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 TSA 10.0008X	Issue No: 2	Certificate history:
			Issue No. 2 (2011-03-09)
Status:	**Current**	Page 1 of 4	Issue No. 1 (2010-10-06)
			Issue No. 0 (2010-07-05)
Date of Issue:	**2011-03-09**		
Applicant:	**Ampcontrol CSM Pty. Ltd** 7 Billbrooke Close Cameron Park NSW 2285 **Australia**		
Electrical Apparatus:	**Intrinsically Safe UPS**		
Optional accessory:			
Type of Protection:	**Ex e ia m Group I IP66**		
Marking:	Ampcontrol IS UPS Ex ia ma e I (Tamb –20 °C + 60 °C) IP66 IECEX TSA 10.0008X 110-240 Vac S/N		

Approved for issue on behalf of the IECEx Certification Body: Ujen Singh

Position: Quality & Certification Manager

Signature:
(for printed version)

Date:

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:

TestSafe Australia
919 Londonderry Road
Londonderry NSW 2753
Australia

IECEx Certificate of Conformity

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Manufacturer: **Ampcontrol CSM Pty Ltd**
7 Billbrooke Close
Cameron Park 2285
Australia

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 : 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 60079-18 : 2004 Edition:2.0	Electrical apparatus for explosive gas atmospheres - Part 18: Construction, test and marking of type of protection encapsulation 'm' electrical apparatus
IEC 60079-7 : 2006-07 Edition:4	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"

*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/TSA/ExTR10.0015/00 AU/TSA/ExTR10.0016/00 AU/TSA/ExTR10.0052/00
AU/TSA/ExTR11.0008/00

Quality Assessment Report:

AU/TSA/QAR06.0007/04

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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The Intrinsically Safe UPS comprises of electronics and batteries mounted within a stainless steel enclosure, to provide a battery-backed, intrinsically safe power supply output. In addition to this output, it provides several other intrinsically safe monitoring and control connections, and a mains power input to maintain the battery. A user accessible front panel consisting of a display, keypad and indicator lamps are provided to allow interrogation and configuration of the IS UPS. The IS UPS consists of circuit boards namely - Input Board, Processor Board, Output Board and Terminal Board. The Battery Board PCB is encapsulated together with the batteries. The terminals of the batteries and the Input Board are encapsulated. The type of protection provided by the encapsulation of the Input Board is 'ma' and has been assessed in a separate test report 32120. The mains terminals are situated in a separate compartment of the stainless steel enclosure. The type of protection provided at the mains terminals is increased safety 'e' and it has been assessed in the test report 32120. The ISUPS is not to be energized when it is inside zone 0. The IS UPS is manufactured in a variety of variants, providing different battery capacities and intrinsically safe power supply output parameters. Variation of battery capacity is accommodated by separate enclosure types, while variation of output parameters is accommodated by allowing the fitment of varied components to configure the output.

CONDITIONS OF CERTIFICATION: YES as shown below:

See Annexe of this certificate for the conditions of certification.

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Refer the annexe for the variations permitted by issue 2 of the certificate.

Annex:

Annexe for IECEx TSA 10_0008X-2.pdf

IECEx Certificate of Conformity Annexe

Annexe for Certificate No.:	IECEx TSA 10.0008X	Issue No.:	2

Drawing list pertaining to Issue- 0 of this Certificate:

Document No.	Sheets	Document Title	Issue	Date (yyyy/mm/dd)
		IS UPS Battery Board		
IS UPS–Z-020	1	IS UPS Battery Board Schematic	3	2010/05/25
ISUPS-Z-021	5	IS UPS Battery Board PCB	3	2010/05/25
ISUPS-Z-022	1	IS UPS Battery Board BOM	3	2010/05/25
		IS UPS Input Board		
ISUPS-Z-002	2	IS UPS Input Board Schematic	4	2010/06/16
ISUPS-Z-016	7	IS UPS Input Board PCB	3	2010/05/25
ISUPS-Z-024	3	IS UPS Input Board BOM	4	2010/06/16
		IS UPS Output Board		
ISUPS-Z-015	2	IS UPS Output Board Schematic	4	2010/06/16
ISUPS-Z-019	5	IS UPS Output Board PCB	3	2010/05/25
ISUPS-Z-025	2	IS UPS Output Board BOM	4	2010/06/16
		IS UPS Processor Board		
ISUPS-Z-014	3	IS UPS Processor Board Schematic	4	2010/06/16
ISUPS-Z-018	7	IS UPS Processor Board PCB	3	2010/05/25
ISUPS-Z-023	3	IS UPS Processor Board BOM	4	2010/06/16
		IS UPS Terminal Board		
ISUPS-Z-013	1	IS UPS Terminal Board Schematic	4	2010/06/01
ISUPS-Z-017	5	IS UPS Terminal Board PCB	3	2010/05/25
ISUPS-Z-009	1	IS UPS Terminal Board BOM	3	2010/05/24
		Transformer		
ISUPS-Z-003	1	IS. UPS Transformer Construction Details	4	2010/05/07
		Assembly Drawings		
ISUPSZ004	1	Battery Module Component of Power Module S/Assy	2	2010/03/19
ISUPSZ005	1	UPS IS IECEx 110/240 300 Wh Version	4	2010/06/16
ISUPSZ006	1	UPS IS IECEx 110/240 65 Wh Version	4	2010/06/16
ISUPSZ010	1	S/Assy, Battery Pack, IS UPS, 65WH	2	2010/03/19
ISUPS-Z-011	1	S/Assy Power Module IS UPS PCB Part	1	2009/11/02
ISUPS Z012	1	ISUPS Enclosures	4	2010/05/07
ISUPS-M-018	3	IS UPS LABELS Manufacturing Details	2	2010/05/11
ISUPS-Z-027	2	IS UPS Model Creation Procedure	1	2010/04/06
ISUPS-Z-028	1	IS UPS Block Diagram	4	2010/06/16

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IECEx Certificate of Conformity Annexe

Annexe for Certificate No.:	IECEx TSA 10.0008X	Issue No.:	2

Document No.	Sheets	Document Title	Issue	Date (yyyy/mm/dd)
ISUPS-Z-029	5	IS UPS User Manual Inclusion	0	2010/06/16

Conditions of Certification pertaining to Issue -0 of this Certificate:
The following conditions of safe use must be taken into account when installed.

1. The mains power input must not be used when installed in Zone 0.

2. The following input/output parameters must be taken in to account when installed.

Terminals X8, X9, X10; mains supply input:
Um = 250 Vac

Terminal X7; External Start Push Button:
Uo = 32.5V
Io = 24 mA
Lo = 100 µH
Co = 0.040 µF

Terminal X6; DC Output:

Configuration	Uo	Io	Co	Lo	Lo/Ro
1	15.1 V	1.50 A	1.0 µF	200 µH	87.17 µH/Ω
2	15.1 V	0.51 A	1.0 µF	200 µH	87.17 µH/Ω
3	15.1 V	0.47 A	2.01µF	520 µH	87.17 µH/Ω
4	15.1 V	0.50 A	1. 0 µF	200 µH	87.17 µH/Ω
5	14.5 V	1.50 A	1.0 µF	200 µH	87.17 µH/Ω
6	12.6 V	2.50 A	2.0 µF	167.2 µH	33 µH/Ω
7	12.6 V	2.40 A	2.0 µF	167.2 µH	33 µH/Ω
8	12.6 V	2.00 A	502 nF	164 µH	40.1 µH/Ω
9	12.6 V	2.00 A	20.54 µF	102.1µH	39 µH/Ω
10	15.1 V	1.50 A	2.09 µF	181.5 µH	79 µH/Ω

The above output parameters Co, Lo, Lo/Ro were determined based on spark testing. The same Co, Lo, Lo/Ro values are allowed to be used with models of ISUPS when configured with lesser Uo and/or Io values.

Terminal X5: Digital Input 1
Uo = 16.5 V
Io = 16.8mA
Lo = 100 µH
Co = 1 µF

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Terminal X4: Digital Input 2 & 3
Ui = 16.5V
Uo = 0V

Terminal X3; Pins 1 & 2 (data for RS-485):
Ui = 7.14 V
Ci = 0.221µF
Li = 0 µH
Uo = 5.88V
Io= 124mA

Terminal X3 Pins 3 & 4 (Power Supply for RS-485):
Ui = 16.5 V
Ii = 2.8A
Ci = 0 µF
Li = 0 µH

Terminal X2; Relay 1:
Ui = 30Vdc
Ii = 3A
Uo = 0 V

Terminal X1; Relay 2 and Relay 3:
Ui = 30Vdc
Ii = 3A
Uo = 0 V

IECEx Certificate of Conformity Annexe

Annexe for Certificate No.:	IECEx TSA 10.0008X	Issue No.:	2

Variations permitted by issue 1 of the certificate:

Following drawings were assessed in test report AU/TSA/ExTR10.0052/00 (TR32600, TestSafe).

Drawing list pertaining to Issue 1 of this Certificate:

Document No.	Sheets	Document Title	Issue	Date (yyyy/mm/dd)
		IS UPS Input Board		
ISUPS-Z-002	2	IS UPS Input Board Schematic	5	2010/09/21
ISUPSZ024	3	IS UPS Input Board BOM	5	2010/09/21
ISUPSZ031	1	IS UPS Input Board Rev-3 Modification Procedure	0	2010/09/20
		IS UPS Processor Board		
ISUPS-Z-014	3	IS UPS Processor Board Schematic	5	2010/09/13
ISUPS-Z-018	7	IS UPS Processor Board PCB	4	2010/09/13
ISUPS-Z-023	3	IS UPS Processor Board BOM	5	2010/09/13
ISUPSZ030	1	IS UPS Processor Board Rev-3 Modification Procedure	0	2010/09/13
		Assembly Drawings		
ISUPSZ004	1	Battery Module Component of Power Module S/Assy	3	2010/09/14
ISUPSZ10	1	S/Assy, Battery Pack, IS UPS, 65 Wh	3	2010/09/14

Conditions of Certification pertaining to Issue 1 of this Certificate:

There are no new conditions pertaining to this issue. Previous conditions of certification are unchanged.

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IECEx Certificate of Conformity Annexe

Annexe for Certificate No.:	IECEx TSA 10.0008X	Issue No.:	2

Variations permitted by issue 2 of the certificate:

Following changes were made to the Input Board:

Resistor values of R62 and R75 are changed. The regulator U4, LM3075 is changed to LM5116. The BOM and PCB tracks were also changed accordingly.

Following changes were made to the Output Board:

The transistors Q1, Q2, Q3 are changed from SPP80N06S2L-07 to IPP80N06S2L-06 or to FDP5800. The value of resistors R49, R51, R53, R55 are changed. The Bill of Materials and the schematic are also changed.

The above changes were assessed in test report AU/TSA/ExTR11.0008/00 (TR32756).

Drawing list pertaining to this variation:

Document No.	Sheets	Document Title	Issue	Date (yyyy/mm/dd)
		Input Board		
ISUPS-Z-002	2	IS UPS Input Board Schematic	6	2011/02/28
ISUPS-Z-016	7	IS UPS Input Board PCB	4	2011/02/28
ISUPSZ024	4	IS UPS Input Board BOM	6	2011/02/28
		Output Board		
ISUPS-Z-015	2	IS UPS Output Board Schematic	6	2011/02/16
ISUPSZ015	3	IS UPS Output Board BOM	6	2011/02/16

Conditions of certification pertaining to Issue 2:

There are no new conditions of certification pertaining to this variation. Previous conditions of certification are unchanged.

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