DOWNLOADED FROM WWW.SCATTS.CO.UK

1 # EU - TYPE EXAMINATION CERTIFICATE

2 **Safety Device, Controlling Device or Regulating Device intended for use outside a potentially explosive atmosphere but required for or contributing to the safe functioning of Equipment and Protective Systems with respect to the risks of explosion**
Directive 2014/34/EU

3 EU - Type Examination Certificate Number: **BAS98ATEX7343X – Issue 8**

3.1 In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Supplementary Certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20 April 2016.

4 Product: **Transformer Isolated Loop Powered Current Separator Type KFD0-CS-Ex*.5***

5 Manufacturer: **Pepperl + Fuchs GmbH**

6 Address: **Lilienthalstrasse 200, 68307 Mannheim, Germany**

7 This re-issued certificate extends EC Type Examination Certificate No. BAS98ATEX7343 to apply to product 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.

8 The original certificate was issued by The Electrical Equipment Certification Service, Notified Body Number 0600, which retains responsibility for its original documentation. SGS Baseefa, Notified Body Number 1180, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, is responsible only for the additional work relating to this re-issued certificate and any other supplementary certificate it has issued.

The examination and test results are recorded in confidential Report No. **See Certificate History**

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

EN 60079-0:2012+A11:2013 **EN 60079-11:2012**

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 product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

11 This EU - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of the product shall include the following :

Ⓔx II (1) G [Ex ia Ga] IIC (-20°C ≤ Ta ≤ +60°C / +70°C)

Ⓔx II (1) D [Ex ia Da] IIIC (-20°C ≤ Ta ≤ +60°C / +70°C)

Ⓔx I (M1) [Ex ia Ma] I (-20°C ≤ Ta ≤ +60°C / +70°C)

SGS Baseefa Customer Reference No. **0808** Project File No. **17/0684**

This document is issued by the Company subject to its General Conditions for Certification Services accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and the Supplementary Terms and Conditions accessible at http://www.sgs.com/SGSBaseefa/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. It does not necessarily indicate that the equipment may be used in particular industries or circumstances. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, schedule included, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Baseefa Limited
Rockhead Business Park, Staden Lane,
Buxton, Derbyshire SK17 9RZ
Telephone +44 (0) 1298 766600 Fax +44 (0) 1298 766601
e-mail baseefa@sgs.com web site www.sgs.co.uk/sgsbaseefa
Registered in England No. 4305578.
Registered address: Rossmore Business Park, Ellesmere Port, Cheshire, CH65 3EN

pp D Brearley

D BREARLEY
Certification Manager

R S SINCLAIR
TECHNICAL MANAGER
On behalf of SGS Baseefa Limited

DOWNLOADED FROM WWW.SCATTS.CO.UK

DOWNLOADED FROM WWW.SCATTS.CO.UK

13 **Schedule**

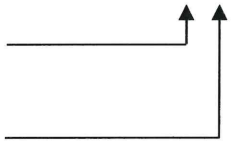
14 **Certificate Number BAS98ATEX7343X – Issue 8**

15 Description of Product

The Transformer Isolated Loop Powered Current Separator Type KFD0-CS-Ex*.5* is designed to provide galvanic isolation between intrinsically safe circuits in a hazardous area and unspecified associated equipment in a non-hazardous area and limit the voltage and current into the hazardous area to intrinsically safe levels.

The safety device comprises a number of electrical components, including transformers, fuses, resistors and zener diodes, all mounted on a single printed circuit board and housed within a plastic enclosure fitted with terminals for external connections.

The ordering code options are: KFD0-CS-Ex*.5*P



The following variants are covered by this certificate (in both Construction 1 & Construction 2 forms):

KFD0-CS-Ex1.50P
KFD0-CS-Ex1.51P
KFD0-CS-Ex2.50P
KFD0-CS-Ex2.51P

The safety device is designed to operate from a dc supply of up to 40V on terminals 9 & 10/8 and 11 & 12.
The segregation of the hazardous area circuits meets the requirements for $375V_{pk}$.

Input / Output Parameters
Terminals 8, 9, 10, 11 & 12

U_m = 250V dc or rms

The equipment is designed to operate from a dc supply of up to 40V.

Terminals 1 w.r.t. 2 and 4 w.r.t. 5

U_o = 25.2V I_o = 93mA P_o = 585mW C_i = 0 L_i = 0

The capacitance and either the inductance or the inductance to resistance ratio (L/R) of the hazardous area load must not exceed the following values:

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR	L/R RATIO (µH/ohm)
IIC	0.107	4.3		60
IIB / IIIC	0.820	18		243
IIA	2.900	33		486
I	4.800	51		797

The above parameters apply when one of the two conditions below is given:
- the total L_i of the external circuit (excluding the cable) is < 1% of the L_o value or
- the total C_i of the external circuit (excluding the cable) is < 1% of the C_o value.

DOWNLOADED FROM WWW.SCATTS.CO.UK

DOWNLOADED FROM WWW.SCATTS.CO.UK

The above parameters are reduced to 50% when both of the two conditions below are given:
- the total L_i of the external circuit (excluding the cable) ≥1% of the L_o value and
- the total C_i of the external circuit (excluding the cable) ≥1% of the C_o value.

Note: the reduced capacitance of the external circuit (including cable) shall not be greater than 1µF for Groups I, IIA & IIB / IIIC and 600nF for Group IIC.

16 Report Number

See Certificate History

17 Specific Conditions of Use

1. The safety device must be installed in a controlled environment with a pollution level limited to pollution degree 2 (or better) or be installed within an enclosure providing a degree of protection of at least IP54 according to EN 60529 & EN 60079-0; provision shall be made to ensure that the non-hazardous area connections is limited to overvoltage category I / II as defined in IEC 60664-1.

18 Essential Health and Safety Requirements

In addition to the Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9, the following are considered relevant to this product:

Clause	Subject	Compliance
1.2.7	LVD type requirements	Manufacturer responsibility
1.2.8	Overloading of equipment (protection relays, etc.)	User/Installer responsibility
1.4.1	External effects	User/Installer responsibility
1.4.2	Aggressive substances, etc.	User/Installer responsibility

19 Drawings and Documents

New drawings submitted for this issue of certificate.

Number	Sheet	Issue	Date	Description
266-033BS-H	1 of 1	H	2018-Apr-23	Summary
266-003BS-01E	1 – 4	E	2017-Sep-28	Schematic
266-003BS-03E	1 & 2	E	2017-Sep-28	Component Setup
266-003BS-05E	1 – 4	E	2018-Apr-23	PCB Layouts

Current drawings which remain unaffected by this issue:

Number	Sheet	Issue	Date	Description
266-003BS-02D	1 – 4	D	2017-Feb-08	Safety Components
16-0706IE-04D	1 – 14	D	2016-Mar-30	Mechanical Parts
266-003BS-06D	1 – 4	D	2016-Dec-14	Transformer
266-033BS-10G	1 & 2	G	2017-Mar-27	Type Labels

All drawings are common to, and held with, IECEx BAS 05.0004X.

20 Certificate History

Certificate No.	Date	Comments
BAS98ATEX7343	7 July 1999	The release of the prime certificate. The associated test and assessment is documented in Test Report 98(C)0611.

DOWNLOADED FROM WWW.SCATTS.CO.UK

DOWNLOADED FROM WWW.SCATTS.CO.UK

Certificate No.	Date	Comments
BAS98ATEX7343/1	20 June 2000	To permit 'D' to be included in the marking i.e. ⟨Ex⟩II (1)GD and other minor label changes.
BAS98ATEX7343/2	4 October 2000	To permit changes to R17-R32 forming the KFD0-CS-Ex2.51P-Y107439.
BAS98ATEX7343/3	29 April 2003	To permit changes to the PCB and parts list. Project File No. 03/0143.
BAS98ATEX7343/4	24 November 2006	To permit changes to the PCB lacquering. Project File No. 06/0779.
BAS98ATEX7343/5	22 December 2011	To permit minor drawing changes, to confirm that the current design meets the requirements of EN 60079-0:2009 and EN 60079-11:2007 for [Ex ia] IIC / IIIC and has additionally been assessed for Group I applications. i.e. the addition of [Ex ia Ma] I. Project File No. 11/0494.
BAS98ATEX7343 Issue 6	19 April 2016	This issue incorporates previously issued primary and supplementary certificates into one certificate, permits changes to electronic components (together with an alternative PCB layout) & transformer and to confirm that the equipment covered by this certificate has been reviewed against the requirements of EN 60079-0:2012+A11:2013 and EN 60079-11:2012 in respect of the differences from EN 60079-0:2009 and EN 60079-11:2007 and that none of these differences affect this equipment. Test Report No. GB/BAS/ExTR16.0090/00. Project File No. 15/0684.
BAS98ATEX7343X Issue 7	24 April 2017	To permit the introduction of an alternative schematic and PCB layout (with two build options, *Construction 1* & *Construction 2*). The upper ambient temperature range has been extended to +70°C. A specific condition of use now applies that states that the safety device must be installed in a controlled environment with suitably reduced pollution levels. Additionally, the output parameters have been corrected to include C_i and L_i. Test Report No. GB/BAS/ExTR17.0061/00. Project File No. 17/0047.
BAS98ATEX7343X Issue 8	26 June 2018	To permit minor changes to the schematic and PCB; additionally, Group IIIC has been added to the load parameter table and the specific condition of use has been clarified. Test Report No. GB/BAS/ExTR17.0320/00. Project File No. 17/0684.
For drawings applicable to each issue, see original of that issue.		

DOWNLOADED FROM WWW.SCATTS.CO.UK

SCATTERGOOD & JOHNSON LTD
ELECTRICAL ENGINEERING & FLUID CONTROL DISTRIBUTORS
Est.1899

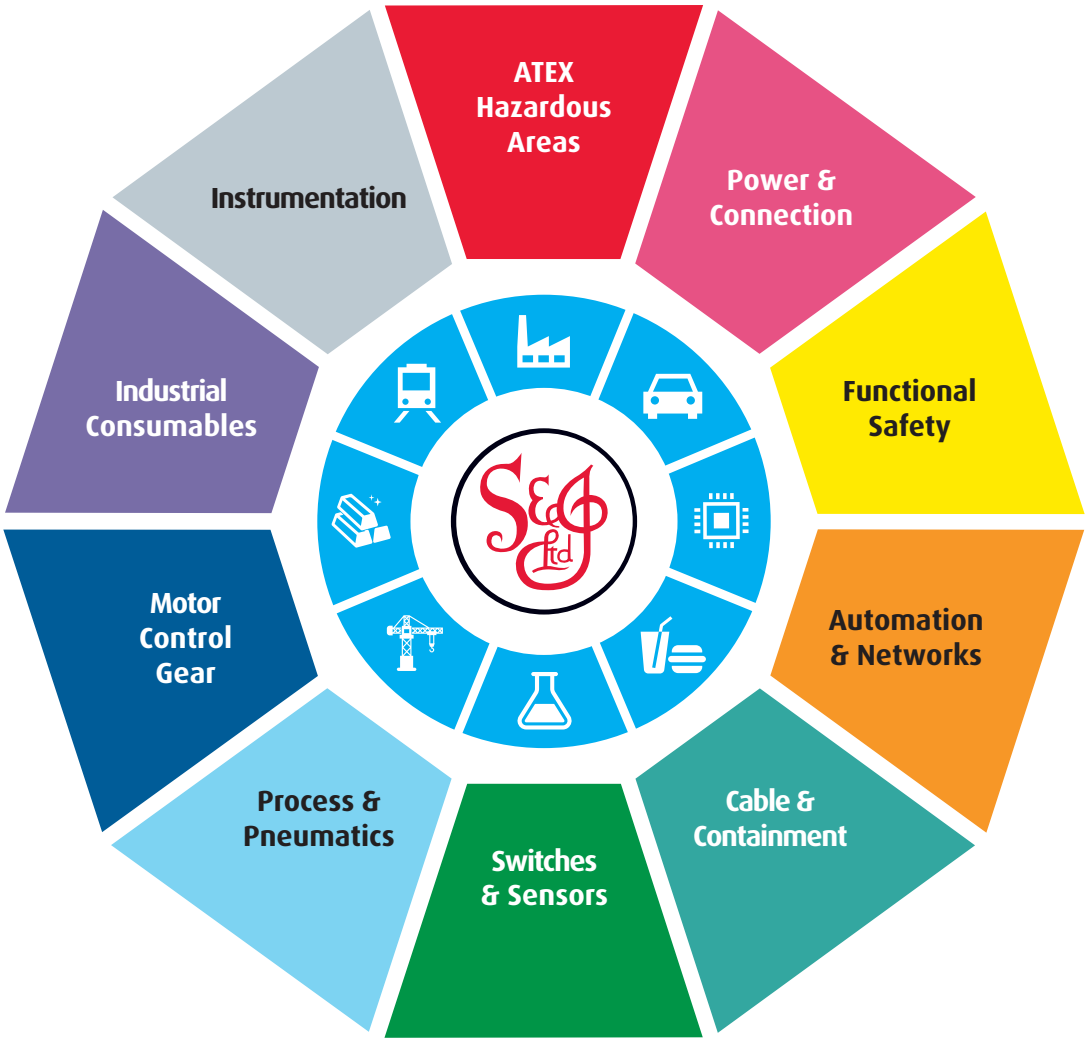
At Scattergood & Johnson Ltd, we pride ourselves on being a technical distributor to specialist industries.

Working with a range of quality product suppliers across a number of specialist markets, we are not your average 'box shifter' - we are your technical and supply chain partner.

We fully support every product we sell - for free! Our internal team and external sales engineers can answer any product or application question, no matter the complexity.

Backing up this technical ability is a range of 50,000+ products available from stock for nationwide next day delivery (same day if required!), or you can collect what you need from any of our trade counters around the UK.

Select your specialist interest below to learn more about how we can help.



Online, In Branch and On the Road - Scattergood & Johnson Ltd, there when you need us.

www.scatts.co.uk