

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:** ITS21UKEX0095X **Issue 00**
- Product:** BA307E-SS and BA327E-SS 4 and 5 Digit Panel Mounting Indicators
- 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-018 dated 15th September 2021.
- 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 ≤ +70°C

Certification Officer: _____



M Newman

Date: _____

31st January 2022

SCHEDULE:

UK-Type Examination Certificate Number: ITS21UKEX0095X Issue 00

11. Description of Product or Protective System

The BA307E-SS and BA327E-SS 4 and 5 digit panel mounting indicators are loop powered indicators enclosed in BEKA's stainless steel robust 105x60mm panel enclosure (certificate number ITS21UKEX0094U), 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 indicators to be calibrated to display a variable represented by the 4/20 mA signal.

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

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

The 4 and 5 Digit Panel Mounting Indicators comprise a main board, a display module, an optional Alarm Board and an optional Backlight board, all housed within the certified BEKA 105 x 60 robust panel, stainless steel enclosure, certified under ATEX certificate number ITS21UKEX0094U.

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)

$$U_i = 30V$$

$$I_i = 200mA$$

$$P_i = 0.84W$$

$$C_i = 13nF$$

$$L_i = 0.008mH (0.01mH)$$

SCHEDULE:

UK-Type Examination Certificate Number: ITS21UKEX0095X Issue 00

TB3 Terminals RS1 and RS2

$U_i = 30V$ $C_o = 53nF$
 $I_i = 200mA$ $L_o = 0.79mH$
 $P_i = 0.84W$ $U_o = 6V$
 $C_i = 13nF$ $I_o = 2.5mA$
 $L_i = 0.008mH (0.01mH)$ $P_o = 3.75mW$

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

$U_i = 30V$
 $I_i = 200mA$
 $P_i = 0.84W$
 $C_i = 24nF$
 $L_i = 0.008mH (0.01mH)$

For intrinsic safety considerations, under fault 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.

The BEKA BA307E-SS and BEKA BA327E-SS consists of the BEKA BA307E and BA327E 4 and 5 digit panel mount indicators (certificate number ITS21UKEX0088X) and the BEKA robust 105x60mm panel enclosure (certificate number ITS21UKEX0094U). The plastic case of the suffix-E type indicators has been removed and replaced with the component approved enclosure, giving a new piece of equipment with suffix-E-SS.

SCHEDULE:

UK-Type Examination Certificate Number: ITS21UKEX0095X Issue 00

12. Report Number

Intertek Report: 104629389CHE-018 dated 15th September 2021.

13. Special Conditions of Certification

(a). Special Conditions of Use

- For use in group IIIC conductive dust atmospheres, the indicator shall be mounted such that the indicator terminals have at least IP6X protection.
- When installed in an Ex px, py or pz panel enclosure, the indicator must be powered by an appropriately rated Zener barrier or galvanic isolator located in a safe area.
- When installed in an Ex e panel enclosure, the indicator must be powered by an appropriately rated Zener barrier or galvanic isolator located in a safe area.
- When installed in an Ex ta, tb or tc panel enclosure the indicator must be powered via appropriately rated Zener barrier or galvanic isolator located in a safe area, so that indicator push button contacts are nonincendive (Ex ia).
- The supply circuit for indicators used in the equipment with pressurized type of protection shall be rated for a prospective short circuit current of not more than 10kA.

(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.

14. Essential Health and Safety Requirements (EHSRs)

The relevant Essential Health and Safety Requirements (EHSRs) have been identified and assessed in Intertek Report: 104629389CHE-018 dated 15th September 2021.

15. Drawings and Documents

Title:	Drawing No.:	Rev. Level:	Date:
ATEX & IECEx Ex i Certification information for BA307E-SS & BA327E-SS Rugged Digital Indicators (3 sheets)	CI300-77	1	17/16/2014
UKCA Ex i Certification Information for BA307E-SS & BA327E-SS Rugged Digital Indicators	C300-77-UKCA	1	May 21

Additional information about the BA307E-SS and BA327E-SS UKCA Ex i certificate

This UKCA EC-Type Examination Certificate ITS21UKEX0095X for the intrinsically safe BA307E-SS and BA327E-SS 4/20mA loop powered indicators refers to UKEX Component Certificate ITS21UKEX0094U for the BEKA robust 105x60mm stainless steel enclosure in which the indicators are housed. A copy of this Component Certificate follows this note.

The Component Certificate confirms that the front of the stainless steel enclosure complies with the impact and ingress requirements specified for the following types of protection:

- II 2 G Ex eb IIC Gb Protection by Increased safety EN 60079-7:2015
- II 2 G Ex p IIC Gb Protection by pressurised enclosure EN 60079-2:2014
- II 1 D Ex ta IIC Da Dust ignition protection by enclosure EN 60079-31:2014

When a BA307E-SS or BA327E-SS indicator is installed in a cabinet having one of these types of protection, installation of the indicator does not invalidate the cabinet's certification. Installation requirements for these loop powered indicators are specified in section 13a of the indicator EC-Type Examination Certificate ITS21UKEX0095X.

Further installation information is contained in the BA307E-SS and BA327E-SS Instruction Manual and in the BEKA Application Guide AG300 both of which may be down loaded from this website.

Please note that the UKCA Component Certificate number does not appear on the indicator's certification label.

UK-TYPE EXAMINATION CERTIFICATE

Component Intended for use on/in a Product and Protective Systems Intended for Use in Potentially Explosive Atmospheres

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

- UK-Type Examination Certificate Number:** ITS21UKEX0094U **Issue** 00
- Product:** BEKA 105 x 60 robust panel enclosure
- 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 the product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of the product 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 G101377532 dated June 2014 and 104629389CHE-017 dated 6th September 2021.
- Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN IEC 60079-0:2018, EN 60079-2:2014, EN 60079-7:2015+A1:2018 and EN 60079-31:2014 except in respect of those requirements referred within item 14 of the Schedule.
- The sign “U” is placed after the certificate number. It indicates that this certificate must not be mistaken for a certificate intended for equipment or a protective system. This partial certification may be used as a basis for certification of a product or a protective system.
- 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 2 G Ex eb IIC Gb II 2 G Ex p IIC Gb II 1 D Ex ta IIIC Da

Service Temperature: -40°C to +70°C

Certification Officer: _____



M Newman

Date: _____

31st January 2022

This Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. This Certificate is accredited under UKAS schedule 0010.

Intertek Testing & Certification Limited, Cleeve Road, Leatherhead, Surrey, KT22 7SA
Registered No 3272281 Registered Office: Academy Place, 1-9 Brook Street, Brentwood, Essex, CM14 5NQ.

SCHEDULE:

EU-Type Examination Certificate Number: ITS21UKEX0094U Issue 00

11. Description of Component

The BEKA 105 x 60 robust panel enclosure is an empty enclosure made from stainless steel. Enclosure comprises main enclosure casting with 10mm thick toughened glass and rubber silicon keypad buttons located on the front and four screws on the back of the enclosure for installation of the rear panel and further mounting purposes. Silicone rubber gasket providing degree of protection IP66 is retained to the surface of the front bezel. Enclosures were tested to meet the requirements of IP66 requirements for the front of the enclosure in accordance with IEC 60529.

Enclosures are provided with external earthing stud suitable for earthing wire. There are no openings in the front of the enclosure.

12. Report Number

Intertek Report: G101377532 dated June 2014 and 104629389CHE-017 dated 6th September 2021.

13. Conditions of Certification

- (a). Schedule of Limitations
- For an Ex i instrument installed in an Ex px or py panel enclosure, the instrument must be powered via appropriately rated Zener barrier or galvanic isolator located in a safe area, and the rear panel must provide appropriate vents dependent on the characteristics of the gas used for the pressurised. The equipment is allowed to be installed in Zone 1 or Zone 2 hazardous location.
 - For an Ex i instrument installed in an Ex e panel enclosure, the instrument must be powered via appropriately rated Zener barrier or galvanic isolator located in a safe area. The equipment is allowed to be installed in Zone 1 or Zone 2 hazardous locations depend of intrinsically safe level of protection.
 - For the Ex i instrument installed in Ex ta or Ex tb panel enclosure the instrument must be powered via appropriately rated Zener barrier or galvanic isolator located in a safe area, so that instrument push button contacts are nonincendive (Ex ia).
 - For instruments designate for type of protection pressurized equipment the supply circuit shall be rated for a prospective short circuit current of not more than 10kA.
 - Final assembly must be reassessed to the relevant standards taking into consideration all types of protection used.
- (b). Conditions of Manufacture
- No Conditions of Manufacture

14. Essential Health and Safety Requirements (EHSRs)

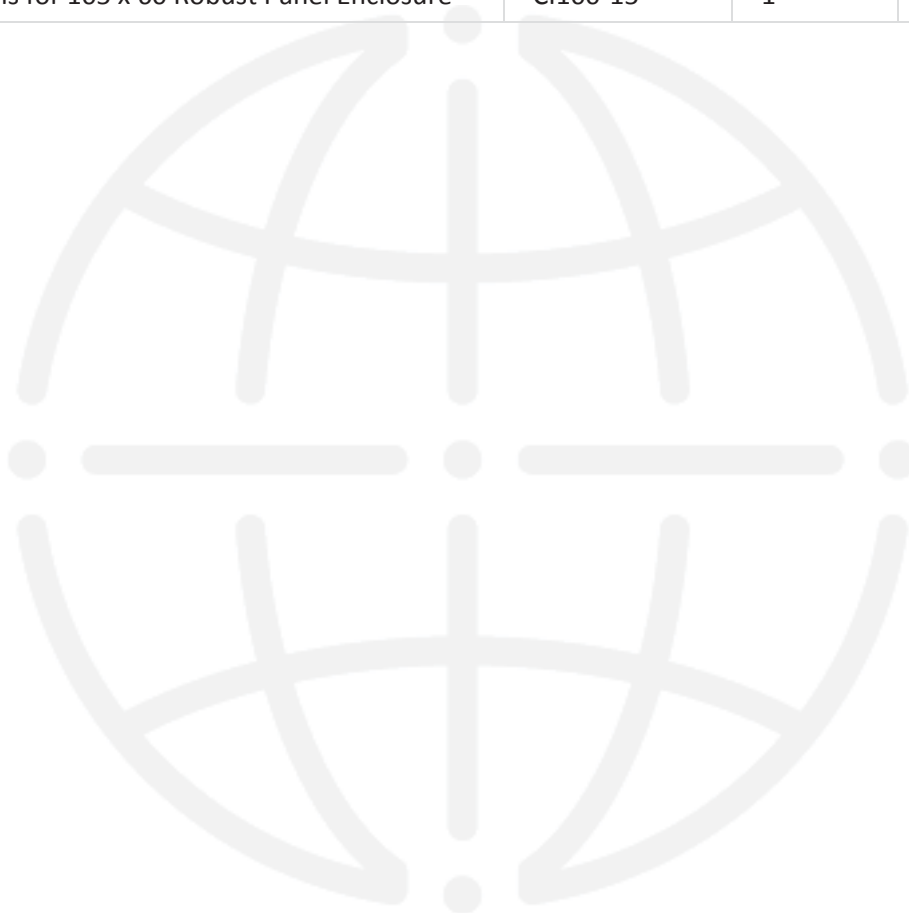
The relevant Essential Health and Safety Requirements (EHSRs) have been identified and assessed in Intertek Report: 104629389CHE-017 dated 6th September 2021.

SCHEDULE:

EU-Type Examination Certificate Number: ITS21UKEX0094U Issue 00

15. Drawings and Documents

Title:	Drawing No.:	Rev. Level:	Date:
ATEX & IECEx Ex nA, Ex p, Ext ta & Ex e Certification for BEKA 105 x 60 Robust Panel Enclosure	CI100-07	1	13.03.2014
UKCA Ex p, Ex ta & Ex eb Certification Information for BEKA 105 x 60 ROBUST PANEL ENCLOSURE (2 sheets)	CI100-07-UKCA	1	May 21
Gasket Details for 105 x 60 Robust Panel Enclosure	CI100-15	1	06.09.2021



This Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. This Certificate is accredited under UKAS schedule 0010.

Intertek Testing & Certification Limited, Cleeve Road, Leatherhead, Surrey, KT22 7SA
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