



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEX SIR 08.0117X** issue No.: **0** Certificate history:

Status: **Current**

Date of Issue: **2008-12-10** Page 1 of 4

Applicant: **Controlled Systems Limited**
Ryder Close
Cadley Hill
Swadincote
Derbyshire DE45 9EU
United Kingdom

Electrical Apparatus: **9491-PS 12VDC IS Power Supply Module**
Optional accessory:

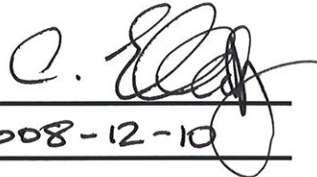
Type of Protection: **Type 'n' and Intrinsic Safety**

Marking: **Ex nAc [ia] [ib] IIB T4**
(Ta = 0°C to +70°C)

*Approved for issue on behalf of the IECEx
Certification Body:* C Ellaby

Position: Certification Officer

Signature:
(for printed version)



Date:

2008-12-10

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

SIRA Certification Service
Rake Lane
Eccleston
Chester
CH4 9JN
United Kingdom

sira
CERTIFICATION



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Manufacturer: **Controlled Systems Limited**
Ryder Close
Cadley Hill
Swadincote
Derbyshire DE45 9EU
United Kingdom

Manufacturing location(s):
MTL Instruments Pvt Limited
No 3 Old Mahabalipuram
Road
Sholinganallur
Chennai 600119
India

Measurement Technology Ltd
Power Court
Luton
Bedfordshire LU1 3JJ
United Kingdom

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

- | | |
|---|---|
| IEC 60079-0 : 2007-10
Edition: 5 | Explosive atmospheres - Part 0: Equipment - General requirements |
| IEC 60079-11 : 2006
Edition: 5 | Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i" |
| IEC 60079-15 : 2005-03
Edition: 3 | Electrical apparatus for explosive gas atmospheres Part 15: Construction, test and Marking of Type of Protection "n" electrical apparatus |
| IEC 60079-26 : 2006
Edition: 2 | Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga |

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

[GB/SIR/ExTR08.0155/00](#)

Quality Assessment Report:

[GB/BAS/QAR06.0022/01](#)

[GB/BAS/QAR07.0017/01](#)

[GB/SIR/QAR07.0023/01](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The 9491-PS 12 VDC 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.

See Equipment continued for more information.

CONDITIONS OF CERTIFICATION: YES as shown below:

1.	The equipment shall be installed in an additional enclosure that is certified as meeting or exceeding the enclosure requirements of IEC 60079-0 and IEC 60079-15 (e.g. a certified Ex e enclosure). The minimum level of ingress protection provided shall be IP 54.
2.	When using the option to connect the power supply module to an external backplane via connector X1, the following conditions apply: <ul style="list-style-type: none">* 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.
3.	The maximum current drawn from terminals 1, 3, 5 and 6 shall not exceed 480mA in normal operation.



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EQUIPMENT(continued):

The parameters for the power supply are as follows:

Terminals 13 and 14 or 8 pin connector				
Rated voltage	30 V 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 μ F	Group IIA	30 μ F
Lo/Ro	Group IIB	17.2 μ H/ Ω	Group IIA	34.4 μ H/ 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 μ H			

The Manufacturer shall note the following conditions of manufacture:

1. 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.
2. 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.
3. As required by clause 11.2 of 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