



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx CES 16.0012X issue No.: 0 Certificate history:

Status: **Current**

Date of Issue: **2016-05-26** Page 1 of 3

Applicant: **CORTEM S.p.A.**
Via Aquileia 10
I - 34070 Villesse (GO)
Italy

Equipment: **Command, control and signalling unit, series EJB-., EJBX., EJB-., and AQS-1**
Optional accessory:

Type of Protection: **Flameproof enclosures 'd'; Dust ignition protection 't'**

Marking: **Ex db I Mb (EJBX.. stainless steel type only)**
Ex db IIB T6 or T5 or T4 Gb
Ex db IIB+H2 T6 or T5 or T4 Gb
Ex tb IIIC T85 or T100 or T135 °C Db
IP66 or IP66/67

Approved for issue on behalf of the IECEx
Certification Body:


Mirko Balaz

Position:

Head of IECEx CB

Signature:
(for printed version)

Date:


26-5-2016

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

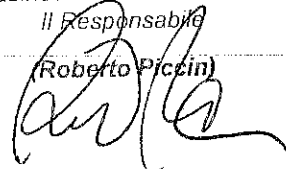
CESI

CESI S.p.A.

Testing & Certification Division
Business Area Certification

Il Responsabile

(Roberto Piccin)





IECEX Certificate of Conformity

Certificate No.: IECEx CES 16.0012X

Date of Issue: 2016-05-26

Issue No.: 0

Page 2 of 3

Manufacturer: **CORTEM S.p.A.**
Via Aquileia 10
I - 34070 Villesse (GO)
Italy

Additional Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2011 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-1 : 2014-06 Edition: 7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-31 : 2013 Edition: 2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:
IT/CES/ExTR16.0003/00

Quality Assessment Report:

IT/CES/QAR06.0002/09



IECEX Certificate of Conformity

Certificate No.: IECEx CES 16.0012X

Date of Issue: 2016-05-26

Issue No.: 0

Page 3 of 3

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The EJB-.. command, control and signalling units series are equipments composed by an Ex db or Ex tb enclosure used to install common electrical devices such as contactors, switches, measuring instruments, programmable logic controllers, pilot lights, contact blocks, command and signalling actuators mounted on the cover or on the enclosure walls, circular or rectangular transparent glass windows sealed on the cover to permit instrument reading, etc.

The EJB-.. command, control and signalling units series have the body and the cover made in aluminium alloy or stainless steel and are in Ex db I (stainless steel only), Ex db IIB, Ex db IIB+H₂ and Ex tb IIIC execution.

The EJB-.. series is available in two particular execution:

- with external flange for type EJB-..;
- with internal flange for type AQS-1.

The command, control and signalling units, series EJB-.., EJBX-.., EJBT-.. and AQS-1 characteristics are further described in the Annexe of this certificate.

CONDITIONS OF CERTIFICATION: YES as shown below:

The accessories used for cable entries and for closing unused openings shall be certified according to IEC 60079-0, IEC 60079-1 and IEC 60079-31. A minimum degree of protection IP66/67 shall be guaranteed according to IEC 60529 standard.

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.

For radio application the antenna shall be installed in safe area or it shall respect one of the specific type of protection indicated in IEC 60079-0 and installed according to IEC 60079-14. If the radio antenna is installed into the Ex d enclosure it shall respect the limits indicated at the clause 6.6.1 of the IEC 60079-0 standard.



IECEX Certificate of Conformity



Prot: B6019209

Annex to certificate: IECEx CES 16.0012X Issue No.:0 of 2016-05-26

Applicant: CORTEM S.p.A., Via Aquileia 10,
I - 34070 Villesse (GO), Italy

Electrical Apparatus: Command, control and signalling unit,
series EJB-..., EJBX-..., EJBT.. and AQS-1

Description of the equipment

The **EJB-..** command, control and signaling units series are equipment's composed by an Ex db or Ex tb enclosure covered by IECEx CES 14.0017U certificate used to install common electrical devices such as contactors, switches, measuring instruments, programmable logic controllers, contact blocks etc.. Pilot lights, maneuvers and push button covered by IECEx CES 14.0030U, IECEx TSA 06.0015U and IECEx CES 11.0030U certificates can be mounted on the cover or on the enclosure walls. Furthermore, circular or rectangular transparent glass windows sealed on the cover can be installed to permit instrument reading.

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 enclosures without operators only.

The flanged joint between the body of **EJB-..** command, control and signalling units series and the covers are fixed with quality A2-70 stainless steel screws.

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

Model Identification:

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	-	-

PAD B6019209 (2275723) - USO AZIENDALE



IECEX Certificate of Conformity



Prot: B6019209

Annex to certificate: IECEX CES 16.0012X Issue No.:0 of 2016-05-26

Applicant: CORTEM S.p.A., Via Aquileia 10,
I - 34070 Villesse (GO), Italy

Electrical Apparatus: Command, control and signalling unit,
series EJB-..., EJBX-..., EJBT.. and AQS-1

Electrical characteristics

General electrical characteristics:

Rated voltage: 12 ÷ 250 Vdc
24 ÷ 1000 Vdc

Nominal frequency: 50/60 Hz

Max. rated current: 650 A

Maximum power for lamps: 3W with T_{amb.} +55°C

Ex db flameproof enclosure EJB-45, EJB-5, EJB-5B, EJB-55B sizes restrictions:

Rated voltage: 750 Vdc

Max. rated current: 630 A

Ex db flameproof enclosure EJB-55, EJB-6, EJB-6B, EJB-7, EJB-7B sizes restrictions:

Rated voltage: 690 Vac

Nominal frequency: 50/60 Hz

Max. rated current: 1000 A

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	-	650
fuses	660	-	400
air thermal relays	500	12	10
electronic control device	660	100	-
air contactors	660	30	650
sequence timer	240	5	10
photoelectrical cell	240	2	-
capacitors (discharge time 30sec)	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 utilisation category, etc., the manufacturer will define ratings which will be within the range of these limiting values and will comply with the relevant Standards.

Degree of protection (IEC 60529): IP66 (with installed operators)
IP66/67 (without installed operators)

Ambient temperature:

The command, control and signalling units shall be used in the following ambient temperature range:

- from -20°C up to +55°C: all versions of command, control and signalling units for group I (made in stainless steel only), group IIB, IIB+H₂ and group IIIC;
- from -40°C up to +55°C: all versions of command, control and signalling units for group IIB, IIB+H₂ and group IIIC with polycarbonate pilot lights;
- from -60°C up to +55°C all versions of command, control and signalling units for group IIB, IIB+H₂ and group IIIC without polycarbonate pilot lights.



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Applicant: CORTEM S.p.A., Via Aquileia 10,
I - 34070 Villesse (GO), Italy

Electrical Apparatus: Command, control and signalling unit,
series EJB-..., EJBX-..., EJBT.. and AQS-1

Maximum dissipated power:

Table 1.

Type			Maximum dissipated power inside enclosures			
			Tamb. = +40°C			
Aluminium alloy		Stainless steel	no signalling lamps, only LED are allowed		with lamps and/or LED	without signalling lamps and LED
			T6 / T85 °C	T5 / T100 °C	T5 / T100 °C	T4 / T135 °C
EJBT0 / EJBT2CB	EJB-01	-	30 W	45 W	30 W	100 W
EJBT1 / EJBT2C	EJB-1	EJBX-1	45 W	65 W	45 W	140 W
EJBT2	EJB-2	EJBX-2	60 W	85 W	60 W	190 W
EJBT3	EJB-3	EJBX-3	75 W	110 W	75 W	245 W
EJBT3B	EJB-3B	EJBX-3B	55 W	80 W	55 W	180 W
EJBT4	EJB-4	EJBX-4	100 W	175 W	100 W	350 W
EJBT4B	EJB-4B	EJBX-4B	75 W	130 W	75 W	260 W
EJBT45	EJB-45	EJBX-45	140 W	240 W	140 W	480 W
EJBT45B	EJB-45B	EJBX-45B	120 W	210 W	120 W	430 W
-	EJB-48BA	-	120 W	210 W	120 W	430 W
EJBT5	EJB-5	EJBX-5	210 W	315 W	210 W	600 W
EJBT5B	EJB-5B	EJBX-5B	170 W	250 W	170 W	480 W
-	EJB-503	-	230 W	345 W	230 W	660 W
EJBT55	EJB-55	EJBX-55B	260 W	380 W	260 W	740 W
EJBT55B	EJB-55B	-	260 W	380 W	260 W	740 W
-	EJB-55C	EJB-55	360 W	550 W	360 W	1050 W
EJBT6	EJB-6	EJBX-6	600 W	910 W	600 W	1740 W
EJBE-6B	EJB-6B	EJBX-6B	490 W	720 W	490 W	1390 W
-	EJB-7	-	770 W	1170 W	770 W	2270 W
-	EJB-7B	-	600 W	910 W	600 W	1740 W
-	-	EJBX-7	610 W	930 W	610 W	1780 W
-	AQS-1	-	100 W	150 W	100 W	280 W

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Applicant: CORTEM S.p.A., Via Aquileia 10,
I - 34070 Villesse (GO), Italy

Electrical Apparatus: Command, control and signalling unit,
series EJB-..., EJBX-..., EJBT.. and AQS-1

Maximum dissipated power (follows):

Table 2.

Type			Maximum dissipated power inside enclosures			
			Tamb. = +55°C			
Aluminium alloy		Stainless steel	no signalling lamps, only LED are allowed		with lamps and/or LED	without signalling lamps and LED
			T6 / T85 °C	T5 / T100 °C	T5 / T100 °C	T4 / T135 °C
EJBT0 / EJBT2CB	EJB-01	-	25 W	40 W	25 W	80 W
EJBT1 / EJBT2C	EJB-1	EJBX-1	34 W	50 W	34 W	105 W
EJBT2	EJB-2	EJBX-2	45 W	65 W	45 W	142 W
EJBT3	EJB-3	EJBX-3	56 W	82 W	56 W	184 W
EJBT3B	EJB-3B	EJBX-3B	40 W	60 W	40 W	135 W
EJBT4	EJB-4	EJBX-4	75 W	130 W	75 W	262 W
EJBT4B	EJB-4B	EJBX-4B	56 W	100 W	56 W	195 W
EJBT45	EJB-45	EJBX-45	105 W	180 W	105 W	360 W
EJBT45B	EJB-45B	EJBX-45B	90 W	160 W	90 W	320 W
-	EJB-48BA	-	90 W	160 W	90 W	320 W
EJBT5	EJB-5	EJBX-5	160 W	235 W	160 W	450 W
EJBT5B	EJB-5B	EJBX-5B	130 W	190 W	130 W	360 W
-	EJB-503	-	176 W	255 W	176 W	495 W
EJBT55	EJB-55	EJBX-55B	200 W	300 W	200 W	565 W
EJBT55B	EJB-55B	-	160 W	235 W	160 W	450 W
-	EJB-55C	EJB-55	270 W	400 W	270 W	765 W
EJBT6	EJB-6	EJBX-6	460 W	680 W	460 W	1300 W
EJBE-6B	EJB-6B	EJBX-6B	370 W	550 W	370 W	1040 W
-	EJB-7	-	590 W	890 W	590 W	2090 W
-	EJB-7B	-	460 W	680 W	460 W	1300 W
-	-	EJBX-7	470 W	690 W	470 W	1310 W
-	AQS-1	-	75 W	110 W	75 W	205 W



IECEX Certificate of Conformity

CESI 1956
2016

Prot: B6019209

Annex to certificate: IECEx CES 16.0012X Issue No.:0 of 2016-05-26

Applicant: CORTEM S.p.A., Via Aquileia 10,
I - 34070 Villesse (GO), Italy

Electrical Apparatus: Command, control and signalling unit,
series EJB-..., EJBX-..., EJBT.. and AQS-1

Manufacturing and certification conditions

- For ignition transformers application, the following electrical characteristics are admitted:
 - Primary voltage: 1000 V max.
 - Secondary voltage: 20 kV (impulse 25 kV max for 3 msec.).
 - Secondary current: 50 mA.
- For power transformer applications (only EJB-7 type) are admitted installation of single-phase or three-phase transformers having the maximum dissipated power (W) lower than the maximum dissipated power admitted in Table 1 and Table 2. Furthermore the box type EJB-7 is suitable also for installation of three-phase power transformer with maximum power of 15 kVA.
- For motor inverter application, the following configuration are admitted:

Enclosure size	Motor inverter max. power [kW]		Max. dissipate Power [W]	Max. Cooling fun Flow-rate [m ³ /h]
	T _a +40°C	T _a +55°C		
EJB-4	2.2	1.5	73	44
EJB-45	2.2	1.5	73	44
EJB-5	5.5	4.0	172	44
EJB-6	7.5	5.5	232	88
EJB-7	7.5	5.5	323	88

- For surge protective devices application, the following configuration are admitted:

PDR type	Max. protection [kA]	Protection Breaker (C curve type) [A]
PDR65	65	50
PDR40	40	40
PDR20	20	25
PDR8	8	20

- On the enclosures types EJB -55, EJB -6, EJB 6B, EJB -7, EJB -7B can be installed MCCB (MOLDED CASE CIRCUIT BREAKER) automatic breakers or on load isolator switches, three or four poles for rated current from 800 A up to 1000 A.
- On the bigger sizes of enclosures type EJB-45, EJB -5, EJB-5B, EJB-55, EJB-55B, EJB -6, EJB 6B, EJB -7, EJB- 7B can be installed MCCB automatic breakers or on load isolator switches, three or four poles for rated current up to 630 A suitable for DC circuits with rated voltage up to 750 VDC.
 - MCCB size 630 A is suitable for max current 630 A at max voltage 360 VDC at ambient temperature +40°C or derated to 500 A for an ambient temperature of +55°C at maximum voltage 500 VDC.
 - MCCB size 800 A is derated for max current 630 A at max voltage 750 VDC for ambient temperature of +55°C.



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Applicant:

**CORTEM S.p.A., Via Aquileia 10,
I - 34070 Villesse (GO), Italy**

Electrical Apparatus:

**Command, control and signalling unit,
series EJB-..., EJBX-..., EJBT.. and AQS-1**

Warning labels:

"Use screws of quality A2-70 according UNI 7323 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 enclosures 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 equipment with temperature class T4:

"Use cables suitable for temperature of 100°C".