EXAM
BBG Prüf- und Zertifizier GmbH

Translation

(1) # EC-Type Examination Certificate

(2) **- Directive 94/9/EC -**
Equipment and protective systems intended for use in potentially explosive atmospheres

(3) # BVS 05 ATEX E 020

(4) **Equipment:** **Display type Challenger 15i-2-HB-FMO**

(5) **Manufacturer:** **GeCma Components GmbH**

(6) **Address:** **D - 50169 Kerpen**

(7) The design and construction of this equipment and any acceptable variation thereto are specified in the schedule to this type examination certificate.

(8) The certification body of EXAM BBG Prüf- und Zertifizier GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council of 23 March 1994, certifies that this equipment 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 the test and assessment report BVS PP 05.2006 EG.

(9) The Essential Health and Safety Requirements are assured by compliance with:

EN 50014:1997+A1-A2	General requirements
EN 50020:2002	Intrinsic safety 'i'

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment 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, examination and tests of the specified equipment in accordance to Directive 94/9/EC.
Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate

(12) The marking of the equipment shall include the following:

II 2G EEx ib IIC T4

EXAM BBG Prüf- und Zertifizier GmbH
Bochum, dated 01. February 2005

Signed: Dr. Jockers
Certification body

Signed: Dr. Eickhoff
Special services unit

Dinnendahlstrasse 9 44809 Bochum Germany Phone +49 201 172-3947 Fax +49 201 172-3948

(13) Appendix to

(14) # EC-Type Examination Certificate

BVS 05 ATEX E 020

(15) 15.1 Subject and type

Display type Challenger 15i-2-HB-FMO

15.2 Description

The display is used for the visualisation of data and process information.
The electronic components of the display are securely mounted in a metal enclosure.
A viewing panel is located at the front side of the enclosure.
The intrinsically-safe circuits are connected using terminals and connectors situated at the rear side of the enclosure.

15.3 Parameters

15.3.1 Terminal block K1: Power supply circuits
Terminals 3 - 4, 5 - 6, 7 - 8, 11 - 12, 13 - 14 and 15 - 16
Values for each circuit

Voltage	Ui	DC	12,5	V
Current	Ii		543	mA
Power	Pi		6,8	W
effective internal capacitance	Ci	negligible		
effective internal inductance	Li	negligible		

15.3.2 Terminal blocks K2 and K3: Power supply circuits
Terminals 1 – 2 of each terminal block

Voltage	Ui	DC	12,5	V
Current	Ii		543	mA
Power	Pi		6,8	W
effective internal capacitance	Ci	negligible		
effective internal inductance	Li	negligible		

15.3.3 Terminal block K4 for the connection of an ASD (application supporting device) , e.g. of a keyboard

Voltage	Uo	DC	5,5	V
Current	Io		71	mA
max. external inductance	Lo		1	mH
max. external capacitance	Co		40	µF

15.3.4 Terminal block K5: for the connection of data circuits of a transmittion unit, e. g. type Challenger TCV 2i, values for each cable pair

Voltage	Ui	DC	± 5,5	V
effective internal capacitance	Ci	negligible		
effective internal inductance	Li	negligible		

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15.3.5 Video input (connector X2, only for version with UVI)

Voltage	Uo	2,5	V
Current	Io	88	mA
Power	Po	176	mW
max. external inductance	Lo	4	mH
max. external capacitance	Co	100	µF

for the connection of an intrinsically safe video circuit with the following maximum values:

Voltage	Ui	6	V
Current	Ii	188	mA
Power	Pi	194	mW
effective internal capacitance	Ci	negligible	
effective internal inductance	Li	negligible	

15.3.6 Terminal block K9:

15.3.6.1 Terminals 1 and 2: Output (power supply) circuit
values depending on the values of the power supply connected to terminal block K3, but maximum

Voltage	Uo	DC	12,5	V
Current	Io		543	mA
Power	Po		6,8	W

The values of the max. external inductance and capacitance can only be determined in connection with the power supply connected to terminal block K3.

15.3.6.2 Terminals 3 up to 7: for the connection of an ASD (application supporting device) , e. g. a keyboard

Voltage	Uo	DC	5,5	V
Current	Io		71	mA
max. external inductance	Lo		1	mH
max. external capacitance	Co		40	µF

15.3.7 Ambient temperature range Ta -40 °C up to +70 °C

(16) Test and assessment report
BVS PP 05.2006 EG as of 01.02.2005

(17) Special conditions for safe use
None

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, 01. February 2005
BVS-Schu/Kw A 20040765

EXAM BBG Prüf- and Zertifizier GmbH

Certification body

Special services unit

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