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 12.0062	issue No.:0	Certificate history:
Status:	**Current**		
Date of Issue:	**2012-09-05**	Page 1 of 3	

Applicant: **WOELKE Industrieelektronik GmbH**
Im Löwental 66
45239 Essen
Germany

Electrical Apparatus: **Audio-visual alarm device, type AVS 4***
Optional accessory:

Type of Protection: **Equipment protection by intrinsic safety "i"**

Marking: Ex ia I Ma

Approved for issue on behalf of the IECEx Certification Body: H.-Ch. Simanski

Position: Head of Certification Body

Signature:
(for printed version)

Date: 5/9/2012

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

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Certificate No.: IECEx BVS 12.0062

Date of Issue: **2012-09-05** Issue No.: **0**

Manufacturer: **WOELKE Industrieelektronik GmbH**
Im Löwental 66
45239 Essen
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/ExTR12.0060/00

Quality Assessment Report:

DE/BVS/QAR12.0006/01

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Schedule

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

General product information

Type Code
Equipment: Audio-visual alarm device
Type: AVS 4, AVS 4.1

Description
Audio-visual alarm generator type AVS 4 and AVS 4.1 comprise a cylindrical flash-lamp enclosure made of plastics material (surface resistance ≤ 10^9 Ω).

Optical warning signal devices (light emitting diodes) are arranged below a calotte made of transparent plastics material (surface ≤ 100 cm^2).

Intrinsically safe circuits of the Audio-visual alarm generator AVS 4 and 4.1 (supply and remote control circuits) are led out of the casting compound at the bottom side of the enclosure. They are interconnected to terminals located in a flanged terminal box.

The terminal box contains a circuit board with additional electronics and the external terminals for intrinsically safe circuits (Supply, Alarm 1, Alarm 2).

A control circuit 'OFF (reset)' is placed on a button on one side of the terminal housing.

Parameters:
see Annex

CONDITIONS OF CERTIFICATION: NO

Annexe: BVS_12_0062_Woelke_Annex.pdf

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Annex
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Audio-visual alarm device type AVS 4

Terminal configuration Opto isolator inputs ALARM 1 and ALARM 2' providing galvanic separation.

Parameter	Supply circuit	Remote control circuits)[1]	
		ALARM 1	ALARM 2
Level of protection	Ex ia I Ma		
Voltage U_i	DC 16 V	DC 24 V	
Current I_i	2 A	N / A	
Power P_i	N / A		
effective internal capacitance C_i	110 nF	negligible	
effective internal inductance L_i	Negligible		
Terminals	X1 (+), X2 (-)	X6 (+), X7 (-)	X9 (+), X10 (-)

Remark:
)[1] galvanically separated from each other and from the supply circuit
N / A = not applicable
Ambient temperature range: - 20 °C ≤ T_{amb} ≤ +60 °C

Audio-visual alarm device type 4.1

Terminal configuration Opto isolator inputs ALARM 1 and ALARM 2' not galvanically separated intended to be connected to relay contacts or Opto isolator outputs providing characteristic 'active open'.

Parameter	Supply circuit	Remote control circuits	
		ALARM 1	ALARM 2
Level of protection	Ex ia I Ma		
Voltage U_i	DC 16 V	N / A	
Current I_i	2 A	N / A	
Power P_i	N / A		
effective internal capacitance C_i	110 nF	negligible	
effective internal inductance L_i	negligible		
Voltage U_o	N / A	DC 16 V)[3]	
Current I_o	N / A	5 mA	
Power P_o	N / A	20 mW	
max. external capacitance C_o	N / A	13 µF	
max. external inductance L_i	N / A	18.66 H	
max. inductance- / resistance ratio L_o/R_o	N / A	24.93 mH/Ω	
Characteristics	N / A	linear	
Terminals)[1]	X1 (+), X2 (-)	X5 (+), X6 (-)	X8 (+), X9 (-)
Interconnection between)[1]	N / A	X7 -X11	X10-X11
Terminals)[2]	X1 (+), X2 (-)	X6 (+), X7 (-)	X9 (+), X10 (-)
Interconnection between)[2]	N / A	X5 -X6, X7-X11	X8 -X9, X10-X11

Remark:
)[1] intended to be connected to potential free relay contacts or opto isolator-outputs providing characteristic 'active open'
)[2] intended to be connected to potential free relay contacts or opto isolator-outputs providing characteristic 'active closed'
)[3] identical with U_i of the supply circuit
N / A = not applicable
Ambient temperature range: - 20 °C ≤ T_{amb} ≤ +60 °C