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 09.0046X issue No.:2

Status: **Current**

Certificate history:
Issue No. 2 (2012-4-23)
Issue No. 1 (2011-2-17)
Issue No. 0 (2009-8-10)

Date of Issue: **2012-04-23**

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

Electrical Apparatus: **Temperature Transmitter type 9182/**-**-****
Optional accessory:

Type of Protection: **Equipment protection by intrinsic safety "i", Type of Protection "n", protection level (EPL) Ga**

Marking: Ex nA nC [ia Ga] IIC T4 Gc and [Ex ia Da] IIIC resp.
Ex nAc nCc [ia] IIC T4 and [Ex ia] IIIC
for types 9182/**-**-1*
Ex nA nC IIC T4 Gc resp. Ex nAc nCc IIC T4
for types 9182/**-**-6*

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

Position: Deputy 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

DEKRA EXAM GmbH

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Date of Issue: **2012-04-23** Issue No.: **2**

Manufacturer: **R. STAHL Schaltgeräte GmbH**
Am Bahnhof 30
74638 Waldenburg
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"
IEC 60079-15 : 2010 Edition: 4	Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
IEC 60079-26 : 2006 Edition: 2	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga

*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/ExTR09.0042/01

Quality Assessment Report:

DE/BVS/QAR10.0002/02

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Schedule

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

Description

The Temperature Transmitter type 9182 is an associated apparatus per IEC 60079-11 as well as a nonincendive apparatus per IEC 60079-15. 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. Additional exist variants as nonincendive apparatus without intrinsically safe circuits.

The temperature transmitter serves to connect up to 2 thermo element sensors (TC), resistance thermometers (RTD), potentiometers or passive voltage sensors in an intrinsically safe manner. The device linearizes the temperature signal and converts it to a standard current or voltage. In addition, it possesses switch contacts for error indication and, optionally, up to two switch contacts per channel to indicate limit infringements.

Type designation and electrical data

See Annex

CONDITIONS OF CERTIFICATION: YES as shown below:

For use in Zone 2 the Temperature Transmitter has to be mounted inside an enclosure which is in accordance with IEC 60079-15.

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

The temperature transmitter has been assessed in acc. with IEC 60079-0 :2011, IEC 60079-11 :2011 and IEC 60079-15 :2010.

Annexe: BVS_09_0046X_R_Stahl_Annex_issue2.pdf

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Certificate No.: **IECEx BVS 09.0046X, issue 2**
Annex

Type Designation

Temperature Transmitter Type **9182 /** * **0** - **5** * - * *
a b c d e f

Channels	1	1
	2	2
Output	without analogue output	0
	analogue 0/4-20 mA	1
	analogue 0/1-5 V	3
	analogue 0/4-20 mA passive	9
Power supply	24 V DC, associated apparatus	1
	24 V DC, nonincendive apparatus	6
Special functions	without limit contacts, with line fault signalling	1
	2 limit contacts per channel with line fault signalling	2
	SIL 2, without limit contacts, with line fault signalling	3
	SIL 2, 2 limit contacts per channel with line fault signalling	4

Electrical Data

Auxiliary Power Supply

Maximum safety voltage: Um ≤ 253 V AC

(Terminal No. 7 (L+), 9 (L-) and pac-bus connector V007 / 1 (+), 2 (-))
Nominal Voltage: U_n = 24 V DC (18 ... 31.2 V DC)
Nominal Current: I_n = 80 mA

Non I.S. signal circuits

Input circuits
Models type 9182/*0-5*-6*

For connection to passive circuits or simple equipment, e.g. thermo elements or resistance thermometers.
Terminal No. 10 to 15, any interconnection
Maximum Voltage Umax = 6.5 V
Maximum current Imax = 19.7 mA

Output circuits

On 2-channel versions the output circuits are galvanically separated from each other.

Maximum safety voltage: $U_m \leq 253$ V AC

Models type 9182/20-51-*1 and 9182/20-51-*3

2 analog outputs, 0/4 mA...20 mA

(Output 1: Terminal No. 1, 2
Output 2: Terminal No. 5 ,6)

Nominal Voltage: $U_n = 15$ V DC
Nominal Current: $I_n = 20$ mA

Models type 9182/10-51-*1 and 9182/10-51-*3

1 analog output, 0/4 mA...20 mA

(Output 1: Terminal No. 1, 2)

Nominal Voltage: $U_n = 15$ V DC
Nominal Current: $I_n = 20$ mA

Model type 9182/10-51-*2 and 9182/10-51-*4

1 analog output, 0/4 mA...20 mA
2 switch contacts

(Output 1: Terminal No. 1, 2)

Nominal Voltage: $U_n = 15$ V DC
Nominal Current: $I_n = 20$ mA

(Contact 1: Terminal No. 3, 4
Contact 2: Terminal No. 5, 6)

Nominal Voltage: $U_n = 30$ V AC/DC
Nominal Current: $I_n = 100$ mA

Model type 9182/10-50-*2 and 9182/10-50-*4

2 switch contacts

(Contact 1: Terminal No. 3, 4
Contact 2: Terminal No. 5, 6)

Nominal Voltage: $U_n = 30$ V AC/DC
Nominal Current: $I_n = 100$ mA

Model type 9182/20-50-*2 and 9182/20-50-*4

4 switch contacts

(Contact 1: Terminal No. 1, 2
Contact 2: Terminal No. 2 (together with switch contact 1), 3
Contact 3: Terminal No. 5, 6
Contact 4: Terminal No. 6 (together with switch contact 3) 4)

Nominal Voltage: $U_n = 30$ V AC/DC
Nominal Current: $I_n = 100$ mA

Model type 9182/10-53-*1

1 analog output, 0/1 V...5 V

(Output 1: Terminal No. 1, 2)

Nominal Voltage: $U_n = 5$ V DC
Nominal Current: $I_n = 10$ mA

Model type 9182/10-53-*2

1 analog output, 0/1 V...5 V
2 switch contacts

Output 1: Terminal No. 1, 2

Nominal Voltage: U_n = 5 V DC
Nominal Current: I_n = 10 mA

Contact 1: Terminal No. 3, 4
Contact 2: Terminal No. 5, 6

Nominal Voltage: U_n = 30 V AC/DC
Nominal Current: I_n = 100 mA AC/DC

Model type 9182/20-53-*1

2 analog output, 0/1 V...5 V

Output 1: Terminal No. 1, 2
Output 2: Terminal No. 5, 6

Nominal Voltage: U_n = 5 V DC
Nominal Current: I_n = 10 mA

Model type 9182/10-59-*1 and 9182/10-59-*3

1 analog output, 0/4 – 20 mA passive
Output 1: Terminal No. 1, 2

Nominal Voltage: U_n = 22 V DC
Nominal Current: I_n = 20 mA

Model type 9182/20-59-*1 and 9182/20-59-*3

2 analog outputs, 0/4 – 20 mA passive

Output 1: Terminal No. 1, 2
Output 2: Terminal No. 5, 6

Nominal Voltage: U_n = 19 V DC
Nominal Current: I_n = 20 mA

Model type 9182/10-59-*2 and 9182/10-59-*4

1 analog output, 0/4 – 20 mA passive
Output 1: Terminal No. 1, 2

Nominal Voltage: U_n = 22 V DC
Nominal Current: I_n = 20 mA

Contact 1: Terminal No. 3, 4
Contact 2: Terminal No. 5, 6

Nominal Voltage: U_n = 30 V AC/DC

Nominal Current: I_n = 100 mA AC/DC

Line fault monitoring circuit

(Loop 1; Terminal 8, 9 (-); Loop 2; pac-bus connector V007 / 3, 4)
Loop 1 reference to the return of the auxiliary power supply.
Loop 2 is galvanically separated from Loop 1.

Nominal Voltage: U_n = 24 V DC (18 ... 31.2 V DC)
Nominal Current: I_n = 100 mA

Intrinsically safe input circuits, level of protection "ia"

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

For explosive dust atmospheres the maximum allowed values for inductance and capacitance as for gas group IIB apply.

For connection to passive intrinsically safe circuits or simple equipment, e.g. thermo elements or resistance thermometers.

Model types 9182/*0-5*-1*

Terminal No. 10 to 15, any interconnection

U_o = 6.5 V
I_o = 19.7 mA
P_o = 32 mW (linear characteristic)
C_i ≈ 0 Li ≈ 0

The maximum allowable values for external inductance and capacitance are shown in the table below.

	IIB	IIC
L_o	330 mH	90 mH
C_o	570 µF	25 µF

Ambient temperature range

Any assembling position -20 °C ≤ Ta ≤ +70 °C