



CML 21ATEX2110X
Issue 0

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>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> </tbody> </table>		Co =	IIA	1000 μF	IIB	1000 μF	IIC	100 μF	III	1000 μF	<table border="1"> <thead> <tr> <th>See Note 1</th> <th>Co =</th> <th>Lo =</th> </tr> </thead> <tbody> <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> </tbody> </table>	See Note 1	Co =	Lo =	IIA	730 μF	4.4H	IIB	46 μF	2.2H	IIC	5.5 μF	556mH	III	46 μF	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 μF for Groups IIA, IIB, and III, and 600nF for Group IIC.



CML 21ATEX2110X
Issue 0

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 or component 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 (Special Conditions)

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 21ATEX2110X
Equipment BA340x DI Module
Manufacturer BEKA associates Ltd.



The following documents describe the equipment or component 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



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