



(1) **EU-TYPE EXAMINATION CERTIFICATE**
(Translation)

(2) Component Intended for Use in Potentially Explosive Atmospheres
Directive 2014/34/EU

(3) EU-Type Examination Certificate Number:

PTB 09 ATEX 1107 U

Issue: 3

(4) Component: Empty enclosure type 8150/0-****_****_***_****

(5) Manufacturer: R. STAHL Schaltgeräte GmbH

(6) Address: Am Bahnhof 30, 74638 Waldenburg, Germany

(7) This component and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 17 of the Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this component has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential test report PTB Ex 24-11213.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN IEC 60079-0:2018, EN 60079-7:2015+A1:2018, IEC 60079-31:2022-01

(10) The sign "U" placed behind the certificate number indicates that this certificate should not be confounded with certificates issued for equipment or protective systems. This partial certification may be used as a basis for certification of an equipment or protective systems.

(11) This EU-Type Examination Certificate relates only to the design and construction of the specified component in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this component. These are not covered by this certificate.

(12) The marking of the component shall include the following:

 **II 2 G Ex eb IIC Gb or II 2 G Ex eb IIB Gb or II 2 G Ex eb IIA Gb**

 **II 2 D Ex tb IIIC Db**

Konformitätsbewertungsstelle, Sektor Explosionsschutz

Braunschweig, April 30, 2024

On behalf of PTB:


Dr.-Ing. D. Markus
Direktor und Professor



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EU-Type Examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

(13)

SCHEDULE

(14) **EU-Type Examination Certificate Number PTB 09 ATEX 1107 U, Issue: 3**

(15) Description of Component

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 or inner coating. The cover is attached with screws and distance sleeves in blind rivet nuts or by cam locks and continuous hinges or single screw able hinges (only for length 400 mm maximum). The enclosure can carry out as single door, two or three 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.

Technical data

Sizes	Width	Height	Depth
Min.	100 mm	100 mm	60 mm
Max.	2420 mm	2200 mm	1200 mm

Service temperature

Enclosure Size	Ambient Temperature	Cover Gasket
8150/0-****-****-***-**1	$-60\text{ °C} \leq T_s \leq 135\text{ °C}$	Gasket no. 1 (D0067)
8150/0-****-****-***-**3	$-55\text{ °C} \leq T_s \leq 85\text{ °C}$	Gasket no. 2 (D0068+D0070+D0315)
	$-40\text{ °C} \leq T_s \leq 60\text{ °C}$	Gasket no. 4 (D0172)
8150/0-****-****-***-**2	$-60\text{ °C} \leq T_s \leq 100\text{ °C}$	Gasket no. 1 (D0067)
8150/0-****-****-***-**4	$-55\text{ °C} \leq T_s \leq 85\text{ °C}$	Gasket no. 2 (D0068+D0070+D0315)
8150/0-****-****-***-**5 (with cam locks)	$-40\text{ °C} \leq T_s \leq 60\text{ °C}$	Gasket no. 4 (D0172)

For PE-Assemblies:

-50 °C to +100 °C (for gasket D0187)

-60 °C to +100 °C (for gasket D0097, D0216 and D0217)

For sealing frame:

-60 °C to +85 °C (for gasket option no. 1 D0075)

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For screwed metal labels:

-60 °C to +80 °C (for adhesive D0213)

-60 °C to +100 °C (for adhesive D0212, D0143, D0315, also valid for without adhesive)

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 mm ²								
-	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

Ingress protection according to EN IEC 60079-0, EN 60079-7 and EN 60079-31

IP66 for all other enclosure versions

IP66 for enclosure combination (Drawing 8150 0 000 070 0)

IP66 for sealing frames (for gasket D0075)

IP66 for tapered cover for clean room empty enclosure only with cover gasket D0067 (Drawing 8150 0 000 083 0)

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IP66 for earth assemblies type BG70, BG85, BG210, BG 237 and BG238 with gaskets D0097, D0187 or D0216 (Drawing 8150 0 000 146 0)

IP65 for earth assemblies type BG245 with gaskets D0097, D0187, D0216 or D0217 (Drawing 8150 0 000 146 0)

Screwed metal label with adhesive as sealing material with two M3 screws and cap nut (cap nut on the outside):

IP66 for adhesive D0143 or D0315 (Drawing 8150 0 000 133 0)

IP64 for adhesive D0212 or D0213 (Drawing 8150 0 000 133 0)

IP64 for screwed metal label without adhesive with two M3 screws, spring washer and nut (nut on the inside) (Drawing 8150 0 000 133 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 ($\leq \dots$ mm)							
	≤ 12	≤ 16	≤ 20	≤ 25	≤ 32	≤ 40	≤ 50	≤ 63
Required space for each cable gland in mm ²	315	491	685	990	1560	2420	3425	5155

Tightening torque for all screwable covers and flange for enclosure combination: 4.5 Nm

Tightening torque for sealing frame M5: 2.7 Nm

Tightening torque for screws M3 of screwed and glued metal labels: 0.6 Nm

Tightening torque for earth assemblies:

Type	Tightening torque
BG70	for M6 without conductor connection: 1.2 Nm for M6 with conductor connection: 4.7 Nm for M33 mounting: 20 Nm
BG85	for M4 without conductor connection: 1.4 Nm for M6 without conductor connection: 1.2 Nm for M6 with conductor connection: 4.5 Nm for M10 mounting: 10 Nm

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BG210	if cable is clamped under/cable plug: 2.5 Nm for nut: 20 Nm
BG237	for M8 without conductor connection: 4 Nm for M8 with conductor connection: 16 Nm for M33 mounting: 20 Nm
BG238	for M10 without conductor connection: 4 Nm for M10 with conductor connection: 16 Nm for M33 mounting: 20 Nm
BG245	without connection: 4 Nm with conductor connection: 16 Nm for mounting: 20 Nm

Type Code

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

a) Type series

b) Assembly (only for internal use)

/ – empty enclosure

A – For internal use

Enclosure Type:

0 – Empty enclosure

c²) Enclosure size, width [mm]

min. 0100

max. 2420

d³) Enclosure size, height [mm]

min. 0100

max. 2200

e) Enclosure size, depth [mm]

min. 060

max. 1200

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)

g¹) Surface:

1 – Powder coated or wet coated

3 – Sanded or brushed, with grain 240

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4 – Electro polished

h¹⁾ 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
- 6 – With hinge and cam lock (rotary latches) – three door version

i¹⁾ Temperature range of Cover Gasket:

- 1 – from -60 °C to 135 °C (Gasket 1 – D0067)
- 2 – from -55 °C to 85 °C (Gasket 2 – D0068)
- 4 – from -40 °C to 60 °C (Gasket 4 – D0172)

- 1) Not relevant for Ex-certification evaluation only equipment should be used what described in the description.
- 2) The size of the cover is limited to 1200 mm width and a height of 2200 mm. Therefore enclosures larger than 1200 mm width are only for multi-door versions.
- 3) Is an enclosure equipped with a floor stand then the height of the floor stand is not to add to the enclosure size.

(16) Test report PTB Ex 24-11213

(17) Notes for manufacture, installation and operation

Outer coating (Polyester) maximum 200 µm for gas group IIC.

Outer coating (Polyester) maximum 2 mm for gas group IIB, IIA.

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.

Service temperature

Enclosure Size	Ambient Temperature	Cover Gasket
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	-40 °C ≤ T _s ≤ 60 °C	Gasket no. 4 (D0172)
8150/0-****_****_***_**2	-60 °C ≤ T _s ≤ 100 °C	Gasket no. 1 (D0067)
8150/0-****_****_***_**4	-55 °C ≤ T _s ≤ 85 °C	Gasket no. 2 (D0068+D0070+D0315)
8150/0-****_****_***_**5 (with cam locks)	-40 °C ≤ T _s ≤ 60 °C	Gasket no. 4 (D0172)

For PE-Assemblies:

-50 °C to +100 °C (for gasket D0187)

-60 °C to +100 °C (for gasket D0097, D0216 and D0217)

For sealing frame:

-60 °C to +85 °C (for gasket option no. 1 D0075)

For screwed metal labels:

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-60 °C to +100 °C (for adhesive D0212, D0143, D0315, also valid for without adhesive)

Separately certified cable transit devices can be mounted if the schedule of limitations have been considered. If welded frames are used, the weld must be done in the same quality like the corners of the enclosure and with the same material for the weld.

The horizontal or vertical force must be limited to 250 N per hinge up to 3 hinges over 4 hinges the force must be limited to 200 N per hinge.

The use of this component requires a further assessment by an ExCB.

Notes for the safe operation

1. 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.
2. 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.
3. 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.

(18) Essential health and safety requirements

Met by compliance with the aforementioned standards.

The standard IEC 60079-31:2022-01 is not yet listed as a harmonized European standard in the Official Journal of the EU. However, compliance with the essential health and safety requirements of Directive 2014/34 / EU is ensured since the IEC 60079-31:2022-01 standard has at least the same level of protection as the harmonized predecessor standard EN 60079-31:2014.

Konformitätsbewertungsstelle, Sektor Explosionsschutz
On behalf of PTB:

Braunschweig, April 30, 2024


Dr.-Ing. D. Markus
Direktor und Professor

