

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: **BAS02ATEX7206 – Issue 5**

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 Repeater / Power Supply Type KFD2-VR4-Ex1.26**

5 Manufacturer: **Pepperl + Fuchs GmbH**

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

7 This re-issued certificate extends EC Type Examination Certificate No. BAS02ATEX7206 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 :

⊕ II (1) G [Ex ia Ga] IIC (-20°C ≤ Ta ≤ +60°C)

⊕ II (1) D [Ex ia Da] IIIC (-20°C ≤ Ta ≤ +60°C)

SGS Baseefa Customer Reference No. **0808**

Project File No. **17/0366**

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R S SINCLAIR  
TECHNICAL MANAGER

On behalf of SGS Baseefa Limited

13 **Schedule**

14 **Certificate Number BAS02ATEX7206 – Issue 5**

15 **Description of Product**

The Transformer Isolated Repeater / Power Supply Type KFD2-VR4-Ex1.26 is designed to restrict the transfer of energy from unspecified non-hazardous area equipment to intrinsically safe vibration sensors located in a hazardous area and provides galvanic isolation between the hazardous area and non-hazardous area circuits. The equipment provides a floating output to power a vibration sensor or accelerometer in the hazardous area and transfers the signal to the non-hazardous area.

The equipment comprises a number of electronic components, including transformers, an opto-isolator, 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 segregation of the hazardous area circuits meets the requirements for 250V.

**Input / Output Parameters**

Terminals 7, 8, 11 & 12 and Power Rail

$$U_m = 253V$$

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

All hazardous area terminals 1 to 6

$$\begin{array}{ll} U_o = -26.4V & C_i = 0 \\ I_o = 90mA & L_i = 0 \\ P_o = 0.57W & \end{array}$$

Hazardous Area Terminals 1, 3, 5 wrt 4

$$\begin{array}{ll} U_o = -25.2V & C_i = 0 \\ I_o = 90mA & L_i = 0 \\ P_o = 0.57W & \end{array}$$

Hazardous Area Terminals 2, 6 wrt 4

$$\begin{array}{ll} U_o = 1.2V & C_i = 0 \\ I_o = 0.12mA & L_i = 0 \\ P_o = 0.036mW & \end{array}$$

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

Hazardous Area Terminals 1, 3, 5 wrt 4

(Alternatively, all hazardous area terminals combined)

GROUP	CAPACITANCE ( $\mu F$ )	INDUCTANCE (mH)	OR	L/R RATIO ( $\mu H/ohm$ )
IIC	0.096	4.59		59
IIB / IIIC	0.74	18.82		239
IIA	2.48	38.36		478

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.

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)  $\geq 1\%$  of the  $L_o$  value and  
- the total  $C_i$  of the external circuit (excluding the cable)  $\geq 1\%$  of the  $C_o$  value.

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

#### Hazardous Area Terminals 2, 6 wrt 4

GROUP	CAPACITANCE ( $\mu\text{F}$ )	INDUCTANCE (mH)	OR	L/R RATIO ( $\mu\text{H}/\text{ohm}$ )
IIC	100	1000		1000
IIB / IIIC	1000	1000		1000
IIA	1000	1000		1000

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.

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)  $\geq 1\%$  of the  $L_o$  value and  
- the total  $C_i$  of the external circuit (excluding the cable)  $\geq 1\%$  of the  $C_o$  value.

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

#### 16 Report Number

See Certificate History

#### 17 Specific Conditions of Use

None

#### 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
266-016BS-C	1 of 1	C	2017-Aug-16	Summary
266-010BS-00B	1 – 8	B	2017-Aug-16	Description
266-010BS-02B	1 of 1	B	2017-Aug-16	Components
266-010BS-04F	1 – 15	F	2016-Mar-23	Mechanical Parts
266-010BS-06C	1 – 4	C	2017-Aug-16	Transformers T1 & T2
266-010BS-07C	1 & 2	C	2017-Aug-16	Printed Circuit Board Lacquering Details
266-0016BS-10C	1 & 2	C	2017-May-17	Type Labels

Current drawings which remain unaffected by this issue:

Number	Sheet	Issue	Date	Description
266-010BS-01A	1 of 1	A	2009-Jul-08	Schematic
266-010BS-03A	1 of 1	A	2009-Jul-08	Component Overlay
266-010BS-05A	1 – 5	A	2009-Jul-08	Printed Circuit Board Details

**20 Certificate History**

Certificate No.	Date	Comments
BAS02ATEX7206	2 July 2002	The release of the prime certificate. The associated test and assessment is documented in Test Report 02(C)0245.
BAS02ATEX7206/1	4 January 2006	To permit minor changes to the circuit and PCB layout. Additionally, the listed drawings replace all previously certified drawings. Project File No. 05/0710.
BAS02ATEX7206/2	17 December 2008	To permit the correction of the output parameters associated with Terminals 6 & 2 w.r.t. 4. Test Report No. GB/BAS/ExTR08.0264/00. Project File No. 08/0966.
BAS02ATEX7206/3	20 August 2010	To permit: <ul style="list-style-type: none"> <li>- An alternative PCB.</li> <li>- To confirm that the equipment covered by this certificate has been reviewed against the requirements of EN 60079-0:2006, and EN 60079-11:2007 in respect of the differences from EN 50014:1997 + Amds 1 &amp; 2 and EN 50020:1994 and that none of these differences affect this equipment.</li> <li>- The equipment has additionally been assessed against the relevant requirements of EN 61241-11:2006 and the following additional marking may be applied:  <div style="text-align: center;">  </div> </li> </ul> Test Report No. GB/BAS/ExTR10.0184/00. Project File No. 09/0623.

Certificate No.	Date	Comments
<p>BAS02ATEX7206                      Issue 4</p>	<p>18 June 2015</p>	<p>This issue incorporates previously issued primary and supplementary certificates into one certificate, permits changes to the transformer and confirms 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 60079-0:2006 and EN 60079-11:2007 and that none of these differences, with the exception of marking, affect this equipment. The equipment is now marked:</p> <p>⊕ II (1)G [Ex ia Ga] IIC                      ⊕ II (1)D [Ex ia Da] IIIC</p> <p>Test Report No. GB/BAS/ExTR15.0021/00                      Project File No. 15/0069.</p>
<p>BAS02ATEX7206                      Issue 5</p>	<p>10 May 2018</p>	<p>To permit the introduction of alternative components, the use of an alternative housing material and additional minor drawing changes. The parameters, including load table, for terminals 2 &amp; 6 wrt 4 have been reintroduced as separate parameters (separated from 1, 3 &amp; 5 wrt 4).</p> <p>Test Report No. GB/BAS/ExTR18.0112/00                      Project File No. 17/0366.</p>
<p>For drawings applicable to each issue, see original of that issue.</p>		