



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.:  issue No.:

Status:

Date of Issue:  Page 1 of 3

Applicant: **BEKA Associates Ltd**  
Old Charlton Road  
Hitchin  
SG25 2DA  
United Kingdom

Electrical Apparatus: **BA307NE and BA327NE 4 and 5 digit panel mounting indicators**  
*Optional accessory:*


Type of Protection: **Ex nA ic tc**

Marking: **Ex nA ic IIC T5 Gc -40°C ≤ Ta ≤ 70°C**  
**Ex ic tc IIIC T80°C Dc -40°C ≤ Ta ≤ 70°C**  
**IECEX 14.0026X**

*Approved for issue on behalf of the IECEx  
Certification Body:* A Dickinson

*Position:* Certification Officer

*Signature:*  
*(for printed version)*

  
4 Sept 2014

*Date:*

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

**Intertek Testing & Certification Limited**  
ITS House, Cleeve Road,  
Leatherhead,  
Surrey, KT22 7SB  
United Kingdom





# IECEX Certificate of Conformity

Certificate No.: IECEx ITS 14.0026X  
Date of Issue: 2014-09-04 Issue No.: 0  
Page 2 of 3

Manufacturer: **BEKA Associates Ltd**  
Old Charlton Road  
Hitchin  
SG25 2DA  
United Kingdom

Additional Manufacturing  
location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

#### STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

- IEC 60079-0 : 2007-10** Explosive atmospheres - Part 0: Equipment - General requirements  
Edition: 5
- IEC 60079-11 : 2006** Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"  
Edition: 5
- IEC 60079-15 : 2010** Explosive atmospheres - Part 15: Equipment protection by type of protection "n"  
Edition: 4
- IEC 60079-31 : 2008** Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure 't'  
Edition: 1

*This Certificate does not indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

#### TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

#### Test Report:

GB/ITS/EXTR11.0017/00

GB/ITS/EXTR11.0017/01

GB/ITS/EXTR11.0017/02

#### Quality Assessment Report:

GB/ITS/QAR06.0002/03



# IECEX Certificate of Conformity

Certificate No.: IECEx ITS 14.0026X

Date of Issue: 2014-08-14

Issue No.: 0

Page 3 of 3

## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

The BA307NE and BA327NE 4 and 5 digit panel mounting indicators are loop powered instruments 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 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 IECEx certificate number IECEx ITS 14.0007U.

The maximum input parameters are as follows: TB1 4/20mA Loop input – Terminals 1 & 3  $I_i = 200\text{mA}$  (Note: There is no  $U_i$  figure because of the multiple shunt input diodes within the instrument which define the input voltage) TB2 Backlight – Terminals 12 & 13 (4/20mA loop powered)  $I_i = 200\text{mA}$  (connected in series with TB1 terminals 1 & 3) TB2 Backlight – Terminals 12 & 14 (separately powered)  $U_i = 30\text{V}$  (Note: There is no  $I_i$  figure because there is a current sink within the backlight) TB4 Alarms – each channel – Terminals 8 & 9; 10 & 11  $U_i = 30\text{V}$   $I_i = 200\text{mA}$

The BEKA BA307NE and BEKA BA327NE consists of the BEKA BA307E and BA327E 4 and 5 digit panel mount indicators (certificate number IECEx ITS 11.0015X) and the BEKA robust 105x60mm panel enclosure (certificate number IECEx ITS 14.0007U). 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-NE.

### CONDITIONS OF CERTIFICATION: YES as shown below:

For Ex nA instrument installed in Ex n or Ex e panel enclosure the instrument must be powered from a limited energy circuit.

For Ex nA instrument installed in Ex px, py or pz panel enclosure the instrument must be powered from a limited energy circuit.

For Ex nA instrument installed in Ex px, py or pz panel enclosure the vents located on the back of the instrument must not be obstructed.

For Ex tc instrument installed in Ex tc panel enclosure the instrument must be powered from a limited energy circuit, so that instrument push button contacts are nonincendive (Ex ic).

For instruments designated for type of protection pressurized equipment the supply circuit shall be rated for a prospective short circuit current of not more than 10kA.

The equipment must be installed in a panel that maintains at least one of the following types of protection:

Ex e IIC Gc  $-40^\circ\text{C} \leq T_a \leq +70^\circ\text{C}$

Ex p IIC Gc  $-40^\circ\text{C} \leq T_a \leq +70^\circ\text{C}$

Ex nA IIC Gc  $-40^\circ\text{C} \leq T_a \leq +70^\circ\text{C}$

Ex tc IIIC Dc  $-40^\circ\text{C} \leq T_a \leq +70^\circ\text{C}$

Condition of Manufacture:

The voltages applied to infallible transformers shall conform to the values given in Table 10 as per the requirements of EN 60079-11:2007, Clause 11.2, Routine tests for infallible transformers.

### **Additional information about the BA307NE and BA327NE IECEx Ex nA certificate**

This IECEx Certificate of Conformity IECEx ITS 14.0026X for the Type of Protection 'n' BA307NE and BA327NE 4/20mA loop powered indicators refers to IECEx Component Certificate IECEx ITS 14.0007U for the BEKA robust 105x60mm stainless steel enclosure in which the indicators are housed. For reference a copy of this Component Certificate follows this note.

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

Ex e IIC	Protection by Increased safety IEC 60079-7:2006
Ex p IIC	Protection by pressurised enclosure IEC 60079-2:2007
Ex nA IIC	Type of protection 'n' IEC 60079-15:2010
Ex ta IIIC	Dust ignition protection by enclosure IEC 60079-31:2008

When a BA307NE or BA327NE indicator is installed in a Zone 2 or 22 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 defined by the Conditions of Certification in the IECEx Certificate of Conformity IECEx ITS 14.0026X.

Further installation information is contained in the [BA307NE and BA327NE Instruction Manual](#) and in the [BEKA Application Guide AG310](#) both of which may be downloaded from this website.

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



# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.:  issue No.:

Status:

Date of Issue:  Page 1 of 4

Applicant: **BEKA**  
Old Charlton Road  
Hitchin SG5 2DD  
United Kingdom

Electrical Apparatus: **Robust 105-60mm Panel Enclosure**  
Optional accessory:

Type of Protection: **"p", "e", "nA", "ta"**

Marking: IECEx ITS 14.0007U  
Ex e IIC Gb, Ex p IIC Gb, Ex nA IIC Gc, Ex ta IIIC Da

Approved for issue on behalf of the IECEx Certification Body: **V K Varma**

Position: **Certification Officer**

Signature:  
(for printed version)

Vijay K. Varma  
2014-06-10

Date:

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ITS House, Cleeve Road,  
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Surrey, KT22 7SB  
United Kingdom





# IECEX Certificate of Conformity

Certificate No.: IECEx ITS 14.0007U

Date of Issue: 2014-06-10

Issue No.: 0

Page 2 of 4

Manufacturer: **BEKA**  
Old Charlton Road  
Hitchin SG5 2DD  
United Kingdom

Additional Manufacturing location  
(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

#### STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

<b>IEC 60079-0 : 2011</b> Edition: 6.0	Explosive atmospheres - Part 0: General requirements
<b>IEC 60079-15 : 2010</b> Edition: 4	Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
<b>IEC 60079-2 : 2007-02</b> Edition: 5	Explosive Atmospheres - Part 2 Equipment protection by pressurized enclosure "p"
<b>IEC 60079-31 : 2008</b> Edition: 1	Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure 't'
<b>IEC 60079-7 : 2006-07</b> Edition: 4	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"

*This Certificate does not indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

#### TEST & ASSESSMENT REPORTS:

*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

Test Report:  
GB/ITS/ExTR14.0024/00

Quality Assessment Report:  
GB/ITS/QAR06.0002/03



# IECEx Certificate of Conformity

Certificate No.: IECEx ITS 14.0007U

Date of Issue: 2014-06-10

Issue No.: 0

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## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

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.

**CONDITIONS OF CERTIFICATION: NO**



# IECEX Certificate of Conformity

Certificate No.: IECEx ITS 14.0007U

Date of Issue: 2014-06-10

Issue No.: 0

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## Additional information:

### Schedule of Limitation

- For an Ex nA instrument installed in an Ex n or Ex e panel enclosure, the instrument must be powered from an energy-limited circuit. The equipment is allowed to be installed in Zone 2 hazardous location.
- For an Ex nA instrument installed in an Ex px, py or pz panel enclosure, the instrument must be powered from the energy-limited circuit, and the rear panel must provide appropriate vents dependent on the characteristics of the gas used for the pressurised system. The equipment is allowed to be installed in Zone 2 hazardous location.
- 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 system. 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 dependant on the intrinsically safe level of protection.
- For Ex nA instrument installed in Ex tc panel enclosure the instrument must be powered from the limited energy circuit, so that instrument push button contacts are nonincendive (Ex ic).
- 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).
- The supply circuit for instruments used in the equipment with pressurized type of protection 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.
- Service temperature range specified by manufacturer is -40°C to +70°C.