1 # EC - TYPE EXAMINATION CERTIFICATE

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

3 EC - Type Examination Certificate Number: **Baseefa13ATEX0102X**

4 Equipment or Protective System: **Universal Temperature Converter Type KCD2-UT2-Ex1..**

5 Manufacturer: **Pepperl + Fuchs GmbH**

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

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 Baseefa, Notified Body number 1180, 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 No. GB/BAS/ExTR13.0130/00

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

EN 60079-0:2012 **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 equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

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

12 The marking of the equipment or protective system shall include the following :

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

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

⟨Ex⟩ **I (M1)** **[Ex ia Ma] I (-20°C ≤Ta ≤+60°C / +70°C)**

Baseefa Customer Reference No. **0808** Project File No. **12/1011**

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R S SINCLAIR
GENERAL MANAGER
On behalf of SGS Baseefa Limited

13 **Schedule**

14 **Certificate Number Baseefa13ATEX0102**

15 **Description of Equipment or Protective System**

The Universal Temperature Converter Type KCD2-UT2-Ex1.. is designed to transfer a signal from TC/mV, RTD (2, 3 or 4-wire) or Potentiometer in 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 a transformer and opto-couplers and the voltage and current appearing at the hazardous area connectors are limited to intrinsically safe levels.

The Universal Temperature Converter Type KCD2-UT2-Ex1.. comprises a number of electronic components including an isolating transformer, two opto-isolators, fuses, zener diodes and resistors all mounted on a single printed circuit board and housed in a plastic enclosure with removable terminals and PowerRail contacts. LEDs provide status indication.

Different versions are identified as follows:

KCD2-UT2-Ex1-.
↑
Output:
None: Current
1: Voltage

Non-Hazardous Area Connector(s)
Power Supply: pin 9[+] wrt pin 10[-] or via Power Rail

U_m = 253V 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.

Outputs: pin 6[+] wrt pin 5[-] and pin 7[+] wrt pin 8[-]

U_m = 253V r.m.s.

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

Programming jack

U_m = 253V r.m.s.

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

Fault Signal: via Power Rail

U_m = 253V 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: pins 1, 2, 3, 4 (any combination)

U_o	=	9V	C_i	=	0
I_o	=	13.1mA	L_i	=	0
P_o	=	30mW			

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 (μF)	INDUCTANCE (mH)	OR	L/R RATIO (μH/ohm)
IIC	4.9	207		1158
IIB	40	828		4635
IIA	500	1657		9270
I	1000	2719		15209

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) ≥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 and 600nF for Group IIC.

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17 Specific Conditions of Use

The KCD2-UT2-Ex1.. must be installed in a controlled environment with suitably reduced pollution, i.e. a level of ingress protection of at least IP54.

18 Essential Health and Safety Requirements

All relevant Essential Health and Safety Requirements are covered by the standards listed at item 9.

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
16-966BS	1 of 1	-	2013-Apr-11	Summary
16-0966BS-00	1 – 12	-	2013-Apr-11	Description
16-0966BS-01	1 – 3	-	2013-Mar-01	Schematic
16-0966BS-02	1 of 1	-	2013-Apr-11	I.S. Relevant Components
16-0966BS-03	1 & 2	-	2013-Mar-01	Layouts
16-533-04	1 & 2	-	2005-Dec-05	Mechanical Parts (Housing)
16-0966BS-05	1 – 4	-	2013-Mar-01	Component Overlay
16-0966BS-06	1 – 5	-	2012-Nov-12	Transformer
16-0966BS-10	1 – 3	-	2013-Apr-11	Type Label

These drawings are common to Baseefa13ATEX0103X and IECEx BAS 13.0057X and held with IECEx BAS 13.0057X.