Flameproof enclosures

DE8 – BC …

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

- 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:

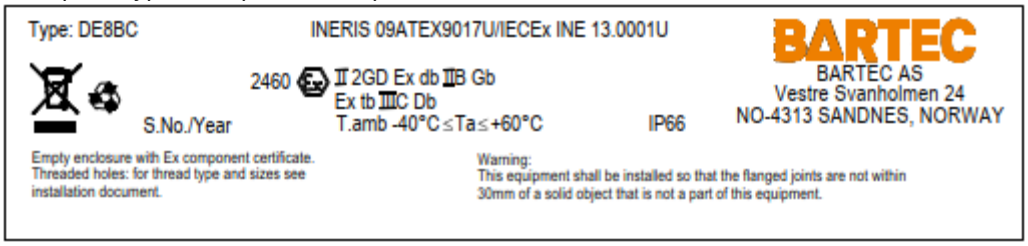
Zones due to gases, vapors, and mists

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

Example of type label (U-certificate) 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 is required.

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 temperature.
- Any damage on device can cause the flameproof protection to become ineffective.
- Installation of the enclosure must be done by qualified 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 void our responsibility.
- The use of the device in case of excessive deposits of dusts (over 50mm thick layer) 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 larger DE8-BC enclosures are 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 inside the door and on the flange of the enclosure must be well protected while working inside the enclosure.
- Make sure upon any movement, shifting or transportation of the DE8-BC enclosures, that all 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 inside larger doors shall not be removed or adjusted unless this is done in agreement with BARTEC AS. The door cones are adjusted individually, and removal of cone may impair the adjustment.
- The door handle is designed for vertical operation only, it is not able to lift large doors in horizontal position. Fit M12 lifting lugs in holes in door edge if required.

Transport, storage

- Check it the product has been damaged during transport. If any damage is observed, report to the carrier to file a freight claim.
- 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 mounted 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 work 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:

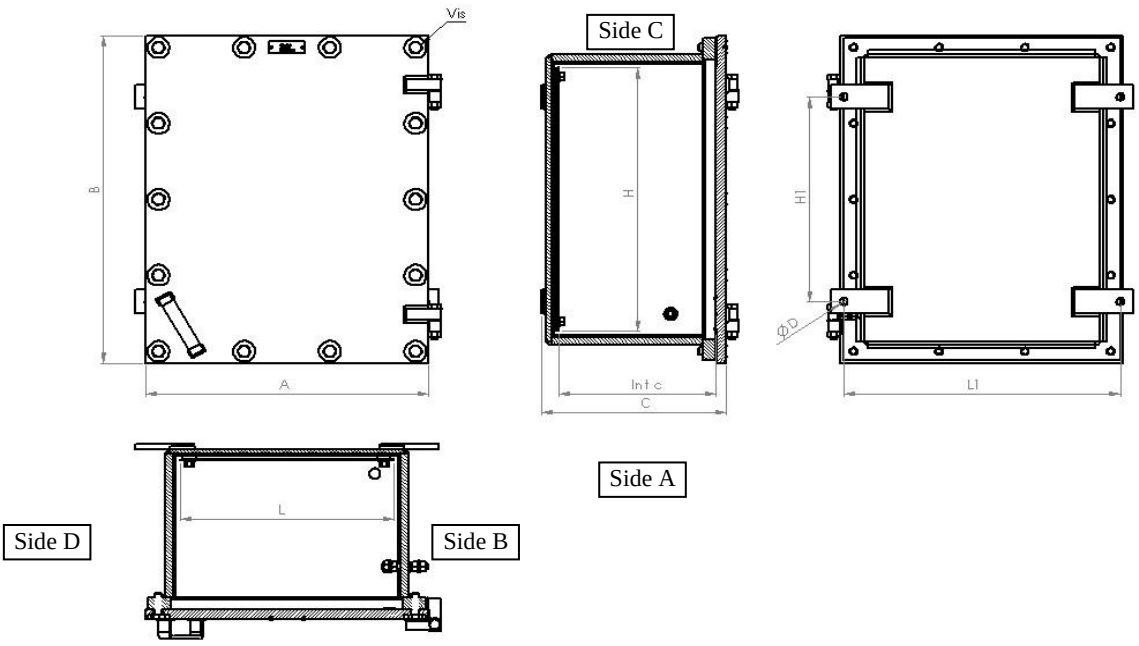
- Prevent and avoid any formation of layers of dusts: make a periodic cleaning with a wet cloth.
- Do not take apart the command and control units (push buttons, pilot light, etc.)

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

- The external equipment and surfaces without any damage.
- 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 surfaces with a thin layer of grease (acid free white Vaseline, or similar grease that does not harden because of ageing, does not contain an evaporating solvent, and does not cause corrosion of the joint surfaces).
  If gasket is fitted: Check gasket for damage. Replace if damaged. Grease gasket with acid free Vaseline.
- Secure the door using the original bolts as listed in the table on next page. Ensure that the bolts are clean and are greased (use anti-seize grease on threads to avoid galling). Ensure all bolts are fitted. Torque all bolts to the correct value listed in the table below. After torquing the bolts, check with a shim / feeler gage 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	Maximum power whatever the content is	Dimensions of mounting plate (mm)			Fixing (mm)			Bolts in lid	Weight kg
		A	B	C	dm^3 / liters	W Max.	H	L	Int c	H1	L1	øD holes	Qty x ø-L	
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



Recommended tightening torques of the Lid bolts

Enclosure type		Required Quality of bolts ISO4017 / ISO 4762		Bolt quantity and size	Recommended tightening torque Ma for lubricated bolts [Nm]	
		-20°C	**-40°C**	Qty x Ø-L	**-20°C**	**-40°C**
DE8BC	**32**	A4-80	A4-80	12 x M12-35	74	74
DE8BC	**32D**	A4-80	A4-80	12 x M12-35	74	74
DE8BC	**351**	A4-80	A4-80	14 x M12-35	74	74
DE8BC	**351D**	A4-80	A4-80	14 x M12-35	74	74
DE8BC	**43**	A4-80	A4-80	14 x M12-35	74	74
DE8BC	**43D**	A4-80	A4-80	14 x M12-35	74	74
DE8BC	**44**	A4-80	A4-80	16 x M14-40	117	117
DE8BC	**44D**	A4-80	10.9	16 x M14-40	117	117
DE8BC	**54**	A4-80	A4-80	18 x M14-40	117	117
DE8BC	**54D**	A4-80	10.9	18 x M14-40	117	117
DE8BC	**64**	A4-80	A4-80	20 x M14-40	117	117
DE8BC	**64D**	A4-80	10.9	20 x M14-40	117	117
DE8BC	**75**	A4-80	A4-80	24 x M14-50	117	117
DE8BC	**75D**	12.9		24 x M14-50	117	
DE8BC	**86**	A4-80	A4-80	26 x M16-50	180	180
DE8BC	**86D**	12.9		26 x M16-50	180	
DE8BC	**107**	A4-80	A4-80	30 x M16-50	180	180
DE8BC	**108**	A4-80	A4-80	30 x M16-50	180	180
DE8BC	**108D**	10.9	12.9	38 x M16-50	180	180
DE8BC	**148**	A4-80	A4-80	40 x M16-50	180	180

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 of device must always be engaged in enclosure wall.

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

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

⚠ Specific Conditions of use (X):

The content of the Ex component enclosure must be in accordance with the clause 3.10 of annex D of IEC 60079-1 standard.

The values of flameproof joints (lengths and gaps) are detailed in note of manufacturer.

The screws used for the assembly of the various parts of explosion-proof enclosures must be of yield stress higher or equal to the values defined in the table on page 6.

⚠ 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.