


# TYPE EXAMINATION CERTIFICATE

**Product or Protective Systems Intended for Use in Potentially Explosive Atmospheres**  
**UKSI 2016:1107 (as amended)**

- 1. Type Examination Certificate Number:** ITS21UKEX0289X **Issue** 03
- 2. Product:** Programmable Control and I/O Modules
- 3. Manufacturer:** Xin Hua Control Engineering Co Ltd (a branch of Nexus Controls LLC) **Applicant:** Nexus Controls LLC
- 4. Address:** Nexus Controls LLC  
160 Wen Jing Road,  
Minhuang District, Shanghai,  
ZIP 200245, China **Address:** 1800 Nelson Rd, Longmont, CO 80501-6324, USA  
  
1800 Nelson Rd, Longmont,  
CO 80501-6324, USA
- 5.** This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- 6.** Intertek Testing and Certification Limited, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of the products intended for use in potentially explosive atmospheres given in Schedule 1 of UKSI 2016:1107 (as amended).  
  
The examination and test results are recorded in the confidential report 105357992DAL-002 dated 06 July 2023.
- 7.** Compliance with the Essential Health and Safety Requirements has been assured by compliance with standards EN IEC 60079-0:2018, EN IEC 60079-7: 2015/A1:2018, EN 60079-15:2019 except in respect of those requirements referred to within item 14 of the Schedule
- 8.** If the sign "X" is placed after the certificate number, it indicates that the product is subject to the special conditions of use specified in the Schedule to this certificate.
- 9.** This Type Examination Certificate relates only to the design of the specified product and not to specific items subsequently manufactured.
- 10.** The marking of the product shall include the following:

II 3 G  
 Ex ec nC IIC T4 Gc  
Tamb: -20°C ≤ Ta ≤ 50°C

**Certification Officer:**  **Date:** 28 July 2023  
Todd L. Relyea

## SCHEDULE:

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### 11. Description of Equipment or Protective System

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-CBACN, MVP51-CBACN, MVP52-CBACN, MVP53-CBACN, BVP53-CBACN, MSP50-CBACN, MSP51-CBACN, MCD50-CBACN, MCD51-CBACN, MLP50-CBACN, BLP50-CBACN, 2oo3-CBACN, TCBT-CBACN, TCBB-CBACN, SDO60-CBACN, BSDO60-CBACN, SPU60-CBACN, BSPU60-CBACN, SAI60-CBACN, BSAI60-CBACN, SDI60-CBACN, BSDI60-CBACN, MPU70-CBACN, RAO70-CBACN, BAO70-CBACN, BAO70S-CBACN, RDO70-CBACN, BDO70-CBACN, BDO70S-CBACN.

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, MVP51-CBAUS, MVP52-CBAUS, MVP53-CBAUS, BVP53-CBAUS, MSP50-CBAUS, MSP51-CBAUS, MCD50-CBAUS, MCD51-CBAUS, MLP50-CBAUS, BLP50-CBAUS, 2oo3-CBAUS, TCBT-CBAUS, TCBB-CBAUS, SDO60-CBAUS, BSDO60-CBAUS, SPU60-CBAUS, BSPU60-CBAUS, SAI60-CBAUS, BSAI60-CBAUS, SDI60-CBAUS, BSDI60-CBAUS, MPU70-CBACN, RAO70-CBACN, BAO70-CBACN, BAO70S-CBACN, RDO70-CBACN, BDO70-CBACN, BDO70S-CBACN.

#### 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.

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Each I/O module contains a processor circuit which is common to all Nexus I/O 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 modules 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-T - top train connection board

TCB-B - 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

See below table for details.

Module Name	Haz , Panel Mount Module SAP part numbers	Haz , PCBA SAP part numbers	HAZ AREA PCB PART NUMBER	Description of use	input VOLTAGE (max)
MAI50	MAI50-CBACN	MAI50-BBACN	MAI50-ABACN	ma/V analog input module 16 channels	24VDC, 11.0W
	MAI50-CBAUS	MAI50-BBAUS	MAI50-ABAUS		
MAI51	MAI51-CBACN	MAI51-BBACN	MAI51-ABACN	TC/RTD analog input module 16 channels	24VDC, 1.8W
	MAI51-CBAUS	MAI51-BBAUS	MAI51-ABAUS		
MHT50	MHT50-CBACN	MHT50-BBACN	MHT50-ABACN	mA/V Analog input module 8 channels with HART	24VDC, 6.62W
	MHT50-CBAUS	MHT50-BBAUS	MHT50-ABAUS		
MAI52	MAI52-CBACN	MAI52-BBACN	MAI52-ABACN	mA/V Analog input module 8 channels	24VDC, 6.5 W
	MAI52-CBAUS	MAI52-BBAUS	MAI52-ABAUS		
MAI53	MAI53-CBACN	MAI53-BBACN	MAI53-ABACN	mA/V Analog input module 16 channels with individual ADC	24VDC, 12.7W
	MAI53-CBAUS	MAI53-BBAUS	MAI53-ABAUS		
MAI54	MAI54-CBACN	MAI54-BBACN	MAI54-ABACN	mA/V Analog Input Module 8 Channels with Individual ADC, fast sampling	24VDC, 9.2W
	MAI54-CBAUS	MAI54-BBAUS	MAI54-ABAUS		
MHO50	MHO50-CBACN	MHO50-BBACN	MHO50-ABACN	mA/V Analog output module 8 channels	24VDC, 6.7W

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	MHO50-CBAUS	MHO50-BBAUS	MHO50-ABAUS	with HART	
MAO50	MAO50-CBACN	MAO50-BBACN	MAO50-ABACN	mA/V analog output module 8 channels	24VDC, 6.55W
	MAO50-CBAUS	MAO50-BBAUS	MAO50-ABAUS		
MDI50	MDI50-CBACN	MDI50-BBACN	MDI50-ABACN	Digital input module 32 channels	24VDC, 8.5W
	MDI50-CBAUS	MDI50-BBAUS	MDI50-ABAUS		
MDI52	MDI52-CBACN	MDI52-BBACN	MDI52-ABACN	digital input module 16 channels	24VDC, 5.0 W
	MDI52-CBAUS	MDI52-BBAUS	MDI52-ABAUS		
MDI53	MDI53-CBACN	MDI53-BBACN	MDI53-ABACN	digital module 16 channels 24VDC/48VDC/125V DC	24VDC, 3.8W 112.5-137.5 VDC, 6.2W wetting
	MDI53-CBAUS	MDI53-BBAUS	MDI53-ABAUS		
MDI50A	MDI50A-CBACN	MDI50A-BBACN	MDI50A-ABACN	Option board to MDI50 module, 32CHs 24VDC Digital Input	24VDC, 8.5W, wetting
	MDI50A-CBAUS	MDI50A-BBAUS	MDI50A-ABAUS		
MDO53	MDO53-CBACN	MDO53-BBACN	MDO53-ABACN	digital output module 16 AC relay channels	Supply: 24Vdc, 11.0W Load: 8A/30VDC
	MDO53-CBAUS	MDO53-BBAUS	MDO53-ABAUS		
MDO55	MDO55-CBACN	MDO55-BBACN	MDO55-ABACN	digital output 16 channels with source transistor output	21.6-26.4 VDC, 2.6 W power 24 VDC, 48 W or 48 VDC, 96 W External Power max per chan 24 VDC, 6 W max per chan 48 VDC, 12 W max of 2 A or 96 W for all Channels output power
	MDO55-CBAUS	MDO55-BBAUS	MDO55-ABAUS		
MVP50	MVP50-CBACN	MVP50-BBACN	MVP50-ABACN	Valve position control module	24VDC, 11.0 W
	MVP50-CBAUS	MVP50-BBAUS	MVP50-ABAUS		
MVP50	MVP50-CBBCN	MVP50-BBBCN	MVP50-ABBCN	Valve position control module (highspeed)	24VDC, 11.0 W
	MVP50-CBBUS	MVP50-BBBUS	MVP50-ABBUS		
MVP51	MVP51-CBACN	MVP51-BBACN	MVP51-ABACN	Triple redundant LVDT valve position Control Module	24VDC, 11.0 W
	MVP51-CBAUS	MVP51-BBAUS	MVP51-ABAUS		
MVP52	MVP52-CBACN	MVP52-BBACN	MVP52-ABACN	Valve Position Control Module, dual redundant servo control application	24VDC, 11.0 W
	MVP52-CBAUS	MVP52-BBAUS	MVP52-ABAUS		

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Intertek Testing & Certification Limited, Cleeve Road, Leatherhead, Surrey, KT22 7SA

Registered No 3272281 Registered Office: Academy Place, 1-9 Brook Street, Brentwood, Essex, CM14 5NQ.

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MVP53	MVP53-CBACN MVP53-CBAUS	MVP53-BBACN MVP53-BBAUS	MVP53-ABACN MVP53-ABAUS	TMR Valve Position Control Module	24VDC, 6.0W
MSP50	MSP50-CBACN MSP50-CBAUS	MSP50-BBACN MSP50-BBAUS	MSP50-ABACN MSP50-ABAUS	Speed Measurement and protection module	24VDC, 7.6W
MSP51	MSP51-CBACN MSP51-CBAUS	MSP51-BBACN MSP51-BBAUS	MSP51-ABACN MSP51-ABAUS	Speed Measurement and Logic Protection Module(MSP50 hardware, different firmware)	24VDC, 7.6W
MLP50	MLP50-CBACN MLP50-CBAUS	MLP50-BBACN MLP50-BBAUS	MLP50-ABACN MLP50-ABAUS	TMR programmable logic control module	Supply: 24VDC, 6.8W
MCD50	MCD50-CBACN MCD50-CBAUS	MCD50-BBACN MCD50-BBAUS	MCD50-ABACN MCD50-ABAUS	iLink & 24VDC Extension Module	24VDC, 0.1W
MCD51	MCD51-CBACN MCD51-CBAUS	MCD51-BBACN MCD51-BBAUS	MCD51-ABACN MCD51-ABAUS	iLink & 24VDC Extension Module	24VDC, 0.1W
MPU55	MPU55-CBACN MPU55-CBAUS	MPU55-BBACN MPU55-BBAUS	MPU55-ABACN MPU55-ABAUS	Controller Module	24VDC, 7.2W
MPU56	MPU56-CBACN MPU56-CBAUS	MPU56-BBACN MPU56-BBAUS	MPU56-ABACN MPU56-ABAUS	Controller Module	24VDC, 7.2W
MPU57	MPU57-CBACN MPU57-CBAUS	MPU57-BBACN MPU57-BBAUS	MPU57-ABACN MPU57-ABAUS	Controller Module	24VDC, 7.2W
BLP50	BLP50-CBACN BLP50-CBAUS	BLP50-BBACN BLP50-BBAUS	BLP50-ABACN BLP50-ABAUS	TMR Programmable Logic Protection Base Module	Supply: 24VDC, 9.5W Load: 4A/30VDC
BVP53	BVP53-CBACN BVP53-CBAUS	BVP53-BBACN BVP53-BBAUS	BVP53-ABACN BVP53-ABAUS	TMR Valve Position Control Base Module(for MVP53)	24VDC, 0.1W
2oo3	2oo3-CBACN 2oo3-CBAUS	2oo3-BBACN 2oo3-BBAUS	2oo3-ABACN 2oo3-ABAUS	2oo3 Relay module	24VDC, 1.5W
TCBT	TCBT-CBACN TCBT-CBAUS	TCBT-BBACN TCBT-BBAUS	TCBT-ABACN TCBT-ABAUS	TOP TRAIN CONNECTION BOARD	input: 20.4-28.8VDC, 0.1 W , output: 20.4-28.8VDC

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TCBB	TCBB-CBACN TCBB-CBAUS	TCBB-BBACN TCBB-BBAUS	TCBB-ABACN TCBB-ABAUS	BOTTOM TRAIN CONNECTION BOARD	input: 20.4-28.8VDC, 0.1 W output: 20.4-28.8VDC
SDO60	SDO60-CBACN SDO60-CBAUS	SDO60-BBACN SDO60-BBAUS	SDO60-ABACN SDO60-ABAUS	SDO 6CHs DIGITAL OUTPUT MODULE	input: 20.4-28.8VDC, 2W, Transistor output: 0.3A @ 24V dc
BSDO60	BSDO60-CBACN BSDO60-CBAUS	BSDO60-BBACN BSDO60-BBAUS	BSDO60-ABACN BSDO60-ABAUS	SDO 6CHs BASE BOARD MODULE	input: 20.4-28.8VDC, 12W, output: 20.4- 28.8VDC, Relay output: 30VDC
SPU60	SPU60-CBACN SPU60-CBAUS	SPU60-BBACN SPU60-BBAUS	SPU60-ABACN SPU60-ABAUS	SPU CONTROL MODULE	input: 20.4-28.8VDC, 5W
BSPU60	BSPU60-CBACN BSPU60-CBAUS	BSPU60-BBACN BSPU60-BBAUS	BSPU60-ABACN BSPU60-ABAUS	SPU BASE BOARD MODULE	input: 20.4-28.8VDC, 0.1W, output:20.4- 28.8VDC
SAI60	SAI60-CBACN SAI60-CBAUS	SAI60-BBACN SAI60-BBAUS	SAI60-ABACN SAI60-ABAUS	SAI 8CHs ANALOG INPUT MODULE	input: 20.4-28.8VDC 5W
BSAI60	BSAI60-CBACN BSAI60-CBAUS	BSAI60-BBACN BSAI60-BBAUS	BSAI60-ABACN BSAI60-ABAUS	SAI 8CHs BASE BOARD MODULE	input: 20.4-28.8VDC, 6W, Ouput:20.4- 28.8VDC
SDI60	SDI60-CBACN SDI60-CBAUS	SDI60-BBACN SDI60-BBAUS	SDI60-ABACN SDI60-ABAUS	SDI 24CHs DIGITAL INPUT MODULE	input: 20.4-28.8VDC, 5W
BSDI60	BSDI60-CBACN BSDI60-CBAUS	BSDI60-BBACN BSDI60-BBAUS	BSDI60-ABACN BSDI60-ABAUS	SDI 24CHs BASE BOARD MODULE	input: 20.4-28.8VDC, 2W, output:20.4- 28.8 VDC
MPU70	MPU70-CBBCN MPU70-CBBUS	MPU70-BBBCN	MPU70-ABBCN	Controller Module	input: 24 VDC, 28.0 W
RAO70	RAO70-CBBCN RAO70-CBBUS	RAO70-BBBCN RAO70-BBBUS	RAO70-ABBCN RAO70-ABBUS	8CHs Analog Output Board	input: 24 VDC, 28.0 W
BAO70	BAO70-CBBCN BAO70-CBBUS	BAO70-CBBCN BAO70-CBBUS	BAO70-ABBCN BAO70-ABBUS	DMR Base Board Module	input: 24 VDC, 28.0 W
BAO70S	BAO70S-CBBCN BAO70S-CBBUS	BAO70S-BBBCN BAO70S-BBBUS	BAO70S-ABBCN BAO70S-ABBUS	Base Board Module	input: 24 VDC, 28.0 W

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RDO70	RDO70-CBBCN	RDO70-BBBCN	RDO70-ABBCN	16CHs Digital Output Module	input: 24 VDC, 28.0 W
	RDO70-CBBUS	RDO70-BBBUS	RDO70-ABBUS		
BDO70	BDO70-CBBCN	BDO70-BBBCN	BDO70-ABBCN	DMR Transfer Base Board Module	input: 24 VDC, 28.0 W
	BDO70-CBBUS	BDO70-BBBUS	BDO70-ABBUS		
BDO70S	BDO70S-CBBCN	BDO70S-BBBCN	BDO70S-ABBCN	Transistor Base Board Module	input: 24 VDC, 28.0 W
	BDO70S-CBBUS	BDO70S-BBBUS	BDO70S-ABBUS		

### 12. Report Number

Intertek Report: 105357992DAL-002 dated 06 July 2023.

### 13. Conditions of Certification

#### (a). Special Conditions of Use

- The Programmable Control and I/O Modules shall be installed in a suitable ATEX certified Ex e, and minimum ingress protection IP54 enclosure as per the instructions, parts, and specifications provided in Service Manual.
- 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.
- The Programmable Control and I/O Modules shall only be powered by a secondary circuit not exceeding 24V.



(b). Conditions of Manufacture - Routine Tests

**Routine Dielectric Strength Test per Clause 7.1 of EN IEC 60079-7: 2015/A1:2018 and EN 60079-15:2019**

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.

**14. Essential Health and Safety Requirements (EHSRs)**

The relevant Essential Health and Safety Requirements (EHSRs) affected by this variation have been identified and assessed in Intertek Report: 105357992DAL-002 dated 06 July 2023.

**15. Drawings and Documents**

Title:	Drawing No.:	Rev. Level:	Date:
*Nexus OnCore Modules ATEX/IECEX/UL/CAN Manual Addendum	NCM10080	G	May 2023
NEXUS ONCORE IECEX LABELS, SMALL	154M6671	D	10/05/2022
NEXUS ONCORE MODULE IECEX LABELS	152M7204	D	10/07/2022
2oo3 Relay Board	2O03-BBACN	N/A	11/30/2020
BLP 50	BLP50-BBACN	N/A	11/19/2020
BSAI60	BSAI60-BBACN	N/A	12/01/2020
BSDI60	BSDI60-BBACN	N/A	12/01/2020
BSDO60	BSDO60-BBACN	N/A	12/01/2020
BSPU60	BSPU60-BBACN	N/A	12/01/2020
BVP53	BVP53-BBACN	N/A	11/30/2020
MAI50	MAI50-BBACN	N/A	11/19/2020
MAI51	MAI51-BBACN	N/A	11/19/2020
MAI52	MAI52-BBACN	N/A	11/19/2020
MAI53	MAI53-BBACN	N/A	11/19/2020
MAI54	MAI54-BBACN	N/A	11/19/2020
MAO50	MAO50-BBACN	N/A	11/19/2020
MCD50	MCD50-BBACN	N/A	11/19/2020
MCD51	MCD51-BBACN	N/A	11/19/2020
MDI50A	MDI50A-BBACN	N/A	2020/12/01
MDI50	MDI50-BBACN	N/A	2020/12/01
MDI52	MDI52-BBACN	N/A	2020/12/01

## 15. Drawings and Documents

Title:	Drawing No.:	Rev. Level:	Date:
MDI53	MDI53-BBACN	N/A	2020/12/01
MDO53	MDO53-BBACN	N/A	2020/12/01
MDO55	MDO55-BBACN	N/A	2020/12/01
MHO50	MHO50-BBACN	N/A	11/19/2020
MHT50	MHT50-BBACN	N/A	11/19/2020
MLP 50	MLP50-BBACN	N/A	11/30/2020
SOC CONTROLLER	MPU55-BBACN	N/A	11/19/2020
ICFC DEH MSP	267B6751P1508	5	09/23/2020
Nexus MVP50	267B6751P2017	4	09/04/2020
MVP53	MVP53-BBACN	N/A	11/30/2020
SAI60	SAI60-BBACN	A	11/26/2021
SDI60	SDI60-BBACN	N/A	12/01/2020
SDO60	SDO60-BBACN	N/A	12/01/2020
SPU60	SPU60-BBACN	N/A	12/01/2020
TCB_BOTTOM	TCBB-BBACN	N/A	12/01/2020
TCB_TOP	TCBT-BBACN	N/A	12/01/2020
MPU70	MPU70-BBACN	VA	07/30/2022
*BAO70	BAO70-BBACN	VA	04/21/2022
*BAO70S	BAO70S-BBACN	VA	04/21/2022
*RAO70	RAO70-BBACN	VA	04/21/2022
*RDO70	RDO70-BBACN	VA	07/27/2022
*BDO70	BDO70-BBACN	VA	05/05/2022
*BDO70S	BDO70S-BBACN	VA	05/05/2022

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

## 16. Details of Certificate changes

### Issue 1:

- Added below manufacturer:  
Nexus Control LLC  
1800 Nelson Rd, Longmont, CO 80501-6324, USA
- Updated UKEX cert# from ITS21UKEX0289 to ITS21UKEX0289X.
- Updated label and manual accordingly.

### Issue 2:

- Added MPU70 module (MPU70-CBBCN, MPU70-CBBUS)
- Updated SAI60 module

Updated for new PCBA to fix a flowing ground that happens in a moist environment.

### Issue 3:

- Added 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