

## UK Type Examination Certificate CML 21UKEX2111X Issue 0

### United Kingdom Conformity Assessment

- 1 Product or Protective System Intended for use in Potentially Explosive Atmospheres UKSI 2016:1107 (as amended) – Schedule 3A, Part 1
- 2 Equipment **BA340x DI Module**
- 3 Manufacturer **BEKA associates Ltd.**
- 4 Address **Old Charlton Road, Hitchin, Herts.  
SG5 2DA, UK**

5 The equipment is specified in the description of this certificate and the documents to which it refers.

6 Eurofins E&E CML Limited, Newport Business Park, New Port Road, Ellesmere Port, CH65 4LZ, United Kingdom, Approved Body Number 2503, in accordance with Regulation 43 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended), certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Schedule 1 of the Regulations.

The examination and test results are recorded in the confidential reports listed in Section 12.

7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to specific conditions of use (affecting correct installation or safe use). These are specified in Section 14.

8 This UK Type Examination certificate relates only to the design and construction of the specified equipment. Further requirements of the Regulations apply to the manufacturing process and supply of the product. These are not covered by this certificate.

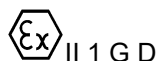
9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

EN IEC 60079-0:2018

EN 60079-11:2012

10 The equipment shall be marked with the following:

BA3401:

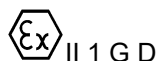


Ex ia IIC T4 Ga

Ex ia IIIC T135°C Da

-40°C ≤ Ta ≤ +65°C

BA3402:



Ex ia IIC T4 Ga

Ex ia IIIC T195°C Da

-40°C ≤ Ta ≤ +65°C

*A Snowden*



## 11 Description

The BA340x DI 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).

The equipment also carries terminal blocks for the connection to external digital inputs.

The following model types are available:

Model number	Description
BA3401	Standard switch inputs
BA3402	NAMUR compatible switch inputs

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:

Barrier Power in PL3 Terminals 1 - 4	3V3 supply and data PL3 Terminals 21 - 40	BA3401 Digital Inputs TB1 – TB8 (values are for each input)	BA3402 Digital Inputs TB1 – TB8 (values are for each input)																									
$U_i = 12.4V$	$U_i = 4.1V$	$U_i = 0$	$U_i = 0$																									
$I_i = 2.68A$																												
$P_i = 5.44W$																												
	$U_o = 0$	$U_o = 4.94V$	$U_o = 8.8V$																									
	$I_o = 0$	$I_o = 0$	$I_o = 7.4mA$																									
	$P_o = 0$	$P_o = 0$	$P_o = 16mW$																									
$C_i = 0$	$C_i = 0$	$C_i = 1.1nF$	$C_i = 1.1nF$																									
$L_i = 0$	$L_i = 0$	$L_i = 4\mu H$	$L_i = 4\mu H$																									
		<table border="1"> <thead> <tr> <th></th> <th>Co =</th> </tr> </thead> <tbody> <tr> <td>IIA</td> <td>1000<math>\mu F</math></td> </tr> <tr> <td>IIB</td> <td>1000<math>\mu F</math></td> </tr> <tr> <td>IIC</td> <td>100<math>\mu F</math></td> </tr> <tr> <td>III</td> <td>1000<math>\mu F</math></td> </tr> </tbody> </table>		Co =	IIA	1000 $\mu F$	IIB	1000 $\mu F$	IIC	100 $\mu F$	III	1000 $\mu F$	<table border="1"> <thead> <tr> <th>See Note 1</th> <th>Co =</th> <th>Lo =</th> </tr> </thead> <tbody> <tr> <td>IIA</td> <td>730<math>\mu F</math></td> <td>4.4H</td> </tr> <tr> <td>IIB</td> <td>46<math>\mu F</math></td> <td>2.2H</td> </tr> <tr> <td>IIC</td> <td>5.5<math>\mu F</math></td> <td>556mH</td> </tr> <tr> <td>III</td> <td>46<math>\mu F</math></td> <td>2.2H</td> </tr> </tbody> </table>	See Note 1	Co =	Lo =	IIA	730 $\mu F$	4.4H	IIB	46 $\mu F$	2.2H	IIC	5.5 $\mu F$	556mH	III	46 $\mu F$	2.2H
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NOTE 1 - The above load parameters apply when one of the two conditions below is met:

- the total  $L_i$  of the external circuit (excluding the cable) is  $< 1\%$  of the  $L_o$  value or
- the total  $C_i$  of the external circuit (excluding the cable) is  $< 1\%$  of the  $C_o$  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 1 $\mu F$  for Groups IIA, IIB, and III, and 600nF for Group IIC.



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## 12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	28 Jun 2021	R13778A/00	Issue of prime certificate

Note: Drawings that describe the equipment are listed in the Annex.

## 13 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.

## 14 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. In installations requiring EPL Da, Db, or Dc, the equipment shall be mounted within an enclosure which provides a minimum degree of protection of IP5X and which meets the requirements of EN 60079-0 Clause 8.4 (material composition requirements for metallic enclosures for Group III) and/or EN 60079-0 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.

## Certificate Annex

**Certificate Number** CML 21UKEX2111X  
**Equipment** BA340x DI module  
**Manufacturer** BEKA associates Ltd.



The following documents describe the equipment defined in this certificate:

### Issue 0

Drawing No	Sheets	Rev	Approved date	Title
CI3401-01	1 to 26	1	28 Jun 2021	ATEX & IECEx Certification Information for BEKA BA340x Digital Input Module