



**EC TYPE-EXAMINATION CERTIFICATE**

- 1.
2. **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**
3. EC-Type Examination Certificate Number: ITS03ATEX21379
4. Equipment or Protective System: BA458C BATCH CONTROLLER
5. Manufacturer: BEKA ASSOCIATES LIMITED
6. Address: Old Charlton Road, Hitchin, Herts, SG5 2DA
7. This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
8. The ITS Testing and Certification Limited, notified body number 0359 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.  
  
The examination and test results are recorded in confidential Report Number:  
Intertek Report Ref 03010033 Issue 1, dated October 2003
9. Compliance with the Essential Health and Safety Requirements has been assured by compliance with:  
EN 50014:1997 + Amds 1 & 2, EN 50020:2002 and EN 50284:1999  
except in respect of those requirements listed at item 18 of the Schedule.
10. If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.
11. This EC Type examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.
12. The marking of the equipment or protective system shall include the following:-



II 1 G, EEx ia IIC T5 ( Tamb= -40°C to 60°C)

**R M Adams**  
Deputy Certification Manager  
14 October 2003

**Intertek Testing & Certification Limited**  
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13. **Schedule**
14. EC-TYPE EXAMINATION CERTIFICATE NUMBER ITS03ATEX21379
15. Description of Equipment or Protective System.

BA458C Batch Controller is a panel mounting equipment designed to control the dispensing of liquids, solids or components in the hazardous area. The BA484D incorporates a selection of operator display screens identifying the function of the front panel push-button switches.

The BA458C comprises a Simple Power Supply Board, EC-Type Examination Certificate Number ITS03ATEX21376U, a Current and Pulse Input Board 01, EC-Type Examination Certificate Number ITS03ATEX21377U, two Alarm Board 01, EC-Type Examination Certificate Number ITS02ATEX2044U and a CPU and Display, EC-Type Examination Certificate Number ITS02ATEX2045U, all housed within a metallic enclosure.

The enclosure provides a Degree of Protection of at least IP20.

Intrinsic safety is assured by the use of certified components, which provide limitation of voltage, current and power, limitation of capacitance and inductance, and infallible segregation.

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

**TB1 terminals 1 and 2**

$U_i = 28 \text{ V}$   
 $I_i = 96 \text{ mA}$   
 $P_i = 0.84 \text{ W}$

The equivalent parameters are:

$C_i = 15 \text{ nF}$   
 $L_i = 8 \text{ } \mu\text{H}$

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13. **Schedule**
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**TBS terminals S1 to S7**

$U_o = 14.7 \text{ V}$

$I_o = 99 \text{ mA}$

$P_o = 0.6 \text{ W}$

The equivalent parameters are:

$C_i = 30 \mu\text{F}$  at 6 V

$C_i = 0.47 \mu\text{F}$  at 14.7V

$L_i = 0.3 \text{ mH}$

**TBA1 terminals A1 & A2, A3 & A4 (each Alarm channel)**

**TBA2 terminals A5 & A6**

**TBA3 terminals A7 & A8, A9 & A10 (each Alarm channel)**

**TBA4 terminals A11 & A12**

$U_i = 28 \text{ V}$

$U_o = 1.49 \text{ V}$

$I_i = 200 \text{ mA}$

$I_o = 1 \mu\text{A}$

$P_i = 0.85 \text{ W}$

$P_o = 3 \mu\text{W}$

The equivalent parameters are:

$C_i = 0.04 \mu\text{F}$

$L_i = 0.02\text{mH}$

For intrinsic safety considerations, under fault conditions the output voltage, current and power at the above terminals do not exceed those specified in Clause 5.4 of EN 50020: 2002. The equivalent capacitance and inductance are the result of r.f suppression components directly connected to the apparatus terminals.

**TB2 terminals 11 and 12**

$U_o = 10.6 \text{ V}$

$I_o = 20 \text{ mA}$

$P_o = 50 \text{ mW}$

The equivalent parameters are:

$C_i = 15 \text{ nF}$

$L_i = 8 \mu\text{H}$

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**TB2 terminals 13 to 17**

$U_i = 28 \text{ V}$	$U_o = 1.1 \text{ V}$
$I_i = 100 \text{ mA}$	$I_o = 0.12 \text{ mA}$
$P_i = 0.66 \text{ W}$	$P_o = 35 \mu\text{W}$

The equivalent parameters are:

$C_i = 18 \text{ nF}$   
 $L_i = 0.02 \text{ mH}$

For intrinsic safety considerations, under fault conditions the output voltage, current and power at the above terminals do not exceed those specified in Clause 5.4 of EN 50020: 2002. The equivalent capacitance and inductance are the result of r.f suppression components directly connected to the apparatus terminals.

**TB2 terminals 18 to 20**

$U_o = 11.7 \text{ V}$   
 $I_o = 2.4 \text{ mA}$   
 $P_o = 7 \text{ mW}$

The equivalent parameters are:

$C_i = 3.6 \text{ nF}$   
 $L_i = 0$

16. Report No. ITS Report Ref 03010033.
17. SPECIAL CONDITIONS FOR SAFE USE  
None

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13. **Schedule**
14. EC-TYPE EXAMINATION CERTIFICATE NUMBER ITS03ATEX21379
18. Essential Health and Safety Requirements

Essential Health and Safety Requirements not covered by Standards listed at (9)		
Clause	Subject	Compliance
1.01	Principal of integrated explosion protection	The equipment is designed to comply with the requirements of EN 50014, EN 50020 and EN 50284
1.02	Analysis of possible operating faults	The equipment is designed to comply with failure modes specified in EN 50020
1.0.3	Special checking and maintenance conditions	No special requirements
1.2.4	Dust deposits	Certification for gas atmospheres only
1.2.7	Protection against other hazards	The equipment is designed to comply with the requirements of EN 50014

19. **DRAWINGS**

Number	Issue	Date	Description
CI450-01 sheets 1*, 2*, 3* & 4	I	Feb. 03	BA458C Certification Information

\* These drawings are common to EC-Type Examination Certificate No ITS03ATEX21378.

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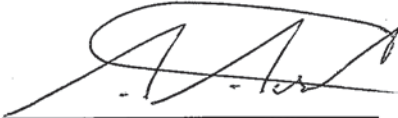
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1. **SUPPLEMENTARY EC-TYPE EXAMINATION CERTIFICATE**
2. **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**
3. Supplementary EC-Type Examination Certificate Number: **ITS03ATEX21379/1X**
4. Equipment or Protective System: **BA458C Batch Controller**
5. Manufacturer: **BEKA ASSOCIATES LIMITED**
6. Address: **Old Charlton Road, Hitchin, Herts, SG5 2DA**
7. This supplementary certificate extends EC-Type Examination Certificate Number ITS03ATEX21379 to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedule of the said Certificate but having variations specified in the Schedule attached to this certificate and the documents therein referred to.

Intertek Report Ref 10050420A dated January 2012.

This Supplementary Certificate shall be held with the original Certificate



**A T Austin**  
**Certification Officer**  
**23 January 2012**

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## Schedule

**SUPPLEMENTARY EC-TYPE EXAMINATION CERTIFICATE NUMBER  
ITS03ATEX21379/1X**

### VARIATION ONE

#### Description of the Variation to the Equipment or Protective System.

To permit the following changes:

- 1.1 Addition of alternative Alarm Board 01 (PC175). The entity parameter, Li, is changed from 20  $\mu$ H to 8  $\mu$ H at the TBA Terminals for each Alarm channel when PC175 is fitted. The remaining entity parameters are unchanged.
- 1.2 Assessment of the BA488C Serial Text Display to the latest standards listed below. Category of the instrument is changed from "ib" to "ia" and Special Condition for Safe Use added as the material limits of the enclosure are exceeded for equipment of ELP Ga.

IEC 60079-0:2011  
IEC 60079-11:2011  
IEC 60079-26:2006

The equipment coding is:



II 1 G, Ex ia IIC T5 Ga (Tamb = -40°C to +60°C)

#### Report No.

Intertek Report Ref 10050420A dated January 2012.

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## Schedule

**SUPPLEMENTARY EC-TYPE EXAMINATION CERTIFICATE NUMBER  
ITS03ATEX21379/1X**

### SPECIAL CONDITION FOR SAFE USE

When installed in the Zone 0 potentially explosive atmosphere, the BA458C Batch Controller 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.

### Essential Health and Safety Requirements

See original certificate

### DRAWINGS

Number	Sheets	Issue	Date	Description
CI450-01	1*, 2*, 3* & 4	3	Oct. 11	Certification Information for BA454D & BA458C

\* These drawings are common to and held with EC-Type Examination Certificate No ITS03ATEX21378/2

*This Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.*

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