



# 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](http://www.iecex.com)

Certificate No.: IECEx BVS 09.0053 Issue No: 2 Certificate history:  
Status: **Current** Page 1 of 4 Issue No. 2 (2013-04-25)  
Date of Issue: **2013-04-25** Issue No. 1 (2010-11-25)  
Applicant: **KEM Küppers Elektromechanik GmbH** Issue No. 0 (2010-02-22)  
Liebigstraße 5  
85757 Karlsfeld  
Germany  
Electrical Apparatus: **Pulse Amplifier type V\* \*\*-\*-\*-\*Ex, V\*E0\*-\*-\*-\*Ex, A13256-\*1**  
*Optional accessory:*  
Type of Protection: **Protection by intrinsic safety "i"**  
Marking: Ex ia IIC T4 Gb

Approved for issue on behalf of the IECEx  
Certification Body:

H.-Ch. Simanski

Position:

Head of Certification Body

Signature:  
(for printed version)

Date:

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](http://www.iecex.com).

Certificate issued by:

DEKRA EXAM GmbH  
Dinnendahlstrasse 9  
44809 Bochum  
Germany





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Manufacturer: **KEM Küppers Elektromechanik GmbH**  
Liebigstraße 5  
85757 Karlsfeld  
**Germany**

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

*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/ExTR09.0052/02](#)

Quality Assessment Report:

[DE/TPS/QAR12.0003/00](#)



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## Schedule

### EQUIPMENT:

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

#### Description

The Pulse Amplifier may be extended optionally with models providing different PCB layout and with a special model type A13256-\*1 according to the type codes above.

The Versions providing different PCB layout, type V\*E02-\*\*-\*\*-\*, V\*E03-\*\*-\*\*-\*, V\*E04-\*\*-\*\*-\* are technically identical with the corresponding types according to the previous type code.

The special model 'Pulse Amplifier type A13256-\*1' is identical with pro previous model 'Pulse Amplifier type VTEF-SP-Ex' with the exception of connector pinning.

#### Type Code

See Annex

#### Ratings

See Annex

**CONDITIONS OF CERTIFICATION: NO**



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**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):**

The Pulse Amplifiers have been extended with new models.

**Annex:**

[BVS\\_09\\_0053\\_KEM Küppers Elektromechanik\\_Annex\\_issue2\\_1.pdf](#)



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**Annex**  
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Type code

Pulse Amplifier type V\* \*\*\_\*\*\_\*\_\* (previous models)  
 ab cd-ef-g-h

Position	Feature	Code letter(s) / -number(s)	
a	Amplifier	V	
b	Carrier frequency	T	
	Inductive	I	
cd	Mechanical design	EF, EK =	different length and position of the sensor
		EL, ER =	
		ES =	
		EC =	GHT060 housing for ZHM **-CT
		EM =	GHT060 housing for LFM
e	Electrical connector	H =	M12 S713
		S =	M16 S423
		U =	MS10L
f	Signal-output	N =	NAMUR
		O =	open collector
		P =	'push pull'
		U =	universal (NAMUR + PP)
g	Custom features	L =	LED
h	IECEX approval	Ex	



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Pulse Amplifier type V\*E02-\*-\*-\*-\* (new type)  
abcde-f-g-hi-k

Position	Feature	Code letter(s) / -number(s)
a	Amplifier	V
b	Carrier frequency	T
	Inductive	I
cde	Series name	E02 (single, screw in)
f	Thread type	A – Z
g	Electrical connection	A = M16, 'push pull'
		D = Amphenol, 'push pull'
		E = Amphenol, open collector
		P = M12, 'push pull'
		N = M12, NAMUR
		M = M12, NAMUR, alternative pinning
		U = M12, NAMUR + PP
x = other combinations and pinnings		
hi	Custom features	00 – 99
k	IECEX approval	Ex



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Pulse Amplifier type V\*E03-\*\*-\*\*-\*\* (new type)  
abcde-fg-h-i-k

Position	Feature	Code letter(s) / -number(s)
a	Amplifier	V
b	Carrier frequency	T
	Inductive	I
cde	Series name	E03 (single, diecast housing)
fg	Mechanical design	00-99 = pickup form and position
h	Electrical connection	A = M16, 'push pull'
		D = Amphenol, 'push pull'
		E = Amphenol, open collector
		P = M12, 'push pull'
		N = M12, NAMUR
		M = M12, NAMUR, alternative pinning
		U = M12, NAMUR + PP
x = other combinations and pinnings		
i	Custom features	L = LED
		x = other options
		empty = standard version
k	IECEX approval	Ex

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Pulse Amplifier    type V\*E04-\*\*-\*\*-\*\* (new type)  
    abcde-fg-h-i-k

Position	Feature	Code letter(s) / -number(s)
a	Amplifier	V
b	Carrier frequency	T
	Inductive	I
cde	Series name	E04 (single, cartridge housing)
fg	Mechanical design	00-99 = pickup form and position
h	Electrical connection	A = M16, 'push pull'
		D = Amphenol, 'push pull'
		E = Amphenol, open collector
		P = M12, 'push pull'
		N = M12, NAMUR
		M = M12, NAMUR, alternative pinning
		U = M12, NAMUR + PP
		x = other combinations and pinnings
i	Custom features	L = LED
		x = other options
		empty = standard version
k	IECEX approval	Ex

Pulse Amplifier type A13256-\*1 (special model)

└─ Modifications not affecting intrinsic safety parameters  
     0 = Carrier frequency pick up for JVM02/1 or ZHM02/1  
     1 to 9 = Versions adapted to other size and forms





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Parameters

- 1 Supply- and signal circuit; 3-wire configuration
- 1.1 Power supply  
Connector-pins 1 and 3, model V\* \*\* -H/S\* -\*-Ex  
Connector-pins 1 and 3, model V\*E0\* -\*-A/D/E/P/U\* -\*-Ex  
Connector-pins A and B, model V\* \*\* -U\* -\*-Ex  
Connector-pins 5 and 1, model A13256\*1
- |                                |                |    |            |    |
|--------------------------------|----------------|----|------------|----|
| Voltage                        | U <sub>i</sub> | DC | 30         | V  |
| Current                        | I <sub>i</sub> |    | 120        | mA |
| Power                          | P <sub>i</sub> |    | 850        | mW |
| Effective internal capacitance | C <sub>i</sub> |    | 8          | nF |
| Effective internal inductance  | L <sub>i</sub> |    | negligible |    |
- 1.2 Signal-output circuit 'push pull' or 'open collector' configuration  
Connector-pins 2 and 3, model V\* \*\* SO/P\* -\*-Ex (with connector M16)  
Connector-pins 3 and 4, model V\* \*\* HO/P/U\* -\*-Ex (with connector M12)  
Connector-pins B and C, model V\* \*\* UO/P\* -\*-Ex (with connector MS10L)  
Connector-pins 2 and 3. model V\*E0\* - \*\* - A\* -\*-Ex (with connector M16)  
Connector-pins 3 and 4. model V\*E0\* - \*\* - P/U\* -\*-Ex (with connector M12)  
Connector-pins B and C, model V\*E0\* - \*\* - D/E\* -\*-Ex (with connector Amphenol)  
Connector-pin 4 and 1, model A13256\*1
- |                                |                |    |            |                   |
|--------------------------------|----------------|----|------------|-------------------|
| Voltage                        | U <sub>i</sub> | DC | 30         | V                 |
| Current                        | I <sub>i</sub> |    | 24.6       | mA                |
| Power                          | P <sub>i</sub> |    | 185        | mW                |
| Effective internal capacitance | C <sub>i</sub> |    | 8          | nF ) <sup>1</sup> |
| Effective internal inductance  | L <sub>i</sub> |    | negligible |                   |
- )<sup>1</sup> identical with C<sub>i</sub> in the supply circuit
- 2 Supply- and signal circuit; 2-wire configuration N/M =NAMUR  
Connector-pins 1 and 2 (version N), 1 and 4 (version M)  
Pulse Amplifier type V\* \*\* -\* N - \*-\* /  
Pulse Amplifier type V\*E0\* - \*\* - N\* -\*-\* /  
Pulse Amplifier type V\*E0\* - \*\* - M\* -\*-\*
- |                                |                |    |            |    |
|--------------------------------|----------------|----|------------|----|
| Voltage                        | U <sub>i</sub> | DC | 10.5       | V  |
| Current                        | I <sub>i</sub> |    | 16         | mA |
| Power                          | P <sub>i</sub> |    | 40         | mW |
| Effective internal capacitance | C <sub>i</sub> |    | 8          | nF |
| Effective internal inductance  | L <sub>i</sub> |    | negligible |    |
- 3 Ambient temperature range: -40 °C ≤ T<sub>a</sub> ≤ +60 °C