane used does not form part of this certified equipment and as such shall be separately certified or assessed for use in Zone 2.
- 15.3 The maximum current drawn from terminals 1, 3, 5 and 6 combined shall not exceed 480mA in normal operation.
- 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 As required by clause 11.2 of EN/IEC 60079-11:2006, the following routine tests shall be carried out on transformers TX1 and TX2 (TRF305):
- A voltage of 1500 V rms shall be applied for 60 seconds between the primary and secondary (1) windings
  - A voltage of 1500 V rms shall be applied for 60 seconds between the primary and secondary (2) windings
  - A voltage of 1500 V rms shall be applied for 60 seconds between 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.

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# Certificate Annexe

**Certificate Number:** Sira 08ATEX4310X  
**Equipment:** 9491-PS 12VDC IS Power Supply Module  
**Applicants:** Controlled Systems Ltd.  
MTL Instruments Pvt Ltd.  
Measurement Technology Ltd.



## Issue 0

Number	Sheet	Rev.	Date	Description
9491-PSU	1 of 1	4	05 Sep 08	12V I.S. Power Supply Circuit Diagram
9491-ASSY	1 of 1	1	05 Sep 08	9491 IS Power Supply Assembly Drawing
9491-PSU PCB	1 of 1	4	05 Sep 08	12V I.S. Power Supply Artworks
9491-Label IECEX ZONE 2	1 of 1	2	03 Dec 08	9491-PS 12VDC IS Power Supply IECEX Zone 2 Cert Label
9401-Label ATEX ZONE 2	1 of 1	2	03 Dec 08	9491-PS 12VDC IS Power Supply ATEX Zone 2 Cert Label
TRF305	1 of 2	2	25 Apr 08	MTL Planar Transformer – Type TRF305
TRF305	2 of 2	2	25 Apr 08	MTL Planar Transformer – Type TRF305
9491-Zone 2	1 of 1	1	03 Dec 08	9491 IS Power Supply Additional Notes for Zone 2

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