



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: **ITS09ATEX26156X**

4. Equipment or Protective System: **BA478C Indicating Temperature Transmitter**

5. Manufacturer: **BEKA ASSOCIATES LIMITED**

6. Address: **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. Intertek 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 Intertek Report Ref 08036506A Issue 1 dated May 2009

9. Compliance with the Essential Health and Safety Requirements has been assured by compliance with standards EN 60079-0:2006, EN 60079-11:2007 and EN 60079-26:2007, except in respect of those requirements referred to 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 and construction 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, Ga Ex ia IIC T5, Ta = -40°C to +70°C



**A T Austin**  
**Certification Officer**  
**Date: 5 June 2009**

**Intertek Testing & Certification Limited**  
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- 13. SCHEDULE
- 14. EC-TYPE EXAMINATION CERTIFICATE NUMBER ITS09ATEX26156X
- 15. Description of Equipment or Protective System

The BA478C Indicating Temperature Transmitter is a panel 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 BA478C may optionally be fitted with an Alarm board and may additionally be fitted with an optional Back Light board.

The BA478C Indicating Temperature Transmitter comprises a panel terminal board, a main display board, and an optional Alarm board, and/or an optional Back Light board, all housed within a metallic enclosure surrounded by a bezel of plastic material having a surface resistance of less than 1 GΩ. 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 inductance, and infallible segregation.

The maximum intrinsically safe input and output parameters at the external connections are as follows:

**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 TB601 - 8 & 9; 10 & 11**

$U_i = 30 \text{ V}$   
 $I_i = 200 \text{ mA}$   
 $P_i = 0.85 \text{ W}$   
 $U_o = 0.7 \text{ V}$   
 $I_o = 1.3 \text{ } \mu\text{A}$   
 $P_o = 4.0 \text{ } \mu\text{W}$

The equivalent parameters are:

$C_i = 0.02 \text{ } \mu\text{F}$   
 $L_i = 0.01 \text{ mH}$   
 $C_o = 46 \text{ nF}$   
 $L_o = 0.69 \text{ mH}$

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14 EC-TYPE EXAMINATION CERTIFICATE NUMBER ITS09ATEX26156X

**Terminals TB1 - 1, 2, 3 & 4**

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

$$I_i = 100 \text{ mA}$$

$$P_i = 194 \text{ mW}$$

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

$$I_o = 30.3 \text{ mA}$$

$$P_o = 46 \text{ mW}$$

The equivalent parameters are:

$$C_i = 16.16 \text{ } \mu\text{F}$$

$$L_i = 0$$

$$C_o = 23.84 \text{ } \mu\text{F}$$

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

For intrinsic safety considerations, under faults conditions, the voltage, current and power at the output terminals TB601 - 8 & 9, and 10 & 11 do not exceed those specified in clause 5.7 of EN 60079-11. The equivalent capacitance and inductance are the result of r.f. suppression components directly connected across the apparatus input terminals.

16. Report Number:

Intertek Report Ref 08036506A Issue 1 dated May 2009

17. CONDITIONS OF CERTIFICATION:

(a). Special Conditions for safe use

The BA478C Indicating Temperature Transmitter when installed in Zone 0 potentially explosive atmosphere shall be installed such that even in the event of rare incidents, an ignition source due to impact or friction between aluminium enclosure at the rear of the instrument mounting panel and iron/steel is excluded.

(b). Conditions For Use (Routine Tests)

The voltages applied to infallible transformers shall conform to the values given in Table 9 as per the requirements of EN 60079-11:2007 clause 11.2, Routine tests for infallible transformers.

18. Essential Health and Safety Requirements (EHSR's)

The relevant EHSR's have been identified and assessed in Intertek Report Ref 08036506A Issue 1 dated May 2009.

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- 14. EC-TYPE EXAMINATION CERTIFICATE NUMBER ITS09ATEX26156X
- 19. Drawings and Documents

Number	Title	Issue	Date
CI470-01, sheets 1 - 14, 19 - 23, 25 - 27	Certification Information for BA478C Indicating Temperature Transmitter	1	August 2008

*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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