

CESI

CERTIFICATE



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Schema di certificazione

CESI-ATEX

[1] SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE

[2] **Equipment or Protective System intended for use
in potentially explosive atmospheres
Directive 2014/34/EU**

[3] Supplementary EU-Type Examination Certificate number:

CESI 02 ATEX 073X /05

[4] Product: **Command, control and interface units EJB.. series (and AQS-1 model)**

[5] Manufacturer: **CORTEM S.p.A**

[6] Address: **Via Aquileia, 10 - 34070 Villesse (Gorizia) - Italia**

[7] This supplementary certificate extends EU-Type Examination Certificate **CESI 02 ATEX 073X**, to apply to Product designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

[8] CESI, notified body n. 0722 in accordance with Article 17 of the Directive 2014/34/EU of the Parliament and Council of 26 February 2014, certifies that this Product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment or protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in confidential report n. **EX-C3003130**.

[9] In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Supplementary certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20 April 2016.

[10] If the sign "X" is placed after the certificate number, it indicates that the Product in subject to special conditions for safe use specified in the schedule to this certificate.

[11] This EU-TYPE EXAMINATION CERTIFICATE relates only to the design, examination and tests of the specified Product in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this Product. These are not covered by this certificate.

[12] The marking of the Product shall include the following:

- | | | | |
|--|-------------------|---|---|
| | I M2 | Ex db [ia Ma] I Mb | <i>(EJBX.. stainless steel type only)</i> |
| | | <i>or</i> | |
| | II 2(1) GD | Ex db [ia Ga] IIB T6 or T5 Gb | |
| | | Ex tb [ia Da] IIIC T85 or T100 °C Db | |
| | | IP66 or IP66/67 | <i>(IP66 with operators)</i> |
| | | <i>or</i> | |
| | II 2(1) GD | Ex db [ia Ga] IIB+H2 T6 or T5 Gb | |
| | | Ex tb [ia Da] IIIC T85 or T100 °C Db | |
| | | IP66 or IP66/67 | <i>(IP66 with operators)</i> |

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Date 04/07/2024 - Translation issued the 04/07/2024

Prepared
Adrián Lucas Vagni

Verified
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Description of the variation to the Product

Variation 5.1: The **Command, control and interface units EJB.. series (and AQS-1 model)** previously assessed in compliance with EN 60079-0:2012+A11:2013 have been re-assessed on the basis of the new edition of EN IEC 60079-0:2018 Standard.

Variation 5.2: Extended the ambient temperature up to +70 °C.

Variation 5.3: The Equipment can be supplied with external/internal coating and valves ECD-2 series.

Variation 5.4: Editorial changes were applied to parameters of choice for IS components.

Variation 5.5: Certified accessories admitted for cable entries and for connection of more command, control and interface unit EJB series were added.

Unchanged the other constructional characteristics of the **Command, control and interface units EJB.. series (and AQS-1 model)**.

Description of Product

The Equipment **Command, control and interface units EJB.. series (and AQS-1 model)** are composed by an Ex db or Ex tb enclosure used to install common electrical devices such as contactors, switches, measuring instruments, programmable logic controllers and contact blocks. Pilot lights, maneuvers and push button **M-0..** series can be mounted on the cover or on the enclosure walls. Furthermore, transparent glass windows sealed on the cover to permit instrument reading can be installed. They can incorporate associated apparatus for interface with intrinsic safety circuits. These associated apparatuses are subject of separate certification with type of protection [Ex ia] IIB or IIC for group IIB+H₂.

These Equipment **EJB..** series have the body and the cover made in aluminium alloy or stainless steel and are in Ex db [ia Ma] I Mb (stainless steel enclosures only), Ex db [ia Ga] IIB+H₂ Gb and Ex tb [ia Da] IIIC Db execution.

The Equipment is available in two particular executions:

- with external flange for series EJB-..;
- with internal flange for model AQS-1.

Gaskets between cover and body flanged joint and for all other accessories are made in silicon and they guarantee the protection degree IP66 while IP67 for Equipment without control-signal operators only. The flanged joint between the body of the Equipment and the covers are fixed with quality A2-70 stainless steel screws.

The walls of the Equipment can be drilled and threaded with maximum size and maximum number of hubs as specified in the manufacturer documents annexed. Each Equipment is provided with internal and external earthing screw or bolt.

Ambient temperature

- For all Group I (made in stainless steel only), Group II and Group III equipment:

-20 °C ÷ +40 °C or -20 °C ÷ +55 °C

- For all Group IIB, Group IIB+H₂ and Group IIIC equipment with polycarbonate pilot lights:

-40 °C ÷ +40 °C or -40 °C ÷ +55 °C or -40 °C ÷ +70 °C

- For all Group IIB, Group IIB+H₂ and Group IIIC equipment without polycarbonate pilot lights:

-60 °C ÷ +40 °C or -60 °C ÷ +55 °C or -60 °C ÷ +70 °C

In all cases, if control-signal operators are installed, they must be suitable for the temperature assigned to the Equipment.

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Identification of Command, control and interface units EJB.. series (and AQS-1 model):

| Aluminium alloy enclosures | | Stainless steel enclosures |
|----------------------------|-------------|----------------------------|
| EJB series | EJBT series | EJBX series |
| AQS-1 | - | - |
| EJB-01 | EJBT0 | EJBX-01 |
| - | - | EJBX-01B |
| EJB-1 | EJBT1 | EJBX-1 |
| EJB-2 | EJBT2 | EJBX-2 |
| - | EJBT2CB | - |
| - | EJBT2C | - |
| EJB-3 | EJBT3 | EJBX-3 |
| EJB-3B | EJBT3B | EJBX-3B |
| EJB-4 | EJBT4 | EJBX-4 |
| EJB-4B | EJBT4B | EJBX-4B |
| EJB-45 | EJBT45 | EJBX-45 |
| EJB-45B | EJBT45B | EJBX-45B |
| EJB-48BA | - | - |
| EJB-5 | EJBT5 | EJBX-5 |
| EJB-5B | EJBT5B | EJBX-5B |
| EJB-55 | EJBT55 | EJBX-55 |
| EJB-55B | EJBT55B | EJBX-55B |
| EJB-503 | - | - |
| EJB-55C | - | - |
| EJB-6 | EJBT6 | EJBX-6 |
| EJB-6B | EJBT6B | EJBX-6B |
| EJB-7 | EJBT7 | EJBX-7 |
| EJB-7B | - | - |

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Electrical characteristics

| | | |
|--------------------------|------------------------|-----|
| Rated voltage: | 12 ÷ 250 | Vdc |
| | 24 ÷ 1000 | Vac |
| Nominal frequency: | 50/60 | Hz |
| Max. rated current: | 400 | A |
| Maximum power for lamps: | 3W with Tamb. +55 °C | |
| Associated Apparatus: | max. Voltage Um ≤ 250V | |

When Ex i circuits are present the distances between Intrinsic Safety circuits and Non-Intrinsic Safety circuits or between separate intrinsic safety circuits shall be according to EN 60079-11 Standard. Intrinsically safe circuits shall be clearly identified. Where a colour is used for this purpose, it shall be light blue for the intrinsically safe connections.

Table of typical electrical and electronic Equipment inside the boxes:

| DESCRIPTION | [V] | DISSIPATED POWER [W] | [A] |
|------------------------------------|-----|----------------------|-----|
| Analogical digital instruments | 660 | 10 | 5 |
| Electronic gear case | 400 | 10 | - |
| PLC, multiplexer, amplifier | 240 | 80 | - |
| Control and gauging device | 240 | 100 | - |
| Automatic breakers | 660 | - | 400 |
| Fuses | 660 | - | 400 |
| Air thermal relays | 500 | 12 | 10 |
| Electronic control device | 660 | 100 | - |
| Air contactors | 660 | 30 | 400 |
| Sequence timer | 240 | 5 | 10 |
| Photoelectrical cell | 240 | 2 | - |
| Capacitors (discharge time 30 sec) | 660 | - | - |
| Transformers | 660 | 200 | - |
| Resistors | 240 | 300 | - |
| Terminals | 660 | - | - |
| Ballasts | 277 | 40 | 7,5 |

The ratings specified are maximum values, actual values will be subject to the electrical equipment/component used from case to case. Depending on the system conditions, the mode of operation, the utilization category, etc., the manufacturer will define ratings which will be within the range of these limiting values and will comply with the relevant Standards.

Intrinsic safety circuits:

The electrical characteristics of the intrinsic safety circuits are reported on the label of the associated apparatus used.

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Maximum dissipated power:

Table 1.

| Type | | | Maximum dissipated power inside enclosures | | | |
|-----------------|----------|-----------------|--|-----------------------------------|--|-----------------------------------|
| | | | Tamb. = +40°C | | Tamb. = +55°C | |
| Aluminium alloy | | Stainless steel | No signalling lamps, only LEDs are allowed | With signalling lamps and/or LEDs | No signalling lamps, only LEDs are allowed | With signalling lamps and/or LEDs |
| | | | T6 / T85 °C | T5 / T100 °C | T6 / T85 °C | T5 / T100 °C |
| EJBT0 / EJBT2CB | EJB-01 | - | 30 W | 30 W | 25 W | 25 W |
| EJBT1 / EJBT2C | EJB-1 | EJBX-1 | 45 W | 45 W | 34 W | 34 W |
| EJBT2 | EJB-2 | EJBX-2 | 60 W | 60 W | 45 W | 45 W |
| EJBT3 | EJB-3 | EJBX-3 | 75 W | 75 W | 56 W | 56 W |
| EJBT3B | EJB-3B | EJBX-3B | 55 W | 55 W | 40 W | 40 W |
| EJBT4 | EJB-4 | EJBX-4 | 100 W | 100 W | 75 W | 75 W |
| EJBT4B | EJB-4B | EJBX-4B | 75 W | 75 W | 56 W | 56 W |
| EJBT45 | EJB-45 | EJBX-45 | 140 W | 140 W | 105 W | 105 W |
| EJBT45B | EJB-45B | EJBX-45B | 120 W | 120 W | 90 W | 90 W |
| - | EJB-48BA | - | 120 W | 120 W | 90 W | 90 W |
| EJBT5 | EJB-5 | EJBX-5 | 210 W | 210 W | 160 W | 160 W |
| EJBT5B | EJB-5B | EJBX-5B | 170 W | 170 W | 130 W | 130 W |
| - | EJB-503 | - | 230 W | 230 W | 176 W | 176 W |
| EJBT55 | EJB-55 | EJBX-55B | 260 W | 260 W | 200 W | 200 W |
| EJBT55B | EJB-55B | - | 260 W | 260 W | 160 W | 160 W |
| - | EJB-55C | EJB-55 | 360 W | 360 W | 270 W | 270 W |
| EJBT6 | EJB-6 | EJBX-6 | 600 W | 600 W | 460 W | 460 W |
| EJBE-6B | EJB-6B | EJBX-6B | 490 W | 490 W | 370 W | 370 W |
| - | EJB-7 | - | 770 W | 770 W | 590 W | 590 W |
| - | EJB-7B | - | 600 W | 600 W | 460 W | 460 W |
| - | - | EJBX-7 | 610 W | 610 W | 470 W | 470 W |
| - | AQS-1 | - | 100 W | 100 W | 75 W | 75 W |

For the ambient temperature of +70°C the values of dissipated power correspond to those indicated on columns of +55°C decreased by 25%.

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Cable Entries

The accessories used for the cable entries and to close the unused holes, shall be subject of a separate certification, shall be used according to the Safety Instructions reported in the relevant certificate and shall guarantee the same type/degree of protection assigned to the Equipment. Moreover, the accessories shall be suitable to be used in the ambient temperature range assigned to the Equipment.

In case of cylindrical threads, the coupling shall be locked against loosening using thread-lock compound.

In addition, certified sealing fittings or sealing bushings can be used for cable entries and for connection of more command, control and signal unit EJB series. To facilitate the installation of the sealed joints, certified conduit fittings can be used. The certified accessories admitted are as follows:

- Sealing fittings EYS, EYD, EZS, EZD series certified CESI 03 ATEX 085X;
- Sealing bushings NPS, CP, TP, NCS, LPS series certified CESI 01 ATEX 080U;
- Three pieces conduit unions R, B, RB series certified CESI 99 ATEX 034U;
- Nipples NP, sleeves EM and elbow ELF series certified CESI 01 ATEX 104U;
- Adaptors RE REB REM REN series and plugs PLG certified CESI 02 ATEX 049X.

The operating temperature limits of Ex certified accessories admitted, shall be duly observed during command, control and interface unit EJB Equipment mounting.

Furthermore, the different types of protection of the equipment enclosures connected by means of these Ex certified accessories shall be duly fulfilled.

Warning labels

"Use screws of quality A2-70 with tensile strength of at least 700 N/mm²."

"Warning - do not open when energized"

For equipment with capacitors:

"After de-energizing, wait 10 minutes before opening".

For equipment with batteries or cells:

"Warning – Do not open when an explosive atmosphere is present".

For equipment with temperature class T5:

"Use cables suitable for temperature of 90 °C".

For products complete with external coating in non-metallic material with a thickness:

> 0.2 mm for IIB+H₂ execution or

> 2 mm for IIB execution.

"Warning – Potential electrostatic charging hazard – for cleaning use only a damp cloth".

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Report n. EX-C3003130

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Routine tests

The manufacturer shall carry out the routine tests prescribed at paragraph 16 of the EN 60079-1:2014 standard.

The routine overpressure test shall be carried out with the static method (paragraph 15.2.3 of the EN 60079-1:2014 standard) with the following pressure values:

- 12.3 bar on all EJB Equipment for minimum ambient temperature until -20 °C;
- 12.3 bar on all EJBX Equipment for minimum ambient temperature until -20 °C;
- 14.9 bar on all EJB Equipment for minimum ambient temperature until -40 °C;
- 15.2 bar on all EJBX Equipment for minimum ambient temperature until -40 °C;
- 16.4 bar on all EJB Equipment for minimum ambient temperature until -60 °C;
- 17.0 bar on all EJBX Equipment for minimum ambient temperature until -60 °C.

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Special conditions for safe use (X)

- The accessories used for cable entries and for closing unused openings shall be certified according to EN IEC 60079-0, EN 60079-1 and EN 60079-31. A minimum degree of protection IP66/67 shall be guaranteed according to EN 60529 standard.
- The Equipment shall be used in the following ambient temperature range:
 - from -20°C up to +40°C/+55°C: all versions of Equipment for Group I (EJBX.. made in stainless steel only), Group IIB, Group IIB+H₂ and Group IIIC;
 - from -40°C up to +40°C/+55°C/+70°C: all versions of Equipment for Group IIB, Group IIB+H₂ and Group IIIC with polycarbonate pilot lights;
 - from -60°C up to +40°C/+55°C/+70°C: all versions of Equipment for Group IIB, Group IIB+H₂ and Group IIIC without polycarbonate pilot lights.
- The operating temperature limits of Ex accessories used for connection of more command, control and interface unit EJB series, shall be duly observed.
- The minimum distance between flameproof flanged joint of the enclosure and external obstacle should be:
 - 20 mm for IIB execution;
 - 30 mm for IIB+H₂ execution.

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Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

EHSR are assured by compliance with safety conditions and by compliance with the following standards:

| | |
|-----------------------------|--|
| EN IEC 60079-0: 2018 | Explosive atmospheres - Part 0: Equipment - General requirements |
| EN 60079-1: 2014 | Part 1: Equipment protection by flameproof enclosures "d" |
| EN 60079-11: 2012 | Part 11: Equipment protection by intrinsic safety 'i' |
| EN 60079-31:2014 | Part 31: Equipment dust ignition protection by enclosure 't' |

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[19] **Descriptive documents** (prot. EX-C3003140)

| | | | |
|---|-------|-------|------------|
| *Technical note A4-7850 (11 pg.) | Rev.0 | dated | 09/02/2022 |
| *Safety, maintenance and mounting instructions F-270 (11 pg.) | Rev.8 | dated | 09/02/2022 |
| *A3-8159 Drawing (3 sheets) | Rev.0 | dated | 09/02/2022 |
| *Annex 1 (8 pg.) | Rev.0 | dated | 09/02/2022 |
| -Drawing A3-6586 | Rev.1 | dated | 21/07/2016 |

*Note: an * is placed before the title of documents which are new or revised, annexed to this supplement.*

One copy of all documents mentioned above is kept in CESI files.

Certificate history

| Issue N. | Issue Date | Summary description of variation |
|----------|------------|---|
| 00 | 06/10/2002 | First Issue of the Certificate. |
| 01 | 20/11/2007 | Updating to standards EN 60079-0 (2006), EN60079-1 (2004), EN60079-11 (2007), EN60079-26 (2004), EN 61241-0 (2006), EN 61241-1 (2004) and EN 61241-11 (2006). New execution IIB+H2. New EJB-01, AQS.-1, EJB-55, EJB-55B and EJBX7 types were added. |
| 02 | 31/05/2010 | Updating to standards EN 60079-1 (2007), EN60079-26 (2007). New exec. for group I (for stainless steel enclosure only). New minimum ambient temperature for group II. New EJB-7 and EJB-7B types were added. |
| 03 | 18/04/2012 | Updating to standards EN 60079-0 (2009), EN60079-1 (2007), EN60079-11 (2007), EN60079-26 (2007) and EN60079-31 (2009). Elimination of silicon grease on plane joints for IP degree of protection. New EJB-55B model was added. Update of EJB-55 and EJB-55C coding. |
| 04 | 31/10/2016 | Updating to standards EN 60079-0: 2012 + A11:2013, EN60079-1:2014, EN60079-11:2012, EN60079-26:2015 and EN60079-31:2014. New minimum ambient temperature -60°C. New enclosures EJBX-01 and EJBT... series and Special conditions for safe use (X) have been added. |
| 05 | 04/07/2024 | Standard update to EN IEC 60079-0:2018. Extended ambient temperature from -20°C, -40°C, -60°C up to +70°C. Added external/internal coating and valves ECD-2 series. Editorial changes to selection parameters for IS components. Admitted accessories for cable entries and for connection of more EJB unit were added. |

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