



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.: issue No.: [Certificate history:](#)

Status:

Date of Issue: **2015-02-24** Page 1 of 3

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

Electrical Apparatus: **Transmitter Supply Unit with Limit Value type 9162/13-11-*4**
Optional accessory:

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

Marking: Ex nA nC IIC T4 Gc type 9162/13-11-64
Ex nA nC [ia Ga] IIC T4 Gc type 9162/13-11-14
[Ex ia Da] IIIC

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](#).

Certificate issued by:

DEKRA EXAM GmbH
Dinnendahlstrasse 9
44809 Bochum
Germany





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Manufacturer: **R. STAHL Schaltgeräte GmbH**
Am Bahnhof 30
74638 Waldenburg
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 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-11 : 2011 Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-15 : 2010 Edition: 4	Explosive atmospheres - Part 15: Equipment protection by type of protection "n"

*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/ExTR15.0011/00](#)

Quality Assessment Report:
[DE/BVS/QAR10.0002/05](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

General product information:

The Transmitter Supply Unit with Limit Value type 9162/13-11-14 is an associated apparatus per IEC 60079-11. The intrinsically safe circuit is galvanically separated from the non I.S. signal circuits as well as from the auxiliary power supply circuit.

The Transmitter Supply Unit with Limit Value type 9162/13-11-64 is a non-incendive apparatus per IEC 60079-15. It is based on type variant 9162/13-11-14, but has no intrinsically safe circuits.

The device serves for the (intrinsically safe) power supply and signal evaluation of 2- and 3-wire transmitters. It may also be used for signal evaluation of active current sources. Additionally it is used for bidirectional transmission of a HART communication signal, where a digital signal is superimposed on the current signal by means of frequency shift keying. Two potential free contact circuits serve for the evaluation of pre adjusted limit values.

Type Designation

See Annex

Parameters

See Annex

CONDITIONS OF CERTIFICATION: YES as shown below:

For installations in hazardous locations Zone 2 the following applies:

The device has to be mounted in a protective housing or cabinet which complies with the requirements of IEC 60079-15.



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Type Designation

	Type	9	16	1	3	-	1	1	-	*	4
		/	a	b			c	d		e	f
Single channel	1										
With HART transmission	3										
Input											
active/passive 4...20mA	1										
Output											
active 4...20mA	1										
Design											
24 V DC, associated apparatus	1										
24 V DC, nonincendive apparatus	6										
Special function:											
Limit Contact, device with SIL assessment	4										

Parameters

1	Power input (Terminals 7(L+), - 9 (L-) and pac-bus connector V007/1 (+) and 2(-))				
	Nominal voltage	U_N	DC	24	V
	Max. voltage	U_m	AC	253	V
	Nominal current	I_N		85	mA
2	Output signal circuits				
	max. voltage	U_m	AC	253	V
2.1	Analog-Output (active) Terminal No. either 1 or 3 (+) and 2 (-)				
	Nominal current ON / OFF	I_N		4 - 20	mA
	Load resistance			0 - 600	Ω
2.2	Contact-Outputs Contact A: Terminal No. 3 and 4 Contact B: Terminals No. 5 and 6				
	Nominal voltage	U_N		± 30	V
	Nominal current	I_N		100	mA
2.3	Error indicator circuits Circuit 1: Terminals No. 8, 9, (-) Circuit 2: pac-bus connector V007/3, 4				
	Nominal voltage	U_N	AC / DC	30	V
	Nominal current	I_N		100	mA
2.4	Configuration interface (RS232) (plug connector V401 behind the front cover)				
	Nominal voltage	U_N	AC / DC	± 15	V
	Nominal current	I_N		10	mA



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3 Input signal circuits

3.1 Connection to passive circuits of 2-wire transmitters

Terminal No. 12 (+) and 10 (-)

For type 9162/13-11-14 (intrinsically safe)

Voltage	U_o	27.0	V
Current	I_o	87.9	mA
Power	P_o	574	mW
linear output characteristic			
Effective internal capacitance	C_i	negligible	
Effective internal inductance	L_i	negligible	

The maximum allowed values for external inductance or capacitance for type 9162/13-11-14 are shown in the table below:

	IIB / IIIC	IIC
L_o	14 mH	2.3 mH
C_o	705 nF	90 nF

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

	IIB / IIIC			IIC		
	L_o	10 mH	1 mH	0.2 mH	1 mH	0.5 mH
C_o	290 nF	380 nF	600 nF	56 nF	72 nF	90 nF

For type 9162/13-11-64

Nominal values	U_N	16 V at 20	mA
	U_{NL}	26	V
	I_N	0-20	mA
	I_{SC}	35	mA

3.2 Connection to passive circuits of 3-wire-transmitters

Terminal No. 12 (+), 10 (Signal +) and 11 (-)

For type 9162/13-11-14 (intrinsically safe)

Voltage	U_o	27.0	V
Current	I_o	88.3	mA
Power	P_o	574	mW
Effective internal capacitance	C_i	negligible	
Effective internal inductance	L_i	negligible	

The maximum allowed values for external inductance or capacitance for type 9162/13-11-14 are shown in the table below:

	IIB / IIIC	IIC
L_o	14 mH	2.3 mH
C_o	705 nF	90 nF

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

	IIB / IIIC			IIC		
	L_o	10 mH	1 mH	0.2 mH	1 mH	0.5 mH
C_o	290 nF	380 nF	600 nF	56 nF	72 nF	90 nF



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For type 9162/13-11-64
Nominal values

U_N	16 V at 20	mA
U_{NL}	26	V
I_N	0-20	mA
I_{SC}	35	mA

3.3 Connection of active current sources (e.g. auxiliary supplied 4-wire transmitters)

Terminals No. 10 (Signal +) and 11 (-)
For type 9162/13-11-14 (intrinsically safe)

Voltage	U_o	4,1	V
Current	I_o	≈ 0	mA
Power	P_o	≈ 0	mW
Effective internal capacitance	C_i	negligible	
Effective internal inductance	L_i	negligible	

The signal input is designed for the connection of intrinsically safe circuits not exceeding the following values

Voltage	U_i	30	V
Current	I_i	100	mA

For type 9162/13-11-64
Nominal values

I_N	0-20	mA
I_{max}	100	mA
U_{max}	30	V
R_i	30	Ω

3.4 Ambient temperature range $-40\text{ °C} \leq T_a \leq +70\text{ °C}$