



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.: **IECEX BVS 12.0001X** Page 1 of 4 [Certificate history:](#)  
Issue 0 (2012-01-30)

Status: **Current** Issue No: 1

Date of Issue: 2019-10-25

Applicant: **R. STAHL Schaltgeräte GmbH**  
Am Bahnhof 30  
74638 Waldenburg  
Germany

Equipment: **Vibration Transducer Supply Unit type 9147 / \*0-99-10**

Optional accessory:

Type of Protection: **Intrinsic Safety "i", Increased Safety "e"**

Marking: Ex ec [ia Ga] IIC T4 Gc  
[Ex ia Da] IIIC  
[Ex ia Ma] I

Approved for issue on behalf of the IECEx  
Certification Body:

**Dr Franz Eickhoff**

Position:

**Deputy Head of Certification Body**

Signature:  
(for printed version)

Date:

1. This certificate and schedule may only be reproduced in full.
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Certificate issued by:

**DEKRA Testing and Certification GmbH**  
Certification Body  
Dinnendahlstrasse 9  
44809 Bochum  
Germany

 **DEKRA**  
On the safe side.



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Manufacturer: **R. STAHL Schaltgeräte GmbH**  
Am Bahnhof 30  
74638 Waldenburg  
Germany

Additional  
manufacturing  
locations:

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 equipment 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 60079-0:2017** Explosive atmospheres - Part 0: Equipment - General requirements  
Edition:7.0

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

**IEC 60079-7:2017** Explosive atmospheres - Part 7: Equipment protection by increased safety "e"  
Edition:5.1

This Certificate **does not** indicate compliance with 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/ExTR12.0005/01](#)

Quality Assessment Report:

[DE/BVS/QAR10.0002/14](#)



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## **EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

### **Subject and Type**

See Annex

### **Description of product**

The Vibration Transducer Supply Unit type 9147 / \*0-99-10 is an associated apparatus per IEC 60079-11 as well as a non-sparking apparatus. The intrinsically safe circuits are galvanically separated from each other, as from the non-I.S. signal circuits and from the auxiliary power supply circuit.

The Vibration Transducer Supply Unit is used for the intrinsically safe operation of one or two vibration transducers. It is possible to operate a 2-wire acceleration sensor current-feed or voltage-fed 3-wire eddy current transducers.

The device supplies the sensors and transmits its signal galvanically separated to the output.

### **Listing of all components used referring to older standards**

None

### **Parameters**

See Annex

## **SPECIFIC CONDITIONS OF USE: YES as shown below:**

For use in Zone 2 the Vibration Transducer Supply Unit has to be mounted inside an enclosure, which is in accordance with IEC 60079-7.



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

- Assessment in accordance with the current standard versions
- Update of electrical parameters
- Type of protection "nA" is now designated as type of protection "ec" and the requirements for "ec" equipment were assessed in annex IEC 60079-7:2017 of IECEx-Test Report DE/BVS/12/2010/N1.
- Update of marking

## **Annex:**

[BVS\\_12\\_0001X\\_R. Stahl\\_Annex\\_issue1\\_1.pdf](#)



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**Certificate No.:** IECEx BVS 12.0001X **issue No.:** 1  
**Annex**  
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## Subject and Type

Vibration Transducer Supply Unit type 9147 / \*0-99-10

Instead of the \*\*\* in the complete denomination, numerals will be inserted which characterize modifications:

Vibration Transducer Supply Unit type 9147 / \* 0-99-10

Number of channels:

1

2

## Parameters

1	Power input				
	Terminal No. 7 (L+), 9 (L-) and pac-Bus connector V007/ 1 (+), 2 (-)				
	Nominal voltage	$U_N$	DC	24	V
				(18 ... 31.2 V DC)	
	Nominal current:	$I_N$		90	mA
	Maximum safety voltage:	$U_m$	AC	253	V
2	Non-I.S. Output signal circuits				
	Maximum safety voltage:	$U_m$	AC	253	V
2.1	Type 9147/20-99-10				
	2 analogue outputs, voltage signal				
	Output 1: Terminal 1 and 2				
	Output 2: Terminal 5 and 6				
	Nominal voltage:	$U_N$		20	V
	Nominal current:	$I_N$		2	mA
2.2	Type 9147/10-99-10				
	1 analogue output, voltage signal				
	Output 1: Terminal 1 and 2				
	Nominal voltage:	$U_N$		20	V
	Nominal current:	$I_N$		10	mA
3	Intrinsically safe signal circuits				

Intrinsically safe circuits with level of protection Ex ia for connection to passive intrinsically safe apparatus e.g. vibration transducers or acceleration sensors.

The intrinsically safe circuits may also be used in areas endangered by explosive dust atmospheres and be connected to apparatus certified accordingly.

Terminal No.: Channel 1: 12 (+com.), 11 (-Input), 10 (-PWR)

Channel 2: 14 (+com.), 15 (-Input), 13 (-PWR) at types 9147/2... only

The data is valid for channel 1 or channel 2.

Maximum output voltage	$U_o$	26.3	V
Maximum output current	$I_o$	88.3	mA
Maximum output power	$P_o$	579	mW
Linear characteristic			
Effective internal capacitance	$C_i$	2.4	nF
Effective internal inductance	$L_i$	0	mH



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Maximum external capacitance  $C_o$  or maximum external inductance  $L_o$ :

	IIC	IIB / IIIC	IIA	I
$L_o$ [mH]	4.4	18	36	58
$C_o$ [nF]	97	740	2510	3950

The following maximum values apply if concentrated inductances and capacitances are connected.

	IIC				IIB / IIIC					IIA				
$L_o$ [mH]	2.2	1.0	0.5	0.2	17	2	0.5	0.2	0.1	28	1	0.5	0.1	0.005
$C_o$ [nF]	43	59	75	97	320	340	480	620	740	430	570	670	1000	2510

	I				
$L_o$ [mH]	40	20	1	0.2	0.002
$C_o$ [nF]	490	720	750	1100	3950

4 Ambient temperature range  
 Any assembling position

$T_a$  -20 °C up to +70 °C