



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 09.0005 issue No.:1

Status: Current

Certificate history:
Issue No. 1 (2009-11-11)
Issue No. 0 (2009-6-5)

Date of Issue: 2009-11-11 Page 1 of 6

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

Electrical Apparatus: **BA474D Indicating Temperature Transmitter**
Optional accessory:

Type of Protection: **Ex ia**

Marking: **IECEX ITS 09.0005,**
Ex ia IIC T5 Ga, -40°C < Ta < +70°C
[Ex ia Ga] IIC, -40°C < Ta < +70°C
Ex ia IIIC T80°C Da IP66, -20°C < Ta < +60°C
[Ex ia Da] IIIC, -20°C < Ta < +60°C

Approved for issue on behalf of the IECEx Certification Body: A T Austin

Position: Certification Officer

Signature:
(for printed version)

Date: 2009-11-26

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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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 61241-0 : 2004 Edition: 1	Electrical apparatus for use in the presence of combustible dust - Part 0: General requirements
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/ExTR09.0005/00
GB/ITS/ExTR09.0005/01

Quality Assessment Report:

GB/ITS/QAR06.0002/01



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The BA474D Indicating Temperature Transmitter is a field mounting loop powered indicating temperature transmitter designed to display temperature in the hazardous process area and transmit a linearised 4/20 mA current to the non-hazardous area. It provides galvanic isolation between the input and output connections.

The BA474D may optionally be situated in the non-hazardous area as an associated electrical apparatus and provide galvanic isolation between the non-intrinsically safe area input terminals and intrinsically safe input/output terminals.

The BA474D may optionally be fitted with an Alarm board and may additionally be fitted with an optional Back Light board.

The BA474D Indicating Temperature Transmitter comprises a field terminal board, a main board, and an optional Alarm board, and/or an optional Back Light board, all housed within a plastic, glass reinforced polyester, enclosure. The enclosure provides a degree of protection IP20 (Gas) and IP66 (Gas/Dust).

CONDITIONS OF CERTIFICATION: NO

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EQUIPMENT(continued):

The maximum intrinsically safe input and output parameters at the terminals for external connections are:

Terminals TB2-5 & 6

$$U_i = 28 \text{ V}$$

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

$$P_i = 0.85 \text{ W}$$

The equivalent parameters are:

$$C_i = 46.42 \text{ nF}$$

$$L_i = 0.01 \text{ mH}$$

$$C_o = 36.58 \text{ nF}$$

$$L_o = 0.69 \text{ mH}$$

Terminals TB3-8 & 9; 10 & 11

$$U_i = 30 \text{ V} \quad U_o = 0.7 \text{ V}$$

$$I_i = 200 \text{ mA} \quad I_o = 1.3 \text{ uA}$$

$$P_i = 0.85 \text{ mW} \quad P_o = 4 \text{ uW}$$

The equivalent parameters are:

$$C_i = 0.02 \text{ uF}$$

$$L_i = 0.01 \text{ mH}$$

$$C_o = 46 \text{ nF}$$

$$L_o = 0.69 \text{ mH}$$

Terminals TB1-1, 2, 3 & 4

$$U_i = 6 \text{ V} \quad U_o = 6 \text{ V}$$

$$I_i = 100 \text{ mA} \quad I_o = 30.3 \text{ mA}$$

$$P_i = 194 \text{ mW} \quad P_o = 46 \text{ mW}$$

The equivalent parameters are:

$$C_i = 16.16 \text{ uF}$$

$$L_i = 0$$

$$C_o = 23.84 \text{ uF}$$

$$L_o = 3 \text{ mH}$$

For intrinsic safety considerations, under fault conditions, the voltage, current and power at terminals TB3- 8 & 9; 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 terminals.



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

VARIATION 1 (GB/ITS/ExTR09.0005/01; Intertek Project No 09043367)

To permit the following changes:

1. Addition of ferrite absorbers in series with sensor inputs 1, 2, 3 and 4 on TB1. Due to very low inductance value ($1 \mu\text{H}$ each), the inductance at the terminals may be disregarded.
2. Option to replace diodes D601 and D602 with wire links.
3. Minor changes to the Field Terminal Board artwork.

The above changes do not impair intrinsic safety and the entity parameters are unchanged.



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Additional information:

As an associated electrical apparatus, the input and output parameters are:

Terminals TB2- 5 & 6; Terminals TB3- 8 & 9; 10 & 11

$U_m = 250 \text{ V}$

Terminals TB1-1, 2, 3 & 4

$U_i = 6 \text{ V}$

$U_o = 6 \text{ V}$

$I_i = 100 \text{ mA}$

$I_o = 30.3 \text{ mA}$

$P_i = 194 \text{ mW}$

$P_o = 46 \text{ mW}$

The equivalent parameters are:

$C_i = 16.16 \text{ uF}$

$L_i = 0$

$C_o = 23.84 \text{ uF}$

$L_o = 3 \text{ mH}$