




UK-TYPE EXAMINATION CERTIFICATE

**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 Product and Protective Systems with respect to the risks of explosion
UKSI 2016:1107 (as amended) – Schedule 3A, Part 1**

- UK-Type Examination Certificate Number: **BAS21UKEX0427**
- Product: **Transformer Isolated Potentiometer Amplifier Type KFD2-PT2-Ex1....**
- Manufacturer: **Pepperl+Fuchs SE**
- Address: **Lilienthalstrasse 200, 68307 Mannheim, Germany**
- This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- SGS Baseefa, Approved Body number 1180, in accordance with Regulation 43 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended), 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 Schedule 1 of the Regulations.
- The examination and test results are recorded in confidential Report No. **21(C)0161**
- Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN IEC 60079-0:2018 EN 60079-11:2012
- except in respect of those requirements listed at item 18 of the Schedule.
- 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.
- This UK-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Regulations apply to the manufacturing process and supply of this product. These are not covered by this certificate.
- The marking of the product shall include the following:
-  **II (1) G [Ex ia Ga] (-20°C ≤ Ta ≤ +60°C)**
-  **II (1) D [Ex ia Da] (-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. **21/0161**

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R S SINCLAIR
TECHNICAL MANAGER
On behalf of SGS Baseefa Limited

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Schedule

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Certificate Number BAS21UKEX0427

15 Description of Product

The Transformer Isolated Potentiometer Amplifier Type KFD2-PT2-Ex1.... is designed to enable the signal from a potentiometer located in the hazardous area to be monitored while limiting the voltage and current to intrinsically safe levels.

The equipment comprises a number of electronic 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.

This certificate covers the following isolators:

	Type	Operational Output
KFD2-PT2-Ex1	KFD2-PT2-Ex1-Y98312	0-10V
KFD2-PT2-Ex1-1	KFD2-PT2-Ex1-1-Y107265	0-5V
KFD2-PT2-Ex1-2	KFD2-PT2-Ex1-2-Y107266	2-10V
KFD2-PT2-Ex1-3	KFD2-PT2-Ex1-3-Y107267	1-5V
KFD2-PT2-Ex1-4	KFD2-PT2-Ex1-4-Y107268	0-20mA
KFD2-PT2-Ex1-5	KFD2-PT2-Ex1-5-Y107269	4-20mA
	KFD2-PT2-Ex1-6-Y112844	0-24mA

The segregation of the hazardous area circuits meets the requirements for 250V.

Input / Output Parameters

KFD2-PT2-Ex1... variants

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.

Terminals 1 to 5:

$$U_o = 10.4V \quad I_o = 31.4mA \quad P_o = 82mW \quad C_i = 0 \quad L_i = 0$$

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

GROUP	CAPACITANCE (μF)	INDUCTANCE (mH)	OR	L/R RATIO ($\mu H/ohm$)
IIC	2.52	36.07		170
IIB / IIIC	17.40	132.57		652
IIA	79.00	273.55		1203
I	110.00	473.31		3000

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 1µF for Groups I, IIA & IIB / IIIC and 600nF for Group IIC.

KFD2-PT2-Ex1...Y... variants

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.

Terminals 1 to 5:

$$U_o = 10.4V \quad I_o = 46mA \quad P_o = 120mW \quad C_i = 0 \quad L_i = 0$$

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

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR	L/R RATIO (µH/ohm)
IIC	2.53	17.23		123
IIB / IIIC	17.40	64.57		456
IIA	79.00	136.24		901
I	110.00	220.54		3000

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 1µF for Groups I, IIA & IIB / IIIC and 600nF for Group IIC.

16 Report Number

21(C)0161

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, and conformity is demonstrated in the report:

Clause	Subject
1.2.7	LVD type requirements
1.2.8	Overloading of equipment (protection relays, etc.)
1.4.1	External effects
1.4.2	Aggressive substances, etc.

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
16-1555CM-10	1 & 2	0	2021-Apr-12	Additional Marking Requirements for UKCA

For all other drawings see BAS00ATEX7171