

Enclosures series "EJB-UL"

PRODUCT COVERED:

- EBJ-21-UL, EBJ-31-UL, EJB-51-UL, EJB-61-UL and EJB-63-UL Explosion-proof enclosures for use in Hazardous Locations, Class I, Division I, Groups B, C, and D; Class II, Groups E, F, and G; Class III.
- Environmental ratings: Type 1, 4 and 4X.

1. INTRODUCTIONS

1.1 Scope

This handbook has been written by the manufacturer of the equipment and is integrating part of it. This handbook defines the scope for which the equipment has been designed and manufactured and contains all the information necessary to guarantee a sure and correct use.

The observance of the contained indications guarantees the personal safety and greater duration of the same equipment.

The information contained in the manual are addressed to following subjects:

- Assigned to the transport, handling, unpack.
- Assigned to the preparation of installation and its site.
- Installers.
- Equipment's users.
- Assigned to the maintenance.

This handbook must be conserved with the maximum care and must be always available for any consultation; therefore, it must be protected from humidity, carelessness, sunlight and how much other can damage it.

For a fast search of the arguments consult the index in the previous page.

The warnings and the important parts of text have been evidenced by means of use of the symbols following illustrated and defined.

1.2 General warning

To avoid risk of electrical shock, electrical power must be off before and during installation and maintenance.

The producer isn't liable for damages caused to the system or the things in the following cases:

- Improper use.
- Employment of not trained and qualified staff.
- Not correct assembly and installation.
- Defects in the systems.
- Modifications or interventions not authorized.
- Use of non-original spare parts.
- Non-observance of the rules written in this handbook.
- Exceptional events.

Every operation not described in this handbook and/or not authorized by manufacturer, beyond making to lose in immediate way the guarantee, involves the full responsibility of who executes it.

2. IDENTIFICATION

2.1 Product brand and type designation

Enclosures for terminal boards, for control and signalling units, for power unit series "EJB".

EJB--UL**: indicate the series name and the size of enclosure.

2.2 Producer name and address

BARTEC F.N. Srl

via M. Pagano 3 - I-20090 Trezzano sul Naviglio (MI) ITALY

Tel.: +39.02.484741 - Fax: +39.02. 4456189

<https://www.bartec-fn.com> - e-mail: info@bartec-fn.com

3. SPECIFICATION OF THE PRODUCT

3.1 cable entry holes and mounting of accessories

ENCLOSURES MATERIAL: cast aluminium alloy, GAISi 13 according to UNI EN ISO 1706:1999, or from 316L Stainless Steel.

The enclosures may have, or be given, threaded holes on the walls, on the cover and in some cases on the bottom, allowing to screw the control or signalling accessories, or for the cable entry.

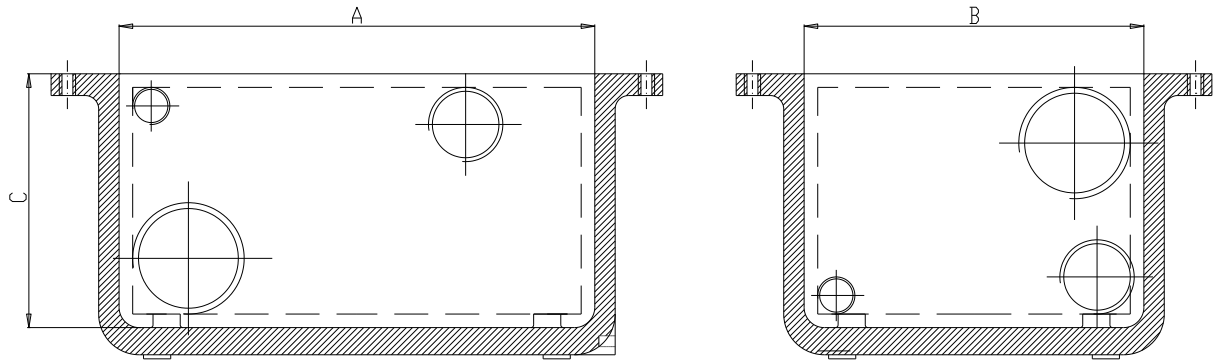
NB: All mechanical manufacturing may only be executed by manufacturer, unless of express authorization of itself.

The quantity and size of the holes must comply with the indications supplied by the manufacturer, in accordance with the type of tests carried out for the certification of enclosures.

The cover may be provided with threaded openings for engagement with auxiliary devices with no more than the table below and as described below.

Cat. No.	Size	Number of Openings MAX	Minimum Distance Between Center-to-Center Openings	
			mm	in.
EJB-21-UL	1/2" NPSM or M20x1,5mm	12	50	1.97
	3/4" NPSM or M25x1,5mm	11	55	2.17
	1" NPSM or M32x1,5mm	6	65	2.56
EJB-31-UL	1/2" NPSM or M20x1,5mm	30	52	2.05
	3/4" NPSM or M25x1,5mm	24	55	2.17
	1" NPSM or M32x1,5mm	15	65	2.56
EJB-51-UL	1/2" NPSM or M20x1,5mm	35	50	1.97
	3/4" NPSM or M25x1,5mm	35	55/65	2.17/2.56
	1" NPSM or M32x1,5mm	24	75/85	2.95/3.35
EJB-61-UL	1/2" NPSM or M20x1,5mm	59	50	1.97
	3/4" NPSM or M25x1,5mm	40	55	2.17
	1" NPSM or M32x1,5mm	28	65	2.56
EJB-63-UL	1/2" NPSM or M20x1,5mm	59	50	1.97
	3/4" NPSM or M25x1,5mm	40	55	2.17

	1" NPSM or M32x1,5mm	28	65	2.56
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TYPE	THREADED SIZE ENTRY		Min. distance between hub and hub from the enclosures flange		Min. distance between hub and hub from the enclosures bottom and sides		INTERNAL DIMENSIONS (mm. and inch.)					
							A		B		C	
			Metric	NPT	mm	in	mm	in	mm	in	mm	in
EJB-21-UL	M20	1/2"	30	1.18	10	0.39	220	8.66	180	7.09	123	4.84
	M25	3/4"	30	1.18	10	0.39						
	M32	1"	30	1.18	10	0.39						
	M50	1 1/2"	30	1.18	10	0.39						
	M63	2"	30	1.18	15	0.59						
	M75	2 1/2"	30	1.18	15	0.59						
	M90	3"	30	1.18	15	0.59						
EJB-31-UL	M20	1/2"	40	1.57	10	0.39	350	13.78	250	9.84	187	7.36
	M25	3/4"	40	1.57	10	0.39						
	M32	1"	40	1.57	10	0.39						
	M50	1 1/2"	40	1.57	10	0.39						
	M63	2"	40	1.57	10	0.39						
	M75	2 1/2"	40	1.57	10	0.39						
	M90	3"	40	1.57	10	0.39						
EJB-51-UL	M20	1/2"	58	2.28	10	0.39	490	19.29	290	11.42	195	7.68
	M25	3/4"	58	2.28	10	0.39						
	M32	1"	58	2.28	10	0.39						
	M50	1 1/2"	58	2.28	15	0.59						

	M63	2"	58	2.28	15	0.59						
	M75	2 1/2"	58	2.28	20	0.79						
	M90	3"	58	2.28	20	0.79						
EJB-61-UL	M20	1/2"	70	2.76	10	0.39	580	22.83	370	14.57	293	11.54
	M25	3/4"	70	2.76	10	0.39						
	M32	1"	70	2.76	10	0.39						
	M50	1 1/2"	70	2.76	15	0.59						
	M63	2"	70	2.76	15	0.59						
	M75	2 1/2"	70	2.76	20	0.79						
	M90	3"	70	2.76	20	0.79						
EJB-63-UL	M20	1/2"	68	2.68	10	0.39	580	22.83	370	14.57	163	6.42
	M25	3/4"	68	2.68	10	0.39						
	M32	1"	68	2.68	10	0.39						
	M50	1 1/2"	68	2.68	15	0.59						
	M63	2"	68	2.68	15	0.98						
	M75	2 1/2"	68	2.68	20	0.98						
	M90	3"	68	2.68	20	0.98						

MINIMUM CENTER-TO-CENTER DISTANCE BETWEEN ENTRIES

Minimum Distance Between the Center of the Holes, mm (in.)										
- 4"	-	-	-	-	-	-	-	-	-	139 (5.47)
M90 3"	-	-	-	-	-	-	-	-	115 (4.53)	126 (4.96)
M75 2-1/2"	-	-	-	-	-	-	101 (3.98)	108 (4.25)	120 (4.72)	112 (4.41)
M63 2"	-	-	-	-	-	88 (3.46)	94 (3.70)	102 (4.02)	112 (4.41)	106 (4.17)
M50 1-1/2"	-	-	-	-	75 (2.95)	82 (3.23)	88 (3.46)	95 (3.74)	106 (4.17)	103 (4.06)
M40 1-1/4"	-	-	-	67 (2.64)	70 (2.76)	77 (3.03)	84 (3.31)	91 (3.58)	103 (4.06)	99 (3.90)
M32 1"	-	-	58 (2.28)	63 (2.48)	66 (2.60)	73 (2.87)	80 (3.15)	86 (3.39)	99 (3.90)	95 (3.74)
M25 3/4"	-	52 (2.05)	55 (2.17)	59 (2.32)	63 (2.48)	69 (2.72)	76 (2.99)	83 (3.27)	95 (3.74)	93 (3.66)
M20 1/2"	46 (1.81)	49 (1.93)	52 (2.05)	57 (2.24)	60 (2.36)	67 (2.64)	73 (2.87)	80 (3.15)	93 (3.66)	-
Metric NPT	M20 1/2"	M25 3/4"	M32 1"	M40 1-1/4"	M50 1-1/2"	M63 2"	M75 2-1/2"	M90 3"	- 4"	

The Cover Gasket (O-Ring) is provided along the perimeter and constructed of the following:

- Red silicone, manufactured by Vergomma or Tiger, compound designation LSR.
- White silicone, manufactured by Vergomma, compound designation SID 816.

Model	Diameter	Lenght
EJB-21-UL	3,5 mm	812 mm
EJB-31-UL	3,5 mm	1212 mm
EJB-51-UL	3,5 mm	1563 mm

EJB-61-UL	3,5 mm	1901 mm
EJB-63-UL	3,5 mm	1901 mm

3.2 INSTALLATION

Enclosures type EJB, are furnished with or without drilled and tapped openings. Drilling and tapping of conduit openings is subjects to the limitations of maximum size and number of openings as well as spacing. Refer to drilling and tapping, paragraph 3.1.

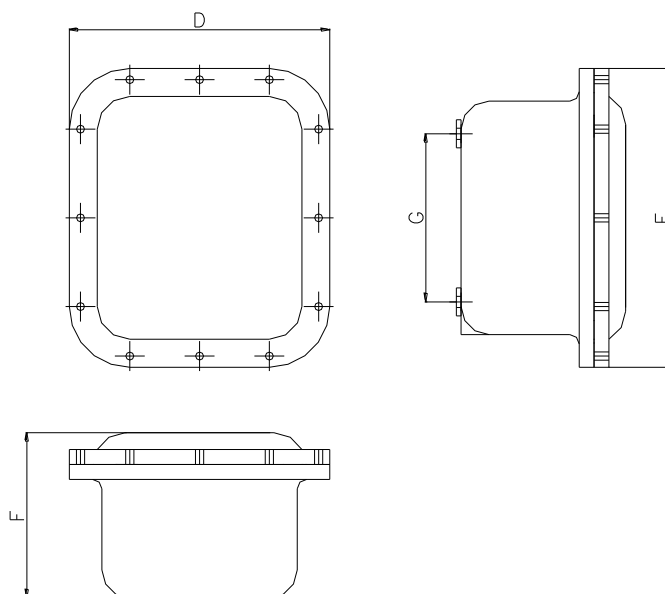
Select a mounting location that will provide suitable strength and rigidity for supporting all contained wiring and control devices. The following figure show the mounting dimensions for the four detachable mounting feet.

To close cover, make sure cover and body joint surfaces are clean and not scratched. Orient cover to align with two stud bolts on body. Lift cover to approximate position, and line up bolt holes of cover with body. Avoid sliding cover joint surfaces of body. Cover-body bolt holes must match up. Start with the corner bolts. Fully tighten all cover bolts.

The cover may be provided with threaded openings for engagement with auxiliary devises, see paragraph 3.1.

CAUTION:

- Hazardous locations information, specifying class and group listing of each device is marked on the nameplate of each enclosure. Class and group listing for any device connected with the enclosure must be suitable for the classifications of the location in which the enclosures is installed.
- All unused conduit openings must be plugged. Listed plug must engage a minimum of five full threads.
- Do not use cover bolts to lift the enclosure. They could be damaged.
- Pay attention that hammers or other tools do not damage the flame-path joints or cover gasket. Do not handle the cover roughly or place it on surfaces that might damage or scratch the joint surface.
- Clean both joint surfaces of body and cover before closing. Dirt or foreign material must not accumulate on flame-path joint surfaces. Surfaces must seat fully against each other to provide a proper explosion proof seal.



EJB TYPE	D	E	F	G
EJB-21-UL	280	320	177	180

EJB-31-UL	350	450	248	294
EJB-51-UL	400	600	265,5	360
EJB-61-UL	500	710	389	500
EJB-63-UL	500	710	259	500

3.3 GROUNDING

The internal grounding terminal shall be used as the primary equipment ground. The external terminal is only a supplemental bonding connection where local authorities permit or require it.

- Internal Ground Screw – Hexagon head screw M6 x 10 with a stainless steel flat and lock washer provided on the base of the enclosure body, marked with the letter or word “G”, “GROUND” or marked with a grounding symbol.
- External Ground – Terminal coloured green, marked with the letter or word “G”, “GROUND” or marked with a grounding symbol.

3.4 COVER SCREW

The cover is secured to the enclosure body with Grade A2 or A4, Class 70 or 80 hex head cap screws.

EJB TYPE	Number of Screws	Size of Screws
EJB-21-UL	12	M8
EJB-31-UL	20	M8
EJB-51-UL	30	M10
EJB-61-UL	36	M12
EJB-63-UL	36	M12

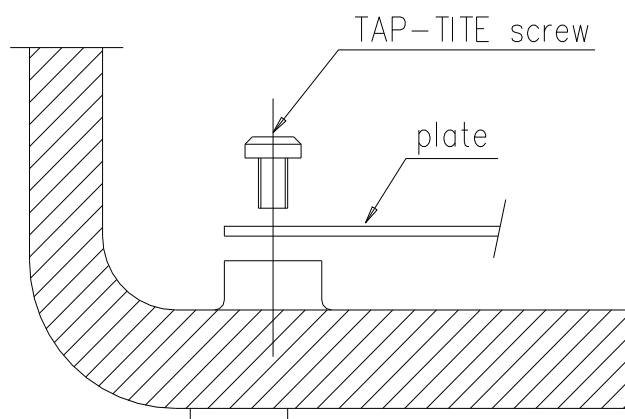
3.5 STANDARDS

- UL 1203** - Explosion-Proof and Dust-Ignition-Proof Electrical Equipment for Use in Hazardous (Classified) Locations.
- UL 50** - ENCLOSURES FOR ELECTRICAL EQUIPMENT, NON-ENVIRONMENTAL CONSIDERATIONS.
- UL 50E** - ENCLOSURES FOR ELECTRICAL EQUIPMENT, ENVIRONMENTAL CONSIDERATIONS.

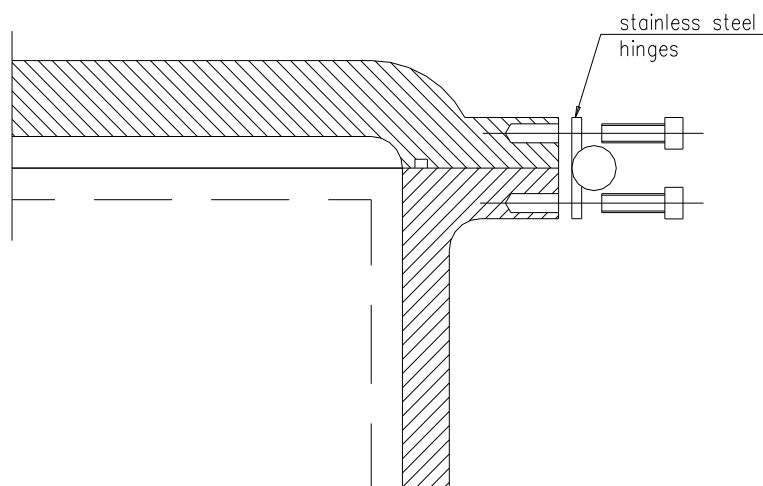
4. MOUNTING PLATE KIT**4.1 APPLICATION**

On the enclosures series EJB-**-UL, are used the mounting plate for install terminal blocks, relays and various electrical devices.

Mounting plate for enclosures type EJB-**-UL should be installed by qualified and competent employees.

**GAUGING REQUIREMENTS FOR FIELD-THREADED ENTRIES SHALL CONFORM TO:**

- For NPT threaded entries, ANSI/ASME B1.20.1 except those entries shall gauge from flush to +3-1/2 turns beyond the L-1 gauging notch in lieu of the -1 to +1 turns described in ANSI/ASME B1.20.1.
- Metric threaded entries shall have a thread tolerance of 6H.

5. HINGES KIT**5.1 APPLICATION**

6. MAINTENANCE**CAUTION:**

- Clean both ground joint surfaces of body and cover before closing. Dirt or foreign material must not accumulate on flat ground joint surfaces. Surface must seat fully against each other to provide a proper explosion proof seal.
- To prevent external fire or explosion do not install switching equipment intended to interrupt more than 10,000 RMS symmetrical amperes. Do not install equipment which will produce external surface temperatures exceeding the ignition temperature of the flammable or combustible materials which may surround this enclosure. Any current-interrupting device which may be installed in this enclosure may fail electrically or mechanically unless they have been investigated and found suitable for operation in this hazardous location.

WARNING:

- Always disconnect primary power source before opening enclosure for inspection or service.

Frequent inspection should be made. A schedule for maintenance check should be determined by the environment and frequency of use. It's recommended that it should be at least once a year.

Enclosures type EJB gasket: do not attempt field replacement or repair of cover gasket. Instead, remove damaged gasket and continue to use cover without gasket. This will assure safety for use in class I, class II and class III hazardous locations. However, the enclosure will not be watertight.

Perform visual, electrical and mechanical checks on all components on a regular basis:

- Visually check for undue heating evidenced by discoloration of wires or other components, damaged or worn parts, or leakage evidenced by water of corrosion in the interior.
- Electrically check to make sure that all connection are clean and tight and that contacts in the components make or break as required.
- Mechanically check that all parts are properly assembled, and operating mechanism move freely.