



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

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

Certificate No.: **IECEX TRA 17.0002X** Page 1 of 5 [Certificate history:](#)
Issue No: 1 [Issue 0 \(2017-10-20\)](#)

Status: **Current**

Date of Issue: 2023-02-28

Applicant: **Compac Industries Ltd**
52 Walls Rd
Penrose Auckland
New Zealand

Equipment: **C5000 Power Supply**

Optional accessory:

Type of Protection: **Flameproof 'd' & Intrinsic Safety 'i'**

Marking: Ex db [ib Gb] IIA T4 Gb
-40°C ≤ Ta ≤ +55°C for 110-240Vac 15A version (with motor triacs)
-40°C ≤ Ta ≤ +65°C for 110-240Vac 2A version (without motor triacs)

Approved for issue on behalf of the IECEx
Certification Body:

David Price

Position:

Certification Authority

Signature:
(for printed version)

Date:
(for printed version)

2023-02-28

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 www.iecex.com or use of this QR Code.



Certificate issued by:

Ex Testing and Certification Pty Ltd
1/30 Kennington Drive
Tomago NSW 2322
Australia



TESTING & CERTIFICATION



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Manufacturer: **Compac Industries Ltd**
52 Walls Rd
Penrose Auckland
New Zealand

Manufacturing
locations:

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 equipment 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 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

[IEC 60079-1:2014-06](#) Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

[IEC 60079-11:2011](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

This Certificate **does not** indicate compliance with 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 Reports:

[AU/ExTC/ExTR23.0005/00](#)

[AU/ExTC/ExTR23.0006/00](#)

Quality Assessment Report:

[AU/TSA/QAR08.0008/09](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The C5000 Power Supply consists of a flameproof box enclosing several printed circuit board assemblies:

- a power supply producing a 5V, 0.2A, 1W I.S. supply, a 9V, 1A I.S. supply, I.S. isolated RS485, and a 12V non-I.S. supply
- a processor board running off the 12V non-I.S. supply with USB, Ethernet, and SD card reader
- a Comms boards to interface to extra low voltage, non-I.S, forecourt pump communications
- a terminal board which has 7 low current (0.2A) triac outputs and terminals for field wiring of input mains, motors, solenoids or other mains driven equipment
- two high current (5A) triacs to drive up to two 1HP electric motors.

The flameproof enclosure is made of cast aluminium with a built in barrier gland and may be used with compac brass blanking plugs BA-PLUG-20E.

See annex for further details.

SPECIFIC CONDITIONS OF USE: YES as shown below:

See annex for details



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
See annex for details



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Additional information:

ExTC Job : 21082

Annex:

[IECEX_TRA_17.0002X_001_Annex Final.pdf](#)

 <h1 style="margin: 0;">IECEX Certificate of Conformity</h1> <h2 style="margin: 0;">Annexe</h2>		 <small>TESTING & CERTIFICATION</small>
Annexe for Certificate No.:	IECEX TRA 17.0002X	Issue No.: 1

Description:

(Continuation from main body of the certificate)

The mains terminal board (CI504), the processor board (CI500), the Communication board (CI501), and part of the power supply boards (CI505) are on the non-intrinsically safe side of the electronics and have been provided Ex d protection. The outputs from the power supply board (CI505) are intrinsically safe and have been considered in this report.

The flameproof box and its accessories provide the Ex d protection. The processor and communication boards are considered when calculating the maximum temperature inside the box.

The mains supply is 110-240Vac 50/60Hz 15A (for the models fitted with motor triacs), or 2A (for the models fitted without motor triacs).

As far as the intrinsic safety is concerned the mains fuses (F2, F3) are on the terminal board (CI504). These are the only two components on the terminal board that are required for the intrinsic safety of the output. The fuses are placed on the top side of the PCB and are protected with plastic covers. The tracks after the fuses are on the bottom side of the PCB so cannot be compromised by shorting out to the wiring on the top.

The Power Supply board CI505 is the “associated apparatus” that bridges between the non-intrinsically safe parts and the intrinsically safe outputs. This consists of 3 printed circuit boards piggy backed on top of one another. These boards are fitted under the processor and terminal board. This board provides a non-IS 12V 1A. It also provides intrinsically safe 9V supply output, a 5V supply output, and a RS485 connection brought out on a cable through a gland, with a plug with 8 pins.

Compliance for flameproof requirements is provided in AU/ExTC/ExTR23.0006/00 and for intrinsic safety requirements in provided in AU/ExTC/ExTR23.0006/00.

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Annexe



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Conditions of Certification pertaining to Issue 0 of this Certificate:

1. The Um of 250Vac is applicable on the non-intrinsically safe connections, with a nominal voltage range of 110-240Vac.

Input output parameters that must be taken into account during interconnection with other intrinsically safe equipment:

C5000 Power Supply I.S. Cable connections:	
5V & RS485	Pins 1, 2, & 6 w.r.t. Pins 3, 4, 5, & 7
Uo	5.2V
Io	192mA
Po	1W
Co	800uF
Lo	2.5mH
9V Output	Pin 8 w.r.t. Pins 3, 4, 5, & 7
Uo	9.6V
Io	960mA
Po	9.2W
Co	15uF
Lo	27uH

2. The intrinsically safe output circuits are bonded to the metallic enclosure, and this must be taken into account when interconnecting in the system.
3. Some flamepaths are different from the standard and must be considered during maintenance / repair using the information supplied by the manufacturer.

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Annexe



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Drawing list pertaining to Issue 0 of this Certificate:

Manufacturer's Documents				
Title:	Drawing No.:	Pages	Rev. Level:	Date:
C5000 – Mains Transformer Build	AP388	1-2	A	5 Sep 2017
Installation & Safety Data for C5000 Power Supply	AP389	5	B	16 Oct 2017
C5000 Power Supply Label	AP390	1-2	B	29 Sep 2017
C5K Processor (Schematics)	CI500	1-7	B	3 May 2017
C5000 Processor (PCB layers)	CI500	8-13	B	4 May 2017
CP-C5K-Processor (BOM)	CI500P	1-3	B	3 May 2017
CI501 Comms Board 1 (Schematics)	CI501	1-3	A	28 Sep 2016
C5000 Comms Board 1 (PCB layers)	CI501	4-7	A	25 Sep 2017
C5000 Comms Option 1 (BOM)	CI501P	1	A	29 Sep 2016
C5000 Mains Terminal Board (Schematic – Connectors)	CI504	1 of 6	A	26 Sep 2016
C5000 Mains Terminal Board (Schematic – Triacs)	CI504	2 of 6	A	26 Sep 2016
C5000 Mains Terminal Board (PCB - Top Overlay)	CI504	3 of 6	A	6 Jul 2017
C5000 Mains Terminal Board (PCB - Top Layer)	CI504	4 of 6	A	6 Jul 2017
C5000 Mains Terminal Board (PCB - Bottom Layer)	CI504	5 of 6	A	6 Jul 2017
C5000 Mains Terminal Board (PCB - Bottom Overlay)	CI504	6 of 6	A	6 Jul 2017
CP-C5K-TERM (Terminal Board - PCB - Bill of Materials)	CI504P	1	A1	6 Jul 2017
C5000 Power Supply (Schematic – Overview)	CI505	1 of 9	C	25 Sep 2017
C5000 Power Supply (Schematic Mains to 12V)	CI505	2 of 9	C	25 Sep 2017
C5000 Power Supply (Schematic 12V to 9V I.S.)	CI505	3 of 9	C	25 Sep 2017

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Title:	Drawing No.:	Pages	Rev. Level:	Date:
C5000 Power Supply (Schematic - 12V to 5V I.S.)	CI505	4 of 9	C	25 Sep 2017
C5000 Power Supply (Schematic - Local and Isolated Comms)	CI505	5 of 9	C	25 Sep 2017
C5000 Power Supply (all layers)	CI505	6 to 9 of 9	C	5 Jul 2017
CP-C5K-PS (C5000 Power Supply Board - Bill of Materials)	CI505P	1-7	C	25 Sep 2017
Development C5000 Transformer Bobbin	PDM1432B	1-2	A	19 Sep 2016
C5000 Power Supply - C5000 Explosion Proof Box (BSE) <i>(various titles)</i>	PDM1442C	1-3	B	21 Apr 2017
C5000 Power Supply - C5 Explosion Proof Box Lid	PDM1443B	1	A	21 Apr 2017
C5000 Power Supply – C5K FP Box IS Gland	PDM1444B	1	A	25 Sep 2017
C4000 Glands - Blanking Plug	SW050	8 only	G	19 Mar 2010

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Variations permitted by Issue 1 of this certificate:

- Compliance has been assessed to the more recent Standards IEC 60079-0:2017; IEC 60079-1:2014; IEC 60079-11:2011 (in reports AU/ExTC/ExTR23.0006/00 for Ex d and AU/ExTC/ExTR23.0005/00 for Ex i). These reports together with the drawings listed in the table below replace the earlier reports and drawings associated with Issue 0 of this certificates.
- Allowance for an increased output cable length
- Revised marking label and Instruction Manual
- Revised certificate Ex code to clarify that Tamb depends on the current listed in the marking label
- Method of affixing O-ring and reduced thread tap length

Conditions of Certification pertaining to Issue 1 of this certificate:

The conditions below are the composite list to be used with applying this issue of the certificate:

1. The Um of 250Vac is applicable on the non-intrinsically safe connections, with a nominal voltage range of 110-240Vac.

Input output parameters that must be taken into account during interconnection with other intrinsically safe equipment:

C5000 Power Supply I.S. Cable connections:	
5V & RS485	Pins 1, 2, & 6 w.r.t. Pins 3, 4, 5, & 7
Uo	5.2V
Io	192mA
Po	1W
Co	800uF
Lo	2.5mH
9V Output	Pin 8 w.r.t. Pins 3, 4, 5, & 7
Uo	9.6V
Io	960mA
Po	9.2W
Co	15uF
Lo	27uH

2. The intrinsically safe output circuits are bonded to the metallic enclosure, and this must be taken into account when interconnecting in the system.

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3. Some flamepaths are different from the standard and must be considered during maintenance / repair using the information supplied by the manufacturer.
4. The maximum length of the output I.S. cable is 4m. Longer cables may be used but then the parameters of the extra cable capacitance (300pF/m 1uH/m) must be included in the analysis of the system parameters and will effectively reduce the Co and Lo parameters of the above output parameters
5. The equipment provides IP66 only when the base is fitted with an O-ring fitted in the base and with the use of appropriate glands

Drawings Associated with the Issue 1 of this Certificate:

Manufacturer's Documents				
Title:	Drawing No.:	Pages	Rev. Level:	Date:
C5000 – Mains Transformer Build	AP388	1-2	A	2017-09-05
Installation & Safety Data for C5000 Power Supply	AP389	1-5	C	2021-05-19
C5000 Power Supply Label	AP390	2	D	2022-09-14
C5K Processor (Schematics)	CI500	1-7	B	2017-05-03
C5000 Processor (PCB layers)	CI500	8-13	B	2017-05-04
CP-C5K-Processor (BOM)	CI500P	1-3	B	2017-05-03
CI501 Comms Board 1 (Schematics)	CI501	1-3	A	2016-09-28
C5000 Comms Board 1 (PCB layers)	CI501	4-7	A	2017-09-25
C5000 Comms Option 1 (BOM)	CI501P	1	A	2016-09-29
C5000 Mains Terminal Board (Schematic – Connectors)	CI504	1 of 6	A	2016-09-26
C5000 Mains Terminal Board (Schematic – Triacs)	CI504	2 of 6	A	2016-09-26
C5000 Mains Terminal Board (PCB - Top Overlay)	CI504	3 of 6	A	2017-07-06
C5000 Mains Terminal Board (PCB - Top Layer)	CI504	4 of 6	A	2017-07-06
C5000 Mains Terminal Board (PCB - Bottom Layer)	CI504	5 of 6	A	2017-07-06

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Title:	Drawing No.:	Pages	Rev. Level:	Date:
C5000 Mains Terminal Board (PCB - Bottom Overlay)	CI504	6 of 6	A	2017-07-06
CP-C5K-TERM (Terminal Board - Bill of Materials)	CI504P	1	A1	2017-07-06
C5000 Power Supply C5000 P/Supply (several titles)	CI505	1 to 5 of 9	C	2023-02-16
C5000 Power Supply Top Overlay	CI505	6 of 9	C	2017-07-05
C5000 Power Supply Top Layer	CI505	7 of 9	C	2017-07-05
C5000 Power Supply Bottom Layer	CI505	8 of 9	C	2017-07-05
C5000 Power Supply Bottom Overlay	CI505	9 of 9	C	2017-07-05
CP-C5K-PS (C5000 Power Supply Board - Bill of Materials)	CI505P	1-6	C1	2023-02-16
Development C5000 Transformer Bobbin	PDM1432B	1-2	A	19 Sep 2016
C5000 Power Supply C5000 Explosion Proof Box (BSE) <i>(various titles)</i>	PDM1442E	3	D	2021-05-21
C5000 Power Supply C5 Explosion Proof Box Lid	PDM1443B	1	A	2017-04-21
C5000 Power Supply C5K FP Box IS Gland	PDM1444B	1	A	2017-09-25
C4000 Glands C4000 Blanking Plug	SW050 (Sh 8)	1	G	2010-03-19