



# 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](http://www.iecex.com)

Certificate No.: **IECEX ITA 14.0037X** Page 1 of 5 Certificate history:  
Status: **Current** Issue No: 2 [Issue 1 \(2017-06-08\)](#)  
Date of Issue: 2021-08-21 [Issue 0 \(2015-02-12\)](#)  
Applicant: **Nautitech Mining Systems Pty Ltd**  
Unit 3, 9 Packard Avenue  
Castle Hill NSW 2154  
**Australia**  
Equipment: **Programmable Logic Controller (PLC) Type 12014**  
Optional accessory:  
Type of Protection: **Intrinsic Safety "ia"**  
Marking: Ex ia I Ma  
-20C < Ta < +60C

Approved for issue on behalf of the IECEx  
Certification Body:

**Ajay Maira**

Position:

**Certification Authority**

Signature:  
(for printed version)

*Ajay Maira*

Date:

2021-08-21

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Australia



TESTING & CERTIFICATION



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Manufacturer: **Nautitech Mining Systems Pty Ltd**  
Unit 3, 9 Packard Avenue  
Castle Hill NSW 2154  
**Australia**

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 Report:

[AU/ITA/ExTR14.0074/00](#)

Quality Assessment Report:

[AU/MSC/QAR21.0001/00](#)



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## **EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

The Programmable Logic Controller (PLC) is a purpose built apparatus that may be present in a configurable instrumented system built to achieve a safety and/or a control function. The programmable Logic Controller is suited for operation where explosive gases may be continuously present.

The complete instrumented system may use several modules, where the modules are mechanically and electrically connected to each other using header-socket connections on the compatible sides that mate with each other, and the modules are fastened together to form one assembly.

For further details, see the Annexe.

## **SPECIFIC CONDITIONS OF USE: YES as shown below:**

See Annexe for details.



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**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)**  
See Annexe for details.



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**Additional information:**

Job 21105

**Annex:**

[IECEX ITA 14.0037X-2 Annexe final.pdf](#)

<h1>IECEX Certificate of Conformity</h1>		
	<h2>Annexe</h2>	
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**Description:**

Continued from the 'Equipment' section of the certificate:

A typical configuration of the complete instrumented system may contain a power supply module which connects to a suitably certified input source (usually alternator or other mains connected power source) and after its voltage and current limitation delivers power on a '4 Pin Power Rail' to all the modules, thus forming a backplane based connection system. This high power rail with  $U_o = 20\text{ V}$  and  $I_o = 11.9\text{ A}$  is adequately segregated between the active and return lines, and also segregated from all other circuits, with connection pins duplicated and all the modules are fastened together to prevent sparking to be considered. This 4 Pin Power Rail does not connect to any of the PLC internal circuits.

The backplane also contains four (4) selectable Exia Power Buses delivered by the PSM and/or UPS module on a 9 Pin Power Rail. These Exia Buses ( $U_o 8.95\text{ V}$   $I_o 2.4\text{ A}$ ) are suitably segregated and galvanically isolated to prevent combination within the PLC module. The PLC module contains three galvanically separated circuits. Each of these shall be connected at the time of configuration to only one of these Exia Power Buses using selector links, and the input parameters of the Power Bus changes accordingly.

There are also 24 intrinsically safe, adequately segregated data circuits carried through the '24 Pin Signal Rail' to all the modules completing the communications on the backplane.

The PLC Module contains several internal printed circuit boards interconnected to each other. It is totally encapsulated except for the keypad switches and LCD display on the front surface of the module.

The module sources its power from the internal backplane and supplies power to two external Field Bus Connectors FB1 and FB2 located on the bottom surface. This is used to power IS Transceiver and Isolation Barriers in the field.

PCA 7521 (UIFP) also contains low energy, wireless, 2.4GHz Bluetooth communication circuits with a maximum output transmission power of 10.5dBm (11.22mW).

The module also contains input and output optical communication circuits located on PCA 7586 (Middle) with a maximum output optical power of -1.5dBm (0.75mW). The sealed optical connections are available at the base of the module and labelled "POF TX" and "POF RX".

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

- The PLC must be installed with a compatible module on either side or end plates to form a complete system.
- The parameters provided below shall be taken into account in installation. Consult the manufacturer for assistance and advice.

**Table 1.1**

Internal Connectors (Backplane) J1, J2 *Note 2													
Description	Circuit	Pin	Function	12014 PLC									
Exia 9 pin Power Rail	BUS A	1	POWER_A	Processor Input Circuit *Note 1	FB1 Input Circuit *Note 1	FB2 Input Circuit *Note 1							
		2	GROUND_A										
	BUS B	7	POWER_B										
		4	GROUND_B										
	BUS C	3	POWER_C										
		6	GROUND_C										
	BUS D	8	POWER_D										
		9	GROUND_D										
	Not Connected	5	Not Connected	Not connected									
Exia 24 Pin Signal Rail	Datalogger/No n Safety CAN BUS	10	CANH_NS	U <sub>i</sub> = 9V C <sub>i</sub> = 3uF L <sub>i</sub> = 0uH									
		11	CANL_NS										
		28	CANH_DL										
		29	CANL_DL										
		19	DATA CAN POWER										
		12	DATA CAN_GROUND										
	UPS Toggle	30	33	TOGGLE_1	U <sub>o</sub> = 9V I <sub>o</sub> = 24.3mA P <sub>o</sub> = 54.7mW C <sub>o</sub> = 1uF L <sub>o</sub> = 1uH								
			33	TOGGLE_GROUND									
		31	33	TOGGLE_2				U <sub>o</sub> = 9V I <sub>o</sub> = 24.3mA P <sub>o</sub> = 54.7mW C <sub>o</sub> = 1uF L <sub>o</sub> = 1uH					
			33	TOGGLE_GROUND									
		32	33	TOGGLE_3							U <sub>o</sub> = 9V I <sub>o</sub> = 24.3mA P <sub>o</sub> = 54.7mW C <sub>o</sub> = 1uF L <sub>o</sub> = 1uH		
			33	TOGGLE_GROUND									
Safety CAN BUS	CAN	13	CANH_S	U <sub>i</sub> = 9V Feed through only									
		14	CANL_S										

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		26	SAFETYCAN_POWER	
		25	SAFETYCAN_GROUND	
	Heartbeat	17	DATAH	U <sub>i</sub> = 9V
		16	DATAL	Feed through only
	CAN BUS Bridge A	27	CANH_BA	U <sub>i</sub> = 9V
		21	CANL_BA	Feed through only
	CAN BUS Bridge B	22	CANH_BB	U <sub>i</sub> = 9V
		23	CANL_BB	Feed through only
	Spare	15	Reserved for future module	U <sub>i</sub> = 9V Feed through only
		18	Reserved for future module	U <sub>i</sub> = 9V Feed through only
		20	Reserved for future module	U <sub>i</sub> = 9V Feed through only
		24	Reserved for future module	U <sub>i</sub> = 9V Feed through only
4 Pin Power Rail	Charging Terminals	37	Ground	U <sub>n</sub> = 20V
		36		I <sub>n</sub> = 11.9A
		35	Power	Feed through only
		34		See *Note 3

\*Note 1: Entity parameters that depend of the position of the configuration jumpers are shown in the table 1.2 below.

\*Note 2: J1 and J2 form a back plane through each module with all signals passing through unless stated otherwise

\*Note 3: The Backplane '4 Pin Power Rail' is separate from all circuits in this PLC module, and has separation between the power and neutral rail, and has duplication of contacts to prevent sparking. The U<sub>n</sub> 20V and I<sub>n</sub> 11.9A are allowable nominal voltages and currents in Ex ia conditions.



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The PLC shall be configured using up to three sets of configuration jumpers to source power for up to three separate circuit's (PLC processor, PLC FB1, PLC FB2).

Each circuit in the PLC shall use one set of configuration jumpers to source power from only one Power Bus.

If more than one circuit is configured to source power from the same Power Bus the internal capacitance and inductance from each circuit shall be combined.

**Table 1.2**

Parameters due to PLC processor circuit:

Permitted configurations	PLC processor #1	PLC processor #2	PLC processor #3	PLC processor #4	PLC processor #5
Jumpers populated	JP1_10 JP1_9	JP1_12 JP1_11	JP2_12 JP2_11	JP2_10 JP2_9	
BUS A	U <sub>i</sub> = 9V C <sub>i</sub> = 5.5uF L <sub>i</sub> = Neg	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V Feed through only
BUS B	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V C <sub>i</sub> = 5.5uF L <sub>i</sub> = Neg	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V Feed through only
BUS C	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V C <sub>i</sub> = 5.5uF L <sub>i</sub> = Neg	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V Feed through only
BUS D	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V C <sub>i</sub> = 5.5uF L <sub>i</sub> = Neg	U <sub>i</sub> = 9V Feed through only

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**Table 1.3**  
Parameters due to PLC FB1 circuit:

Permitted configurations	PLC FB1 #1	PLC FB1 #2	PLC FB1 #3	PLC FB1 #4	PLC FB1 #5
Jumpers populated	JP2_1 JP2_2	JP2_3 JP2_4	JP2_5 JP2_6	JP2_7 JP2_8	
BUS A	U <sub>i</sub> = 9V I <sub>i</sub> = 2.5A L <sub>i</sub> = Neg C <sub>i</sub> = 11.11uF + all external capacitance connected at FB1 Pins 2,3,4	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V Feed through only
BUS B	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V I <sub>i</sub> = 2.5A L <sub>i</sub> = Neg C <sub>i</sub> = 11.11uF + all external capacitance connected at FB1 Pins 2,3,4	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V Feed through only
BUS C	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V I <sub>i</sub> = 2.5A L <sub>i</sub> = Neg C <sub>i</sub> = 11.11uF + all external capacitance connected at FB1 Pins 2,3,4	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V Feed through only
BUS D	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V I <sub>i</sub> = 2.5A L <sub>i</sub> = Neg C <sub>i</sub> = 11.11uF + all external capacitance connected at FB1 Pins 2,3,4	U <sub>i</sub> = 9V Feed through only

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**Table 1.4**  
Parameters due to PLC FB2 circuit:

Permitted configurations	PLC FB2 #1	PLC FB2 #2	PLC FB2 #3	PLC FB2 #4	PLC FB2 #5
Jumpers populated	JP1_1 JP1_2	JP1_3 JP1_4	JP1_5 JP1_6	JP1_7 JP1_8	
BUS A	U <sub>i</sub> = 9V I <sub>i</sub> = 2.5A L <sub>i</sub> = Neg C <sub>i</sub> = 11.11uF + all external capacitance connected at FB2 Pins 2,3,4	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V Feed through only
BUS B	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V I <sub>i</sub> = 2.5A L <sub>i</sub> = Neg C <sub>i</sub> = 11.11uF + all external capacitance connected at FB2 Pins 2,3,4	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V Feed through only
BUS C	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V I <sub>i</sub> = 2.5A L <sub>i</sub> = Neg C <sub>i</sub> = 11.11uF + all external capacitance connected at FB2 Pins 2,3,4	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V Feed through only
BUS D	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V Feed through only	U <sub>i</sub> = 9V I <sub>i</sub> = 2.5A L <sub>i</sub> = Neg C <sub>i</sub> = 11.11uF + all external capacitance connected at FB2 Pins 2,3,4	U <sub>i</sub> = 9V Feed through only

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**Table 1.5**  
Output Parameters at FB1, FB2 connectors:

External connectors				Entity Parameters	
Description	Circuit	Pin	Function	12014 PLC	
Field Bus Connections	FB1	1	Screen	U <sub>o</sub> = 9V I <sub>o</sub> = 2.5A C <sub>o</sub> = *Note1 L <sub>o</sub> = *Note1	
		2	-		
		3	Ground		
		4	Power		
		5	CAN H	U <sub>o</sub> = 8.61V I <sub>o</sub> = 1.45A P <sub>o</sub> = 2W C <sub>o</sub> = 40uF L <sub>o</sub> = 47uH  U <sub>i</sub> = 9V P <sub>i</sub> = 1.15W C <sub>i</sub> = 8.75uF L <sub>i</sub> = Negligible	
		6	CAN L		
		7	CAN Ground		
		8	CAN Power		
	FB2	1	1	Screen	U <sub>o</sub> = 9V I <sub>o</sub> = 2.5A C <sub>o</sub> = *Note2 L <sub>o</sub> = *Note2
			2	-	
			3	Ground	
			4	Power	
		5	5	CAN H	U <sub>o</sub> = 8.61V I <sub>o</sub> = 1.45A P <sub>o</sub> = 2W C <sub>o</sub> = 40uF L <sub>o</sub> = 47uH  U <sub>i</sub> = 9V P <sub>i</sub> = 1.15W C <sub>i</sub> = 8.75uF L <sub>i</sub> = Negligible
			6	CAN L	
			7	CAN Ground	
			8	CAN Power	

\*Note1 the output capacitance/inductance is inherited from the internal supply bus connected using JP2\_1 JP2\_2 or JP2\_3 JP2\_4 or JP2\_5 JP2\_6 or JP2\_7 JP2\_8 provided in Table 1.3

\*Note2 the output capacitance/inductance is inherited from the internal supply bus connected using JP1\_1 JP1\_2 or JP1\_3 JP1\_4 or JP1\_5 JP1\_6 or JP1\_7 JP1\_8 provided in Table 1.4

- c) The Field sockets at the bottom shall be fitted with either a matching plug and cable rated at IP66 or using an end cap with IP66 rating

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**Drawings Associated with the Issue 0 of this Certificate:**

Manufacturer's Documents				
Drawing/Document Number:	Page/s:	Title:	Revision Level:	Date:
PLC				
ZUQPTY4FSNWN-191-476	1 of 1	12014 PLC Module Schematic Index	-	2015-02-02
ZUQPTY4FSNWN-191-363	1 of 37	Part# 12014-2.0 Programmable Logic Controller (PLC) SCHEMATIC	1	2014-05-13
ZUQPTY4FSNWN-191-363	2 of 37	Part# 7588-2.0 PLC_LEFT_PCA SCHEMATIC	1	2013-06-20
ZUQPTY4FSNWN-191-363	3 of 37	Part# 7586-2.0 PLC_MIDDLE_PCA SCHEMATIC	1	2013-06-20
ZUQPTY4FSNWN-191-363	4 of 37	Part# 7589-2.0 PLC_RIGHT_PCA SCHEMATIC	1	2013-06-20
ZUQPTY4FSNWN-191-363	5 of 37	Part# DS_FR-1.0 FR_Ui_9V Ci_5uF Li_0uH Po_6W02 SCHEMATIC	2	2013-11-11
ZUQPTY4FSNWN-191-363	6 of 37	Part# DS_FE-1.0 ISOLATED CAN OPTO SCHEMATIC	2	2013-10-08
ZUQPTY4FSNWN-191-363	7 of 37	Part# DS_EC-1.0 CAN TRANSCEIVER SCHEMATIC	2	2013-10-08
ZUQPTY4FSNWN-191-363	8 of 37	Part# 7589-1.0 UPS_SHDN_DRIVER SCHEMATIC	1	2014-12-01
ZUQPTY4FSNWN-191-363	9 of 37	Part# DS_BH-1.0 OPTO I2C Um:9V SCHEMATIC	1	2013-07-01
ZUQPTY4FSNWN-191-363	10 of 37	Part# DS_AN-1 OPTO-2CH-Ui_9V-3V-5V ISIS SCHEMATIC	2	2014-02-27 <sup>1</sup>
ZUQPTY4FSNWN-191-363	11 of 37	Part# DS_AM-1 OPTO-2CH-Ui_9V-5V-3V3 ISIS SCHEMATIC	2	2014-02-27 <sup>2</sup>
ZUQPTY4FSNWN-191-363	12 of 37	Part# 12014-2.0 Field_Bus_Current_Limiter SCHEMATIC	1	2014-12-01
ZUQPTY4FSNWN-191-363	13 of 37	Part# DS_CF-1.0 I2C IO Expander SCHEMATIC	1	2013-08-15
ZUQPTY4FSNWN-191-363	14 of 37	Part# 12014-1.0 5V Linear Regulator SCHEMATIC	1	2014-12-01
ZUQPTY4FSNWN-191-363	15 of 37	Part# DS_FC-1.0 Um9V_Infallible_Transformer SCHEMATIC	1	2014-06-05
ZUQPTY4FSNWN-191-363	16 of 37	Part# DS_FI-1.0 IS BARRIER Ui_9V Ci_5.5uF Po_<2W SCHEMATIC	1	2013-08-12
ZUQPTY4FSNWN-191-363	17 of 37	Part# DS_FH-0.1 7.5V SMPS SCHEMATIC	1	2014-07-03

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### Manufacturer's Documents

Drawing/Document Number:	Page/s:	Title:	Revision Level:	Date:
ZUQPTY4FSNWN-191-363	18 of 37	Part# DS_FF-1.0 UM_10 Pi_2W Uo 8V61 Io 1.45A SCHEMATIC	1	2014-06-26
ZUQPTY4FSNWN-191-363	19 of 37	Part# DS_HN-1.0 Barrier 390R Ui9V SCHEMATIC	1	2014-12-01
ZUQPTY4FSNWN-191-363	20 of 37	Part# DS_BP-1.0 BARRIER LVDS UART SCHEMATIC	1	2014-12-01
ZUQPTY4FSNWN-191-363	21 of 37	Part# 7461-1.0 BARRIER SCHEMATIC	1	2013-06-26
ZUQPTY4FSNWN-191-363	22 of 37	Part# 7589-1.0 SAFEPSU SCHEMATIC	2	2014-03-06
ZUQPTY4FSNWN-191-363	23 of 37	Part#DS_CA-1.1 RM48 - ZWT337 SCHEMATIC	3	2013-05-29
ZUQPTY4FSNWN-191-363	24 of 37	Part# DS_BX-1.0 PHY CAN SCHEMATIC	1	2014-12-01
ZUQPTY4FSNWN-191-363	25 of 37	Part# DS_CH-1 MEMORY_FLASH SCHEMATIC	1	2013-06-25
ZUQPTY4FSNWN-191-363	26 of 37	Part# DS_BT-1.0 MEMORY_SPI_FLASH_4MB SCHEMATIC	1	2013-06-25
ZUQPTY4FSNWN-191-363	27 of 37	Part# DS_BS-1.0 Sensor - Temperature - Analog SCHEMATIC	1	2013-06-25
ZUQPTY4FSNWN-191-363	28 of 37	Part#DS_BQ-1.0 RTC I2C Um:10 SCHEMATIC	1	2013-06-25
ZUQPTY4FSNWN-191-363	29 of 37	Part#DS_CD-1.0 MEMORY SDRAM SCHEMATIC	1	2014-01-31
ZUQPTY4FSNWN-191-363	30 of 37	Part# DS_BF-1.0 PHY- MII - 100Base-FX SCHEMATIC	1	2013-06-26
ZUQPTY4FSNWN-191-363	31 of 37	Part# DS_BE-1 FireComms 100Base FX SCHEMATIC	3	2013-07-07
ZUQPTY4FSNWN-191-363	32 of 37	Part# 7586-1.0 PSU_5V0 SCHEMATIC	1	2014-03-06
ZUQPTY4FSNWN-191-363	33 of 37	Part# 7586-1.0 PSU_1V2 SCHEMATIC	2	2014-03-06
ZUQPTY4FSNWN-191-363	34 of 37	Part# 7586-1.0 PSU_3V3 SCHEMATIC	2	2014-03-06
ZUQPTY4FSNWN-191-363	35 of 37	Part# DS_EF-1.0 CUBEx_BACKPLANE_LEFT SCHEMATIC	2	2013-07-22
ZUQPTY4FSNWN-191-363	36 of 37	Part# DS_EF-1.0 CUBEx_BACKPLANE_RIGHT SCHEMATIC	1	2013-07-22
ZUQPTY4FSNWN-191-363	37 of 37	Part# 7565-2.0 BREAKOUT CONNECTOR SCHEMATIC	1	2014-12-01

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Drawing/Document Number:	Page/s:	Title:	Revision Level:	Date:
ZUQPTY4FSNWN-191-375	1 of 1	PART 12014-1 PLC CERTIFICATION DETAIL	1	2014-06-16
ZUQPTY4FSNWN-191-403	1 of 1	PART 12014-1 PLC DATASHEET	1	2014-02-26
ZUQPTY4FSNWN-191-458	9 shts	Part# 7486-2.0 PLC Controller (all layers) PCB Artwork	1	2014-07-07
ZUQPTY4FSNWN-191-456	9 shts	Part# 7488-2.0 PLC_LEFT_PCB (all layers) PCB Artwork	1	2014-07-07
ZUQPTY4FSNWN-191-455	9 shts	Part# 7486-2.0 PLC Right (all layers) PCB Artwork	1	2014-07-07
ZUQPTY4FSNWN-191-457	5 shts	Part# 7564-2.0 PLC Breakout Board (all layers) PCB Artwork	1	2014-12-02
<b>UIFP Faceplate</b>				
ZUQPTY4FSNWN-191-448	1 of 7	Part# 2181-936 - 2.0 CUBEx UI Faceplate SCHEMATIC	1	2014-03-06
ZUQPTY4FSNWN-191-448	2 of 7	Part# 7521-1.2 UIFP Main PCB SCHEMATIC	1	2014-03-05
ZUQPTY4FSNWN-191-448	3 of 7	Part# 7521-1.2 UIFP Load SCHEMATIC	1	2014-03-05
ZUQPTY4FSNWN-191-448	4 of 7	Part# 7521-1.2 UIFP LCD SCHEMATIC	1	2015-01-12 <sup>3</sup>
ZUQPTY4FSNWN-191-448	5 of 7	Part# 7525-1.0 UIFP FLEX Keypad SCHEMATIC	1	2014-02-11
ZUQPTY4FSNWN-191-448	6 of 7	Part# DS_BZ-1 IS BARRIER Keypad SCHEMATIC	1	2014-01-08
ZUQPTY4FSNWN-191-448	7 of 7	Part# DS_EJ-1 Bluetooth 4.0 BLE SCHEMATIC	1	2014-03-06
ZUQPTY4FSNWN-191-449	10	Part# 7520 UIFP Main PCB (all layers) PCB Artwork	1	2015-01-12 <sup>4</sup>

# IECEX Certificate of Conformity



## Annexe



<b>Annexe for Certificate No.:</b>	<b>IECEX ITA 14.0037X</b>	<b>Issue No.:</b>	<b>2</b>
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<b>Manufacturer's Documents</b>				
<b>Drawing/Document Number:</b>	<b>Page/s:</b>	<b>Title:</b>	<b>Revision Level:</b>	<b>Date:</b>
ZUQPTY4FSNWN-191-450	6	Part# 7525 UIFP FLEX Keypad (all layers) PCB Artwork	1	2015-01-12 <sup>5</sup>
ZUQPTY4FSNWN-191-445	1	Part 2181-936-2 UIFP CERTIFICATION DETAIL	1	2013-07-30

- <sup>1</sup> The date shown on the certificate was corrected during Issue 2 of the certificate.  
<sup>2</sup> The date shown on the certificate was corrected during Issue 2 of the certificate.  
<sup>3</sup> The date shown on the certificate was corrected during Issue 2 of the certificate.  
<sup>4</sup> The date shown on the certificate was corrected during Issue 2 of the certificate.  
<sup>5</sup> The date shown on the certificate was corrected during Issue 2 of the certificate.

**Variations permitted by Issue 1 of this certificate:**

1. The applicant and manufacturer have changed to NTMS.
2. Revised QAR reference to AU/ITA/QAR08.0004/09 to include this equipment in the scope of the audit of the manufacturer.
3. The manufacturer has submitted a complete set of drawings which have been retitled with their name. Where the drawing contained pictures showing the name of the earlier manufacturer, these have been edited to that extent. No other changes were made, and the revised drawing list is included below.
4. There are no changes in the parameters or conditions from the earlier issue of the certificate.

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

There are no changes to the conditions of use.

**Drawings Associated with the Issue 1 of this Certificate:**

<b>Manufacturer's Documents</b>				
<b>Title:</b>	<b>Drawing No.:</b>	<b>Pages</b>	<b>Rev. Level:</b>	<b>Date:</b>
<b>PLC</b>				
12014 Programmable Logic Controller (PLC)	ZUQPTY4FSNWN-191-363	1 of 37	2.1	2014-05-13
7588 PLC_LEFT_PCA	ZUQPTY4FSNWN-191-363	2 of 37	2.1	2013-06-20



# IECEX Certificate of Conformity



## Annexe



**Annexe for Certificate No.:**

**IECEX ITA 14.0037X**

**Issue No.:**

**2**

Title:	Drawing No.:	Pages	Rev. Level:	Date:
7586 PLC_MIDDLE_PCA	ZUQPTY4FSNWN-191-363	3 of 37	2.2	2013-06-20
7589 PLC_RIGHT_PCA	ZUQPTY4FSNWN-191-363	4 of 37	2.1	2013-06-20
DS_FR FR_Ui_9V Ci_5uF Li_0uH Po_6W02	ZUQPTY4FSNWN-191-363	5 of 37	2.1	2013-11-11
DS_FE ISOLATED CAN OPTO	ZUQPTY4FSNWN-191-363	6 of 37	2.1	2013-10-08
DS_EC CAN TRANSCEIVER	ZUQPTY4FSNWN-191-363	7 of 37	2.1	2013-10-08
7589 UPS_SHDN_DRIVER	ZUQPTY4FSNWN-191-363	8 of 37	1.1	2014-12-01
DS_BH OPTO I2C Um:9V	ZUQPTY4FSNWN-191-363	9 of 37	1.1	2013-07-01
DS_AN OPTO-2CH-Ui_9V-3V-5V_ISIS	ZUQPTY4FSNWN-191-363	10 of 37	2.2	2013-06-13
DS_AM OPTO-2CH-Ui_9V-5V-3V3_ISIS	ZUQPTY4FSNWN-191-363	11 of 37	2.1	2013-06-13
12014 Field_Bus_Current_Limiter	ZUQPTY4FSNWN-191-363	12 of 37	1.1	2014-12-01
DS_CF I2C IO Expander	ZUQPTY4FSNWN-191-363	13 of 37	1.1	2013-08-15
12014 5V Linear Regulator	ZUQPTY4FSNWN-191-363	14 of 37	1.1	2014-12-01
DS_FC Um9V_Infallible_Transformer	ZUQPTY4FSNWN-191-363	15 of 37	1.1	2014-06-05
DS_FI IS BARRIER Ui_9V Ci_5.5uF Po_<2W	ZUQPTY4FSNWN-191-363	16 of 37	1.1	2013-08-12
DS_FH 7.5V SMPS	ZUQPTY4FSNWN-191-363	17 of 37	1.1	2014-07-03
DS_FF UM_10 Pi_2W Uo_8V61 Io_1.45A	ZUQPTY4FSNWN-191-363	18 of 37	1.1	2014-06-26
DS_HN Barrier 390R Ui9V	ZUQPTY4FSNWN-191-363	19 of 37	1.1	2014-12-01
DS_BP BARRIER LVDS UART	ZUQPTY4FSNWN-191-363	20 of 37	1.1	2014-12-01

# IECEX Certificate of Conformity



## Annexe



**Annexe for Certificate No.:**

**IECEX ITA 14.0037X**

**Issue No.:**

**2**

Title:	Drawing No.:	Pages	Rev. Level:	Date:
7461 BARRIER	ZUQPTY4FSNWN-191-363	21 of 37	1.1	2013-06-26
7589 SAFEPSU	ZUQPTY4FSNWN-191-363	22 of 37	3.1	2014-03-06
DS_CA RM48 - ZWT337	ZUQPTY4FSNWN-191-363	23 of 37	3.1	2013-05-29
_BX PHY CAN	ZUQPTY4FSNWN-191-363	24 of 37	1.1	2014-12-01
DS_CH MEMORY_FLASH	ZUQPTY4FSNWN-191-363	25 of 37	1.1	2013-06-25
DS_BT MEMORY_SPI_FLASH_4MB	ZUQPTY4FSNWN-191-363	26 of 37	1.1	2013-06-25
DS_BS Sensor - Temperature - Analog	ZUQPTY4FSNWN-191-363	27 of 37	1.1	2013-06-25
DS_BQ RTC I2C Um:10	ZUQPTY4FSNWN-191-363	28 of 37	1.1	2013-06-25
DS_CD MEMORY SDRAM	ZUQPTY4FSNWN-191-363	29 of 37	1.1	2014-01-31
DS_BF PHY- MII - 100Base-FX	ZUQPTY4FSNWN-191-363	30 of 37	1.1	2013-06-26
DS_BE FireComms 100Base FX	ZUQPTY4FSNWN-191-363	31 of 37	3.1	2013-07-07
7586 PSU_5V0	ZUQPTY4FSNWN-191-363	32 of 37	1.1	2014-03-06
7586 PSU_1V2	ZUQPTY4FSNWN-191-363	33 of 37	2.1	2014-03-06
7586 PSU_3V3	ZUQPTY4FSNWN-191-363	34 of 37	2.1	2014-03-06
DS_EF CUBEx_BACKPLANE_LEFT	ZUQPTY4FSNWN-191-363	35 of 37	2.1	2013-07-22
DS_EF CUBEx_BACKPLANE_RIGHT	ZUQPTY4FSNWN-191-363	36 of 37	1.1	2013-07-22
7565 BREAKOUT CONNECTOR	ZUQPTY4FSNWN-191-363	37 of 37	2.1	2014-12-01
PLC CERTIFICATION DETAIL	12014-A	1 of 2	2	2017-02-17
PLC DATASHEET	12014-A	2 of 2	2	2017-02-17

# IECEX Certificate of Conformity



## Annexe



**Annexe for Certificate No.:**

**IECEX ITA 14.0037X**

**Issue No.:**

**2**

Title:	Drawing No.:	Pages	Rev. Level:	Date:
Part # 7486 PLC Controller PCB Artwork (all layers)	ZUQPTY4FSNWN-191-458	9 shts	2.2	2014-07-07
Part # 7488 PLC_LEFT_PCB PCB Artwork (all layers)	ZUQPTY4FSNWN-191-456	9 shts	2.1	2014-07-07
Part # 7486 PLC Right PCB Artwork (all layers)	ZUQPTY4FSNWN-191-455	9 shts	2.1	2014-07-07
Part # 7564 PLC Breakout Board PCB Artwork (all layers)	ZUQPTY4FSNWN-191-457	5 shts	2.2	2014-12-02
<b>UIFP Faceplate</b>				
2181-936 CUBEx UI Faceplate SCHEMATIC	ZUQPTY4FSNWN-191-448	1 of 7	2.1	2014-03-06
7521 UIFP Main PCB SCHEMATIC	ZUQPTY4FSNWN-191-448	2 of 7	1.3	2015-01-12
7521 UIFP Load SCHEMATIC	ZUQPTY4FSNWN-191-448	3 of 7	1.3	2015-01-12
7521 UIFP LCD SCHEMATIC	ZUQPTY4FSNWN-191-448	4 of 7	1.3	2015-01-12
7525 UIFP FLEX Keypad SCHEMATIC	ZUQPTY4FSNWN-191-448	5 of 7	1.1	2014-02-11
DS_BZ IS BARRIER Keypad SCHEMATIC	ZUQPTY4FSNWN-191-448	6 of 7	1.1	2014-01-08
DS_EJ Bluetooth 4.0 BLE SCHEMATIC	ZUQPTY4FSNWN-191-448	7 of 7	1.1	2014-03-06
Part# 7520 UIFP Main PCB (all layers) PCB Artwork	ZUQPTY4FSNWN-191-449	10	1.3	2015-01-12

# IECEX Certificate of Conformity



## Annexe



**Annexe for Certificate No.:**

**IECEX ITA 14.0037X**

**Issue No.:**

**2**

Title:	Drawing No.:	Pages	Rev. Level:	Date:
Part# 7525 UIFP FLEX Keypad (all layers) PCB Artwork	ZUQPTY4FSNWN- 191-450	6	1.1	2015-01-12
UIFP CERTIFICATION DETAIL	2181-936-A	1	2	2017-03-02

**Variations permitted by Issue 2 of this certificate:**

- The manufacturer's Quality Assessment was changed from Ex Testing and Certification to another IECEX Certification Body, Mine Safety Technology Centre. QAR reference has been changed accordingly.

**Specific Conditions of Use pertaining to Issue 2 of this certificate:**

There are no changes to the conditions of use.

**Drawings Associated with the Issue 2 of this Certificate:**

There are no drawings applicable to this issue of the certificate.