

# 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:** ITS21UKEX0097X **Issue 00**
- Product:** BA407E-SS and BA427E-SS 4 and 5 Digit Rugged Set Point Stations
- 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-020 dated 8<sup>th</sup> 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:**

3<sup>rd</sup> March 2022

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### 11. Description of Product or Protective System

The BA407E-SS and BA427E-SS 4 and 5 Digit Rugged Set Point Stations are panel mounting instruments that allow an operator to manually adjust the current flowing in a 4-20 mA loop. They incorporate a digital and bargraph display to represent current in engineering units. The 4 or 5 Digit Set Point Stations may optionally be fitted with a Backlight board.

The 4 and 5 Digit Set Point Stations models are listed below:

BA407E-SS – 4 Digit Set Point Station

BA427E-SS – 5 Digit Set Point Station

The 4 and 5 Digit Rugged Set Point Stations comprise a main board, a display board and an optional Backlight board, all assessed and certified under certificate no. ITS21UKEX0092X and housed within a stainless steel robust 105x60mm panel enclosure, assessed and certified under certificate no. ITS21UKEX0094U. The enclosure provides a degree of protection of at least IP66 for the front of the panel and minimum of IP20 for the back of the panel.

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, 2,3 and 4 (Loop Input)

$U_i = 30 \text{ V}$

$I_i = 200 \text{ mA}$

$P_i = 0.84 \text{ W}$

$C_i = 2.2 \text{ nF}$

$L_i = 0.008 \text{ mH (0.01 mH)}$

$C_o = 63.8 \text{ nF}$

$L_o = 0.79 \text{ mH}$

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### TB2 Terminals 12, 13 and 14 (optional Backlight input)

$$U_i = 30 \text{ V}$$

$$I_i = 200 \text{ mA}$$

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

$$C_i = 11 \text{ nF}$$

$$L_i = 0$$

$$C_o = 55 \text{ nF}$$

$$L_o = 0.8 \text{ mH}$$

### TB1 Terminals 1, 2, 3 and 4 (loop output) connected in series with TB2 Terminals 12 and 13 (loop powered backlight)

$$U_i = 30 \text{ V}$$

$$I_i = 200 \text{ mA}$$

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

$$C_i = 2 \text{ nF}$$

$$L_i = 0.008 \text{ mH (0.01 mH)}$$

$$C_o = 64 \text{ nF}$$

$$L_o = 0.79 \text{ mH}$$

### TB3 Terminals 5, 6 and 7 (optional remote encoder)

$$U_i = 30 \text{ V}$$

$$U_o = 5.0 \text{ V}$$

$$I_i = 200 \text{ mA}$$

$$I_o = 1.0 \text{ mA}$$

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

$$P_o = 1.25 \text{ mW}$$

$$C_i = 0$$

$$L_i = 0$$

$$C_o = 66 \text{ nF}$$

$$L_o = 0.8 \text{ mH}$$

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### 12. Report Number

Intertek Report: 104629389CHE-020 dated 8<sup>th</sup> February 2022.

### 13. Special Conditions of Certification

#### (a). Special Conditions of Use

- For use in Group IIIC explosive dust atmosphere the Set Point Station units shall be mounted such that the instrument terminals are protected by at least IP6X approved enclosure.
- When installed in accordance with manufacturer instructions front of the Robust Set Point Station enclosure provide minimum degree of protection by enclosure of IP66.
- For installation in Ex e, Ex nA, Ex p or Ex t panel enclosure, all connection must be supplied via appropriately rated and approved Zener barrier or galvanic isolator.
- When installed purely as intrinsically safe equipment, the ambient temperature range of the BA407E-SS and BA427E-SS is  $-40^{\circ}\text{C} \leq T_a \leq +70^{\circ}\text{C}$ .

#### (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-020 dated 8<sup>th</sup> February 2022.

### 15. Drawings and Documents

Title:	Drawing No.:	Rev. Level:	Date:
ATEX & Iecex Ex i Certification Information for BA407E-SS & BA427E-SS Rugged Set Point Stations (3 sheets)	CI400-06	1	03/11/2015
UKCA Ex i Certification Information for BA407E-SS & BA427E-SS Rugged Set Point Stations (2 Sheets)	CI400-06-UKCA	1	May 2021