

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: **Baseefa11ATEX0021X – Issue 1**

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: **Voltage Repeater Type HiC2095 / HiD2096**

5 Manufacturer: **Pepperl + Fuchs GmbH**

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

7 This re-issued certificate extends EC Type Examination Certificate No. Baseefa11ATEX0021X 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. **17/0608**

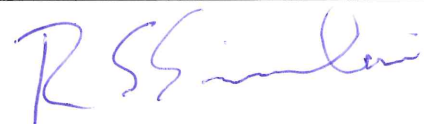
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R S SINCLAIR  
TECHNICAL MANAGER  
On behalf of SGS Baseefa Limited

13 **Schedule**

14 **Certificate Number Baseefa11ATEX0021X – Issue 1**

15 **Description of Product**

The Voltage Repeater Type HiC2095 / HiD2096 is designed to transfer a signal from a hazardous area to unspecified apparatus located in a non-hazardous area. The hazardous area circuit is galvanically isolated from the non-hazardous area circuit using transformers and the voltage and current appearing at the hazardous area connection pins is limited to intrinsically safe levels.

The Voltage Repeater Type HiC2095 / HiD2096 comprises a number of electronic components including two (HiC2095) or four (HiD2096) isolating transformers, fuses, zener diodes and resistors all mounted on a single printed circuit board and housed in a plastic enclosure with two polarised sockets in the base of the enclosure for hazardous and non-hazardous area connections via a terminal backplane and are suitable for direct insertion into termination boards series HiC (CESI06ATEX022) or HiD (CESI02ATEX086) or similar ATEX-certified Pepperl + Fuchs boards. LED indication is provided for power-on status.

The HiC2095 is a single channel repeater and the HiD2096 is a two channel repeater.

**Input / Output Parameters**

**HiC2095**

**Non-Hazardous Area Connector(s)**

Power Supply: SL1, pins 1a[-] / 1b[-] w.r.t. pins 2a[+] / 2b[+]

$$U_m = 253V \text{ r.m.s.}$$

The circuit connected to the power supply pins is designed to operate from a d.c. supply voltage of up to 30V.

Output: SL1, pins 7a[-] & 8a[+]

$$U_m = 253V \text{ r.m.s.}$$

The circuit connected to the output is designed to operate from a d.c. supply of up to 30V.

**Hazardous Area Connector(s)**

Input: SL2 pins 5a, 1b, 7a, 5b, 1a, 7b

$$\begin{array}{ll} U_o = 26.4V & C_i = 0 \\ I_o = 93mA & L_i = 0 \\ P_o = 583mW & \end{array}$$

Input: SL2 pins 1a, 7b, 5b, 5a

$$\begin{array}{ll} U_o = 25.2V & C_i = 0 \\ I_o = 93mA & L_i = 0 \\ P_o = 583mW & \end{array}$$

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:

GROUP	CAPACITANCE ( $\mu\text{F}$ )	INDUCTANCE (mH)	OR	L/R RATIO ( $\mu\text{H}/\text{ohm}$ )
IIC	0.096	4.11		54
IIB / IIIC	0.74	16.44		216
IIA	2.48	32.88		433
I	3.93	53.95		710

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 600nF for Group IIC.

#### HiD2096

##### Non-Hazardous Area Connector(s)

Power Supply: SL1, pins 1a[-] / 1b[-] w.r.t. pins 2a[+] / 2b[+]

$$U_m = 253\text{V r.m.s.}$$

The circuit connected to the power supply pins is designed to operate from a d.c. supply voltage of up to 30V.

Output: SL1, pins 7a[-] & 8a[+] (Ch 1) and 9a[-] & 10a[+] (Ch 2)

$$U_m = 253\text{V r.m.s.}$$

The circuit connected to the output is designed to operate from a d.c. supply of up to 30V.

##### Hazardous Area Connector(s)

Input: SL2 pins 5a, 7a, 5b, 7b (Ch 1) and 1a, 3b, 3a, 1b (Ch 2)

$$\begin{aligned} U_o &= 26.4\text{V} & C_i &= 0 \\ I_o &= 93\text{mA} & L_i &= 0 \\ P_o &= 583\text{mW} \end{aligned}$$

Input: SL2 pins 7b, 5b, 5a (Ch 1) and 1b, 3a, 1a (Ch 2)

$$\begin{aligned} U_o &= 25.2\text{V} & C_i &= 0 \\ I_o &= 93\text{mA} & L_i &= 0 \\ P_o &= 583\text{mW} \end{aligned}$$

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

GROUP	CAPACITANCE ( $\mu\text{F}$ )	INDUCTANCE (mH)	OR	L/R RATIO ( $\mu\text{H}/\text{ohm}$ )
IIC	0.096	4.11		54
IIB / IIIC	0.74	16.44		216
IIA	2.48	32.88		433
I	3.93	53.95		710



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

1. The socket connections at the base of the enclosure must be afforded a degree of protection of at least IP20 when installed.

## 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
<b>HiC2095</b>				
16-0677BS-A	1 of 1	A	2017-Aug-17	Summary
16-0677BS-00A	1 – 10	A	2017-Aug-17	Description
16-0677BS-02B	1 of 1	B	2017-Aug-17	Relevant Components
<b>HiD2096</b>				
16-0678BS-A	1 of 1	A	2017-Aug-17	Summary
16-0678BS-00A	1 – 10	A	2017-Aug-17	Description
16-0678BS-02B	1 of 1	B	2017-Aug-17	Relevant Components
<b>Common</b>				
16-0677BS-06A	1 – 6	A	2017-Aug-17	Transformers
16-0677BS-07A	1 & 2	A	2017-Aug-17	PCB Lacquering Details
16-0677BS-10A	1 – 3	A	2017-Aug-17	Type Label

Current drawings which remain unaffected by this issue:

Number	Sheet	Issue	Date	Description
<b>HiC2095</b>				
16-0677BS-03	1 & 2	-	2010-Jul-21	Component Layout
<b>HiD2096</b>				
16-0678BS-03	1 & 2	-	2010-Jul-21	Component Layout
<b>Common</b>				
16-0677BS-01	1 – 3	-	2010-Jul-19	Schematic
16-0677BS-05	1 – 4	-	2010-Jul-19	PCB Layout
16-534-04A	1 & 2	A	2009-Feb-04	HiC/HiD Housing

These drawings are common to Baseefa11ATEX0022X, IECEx BAS 11.0013X and held with IECEx BAS 11.0012X.

## 20 Certificate History

Certificate No.	Date	Comments
Baseefa11ATEX0021X	28 February 2011	The release of the prime certificate. The associated test and assessment against the requirements of EN 60079-0:2006, EN 60079-11:2007 & EN 61241-11:2006 is documented in Test Report No. GB/BAS/ExTR11.0020/00. Project File No. 09/0181.
Baseefa11ATEX0021X Issue 1	10 May 2018	To permit the introduction of alternative components, the use of an alternative housing material and additional minor drawing changes. Test Report No. GB/BAS/ExTR18.0113/00. Project File No. 17/0608

For drawings applicable to each issue, see original of that issue.