

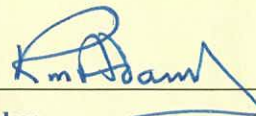


**EC-TYPE EXAMINATION CERTIFICATE**

- 1.
2. **Equipment or Protective System Intended for use in  
Potentially Explosive Atmospheres Directive 94/9/EC**
3. EC-Type Examination Certificate Number: ITS03ATEX21062X
4. Equipment or Protective System: 4-387 SMART SERIES PRESSURE TRANSMITTER
5. Manufacturer: DELTA CONTROLS LTD
6. Address: Island Farm Avenue, West Molesey, Surrey KT8 2UZ
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 02009441 Issue 1, dated June 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 T4 ( Tamb= -20°C to + 90°C)  
EEx ia IIC T5 ( Tamb= -20°C to + 40°C)

  
R M Adams  
Deputy Certification Manager  
11 June 2003

ITS Testing & Certification Limited  
ITS House, Cleeve Road, Leatherhead, Surrey, KT22 7SB  
Tel: + 44 (0)1372 370900 Fax: +44 (0)1372 370977  
<http://www.etlsemko.com/uk>  
Registered No 3272281 Registered Office: 25 Savile Row London W1X 1AA

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



13. **Schedule**

14. EC-TYPE EXAMINATION CERTIFICATE NUMBER ITS03ATEX21062X

15. Description of Equipment or Protective System.

The 4-387 SMART SERIES PRESSURE TRANSMITTER is designed to produce a 4 to 20mA d.c. signal proportional to the pressure of a process fluid. The transducer may be mechanically connected to the process system in a number of alternative ways.

The transducer comprises discrete electronic components mounted on two or three printed circuit boards and a sputtered thin film or metal foil or semi-conductor strain gauge or a piezo-resistive silicon pressure sensor.

The temperature compensated electronics circuits are mounted in a stainless steel tubular enclosure which provides a Degree of Protection of at least IP20

Electrical connections are by terminals or a 2-core integral cable

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

The maximum intrinsically safe input parameters are as follows:

$U_i = 28V$   
 $I_i = 200 \text{ mA}$   
 $P_i = 1.0W$

The equivalent parameters are:

$C_i = 0.07 \mu F$   
 $L_i = 4\mu H$

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13. **Schedule**

14. EC-TYPE EXAMINATION CERTIFICATE NUMBER ITS03ATEX21062X

16. Report No. ITS Report Ref 02009441.

17. SPECIAL CONDITIONS FOR SAFE USE

The transducer may not be capable of withstanding the 500V insulation test required by clause 6.4.12 of EN 50020 : 2002 and this must be taken into account when installing the apparatus.

18. Essential Health and Safety Requirements

The relevant EHSR's that have not been addressed by the standards listed in this certificate have been identified and assessed in ITS Report Ref 02009441 Issue 1, dated June 2003.

19. **DRAWINGS**

Number	Issue	Date	Description
14718, sheets 1 and 2	A	15/05/2003	ATEX Approval Drawing for 4-387 Smart Series EEx ia

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ITS House, Cleeve Road, Leatherhead, Surrey, KT22 7SB  
Tel: + 44 (0)1372 370900 Fax: +44 (0)1372 370977  
<http://www.etlsemko.com/uk>

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**Intertek**



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: **ITS03ATEX21062X/1**
4. Equipment or Protective System: **4 – 387 SMART SERIES PRESSURE TRANSMITTER**
5. Manufacturer: **DELTA CONTROLS LTD**
6. Address: **Island Farm Avenue, West Molesey, Surrey KT8 2UZ**
1. This supplementary certificate extends EC-Type Examination Certificate Number ITS03ATEX21062X 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 07027755 dated November 2008

This Supplementary Certificate shall be held with the original Certificate



**A T Austin**  
**Deputy Certification Manager**  
**17 December 2008**

Intertek Testing & Certification Limited  
Intertek House, Cleeve Road, Leatherhead, Surrey, KT22 7SB  
Tel: + 44 (0) 1372 370900 Fax: +44 (0) 1372 370977  
<http://www.uk.intertek-etlsemko.com>  
Registered No 3272281 Registered Office: 25 Savile Row London W1X 1AA

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## Schedule

**SUPPLEMENTARY EC-TYPE EXAMINATION CERTIFICATE NUMBER ITS03ATEX21062X/1**

### VARIATION ONE

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

To permit the following:

- a) Minor changes to the electronic circuit and schematic diagram, which do not impair intrinsic safety.
- b) Re-assessment of the 4-387 Smart Series Pressure Transmitter to the requirements of EN 60079-0:2006, 60079-11:2007 and EN 60079-26:2004 for Gas, and to the requirements of EN 61421-0:2006 and EN 61241-11:2006 for Dust.

The revised coding of the 4-387 Smart Series Pressure Transmitter is:

Ga Ex ia IIC T4 (Tamb = - 20°C to + 90°C)  
Ga Ex ia IIC T5  
Ex iaD 20 T120 (Tamb = - 20°C to + 90°C)  
Ex iaD 20 T90

#### Report No.

Report Ref 07027755 dated November 2008

#### SPECIAL CONDITIONS FOR SAFE USE

1. The transmitter may not be capable of withstanding the 500 V insulation test required by clause 6.3.12 of EN 60079-11 and this must be taken into account when installing the apparatus (as per the original certificate).
2. A conduit/cable gland or an integral cable when fitted to the transmitter must provide a degree of protection of at least IP6X.

Intertek Testing & Certification Limited  
Intertek House, Cleeve Road, Leatherhead, Surrey, KT22 7SB  
Tel: + 44 (0) 1372 370900 Fax: +44 (0) 1372 370977  
<http://www.uk.intertek-etlsemko.com>  
Registered No 3272281 Registered Office: 25 Savile Row London W1X 1AA

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**Intertek**

## **Schedule**

**SUPPLEMENTARY EC-TYPE EXAMINATION CERTIFICATE NUMBER ITS03ATEX21062X/1**

### **Essential Health and Safety Requirements**

See original certificate

### **DRAWINGS**

<b>Number</b>	<b>Issue</b>	<b>Date</b>	<b>Description</b>
14718 Sheet 1	B	11/09/2008	ATEX Approval Drawing for 4-387 Smart Series EEx ia- General Assembly
14718 Sheet 2	C	11/09/2008	ATEX Approval Drawing for 4-387 Smart Series EEx ia- Schematic Drawing

Intertek Testing & Certification Limited  
Intertek House, Cleeve Road, Leatherhead, Surrey, KT22 7SB  
Tel: + 44 (0) 1372 370900 Fax: +44 (0) 1372 370977  
<http://www.uk.intertek-eilsemko.com>  
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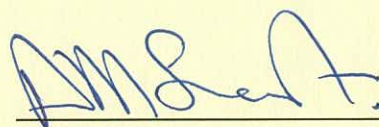




1. **SUPPLEMENTARY EC-TYPE EXAMINATION CERTIFICATE**
2. **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**
3. Supplementary EC-Type Examination Certificate Number: **ITS03ATEX21062X/2**
4. Equipment or Protective System: **4 – 387 SMART SERIES PRESSURE TRANSMITTER**
5. Manufacturer: **DELTA CONTROLS LTD**
6. Address: **Island Farm Avenue, West Molesey, Surrey KT8 2UZ**
7. This supplementary certificate extends EC-Type Examination Certificate Number ITS03ATEX21062X 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 Ref 10045195

This Supplementary Certificate shall be held with the original Certificate



**A M Smart**  
**Certification Officer**  
**23 February 2010**

**Intertek Testing & Certification Limited**  
**Intertek House, Cleeve Road, Leatherhead, Surrey, KT22 7SB**  
**Tel: + 44 (0) 1372 370900 Fax: +44 (0) 1372 370977**  
<http://www.etlsemko.com/uk>  
**Registered No 3272281 Registered Office: 25 Savile Row London W1X 1AA**

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## Schedule

**SUPPLEMENTARY EC-TYPE EXAMINATION CERTIFICATE NUMBER ITS03ATEX21062X/2**

### VARIATION TWO

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

To permit the following changes:

- 1.1 Minor mechanical changes- addition of fingers for internal earth connections.
- 1.2 Minor changes to the top and main amp board.
- 1.3 Removal of Pre-Amp Board (Thin-Film Sensor).
- 1.4 Changes in the notes- minimum track width now 300 microns (was 230 microns) and clarification of interconnecting wire between sensor and PCB

The above changes do not impair intrinsic safety and the temperature class is not affected.

### SPECIAL CONDITIONS FOR SAFE USE

1. The transmitter may not be capable of withstanding the 500 V insulation test required by clause 6.3.12 of EN 60079-11 and this must be taken into account when installing the apparatus (as per the original certificate).
2. A conduit/cable gland or an integral cable when fitted to the transmitter must provide a degree of protection of at least IP6X.

### Essential Health and Safety Requirements

See original certificate

**Intertek Testing & Certification Limited**  
Intertek House, Cleeve Road, Leatherhead, Surrey, KT22 7SB  
Tel: + 44 (0) 1372 370900 Fax: +44 (0) 1372 370977  
<http://www.etlsemko.com/uk>  
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## Schedule

**SUPPLEMENTARY EC-TYPE EXAMINATION CERTIFICATE NUMBER ITS03ATEX21062X/2**

### DRAWINGS

Number	Issue	Date	Description
14718 Sheet 1	C	2010/01/26	ATEX Approval Drawing for 4-387 Smart Series EEx ia- General Assembly
14718 Sheet 2	D	26/01/2010	ATEX Approval Drawing for 4-387 Smart Series EEx ia- Schematic Drawing

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