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: **Baseefa06ATEX0170**

4 Equipment or Protective System: **Type KCD0-SD-Ex1.1245 Transformer Isolated Solenoid Driver**

5 Manufacturer: **Pepperl + Fuchs GmbH**

6 Address: **Königsberger Allee 87, 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 (2001) Ltd., 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. **06(C)0106/1**

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

EN 60079-0: 2004 EN 50020: 2002 EN 60079-26: 2004 EN 61241-11: 2005

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 :

II (1) GD	**[Ex ia] IIC**	**$-20°C \le T_a \le +60°C$**
	[Ex iaD]	**$-20°C \le T_a \le +60°C$**
I (M1)	**[Ex ia] I**	**$-20°C \le T_a \le +60°C$**

This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa Customer Reference No. **0808**

Project File No. **06/0106**

This certificate is granted subject to the general terms and conditions of Baseefa (2001) Ltd. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

R S SINCLAIR
DIRECTOR
On behalf of
Baseefa (2001) Ltd.

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Registered in England No. 4305578 at the above address

13 # Schedule

14 ## Certificate Number Baseefa06ATEX0170

15 Description of Equipment or Protective System

The Type KCD0-SD-Ex1.1245 Transformer Isolated Solenoid Driver is designed to transfer current from unspecified apparatus located in the non-hazardous area to the hazardous area. The voltage and current passed to the hazardous area is limited to intrinsically safe levels and have linear characteristics. The hazardous area circuit is galvanically isolated from the non-hazardous area using a transformer.

The Type KCD0-SD-Ex1.1245 Transformer Isolated Solenoid Driver comprise a number of electronic components, including an isolating transformer, fuses, zener diodes and resistors all mounted on a single printed circuit board and housed in a plastic enclosure with polarised plug-in terminals for hazardous and non-hazardous area connections. LED indication is provided for channel status.

Input/Output Parameters

Non-Hazardous Area Terminals 5 & 6

U_m = 253V r.m.s.

The circuit connected to non-hazardous area terminals 5 & 6 is designed to operate from a d.c. supply voltage up to 35V.

Hazardous Area Terminals 1 w.r.t. 2

U_o = 25.2V
I_o = 110mA
P_o = 693mW
C_i = 0
L_i = 0

The capacitance and either the inductance or inductance to resistance ratio (L/R) of the load connected to output terminals of either channel must not exceed the following values:

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR L/R RATIO (µH/ohm)
IIC	0.107	2.94	51
IIB	0.82	11.75	205
IIA	2.90	23.50	410
I	4.15	38.56	673

Note: The above load parameters apply where:

1. The external circuit contains no combined lumped inductance L_i and capacitance C_i greater than 1% of the above values

Or 2. The inductance and capacitance are distributed as in a cable.

Or 3. The external circuit contains either only lumped inductance or lumped capacitance in combination with a cable.

In all other situations e.g. the external circuit contains combined lumped inductance or lumped capacitance, up to 50% of each of the L and C values is allowed.

16 Report Number

06(C)0106/1

17 Special Conditions for Safe Use

None

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
266-020BS	1	Original	2006-Jan-12	Summary – KCD0-SD-Ex1.1245
266-020BS-00	1 to 9	Original	2006-Jan-06	Description – KCD0-SD-Ex1.1245
266-020BS-01	1 to 3	Original	2006-Jan-12	Schematic – KCD0-SD-Ex1.1245
266-020BS-02	1	Original	2006-Jan-09	Description of Relevant Components – KCD0-SD-Ex1.1245
266-020BS-03	1 & 2	Original	2006-Jan-17	Component Overlay – KCD0-SD-Ex1.1245
16-533-04	1 & 2	Original	2005-Dec-05	Housing – KCD2
266-020BS-05	1 of 5	Original	2006-Jan-16	Printed Circuit Board – KCD0-SD-Ex1.1245
266-020BS-05	2 of 5	Original	2006-Jan-16	Printed Circuit Board – Top – KCD0-SD-Ex1.1245
266-020BS-05	3 of 5	Original	2006-Jan-16	Printed Circuit Board – Bottom – KCD0-SD-Ex1.1245
266-020BS-05	4 of 5	Original	2006-Jan-16	Printed Circuit Board – Top Lacquering Details – KCD0-SD-Ex1.1245
266-020BS-05	5 of 5	Original	2006-Jan-16	Printed Circuit Board – Bottom Lacquering Details – KCD0-SD-Ex1.1245
266-020BS-06	1 to 4	Original	2006-Jan-16	Transformer – KCD0-SD-Ex1.1245 / HiC2871
266-020BS-10	1	Original	2006-Jan-26	Type Label – KCD0-SD-Ex1.1245