

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: **Baseefa02ATEX0116 – Issue 4**

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 Communications Repeater Type KFD2-FF-Ex2.RS232**

5 Manufacturer: **Pepperl + Fuchs GmbH**

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

7 This re-issued certificate extends EC Type Examination Certificate No. Baseefa02ATEX0116 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 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, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

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)**

 **I (M1) [Ex ia Ma] I (-20°C ≤ Ta ≤ +60°C)**

SGS Baseefa Customer Reference No. **0808**

Project File No. **17/0609**

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R S SINCLAIR  
TECHNICAL MANAGER  
On behalf of SGS Baseefa Limited

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## Schedule

14

Certificate Number Baseefa02ATEX0116 – Issue 4

### 15 Description of Product

The Transformer Isolated Communications Repeater Type KFD2-FF-Ex2.RS232 is a device designed to restrict the transfer of energy from unspecified non-hazardous area apparatus to intrinsically safe circuits located in a hazardous area, and provide galvanic isolation between the hazardous area and non-hazardous area circuits.

The Transformer Isolated Communications Repeater Type KFD2-FF-Ex2.RS232 comprises a number of electrical components, including isolating transformers, fuses, resistors and zener diodes all mounted onto a single printed circuit board (PCB) and housed within a plastic enclosure with plug-in terminals.

#### Input / Output Parameters

Terminals 7, 9 & 11 w.r.t 0V (terminals 8, 10 & 12) and Power Rail:

$$U_m = 253V$$

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

#### Terminals 1 w.r.t. 2

$$\begin{aligned} U_o &= 14.5V \\ I_o &= 48mA \\ P_o &= 0.18W \\ C_i &= 0 \\ L_i &= 0 \end{aligned}$$

#### Terminals 3 w.r.t. 2

$$\begin{aligned} U_o &= 5.4V \\ I_o &= 27mA \\ P_o &= 0.04W \\ C_i &= 0 \\ L_i &= 0 \end{aligned}$$

#### Terminals 1, 2 and 3

$$\begin{aligned} U_o &= 19.9V \\ I_o &= 75mA \\ P_o &= 0.2W \\ C_i &= 0 \\ L_i &= 0 \end{aligned}$$

The capacitance and either the inductance or inductance to resistance ratio (L/R) of the hazardous area load connected to the hazardous area connections (Terminals 1, 2 & 3) of the apparatus must not exceed the following values:

GROUP	CAPACITANCE ( $\mu$ F)	INDUCTANCE (mH)	OR	L/R RATIO ( $\mu$ H/ohm)
IIC	0.223	6.59		210
IIB / IIIC	1.420	26.30		842
IIA	5.570	54.39		1685
I	8.070	82.96		2600

#### NOTE:

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
16-0858BS-D	1 of 1	D	2017-Aug-22	Summary (ATEX)
266-004BS-02A	1 – 4	A	2015-Nov-04	Component List
266-004BS-05A	1 – 9	A	2007-Sep-20	PCB Details
266-004BS-06A	1 & 2	A	2015-Nov-12	Transformer Details
16-0706IE-04D	1 – 14	D	2016-Mar-30	Mechanical Parts



Current drawings also associated with this certificate.

Number	Sheet	Issue	Date	Description
251-5020B	1	B	08.01.04	Circuit diagram KFD2-FF-Ex2.RS232
253-5016B	1	B	08.01.04	PCB Component overlay
255-1272C	1	C	29.06.00	Zener Sub-assembly
16-0858BS-10B	1 & 2	B	2012-Mar-07	Certification label KFD2-FF-Ex2.RS232

**20 Certificate History**

Certificate No.	Date	Comments
Baseefa02ATEX0116	30 October 2002	The release of the prime certificate. The associated test and assessment is documented in Test Report No. 02(C)0143.
Baseefa02ATEX0116/1	10 February 2004	To permit replacement of an obsolete component. Project File No. 04/0022.



Certificate No.	Date	Comments
Baseefa02ATEX0116/2	27 March 2012	<p>To confirm that the equipment covered by this certificate has been reviewed against the requirements of EN 60079-0:2009 and EN 60079-11:2012 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.</p> <p>The equipment is also considered suitable for Group I applications and has additionally been assessed against the relevant requirements of EN 61241-11:2006 and the following additional marking may be applied:</p> <p style="text-align: center;">  I (M1) [Ex ia Ma] I   II (1)D [Ex ia Da] IIIC         </p> <p>Project File No. 11/0491.</p>
Baseefa02ATEX0116 Issue 3	28 April 2015	<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 in respect of the differences from EN 60079-0:2009 and that none of these differences affect this equipment.</p> <p>Report No. GB/BAS/ExTR15.0020/00. Project File No. 15/0066.</p>
Baseefa02ATEX0116 Issue 4	10 May 2018	<p>To permit the introduction of alternative components and the use of an alternative housing material. Drawings 252-0925D, 252-0926C, 255-0698B, 255-0751C, 255-0790H, 256-0044B, 256-5012A &amp; 257-5018A have been superseded and replaced by drawings shown in the “new drawings” list.</p> <p>Report No. GB/BAS/ExTR18.0107/00. Project File No. 17/0609</p>
For drawings applicable to each issue, see original of that issue.		