



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 22.0034X** Page 1 of 4 [Certificate history:](#)
Issue 0 (2022-12-20)

Status: **Current** Issue No: 1

Date of Issue: 2023-07-17

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

Equipment: **Rack Mounted Controller**

Optional accessory:

Type of Protection: **increased safety "ec", Sealed Device "nC"**

Marking: Ex ec nC IIC T4 Gc
-20°C ≤ Tamb ≤ +50°C
IECEX ETL 22.0034X

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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2. This certificate is not transferable and remains the property of the issuing body.
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Certificate issued by:

Intertek
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Cortland NY 13045-2995
United States of America

intertek



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

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 60079-15:2017](#) 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/ExTR22.0030/00](#)

[US/ETL/ExTR22.0030/01](#)

Quality Assessment Report:

[US/ETL/QAR21.0013/01](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

Rack Mounted Controller

This product is a controller system intended for installation in an end product enclosure. The design consists of several control boards stacked on each other and connected to a mountable frame which also includes a power supply and controller computer.

All modules listed below:

MPU55-CBACN, MPU70-CBBCN, MAI50-CBACN, MAI51-CBACN, MAI54-CBACN, MAO50-CBACN, MSP50-CBACN, MVP50-CBBCN, MDI50-CBACN, MDI53-CBACN, MDO53-CBACN, MHT50- CBACN, MHO50- CBACN.

MPU55-CBAUS, MPU70-CBBUS, MAI50-CBAUS, MAI50-EBAUS, MAI51-CBAUS, MAI51-EBAUS, MAI54-CBAUS, MAI54-EBAUS, MAO50-CBAUS, MAO50-EBAUS, MSP50-CBAUS, MSP50-EBAUS, MVP50-CBAUS, MVP50-EBAUS, MDI50-CBAUS, MDI50-EBAUS, MDI53-CBAUS, MDI53-EBAUS, MDO53-CBAUS, MDO53-EBAUS, MHT50- CBAUS, MHT50-EBAUS, MHO50- CBAUS MHO50-EBAUS.

Model Similarity:

The control modules MPU55 is an 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.

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

Each I/O module contains a processor circuit which is common to all Nexus I/O modules. The Nexus analog input modules MAI50, MAI53 and MAI54 contain a processor subsystem and an acquisition circuit specific to either temperature input function or any other analog input function.

The MHT50 is physically equivalent to the MAI50 board (just different firmware and name).

The Nexus analog output module MAO50 contains 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 MHO50 is physically equivalent to the MAO50 board (just different firmware and name).

The speed measurement module MSP50 contains 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 module MVP50 is an integrated I/O module specific for valve position control. The module has redundant input/output channels and on-board PID servo control loop.

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

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

The blade modules are identical to the original modules with covers being removed.

Refer Appendix for more information.

SPECIFIC CONDITIONS OF USE: YES as shown below:

- Equipment shall be installed in an Ex certified tool secured enclosure which provides a minimum ingress protection of IP54.
- The equipment must be mounted horizontally in a chassis within the enclosure.
- The maximum surface temperature measured according to test conducted per Clause 26.5.1 IEC 60079-0 Standard was 95.7°C. End user must verify that the enclosure in which this equipment is installed is suitably rated for service per this temperature.
- In case of d. c. voltage supply for the power supply, a suitable line-side fuse has to be used.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

- Listing module numbers, model similarity and Appendix - Module details

- Adding below blade IO modules:

MAI50-EBAUS MAI50, Compact Blade IO, Front, HA

MAI54-EBAUS MAI54, Compact Blade IO, Front, HA

MAI51-EBAUS MAI51, Compact Blade IO, Front, HA

MAO50-EBAUS MAO50, Compact Blade IO, Front, HA

MHT50-EBAUS MHT50, Compact Blade IO, Front, HA

MHO50-EBAUS MHO50, Compact Blade IO, Front, HA

MDI50-EBAUS MDI50, Compact Blade IO, Front, HA

MDI53-EBAUS MDI53, Compact Blade IO, Front, HA

MDO53-EBAUS MDO53, Compact Blade IO, Front, HA

MSP50-EBAUS MSP50, Compact Blade IO, Front, HA

MVP50-EBAUS MVP50, Compact Blade IO, Front, HA

- Adding MPU70 module as an alternative to MPU55 controller

- Removing below special condition of use:

• Controller shall not be subject to input power variation and shall always be powered at 24VDC +/- 2% (or +/- 0.5 VDC).

Annex:

[Annex to IECEx ETL 22.0034X Issue 01.pdf](#)



Annex to IECEx Certificate of Conformity

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Conditions of Manufacture:

A routine electric strength test will be required between the input pins and the enclosure of each IO modules per IEC 60079-7:2017, Clause 7.1.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.



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Scheduled Drawings:

Technical Documents			
Title:	Drawing No.:	Rev. Level:	Date:
*ONCORE COMPACT, IO RACK W/ SIMPLEX CTRL & PWR	152M8430	D	2023-06-15
*ONCORE SYSTEM WIRING COMPACT CONTROL SYSTEM	152M8446	C	2023-06-15
*MODULE-LEVEL ASSEMBLY DRAWING	152M8447	E	2023-06-15
*Nexus OnCore Compact Control System ATEX/IECEX/UL/CAN/UK Ex Manual Addendum	NCM10103	-	June 2023

* Designates a drawing which has been updated or is new to the scope of this certificate.