

Scope :

USER MANUAL
DE8-BC Ex db / tb Flameproof Enclosures,
Component Certified

BARTEC

Date:
20.02.2023

Ver.:
4

QA Code:
5

Checked by:
E.T.

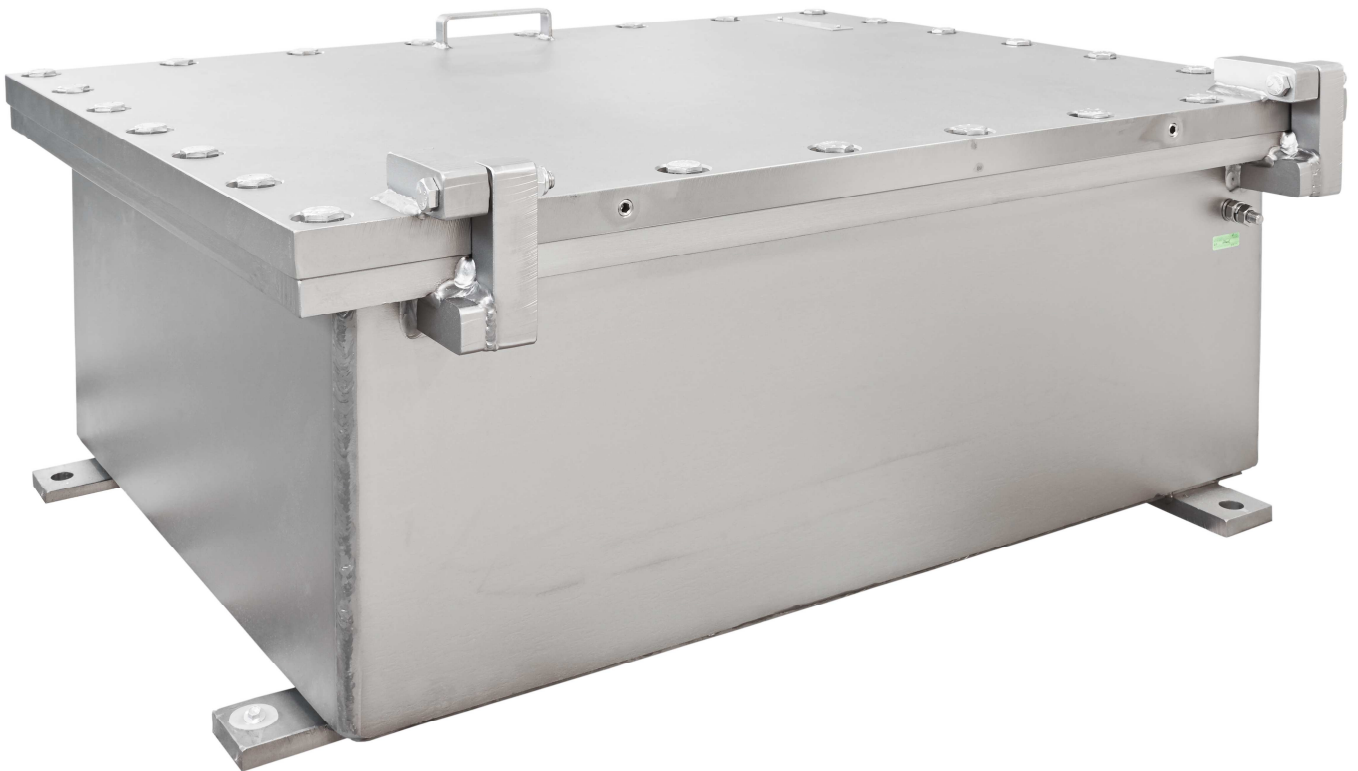
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Flameproof enclosures

DE8 – BC ...



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The DE8-BC range of Ex d enclosures are rugged and designed for harsh environment like:

- Oil and gas industry
- Chemical industry
- Pharmaceutical
- Industry
- Agribusiness

They are designed for use in potentially explosive atmospheres and certified according to the requirements of the ATEX Directive and IECEx.

Parameters relating to safety

Maximum current : 1000 A
Maximum DC voltage : 1000 V
Maximum AC voltage : 11000 V

Marking

Ex db IIB Gb

Ex tb IIIC Db

Tamb. : -40°C *, to +60°C

IP66

***except enclosures type DE8-BC75D and DE8-BC86D which are only certified to -20°C**

The enclosures listed in this manual are certified:

II 2 G/D (ATEX)

Gb / Db (IECEx)

The certificate numbers are :

INERIS 09ATEX9017U

IECEx INE 13.0001U

They are made in accordance with the following standards:

Zones due to gases, vapors and mists

EN IEC 60079-0:2018

IEC 60079-0:2017

EN 60079-1:2014

IEC 60079-1:2014

Zones for dusts

EN IEC 60079-0:2018

IEC 60079-0:2017

EN 60079-31:2014

IEC 60079-31:2013

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Example of the type label that shall be mounted inside the enclosure:



Description of the component


Our DE8-BC range of flameproof enclosures is available in many sizes. They are made of welded and machined acid resistant stainless steel 316L or painted carbon steel. Each is expected to receive electrical components inside, making service and maintenance easy. They can also be customized to meet each individual specific need. If necessary, multiple enclosures can be assembled on a frame with or without combined Ex e junction boxes.

The enclosures are delivered with Ex Component certificate (U-certificate) to be used as basis for further certification of an Ex Equipment or Protective System.

Meaning of symbols

 This symbol means a hazard and precaution to be taken

Safety instructions

 The device must be installed, used and maintained in accordance with the following standards:

- IEC/EN 60079-0 (Explosive atmospheres - Part 0: Equipment - General requirements)
- IEC/EN 60079-1 (Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d")
- IEC/EN 60079-14 (Explosive atmospheres - Part 14: Electrical installations design, selection and erection)
- IEC/EN 60079-17 (Explosive atmospheres - Part 17: Electrical installations inspection and maintenance)
- IEC/EN 60079-31 (Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t")
- Decrees, orders, laws, directives, circulars, applications, standards, state of art and other documentation relating to its installation site

 **It is forbidden to change anything without the prior written consent of BARTEC AS unless the enclosure undergoes a full Equipment certification at a Notified Body/Certification Body.**

 **We cannot accept any responsibility for failure to observe these regulations:**

- Make sure of the compatibility between the information on the nameplate, the explosive atmosphere present, the area of use and ambient temperatures on surfaces
- Any damage on the device can cause the flameproof protection to become ineffective

- The installation of the enclosure must be done in the state of the art in the technical domains and only by qualified, competent and empowered personnel
- A defective or abnormal use as well as the non compliance with the instructions of the present document exclude any clause of guarantee and do not engage our responsibility
- The use of the device in case of excessive deposits of dusts superior at 50mm according to EN / IEC 60079-31 is not authorized
- Liability for manufacturer traceability is ensured only at the first known delivery destination (serial number specified on the certification label)
- It is also required to observe the regulations of the country of use
- The doors of the DE8-BC enclosures are relatively heavy, to avoid sagging of the doors, potentially making the door not align with the flange of the enclosure, the doors shall be closed and secured during any moving and shifting of the enclosures. It is also strongly advisable to close and secure the doors when the daily working shift is over
- The flame paths of the doors and of the flanges of the enclosures must be well protected whilst work is performed and ongoing inside the enclosures
- Make sure that upon any movement, shifting or transportation of the DE8-BC enclosures, that all the lid bolts are fitted and securely fastened
- The doors of the DE8-BC enclosures shall not be removed unless this is done in agreement with BARTEC AS. The doors are adjusted individually and removal of them may impair the adjustment
- The adjustable cone, when installed, inside the door shall not be adjusted unless this is done in agreement with BARTEC AS. The doors are adjusted individually and removal of them may impair the adjustment

Transport, storage

- Check if the product has been damaged during transport. If any damage is observed, do the statutory reserves to the carrier
- Do not put damaged products into service

Packaging	Location storage	Duration storage
Open	In a covered location, clean (without contact with external substances) and closed with temperature a constant humidity (-40°C < T < +70°C). Shielded from important temperature variations	2 years and more with regular inspection (cleanliness and mechanical damage)

Before starting

- Make sure the unit has been correctly settled and not damaged
- The device may include any foreign body and no part is damaged
- The cable gland(s) must be tightened (see description of the gland torque)

Maintenance

The maintenance and repairs works on devices must be made only by authorized and trained persons for that purpose.

Before any work the devices must be switched off. In addition:

- Prevent and avoid any formation of layers of dusts: make a periodic cleaning with a wet cloth
- Do not take apart the command and control units (push buttons, pilot light, etc.)

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It is advisable that the following checks must be made at least once a year:

- The external equipment and surfaces must not be damaged
- The cable entry devices and blanking plugs must be securely fastened
- Prior to closing, check the cleanliness of the flame path (machined part of the cover in contact with the machined part of the box). Grease these 2 parts with a thin layer of grease resistant to oxidation (acid free white Vaseline or Gleitmo 165). Check the gasket for any damage. Replace if damaged. Grease the gasket using acid free Vaseline.
- Screw the cover on the box using the original bolts as listed in the table below. Ensure that the bolts are clean and are greased (grease like Gleitmo 165). Ensure that all the bolts are fitted. Torque all bolts to the correct torque as listed in the table below. After torquing the bolts, check with a shim of 15/100 mm (4/100mm for IIB + H2) all around the flame path that the shim cannot penetrate the enclosure. Its non-penetration on full perimeter is the insurance of the conformity of the product with the standards

Technical features

References		External dimensions (mm)			Internal volume dm ³ / liters	Maximum power whatever the content is W Max.	Dimensions of mounting plate (mm)			Fixing (mm)			Bolts in lid Qty x Ø-L	Weight
		A	B	C			H	L	Int c	H1	L1	ØD holes		
DE8BC	32	338	438	261	17	250	300	200	192	234	326	Ø12	12 x M12-35	74
DE8BC	32D	338	438	471	31	250	300	200	192	234	326	Ø12	12 x M12-35	87
DE8BC	351	358	478	261	20	250	350	225	192	274	346	Ø12	14 x M12-35	85
DE8BC	351D	358	478	471	33	250	350	225	192	274	346	Ø12	14 x M12-35	98
DE8BC	43	438	538	321	40	380	400	300	252	334	526	Ø12	14 x M12-35	122
DE8BC	43D	438	538	472	63	380	400	300	403	334	526	Ø12	14 x M12-35	145
DE8BC	44	548	548	323	52	380	400	400	252	334	526	Ø12	16 x M14-40	155
DE8BC	44D	548	548	476	82	380	400	400	405	334	526	Ø12	16 x M14-40	182
DE8BC	54	548	648	323	63	410	500	400	252	414	526	Ø20	18 x M14-40	180
DE8BC	54D	548	648	476	100	410	500	400	405	414	526	Ø20	18 x M14-40	204
DE8BC	64	548	748	323	75	470	600	400	252	514	526	Ø20	20 x M14-40	205
DE8BC	64D	548	748	476	118	470	600	400	405	514	526	Ø20	20 x M14-40	238
DE8BC	75	668	868	332	107	600	700	500	253	614	630	Ø20	24 x M14-50	319
DE8BC	75D	668	868	486	169	600	700	500	405	614	630	Ø20	24 x M14-50	361
DE8BC	86	768	968	378	167	600	800	600	297	714	734	Ø20	26 x M16-50	447
DE8BC	86D	768	968	493	223	600	800	600	407	714	734	Ø20	26 x M16-50	510
DE8BC	107	868	1168	400	236	1200	1000	700	309	908	868	Ø20	30 x M16-50	660
DE8BC	108	868	1168	436	275	1400	1000	700	344	908	868	Ø20	30 x M16-50	675
DE8BC	108D	868	1168	500	325	1400	1000	700	409	908	868	Ø20	38 x M16-50	725
DE8BC	148	944	1594	509	502	2000	1450	800	417	1200	900	Ø20	40 x M16-50	1110

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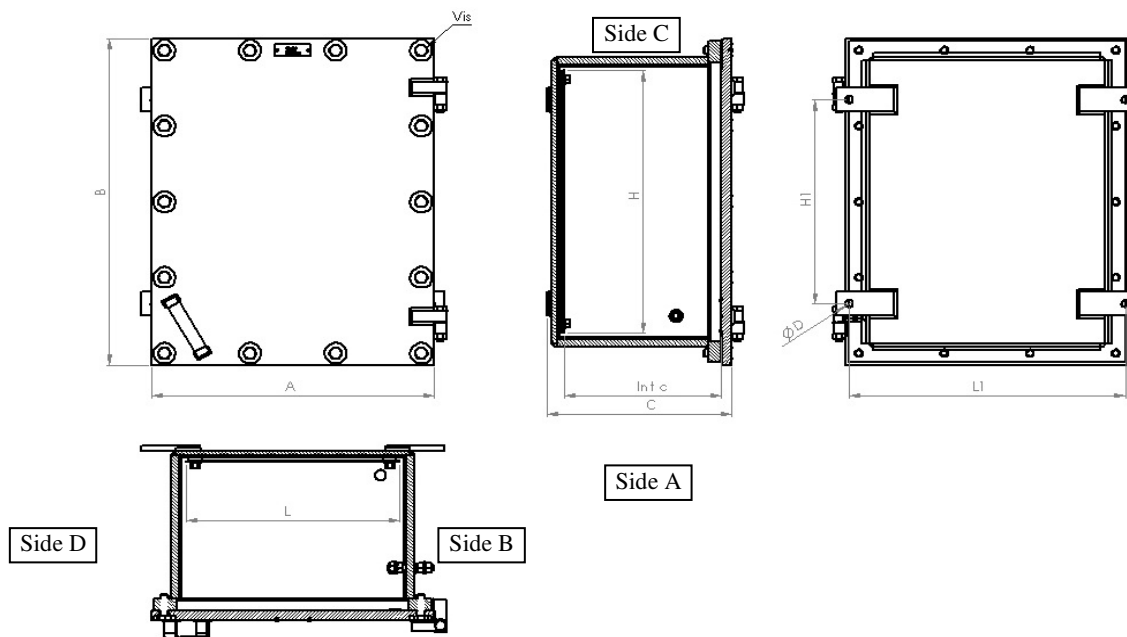
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Recommended tightening torques of the Lid bolts

Enclosure type		Minimum tensile strength of lid bolts [N/mm ²]		Bolts quantity and size Qty x \varnothing -L	Recommended tightening torque Ma for lubricated bolts [Nm]	
		-20°C	-40°C		-20°C	-40°C
DE8BC	32	800	800	12 x M12-35	74	74
DE8BC	32D	800	800	12 x M12-35	74	74
DE8BC	351	800	800	14 x M12-35	74	74
DE8BC	351D	800	800	14 x M12-35	74	74
DE8BC	43	800	800	14 x M12-35	74	74
DE8BC	43D	800	800	14 x M12-35	74	74
DE8BC	44	800	800	16 x M14-40	117	117
DE8BC	44D	800	1000	16 x M14-40	117	117
DE8BC	54	800	800	18 x M14-40	117	117
DE8BC	54D	800	1000	18 x M14-40	117	117
DE8BC	64	800	800	20 x M14-40	117	117
DE8BC	64D	800	1000	20 x M14-40	117	117
DE8BC	75	800	800	24 x M14-50	117	117
DE8BC	75D	1000	X	24 x M14-50	117	X
DE8BC	86	800	800	26 x M16-50	180	180
DE8BC	86D	1000	X	26 x M16-50	180	X
DE8BC	107	800	800	30 x M16-50	180	180
DE8BC	108	800	800	30 x M16-50	180	180
DE8BC	108D	1000	1200	38 x M16-50	180	180
DE8BC	148	800	800	40 x M16-50	180	180

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Number of cable entries:

- Any type of cable or conduit entry device certified Ex d can be used and installed according to EN / IEC 60079-14
- Different types of threads can be used but minimum five threads by bolt must always been engaged

Metric	M20 ISO			M25 ISO			M32 – M40 – M42 ISO			M50 ISO			M63 ISO			M75 ISO		
NPT	½ " NPT ¾ " NPT			1 " NPT			1" ¼ NPT 1" ½ NPT			2 " NPT (1)			2 " ½ NPT (1)			3 " NPT (1)		
Product code	Sides A & C	Sides B & D	Max (2)	Sides A & C	Sides B & D	Max (2)	Sides A & C	Sides B & D	Max (2)	Sides A & C	Sides B & D	Max (2)	Sides A & C	Sides B & D	Max (2)	Sides A & C	Sides B & D	Max (2)
DE8BC 32	12	12	32	8	8	20	3	3	12	1	1	4	-	-	-	-	-	-
DE8BC 32D	12	12	32	8	8	20	3	3	12	1	1	4	-	-	-	-	-	-
DE8BC 351	12	12	24	8	8	18	3	3	8	1	1	4	-	-	-	-	-	-
DE8BC 351D	12	12	24	8	8	18	3	3	8	1	1	4	-	-	-	-	-	-
DE8BC 43	18	18	36	14	14	28	4	4	16	2	2	5	1	1	2	-	-	-
DE8BC 43D	18	18	36	14	14	28	4	4	16	2	2	5	1	1	2	-	-	-
DE8BC 44	20	20	40	16	16	30	5	5	20	3	3	6	1	1	3	-	-	-
DE8BC 44D	20	20	40	16	16	30	5	5	20	3	3	6	1	1	3	-	-	-
DE8BC 54	20	20	40	16	16	30	5	5	20	3	3	6	1	1	3	-	-	-
DE8BC 54D	20	20	40	16	16	30	5	5	20	3	3	6	1	1	3	-	-	-
DE8BC 64	28	28	60	18	18	50	7	7	28	4	4	9	1	1	4	-	-	-
DE8BC 64D	28	28	60	18	18	50	7	7	28	4	4	9	1	1	4	-	-	-
DE8BC 75	28	28	72	24	24	72	10	10	40	4	4	11	2	2	7	-	-	-
DE8BC 75D	28	28	72	24	24	72	10	10	40	4	4	11	2	2	7	-	-	-
DE8BC 86	32	32	112	28	28	100	20	20	80	5	5	17	2	2	8	1	1	4
DE8BC 86D	32	32	112	28	28	100	20	20	80	5	5	17	2	2	8	1	1	4
DE8BC 107	36	36	112	32	32	100	20	20	80	5	5	17	3	3	10	1	1	4
DE8BC 108	36	36	112	32	32	100	20	20	80	5	5	17	3	3	10	1	1	4
DE8BC 108D	36	36	112	32	32	100	20	20	80	5	5	17	3	3	10	1	1	4

(1) With welded ring

(2) Maximum number of cable entries on all side walls of the enclosure

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⚠ Specific Conditions of use (X):

The screws used for the assembly of the various parts of flameproof enclosures must be of yieldstress higher or equal to 700N/mm² and according to the tables above for the Lid bolts.

In accordance with D.3.10 of EN/IEC 60079-1, the content of the Ex component enclosure equipment may be placed in any arrangement provided that an area of at least 20% (IIB) or 40% (IIB+H2) of each cross-sectional area remains free.

The length of flameproof joints are detailed in the drawing DE8BC-147-4.

The other conditions are stipulated in the instructions.

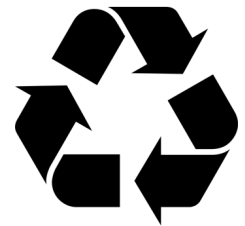
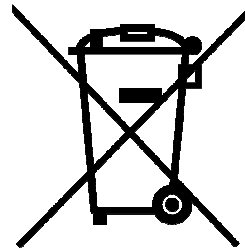
⚠ The content of the DE8-BC enclosures may be placed in any arrangement provided that an area of at least:

- - 20 % of each cross-sectional area remains free for gas group IIB
- - 40 % of each cross-sectional area remains free for gas group IIB + H2

⚠ Dismantling, taking out of service :

When removing the enclosure and taking it out of service, the same precautions apply as those observed when mounting the enclosure.

The enclosure with its content must be handled according to the WEEE (Waste Electrical and Electronic Equipment) Directive, 2012/19/EU.



SS316L