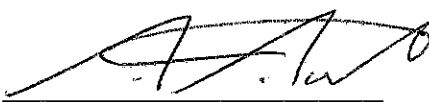




# IECEX Certificate of Conformity

## 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.:	IECEX ITS 11.0014X	issue No.:1	Certificate history: Issue No. 1 (2015-9-2) Issue No. 0 (2011-4-19)
Status:	Current		
Date of Issue:	2015-09-02	Page 1 of 5	
Applicant:	<b>BEKA associates Limited</b> Old Charlton Road Hitchin Herts SG5 2DA United Kingdom		
Electrical Apparatus: Optional accessory:	<b>4 and 5 Digit Field Mounting Indicators and Rate Totaliser</b>		
Type of Protection:	<b>Ex ia</b>		
Marking:	IECEX ITS 11.0014 Ex ia IIC T5 Ga - 40°C < Ta < + 70°C Ex ia IIIC T80°C Da IP66 - 40°C < Ta < + 70°C		
Approved for issue on behalf of the IECEx Certification Body:	A T Austin		
Position:	Certification Officer		
Signature: (for printed version)			
Date:	<u>2015-09-02</u>		

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 11.0014X

Date of Issue: 2015-09-02

Issue No.: 1

Page 2 of 5

Manufacturer: **BEKA associates Limited**  
Old Charlton Road  
Hitchin  
Herts  
SG5 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 : 2011** Explosive atmospheres - Part 0: General requirements  
Edition: 6.0

**IEC 60079-11 : 2011** Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"  
Edition: 6.0

*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/ExTR11.0016/00

GB/ITS/ExTR11.0016/01

Quality Assessment Report:

GB/ITS/QAR06.0002/03



# IECEX Certificate of Conformity

Certificate No.: IECEx ITS 11.0014X

Date of Issue: 2015-09-02

Issue No.: 1

Page 3 of 5

## Schedule

### EQUIPMENT:

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

The 4 and 5 Digit Field Mounting Indicators are field 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 indicator to be calibrated to display any 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 non-linear variables such as tank level in engineering units.

The models are BA304E & BA304G 4 Digit Indicator, BA324E & BA324G 5 Digit Indicator and BA354E and BA354G Rate Totaliser.

The 4 and 5 Digit Field Mounting Indicators and Rate Totaliser may additionally be fitted with an optional Back Light Board.

The 4 and 5 Digit Field Mounting E-series indicators BA304E & BA324E and Rate Totaliser BA354E comprise a Field Terminal Board, Main Display Board with optional Alarm circuits, Display LCD101 and optional Back Light Board all housed within an IP66 stainless steel or a glass reinforced polyester (GRP) enclosure.

The G-series models BA304G 4 Digit Indicator, BA324G 5 Digit Indicator and BA354G Rate Totaliser are similar to the E-series. They are housed within a pre-certified enclosure with IP rating of at least IP66.

The boards in both E-series and G-series contain fixed resistors, keypads, liquid crystal display (LCD), transformers, capacitors, inductors, semiconductor devices, connectors for printed circuit board (pcb) interconnections, terminal blocks for external connections and plastic spacers for pcb mounting.

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

**Conditions of Use for Ex Equipment:** when installed in a Zone 0 potentially explosive atmosphere requiring EPL Ga apparatus, the instrument shall be installed such that even in the event of rare incidents, an ignition source due to impact or friction between the aluminium label and iron/steel is excluded.

**Conditions of Manufacture Routine test:** Routine tests for infallible transformers, 500 V between primary and secondary windings (both windings are supplied from intrinsically safe circuits).



# IECEX Certificate of Conformity

Certificate No.: IECEx ITS 11.0014X

Date of Issue: 2015-09-02

Issue No.: 1

Page 4 of 5

## EQUIPMENT(continued):

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

$U_i = 30 \text{ V}$   $U_o = 1.1 \text{ V}$   
 $I_i = 200 \text{ mA}$   $I_o = 3 \text{ mA}$   
 $P_i = 0.84 \text{ W}$   $P_o = 4.5 \text{ mW}$

$C_i = 13 \text{ nF}$  (for E-series)  
 $C_i = 5.4 \text{ nF}$  (for G - Series)  
 $L_i = 0.016 \text{ mH}$  (0.02 mH)  
 $C_o = 53 \text{ nF}$  (for E-series)  
 $C_o = 60.6 \text{ nF}$  (for G - Series)  
 $L_o = 0.78 \text{ mH}$

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

$U_i = 30 \text{ V}$   
 $I_i = 200 \text{ mA}$   
 $P_i = 0.84 \text{ W}$

$C_i = 13 \text{ nF}$  (for E-series)  
 $C_i = 3.3 \text{ nF}$  (for G - Series)  
 $L_i = 0.008 \text{ mH}$  (0.01 mH)  
 $C_o = 53 \text{ nF}$  (for E-series)  
 $C_o = 63 \text{ nF}$  (for G - Series)  
 $L_o = 0.79 \text{ mH}$

**TB3 Terminals RS1 and RS2**

$U_i = 30 \text{ V}$   $U_o = 6 \text{ V}$   
 $I_i = 200 \text{ mA}$   $I_o = 2.5 \text{ mA}$   
 $P_i = 0.84 \text{ W}$   $P_o = 3.75 \text{ mW}$

$C_i = 13 \text{ nF}$  (for E-series)  
 $C_i = 0$  (for G - Series)  
 $L_i = 0.008 \text{ mH}$  (0.01 mH)  
 $C_o = 53 \text{ nF}$  (for E-series)  
 $C_o = 66 \text{ nF}$  (for G - Series)  
 $L_o = 0.79 \text{ mH}$

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

$U_i = 30 \text{ V}$   $U_o = 1.47 \text{ V}$   
 $I_i = 200 \text{ mA}$   $I_o = 1 \mu\text{A}$   
 $P_i = 0.84 \text{ W}$   $P_o = 2.2 \mu\text{W}$

$C_i = 24 \text{ nF}$  (for E-series)  
 $C_i = 0$  (for G - Series)  
 $L_i = 0.008 \text{ mH}$  (0.01 mH)  
 $C_o = 42 \text{ nF}$  (for E-series)  
 $C_o = 66 \text{ nF}$  (for G - Series)  
 $L_o = 0.79 \text{ mH}$

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 EN60079-11. The equivalent capacitance and inductance are the result of r.f. suppression components directly connected across the apparatus input terminals.



# IECEx Certificate of Conformity

Certificate No.: IECEx ITS 11.0014X

Date of Issue: 2015-09-02

Issue No.: 1

Page 5 of 5

## DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

**Variation One:** Intertek Report Ref G102060844 dated July 2015, GB/ITS/ExTR11.0016/01 dated July 2015

1. Re-assessments of the 4 and 5 Digit Field Mounting Indicators to the requirements of the latest standards EN 60079-0: 2012 and EN 60079-11:2012.
2. The G-series models BA304G 4 Digit Indicator, BA324G 5 Digit Indicator and BA354G Rate totaliser added as part of this certification.
3. Changes to appropriate documents to reflect the above changes.