



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

Certificate No.: **IECEX BVS 10.0055X** Page 1 of 4 Certificate history:
Status: **Current** Issue No: 2 [Issue 1 \(2012-04-16\)](#)
[Issue 0 \(2010-06-21\)](#)
Date of Issue: 2023-07-03
Applicant: **R.STAHL Schaltgeräte GmbH**
Am Bahnhof 30
74638 Waldenburg
Germany
Equipment: **Resistance isolator type 9180/**-77-11**
Optional accessory:
Type of Protection: **Intrinsic safety "i", Type of protection "n", Increased safety "e"**
Marking: Ex ec nC [ia Ga] IIC T4 Gc
[Ex ia Da] IIIC

Approved for issue on behalf of the IECEx
Certification Body:

Dr Franz Eickhoff

Position:

**Senior Lead Auditor, Certification Manager and officially
recognised expert**

Signature:
(for printed version)

Date:
(for printed version)

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Certificate issued by:

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





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

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

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 60079-15:2017](#) Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
Edition:5.0

[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/ExTR10.0074/02](#)

Quality Assessment Report:

[DE/BVS/QAR10.0002/18](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

General product information:

The Resistance Isolator type 9180 is an associated apparatus per IEC 60079-11. The connection terminals are compliant to IEC 60079-7. The signal relays are compliant to IEC 60079-15. The intrinsically safe circuits are galvanically separated from each other as well as from the non I.S. signal circuits as well as from the power supply circuits.

The Resistance Isolator type 9180 is used for the intrinsically safe operation of Pt100 or Pt1000 resistance temperature detectors and other potentiometers. The resistance measured at the input is transmitted at the output.

Listing of all components used referring to older standards

None

Subject and Type and Parameters:

See Annex

SPECIFIC CONDITIONS OF USE: YES as shown below:

- 1 For installation in areas, where EPL Gc equipment is required, the equipment shall be installed in an enclosure that provides a minimum ingress protection of IP54 in accordance with IEC 60079-0.
- 2 For installation in areas, where EPL Gc is required, the equipment shall only be used in an area of at least pollution degree 2, as defined in IEC 60664-1.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

- Assessment of Resistance isolator in accordance with the current standard versions
- Modification of the marking
- Update of the documentation
- The standard IEC 60079-26 is not listed in this supplement, because EPL Ga is ensured by intrinsic safety ia. The standard IEC 60079-26 does not impose additional requirements on the apparatus.

Annex:

[BVS_10_0055X_RStahl_Annex_issue2.pdf](#)



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Annex
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Subject and Type

Resistance isolator type 9180/**-77-11

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

Resistance isolator	9180/	*	*	-	7	7	-	1	1
Number of channels:									
1									
2									
Measuring area:									
0	Pt100								
1	Pt1000								

Parameters

1	Power input				
	Terminals 7 (+), 9 (-) and pac-bus connector 9194/50-01 / 1 (+), 2 (-)				
	Nominal voltage	U_n	DC	24 V (18 - 31.2 V)	
	Nominal current	I_n		30	mA
	Maximum voltage	U_m	AC	253	V
2	Non-intrinsically safe signal circuits				
2.1	Output circuit and switching contact circuits				
2.1.1	Type 9180/20-77-11				
	2 analog outputs, resistance (Pt100)				
	Output 1: Terminal 1, 2 and 3				
	Output 2: Terminal 5, 6 and 4				
	Nominal voltage	U_n	DC	2	V
	Nominal current	I_n		5	mA
	Maximum voltage	U_m	AC	253	V
2.1.2	Type 9180/10-77-11				
	1 analog output, resistance (Pt100)				
	Output 1: Terminal 1, 2 and 3				
	Nominal voltage	U_n	DC	2	V
	Nominal current	I_n		5	mA
	Maximum voltage	U_m	AC	253	V
2.1.3	Type 9180/21-77-11				
	2 Analog outputs, resistance (Pt1000)				
	Output 1: Terminal 1, 2 and 3				
	Output 1: Terminal 5, 6 and 4				
	Nominal voltage	U_n	DC	4	V
	Nominal current	I_n		1	mA
	Maximum voltage	U_m	AC	253	V



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2.1.4 Type 9180/11-77-11
 1 analog output, resistance (Pt1000)
 Output 1: Terminal 1, 2 and 3

Nominal voltage	U_n	DC	4	V
Nominal current	I_n		1	mA
Maximum voltage	U_m	AC	253	V

2.2 Error indicator circuits
 Loop 1: Terminal No. 8, 9 (-); loop 2: pac-bus connector 9194/50-01 / 3, 4
 Loop 1 is connected to the power input via the return conductor.
 Loop 2 is galvanically isolated from loop 1.

Nominal voltage	U_n	AC/DC	30	V
Nominal current	I_n		100	mA
Maximum voltage	U_m	AC	253	V

3 Intrinsically safe output circuits
 Terminal No. 10 to 15, any interconnection

Maximum output voltage	U_o		6.5	V
Maximum output current	I_o		16.5	mA
Linear output characteristics				
Maximum output power	P_o		27	mW

Maximum external capacitance C_o or maximum external inductance L_o :

	IIB / IIIC	IIC
L_o	450 mH	120 mH
C_o	570 μ F	25 μ F

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

	IIB / IIIC				IIC			
L_o [mH]	100	20	2	0,5	50	5	1	0,2
C_o [μ F]	5.3	6.9	11	15	1.1	1.7	2.3	3.4

4 Ambient temperature range -20 °C \leq T_a \leq +70 °C