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 ExTC 18.0012X**

Certificate history:
Issue 0 (2018-06-13)

Status: **Current**

Issue No: 1

Date of Issue: 2020-02-14

Applicant: **Compac Industries Ltd**
52 Walls Road
Penrose
Auckland 1061
New Zealand

Equipment: **Slave Display**

Optional accessory:

Type of Protection: **Intrinsic Safety 'i'**

Marking: Ex ib IIA T4 Gb

-40˚C ≤ Tamb ≤ +70˚C

Approved for issue on behalf of the IECEx Certification Body: **David Price**

Position: **Certification Authority**

Signature: (for printed version)

Date: 2020-02-14

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 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

IECEx Certificate of Conformity

Certificate No.: **IECEx ExTC 18.0012X**

Date of issue: 2020-02-14 Issue No: 1

Manufacturer: **Compac Industries Ltd**
52 Walls Road
Penrose
Auckland 1061
New Zealand

Additional 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 60079-0:2011 Explosive atmospheres - Part 0: General requirements
Edition:6.0

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/ExTR17.0013/00 AU/EXTC/ExTR19.0009/00 AU/EXTC/ExTR19.0022/00

Quality Assessment Report:

AU/TSA/QAR08.0008/07

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

The Slave Display comprises a CI503 Slave Display Board with either a CI252 or CI253 LCD Panel PCB directly mounted to the Slave Display Board and a totaliser, all housed in a plastic enclosure with a polycarbonate front cover.

The Slave Display Board is designed to form part of an intrinsically safe control system and is powered via the BUS-IN connector J1. Connections are provided for 5 V and 9 V IS supplies, common ground and RS485 communications. The Slave Display Board also provides a BUS-OUT connectors J2 which is directly connected to BUS-IN connector J1 (though the pin numbers on J1 for the various circuits are not the same as the pin numbers on J2) for through connected 5 V and 9 V IS supplies, common ground and RS485 communications.

In addition to the BUS-IN and BUS OUT connectors, the Slave Display Board (CI503) provides connector J300 for a totalizer mounted internal to the enclosure.

The Slave Display may optionally be fitted with a CI515 Preset Board with up to two membrane keypads connected.

SPECIFIC CONDITIONS OF USE: YES as shown below:
Refer to Annex for details

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
Refer to Annex for details.

Annex:

IECEx ExTC 18.0012X-1 Annexe Final.pdf

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Annexe

Annexe for Certificate No.:	IECEx ExTC 18.0012X	Issue No.:	01

Description:

Refer to certificate

Specific Conditions of Use pertaining to Issue 0 of this Certificate:

The following input and output parameters were determined for the connectors on the Slave Display and must be taken into account during interconnection:

Connector J1 (BUS-IN) see Note 1	
5V & RS485	**Pins 1, 2 & 6 w.r.t. Pins 3, 4, 5 & 7**
Ui	6 V
Ii	235 mA
Pi	1.05 W
Li	0 µH
Ci	5.5 µF
Io	2 mA see Note 2
Po	3 mW see Note 2
9V	**Pin 8 w.r.t. Pins 3, 4, 5 & 7**
Ui	10 V
Ii	1 A
Pi	10 W
Li	0
Ci	0

Note 1: Connector J2 (BUS-OUT) is connected in parallel to J1, and hence has the same parameters, with the pin numbers allocated as follows:

Circuit reference	J1 Pin #	J2 Pin #
9V	8	6
5V	2	3
A	6	8
B	1	4
Earth, Screen	3, 4, 5, 7	1, 2, 5, 7, 9, 10

Note 2: The terminals on the 5V circuit may be considered under fault to be connected to an internal source of supply due to a supercapacitor that may charge up to the applied Ui but is limited by internal resistance to provide the Io and Po shown in this table. This needs to be accounted for when connecting in a system.

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Annexe

Annexe for Certificate No.:	IECEx ExTC 18.0012X	Issue No.:	01

Drawing list pertaining to Issue 0 of this Certificate:

Manufacturer's Documents

Title:	Drawing No.:	Pages	Rev. Level:	Date:
Common drawings				
C5000 Displays 7 Digit Display Panel Housing Assembly	ASM0143A	2	B	2017-12-15
Installation & Safety Data for Slave Display	AP399	3	A	2018-06-08
C5000 Control Unit Labels Slave Displays	AP392	Sheet 5	B	2018-06-08
Slave Display				
CI503 C5K Slave Display (Schematics)	CI503	Sheets 1 to 3 of 6	B	2018-04-26
C5000 Slave Display Board (Top Overlay)	CI503	Sheet 4 of 6	B	2018-04-26
C5000 Slave Display Board (Top Layer)	CI503	Sheet 5 of 6	B	2018-04-26
C5000 Slave Display Board (Bottom Layer)	CI503	Sheet 6 of 6	B	2018-04-26
CP-C5K-SDISP (BOM)	CI503P	1	B	2018-04-26
CI252				
LCD PANEL LAYOUT1 (Schematic)	CI252	1 of 5	B	2016-01-27
LCD PANEL LAYOUT1 (Top Overlay)	CI252	2 of 5	B	2016-01-27
LCD PANEL LAYOUT1 (Top Layer)	CI252	3 of 5	B	2016-01-27
LCD PANEL LAYOUT1 (Bottom Layer)	CI252	4 of 5	B	2016-01-27
LCD PANEL LAYOUT1 (Bottom Overlay)	CI252	5 of 5	B	2016-01-27
CP-DSPLY-7D1 (BOM)	CI252P	1	B	2017-11-03
CI253				

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Annexe for Certificate No.:	IECEx ExTC 18.0012X	Issue No.:	01

Title:	Drawing No.:	Pages	Rev. Level:	Date:
LCD PANEL LAYOUT2 (Schematic)	CI253	1 of 5	A	2015-10-06
LCD PANEL LAYOUT2 (Top Overlay)	CI253	2 of 5	A	2015-10-07
LCD PANEL LAYOUT2 (Top Layer)	CI253	3 of 5	A	2015-10-07
LCD PANEL LAYOUT2 (Bottom Layer)	CI253	4 of 5	A	2015-10-07
LCD PANEL LAYOUT2 (Bottom Overlay)	CI253	5 of 5	A	2015-10-07
CP-DSPLY-7D2 (BOM)	CI253P	1	A	2017-11-03

Variations permitted by Issue 1 of this certificate:

1. Inclusion of an optional CI515 Preset Board with one or two 4 x 4 membrane keypads.
2. Modification to the CI252 and CI253 LCD boards to include circuitry to control the dimming of the LCD backlights.

Specific Conditions of Use pertaining to Issue 1 of this certificate:

The following parameters are provided for the various connectors to external equipment on the Slave Display and must be taken into account during interconnection:

Slave Board (CI503) Connector J1 (BUS-IN) see Note 1	
5V & RS485	**Pins 1, 2 & 6 w.r.t. Pins 3, 4, 5 & 7**
Ui	6 V
Ii	235 mA
Pi	1.05 W
Li	0 µH
Ci	5.5 µF
Io	2 mA see Note 2
Po	3 mW see Note 2
9V	**Pin 8 w.r.t. Pins 3, 4, 5 & 7**
Ui	10 V
Ii	1 A
Pi	10 W
Li	0 µH
Ci	0 µF

Preset Board (CI515) Connector J100 (BUS-IN) see Note 1	
5V & RS485	**Pins 1, 2 & 6 w.r.t. Pins 3, 4, 5 & 7**
Ui	6 V
Ii	235 mA
Pi	1.05 W
Li	1 µH
Ci	8 µF
9V	**Pin 8 w.r.t. Pins 3, 4, 5 & 7**
Ui	9.6 V
Ii	1 A
Pi	10 W
Li	0 µH
Ci	0 µF

Note 1: Connector J2 (BUS-OUT) is connected in parallel to J1 in the Slave Display Board and connector J101 (BUS-OUT) is connected in parallel to J100 in the Preset Board, and hence have the same parameters, with the pin numbers allocated as follows:

Circuit reference	J1/J100 Pin #	J2/J101 Pin #
9V	8	6
5V	2	3
A	6	8
B	1	4
Earth, Screen	3, 4, 5, 7	1, 2, 5, 7, 9, 10

Note 2: The terminals on the 5V circuit may be considered under fault to be connected to an internal source of supply due to a supercapacitor that may charge up to the applied Ui but is limited by internal resistance to provide the Io and Po shown in this table. This needs to be accounted for when connecting in a system.

Slave Board (CI503) with Preset Board (CI515) installed Connector J1 (BUS-IN) see Note 1	
5V & RS485	**Pins 1, 2 & 6 w.r.t. Pins 3, 4, 5 & 7**
Ui	6 V
Ii	235 mA
Pi	1.05 W
Li	1 µH
Ci	13.5 µF
Io	2 mA see Note 2
Po	3 mW see Note 2
9V	**Pin 8 w.r.t. Pins 3, 4, 5 & 7**
Ui	10 V

Ii	1 A
Pi	10 W
Li	0 µH
Ci	0 µF

Preset Board (CI515) Connectors J200, J201 Membrane Keypad	
Uo	6 V
Io	5.6 mA
Po	8.4 mW
Lo	10 µH
Co	0.1 µF

Drawings Associated with the Issue 1 of this Certificate:

Manufacturer's Documents

Title:	Drawing No.:	Pages	Rev. Level:	Date:
C5000 Displays 7 Digit Display Panel Housing Assembly	ASM0143D	2	D	2019-03-15
C5000 Control Unit Labels Slave Displays	AP392	Sheet 5	C	2020-02-07
Installation & Safety Data for Slave Display	AP399	4	B	2020-02-07
BUS Cable for Pre-set (CI515-J100)	AP411	1	A	2019-03-21
CI252				
LCD PANEL LAYOUT1 (Schematic)	CI252	1 and 2 of 6	D	2019-08-07
LCD PANEL LAYOUT1 (Top Overlay)	CI252	3 of 6	D	2019-08-07
LCD PANEL LAYOUT1 (Top Layer)	CI252	4 of 6	D	2019-08-07
LCD PANEL LAYOUT1 (Bottom Layer)	CI252	5 of 6	D	2019-08-07
LCD PANEL LAYOUT1 (Bottom Overlay)	CI252	6 of 6	D	2019-08-07
CP-C5K-DSPLY7D1 (BOM)	CI252P-D	1	D	2019-08-07
CI253				

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Annexe

Annexe for Certificate No.:	IECEx ExTC 18.0012X	Issue No.:	01

Title:	Drawing No.:	Pages	Rev. Level:	Date:
LCD PANEL LAYOUT2 (Schematic)	CI253	1 and 2 of 6	C	2019-08-15
LCD PANEL LAYOUT2 (Top Overlay)	CI253	3 of 6	C	2019-08-15
LCD PANEL LAYOUT2 (Top Layer)	CI253	4 of 6	C	2019-08-15
LCD PANEL LAYOUT2 (Bottom Layer)	CI253	5 of 6	C	2019-08-15
LCD PANEL LAYOUT2 (Bottom Overlay)	CI253	6 of 6	C	2019-08-15
CP-C5K-DSPLY7D2 (BOM)	CI253P-C	1	C	2019-08-15
CI515				
C5000 Preset Board (Schematic)	CI515	1 and 2 of 5	A	2018-04-06
C5000 Preset Board (Top Overlay)	CI515	3 of 5	A	2018-04-06
C5000 Preset Board (Top Layer)	CI515	4 of 5	A	2018-04-06
C5000 Preset Board (Bottom Layer)	CI515	5 of 5	A	2018-04-06
CP-C5K-PSET (BOM)	CI515P-A	1	A	2019-05-31