



# 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)

### Ex COMPONENT CERTIFICATE

Certificate No.:	IECEX BVS 17.0078U	Issue No: 3	<b>Certificate history:</b> Issue No. 3 (2018-07-26) Issue No. 2 (2018-01-29) Issue No. 1 (2017-12-18) Issue No. 0 (2017-10-05)
Status:	Current	Page 1 of 4	
Date of Issue:	2018-07-26		
Applicant:	R. STAHL Schaltgeräte GmbH Am Bahnhof 30 74638 Waldenburg Germany		
Ex Component:	Empty enclosure type 8280/0-**-2***.*		

This component is NOT intended to be used alone and requires additional consideration when incorporated into other equipment or systems for use in explosive atmospheres (refer to IEC 60079-0).

Type of Protection: **Equipment protection by flameproof enclosures "d", Equipment protection by special protection "s"**

Marking:  
Ex db sb IIB Gb

Approved for issue on behalf of the IECEx  
Certification Body:


Jörg Koch

Position:

Head of Certification Body

Signature:  
(for printed version)

Date:

  
26.7.18

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:

DEKRA EXAM GmbH  
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 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 Component 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 Ex Component 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 Edition:7.0	Explosive atmospheres - Part 0: Equipment - General requirements
IEC 60079-1 : 2014-06 Edition:7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-33 : 2012 Edition:1.0	Explosive atmospheres – Part 33: Equipment protection by special protection "s"

*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 Ex Component listed has successfully met the examination and test requirements as recorded in*

Test Report:

[DE/BVS/ExTR17.0072/03](#)

Quality Assessment Report:

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



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## Schedule

Ex Component(s) covered by this certificate is described below:

### Description

The empty enclosures type 8280/0-\*\*-2\*\*\*-\* are designed in an explosion protection principle based on the type of protection Flameproof Enclosure.

The rectangular enclosures are closed by a cover.

The left and the right side walls of the enclosures are equipped with special woven wire elements (grid plates) which are used as pressure reliefs to reduce the pressure which may be caused by an internal explosion. To protect the woven wire elements against soiling they are covered by explosion vents.

The bottom wall is equipped with threaded bores for cable glands or conduit entries which are separately tested and certified.

Optionally the bottom wall is prepared for the mounting of terminal boxes. In this case the threaded bores may be equipped with bushings.

The cover may be equipped with threaded bores for pilot light attachments, rotary actuators and / or push buttons type 8605\*\*\* (according to IECEx DEK 11.0080U with the marking Ex db IIC Gb) and / or with windows.

At the rear wall a mounting plate is provided for the mounting of built-in components.

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

None

### Subject and type

See Annex

### Parameters

See Annex

### SCHEDULE OF LIMITATIONS:

See Annex



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

- 1 The covers of the enclosures can also be equipped with windows.
- 2 The covers of the enclosures can be fixed
  - by screws (as before) or
  - by brackets or
  - by a combination of screws and brackets (only for enclosures with double cover).The number and the location of the screws are modified.
- 3 The enclosures of size 62 can optionally be built with the following modifications:
  - 3.1 The single cover can be replaced by a frame with two smaller covers (double cover).
  - 3.2 The mechanical design of the left and the right side walls of the enclosures which are equipped with grid plates is modified: Each grid plate is replaced by two smaller grid plates. The design of the enclosure wall is modified to achieve the same mechanical strength as before with smaller wall thicknesses.
  - 3.3 The grid plates can be made of three layers (two additional layers), two layers (one additional layer) or one layer (no additional layer).

## Annex:

[BVS\\_17\\_0078U\\_RStahl\\_Annex\\_issue3.pdf](#)

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**Subject and type**

Empty enclosures type

8280	/	0	-	**	-	2	*	*	*	-	*
a		b		c		d	e	f	g		h

a	Type	8280
b	Design	0 = Empty enclosure "Ex db sb"
c	Enclosure size	20 = 300 mm x 400 mm x 200 mm 31 = 400 mm x 600 mm x 300 mm 41 = 600 mm x 800 mm x 400 mm 62 = 1000 mm x 1400 mm x 700 mm
d	Enclosure material	2 = Stainless steel
e	Cover	0 = Without hinges 1 = With hinges
f	Cover version	1 = single cover 2 = double cover (only for size 62)
g	fastener	1 = screws 2 = locking brackets 3 = screws and locking brackets
h	temperature version	0 = basis version, only one welded grid plate 1 = one additional grid plate 2 = two additional grid plates

**Parameters**

Rated voltage	max. 11 kV
Rated current	max. 1250 A
Rated cross section	max. 300 mm <sup>2</sup>
Permissible upper limit of the ambient temperature range for the empty enclosures	max. 60 °C
Permissible lower limit of the ambient temperature range for the empty enclosures	max. -40 °C

**Correlation of ambient temperature range, internal power dissipation and surface temperatures**

Enclosure size	Layers of additional grid plates	Upper limit of the ambient temperature range								
		+40 °C			+50 °C			+60 °C		
		Max. permissible power dissipation of internal fixtures [W] *								
		T5	T4	T3	T5	T4	T3	T5	T4	T3
20	1	40	140	340	10	110	310	n/a	80	280
31	1	20	200	620	n/a	150	550	n/a	100	480
41	1	60	350	1150	n/a	250	1030	n/a	160	850
62	2	n/a	800	3200	n/a	500	2800	n/a	200	2500
	1	n/a	n/a	2100	n/a	n/a	1700	n/a	n/a	1350

\* The "max. permissible power dissipation" in the table is not a "rated" power dissipation. The manufacturer of the complete enclosure has to ensure that the power dissipation of his built-in components will not exceed the value from the table even under overload or malfunction conditions.



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**Annotation:**

These enclosures provide pressure reliefs. In the event of an internal explosion hot gases pass through these pressure reliefs. For the specification of temperature class it is critical to take the influence of such hot gases into account (see IEC 60079-1, clauses 15.4.3). The values in the table above do include this influence of hot gases.

The specification of the temperature class is not subject of this Certificate for the empty enclosures; it has to be subject of the subsequent Certificate for the complete apparatus (Ex-equipment). For this specification of the temperature class the values from the table above can be used.

But this table does not supersede an examination of the temperatures during the test and certification of the complete apparatus. Depending on the configuration of the complete apparatus additional parameters may have to be considered during this examination (e.g. limits of the permissible service temperatures of internal fixtures and attached components, influence of other enclosures attached to or adjacent to these enclosure and so on).

Permissible service temperatures for the pilot light attachments, rotary actuators and / or push buttons type 8605*** according to IECEx DEK 11.0080U	-60 °C up to 130 °C
Permissible service temperatures for the windows incl. cement	-60 °C up to 100 °C

**Schedule of Limitations”:**

- 1 Schedule of Limitations to be regarded by the manufacturer of the complete equipment
  - 1.1 Information concerning the maximum number of apertures, their maximum sizes and their positions is given in drawing number 8280 0 000 008 0.  
The marking of the complete equipment shall include the identification of the thread type and size as required in IEC 60079-1:2014, clause 13.2.
  - 1.2 Oil-filled circuit-breakers and contactors shall not be used inside the empty enclosures.
  - 1.3 The upper limit of the ambient temperature range shall not exceed 60 °C and the lower limit of the ambient temperature range shall not go below -40 °C.
  - 1.4 The content of the Ex component enclosure equipment may be placed in any arrangement, provided that, with the exception of the mounting plate, 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 dimension in any direction of 12.5 mm.  
Additionally a distance of at least 30 mm between the content of the Ex component enclosure equipment and the mesh of the pressure reliefs at the side walls has to be provided.
  - 1.5 The permissible service temperatures of the pilot light attachments, rotary actuators and / or push buttons type 8605\*\*\* according to IECEx DEK 11.0080U is limited to -60 °C up to 130 °C.
  - 1.6 The permissible service temperatures of the windows is limited to -60 °C up to 100 °C.
- 2 Schedule of Limitations to be regarded by the user of the complete equipment (to be inserted in the instructions)
  - 2.1 The widths of the flameproof joint is longer and the gap is smaller than required by IEC 60079-1:2014. For information of the dimensions of the flameproof joints contact the manufacturer.
  - 2.2 The property class of the fasteners of the cover has to be at least A\*-80.

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- 2.3 During installation and use a minimum distance according to the following table has to be ensured between the explosion vents and other solid objects.

Enclosure size	Minimum distance between explosion vent and other solid objects
20	134 mm
31	100 mm
41	162 mm
62	300 mm

- 2.4 If the enclosures 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).
- 2.5 The permeability of the pressure reliefs (grid plates) 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 grid plates.  
The external surface of the grid plates is protected by an explosion vent. In the event of a blow-out of the explosion vents or in case of damaged or deformed explosion vents they have to be replaced by identical, new explosion vents.
- 2.6 The special protection "sb" of these empty enclosures 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 are correlate with the "conventional" type of protection Flameproof Enclosure "db" must also be observed and adhered to (e.g. for selection, installation, inspection, maintenance and repair).