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 CML 21.0141X**	Page 1 of 3	Certificate history:
Status:	**Current**	Issue No: 0	
Date of Issue:	2021-11-09		
Applicant:	**BEKA associates Ltd.** Old Charlton Road Hitchin SG5 2DA **United Kingdom**		
Equipment:	**BA3701 DI Module Totaliser Counter**		
Optional accessory:			
Type of Protection:	**Intrinsic safety**		
Marking:	Ex ia IIC T4 Ga Ex ia IIIC T226°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)

Date: 2021-11-09

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.

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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Date of issue: 2021-11-09 Issue No: 0

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

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

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/ExTR21.0237/00

Quality Assessment Report:

GB/ITS/QAR06.0002/08

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EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

The BA3701 DI Module Totaliser Counter 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 21.0141X Annex Issue 0.pdf

Annexe to: IECEx CML 21.0141X, Issue 0

Applicant: BEKA associates Ltd

Apparatus: BA3701 DI Module Totaliser Counter

Description

The BA3701 DI Module Totaliser Counter 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).

The equipment also carries terminal blocks for the connection to external digital inputs and outputs. The inputs may be configured by the user as a voltage pulse input or as a voltage free contact / 2-wire NAMUR compliant sensor input.

Intrinsic safety is achieved by limiting energy storage and discharge, and by connecting to other equipment via intrinsically safe interface devices. The equipment has the following parameters:

<table>
<tr><th rowspan="2">Barrier Power in
PL3
Terminals
1 - 4</th><th rowspan="2">3V3 supply and data
PL3
Terminals
21 - 40</th><th colspan="3">TB1 – TB2</th></tr>
<tr><th>Pulse outputs
Terminals 5-6 (values are for each output)</th><th>Digital Inputs
Voltage pulse
Terminals 2 - 4
(values are for each input)</th><th>Digital Inputs
Voltage free contact or 2-wire sensor
(Terminals 1-2 linked)
Terminals 2 - 4
(values are for each input)</th></tr>
<tr><td>Ui = 12.4V</td><td>Ui = 4.1V</td><td>Ui = 28V</td><td>Ui = 28V</td><td>Ui = 0</td></tr>
<tr><td>Ii = 2.68A</td><td></td><td>Ii = 200mA</td><td>Ii = 200mA</td><td></td></tr>
<tr><td>Pi = 5.44W</td><td></td><td>Pi = 0.66W</td><td>Pi = 0.84W</td><td></td></tr>
<tr><td></td><td>Uo = 0</td><td>Uo = 0</td><td>Uo = 1.15V</td><td>Uo = 8.8V</td></tr>
<tr><td></td><td>Io = 0</td><td>Io = 0</td><td>Io = 0</td><td>Io = 7.4mA</td></tr>
<tr><td></td><td>Po = 0</td><td>Po = 0</td><td>Po = 0</td><td>Po = 16mW</td></tr>
<tr><td>Ci = 0</td><td>Ci = 0</td><td>Ci = 0</td><td>Ci = 1.1nF</td><td>Ci = 1.1nF</td></tr>
<tr><td>Li = 0</td><td>Li = 0</td><td>Li = 0</td><td>Li = 4µH</td><td>Li = 4µH</td></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><th></th><th>Co =</th></tr>
<tr><td>IIA</td><td>1000µF</td></tr>
<tr><td>IIB</td><td>1000µF</td></tr>
<tr><td>IIC</td><td>100µF</td></tr>
<tr><td>III</td><td>1000µF</td></tr>
</table>
</td><td>
<table>
<tr><th>See Note 1</th><th>Co =</th><th>Lo =</th></tr>
<tr><td>IIA</td><td>730µF</td><td>4.4H</td></tr>
<tr><td>IIB</td><td>46µF</td><td>2.2H</td></tr>
<tr><td>IIC</td><td>5.5µF</td><td>556mH</td></tr>
<tr><td>III</td><td>46µF</td><td>2.2H</td></tr>
</table>
</td></tr>
</table>

NOTE 1 - The above load parameters apply when one of the two conditions below are met:

- the total Li of the external circuit (excluding the cable) is < 1% of the Lo value or
- the total Ci of the external circuit (excluding the cable) is < 1% of the Co value.

If neither of the above conditions are met, the load parameters are both reduced by 50%. Additionally, the reduced capacitance of the external circuit (including cable) shall not be greater than 1µF for Groups IIA, IIB, and III, and 600nF for Group IIC.

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 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 relate to the installation and/or safe 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. In installations requiring EPL Da, Db, or Dc, the equipment shall be within an enclosure which provides a minimum degree of protection of IP5X and which meets the requirements of IEC60079-0 Clause 8.4 (material composition requirements for metallic enclosures for Group III) and/or 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.

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