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 TRA 17.0003X

Issue No: 0

Certificate history:
Issue No. 0 (2017-07-14)

Status: **Current**

Date of Issue: **2017-07-14**

Applicant: **Controlled Systems Ltd**
Unit 1 Ryder Close
Swadlincote
Derbyshire DE11 9EU
United Kingdom

Equipment: **9492-PS-PLUS IS Power Supply Module**
Optional accessory:

Type of Protection: **Intrinsic Safety**

Marking:

[Ex ia Ma] I

[Ex ib Mb] I

-40°C ≤ Tamb ≤ +70°C

Approved for issue on behalf of the IECEx Certification Body: James Bes

Position: Certification Authority

Signature:
(for printed version)

Date: 2017-07-14

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:

TUV Rheinland Australia Pty. Ltd
1/30 Kennington Drive
Tomago NSW 2322
Australia

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Certificate No: IECEx TRA 17.0003X Issue No: 0

Date of Issue: **2017-07-14**

Manufacturer: **Controlled Systems Ltd**
Unit 1 Ryder Close
Swadlincote
Derbyshire DE11 9EU
United Kingdom

Additional 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 : 2011 Edition:6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-11 : 2011 Edition:6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

*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:

AU/TRA/ExTR17.0009/00 GB/CML/ExTR15.0047/00

Quality Assessment Report:

GB/SIR/QAR07.0023/10

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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The 9492-PS-PLUS 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 can be two separate intrinsically safe outputs one 'ia' and one 'ib'. It restricts the transfer of energy from unspecified safe area apparatus to an intrinsically safe circuit by the limitation of voltage and current. A transformer provides galvanic isolation between the hazardous and non-hazardous areas.

Refer to Annexe for full description.

SPECIFIC CONDITIONS OF USE: YES as shown below:

Refer to Annex for Specific Conditions of Use.

Annex:

IECEx TRA 17.0003X Certificate Annex.pdf

IECEx Certificate of Conformity

Annexe

Annexe for Certificate No.:	IECEx TRA 17.0003X	Issue No.:	0

Description (Cont'd from certificate):

The power supply is intended to be either DIN rail mounted or backplane mounted in the non-explosive area.

External I.S. connections are made via plug in terminals at the top of the enclosure, one for each of the two separate circuits (if fitted).

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 9492-PS-PLUS IS Power Supply Module is suitable for use in Group I, underground coal mining, the electrical parameters are:

Um = 250V

The circuit connected to the safe area terminals is designed to operate from a d.c. supply of up to nominal 30V.

Level of Protection	Uo (V)	Io (A)	Po (W)
ia	12.8	3.23	10.34
ib		0.63	8.07

The capacitance and the inductance to resistance ratio (L/R) of the load connected to the output terminals must not exceed the following values when used as Ex ia.

Co (µF)	Lo/Ro (µH/Ω)	Lo (µH)
30	45.1	130

The capacitance and the inductance of the load connected to the output terminals must not exceed the following values when used as Ex ib.

Co (µF)	Lo (µH)
1.0	100

Conditions of Manufacture pertaining to Issue 0 of this Certificate:

The following conditions are required of the manufacturing process for compliance with the certificate:

1. As required by clause 11.2 of IEC 60079-11:2011, a voltage of 1500Vrms shall be applied for at least 60 seconds (alternatively 1800V for > 1 second) between:
    a. The primary and secondary (1) windings.

b. The primary and secondary (2) windings
c. The secondary (1) and secondary (2) windings (by reference to drawing TRF305)

2. The value of resistors RA, RB, RC, RD, RE, RF, RG and RH shall be chosen such that the crowbar triggering voltage associated with IC6 and IC7 occurs at a voltage less than or equal to Uo on the table shown on drawing 9491/9492/9493-ASSY Sheet 2 for the 9492-PS-PLUS.
3. Each active current limiting switch-off circuit associated with IC4 and IC5 shall be subjected to routine tests to establish that the current switch-off occurs at a load current less than or equal to 630mA.

Conditions of Certification pertaining to Issue 0 of this Certificate:

1. The apparatus shall be housed in an enclosure providing a degree of protection of at least IP54.

Drawing list pertaining to Issue 0 of this Certificate:

Manufacturer's Documents

Title:	Drawing No.:	Pages	Rev. Level:	Date:
9491/9492/9493 IS Power Supply Assembly Drawing	9491/9492/9493-ASSY	2	5	2017-06-30
9492-PS-PLUS IS POWER SUPPLY QLD IECEx CERT LABEL	9492-PS-PLUS QLD LABEL	1	1	2017-04-27
I.S. POWER SUPPLY CIRCUIT DIAGRAM	9492-PSU-PLUS	1	7	2017-06-21
9492-PSU-PLUS ARTWORKS	9492-PS-PLUS PCB	1	7	2017-06-26
MTL Planar Transformer – Type TFR305	TFR305	2	2	2007-12-10