



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 ETL 20.0070X	Page 1 of 4	<u>Certificate history:</u>
Status:	Current	Issue No: 4	Issue 3 (2023-02-28)
Date of Issue:	2023-07-28		Issue 2 (2023-02-13)
			Issue 1 (2021-09-13)
			Issue 0 (2021-03-25)
Applicant:	Nexus Controls LLC 1800 Nelson Rd. Longmont, CO 80501 United States of America		
Equipment:	Programmable Control and I/O Modules		
Optional accessory:			
Type of Protection:	Increased Safety'ec', Sealed Device'nC'		
Marking:	Ex ec nC IIC T4 Gc -20°C to +50°C IECEX ETL 20.0070X		

Approved for issue on behalf of the IECEx
Certification Body:

Todd L. Relyea

Position:

Certification Officer

Signature:
(for printed version)

Date:
(for printed version)

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Manufacturer: **Xinhua Control Engineering Co., Ltd.**
160 Wenjing Road
Minhang District
Shanghai ZIP 200245
China

Manufacturing locations: **Nexus Controls LLC**
1800 Nelson Rd.
Longmont, CO 80501
United States of America

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 60079-15:2017 Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
Edition:5.0

IEC 60079-7:2017 Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

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:

US/ETL/ExTR21.0014/01
US/ETL/ExTR21.0014/04

US/ETL/ExTR21.0014/02

US/ETL/ExTR21.0014/03

Quality Assessment Reports:

GB/SIR/QAR21.0002/03

US/ETL/QAR21.0013/01



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The products covered by this report are the programmable logic control modules, Analog Input Modules, Analog Output Modules, Digital Input Modules, Digital Output Modules, Valve Position Control Modules, Speed Measurement Modules, Extension Modules, Logic Modules and Relay Modules. All the models are intended to be mounted in the panel (by others, this report does not cover any panel) and intended to be operated and communicated with other. The modules are intended for industrial process control and data communication. All modules are intelligent data acquisition and processing module.

All modules listed below:

MPU55-CBACN, MPU56-CBACN, MPU57-CBACN, MAI50-CBACN, MAI51-CBACN, MAI52-CBACN, MAI53-CBACN, MAI54-CBACN, MHT50-CBACN, MAO50-CBACN, MHO50-CBACN, MDI50-CBACN, MDI50A-CBACN, MDI52-CBACN, MDI53-CBACN, MDO53-CBACN, MDO55-CBACN, MVP50-CBACN, MVP50-CBBCN, MVP51-CBACN, MVP52-CBACN, MVP53-CBACN, BVP53-CBACN, MSP50-CBACN, MSP51-CBACN, MCD50-CBACN, MCD51-CBACN, MLP50-CBACN, BLP50-CBACN, 2003-CBACN, TCBT-CBACN, TCBB-CBACN, SDO60-CBACN, BSDO60-CBACN, SPU60-CBACN, BSPU60-CBACN, SAI60-CBACN, BSAI60-CBACN, SDI60-CBACN, BSDI60-CBACN, MPU70-CBBCN, RAO70-CBBCN, BAO70-CBBCN, BAO70S-CBBCN, RDO70-CBBCN, BDO70-CBBCN, BDO70S-CBBCN.

MPU55-CBAUS, MPU56-CBAUS, MPU57-CBAUS, MAI50-CBAUS, MAI51-CBAUS, MAI52-CBAUS, MAI53-CBAUS, MAI54-CBAUS, MHT50-CBAUS, MAO50-CBAUS, MHO50-CBAUS, MDI50-CBAUS, MDI50A-CBAUS, MDI52-CBAUS, MDI53-CBAUS, MDO53-CBAUS, MDO55-CBAUS, MVP50-CBAUS, MVP50-CBBUS, MVP51-CBAUS, MVP52-CBAUS, MVP53-CBAUS, BVP53-CBAUS, MSP50-CBAUS, MSP51-CBAUS, MCD50-CBAUS, MCD51-CBAUS, MLP50-CBAUS, BLP50-CBAUS, 2003-CBAUS, TCBT-CBAUS, TCBB-CBAUS, SDO60-CBAUS, BSDO60-CBAUS, SPU60-CBAUS, BSPU60-CBAUS, SAI60-CBAUS, BSAI60-CBAUS, SDI60-CBAUS, BSDI60-CBAUS, MPU70-CBBUS, RAO70-CBBUS, BAO70-CBBUS, BAO70S-CBBUS, RDO70-CBBUS, BDO70-CBBUS, BDO70S-CBBUS.

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. The Programmable Control and I/O Modules shall be installed in a suitable IECEx certified Ex e, and minimum ingress protection IP54 enclosure as per the instructions, parts, and specifications provided in Service Manual.
2. The end use enclosure shall be tool secured and shall not be opened in the presence of ignitable concentration of explosive gas atmosphere and do not connect/ disconnect this device unless the power has been switched off or the area is deemed to be non-hazardous. Grounding/Bonding wire shall be provided.
3. The Programmable Control and I/O Modules shall only be powered by a secondary circuit not exceeding 24V.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

- Adding below modules:

RAO70-CBBCN, BAO70-CBBCN, BAO70S-CBBCN, RDO70-CBBCN, BDO70-CBBCN, BDO70S-CBBCN

RAO70-CBBUS, BAO70-CBBUS, BAO70S-CBBUS, RDO70-CBBUS, BDO70-CBBUS, BDO70S-CBBUS

Annex:

Annex to IECEx ETL 20.0070X Issue 4_1.pdf



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Conditions of Manufacture:

A routine dielectric strength test is required between the connector pins and the enclosure of fully assembly system. A test voltage of 500V r.m.s. or 700VDC is to be applied for 60s and no breakdown of insulation or separation shall occur. Alternatively, a test shall be carried out at 1.,2 times the test voltage, but maintained for at least 100 ms.

All modules listed below:

MPU55-CBACN, MPU56-CBACN, MPU57-CBACN, MAI50-CBACN, MAI51-CBACN, MAI52-CBACN, MAI53-CBACN, MAI54-CBACN, MHT50-CBACN, MAO50-CBACN, MHO50-CBACN, MDI50-CBACN, MDI50A-CBACN, MDI52-CBACN, MDI53-CBACN, MDO53-CBACN, MDO55-CBACN, MVP50-CBACN, MVP50-CBBCN, MVP51-CBACN, MVP52-CBACN, MVP53-CBACN, BVP53-CBACN, MSP50-CBACN, MSP51-CBACN, MCD50-CBACN, MCD51-CBACN, MLP50-CBACN, BLP50-CBACN, 2003-CBACN, TCBT-CBACN, TCBB-CBACN, SDO60-CBACN, BSDO60-CBACN, SPU60-CBACN, BSPU60-CBACN, SAI60-CBACN, BSAI60-CBACN, SDI60-CBACN, BSDI60-CBACN, MPU70-CBBCN, RAO70-CBBCN, BAO70-CBBCN, BAO70S-CBBCN, RDO70-CBBCN, BDO70-CBBCN, BDO70S-CBBCN.

MPU55-CBAUS, MPU56- CBAUS, MPU57-CBAUS, MAI50-CBAUS, MAI51-CBAUS, MAI52-CBAUS, MAI53-CBAUS, MAI54-CBAUS, MHT50-CBAUS, MAO50-CBAUS, MHO50-CBAUS, MDI50-CBAUS, MDI50A-CBAUS, MDI52-CBAUS, MDI53-CBAUS, MDO53-CBAUS, MDO55-CBAUS, MVP50-CBAUS, MVP50-CBBUS, MVP51-CBAUS, MVP52-CBAUS, MVP53-CBAUS, BVP53-CBAUS, MSP50-CBAUS, MSP51-CBAUS, MCD50-CBAUS, MCD51-CBAUS, MLP50-CBAUS, BLP50-CBAUS, 2003-CBAUS, TCBT-CBAUS, TCBB-CBAUS, SDO60-CBAUS, BSDO60-CBAUS, SPU60-CBAUS, BSPU60-CBAUS, SAI60-CBAUS, BSAI60-CBAUS, SDI60-CBAUS, BSDI60-CBAUS, MPU70-CBBUS, RAO70-CBBUS, BAO70-CBBUS, BAO70S-CBBUS, RDO70-CBBUS, BDO70-CBBUS, BDO70S-CBBUS.

Model Similarity:

The control modules MPU55, MPU56 and MPU57 are integrated stand-alone computers that run the application code and provides a universal control platform for the Nexus system, according to the firmware loaded on the controller.

The Nexus I/O bus & power extension module MCD50 provides the electrical interface between the IO modules and the controller's I/O bus (iLink), as well as the cabinet's DC power system.

Each I/O module contains a processor circuit which is common to all Nexus I/O

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modules. The Nexus analog input modules MAI50, MAI51, MAI52, MAI53, MAI54 and MHT50 contain a processor subsystem and an acquisition circuit specific to either temperature input function or any other analog input function.

The Nexus analog output modules MAO50 and MHO50 contain a processor subsystem and an acquisition circuit specific to the analog output function . Most analog output channels can provide current output with signal range from 4 to 20mA, while some can be configured for 1-5V dc output.

The Nexus discrete input module MDI50, MDI50A and MDI53 contain a processor subsystem and an acquisition circuit specific to the digital input function .

The Nexus discrete output module MDO53 and MDO55 contain a processor subsystem and an acquisition circuit specific to the digital output function.

The speed measurement modules MSP50 and MSP51 contain a processor subsystem (MCU), a Field Programmable Gate Array (FPGA) and an acquisition & output circuit specifically for speed detection and protection function. The module can provide a number of speed input, mA/V analog inputs, discrete inputs and discrete outputs.

The Nexus valve position control modules MVP50, MVP51, MVP52, MVP53 and BVP53 are an integrated I/O module specific for valve position control. The module has redundant input/output channels and on-board PID servo control loop.

MPU70 module is a new design of the MPU55/56 module with faster computing speed.

MLP50 is TMR Emergency Trip System (ETS) plug-in programmable logic protection module.

BLP50 is TMR Emergency Trip System (ETS) base terminal board module.

TCB - top train connection board

TCBB - bottom train connection board

SDO60 - sdo 6chs digital output module

BSDO60 - sdo 6chs base board module

SPU60 - spu control module

BSPU60 - spu base board module

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SAI60 - sai 8chs analog input module

BSAI60 - sai 8chs base board module

SDI60 - sdi 24chs digital input module

BSDI60 - sdi 24chs base board module

RAO70 - 8chs analog output board

BAO70 - DMR base board module

BAO70S - Base board module

RDO70 - 16chs digital output module

BDO70 - DMR transistor base board module

BDO70S - Transistor base board module

Refer Appendix for more information.

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Scheduled Drawings:

Technical	Technical Documents			
Item#:	Title:	Drawing No.:	Rev. Level:	Date:
1	*Nexus OnCore Modules ATEX/IECEX/UL/CAN Manual Addendum	NCM10080	G	May 2023
2	NEXUS ONCORE IECEX LABELS, SMALL	154M6671	D	10/05/2022
3	NEXUS ONCORE MODULE IECEX LABELS	152M7204	D	10/07/2022
4	2oo3 Relay Board	2003-BBACN	N/A	11/30/2020
5	BLP 50	BLP50-BBACN	N/A	11/19/2020
6	BSAI60	BSAI60-BBACN	N/A	12/01/2020
7	BSDI60	BSDI60-BBACN	N/A	12/01/2020
8	BSDO60	BSDO60-BBACN	N/A	12/01/2020
9	BSPU60	BSPU60-BBACN	N/A	12/01/2020
10	BVP53	BVP53-BBACN	N/A	11/30/2020
11	MAI50	MAI50-BBACN	N/A	11/19/2020
12	MAI51	MAI51-BBACN	N/A	11/19/2020
13	MAI52	MAI52-BBACN	N/A	11/19/2020
14	MAI53	MAI53-BBACN	N/A	11/19/2020
15	MAI54	MAI54-BBACN	N/A	11/19/2020
16	MAO50	MAO50-BBACN	N/A	11/19/2020
17	MCD50	MCD50-BBACN	N/A	11/19/2020
18	MCD51	MCD51-BBACN	N/A	11/19/2020
19	MDI50A	MDI50A-BBACN	N/A	2020/12/01
20	MDI50	MDI50-BBACN	N/A	2020/12/01
21	MDI52	MDI52-BBACN	N/A	2020/12/01
22	MDI53	MDI53-BBACN	N/A	2020/12/01
23	MDO53	MDO53-BBACN	N/A	2020/12/01
24	MDO55	MDO55-BBACN	N/A	2020/12/01
25	MHO50	MHO50-BBACN	N/A	11/19/2020

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26	MHT50	MHT50-BBACN	N/A	11/19/2020
27	MLP 50	MLP50-BBACN	N/A	11/30/2020
28	SOC CONTROLLE R	MPU55-BBACN	N/A	11/19/2020
29	ICFC DEH MSP	267B6751P1508	5	09/23/2020
30	Nexus MVP50	267B6751P2017	4	09/04/2020
31	MVP53	MVP53-BBACN	N/A	11/30/2020
32	SAI60	SAI60-BBACN	A	11/26/2021
33	SDI60	SDI60-BBACN	N/A	12/01/2020
34	SDO60	SDO60-BBACN	N/A	12/01/2020
35	SPU60	SPU60-BBACN	N/A	12/01/2020
36	TCB_BOTTO M	TCBB-BBACN	N/A	12/01/2020
37	TCB_TOP	TCBT-BBACN	N/A	12/01/2020
38	MPU70	MPU70-BBBCN	VA	07/30/2022
39	*BAO70	BAO70-BBBCN	VA	04/21/2022
40	*BAO70S	BAO70S-BBBCN	VA	04/21/2022
41	*RAO70	RAO70-BBBCN	VA	04/21/2022
42	*RDO70	RDO70-BBBCN	VA	07/27/2022
43	*BDO70	BDO70-BBBCN	VA	05/05/2022
44	*BDO70S	BDO70S-BBBCN	VA	05/05/2022

*Note: An * is included before the title of documents that are new or revised.*