

BA489 Modbus RTU Display certificates which comprise, BA3101 or BA3102 Operator Display and BA3202 CPU module.



# 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 CML 20.0150X** Page 1 of 4 Certificate history:  
Status: **Current** Issue No: 2 Issue 1 (2023-03-22)  
Date of Issue: 2024-05-14 Issue 0 (2021-06-25)  
Applicant: **BEKA associates Ltd.**  
Old Charlton Road  
Hitchin SG5 2DA  
United Kingdom  
Equipment: **BA3101 and BA3102: Pageant Operator Display. BA3103: Pageant Backplane.**  
Optional accessory:  
Type of Protection: **Intrinsic safety Ex "i"**  
Marking: Ex ia IIC T4 Ga  
Ex ia IIIC T135°C Da  
-40°C ≤ Ta ≤ +65°C

Approved for issue on behalf of the IECEx  
Certification Body:

**L A Brisk**

Position:

**Assistant Certification Manager**

Signature:  
(for printed version)

Date:  
(for printed version)

14 May 2024

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**Eurofins E&E CML Limited**  
**Unit 1, Newport Business Park**  
**New Port Road**  
**Ellesmere Port, CH65 4LZ**  
United Kingdom





# IECEX Certificate of Conformity

Certificate No.: **IECEX CML 20.0150X**

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Date of issue: 2024-05-14

Issue No: 2

Manufacturer: **BEKA associates Ltd.**  
Old Charlton Road  
Hitchin SG5 2DA  
**United Kingdom**

Manufacturing locations: **BEKA associates Ltd.**  
Old Charlton Road  
Hitchin SG5 2DA  
**United Kingdom**

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 60079-11:2011** 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:

[GB/CML/ExTR20.0215/00](#)

[GB/CML/ExTR23.0071/00](#)

[GB/CML/ExTR24.0044/00](#)

Quality Assessment Report:

[GB/ITS/QAR06.0002/11](#)



# IECEX Certificate of Conformity

Certificate No.: **IECEX CML 20.0150X**

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Date of issue: 2024-05-14

Issue No: 2

**EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

The BA3101/BA3102 Pageant Operator Display is the heart of the Pageant system and comprises a motherboard, LCD, backlight, touch buttons, and associated electronics housed within a non-metallic enclosure.

**See annex for full description and conditions of manufacture.**

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

**See Annex for Specific Conditions of Use.**



# IECEX Certificate of Conformity

Certificate No.: **IECEX CML 20.0150X**

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Date of issue: 2024-05-14

Issue No: 2

## **DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)**

### **Issue 1**

This issue introduces the following changes:

1. Minor change to PCB layout.
2. Component value changes.
3. Other minor documentation updates.

### **Issue 2**

This issue introduces the following changes:

1. Introduction of a new type of display with a polycarbonate window, type BA3102.
2. Introduction of a new type of display with no viewing window, type BA3103.
3. Introduction of IP66 rating to the three types.

### **Annex:**

[Certificate Annex IECEx 20.0150X, Issue 2.pdf](#)

**Annexe to:** IECEx CML 20.0150X Issue 02  
**Applicant:** BEKA Associates Ltd.  
**Apparatus:** BA3101 and BA3102: Pageant Operator Display.  
 BA3103: Pageant Backplane.

## Description

The BA3101/BA3102 Pageant Operator Display is the heart of the Pageant system and comprises a motherboard, LCD, backlight, touch buttons, and associated electronics housed within a non-metallic enclosure.

The front face of the equipment incorporates a window for the display and buttons. The rear of the equipment contains 8 slots for the connection of up to 8, separately certified, intrinsically safe modules.

The BA3103 Pageant Backplane has no window, LCD backlight or touch buttons.

The equipment is certified for use in areas requiring equipment protection levels Ga and Da and intrinsic safety is achieved by limiting energy storage and discharge, and by connecting to other intrinsically safe equipment.

The sockets have the following intrinsic safety parameters:

SK1 (CPU interface, Slot C)			SK2 – SK8 (I/O module, slots 1-7)	
Barrier Power in Terminals 39, 40	3V3_CPU supply Terminals 29, 31	Data Buses Terminals 1-14, 17-22, 24, 26, 28, 30, 32	Barrier Power out Terminals 1-4	Data/supply Terminals 21-40
U <sub>i</sub> = 12.4V		U <sub>i</sub> = 4.1V		U <sub>i</sub> = 0
I <sub>i</sub> = 2.68A		I <sub>i</sub> = 203mA		I <sub>i</sub> = 0
P <sub>i</sub> = 5.44W		P <sub>i</sub> = 208mW		P <sub>i</sub> = 0
	U <sub>o</sub> = 4.0V	U <sub>o</sub> = 4.1V	U <sub>o</sub> = 12.4V	U <sub>o</sub> = 4.1V
	I <sub>o</sub> = 2.25A	I <sub>o</sub> = 2.5A	I <sub>o</sub> = 2.68A	I <sub>o</sub> = 2.7A
	P <sub>o</sub> = 1.06W	P <sub>o</sub> = 1.06W	P <sub>o</sub> = 5.44W	P <sub>o</sub> = 1.27W
C <sub>i</sub> = 0	C <sub>i</sub> = 3.40µF	C <sub>i</sub> = 34.02µF	C <sub>i</sub> = 0	C <sub>i</sub> = 34.02µF
L <sub>i</sub> = 0	L <sub>i</sub> = 0	L <sub>i</sub> = 0	L <sub>i</sub> = 0	L <sub>i</sub> = 0

The front of the BA3102 complies with the requirements of EN/IEC 60079-0 for Metallic and non-Metallic parts (Group II or Group III equipment). When a BA3102 is correctly installed in an Ex e or Ex t certified enclosure, the BA3102 will not invalidate the certification of the enclosure and maintain the IP rating of the enclosure to a degree of IP66 protection.



Certificate Annex IECEx  
 Version: 9.0 Approval: Approved

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## Conditions of Manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

- i. Where the product incorporates certified parts or safety critical components, the manufacturer of the product defined on this certificate shall continually monitor these parts/components for any modifications introduced by the manufacturer(s) of these constituent parts. If the manufacturer of any constituent part introduces any changes which affect the compliance of the certified product that is the subject of this certificate, the manufacturer is required to have this certificate updated.
- ii. The manufacturer shall ensure that sufficient documentation is provided with the equipment pertaining to the architecture and design of the BEKA Pageant System, to permit the user to make the necessary intrinsically safe system calculations and documentation.

## Specific Conditions of Use

The following conditions relate to safe installation and/or use of the equipment.

- i. Under certain extreme circumstances, the non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces. In addition, the equipment shall only be cleaned with a damp cloth.
- ii. The metal bezel of the equipment shall be connected to earth via the integral earth stud.
- iii. In installations requiring EPLs Da, Db, or Dc, the surface temperature assigned to this equipment shall take precedence over the surface temperature assigned to any module which may be installed within its enclosure.
- iv. In installations requiring EPL Da, Db, or Dc, the equipment shall be mounted as part of an enclosure which provides a minimum degree of protection of IP5X and which meets the requirements of EN/IEC60079-0 Clause 8.4 (material composition requirements for metallic enclosures for Group III) and/or EN/IEC60079-0 Clause 7.4.3 (avoidance of a build-up of electrostatic charge for Group III) as appropriate.

All cable entries into the equipment shall be made via cable glands which provide a minimum degree of protection of IP5X.

- v. This equipment shall only be used as part of a BEKA Pageant System.

## Components covered by Ex Certificates issued to older editions of Standards

None.



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Certificate No.: **IECEX CML 20.0152X** Page 1 of 3 [Certificate history:](#)  
Status: **Current** Issue No: 0  
Date of Issue: 2021-06-25  
Applicant: **BEKA associates Ltd.**  
Old Charlton Road  
Hitchin SG5 2DA  
**United Kingdom**  
Equipment: **BA320x CPU Module**  
Optional accessory:  
Type of Protection: **Intrinsic safety**  
Marking: Ex ia IIC T4 Ga  
Ex ia IIIC T120°C Da  
-40°C ≤ Ta ≤ +65°C

Approved for issue on behalf of the IECEx  
Certification Body:

**A Snowdon MIET**

Position:

**Assistant Certification Manager**

Signature:  
(for printed version)

*A Snowdon*

Date:

2021-06-25

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Date of issue: 2021-06-25

Issue No: 0

Manufacturer: **BEKA associates Ltd.**  
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**United Kingdom**

Additional  
manufacturing  
locations:

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## 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 60079-11:2011** 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:

[GB/CML/ExTR20.0217/00](#)

Quality Assessment Report:

[GB/ITS/QAR06.0002/08](#)



# IECEX Certificate of Conformity

Certificate No.: **IECEX CML 20.0152X**

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Date of issue: 2021-06-25

Issue No: 0

**EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

The BA320x CPU Module is an intrinsically safe module intended for use with the Pageant system. The module comprises circuit boards mounted within a non-metallic enclosure with a single card edge connector for plugging into separately certified equipment (e.g. the Pageant Display unit).

**See Annex for full description and conditions of manufacture.**

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

See Annex for Specific Conditions of Use.

**Annex:**

[IECEX CML 20.0152X Annex Iss 0.pdf](#)