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 08.0072 issue No.:0

Certificate history:

Status: **Current**

Date of Issue: **2008-08-28** Page 1 of 4

Applicant: **Controlled Systems Limited**
Ryder Close
Swadlincote
Derbyshire DE11 9EU
United Kingdom

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

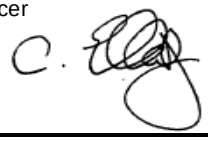
Type of Protection: **Intrinsic Safety and Dust**

Marking: **(Ga) [Ex ia] IIB**
(Gb) [Ex ib] IIB
[Ex iaD]
[Ex ibD]
(Ma) [Ex ia] I
(Mb) [Ex ib] I
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: **2008-08-28**

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.

Certificate issued by:

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

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Manufacturer:

Controlled Systems Limited
Ryder Close
Swadlincote
Derbyshire DE11 9EU
United Kingdom

Manufacturing location(s):

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 : 2004 Edition: 4.0	Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
IEC 60079-11 : 2006 Edition: 5	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 61241-0 : 2004 Edition: 1	Electrical apparatus for use in the presence of combustible dust - Part 0: General requirements
IEC 61241-11 : 2005 Edition: 1	Electrical apparatus for use in the pressence of combustible dusts - Part 11: Protection by intrinsic safety 'iD'

*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/ExTR08.0106/00

Quality Assessment Report:
GB/SIR/QAR07.0023/01

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Schedule

EQUIPMENT:
Equipment and systems covered by this certificate are as follows:

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.

CONDITIONS OF CERTIFICATION: NO

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EQUIPMENT(continued):

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**		

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. **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**