



1. **EC TYPE-EXAMINATION CERTIFICATE**

2. **Equipment or Protective System Intended for use in  
Potentially Explosive Atmospheres Directive 94/9/EC**

3. EC-Type Examination Certificate Number: ITS02ATEX2036

4. Equipment or Protective System: BA488C SERIAL TEXT DISPLAY

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:  
ITS Report Ref 02007502, dated December 2002

9. Compliance with the Essential Health and Safety Requirements has been assured by compliance with:  
EN 50014:1997, 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 of the specified equipment or protective system. Further requirements of this Directive apply to the manufacture and supply of this equipment or protection system.

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)

ITS Testing & Certification Limited  
ITS House, Cleeve Road, Leatherhead, Surrey, KT22 7SB  
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Registered No 3272281 Registered Office: 25 Savile Row London W1X 1AA

  
R M Adams  
Deputy Certification Manager  
20 December 2002

This certificate may only be reproduced in its entirety and without any change, schedule included.

# ITS Intertek Testing Services

13. **Schedule**
14. EC-TYPE EXAMINATION CERTIFICATE NUMBER ITS02ATEX2036
15. Description of Equipment or Protective System.

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, EC-Type Examination Certificate Number ITS02ATEX2043U, an 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 infallible segregation.

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

**TB1 terminals 1 and 2**

$U_i = 25V$   
 $I_i = 108 \text{ mA}$   
 $P_i = 0.58W$

The equivalent parameters are:

$C_i = 0.01 \mu F$   
 $L_i = 0.02 \text{ mH}$

**TB1 terminals 4 and 2**

$U_i = 14 \text{ V}$   
 $I_i = 108 \text{ mA}$   
 $P_i = 0.45 \text{ W}$

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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:

$$C_i = 0.01 \text{ } \mu\text{F}$$

$$L_i = 0.02 \text{ mH}$$

**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:

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

$$C_i = 0.4 \text{ } \mu\text{F at } 14.7\text{V}$$

$$L_i = 0.3 \text{ mH}$$

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

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

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

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

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

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

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

The equivalent parameters are:

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

$$L_i = 0.02\text{mH}$$

For intrinsic safety considerations, under fault conditions the 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.

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14. EC-TYPE EXAMINATION CERTIFICATE NUMBER ITS02ATEX2036
16. Report No. ITS Report Ref 02007502.
17. SPECIAL CONDITIONS FOR SAFE USE  
None
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
CI480-01 sheets 1*, 2*, 3* & 4	1	Mar. 02	BA488C Certification Information

\* These drawings are common to and held with EC-Type Examination Certificate No ITS02ATEX2036.

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