IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEx BVS 12.0011 issue No.:0	Certificate history:
Status:	**Current**	
Date of Issue:	**2012-04-04**	Page 1 of 3

Applicant: **GeCma Components GmbH**
Heisenbergstrasse 26-40
50169 Kerpen
Germany

Electrical Apparatus: **Terminal, type Challenger**
Optional accessory:

Type of Protection: **Intrinsic safety**

Marking: Ex ib IIC T4 Gb

Approved for issue on behalf of the IECEx Certification Body: Dr. F. Eickhoff

Position: Deputy Head of Certification Body

Signature:
(for printed version)

Date: 2012-04-04

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

DEKRA EXAM GmbH
Dinnendahlstrasse 9
44809 Bochum
Germany

DEKRA
DEKRA EXAM GmbH

IECEx Certificate of Conformity

Certificate No.: IECEx BVS 12.0011

Date of Issue: **2012-04-04** Issue No.: **0**

Manufacturer: **GeCma Components GmbH**
Heisenbergstrasse 26-40
50169 Kerpen
Germany

Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:
The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2011 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-11 : 2011-06 Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:
DE/BVS/ExTR12.0022/00

Quality Assessment Report:

DE/TUR/QAR09.0005/00

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Schedule

EQUIPMENT:
Equipment and systems covered by this certificate are as follows:

General product information
see Annex

Parameters
see Annex

CONDITIONS OF CERTIFICATION: NO

Annexe: BVS_12_0011_gecma_Annex.pdf

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Annex

General product information:

The terminal Challenger **i-FMO is a modular apparatus to be integrated into a cut out. It is a display e. g. for process visualization and is designed for use in the hazardous areas. It consists of a metallic enclosure with a glass window at the front side. Inside the enclosure the boards RCV2i, APL2i, a graphic card, a display and a backlight inverter are fixed. In the variant Challenger Touch **I a touch screen electronic (CRM1i) is also fixed inside the enclosure and a touch screen (thickness of foil ≤ 0,2 mm) is mounted before the glass front. The electrical connection is done by terminals located behind a cover on the rear side of the housing.
The following variants are possible:

Challenger 15i-2-FMO, Challenger Touch 15i-2-FMO
Challenger 18i-FMO, Challenger Touch 18i-FMO
Challenger 22i-FMO, Challenger Touch 22i-FMO

The electrical components inside the enclosure are similar, each display size has its own corresponding backlight inverter type, display and graphics card type and the outer dimensions of the enclosure are different.

Parameters:

1 Terminal strips K1: power supply circuits
Terminals 3 - 4, 5 - 6, 7 - 8, 11 - 12, 13 - 14 and 15 - 16
Values per 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	

2 Terminal strips K2 and K3: power supply circuits
Terminal 1 – 2 for each terminal strip

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	

3 Terminal strips K4 to connect an ASD (application supporting device) for data input/output e.g. to connect a keyboard.

Voltage	Uo	DC	5.5	V
Current	Io		71	mA
max. external capacitance	Co		40	µF
max. external inductance	Lo		1	mH

4 Terminal strips K5: to connect a data cable to a transmission unit e.g. Challenger TCV 2i
Values each cable pair

Voltage	Ui		± 5.5	V
Effective internal capacitance	Ci		negligible	
Effective internal inductance	Li		negligible	

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Annex

5	Video-Input (Terminal X2)				
	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 following max values:				
	Voltage	Ui		6	V
	Current	Ii		188	mA
	Power	Pi		194	mW
	Effective internal capacitance	Ci		negligible	
	Effective internal inductance	Li		negligible	
6	Terminal strip K9				
6.1	Terminal 1 and 2: power supply output				
	Voltage	Uo	DC	12.5	V
	Current	Io		543	mA
	Power	Po		6.8	W
	Max. external capacitance Co and max. external inductance Lo depend on the power supply connected at terminal K3				
6.2	Terminal 3 to 7: to connect an ASD (application supporting device) for data input/output e.g. to connect a keyboard				
	Voltage	Uo	DC	5.5	V
	Current	Io		71	mA
	max. external capacitance	Co		40	µF
	max. external inductance	Lo		1	mH
7	Terminal strip K40 (only for types Challenger Touch **i-FMO)				
7.1	Terminal 1 to 4: power supply				
	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	
	Dynamic output current	Io		95	mA
7.2	Terminal 5 to 7: data circuits				
	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	
8	Ambient temperature range	Ta		-10 °C up to +60 °C	