JBEA and ECEA Series Aluminum Enclosures

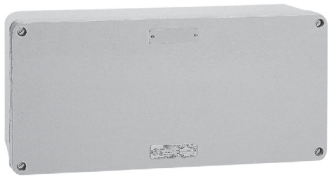
Increased Safety

Zones 1 & 2 – 21 & 22
Gas (G) and Dust (D)

Applications

- Designed for use in Zone 1 or 2 areas where flammable gases or vapors are present either continuously or intermittently.
- Ideal for use in wet or corrosive atmospheres.
- Petroleum, chemical, refineries and other industrial process facilities.
- Designed for use in Zone 21 or 22 areas where flammable dusts are present either continuously or intermittently.
- Food processing, dairy, brewing and other commercial facilities.
- JBEA Series:
  - Terminal junction boxes for electrical low voltage and instrumentation connections in hazardous areas.
  - Refer to technical data to define permitted number of terminal blocks and cable entries on selected junction boxes.
- ECEA Series:
  - Enclosure for distribution and control applications can be customized at our workshop to house a large range of components; i.e. control units, switches, breakers, transformers, meters, etc.

PCe Type



CAe Type

Features

- Operating temperature:
  - PCe type: -55 °C to +60 °C
  - CAe type: -40 °C to +55 °C
- Rail mounting.
- Refer to technical data to define permitted number and size of terminals and cable entries.

Standard Materials

- Enclosure: gray painted grade marine aluminum alloy
- Hardware: stainless steel

Options

- Nameplates.
- Consult your local sales representative for:
  - Enclosures custom drilled and assembled at our factory.
  - Empty enclosure with Ex “U” component marking for re-certification by notified body for CAe type.

Certifications and Compliances

♦ATEX or IECEx Certification

- **Certification Type PCe**
  - Gas, Zones 1 and 2:
    - Conforming to ATEX 94/9/CE: Ⓔx II 2 G
    - Type of Protection: Ex e II, Ex ia IIC, Ex ib IIC, Ex de IIC
    - Temeprature class: T6 for Ta ≤ +40 °C , T5 for Ta ≤ +60 °C
  - Dust, Zones 21 and 22:
    - Conforming to ATEX 94/9/CE:Ⓔx II2 D
    - Type of Protection: Ex tD A21
    - Surface Temperature: T80 °C to T95 °C
  - Ambient Temperature: -55 °C to +60 °C
  - CE Declaration of Conformity: 50221
  - ATEX Certificate: LCIE 00 ATEX 6047
  - Index of Protection according EN/IEC 60529: IP66
  - Impact Resistance (shock): IK10
- **Certification Type CAe**
  - Gas, Zones 1 and 2:
    - Conforming to ATEX 94/9/CE: Ⓔx II 2 G
    - Type of Protection: Ex e II, Ex ia IIC, Ex ib IIC, Ex de IIC
    - Temperature class T6 to T2
  - Dust, Zones 21 and 22:
    - Conforming to ATEX 94/9/CE: Ⓔx II2 D
    - Type of Protection: Ex tD A21
    - Surface Temperature: T80 °C to T290 °C
  - CE Declaration of Conformity: 50325
  - ATEX Certificate: LCIE 02 ATEX 6248X
  - IECEx Certificate: IECEx LCI 04.0016X
  - Index of Protection according EN/IEC 60529: IP66
  - Impact Resistance (shock): IK10
- **Certification Type CAe U**
  - Gas, Zones 1 and 2:
    - Conforming to ATEX 94/9/CE: Ⓔx II 2 G
    - Type of Protection: Ex e II
  - Dust, Zones 21 and 22:
    - Conforming to ATEX 94/9/CE: Ⓔx II2 D
    - Type of Protection: Ex tD A21
  - Ambient Temperature: -40 °C to +55 °C
  - CE Declaration of Conformity: 5C241
  - ATEX Certificate: LCIE 09 ATEX 3036 U
  - Index of Protection according EN/IEC 60529: IP66
  - Impact Resistance (shock): IK10

♦EURASEC Certification

- **Certification Type PCe**
  - EURASEC N° TC RU C-FR.ГБ05.B.00911
- **Certification Type CAe**
  - EURASEC N° TC RU C-FR.ГБ05.B.00911

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Catalog Numbering Guide — JBEA Series Aluminum Junction Box

JBEA — JB Series ATEX/IECEx Certified Junction Box

E — Method of Protection:
E - Increased Safety
I - Intrinsic Safety

A — Material:
A - Aluminum

12 — Length Dimensions mm :
12 - 120
17 - 170
21 - 215
32 - 320
42 - 425
48 - 480

11 — Width Dimensions mm:
11 - 110
20 - 205
38 - 380

09 — Depth Dimensions mm:
09 - 91
13 - 130
19 - 190

D1 — Options:
(options must be listed alphabetically)
U - Component Certification "U"
- Customized Enclosure *(Digit number will be assigned at time of order placement)*

JBEA Series: Ex e II Aluminum Junction Boxes

For use with Ex certified terminals only (not supplied).
Mounting rails supplied.
Yellow laminated plastic label with black lettering.

ECEA Series: Aluminum Enclosure for Distribution and Control Applications

Designed to house a large range of components; i.e. control units, switches, breakers, transformers, meters, etc.
Must be customized at our workshop with the following Catalog Number:
Replace JB with EC, and add last digits and "#" for customized boxes. Example: ECEA 212013 #

Type	Dimensions L x W x D mm	Rail Length Maximum Width mm	Weight kg	Volume dm^3	Catalog Number JBEA Series	Catalog Number ECEA Series
PCe1	120 x 110 x 95	94	1.0	2.2	**JBEA121109**	**ECEA121109#**
PCe2	170 x 110 x 95	144	1.3	2.7	**JBEA171109**	**ECEA171109#**
PCe3	230 x 110 x 95	204	1.6	5.2	**JBEA231109**	**ECEA231109#**
CAe1	215 x 205 x 130	191	4.0	13	**JBEA212013**	**ECEA212013#**
CAe2	320 x 205 x 130	293	5.0	23	**JBEA322013**	**ECEA322013#**
CAe3	425 x 205 x 130	400	6.0	33	**JBEA422013**	**ECEA422013#**
CAe5	480 x 380 x 190	335	11.0	53	**JBEA483819**	**ECEA483819#**

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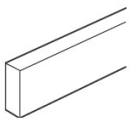
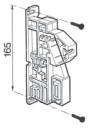
Accessories

		Enclosure Type	Rail Length mm	Catalog Number	Pack
	**Zinc Plated Symetrical Steel Rail** *For direct fixing. Set of two 60 mm height spacers supplied.*	CAe1	191	**JBEPDR215**	1
		CAe2	293	**JBEPDR320**	1
		CAe3	400	**JBEPDR425**	1

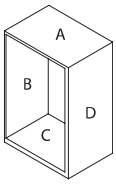
		Bar Length mm	Catalog Number	Pack
	**Copper Bar – 12 x 4 mm** *Copper bar not perforated for cable clamps.*	160	**097270**	1
		200	**097271**	1
		310	**097272**	1
		500	**097273**	1
		690	**097274**	1
	**Cable Clamp for Copper Bar – 12 x 4 mm**			
	1.5 mm² to 4 mm² capacity.		**097203**	1
	6 mm² to 16 mm² capacity.		**097204**	1
	**Insulated Side Support – Set of Two** *For mounting symmetrical, asymmetrical rails and copper bar 12 x 2 mm or 12 x 4 mm.* *See dimensional data page for more details.*		**096115**	1

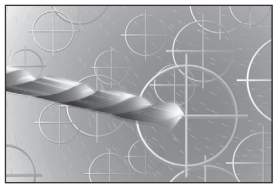
JBEA Series for Junction Box Application Only.

The size of the junction box needed to meet your requirements can be selected based on the table shown below.
We also offer you the possibility to drill and equip, please consult our drilling guide available online at: www.appletonelec.com

1. Define maximum cable entries according to number of modules available per side.

Cable Entry Metric Thread	Number of Modules
M20	1
M25	1
M32	1
M40	2
M50	3





	Dimensions mm			Number of Modules		Allowable	Terminal Dim.
Type	Length	Width	Depth	A/C	B/B	Max. Size	H — mm
PCe1	120	110	95	2	2	M25	110
PCe2	170	110	95	2	3	M32	110
PCe3	230	110	95	2	4	M32	110
CAe1	215	205	130	11	8	M50	205
CAe2	320	205	130	18	8	M50	205
CAe3	425	205	130	26	8	M50	205
CAe5	575	380	190	34	25	M50	380

2. Maximum Rail Arrangement According to Physical Dimensions — Maximum Quantity of Horizontal Rails

	Terminal Capicity mm²						
Type	2.5	4	6	10	16	35	50
PCe1/2/3	1	1	1	1	0	0	0
CAe1/2/3	1	1	1	1	1	1	0
CAe5	3	3	2	2	2	1	1

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3. Defining maximum terminal block quantity according to power dissipation:

- Junction boxes used for instrumentation applications have very low current levels, therefore there is no risk of overheating whatever the number of terminals inside the box.
- For applications other than instrumentation, the following tables allow you to define your junction box depending on the number of terminals and the maximum authorized current being carried with feed-through terminals.
- For single feed terminals using cross connection, please consult your local representative for a calculation.

For other terminal block configurations, please consult our drilling guide available online at: www.appletonelec.com

T Rating: T6		Type CSPe1 120 x 120 x 91 mm	CSPe2 120 x 170 x 91 mm	CSPe3 120 x 230 x 91 mm
2.5 mm²	Quantity	12	22	33
	I Maximum	15 A	13 A	12 A
4 mm²	Quantity	10	18	28
	I Maximum	20 A	19 A	16 A
6 mm²	Quantity	7	14	21
	I Maximum	32 A	27 A	24 A
10 mm²	Quantity	4	6	8
	I Maximum	50 A	50 A	50 A

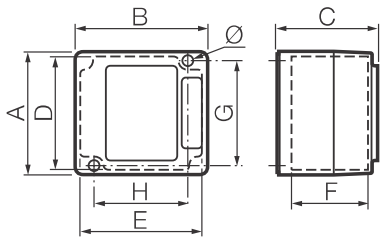
T Rating: T6 @ Ta +40 °C T5 @ Ta +55° C		Type CAe1 200 x 215 x 150 mm	CAe2 200 x 320 x 150 mm	CAe3 200 x 425 x 150 mm	CAe4 200 x 575 x 150 mm
2.5 mm²	Quantity	20	21	23	38
	I Maximum	16 A	16 A	16 A	16 A
4 mm²	Quantity	19	20	23	38
	I Maximum	20 A	20 A	20 A	20 A
6 mm²	Quantity	12	13	14	23
	I Maximum	32 A	32 A	32 A	32 A
10 mm²	Quantity	10	11	18	30
	I Maximum	40 A	40 A	32 A	32 A
16 mm²	Quantity	8	10	13	22
	I Maximum	28 A	27 A	25 A	26 A
25 mm²	Quantity	8	8	10	20
	I Maximum	67 A	73 A	69 A	60 A
35 mm²	Quantity	8	8	10	12
	I Maximum	79 A	86 A	80 A	100 A

JBEA and ECEA Series Aluminum Enclosure Dimensions

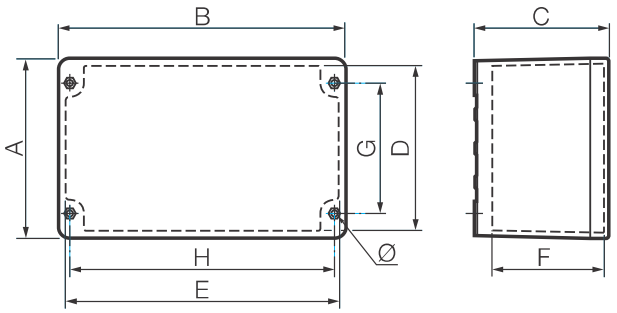
Increased Safety

Dimensions in Millimeters

PCe1 to PCe3



CAe1 to CAe5



	External			Internal			Fixings			
Type	A	B	C	D	E	F	G	H	Thick	Ø
PCe1	110	120	95	100	110	70	94	84	20	5.0
PCe2	110	170	95	100	160	70	94	134	20	5.0
PCe3	110	230	95	100	220	70	94	194	20	5.0
CAe1	205	215	130	190	200	105	146	186	10	6.5
CAe2	205	320	130	190	305	105	146	290	10	6.5
CAe3	205	425	130	190	410	105	146	398	10	6.5
CAe5	480	380	190	378	279	132	385	285	13	7.0

Insulated Side Support (Rail Holder) 096115

	Equipment Capacity	
Type	L	M
CAe1	105	129
CAe2	206	234
CAe3	310	339
CAe5	315	345