



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

Certificate No.: **IECEX ITS 11.0014** issue No.: **0** Certificate history: _____

Status: **Current**

Date of Issue: **2011-04-19** Page 1 of 4

Applicant: **BEKA associates Limited**
Old Charlton Road
Hitchin
Herts
SG5 2DA
United Kingdom

Electrical Apparatus: **4 and 5 Digit Field Mounting Indicators and Rate Totaliser**
Optional accessory:

Type of Protection: **Ex ia**

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:

2011-04-19

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





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Certificate No.: IECEx ITS 11.0014
Date of Issue: 2011-04-19 Issue No.: 0
Page 2 of 4

Manufacturer: **BEKA associates Limited**
Old Charlton Road
Hitchin
Herts
SG5 2DA
United Kingdom

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 Edition: 5	Explosive atmospheres - Part 0: Equipment - General requirements
IEC 60079-11 : 2006 Edition: 5	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-26 : 2006 Edition: 2	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga
IEC 61241-11 : 2005 Edition: 1	Electrical apparatus for use in the presence of combustible dusts - Part 11: Protection by intrinsic safety 'iD'

*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

Quality Assessment Report:

GB/ITS/QAR06.0002/01



IECEX Certificate of Conformity

Certificate No.: IECEX ITS 11.0014

Date of Issue: 2011-04-19

Issue No.: 0

Page 3 of 4

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The 4 and 5 Digit Field Mounting Indicators and Rate Totaliser 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 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 non-linear variables such as tank level in engineering units.

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

BA304E 4 Digit Indicator

BA324E 5 Digit Indicator

BA354E Rate Totaliser

The 4 and 5 Digit Field Mounting Indicator and Rate Totaliser may optionally incorporate Alarm circuit on the main display board and may additionally be fitted with an optional Backlight board.

The 4 and 5 Digit Field Mounting Indicators and Rate Totaliser comprise a field terminal board, a main display board, and an optional Backlight board, all housed within a plastic, glass reinforced polyester, enclosure or a stainless steel casting. The enclosure provides a degree of protection IP20 (Gas) and IP66 (Gas/Dust).

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

CONDITIONS OF CERTIFICATION: NO



IECEx Certificate of Conformity

Certificate No.: IECEx ITS 11.0014

Date of Issue: 2011-04-19

Issue No.: 0

Page 4 of 4

EQUIPMENT(continued):

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)

$U_i = 30 \text{ V}$	$U_o = 1.1 \text{ V}$
$I_i = 200 \text{ mA}$	$I_o = 3 \text{ mA}$
$P_i = 0.84 \text{ W}$	$P_o = 4.5 \text{ mW}$
$C_i = 13 \text{ nF}$	
$L_i = 0.016 \text{ mH (0.02 mH)}$	
$C_o = 53 \text{ nF}$	
$L_o = 0.78 \text{ mH}$	

TB2 Terminals 12, 13 and 14 (Backlight Input)

$U_i = 30 \text{ V}$
$I_i = 200 \text{ mA}$
$P_i = 0.84 \text{ W}$
$C_i = 13 \text{ nF}$
$L_i = 0.008 \text{ mH (0.01 mH)}$
$C_o = 53 \text{ nF}$
$L_o = 0.79 \text{ mH}$

TB3 Terminals RS1 and RS2

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

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

$U_i = 30 \text{ V}$	$U_o = 1.47 \text{ V}$
$I_i = 200 \text{ mA}$	$I_o = 1 \text{ }\mu\text{A}$
$P_i = 0.84 \text{ W}$	$P_o = 2.2 \text{ }\mu\text{W}$
$C_i = 24 \text{ nF}$	
$L_i = 0.008 \text{ mH (0.01 mH)}$	
$C_o = 42 \text{ nF}$	
$L_o = 0.79 \text{ mH}$	

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 IEC 60079-11. The equivalent capacitance and inductance are the result of r.f. suppression components directly connected across the apparatus input terminals.