



## EC-TYPE EXAMINATION CERTIFICATE

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

EC-Type Examination Certificate Number : **BAS00ATEX7087**

Equipment or Protective System: **DUAL CHANNEL SMART FIRE DETECTOR ISOLATOR  
TYPE K\*D0-CS-Ex2.54**

Manufacturer: **PEPPERL + FUCHS GB LTD**

Address: **Oldham, Lancashire, OL1 4EL**

This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

The Electrical Equipment Certification Service, notified body number 600 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 N°

**00(C)0160 dated 13 June 2000**

Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**EN 50014: 1997 + Amds 1 and 2**

**EN 50020: 1994**

except in respect of those requirements listed at item 18 of the Schedule.

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.

This EC-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified equipment or protective system. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment or protective system.

The marking of the equipment or protective system shall include the following:-

**Ex II (1) GD [EEEx ia] IIC (T<sub>amb</sub> = -20°C to +60°C)**

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

File No: **EECS 0807/02/182**

This certificate is granted subject to the general conditions of the Electrical Equipment Certification Service. It does not necessarily indicate that the apparatus may be used in particular industries or circumstances.



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**I M CLEARE**  
DIRECTOR  
17 July 2000



13

Schedule

14

EC-TYPE EXAMINATION CERTIFICATE N° BAS00ATEX7087

15

Description of Equipment or Protective System

The Dual Channel Smart Fire Detector Isolator Type K\*D0-CS-Ex2.54 is designed to provide a galvanically isolated interface to enable the connection of apparatus located in a hazardous area with apparatus located in a non-hazardous area by providing galvanic isolation and limiting to intrinsically safe levels the voltage and current into the hazardous area.

The apparatus comprises a number of electrical components, including transformers, fuses, resistors and zener diodes, all mounted on a single printed circuit board (PCB) and housed within a plastic enclosure.

The use of '\*' in the type designation K\*D0-CS-Ex2.54 represents either H for screw terminal connections, or F to indicate the use of FIM type plug in connectors with an alternative enclosure to accommodate the plugs and sockets.

The apparatus is designed to operate from a d.c. supply of up to 40V on terminals 11 and 12 and on terminals 8, 9 and 10. The segregation of the hazardous area circuits meets the requirements for 250V.

Input/Output Parameters

$U_m = 250V$   
(Terminals 11 and 12 and terminals 8,9, and 10)

$U_o = 28V$        $I_o = 93mA$        $P_o = 653mW$   
(Terminals 1 and 2 and terminals 4 and 5)

The capacitance and either the inductance or the inductance to resistance ratio ( $L_o/R_o$ ) of the load connected to the output terminals of each channel must not exceed the following values:

GROUP	CAPACITANCE in $\mu F$	INDUCTANCE in mH	OR	L/R RATIO in $\mu H/ohm$
IIC	0.077	4.3		55
IIB	0.64	17		199
IIA	2.14	35		431



13

Schedule

14

EC-TYPE EXAMINATION CERTIFICATE N° BAS00ATEX7087

VARIATION ONE

To permit the deletion of channel two from the type K\*D0-CS-Ex2.54 thus forming the Smart Fire Detector Isolator Type type K\*D0-CS-Ex1.54.

Input/Output Parameters

$U_m = 250V$   
(Terminals 11 and 12)

$U_o = 28V$        $I_o = 93mA$        $P_o = 653mW$   
(Terminals 1 and 2)

The capacitance and either the inductance or the inductance to resistance ratio ( $L_o/R_o$ ) of the load connected to the output terminals must not exceed the following values:

GROUP	CAPACITANCE in $\mu F$	INDUCTANCE in mH	OR	L/R RATIO in $\mu H/ohm$
IIC	0.077	4.3		55
IIB	0.64	17		199
IIA	2.14	35		431

VARIATION TWO

To permit an alternative circuit thus forming the The Dual Channel Smart Fire Detector Isolator Type KFD0-CS-Ex2.54-Y72222

Input/Output Parameters

$U_m = 250V$   
(Terminals 11 and 12 and terminals 8,9, and 10)

$U_o = 25.2V$        $I_o = 43mA$        $P_o = 271mW$   
(Terminals 1 and 2 and terminals 4 and 5)

The capacitance and either the inductance or the inductance to resistance ratio ( $L_o/R_o$ ) of the load connected to the output terminals of each channel must not exceed the following values:

GROUP	CAPACITANCE in $\mu F$	INDUCTANCE in mH	OR	L/R RATIO in $\mu H/ohm$
IIC	0.101	19.6		138
IIB	0.81	72		508
IIA	2.89	153		964



13

**Schedule**

14

**EC-TYPE EXAMINATION CERTIFICATE N° BAS00ATEX7087**

**VARIATION THREE**

To permit the use of an alternative circuit and the deletion of channel two from the type KFD0-CS-Ex2.54 thus forming the Smart Fire Detector Isolator Type KFD0-CS-Ex1.54-Y72221.

**Input/Output Parameters**

$U_m = 250V$   
(Terminals 11 and 12)

$U_o = 25.2V$      $I_o = 43mA$      $P_o = 271mW$   
(Terminals 1 and 2)

The capacitance and either the inductance or the inductance to resistance ratio ( $L_o/R_o$ ) of the load connected to the output terminals must not exceed the following values:

GROUP	CAPACITANCE in $\mu F$	INDUCTANCE in mH	OR	L/R RATIO in $\mu H/ohm$
IIC	0.101	19.6		138
IIB	0.81	72		508
IIA	2.89	153		964

16

**Report Nos.**

00(C)0160

17

**Special Conditions For Safe Use**

None.

18

**Essential Health and Safety Requirements**

ESSENTIAL HEALTH & SAFETY REQUIREMENTS not covered by Standards listed at (9)		
Clause	Subject	Compliance
1.1.3	Changes in characteristics of materials and combinations thereof	Report No 00(C)0160 Clause 5.1.1.3
1.2.2	Components for incorporation or replacement	Report No 00(C)0160 Clause 5.1.2.2
1.2.5	Additional means of protection	Report No 00(C)0160 Clause 5.1.1.5
1.2.7	Protection against other hazards	Report No 00(C)0160 Clause 5.1.2.7
1.4.2	Withstanding attack by aggressive substances	Report No 00(C)0160 Clause 5.1.4.2



13

**Schedule**

14

**EC-TYPE EXAMINATION CERTIFICATE N° BAS00ATEX7087**

19

**DRAWINGS**

<b>Number</b>	<b>Issue</b>	<b>Date</b>	<b>Description</b>
251-0412B	B	01.03.00	Circuit Diagram
252-1131F Sheets 1 to 5	F	13.03.00	Parts List, Single Channel
252-1070F Sheets 1 to 7	F	13.03.00	Parts List, Two Channel
255-1036F Sheets 1 to 3	F	31.01.00	PCB Master
257-0208A Sheets 1 & 2	A	03.02.00	PCB Lacquer details, Two Channel
257-0212A Sheets 1 & 2	A	08.05.00	PCB Lacquer details, Single Channel
253-0236A	A	31.01.00	Component Overlay
252-1130B	B	09.02.00	Parts list, Transformer
256-0120A	A	11.02.00	Winding Details
255-0751C Sheets 1 & 2	C	14.01.99	PCB Master, Transformer
254-0263A	A	16.06.98	Plastic Moulding details
255-0698B	B	11.06.99	Cutting/Drilling Details
256-0065C	C	11.02.00	Transformer Connection Details
254-0284B Sheets 1 & 2	B	15.02.00	GA , FIM Housing
254-0299A Sheets 1 & 2	A	15.02.00	GA, Transformer Isolated Barriers
260-1380B	B	2.1.01	Label, KHD0-CS-Ex1.54
260-1381B	B	3.1.01	Label, KFD0-CS-Ex1.54
260-1382B	B	3.1.01	Label, KHD0-CS-Ex2.54
260-1383B	B	3.1.01	Label, KFD0-CS-Ex2.54
260-1384B	B	3.1.01	Label, KFD0-CS-Ex1.54-Y72221
260-1385B	B	3.1.01	Label, KFD0-CS-Ex2.54-Y72222

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BASEEFA List Keywords  
2ISOLBAR



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: BAS00ATEX7087/1**

4 **Equipment or Protective System: DUAL CHANNEL SMART FIRE DETECTOR ISOLATOR  
TYPE K\*D0-CS-Ex2.54**

5 **Manufacturer: PEPPERL + FUCHS GB LTD**

6 **Address: Oldham, Lancashire, OL1 4EL**

7 This supplementary certificate extends EC-Type Examination Certificate No. BAS00ATEX7087 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 any variations specified in the Schedule attached to this certificate and the documents therein referred to.

This Supplementary Certificate shall be held with the original Certificate.

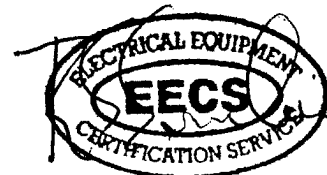
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DIRECTOR  
22 March 2001



13

Schedule

14 SUPPLEMENTARY EC-TYPE EXAMINATION CERTIFICATE N° BAS00ATEX7087/1

**Description of the Variation to the Equipment or Protective System**

**VARIATION 1.1**

To permit an alternative printed circuit board coating pattern for the Types K\*D0-CS-Ex1.54 and KFD0-CS-Ex1.54-Y72221.

**Report No.**

None

**Special Conditions For Safe Use**

None

**Essential Health and Safety Requirements**

See original certificate.

**DRAWINGS**

Number	Sheet	Issue	Date	Description
257-0212B	1 & 2	B	14.02.01	PCB Lacquer Details, Single Channel

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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: **BAS00ATEX7087/2**

4 Equipment or Protective System: **DUAL CHANNEL SMART FIRE DETECTOR ISOLATOR  
TYPE K\*D0-CS-Ex2.54**

5 Manufacturer: **PEPPERL + FUCHS GB LTD**

6 Address: **Oldham, Lancashire, OL1 4EL**

7 This supplementary certificate extends EC-Type Examination Certificate No. BAS00ATEX7087 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 any variations specified in the Schedule attached to this certificate and the documents therein referred to.

This Supplementary Certificate shall be held with the original Certificate.

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I M CLEARE  
DIRECTOR  
29 November 2001





13

**Schedule**

14 **SUPPLEMENTARY EC-TYPE EXAMINATION CERTIFICATE N° BAS00ATEX7087/2**

**Description of the Variation to the Equipment or Protective System**

**VARIATION 2.1**

To permit minor changes to component values in non-critical areas of the circuit. These changes do not affect compliance with the standards.

**Report No.**

None.

**Special Conditions For Safe Use**

None

**Essential Health and Safety Requirements**

See original certificate.

**DRAWINGS**

<b>Number</b>	<b>Sheet</b>	<b>Issue</b>	<b>Date</b>	<b>Description</b>
251-0412C		C	14.11.01	Circuit
252-1131G	1 to 5	G	14.11.01	Parts List, Single Channel
252-1070G	1 to 7	G	14.11.01	Parts List, Two Channel

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