



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

EX COMPONENT CERTIFICATE

Certificate No.: **IECEX CML 20,0081U** Page 1 of 3 [Certificate history:](#)

Status: **Current** Issue No: 0

Date of Issue: 2020-06-12

Applicant: **BEKA Associates Limited**
Old Charlton Road
Hitchin
Herts
SG5 2DA
United Kingdom

Ex Component: BA212 and BA2x3 Power Isolators

This component is NOT intended to be used alone and requires additional consideration when incorporated into other equipment or systems for use in explosive atmospheres (refer to IEC 60079-0).

Type of Protection: **Intrinsic safety, increased safety**

Marking: Ex ec [ia Ga] IIC Gc
-40°C ≤ Ta ≤ +70°C*

* Additional information relating to the temperature range is given in the Schedule of Limitations.

Approved for issue on behalf of the IECEx
Certification Body:

A Snowdon MIET

Position:

Assistant Certification Manager

Signature:
(for printed version)

Date:

June 12, 2020

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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:

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





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Manufacturer: **BEKA Associates Limited**
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Hitchin
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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 60079-0:2017 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

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 Report:

[GB/CML/ExTR20.0105/00](#)

Quality Assessment Report:

[GB/ITS/QAR06.0002/07](#)



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Ex Component(s) covered by this certificate is described below:

The BA212 and BA2x3 Power Isolators are component certified devices suitable for installation in areas requiring EPL Gc. The BA212 provides a single isolated intrinsically safe output. The BA2x3 provides between 1 and 4 isolated intrinsically safe outputs (x = number of outputs). The outputs are suitable for routing into hazardous areas requiring EPL Ga. Intrinsic safety is achieved by limiting the energy available to the hazardous area.

See Annex for full description and Conditions of Manufacture.

SCHEDULE OF LIMITATIONS:

See Annex for Schedule of Limitations.

Annex:

[IECEX CML 20.0081U Annex Issue 0.pdf](#)

Annexe to: IECEx CML 20.0081U Issue 0
Applicant: BEKA Associates Ltd.
Apparatus: BA212 and BA2x3 Power Isolators



Description

The BA212 and BA2x3 Power Isolators are component certified devices suitable for installation in areas requiring EPL Gc. The BA212 provides a single isolated intrinsically safe output. The BA2x3 provides between 1 and 4 isolated intrinsically safe outputs (x = number of outputs). The outputs are suitable for routing into hazardous areas requiring EPL Ga. Intrinsic safety is achieved by limiting the energy available to the hazardous area.

The equipment has the following safety description:

BA212	BA2x3 (parameters for each output)
Um = 30V	Um = 30V
Uo = 12.4V	Uo = 12.4V
Io = 2.66A	Io = 0.67A
Po = 5.2W	Po = 1.36W

The capacitance and either the inductance or the inductance to resistance ratio (L/R) of the load connected to the output terminals shall not exceed the following values:

BA212				
Group	Capacitance (µF)	Inductance (µH)	or	L/R Ratio (µH/Ohm)
IIC	1.24	5		4.3
IIB	7.9	20		17
IIA	30.0	40		34

BA2x3 (for each output)				
Group	Capacitance (µF)	Inductance (µH)	or	L/R Ratio (µH/Ohm)
IIC	1.24	79		17
IIB	7.9	317		68
IIA	30.0	634		137

The above load parameters apply where either

- The external circuit contains no combined lumped inductance Li and capacitance Ci greater than 1% of the above values, or
- The inductance and capacitance are distributed as in a cable, or
- The external circuit contains either only lumped inductance or lumped capacitance in combination with a cable.

In all other situations e.g. if the external circuit contains combined lumped inductance and lumped capacitance, up to 50% of each of the L and C values is allowed. The reduced capacitance of the external circuit (including cable) shall not be greater than 1µF for Groups IIA and IIB, or greater than 600nF for Group IIC.

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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 shall ensure that any changes to those parts or components do not affect the compliance of the certified product that is the subject of this certificate.
- ii. The BA2x3 shall be subjected to a routine isolation test between each intrinsically safe output using a test voltage of 600Vrms for a duration of at least 1 second.

Schedule of Limitations

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

- i. The isolator shall only be powered from a supply with a maximum output voltage of 30V and which complies with one of the following:
 - Is a SELV or PELV system
 - A safety isolating transformer complying with the requirements of IEC 61558-2-6 or technically equivalent standard
 - Apparatus complying with the IEC 60950 series, IEC 61010-1, or a technically equivalent standard
 - Fed directly from cells or batteries
- ii. The isolator shall be installed in an enclosure that meets the requirements of a type of protection as specified in EN/IEC 60079-0 clause 1, with a degree of protection at least as required for Ex e.
- iii. The equipment manufacturer shall ensure that the isolator is used within its rated operating temperature range, with due regard to other heat sources which may be present in the equipment enclosure. The service temperature range is the same as the ambient temperature range of -40°C to +70°C.
- iv. Where necessary, the equipment manufacturer shall take into account the following maximum temperature rises:

Item	Rise (K)
Isolator case	28
Input terminal TB1/TB2/TB3/TB4	20
Output terminal TB101/TB102/TB103/TB104	25
Small components	85



- v. The isolator is suitable for use in Ex tb applications when installed inside a suitable enclosure. The power consumption is 8.0W (BA212 and BA2x3).
- vi. The increased safety terminals TB1/TB2/TB3/TB4 are suitable for use with the following conductor cross section
 - solid [mm²] (AWG) 0,2 - 4 (24 - 12)
 - flexible [mm²] (AWG) 0,2 - 2,5 (24 - 14)