



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 07.0021X** issue No.: **1**

Status: **Current**

Certificate history:
Issue No. 1 (2012-2-17)
Issue No. 0 (2007-12-14)

Date of Issue: **2012-02-17** Page 1 of 5

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

Electrical Apparatus: **BA488C Serial Text Display**
Optional accessory:

Type of Protection: **Intrinsic Safety, Ex ia**

Marking: **IECEX ITS 07.0021X**
Ex ia IIC T5 Ga -40°C < Ta < +60°C

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

Position: **Certification Manager**

Signature:
(for printed version)

Date: 2012-02-17

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 : 2011 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-11 : 2011-06 Edition: 6.0	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

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/ExTR07.0028/00

GB/ITS/ExTR07.0028/01

Quality Assessment Report:

GB/ITS/QAR06.0002/00

GB/ITS/QAR06.0002/01



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

BA488C Serial Text Display is a panel mounting equipment designed to display text and simple graphics in the hazardous area. The BA488C incorporates four push-buttons and two solid state outputs to form an operator interface for simple machine and process control applications.

The BA488C comprises a 5051 Power Supply & Communications Board, an Alarm Board 01 and a CPU and Display Board, all housed within a metallic enclosure.

The enclosure provides a degree of protection of at least IP20.

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

The maximum intrinsically safe input and output parameters are as follows:

TB1 terminals 1 and 2

$U_i = 25 \text{ V}$

$I_i = 108 \text{ mA}$

$P_i = 0.58 \text{ W}$

The equivalent parameters are:

$C_i = 0.01 \text{ uF}$

$L_i = 0.02 \text{ mH}$

CONDITIONS OF CERTIFICATION: YES as shown below:

When installed in a Zone 0 potentially explosive atmosphere, the BA488C Serial Text Display shall be installed such that even in the event of rare incidents, ignition source due to impact or friction between the aluminium enclosure of the instrument and iron/steel is excluded.



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EQUIPMENT(continued):

TB1 terminals 4 and 2

$U_i = 14 \text{ V}$

$I_i = 108 \text{ mA}$

$P_i = 0.45 \text{ W}$

The equivalent parameters are:

$C_i = 0$

$L_i = 0$

TB1 terminals 1, 2, 5 and 6

$U_i = 20 \text{ V}$

$I_i = 139 \text{ mA}$

$P_i = 0.46 \text{ W}$

The equivalent parameters are:

$C_i = 0.01 \text{ uF}$

$L_i = 0.02 \text{ mH}$

TBS terminals S1 to S7

$U_i = 14.7 \text{ V}$

$I_i = 99 \text{ mA}$

$P_i = 0.6 \text{ W}$

The equivalent parameters are:

$C_i = 30 \text{ uF at } 6 \text{ V}$

$C_i = 0.4 \text{ uF at } 14.7 \text{ V}$

$L_i = 0.3 \text{ mH}$

TBA terminals A1 & A2, A3 & A4 (each Alarm channel)

$U_i = 28 \text{ V}$ $U_o = 1.49 \text{ V}$

$I_i = 200 \text{ mA}$ $I_o = 1 \text{ uA}$

$P_i = 0.84 \text{ W}$ $P_o = 3 \text{ uW}$

The equivalent parameters are:

$C_i = 0.04 \text{ uF}$

$L_i = 8 \text{ uH}$

For intrinsic safety considerations, under fault conditions the voltage, current and power at the above terminals, TBA, do not exceed those specified in clause 5.7 of IEC 60079-11:2006. The equivalent capacitance and inductance are the result of r.f. suppression components directly connected to the apparatus terminals.



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

VARIATION ONE (GB/ITS/ExTR07.0028/01, Intertek Project No 10050420)

To permit the following changes:

1. Addition of alternative Alarm Board 01 (PC175). The entity parameter, L_p , is changed from 20 μ H to 8 μ H at the TBA Terminals for each Alarm channel when PC175 is fitted. The remaining entity parameters are unchanged.
2. Review of BA488C Serial Text Display to the latest appropriate standards listed above and the markings have been updated accordingly. The original standards used for assessment and tests are listed in Issue 0.
3. Category of the instrument changed from "Ib" to "Ia" and Condition of Certification added as the material limits of the enclosure are exceeded for equipment of ELP Ga.