UK-TYPE EXAMINATION
CERTIFICATE

Product or Protective Systems Intended for Use in Potentially Explosive Atmospheres

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

1. **UK-Type Examination Certificate Number:** **ITS21UKEX0088X** **Issue 00**

2. **Product:** 4 and 5 Digit Panel Mounting Indicators and Rate Totaliser

3. **Manufacturer:** BEKA Associates Ltd

4. **Address:** Old Charlton Road, Hitchin, Herts, SG5 2DA, United Kingdom

5. This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

6. 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 10048733B Issue 1 dated April 2011, G1014157756 dated March 2014 and 10970263LHD-001 Issue 0 dated September 2017.

7. Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 60079-0:2012+A11:2013 and EN 60079-11:2012 except in respect of those requirements referred to within item 14 of the Schedule.

8. 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.

9. 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.

10. The marking of the product shall include the following:

II 1 GD

Ex ia IIC T5 Ga

Ex ia IIIC T80°C Da IP20

-40°C ≤ Ta ≤ +70°C

Certification Officer: M Newman **Date:** 2nd July 2021

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11. Description of Product or Protective System

The 4 and 5 Digit Panel Mounting Indicators and Rate Totaliser are panel mounted loop powered equipment designed to display a measured variable in meaningful engineering units within the hazardous area. The zero and span of the display are independently adjustable allowing the instruments to be calibrated to display a linear variable represented by the 4/20 mA signal.

A root extractor and an adjustable sixteen segment lineariser enable the indicator to display flow and nonlinear variables such as tank level in engineering units.

The 4 and 5 Digit Panel Mounting Indicators and Rate Totaliser may be one of the following;

BA307E and BA308E 4 Digit Indicators
BA327E and BA328E 5 Digit Indicators
BA358E Rate Totaliser

The 4 and 5 Digit Panel Mounting Indicators and Rate Totaliser may optionally be fitted with Alarm board and may additionally be fitted with an optional Backlight board.

The 4 and 5 Digit Panel Mounting Indicator and Rate Totaliser comprise a main board, a display module, an optional Alarm board and an optional Backlight board, all housed within a plastic enclosure. The enclosure provides a degree of protection of at least IP20.

Intrinsic safety is assured by limitation of voltage, current and power, limitation of capacitance and inductance, and infallible segregation.

The maximum intrinsically safe input and output parameters at the external connections are as follows:

TB1 Terminals 1 and 3 (Loop Input); TB2 Terminal 12 and TB1 Terminal 3 (TB2 -13 and TB1 – 1 connected in series):

U_i = 30V

I_i = 200mA

P_i = 0.84W

C_i = 13nF

L_i = 0.008mH (0.01mH)

TB2 Terminals 12, 13 and 14 (Backlight Input):

U_i = 30V

I_i = 200mA

P_i = 0.84W

C_i = 13nF

L_i = 0.008 mH (0.01 mH)

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TB3 Terminals RS1 and RS2:

U_i = 30V U_o = 6 V

I_i = 200mA I_o = 2.5 mA

P_i = 0.84W P_o = 3.75 mW

C_i = 13nF

L_i = 0.008mH (0.01mH)

C_o = 53nF

L_o = 0.79mH

TB4 Terminals 8 and 9; Terminals 10 and 11 (Alarm 1 and Alarm 2)

U_i = 30V L_i = 0.008mH (0.01mH)

I_i = 200mA

P_i = 0.84W

C_i = 24nF

For intrinsic safety considerations, under faults conditions, the voltage, current and power at the output terminals TB1 - 1 & 3, terminals TB2 – 12 & TB1 – 3, and terminals TB4 - 8 & 9 and 10 & 11 do not exceed those specified in clause 5.7 of EN 60079-11. The equivalent capacitance and inductance are the result of r.f. suppression components directly connected across the apparatus input terminals.

12. Report Number

Intertek Report: 10048733B Issue 1 dated April 2011, G1014157756 dated March 2014 and 10970263LHD-001 Issue 0 dated September 2017.

13. Special Conditions of Certification

(a). Special Conditions of Use

• For use in Group IIIC conductive dust atmospheres, the Indicator or Totaliser shall be mounted such that the instrument terminals have at least IP6X protection.

(b). Conditions of Manufacture

• The voltages applied to infallible transformers shall conform to the values given in Table 10 as per the requirements of EN 60079-11:2012 clause 11.2, Routine tests for infallible transformers.

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14. Essential Health and Safety Requirements (EHSRs)

The relevant Essential Health and Safety Requirements (EHSRs) have been identified and assessed in Intertek Report: 104629389CHE-012, dated 25th May 2021.

15. Drawings and Documents

Title:	Drawing No.:	Rev. Level:	Date:
ATEX & IECEx Certification Information for BA304E, BA307E & 308E 4 Digit Indicators BA324E, 327E & BA328E 5 Digit Indicators BA354E & BA358E Rate Totalisers (Sheets 1, 2, 4-8, 16, 17, 26, 27, 30, 31, 33-36 of 36)	CI300-61	2	Oct' 13
UKCA Certification Information for BA304E, BA307E & 308E 4 Digit Indicators BA324E, 327E & BA328E 5 Digit Indicators BA354E & BA358E Rate Totalisers	CI300-61-UKCA	1	May 21