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

Ex COMPONENT CERTIFICATE

Certificate No.: **IECEx PTB 09.0047U**

Page 1 of 4

Certificate history:
Issue 3 (2017-08-23)
Issue 2 (2012-10-08)
Issue 1 (2011-03-15)
Issue 0 (2009-11-26)

Status: **Current**

Issue No: 4

Date of Issue: 2020-06-17

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

Ex Component: Empty Enclosure, type 8150/0-****-****-***-****

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: **Increased Safety "eb", Protection by Enclosure "tb"**

Marking: Ex eb IIC Gb
Ex tb IIIC Db

Approved for issue on behalf of the IECEx Certification Body: **Dr. Ing. Detlev Markus**

Position: **Head of Department "Explosion Protection in Energy Technology"**

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 www.iecex.com or use of this QR Code.

Certificate issued by:

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

Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin

IECEx Certificate of Conformity

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

Additional manufacturing locations:

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 60079-31:2013 Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2

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/PTB/ExTR09.0054/04

Quality Assessment Report:

DE/BVS/QAR10.0002/15

IECEx Certificate of Conformity

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

Description

The empty enclosures type 8150/0-****-****-***-**** made of stainless steel or sheet steel level of protection increased safety “eb”, are used for the installation of Ex components or components. The enclosures can be provided with an outer coating. The empty enclosures can be combined to give, for example, larger distribution units or as connection chamber enclosure for flameproof control panels. The cover is attached with screws and distance sleeves in blind rivet nuts or by cam locks and single continuous hinges or single screw able hinges (only for length 400 mm maximum). The enclosure can be carried out as two door or single door version.

The empty enclosures are intended for use in hazardous areas of Zone 1, Zone 2, Zone 21 and Zone 22, for example in the chemical and petrochemical industries.

Technical Data and Nomenclature see Attachment.

SCHEDULE OF LIMITATIONS:

Outer coating (Polyester) maximum 200 µm.

The empty enclosure with a coating must not be used in areas affected by charge-producing process, mechanical friction and separation processes, electron (e.g. in the vicinity of electrostatic coating equipment), and pneumatically conveyed dust. This information has to be included into all of this certificate based IECEx-certificates as “specific conditions of use”. Theses certificates should be marked accordingly with the symbol “X” attached to the certification number or a warning marking must be placed on the enclosure.

Service temperatures see attachement.

IECEx Certificate of Conformity

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
1) New test according to IEC 60079-0:2017, IEC 60079-7:2017 and IEC 60079-31:2013.
2) Addition of tapered cover for clean room empty enclosure (Drawing 8150 0 000 083 0-rev00).
3) Addition of reduced size doors for empty enclosure (Drawing 8150 0 000 082 0-rev00).
4) Addition of screw hinge for the empty enclosure length up to 400 mm max.

Annex:

COCA090047U-04_1.pdf

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

Equipment: Empty enclosure type 8150/0-****-****-***-****

Description:

The empty enclosure type 8150/0-****-****-***-**** made of stainless steel or sheet steel of protection increased safety “eb” are used for the installation of Ex components. The enclosures can be provided with an outer coating. The empty enclosures can be combined to give, for example, larger distribution units or as a connection chamber enclosure for flameproof control panels. The cover is attached with screws and distance sleeves in bind rivet nuts or by cam locks and continuous hinges or single screw able hinges (only for length 400 mm maximum). The enclosure can carried out as two door or single door version. The size of doors can be reduced compared to standard version, but the distance between screws and cam locks shall remain unchanged. The clean room enclosure consists of standard cover or tapered cover.

The empty enclosures are intended for use in hazardous areas of Zone 1, Zone 2, Zone 21 and Zone 22, for example in the chemical and petrochemical industries.

Nomenclature:

8150	/	0	-	****	-	****	-	***	-	*	*	*	*
a		b		c		d		e		f	g	h	i

a) Type series

b) Enclosure Type:
0 – Empty enclosure

c) Enclosure size, width [mm]
min. 0100
max. 1200

d) Enclosure size, height [mm]
min. 0100
max. 2200

e) Enclosure size, depth [mm]
min. 060
max. 900

f) Material:
1 – 1.0330 (wall thickness 1.5 mm…..2 mm)
2 – 1.4301, 304, 304 S17 (wall thickness ≤ 2 mm)
3 – 1.4404, 316 L, 316 S11 or 1.4571 316 Ti, 320 S18 (wall thickness ≤ 2 mm)
4 – 1.0330 (wall thickness ≤ 3 mm)
5 – 1.4301, 304, 304 S17 (wall thickness ≤ 3 mm)
6 – 1.4404, 316 L, 316 S11 or 1.4571, 316 Ti, 320 S18 (wall thickness ≤ 3 mm)

g) Surface:
1 – Powder coated
2 – Sanded, with grain 240

4 – Electro polished

h) Design of Cover:
1 – Screwed cover
2 – With hinge and cam lock (rotary latches)
3 – With hinge and screws
4 – With continuous hinge and cam lock (rotary latches)
5 – With hinge and cam lock (rotary latches) – two door version

i) Temperature range of Gasket:
1 – from -60 °C to 135 °C (Gasket 1 – D0067)
2 – from -55 °C to 85 °C (Gasket 2 – D0068)
3 – from -25 °C to 76 °C (Gasket 3 – D0069)

Technical data:

Sizes	Width	Height	Depth
Min.	100 mm	100 mm	60 mm
Max.	1200 mm	2200 mm	900 mm

Service temperature:

Enclosure Size	Service temperature	Cover Gasket
8150/0-****-****-***-**1 8150/0-****-****-***-**3	-60 °C ≤ T_S ≤ 135 °C	Seal no. 1 (D0067)
	-55 °C ≤ T_S ≤ 85 °C	Seal no. 2 (D0068)
	-25 °C ≤ T_S ≤ 76 °C	Seal no. 3 (D0069)
8150/0-****-****-***-**2 8150/0-****-****-***-**4 8150/0-****-****-***-**5 (with cam locks)	-60 °C ≤ T_S ≤ 100 °C	Seal no. 1 (D0067)
	-55 °C ≤ T_S ≤ 85 °C	Seal no. 2 (D0068)
	-25 °C ≤ T_S ≤ 76 °C	Seal no. 3 (D0069)

Maximum number of threaded holes:
The maximum number of cable glands per enclosure side or flange is determined as follows:

Available useful area (useful area ~ length x height of the enclosure side minus approx. 3.5 mm of edge width) divided by the required space or area of the cable glands.

The required space for each cable gland is given by:

Width across corners + surcharge for tool.

The table shows an example of the required space and the minimum center to center distance of cable glands type 8161:

Minimum center to center distance between entries in mm								
Entry size	≤ 12	≤ 16	≤ 20	≤ 25	≤ 32	≤ 40	≤ 50	≤ 63
≤ 12	21,0							
≤ 16	23,5	26,0						
≤ 20	26,8	28,0	30,0					
≤ 25	30,9	31,5	32,5	35,0				
≤ 32	37,4	37,8	38,3	39,5	44,0			
≤ 40	46,2	46,4	46,6	47,3	49,5	55,0		
≤ 50	55,6	55,7	55,8	56,1	57,3	60,0	65,0	
≤ 63	69,8	69,8	69,9	70,1	70,6	69,5	74,5	84,0
Required space for each cable gland in mm²								
-	315,0	491,0	685,0	990,0	1560,0	2420,0	3425,0	5155,0
Minimum width between holes in mm								
	9,0	10,0	10,0	10,0	12,0	15,0	15,0	21,0

Enclosure with reduced size doors:
Enclosure can be equipped with reduced door size compared to standard version, without changing the distance between fixing screws, hinges and cam locks. The door frame of the enclosure can be extended up to 150 mm.

Maximum number of threaded holes:
Available useful area (useful area ~ length x height of the enclosure side minus approx. 3.5 mm of edge width) divided by the required space or area of the cable glands.

The required space for each cable gland is given by:
Width across corner + additional space for tool

The table shows an example of the required space for the cable gland:

	Threaded diameter of cable gland (≤ … mm)							
	≤ 12	≤ 16	≤ 20	≤ 25	≤ 32	≤ 40	≤ 50	≤ 63
Required space for each cable gland in mm²	315	491	685	990	1560	2420	3425	5155

Tightening torque for all screwable covers: 4.5 Nm

Notes for manufacturing and operation:

1. The empty enclosure with a coating of polyester powder must not be used in areas affected by charge producing processes, mechanical friction and separation processes, electron emission (e.g. in the vicinity of electrostatic coating equipment), and pneumatically conveyed dust.

2. Components attached or installed like bushings, cable entry fittings, connectors, terminal strips, blanking plugs, PE bushings 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. This also applies to components already specified in the technical description.

3. Only the number and dimensions of the openings, bushings, cable entry fittings, connectors and blanking plugs that are specified in the technical drawings and technical documents of the manufacturer are allowed to be installed.

4. In order to ensure the ingress protection IP, the cover of the empty enclosure, the flange enclosure, the sealing frame and other Ex-components must be properly installed and with the appropriate torque.

5. Installation of electrical equipment requires a further assessment by an ExCB.

Schedule of Limitations:

Outer coating (Polyester) maximum 200 µm.

The empty enclosure with a coating must not be used in areas affected by charge-producing process, mechanical friction and separation processes, electron (e.g. in the vicinity of electrostatic coating equipment), and pneumatically conveyed dust. This information has to be included into all of this certificate based IECEx-certificates as “specific conditions of use”. Theses certificates should be marked accordingly with the symbol “X” attached to the certification number or a warning marking must be placed on the enclosure.

Service temperature

Enclosure Size	Service temperature	Cover Gasket
8150/0-****-****-***-**1 8150/0-****-****-***-**3	-60 °C ≤ T_S ≤ 135 °C	Seal no. 1 (D0067)
	-55 °C ≤ T_S ≤ 85 °C	Seal no. 2 (D0068)
	-25 °C ≤ T_S ≤ 76 °C	Seal no. 3 (D0069)
8150/0-****-****-***-**2 8150/0-****-****-***-**4 8150/0-****-****-***-**5 (with cam locks)	-60 °C ≤ T_S ≤ 100 °C	Seal no. 1 (D0067)
	-55 °C ≤ T_S ≤ 85 °C	Seal no. 2 (D0068)
	-25 °C ≤ T_S ≤ 76 °C	Seal no. 3 (D0069)

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