

The EJBC series junction boxes have been carefully designed to allow their installation in areas with danger of explosion and/or fire due to the presence of all Gases of Group IIA - IIB - IIC classified as Zone 1, 2, 21, 22. The peculiar multistep joint, obtained thanks to the high quality and precision of the machining, has allowed, in fact, the extension of the protection of gases to Group IIC [Acetylene ( $C_2H_2$ ), Carbon disulphide, Hydrogen ( $H_2$ )]. The quality of this product is recognized and valued the world over for its specific aluminium alloy and the mechanical property of its finishes. The EJBC series is mostly used as a box to carry terminals and busbars, fuse carriers, transformers, reactors and barriers, though it is also used to produce control and signalling boards, light and power boards and surge arresters, and motor starter boxes with various configurations, which are custom made to the requirements of our customers worldwide.

Cortem Group labels its products with a non-removable adhesive label featuring a hologram and an alphanumerical univocal code, as a safety measure against the illegal sale of fakes so that all the products are guaranteed as original. Non-compliance with the International standards entails serious risks for the environment, especially for those working daily on the plants.



**Application sectors:** 















Oil refineries Chemical and petrochemical plants

Onshore plants

Offshore Oil plants of

Oil loading/ Low offloading temperatures wharfs

Presence of hydrogen

100% Cortem product

#### **CERTIFICATION DATA FOR EMPTY ENCLOSURES**

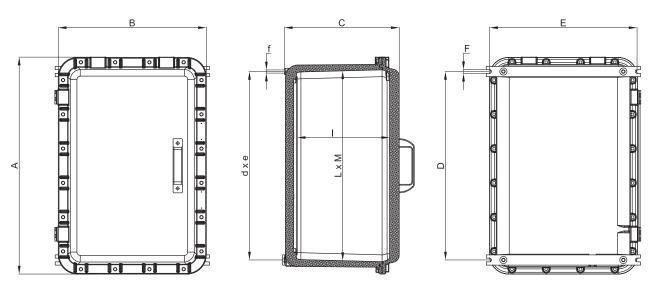
| Classification:           | Group II  | Category 2GD  |
|---------------------------|---|---|
| Installation: EN 60079.14 | zone 1 - zone 2 (Gas)   | zone 21 - zone 22 (Dust)  |
| Marking:                  | C€ 0722 ऒ II 2GD Ex db II   | C T Gb Ex tb IIIC T°C Db IP66/67  |
| Certification:            | ATEX EPT 20 ATEX 40   | 74 U  |
|                           | IEC Ex IECEx EUT 20.00  | All IEC Ex certification data can be downloaded from www.cortemgroup.com        |
| Standards:                | CENELEC EN-IEC 60079-0:201<br>DIRECTIVE 2014/34/UE<br>IEC 60079-0:2017, IEC 60079 | 8, EN 60079-1:2014, EN 60079-31:2014 and EUROPEAN<br>-1:2014, IEC 60079-31:2013 |
| Ambient Temp.:            | -60°C +150°C  | For enclosures without operators, accessories, windows                          |
|                           | -60°C +100°C  | For enclosures without operators, accessories                                   |
|                           | -60°C +60°C 🌞   | For all other versions  |
|                           | -40°C   | For junction box with window on the cover                                       |
| Degree of protection:     | IP66/67   | For enclosures without control and signalling devices                           |
|                           | IP66  | For enclosures with Cortem M-0series control and signalling devices             |

## CERTIFICATION DATA OF ENCLOSURES FOR CONTROL, MONITORING, SIGNALLING UNITS AND INTERFACE UNIT

| Classification:           | Group II   | Categor          | y 2GD                                |                                       |                       |
|---------------------------|--|------------------|--------------------------------------|---------------------------------------|-----------------------|
| Installation: EN 60079.14 | zone 1 - zone 2 (Gas)  | zone 21 - zor    | ne 22 (Dust)                         |                                       |                       |
| Marking:                  | C€ 0722 ﴿ Il 2GD Ex db IIC T   | 6T4 Gb Ex tb II  | IC T85°CT135                         | 5°C Db                                |                       |
| marking.                  | <b>C€</b> 0722 <b>ⓒ II 2GD Ex db [ia C</b>   | Ga] IIC T5/T6 Gb | Ex tb [ia Da] III0                   | C T85°C/T100°                         | C Db IP66/67          |
| Certification:            | ATEX EPT 20 ATEX 4075  | X                |                                      |                                       |                       |
|                           | IEC Ex IECEx EUT 20.002  | 4X               |                                      | ation data can be<br>ww.cortemgroup.c | downloaded from<br>om |
| Standards:                | CENELEC EN-IEC 60079-0: 2018, EN<br>DIRECTIVE 2014/34/UE<br>IEC 60079-0: 2011, IEC 60079-1: 20 |                  |                                      |                                       | 14 and EUROPEAN       |
|                           | <b>¾</b> -60°C +40°C ∋   | <b>*</b>         | With temperature surface temperature | re class T6 and m<br>Hure T85°C.      | aximum                |
| Ambient Temp.:            | <b>ॐ</b> -60°C +55°C ∃   | <b>Ö</b>         | With temperatur<br>surface tempera   | re class T5 and m<br>Iture T100°C.    | aximum                |
|                           | -40°C (+40°C +55   | °C) 🔆            | For junction box                     | with window on th                     | e cover               |
| Degree of protection:     |  | IP66,            | /67                                  |                                       |                       |

## **SELECTION CHART FOR ENCLOSURES**

| Code     | Outsi | de dimen | sions | Interr | nal dimen | sions | I   | Mounting |     | Mounti | ng with br | ackets | Weight |
|----------|-------|----------|-------|--------|-----------|-------|-----|----------|-----|--------|------------|--------|--------|
|          | Α     | В        | C     | L      | M         | I     | d   | е        | f   | D      | E          | F      | kg     |
| EJBC-45  | 567   | 387      | 298   | 490    | 305       | 229   | 360 | 236      | M10 | 360    | 356        | 11     | 38,9   |
| EJBC-45B | 567   | 387      | 248   | 490    | 305       | 179   | 360 | 236      | M10 | 360    | 356        | 11     | 35,3   |
| EJBC-5   | 632   | 432      | 341   | 560    | 360       | 275   | 350 | 550      | M10 | 550    | 430        | 11     | 51     |
| EJBC-5B  | 632   | 432      | 271   | 560    | 360       | 205   | 350 | 550      | M10 | 550    | 430        | 11     | 43,4   |



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#### **MECHANICAL FEATURES**

Body and lid: Low copper content aluminium alloy

Hinges: Stainless steel

**Lid handle:** Made of black painted plastic

Gasket: Acid, hydrocarbon and high temperature-resistant silicone, located between body and lid
Certification label: Adhesive label located inside on empty enclosures; aluminium label riveted onto lid on

other versions

**Bolts and screws:** Stainless steel

Earth screws: M6 stainless steel. On inside and outside of body and on lid complete with anti-rotation

brackets

Mounting brackets: Electrogalvanized steel

Coating: Polyester coating RAL 7035 (Light grey)

Corrosion Resistance: The STANDARD of the aluminium alloy used by Cortem has passed the tests required by standards EN 60068-2-30 (hot/humid cycles) and EN 60068-2-11 (salt mist tests)

### **ACCESSORIES AVAILABLE ON REQUEST/ SPECIAL REQUESTS**

Internal anti-condensation coating RAL 2004 (pure orange)

External polyester coating in different colour (specify the RAL number)

Breather valve Code ECD-210S

Drain valve Code ECD-210S

Round or rectangular windows on lid (see section Enclosures with windows for inspection and reading instruments)

Internal mounting plate: 2.5mm-thick aluminium (code BFE-...). See accessories section

2.5mm-thick electrogalvanized steel (code BFE-...AC).

### Thread options:

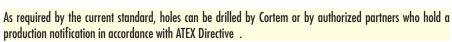
- NPT threads ANSI B1.20.1
- GAS UNI ISO 7-1 thread
- Metric threads ISO 261/965

Junction box in stainless steel AISI 316L (contact our Sales Office for availability)

Cortem manufactures any type of custom-made products according to customer specifications and in compliance with the certification data.

# EJBC-... series Body drilling data

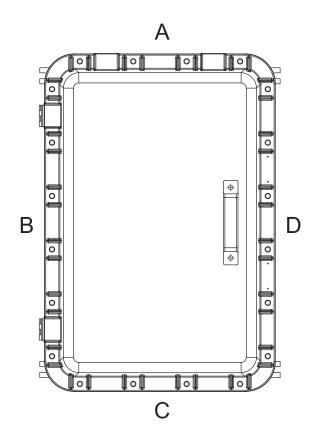
|                             | THREAD COMPARISON CHART |        |        |        |        |        |        |        |         |  |
|-----------------------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|---------|--|
| ISO 7-1                     | 1/2"                    | 3/4"   | 1"     | 1 1/4" | 1 1/2" | 2"     | 2 1/2" | 3"     | 4"      |  |
| ANSI B.20.1 NPT             | 1/2"                    | 3/4"   | 1"     | 1 1/4" | 1 1/2" | 2"     | (*)    | (*)    | (*)     |  |
| ISO 261/965                 | 20x1.5                  | 25x1.5 | 32x1.5 | 40x1.5 | 50x1.5 | 63x1.5 | 75x1.5 | 90x1,5 | 100x1,5 |  |
| <b>D</b><br>Thread diameter | 1                       | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 10      |  |

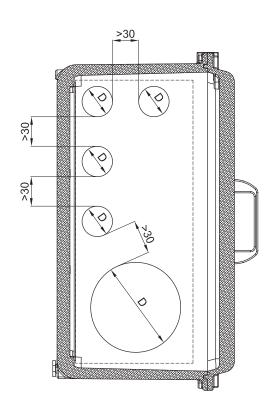




|   |            |          | HOLE DRILLING IN BODY |     |      |      |       |     |      |               |            |          |    |     |      |      |       |     |      |      |   |
|---|------------|----------|-----------------------|-----|------|------|-------|-----|------|---------------|------------|----------|----|-----|------|------|-------|-----|------|------|---|
|   | TYPE OF    |          | Sides A and C         |     |      |      |       |     |      | Sides B and D |            |          |    |     |      |      |       |     |      |      |   |
|   | NCLOSURE   | Drilling |                       | MAX | IMUM | QUAI | YTITY | PER | HOLE | TYPE          |            | Drilling |    | MAX | IMUM | QUAI | NTITY | PER | HOLE | TYPE |   |
|   | area<br>mm | 1        | 2                     | 3   | 4    | 5    | 6     | 7   | 8    | 10            | area<br>mm | 1        | 2  | 3   | 4    | 5    | 6     | 7   | 8    | 10   |   |
|   | EJBC-45    | 277x190  | 24                    | 18  | 12   | 12   | 9     | 6   | 3    | 3             | 2          | 448x190  | 36 | 30  | 21   | 18   | 17    | 10  | 8    | 5    | 3 |
| E | JBC-45B    | 277x135  | 18                    | 14  | 8    | 8    | 6     | 3   | 2    | 2             | 2          | 448x135  | 27 | 23  | 14   | 12   | 10    | 5   | 4    | 3    | 3 |
|   | EJBC-5     | 320x230  | 30                    | 28  | 20   | 12   | 11    | 9   | 6    | 4             | 3          | 520x230  | 50 | 45  | 32   | 21   | 18    | 15  | 10   | 8    | 5 |
|   | EJBC-5B    | 320x160  | 24                    | 18  | 15   | 8    | 8     | 6   | 3    | 2             | 2          | 520x160  | 40 | 27  | 24   | 14   | 12    | 12  | 5    | 4    | 3 |

(\*) 2 1/2" - 3" - 4" NPT holes can be drilled only on EJBC-55





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# EJBC-... series Lid drilling data

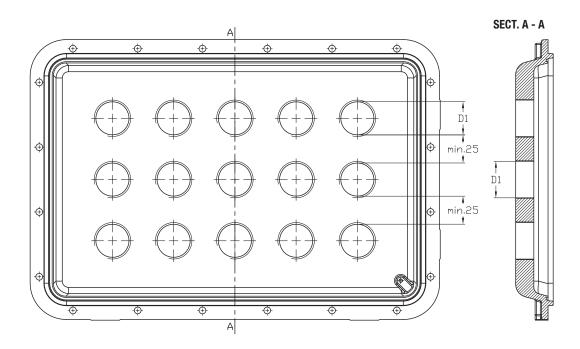


|    | THREAD COMPARISON CHART |         |         |         |         |         |         |         |  |  |
|----|-------------------------|---------|---------|---------|---------|---------|---------|---------|--|--|
| D1 | ISO 228                 | G 3/8"  | G 1/2"  | G 3/4"  | -       | -       | -       | -       |  |  |
| וע | ISO 261/965             | M16x1.5 | M20x1.5 | M25x1.5 | M32x1.5 | M35x1.5 | M40x1.5 | M42x1.5 |  |  |

|                      | HOLE DRILLING IN LID                     |
|----------------------|--|
| TYPE OF<br>ENCLOSURE | Max. n°. of holes allowed for solid lids |
| EJBC-45              | 28                                       |
| EJBC-5               | 40                                       |

## Notes:

- The standard featured is for illustrative purposes only since it has been designed exclusively for M42 holes.
- Standard holes refer to mounting of Cortem control and signalling devices.
- 3/8" Ø holes for Cortem std. side-mounted handles centre-to-centre distance >70mm.
- 1/2" Ø holes for Cortem std. heavy-duty series side-mounted handles centre-to-centre distance >120mm.



# EJBC-... series Features of junction boxes with terminals



These enclosures are customized based on size, on the number of terminals or cables they are due to accommodate, or taking into account the number of cable entries and cabling requirements inside a system. Hence we can produce tailor-made solutions as long as you provide us with the appropriate parameters required at the quote request stage, such as the number of cable glands, unions or sealing fittings to be installed, so that we can determine the most suitable size of enclosure. All terminals can be fitted with your requested accessories and mounted on special rails that are fastened to the enclosure's internal mounting frames. Terminal strips can be arranged in various ways, as specified by the customer and always within the limits allowed by the certificate. The options are vertical, horizontal, in a number of rows, or on different levels using suitable spacers.

#### **ELECTRICAL FEATURES**

Rated voltage: 24 / 800 V Rated frequency: 50 / 60 Hz

#### **Modular terminals**

**Terminal cross-sectional area:** 2.5; 4; 6; 10; 25; 35; 70; 95; 120; 185; 240; 300 [mm<sup>2</sup>]

**Rated current:** 12.5 - 452 [A] **Max. current density:** 1.5 - 7 [A/mm²]

### **Multi-pole terminals**

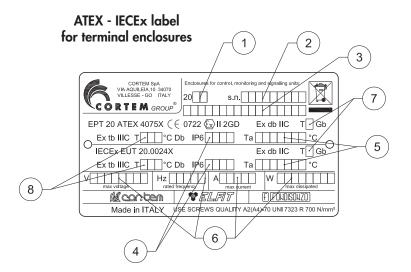
**Terminal cross-sectional area:** 3x16; 4x16; 3x25; 4x25; 3x40; 3x40; 4x40; 3x70; 4x125; 4x125; 3x200; 4x200; 3x315 [mm<sup>2</sup>]

**Rated current:** 48 - 252 [A] **Max. current density:** 0.8 - 3 [A/mm<sup>2</sup>]

## Busbars:

**Dimensions of** 

**busbars:** 20x5; 30x5; 40x5; 50x5; 60x5; 80x5; 100x4; 80x8; 100x5 [mm²] **Rated current:** 240 350 480 600 690 800 800 1000 1000 [A]



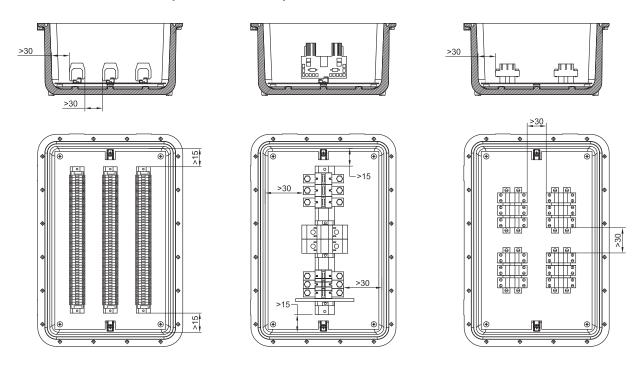
### Data filled in:

- 1. year of manufacture
- 2. serial number
- 3. product code
- 4. degree of protection
- 5. ambient temperature
- 6. electrical specs per certificate
- 7. temperature class
- 8. maximum surface temperature

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# EJBC-... series Features of junction boxes with terminals

## Examples of terminal strips with minimum installation distances



|                      |                               | MAXIMUM NUMBER OF TERMINALS HOUSED |      |      |      |      |    |     |     |     |  |
|----------------------|-------------------------------|------------------------------------|------|------|------|------|----|-----|-----|-----|--|
| TYPE OF<br>Enclosure | TERMINAL CROSS-SECTIONAL AREA |                                    |      |      |      |      |    |     |     |     |  |
|                      | 2.5                           | 4                                  | 6    | 10   | 16   | 35   | 70 | 120 | 185 | 240 |  |
| EJBC-45              | 3x70                          | 3x65                               | 3x50 | 3x35 | 3x25 | 2x20 | 20 | 10  | 8   | 8   |  |
| EJBC-45B             | 3x70                          | 3x65                               | 3x50 | 3x35 | 3x25 | 2x20 | 20 | 10  | 8   | 8   |  |
| EJBC-5               | 3x80                          | 3x70                               | 3x60 | 3x50 | 3x40 | 2x28 | 22 | 10  | 10  | 8   |  |
| EJBC-5B              | 3x80                          | 3x70                               | 3x60 | 3x50 | 3x40 | 2x28 | 22 | 10  | 10  | 8   |  |

Eg. 2x28 = 2 rows of 28 terminals (total 56 terminals). The maximum number of standard terminals refers to CABUR terminals

# Features of junction boxes for control, monitoring and signalling units



Control, monitoring and signalling units are used to produce control boards that, when positioned near the electrical equipment being controlled, enable the electrical system to operate correctly and guarantee the safety of personnel when maintenance is being performed on the system. Because they are fitted with a Manual/Automatic selector, they allow operators to select the appropriate conditions to enable work to be performed entirely safely. They offer protection and control for electrical equipment and control circuits located in explosion hazard areas and in particularly aggressive environments. They are used to hold electrical equipment, such as switches, indicators, contactors, transformers, analogue and digital components, etc.... with the option of external control by using lid-mounted Cortem control and signalling devices, such as control levers, pushbuttons, indicator lights, etc.... Cortem designs, develops and supplies full cabling for one or more enclosures tailored to your specific requirements, producing panel boards - including even extremely complex solutions - and providing a full inspection and testing service on request.

#### **ELECTRICAL FEATURES**

**Rated voltage:** 24 / 1000 Vac 12 / 250 Vdc

Max. current on contacts and fuses: 650 A Rated frequency: 50 / 60 Hz

Max. wattage for lamps:  $5 \text{ W (for Ta } +40^{\circ}\text{C)} / 3 \text{ W (for Ta } +55^{\circ}\text{C)}$ 

Electrical characteristics valid for size EJBC-45, EJBC-5 (T5 100°C).

Rated voltage: up to 750 Vcc Max. current: up to 630 A

### Features of equipment that can be installed in enclosures to produce control and monitoring units.

Table of electrical features of components that can be installed in enclosures to produce control, monitoring and signalling units.

(The values refer to the catalogs of the leading manufacturers of electrical/electronic components available on the market)

#### Minimum air gap between components

| Component<br>voltage<br>(V ac) | Min. air gap<br>(mm) |
|--------------------------------|----------------------|
| 60 - 250                       | 6                    |
| 250 - 380                      | 8                    |
| 380 - 500                      | 10                   |
| 500 - 660                      | 12                   |
| 660 - 1000                     | 20                   |
|                                |                      |
| Component<br>voltage<br>(V dc) | Min. air gap<br>(mm) |
| 12 - 250                       | 6                    |

| COMPONENT TYPE                   | Max. V<br>(Volts) | Max. I<br>(Amperes) | Max. power<br>(Watts) |
|----------------------------------|-------------------|---------------------|-----------------------|
| Analogue and digital instruments | 660               | 5                   | 10                    |
| Electronic inverters/reactors    | 400               | -                   | 10                    |
| PLCs Multiplexers and amplifiers | 240               | -                   | 80                    |
| Testing and measuring devices    | 240               | -                   | 100                   |
| Circuit breakers                 | 660               | 650                 | -                     |
| Fuses                            | 660               | 400                 | -                     |
| Relays                           | 500               | 10                  | 12                    |
| Electronic control devices       | 660               | -                   | 100                   |
| Contactors                       | 660               | 650                 | 30                    |
| Timers                           | 240               | 10                  | 5                     |
| Twilight relays                  | 240               | -                   | 2                     |
| Capacitors                       | 660               | -                   | -                     |
| Transformers                     | 660               | -                   | 200                   |
| Resistors                        | 240               | -                   | 300                   |
| Terminals                        | 660               | -                   | -                     |
| Reactors                         | 277               | 7.5                 | 40                    |

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# Features of junction boxes for control, monitoring and signalling units

## Identification and description of special equipment that can be installed inside.

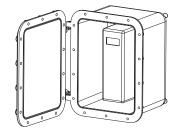
#### **Enclosures with batteries**

Option of installing low-capacity batteries ≤1.5Ah, for powering small electronic devices or backup memories. Whatever the case, the minimum distance of 20mm between the components installed and the inside walls of the enclosure must be met.

#### **Enclosures with inverters**

EJBC-45, EJBC-5 series enclosures, depending on the maximum ambient temperature (+40°C or + 55°C), can be fitted with inverters (ABB ACS550 or similar types) provided maximum power dissipation falls within the permitted range (see table).

| Enclosure type | Maximum<br>inverter power<br>for Ta +40°C | Maximum<br>inverter power<br>for Ta +55°C | Maximum<br>inverter power | Cooling fan flow<br>rate |
|----------------|---|---|---------------------------|--------------------------|
| EJBC-45        | 2.2 kW                                    | 1.5 kW                                    | 73 W                      | 44 m³/h                  |
| EJBC-5         | 5.5 kW                                    | 4.0 kW                                    | 172 W                     | 44 m³/h                  |



### **Enclosures with surge arresters**

Option of installing PRD or similar types of surge arresters, with a maximum protection limit of 65kA; whatever the case, the minimum distance of 20 mm between the arrester and the inside walls of the enclosure must be met.

## **Enclosures with fibre-optic cables**

The enclosures have provision for feeding multiple (not single) fibre-optic cables in and out. The permitted optical power and radiation limits for optical cables are:

- 35mW and 5mW/m<sup>2</sup> for T4 temperature class
- 15mW and 5mW/m<sup>2</sup> for T6 temperature class

### **Enclosures with power transformer**

Option of installing single-phase transformers provided maximum power is within the limits allowed by the certificate.

### **Enclosures with radio-frequency sources**

Option of installing components with radio-frequency sources in the 9kHz to 60GHz range that can be used for continuous and pulsed transmission of signals. Antennas can be installed inside or outside the enclosure and must:

- comply with one of the protection types indicated in standard EN-IEC 60079-0.
- be installed outside the hazardous area.

For more information, refer to certificate EPT 20 ATEX 4075 X / IECEx EUT 20.0024X.

## Table with maximum power dissipation values for EJBC series enclosures.

The temperature classes and maximum surface temperatures of control and monitoring unit enclosures depend on the size of the enclosure, ambient temperature and power dissipation inside the enclosure.

|                | Maximum power dissipation (Watts) with ambient temperature of +40°C (+55°C) |  |   |   |  |  |  |  |
|----------------|---|--|---|---|--|--|--|--|
| Enclosure type | T6 class without indicator lights. Only indicator LEDs are allowed.         | T5 class with indicator lights and/or LEDs | T5 class without indicator lights. Only indicator LEDs are allowed. | T4 class without indicator lights and/or LEDs |  |  |  |  |
| EJBC-45        | 140W (105W)   | 140W (105W)                                | 240W (180W)   | 480W (360W)                                   |  |  |  |  |
| EJBC-45B       | 120W (90W)  | 120W (90W)                                 | 210W (160W)   | 430W (320W)                                   |  |  |  |  |
| EJBC-5         | 210W (160W)   | 210W (160W)                                | 315W (235W)   | 600W (450W)                                   |  |  |  |  |
| EJBC-5B        | 170W (130W)   | 170W (130W)                                | 250W (190W)   | 480W (360W)                                   |  |  |  |  |

# EJBC-... series Features of junction boxes with interface units

#### **ELECTRICAL FEATURES**

**Rated voltage:** 24 / 1000 Vac 12 / 250 Vdc

Max. current on

contacts and fuses: 400 A Rated frequency: 50 / 60Hz

Max. wattage for lamps: 5 W (for Ta +40°C)

3 W (for Ta +55°C)

#### **GENERAL INSTALLATION INFORMATION**

The maximum power dissipation inside the enclosure depends on the maximum current on contacts and fuses, the size of the enclosure, the temperature class (or maximum surface temperature for 2GD category) and ambient temperature, as specified in the maximum power dissipation tables (see previous page).

The maximum power dissipation must not exceed the values given in the table when non-'Ex i' components and 'Ex i'

components (with 1.1W maximum power dissipation) are installed together.

The maximum power dissipation possible inside the enclosure will also depend on the maximum power dissipation of terminals, contacts and cables; whatever the case, the current density value allowed in the enclosure is prescribed by EN 60439-1, IEC 60439-1.

### Details of barrier mounting inside enclosures

The "omega" rail, in accordance with EN 60079-11, is suitable for mounting barriers inside 'Ex d' enclosures.

Barriers are mounted (according to the manufacturer's directions) 7.5 mm away from the base of the enclosure and are secured to the DIN rail with 2 earth terminals (nominal cross-sectional area 6-10 mm) and 2 standard terminals for omega rails (EN 60079-11).

Up to how many barriers can be installed in the enclosures will depend on the properties of the barriers in question; in addition, the maximum number of barriers must not exceed the limit allowed by the certificate in any case.

Associated equipment can also be mounted on a DIN rail; when it is mounted on the enclosure's internal mounting plate, reference must be made to the minimum prescribed distances. Whether mounted on a rail or mounting plate, associated equipment must meet the following requirements:

#### Separators

When separators are used, they must be appropriately sized; their thickness and fastening inside the enclosure must be suitably determined and separators must allow air to circulate inside the enclosure.

## Incoming cables

Incoming cables for 'Ex i' circuits must be suitably labelled or the area around the entry must be coloured blue RAL 5015. 'Ex i' entries must be clearly identified

#### Installation of 'Ex i' and non-'Ex i' components inside the enclosure.

Ex d IIC certified enclosures complete with accessories can contain only Ex ia IIC associated equipment; in this case, the resulting version becomes Ex d [ia] IIC.

#### Connection of internal cables

Cables are connected inside the enclosure to the barriers in accordance with EN 60079-11, with one side for connecting 'Ex i' cables and the opposite side for connecting non-'Ex i' cables.

Connection in 'Ex i' circuits must be made using insulated cables only; there must be no connections to non-'Ex i' circuits and no more than one cable can be connected to a single terminal. 'Ex i' cables cannot be grouped together with non-'Ex i' cables; in addition, 'Ex i' cables and non-'Ex i' cables must be kept separated. The minimum distance between the 2 types of cables must be 8 mm. The minimum insulation level for non-'Ex i' cables must be greater than 1.5 kV; the minimum insulation level for 'Ex i' cables must be greater than 0.5 kV.

#### Internal connections

When routing cables belonging to 'Ex i' circuits, the cables must be identified in one of the following ways:

- cables must have blue insulation (as long as there are no other cables inside the enclosure with this colour).
- 'Ex i' cables must be kept separate from non-'Ex i' cables with blue cable raceways.
- 'Ex i' cables must be grouped together, using a tie, for example, and the area identified with a blue label.

Warning 'Ex i' circuits

- cables for power circuits must have a cross-sectional area of at least 1.5 mm<sup>2</sup>.
- 'Ex i' circuits must be kept at a distance of 50 mm from non-'Ex i' circuits.
- the earth connection must meet European standard EN 60079-14.

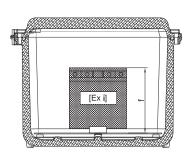
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# EJBC-... series Features of junction boxes with interface units

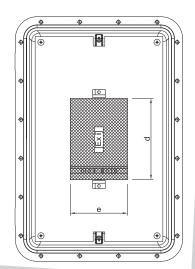
The number of items of equipment mounted inside the enclosures and their layout will vary based on the following:

- in accordance with EN 60079-1 and IEC 60079-1, the equipment contained inside the enclosure can be arranged in any way provided that at least 40% of the surface area of each section is left free.
- equipment must be set at a suitable distance to accommodate cable wiring.

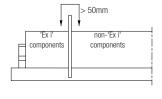
# Maximum dimensions of 'Ex ia' equipment that can be installed inside enclosures.

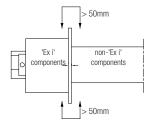


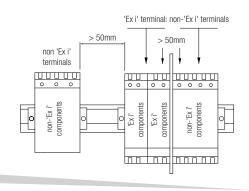
|          | d   | е   | f   |
|----------|-----|-----|-----|
| EJBC-45  | 410 | 225 | 170 |
| EJBC-45B | 410 | 225 | 120 |
| EJBC-5   | 480 | 280 | 220 |
| EJBC-5B  | 480 | 280 | 150 |



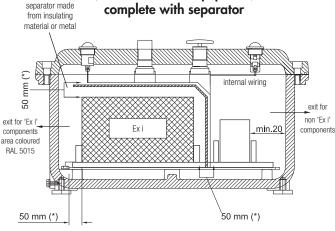
# Examples of installation of associated equipment - minimum distances.



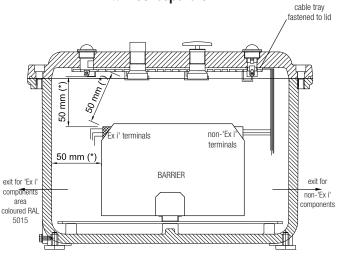




## Example of interface unit (with associated equipment) complete with separator



# Example of interface unit without separator



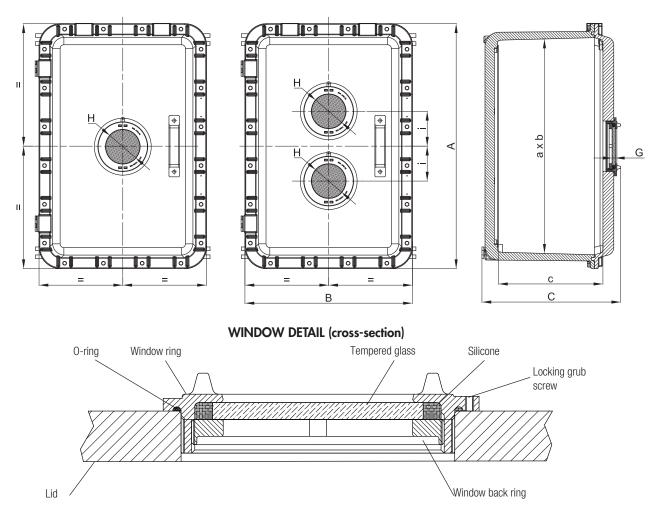
#### **NOTES**

- (\*) 50 mm is the minimum safe distance between 'Ex i' components and non-'Ex i' components (and/or conducting parts).
- The active and passive barriers that can be installed in the enclosures must have their own ATEX certificate.
- The maximum voltage entering barriers on non-'Ex i' circuits must be less than 250 V.

EJBC series junction boxes are used as enclosures for electrical equipment that requires a visual interface with the outside. Voltmeters, ammeters and other analogue and digital measuring instruments are typical examples of installations that require a window for taking direct readings. These enclosures are also used to house monitoring instruments such as infra-red photoelectric cells and twilight sensors that provide pulses for control and signalling equipment (opening/closing, alarms, etc....). Our technical department will decide what size enclosures to use based on your requirements and determine the internal layout so that all the dimensional and electrical parameters prescribed by the certificate are met. We can install equipment to your specifications within the technical limits allowed by the certificate and based on our standard control and signalling devices.



### DIMENSIONAL DRAWING OF ENCLOSURES WITH ROUND VIEWING WINDOWS



A.13 ED.2021

| Code         | Outside dimensions |     | Insid | Inside dimensions |     |     | Siz | e of windo | ws |     |
|--------------|--------------------|-----|-------|-------------------|-----|-----|-----|------------|----|-----|
|              | Α                  | В   | C     | a                 | b   | С   |     | Н          | G  | i   |
|              |                    |     |       |                   |     |     |     |            |    |     |
| EJBC-45/2W0  | 560                | 380 | 298   | 490               | 305 | 229 | 2   | 90         | 10 | 90  |
| EJBC-45B/2W0 | 560                | 380 | 253   | 490               | 305 | 179 | 2   | 90         | 10 | 90  |
| EJBC-45/1W2  | 560                | 380 | 298   | 490               | 305 | 229 | 1   | 140        | 12 | -   |
| EJBC-45B/1W2 | 560                | 380 | 253   | 490               | 305 | 179 | 1   | 140        | 12 | -   |
| EJBC-5/2W0   | 632                | 432 | 341   | 560               | 360 | 275 | 2   | 90         | 10 | 140 |
| EJBC-5B/2W0  | 632                | 432 | 271   | 560               | 360 | 205 | 2   | 90         | 10 | 140 |
| EJBC-5/1W2   | 632                | 432 | 341   | 560               | 360 | 275 | 1   | 140        | 12 | -   |
| EJBC-5B/1W2  | 632                | 432 | 271   | 560               | 360 | 205 | 1   | 140        | 12 | -   |
| EJBC-5/1W3   | 632                | 432 | 341   | 560               | 360 | 275 | 1   | 180        | 15 | -   |
| EJBC-5B/1W3  | 632                | 432 | 271   | 560               | 360 | 205 | 1   | 180        | 15 | -   |

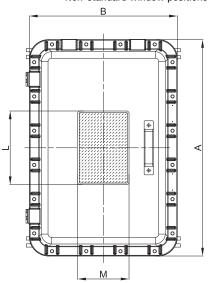
We can provide standard windows to meet your requirements for the various enclosure types for such purposes as viewing analogue or digital instruments, indicators of various kinds.

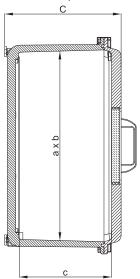


## **DIMENSIONAL DRAWING OF ENCLOSURES** WITH RECTANGULAR WINDOWS (tempered glass).

Position of standard window in centre.

Non-standard window positions or dimensions on request.



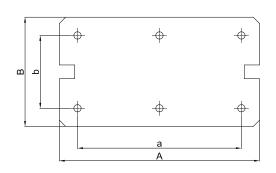


| Code            | Outside dimensions |     |     | Intern | Internal dimensions |     |     | Window size |  |
|-----------------|--------------------|-----|-----|--------|---------------------|-----|-----|-------------|--|
|                 | Α                  | В   | C   | a      | b                   | С   | M   | L           |  |
|                 |                    |     |     |        |                     |     |     |             |  |
| EJBC-45/3020SP  | 560                | 380 | 298 | 490    | 305                 | 229 | 200 | 300         |  |
| EJBC-45B/3020SP | 560                | 380 | 248 | 490    | 305                 | 184 | 200 | 300         |  |
| EJBC-5/3020SP   | 632                | 432 | 341 | 560    | 360                 | 271 | 200 | 300         |  |
| EJBC-5B/3020SP  | 632                | 432 | 271 | 560    | 360                 | 201 | 200 | 300         |  |

| ILLUSTRATION | DESCRIPTION                                | MODEL                        | FEATURES  | CODE       | KEY                  |  |
|--------------|--|------------------------------|---|------------|----------------------|--|
|              | Internal mounting plates                   | EJBC-45/45B                  | Thickness 2.5mm<br>Aluminium<br>(BFE)<br>Galvanized steel   | BFE-45     | SCARE PART           |  |
|              | morral mooning plates                      | EJBC-5/5B                    | (BFEAC)<br>Stainless steel<br>(BFESS)   | BFE-5      | (100000000)          |  |
|              | Breather and drain valve                   | Thread diameter ISO 7-R 3/8" | Material:<br>stainless steel  | ECD-210S   | SPARE PART           |  |
|              | Cable glands and unions                    |                              | For models and codes,<br>visit<br>www.cortemgroup.com   |            | SPARE PART           |  |
|              | Sealed bushings                            |                              | For models and codes,<br>visit<br>www.cortemgroup.com   |            | ACCESSORY SPARE PART |  |
|              | Lid-mounted control and signalling devices |                              | For control and<br>signalling device<br>models and codes, see<br>control and monitoring<br>device chapter | M-0        | ACCESSORY SPACE PART |  |
| 13 75 75     | N°2 hinges per enclosure                   | EJBC                         | Material:<br>stainless steel  | 218-9301   | SPARE PART           |  |
|              |  | EJBC-45/45B                  | Material:   | K45-237    | SPARE PART           |  |
|              | Mounting brackets                          | EJBC-5/5B                    | acero galvanizado   | K5-237     |                      |  |
|              | O-ring between body<br>and lid             | EJBC-45/45B                  | Material:   | K45-131/1S | SPARE PART           |  |
|              | and lid                                    |                              | red-coloured silicone   | K5-131/1S  |                      |  |

## Dimensional drawings of internal mounting plates and mounting brackets

| Enclosures   | Internal mounting plates |      |     |     |        |  |  |
|--------------|--------------------------|------|-----|-----|--------|--|--|
| Eliciosules  | Α                        | Code |     |     |        |  |  |
| EJBC-45 /45B | 460                      | 280  | 440 | 260 | BFE-45 |  |  |
| EJBC-5 /5B   | 530                      | 330  | 500 | 300 | BFE-5  |  |  |



| Enclosures   | Mounting brackets |    |     |    |         |  |  |  |
|--------------|-------------------|----|-----|----|---------|--|--|--|
| Eliciosures  | A B E F Code      |    |     |    |         |  |  |  |
| EJBC-45 /45B | 376               | 30 | 356 | 11 | K45-237 |  |  |  |
| EJBC-5 /5B   | 450               | 30 | 430 | 11 | K5-237  |  |  |  |

