



EC-TYPE EXAMINATION CERTIFICATE

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

EC-Type Examination Certificate Number : **BAS98ATEX7343**

Equipment or Protective System: **TRANSFORMER ISOLATED LOOP POWERED CURRENT
SEPARATOR TYPE K*D0-CS-Ex*.5***

Manufacturer: **PEPPERL + FUCHS GB LIMITED**

Address: **Oldham, Lancs, 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°

98(C)0611 dated 29 April 1999

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


EN 50014: 1997 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:-

 **II [1] G [EEx ia] IIC (-20°C ≤ T_{amb} ≤ 60°C)**

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

File No: **EECS 0807/02/168**

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.



Electrical Equipment Certification Service
Health and Safety Executive
Harpur Hill, Buxton, Derbyshire. SK17 9JN. United Kingdom
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I M CLEARE
DIRECTOR
7 July 1999



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EC-TYPE EXAMINATION CERTIFICATE N° BAS98ATEX7343

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Description of Equipment or Protective System

The Transformer Isolated Loop Powered Current Separator Type K*D0-CS-Ex*.5* is designed to provide an interface between unspecified non hazardous area apparatus and intrinsically safe circuits in a hazardous area.

The apparatus comprises a maximum of two identical channels, each channel comprises a fuse, transformer, zener diodes and other electronic components mounted on a printed circuit board housed on a plastic enclosure fitted with terminals for external connections.

The apparatus is designed to operate from a d.c. supply of up to 40V on terminals 7 and 8 and on terminals 10 and 11.

The segregation of the non-hazardous area circuits and the hazardous area circuits meets the requirements for 375V peak.

The ordering code options are: K*D0-CS-Ex*.5*

H =Terminals, F=Plug/socket
No. of channels, 1-2
Operational characteristics: 0, 1 or 3

Input/Output Parameters

Um = 250V d.c. or r.m.s.

Type K*D0-CS-Ex*.50 and K*D0-CS-Ex*.51

Terminals 1 with respect to 2, and 4 with respect to 5

Uo = 25.2V Io = 93mA Po = 585mW

Type K*D0-CS-Ex*.53

Terminals 1 with respect to 2, and 4 with respect to 5

Uo = 10.5V Io = 95mA Po = 247mW

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



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Type K*D0-CS-Ex*.50 and K*D0-CS-Ex*.51

GROUP	CAPACITANCE in μ F	INDUCTANCE in mH	OR	L/R RATIO in μ H/ohm
IC	0.107	4.3		60
IB	0.82	18		243
IIA	2.90	33		486

Type K*D0-CS-Ex*.53

GROUP	CAPACITANCE in μ F	INDUCTANCE in mH	OR	L/R RATIO in μ H/ohm
IC	2.41	4.0		144
IB	16.8	17.0		576
IIA	75	32.0		1,152

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Report No

98(C)0611

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SPECIAL CONDITIONS FOR SAFE USE

None

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Essential Health and Safety Requirements

ESSENTIAL HEALTH & SAFETY REQUIREMENTS not covered by standards listed in Section 9		
Clause	Subject	Compliance
1.0.2	Analysis of possible operating faults	Report No 98(C)0611 Clause 5.1.0.2
1.0.4	Surrounding area conditions	Report No 98(C)0611 Clause 5.1.0.4
1.0.5	Marking	Report No 98(C)0611 Clause 5.1.0.5
1.0.6	Instructions	Report No 98(C)0611 Clause 5.1.0.6
1.1.3	Changes in characteristics of materials and combinations thereof	Report No 98(C)0611 Clause 5.1.1.3
1.2.2	Components for incorporation or replacement	Report No 98(C)0611 Clause 5.1.2.2
1.2.4	Dust deposits	Report No 98(C)0611 Clause 5.1.2.4
1.2.5	Additional means of protection	Report No 98(C)0611 Clause 5.1.2.5
1.2.7	Protection against other hazards	Report No 98(C)0611 Clause 5.1.2.7
1.4.2	Withstanding attack by aggressive substances	Report No 98(C)0611 Clause 5.1.4.2
1.6.4	Hazards arising from connections	Report No 98(C)0611 Clause 5.1.6.4
2.11	Category IG	Report No 98(C)0611 Clause 5.2.1.1



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EC-TYPE EXAMINATION CERTIFICATE N° BAS98ATEX7343

19. DRAWINGS

Number	Sheet	Issue	Date	Description
251-0313B	1	B	12.01.99	Circuit diagram
252-1245B	1 to 17	B	14.01.99	PCB Parts list
255-1401C	1 to 5	C	31.03.99	PCB artworks
253-0135B	1 & 2	B	11.01.99	PCB component layout
252-1160B	1	B	16.06.98	Transformer T1 parts list for K*D0-CS-Ex*.50..*.52..
252-1161B	1	B	16.06.98	Transformer T1 parts list for K*D0-CS-Ex*.51..*.53..
256-0101A	1	A	08.06.98	Winding details
256-0102A	1	A	08.06.98	Winding details
256-0071B	1	B	09.06.98	Transformer T1 details for K*D0-CS-Ex*.50..*.52..
256-0072B	1	B	09.06.98	Transformer T1 details for K*D0-CS-Ex*.51..*.53..
255-0751C	1 & 2	C	14.01.99	PCB master for transformer mounting board
254-0263A	1	A	16.06.98	Plastic moulding for transformer
253-0130A	1 & 2	A	06.05.98	GA for transformer isolated barrier (15 terminal housing)
253-0132A	1 & 2	A	06.05.98	GA for 20mm, 15 terminal FIM housing
260-1210A	1	A	18.06.98	Label KHD0-CS-Ex1.5*(P)
260-1216A	1	A	18.06.98	Label KHD0-CS-Ex2.5*(P)
260-1217A	1	A	18.06.98	Label KHD0-CS-Ex1.53(P)
260-1218A	1	A	18.06.98	Label KHD0-CS-Ex2.53(P)
260-1219A	1	A	17.06.98	Label KFD0-CS-Ex1.5*(P)
260-1220A	1	A	17.06.98	Label KFD0-CS-Ex2.5*(P)
260-1221A	1	A	17.06.98	Label KFD0-CS-Ex1.53(P)
260-1222A	1	A	17.06.98	Label KFD0-CS-Ex2.53(P)

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BASEEFA List Keywords
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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: **BAS98ATEX7343/1X**

4 Equipment or Protective System: **TRANSFORMER ISOLATED LOOP POWERED CURRENT
SEPARATOR TYPE K*DO-CS-Ex*.5***

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

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

7 This supplementary certificate extends EC-Type Examination Certificate No. BAS98ATEX7343 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.

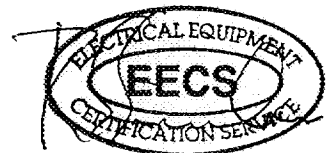
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File No: **EECS 0807/02/168**

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77 **I M CLEARE**
DIRECTOR
20 June 2000



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14 **SUPPLEMENTARY EC-TYPE EXAMINATION CERTIFICATE N° BAS98ATEX7343/1X**

Description of the Variation to the Equipment or Protective System

VARIATION 1.1

To permit D to be included in the apparatus marking, i.e. Ex II (1) GD, and other minor changes to the label.

Report No.

00(C)0470 dated 12 June 2000 held on file No. EECS 0807/02/175

Special Conditions For Safe Use

1. If the IS output is connected to an apparatus used in the presence of combustible dust, then that apparatus must be certified 'D'.

Essential Health and Safety Requirements

See original certificate.

DRAWINGS

Number	Sheet	Issue	Date	Description
260-1210B	1	B	28.2.00	Label KHD0-CS-Ex1.50
260-1216B	1	B	29.2.00	Label KHD0-CS-Ex2.50
260-1217B	1	B	29.2.00	Label KHD0-CS-Ex1.53
260-1218B	1	B	29.2.00	Label KHD0-CS-Ex2.53
260-1219B	1	B	29.2.00	Label KFD0-CS-Ex1.50
260-1220B	1	B	29.2.00	Label KFD0-CS-Ex2.50
260-1221B	1	B	29.2.00	Label KFD0-CS-Ex1.53
260-1222B	1	B	29.2.00	Label KFD0-CS-Ex2.53

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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: BAS98ATEX7343/2X**

4 **Equipment or Protective System: TRANSFORMER ISOLATED LOOP POWERED CURRENT
SEPARATOR TYPE K*D0-CS-Ex*.5***

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

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

7 This supplementary certificate extends EC-Type Examination Certificate No. BAS98ATEX7343 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.

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

File No: EECS 0807/02/168

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I M CLEARE
DIRECTOR
4 October 2000



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Schedule

14 **SUPPLEMENTARY EC-TYPE EXAMINATION CERTIFICATE N° BAS98ATEX7343/2X**

Description of the Variation to the Equipment or Protective System

VARIATION 2.1

To permit an increase in the value of resistors R17 to R32 thus forming the Transformer Isolated Loop Powered Current Separator Type KFD0-CS-Ex2.51P-Y107439.

Output parameters for each channel (Terminals 1 w.r.t. 2 and 4 w.r.t. 5)

$U_o = 25.2V$

$I_o = 46.5 mA$

$P_o = 292.5mW$

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:-

Type KFD0-CS-Ex2.51P-Y107439

GROUP	CAPACITANCE in μF	INDUCTANCE in mH	OR	L/R RATIO in $\mu H/ohm$
IIC	0.107	16.8		118
IIB	0.82	63		437
IIA	2.90	133		867

Report No.

None

Special Conditions For Safe Use

See Supplementary EC-Type Examination Certificate BAS98ATEX7343/1X.

Essential Health and Safety Requirements

See original certificate.

DRAWINGS

Number	Sheet	Issue	Date	Description
252-1245C	1 to 19	C	24.07.00	Parts List
254-0272E	1 & 2	E	24.07.00	G.A. (IS Terminal Housing)
260-1440A	1	A	24.07.00	Label KFD0-CS-Ex2.51P-Y107439

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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: **BAS98ATEX7343/3**

4 Equipment or Protective System: **TRANSFORMER ISOLATED LOOP POWERED CURRENT
SEPARATOR TYPE K*D0-CS-Ex*.5***

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

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

7 This supplementary certificate extends EC – Type Examination Certificate No. BAS98ATEX7343 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.

The original certificate was issued by The Electrical Equipment Certification Service, Notified Body Number 0600, which retains responsibility for its original documentation. Baseefa (2001) Ltd., Notified Body Number 1180, is responsible only for the additional work relating to this supplementary certificate and any other supplementary certificate it has issued.

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

Baseefa (2001) Ltd. Customer Reference No. 0807

Project File No. 03/0143

This certificate is granted subject to the general terms and conditions of Baseefa (2001) Ltd. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

Baseefa (2001) Ltd.

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A handwritten signature in black ink, appearing to read "R S Sinclair".

R S SINCLAIR
DIRECTOR
On behalf of
Baseefa (2001) Ltd.



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Schedule

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Certificate Number BAS98ATEX7343/3

15 **Description of the variation to the Equipment or Protective System**

Variation 3.1

To permit a change to the PCB layout and parts list.

16 **Report Number**

03(C)0143

17 **Special Conditions for Safe Use**

None.

18 **Essential Health and Safety Requirements**

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19 **Drawings and Documents**

Number	Sheets	Issue	Date	Description
251-0313C	1	C	21.1.03	Circuit diagram
252-1245D	11	D	30.1.03	Parts list
255-1401J	5	J	20.3.03	PCB Master
257-5050	2	Original	24.1.03	PCB lacquering details (dual channel)
257-5053	1	Original	24.1.03	PCB lacquering details (single channel)
253-0135C	1	C	22.1.03	Component overlay
254-0284F	2	F	6.12.02	GA for non-power rail FIM housing
260-1440C	1	C	28.1.03	Label: KFD0-CS-Ex2.51P-Y107439
260-1221D	1	D	28.1.03	Label: KFD0-CS-Ex2.53(P)
260-1219D	1	D	28.1.03	Label: KFD0-CS-Ex1.5*(P)