



# 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 PTB 17.0039X

Issue No: 1

Certificate history:

Status: **Current**

Issue No. 1 (2018-02-19)

Issue No. 0 (2017-12-21)

Date of Issue: **2018-02-19**

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

Equipment: **Control panel type 8280/5-\*\*-\*\***  
Optional accessory:

Type of Protection: **Flameproof Enclosure "d", Increased Safety "e", Intrinsic Safety "i", encapsulation "m", optical radiation "op" and special protection "s"**

Marking: **Ex db eb ia [ia Ga] ib [ib Gb] mb op pr [op is] sb IIB T5...T3 Gb**


Approved for issue on behalf of the IECEx  
Certification Body:

Dr.-Ing. Dettlev Markus

Position:

Head of Department "Explosion Protection in Energy Technology"

Signature:  
(for printed version)

  
08.03.18

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:

Physikalisch-Technische Bundesanstalt (PTB)  
Bundesallee 100  
38116 Braunschweig  
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 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:

<b>IEC 60079-0 : 2011</b> Edition:6.0	Explosive atmospheres - Part 0: General requirements
<b>IEC 60079-1 : 2014-06</b> Edition:7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
<b>IEC 60079-11 : 2011</b> Edition:6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
<b>IEC 60079-18 : 2014</b> Edition:4.0	Explosive atmospheres - Part 18: Equipment protection by encapsulation "m"
<b>IEC 60079-28 : 2015</b> Edition:2	Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation
<b>IEC 60079-33 : 2012</b> Edition:1.0	Explosive atmospheres - Part 33: Equipment protection by special protection "s"
<b>IEC 60079-7 : 2015</b> Edition:5.0	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"

*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/PTB/ExTR17.0046/01](#)

#### Quality Assessment Report:

[DE/BVS/QAR10.0002/13](#)



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## Schedule

### EQUIPMENT:

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

The control panel type 8280/5-\*\*-\*\* consists of the separate certified flameproof empty enclosure type 8280/0-\*\*-2\* (certified under IECEx BVS 17.0078U with the marking Ex db sb IIB Gb) with actuators type 8605\*\*\* (certified under IECEx DEK 11.0080U with the marking Ex db IIC Gb) and optionally can be equipped with terminal or control boxes.

The flameproof enclosure of the control panel, made of stainless steel with flanged joints, pressure reliefs and explosion vents, is intended to be used in hazardous areas for the installation of electrical apparatus such as switching-, control-, regulating-, measuring- and indicating devices.

The electrical connection is made by using Ex d-cable entries or Ex d-conduit entries. Connection is also possible through an Ex e-terminal or control box attached to the Ex d-empty enclosure. The Ex e-enclosures must be separately tested and certified.

For further technical information, notes for the manufacturer and for the user and specific conditions of use see Annex.

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

- Repairs of the flameproof joints must be made in compliance with the structural specifications provided by the manufacturer. Repair in compliance with the values in tables 1 and 2 of IEC 60079-1:2014 is not accepted.
- Control panels may be mounted next to each other, or next to other solid objects, with a minimum distance according to the following table:

	Enclosure size					Minimum distance between explosion vent and other solid objects
20 =	300 mm	x	400 mm	x	200 mm	134 mm
31 =	400 mm	x	600 mm	x	300 mm	100 mm
41 =	600 mm	x	800 mm	x	400 mm	162 mm
62 =	1000 mm	x	1400 mm	x	700 mm	300 mm

- If the control panels are mounted inside other enclosure (e.g. protective housings, electrical cabinets or similar), attention has to be paid to the fact that in the event of an internal explosion, gas streams out of the pressure reliefs. It has to be ensured that the surrounding enclosure is large enough or permeable enough so that there is no noteworthy obstruction of the stream of gas. An obstruction of the gas stream may endanger the Special Protection (e.g. increase of the explosion pressure, higher surface temperatures) and/or the surrounding enclosure (e.g. bursting of the surrounding enclosure).
- The permeability of the pressure reliefs (mesh) is important for the integrity of the Special Protection. Everything which can lower this



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permeability (e.g. soiling, corrosion, excessive moistening, painting, dust layers) has to be prevented on the internal and external surface of the mesh.

The external surface of the mesh is protected by an explosion vent. In the event of a blow-out through the explosion vent or in case of damaged or deformed explosion vent they have to be replaced by identical, new explosion vents.





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

- 1) New enclosure size type 8280/5-62-2\*

**Annex:**

[COCA170039X-01.pdf](#)



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

Electrical Apparatus: Control panel type 8280/5-\*\*-\*\*

### Description of equipment

The control panel type 8280/5-\*\*-\*\* consists of the separate certified flameproof empty enclosure type 8280/0-\*\*-2\* (certified under IECEx BVS 17.0078U with the marking Ex db sb IIB Gb) with actuators type 8605\*\*\* (certified under IECEx DEK 11.0080U with the marking Ex db IIC Gb) and optionally can be equipped with terminal or control boxes.

The flameproof enclosure of the control panel, made of stainless steel with flanged joints, pressure reliefs and explosion vents, is intended to be used in hazardous areas for the installation of electrical apparatus such as switching-, control-, regulating-, measuring- and indicating devices.

The electrical connection is made by using Ex d-cable entries or Ex d-conduit entries.

Connection is also possible through an Ex e-terminal or control box attached to the Ex d-empty enclosure. The Ex e-enclosures must be separately tested and certified.

### Annotation:

The main reason of the type of protection Special Protection according to the standard IEC 60079-33 is because the left and the right side of the flameproof empty enclosure type 8280/0-\*\*-2\* with the certificate number IECEx BVS 17.0078U and the marking Ex db sb IIB Gb provide openings made of metallic meshes as pressure reliefs. These openings are intended to reduce the explosion pressure inside the flameproof enclosure.

For more information about the Special Protection acc. to IEC 60079-33 please see certificate of the flameproof empty enclosure type 8280/0-\*\*-2\* IECEx BVS 17.0078U.

### Nomenclature

8280	/	5	-	**	-	*	*
a	/	b	-	c	-	d	e

- a) Type: 8280  
b) Design: 5 = Control panel "Ex db sb"  
c) Size Code:

Code	Width [mm]	Height [mm]	Depth [mm]	Volume [dm <sup>3</sup> ]
20	300	400	200	24
31	400	600	300	72
41	600	800	400	192
62	1000	1400	700	980

- d) Enclosure material: 2 = Stainless steel  
e) Hinge\*: 0 = without hinge  
1 = with hinge

\* not Ex relevant



### Electrical data

Rated voltage: max. 11 kV AC  
Rated current: max. 1.250 A  
Rated power: see table below  
Connection cross section: max. 300 mm<sup>2</sup>  
PE conductor size: max. 95 mm<sup>2</sup>

The electrical data may be reduced according to the limitations of the installed equipment and components used for the control panel.

### Degree of protection according to IEC 60529

IP66\* \* with separately tested and certified Ex components and Ex equipment with a minimum degree of protection of IP66. In case the Ex components have a lower IP degree of protection, the IP rating of the complete equipment needs to be adjusted.

### Fastening of flameproof empty enclosure

Enclosure size	Cover screws	Max. Torque [Nm]
20 = 300 mm x 400 mm x 200 mm	M 8	22
31 = 400 mm x 600 mm x 300 mm	M 8	22
41 = 600 mm x 800 mm x 400 mm	M 8	22
62 = 1000 mm x 1400 mm x 700 mm	M 12	32

### Ambient temperature

Permissible upper limit of the ambient temperature range for the control panel max. +60 °C

Permissible lower limit of the ambient temperature range for the control panel min. -40 °C

The maximum permissible ambient temperature range of the control panel type 8280/5-\*\*-\*\* can be limited by the maximum permissible service temperature ranges of the separately certified components.

### Notes for the manufacturer of the complete equipment

1. Components attached or installed have to be of a technical standard that complies with the specifications on the cover sheet. They must be suited for the operating conditions, and have a separate examination certificate. The special conditions specified for the components must be complied with and may have to be included in the type test.
2. Cable glands and blanking plugs of a simple design must not be used. If the control panel type 8280/5-\*\*-\*\* is connected by means of a conduit entry fitting which has been approved for this purpose, the required sealing device shall be provided immediately at the enclosure.
3. If cable glands or other components made of metal are installed, they have to have a separate certificate that complies with the requirements specified on the cover sheet and they must be earthed according to the section 15 of the standard IEC 60079-0:2011.





4. Components of the type of protection intrinsic safety "i" are to be installed in such a way that the distances, creepage distances and clearances between intrinsically safe circuits and non-intrinsically safe circuits comply with the requirements of IEC 60079-11.
5. When more than one intrinsically safe circuit is used, the rules for interconnection are to be observed.
6. The characteristic values of the intrinsically safe circuits are to be given by the manufacturer on his own responsibility.
7. The connecting cables of the control panel type 8280/5-\*\*-\*\* shall be fixed and routed so that they will be adequately protected against mechanical damage.
8. If the control panel type 8280/5-\*\*-\*\* is attached to an enclosure of type of protection Increased Safety "e" in accordance with IEC 60079-7:2015, the clearance and creepage distances specified in section 4.3, section 4.4 and table 2 shall duly be complied with.
9. When installing the components in the electrical equipment, measures shall be taken to ensure that the operating temperatures of the components at the place of installation remain within the permitted operation temperature range of the components.
10. Oil-filled circuit-breakers and contactors shall not be used inside the control panel.
11. With the exception of the mounting plate, the content of the control panel type 8280/5-\*\*-\*\* may be placed in any arrangement, provided that an area of at least 20 % of each cross-sectional area remains free to permit an unimpeded gas flow and, therefore, unrestricted development of an explosion. Separate relief areas may be aggregated provided that each area has a minimum distance to the respective neighboring area (in any direction) of 12.5 mm.  
Additionally, a distance of at least 30 mm between the content of the control panel type 8280/5-\*\*-\*\* and the mesh of the pressure reliefs at the side walls has to be provided.
12. The control panel type 8280/5-\*\*-\*\* shall carry the following warnings: "Wait 15 minutes after disconnecting the unit before opening it!" or "Do not open within the potentially explosive area!". The user shall be informed about these conditions in an appropriate form, e.g. with a note included in the operating instructions.
13. The word "Warning" must be added to the text of the warning label.
14. The property class of the fasteners of the enclosure cover has to be at least A\*-80.
15. If the temperature at the input parts exceeds 70 °C, temperature-resistant connecting cables shall be used.

This information must accompany each device in an adequate form.

#### **Notes for the user of the complete equipment**

1. Openings that are not used must be closed in compliance with the specifications of the standards listed on the cover sheet.
2. In order to ensure the ingress protection IP, the cover and the components of the control panel type 8280/5-\*\*-\*\* must be properly installed.
3. The Special Protection "sb" of the flameproof empty enclosure type 8280/0-\*\*-2\* is based on the type of protection Flameproof enclosure "db". So, in addition to the provisions the user has to make which are correlated with the Special Protection "sb", also all provisions which correlate with the "conventional" type of protection Flameproof enclosure "db" must be observed and adhered to (e.g. for selection, installation, inspection, maintenance and repair).





### **Specific Conditions of Use**

1. Repairs of the flameproof joints must be made in compliance with the structural specifications provided by the manufacturer. Repair in compliance with the values in tables 1 and 2 of IEC 60079-1:2014 is not accepted.
2. Control panels may be mounted next to each other, or next to other solid objects, with a minimum distance according to the following table:

Enclosure size	Minimum distance between explosion vent and other solid objects
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3. If the control panels are mounted inside other enclosure (e.g. protective housings, electrical cabinets or similar), attention has to be paid to the fact that in the event of an internal explosion, gas streams out of the pressure reliefs. It has to be ensured that the surrounding enclosure is large enough or permeable enough so that there is no noteworthy obstruction of the stream of gas. An obstruction of the gas stream may endanger the Special Protection (e.g. increase of the explosion pressure, higher surface temperatures) and/or the surrounding enclosure (e.g. bursting of the surrounding enclosure).
4. The permeability of the pressure reliefs (mesh) is important for the integrity of the Special Protection. Everything which can lower this permeability (e.g. soiling, corrosion, excessive moistening, painting, dust layers) has to be prevented on the internal and external surface of the mesh.  
The external surface of the mesh is protected by an explosion vent. In the event of a blow-out through the explosion vent or in case of damaged or deformed bursting discs they have to be replaced by identical, new explosion vents.