

UK-TYPE EXAMINATION CERTIFICATE

Product or Protective Systems Intended for Use in Potentially Explosive Atmospheres

UKSI 2016:1107 (as amended) – Schedule 3A, Part 1

- UK-Type Examination Certificate Number:** ITS21UKEX0080 **Issue 00**
- Product:** BA454D Batch Controller
- Manufacturer:** BEKA Associates Ltd
- Address:** Old Charlton Road, Hitchin, Herts, SG5 2DA, United Kingdom
- This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- Intertek Testing and Certification Limited, Approved Body number 0359, in accordance with Regulation 42 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended), certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Schedule 1 of the Regulations.

The examination and test results are recorded in the confidential report 104629389CHE-004 dated 10th February 2022.
- Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN IEC 60079-0:2018 and EN 60079-11:2012 except in respect of those requirements referred to within item 14 of the Schedule.
- If the sign “X” is placed after the certificate number, it indicates that the product is subject to the special conditions of use specified in the Schedule to this certificate.
- This UK-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Regulations apply to the manufacturing process and supply of this product. These are not covered by this certificate.
- The marking of the product shall include the following:

II 1 G Ex ia IIC T5 Ga



II 1 D Ex ia IIIC T80°C Da

-40°C ≤ Ta ≤ +60°C

Certification Officer: 
M Newman

Date: 31st March 2022

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11. Description of Product or Protective System

BA454D Batch Controller is a field mounting equipment designed to control the dispensing of liquids, solids or components in the hazardous area.

The BA454D comprises a Field Connection Assembly 02, EC-Type Examination Certificate Number ITS03ATEX21375U, a Simple Power Supply Board, EC-Type Examination Certificate Number ITS03ATEX21376U, a Current and Pulse Input Board 01, EC-Type Examination Certificate Number ITS03ATEX21377U, two Alarm Board 01, EC-Type Examination Certificate Number ITS02ATEX2044U and a CPU and Display, EC-Type Examination Certificate Number ITS02ATEX2045U, all housed within a two parts plastic enclosure.

The enclosure provides a Degree of Protection of at least IP20.

Intrinsic safety is assured by the use of certified components, which provide limitation of voltage, current and power, limitation of capacitance and inductance, and infallible segregation.

The maximum intrinsically safe input and output parameters are as follows:

TB1 terminals 1 and 2

$$U_i = 28 \text{ V}$$

$$I_i = 96 \text{ mA}$$

$$P_i = 0.84 \text{ W}$$

The equivalent parameters are:

$$C_i = 15 \text{ nF}$$

$$L_i = 8 \text{ } \mu\text{H}$$

TB1 terminals S1 to S7

$$U_o = 14.7 \text{ V}$$

$$I_o = 99 \text{ mA}$$

$$P_o = 0.6 \text{ W}$$

The equivalent parameters are:

$$C_i = 30 \text{ } \mu\text{F at } 6 \text{ V}$$

$$C_i = 0.47 \text{ } \mu\text{F at } 14.7\text{V}$$

$$L_i = 0.3 \text{ mH}$$

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TB1 terminals A1 & A2, A3 & A4, A5 & A6 (each Alarm channel)

TB2 terminals A7 & A8, A9 & A10, A11 & A12 (each Alarm channel)

$U_i = 28 \text{ V}$	$U_o = 1.49 \text{ V}$
$I_i = 200 \text{ mA}$	$I_o = 1 \text{ }\mu\text{A}$
$P_i = 0.85 \text{ W}$	$P_o = 3 \text{ }\mu\text{W}$

The equivalent parameters are:

$C_i = 0.04 \text{ }\mu\text{F}$
 $L_i = 0.02 \text{ mH}$

For intrinsic safety considerations, under fault conditions the output voltage, current and power at the above terminals do not exceed those specified in Clause 5.7 of EN 60079-11:2012. The equivalent capacitance and inductance are the result of r.f suppression components directly connected to the apparatus terminals.

TB2 terminals 11 and 12

$U_o = 10.6 \text{ V}$
 $I_o = 20 \text{ mA}$
 $P_o = 50 \text{ mW}$

The equivalent parameters are:

$C_i = 15 \text{ nF}$
 $L_i = 8 \text{ }\mu\text{H}$

TB2 terminals 13 to 17

$U_i = 28 \text{ V}$	$U_o = 1.1 \text{ V}$
$I_i = 100 \text{ mA}$	$I_o = 0.12 \text{ mA}$
$P_i = 0.66 \text{ W}$	$P_o = 35 \text{ }\mu\text{W}$

The equivalent parameters are:

$C_i = 18 \text{ nF}$
 $L_i = 0.02 \text{ mH}$

For intrinsic safety considerations, under fault conditions the output voltage, current and power at the above terminals do not exceed those specified in Clause 5.7 of EN 60079-11:2012. The equivalent capacitance and inductance are the result of r.f suppression components directly connected to the apparatus terminals.

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TB2 terminals 18 to 20

$$U_o = 11.7 \text{ V}$$

$$I_o = 2.4 \text{ mA}$$

$$P_o = 7 \text{ mW}$$

The equivalent parameters are:

$$C_i = 3.6 \text{ nF}$$

$$L_i = 0$$

12. Report Number

Intertek Report: 104629389CHE-004 dated 10th February 2022.

13. Special Conditions of Certification

- (a). Special Conditions of Use
None.
- (b). Conditions of Manufacture
None.

14. Essential Health and Safety Requirements (EHSRs)

The relevant Essential Health and Safety Requirements (EHSRs) have been identified and assessed in Intertek Report: 104629389CHE-004 dated 10th February 2022.

15. Drawings and Documents

Title:	Drawing No.:	Rev. Level:	Date:
Certification information for BA454D & BA458C (Sheets 1, 2, 3, & 5)	CI450-01	3	Oct. 11
UKCA Certification information for BA454D & BA458C Batch Controller (2 Sheets)	CI450-01-UKCA	1	May 21