IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres

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

Certificate No.:	**IECEx FIDI 25.0004X**	Page 1 of 3	Certificate history:
Status:	**Current**	Issue No: 0	
Date of Issue:	2025-04-24		
Applicant:	**CORTEM S.p.A.** Via Aquileia 10 I - 34070 Villesse (GO) **Italy**		
Equipment:	**Command, control and signalling unit series EJB-.. , EJBX.. , EJBT-.. and AQS-1**		
Optional accessory:			
Type of Protection:	**Flameproof enclosures 'db'; Increased safety 'eb'; Protection by enclosures 'tb'**		
Marking:	**Ex db I Mb** (EJBX.. stainless steel type only) **Ex db IIB T6 or T5 or T4 Gb** or **Ex db eb IIB T6 or T5 or T4 or T3 Gb** (version with socket) **Ex db IIB+H2 T6 or T5 or T4 Gb** or **Ex db eb IIB+H2 T6 or T5 or T4 or T3 Gb** (version with socket) **Ex tb IIIC T85°C or T100°C or T135°C or T140°C Db**		

Approved for issue on behalf of the IECEx Certification Body:

Marino Kelava

Position:

Certification Signatory

Signature:
(for printed version)

Date:
(for printed version)

2025-04-24

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Croatia

Fiditas explosion safety solutions

IECEx Certificate of Conformity

Certificate No.: **IECEx FIDI 25.0004X**

Date of issue: 2025-04-24

Issue No: 0

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

Manufacturing locations:

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 equipment 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 60079-0:2017 Edition:7.0	Explosive atmospheres - Part 0: Equipment - General requirements
IEC 60079-1:2014 Edition:7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-31:2022 Edition:3.0	Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"
IEC 60079-7:2017 Edition:5.1	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"

This Certificate **does not** indicate compliance with 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:

HR/FIDI/ExTR25.0003/00

Quality Assessment Report:

IT/CES/QAR06.0002/19

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EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

The EJB-.. command, control and signalling units series are equipment composed by an 'db' flameproof 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, breathing and draining valves, 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 (EJBX.. stainless steel only), Ex db IIB, Ex db IIB+H2 and Ex tb IIIC execution and can be painted with internal anticondensation painting.

The EJB-.. series 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 units without control-signal 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 enclosure 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.

For other description see Annex

SPECIFIC CONDITIONS OF USE: YES as shown below:
1) 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.

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

- from -20°C up to +40°C/+55°C: all versions of command, control and signalling units for Group I (made in stainless steel only), Group IIB, Group IIB+H2 and Group IIIC;
- from -40°C up to +40°C/+55°C: for command, control and signalling units EJBX-8 for Group I, Group IIB, Group IIB+H2 and Group IIIC;
- from -40°C up to +70°C: all versions of command, control and signalling units 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 command, control and signalling units (types EJBX-8 excluded) for Group IIB, Group IIB+H2 and Group IIIC without polycarbonate pilot lights

3) The operating temperature limits of Ex accessories used for connection of more command, control and signal unit EJB series, shall be duly observed.

4) The minimum distance between flameproof flanged joint of the enclosure and external obstacle should be:

- 20 mm for Group IIB execution:
- 30 mm for Group IIB+H2

5) 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.

6) For repair of flameproof joints contact the manufacturer.

7) When socket Series SPYN is installed:

- The socket is intended to be coupled to plug Series SPYN (manufactured by Cortem).
- The cap of the socket shall be properly installed when plug is not mated with the socket.
- Flameproof joints on the socket are not intended to be repaired.

Annex:

IECExFidi25.0004X_Cortem_units_Annex1.pdf

Continued from original certificate

Electrical characteristics:

Rated voltage: 12 ÷ 750 Vdc ; 24 ÷ 1000 Vac
Nominal frequency: 0/50/60 Hz
Max. rated current: 1000 A
Maximum power for lamps: 3W with Tamb. +55°C

Electrical characteristics valid for sizes EJB-55, EJB-55C, EJB-6, EJB-6B, EJB-7, EJB-7B, EJBX-55B, EJBX-55, EJBX-6, EJBX-6B, EJBX-7, EJBX-8, EJBX-8B, EJBX-8BB units:
Rated voltage: up to 690Vac
Max. current on the contacts: up to 1000A

Electrical characteristics valid for sizes EJB-45, EJB-5, EJB-5B, EJB-55B, EJB-55, EJB-55C, EJB-6, EJB-6B, EJB-7, EJB-7B, EJBX-45, EJBX-5, EJBX-5B, EJBX-55B, EJBX-55, EJBX-6, EJBX-6B, EJBX-7, EJBX-8, EJBX-8B, EJBX-8BB units:
Rated voltage: up to 750Vdc
Max. current on the contacts: up to 630A

Protection degree:

IP66 when operators are installed on the enclosure
IP66/67 when operators are not installed on the enclosure

Ambient temperature:

- -20°C ÷ +40°C; -20°C ÷ +55°C for all types of command, control and signalling units for Group I (made in stainless steel only), Group IIB, Group IIB+H2 and Group IIIC.
- -40°C ÷ +40°C; -40°C ÷ +55°C for command, control and signalling units EJBX-8 for Group I, Group IIB, Group IIB+H2 and Group IIIC.
- -40°C ÷ +70°C For all types of command, control and signalling units for Group IIB, Group IIB+H2 and Group IIIC with polycarbonate pilot lights.
- -60°C ÷ +40°C, -60°C ÷ +55°C, -60°C ÷ +70°C for all types of command, control and signalling units (types EJBX-8 excluded) for Group IIB, Group IIB+H2 and Group IIIC without polycarbonate pilot lights.

Manufacturing 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:

Box size	Motor inverter maximum power for Ta +40°C /Ta= +55°C) / (kW)	Maximum dissipated power (W)	Cooling fun maximum capacity (m^3/h)
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	232	88

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

PRD type	Max. protection (kA)	Protection breaker (C curve type) – (A)
PRD65	65	50
PRD40	40	40
PRD20	20	25
PRD8	8	20

- On the command, control and signalling units 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 command, control and signalling units 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.

If the radio antenna is installed into the 'db' enclosure it shall respect the following characteristics:

Radio frequency: from 9 kHz to 60 GHz

Threshold power, effective output power of the transmitter multiplied by the antenna gain:

for Group IIB = 3.5 W;

for Group IIB+H2 = 2.0 W.

Thermal initiation time:

for Group IIB = 80 µs;

for Group IIB+H2 = 20 µs.

For pulsed radar and other transmissions where the pulses are not short compared with the thermal initiation time, the threshold energy values shall not exceed those given follow:

for Group IIB = 250 µJ;

for Group IIB+H2 = 50 µJ.

Model identification:

Aluminium alloy enclosures	Stainless steel enclosures	Aluminium alloy enclosures
AQS-1	/	/
EJB-01	EJBX-01	EJBT0
/	EJBX-01B	/
EJB-1	EJBX-1	EJBT1
EJB-2	EJBX-2	EJBT2
/	/	EJBT2CB
/	/	EJBT2C
EJB-3	EJBX-3	EJBT3
EJB-3B	EJBX-3B	EJBT3B
EJB-4	EJBX-4	EJBT4
EJB-4B	EJBX-4B	EJBT4B
EJB-45	EJBX-45	EJBT45
EJB-45B	EJBX-45B	EJBT45B
EJB-48BA	/	/
EJB-5	EJBX-5	EJBT5
EJB-5B	EJBX-5B	EJBT5B
EJB-503	/	/
EJB-55	EJBX-55	EJBT55
EJB-55B	EJBX-55B	EJBT55B
EJB-55C	/	/
EJB-6	EJBX-6	EJBT6
EJB-6B	EJBX-6B	EJBT6B
EJB-6BB	/	/
EJB-7	EJBX-7	/
EJB-7B	/	/
/	EJBX-8	/
/	EJBX-8B	/
/	EJBX-8BB	/

Maximum dissipated power:

Table 1: Ambient temperature 40°C

Type of enclosure			Maximum dissipated power [W] with ambient temperature Tamb = +40°C			
Aluminum alloy		Stainless steel	Without signalling lamps, only LEDs are allowed	With signalling lamps and/or LEDs	Without signalling lamps, only LEDs are allowed	Without lamps and without LEDs
			T6/T85°C	T5/T100°C	T5/T100°C	T4/T135°C
EJBT0 / EJBT2CB	EJB-01	EJBX-01 / 01B	30	30	45	100
EJBT1 / EJBT2C	EJB-1	EJBX-1	45	45	65	140
EJBT2	EJB-2	EJBX-2	60	60	85	190
EJBT3	EJB-3	EJBX-3	75	75	110	245
EJBT3B	EJB-3B	EJBX-3B	55	55	80	180
EJBT4	EJB-4	EJBX-4	100	100	175	350
EJBT4B	EJB-4B	EJBX-4B	75	75	130	260
EJBT45	EJB-45	EJBX-45	140	140	240	480
EJBT45B	EJB-45B	EJBX-45B	120	120	210	430
/	EJB-48BA	/	120	120	210	430
EJBT5	EJB-5	EJBX-5	210	210	315	600
EJBT5B	EJB-5B	EJBX-5B	170	170	250	480
/	EJB-503	/	230	230	345	660
EJBT55	EJB-55	EJBX-55B	260	260	380	740
EJBT55B	EJB-55B	/	210	210	315	600
/	EJB-55C	EJBX-55	360	360	550	1050
EJBT6	EJB-6	EJBX-6	600	600	910	1740
EJBT6B	EJB-6B	EJBX-6B	490	490	720	1390
/	EJB-6BB	/	390	390	575	1110
/	EJB-7	/	770	770	1170	2270
/	EJB-7B	/	600	600	910	1740
/	/	EJBX-7	610	610	930	1780
/	AQS-1	/	100	100	150	280
/	/	EJBX-8	1384	1384	2080	3945
/	/	EJBX-8B	1154	1154	1735	3295
/	/	EJBX-8BB	927	927	1396	2655

Table 2: Ambient temperature 55°C

Type of enclosure			Maximum dissipated power [W] with ambient temperature Tamb = +55°C			
Aluminum alloy		Stainless steel	Without signalling lamps, only LEDs are allowed	With signalling lamps and/or LEDs	Without signalling lamps, only LEDs are allowed	Without lamps and without LEDs
			T6/T85°C	T5/T100°C	T5/T100°C	T4/T135°C
EJBT0 / EJBT2CB	EJB-01	EJBX-01/01B	25	25	40	80
EJBT1 / EJBT2C	EJB-1	EJBX-1	34	34	50	105
EJBT2	EJB-2	EJBX-2	45	45	65	142
EJBT3	EJB-3	EJBX-3	56	56	82	184
EJBT3B	EJB-3B	EJBX-3B	40	40	60	135
EJBT4	EJB-4	EJBX-4	75	75	130	262
EJBT4B	EJB-4B	EJBX-4B	56	56	100	195
EJBT45	EJB-45	EJBX-45	105	105	180	360
EJBT45B	EJB-45B	EJBX-45B	90	90	160	320
/	EJB-488A	/	90	90	160	320
EJBT5	EJB-5	EJBX-5	160	160	235	450
EJBT5B	EJB-5B	EJBX-5B	130	130	190	360
/	EJB-503	/	176	176	255	495
EJBT55	EJB-55	EJBX-55B	200	200	300	565
EJBT55B	EJB-55B	/	160	160	235	450
/	EJB-55C	EJBX-55	270	270	400	765
EJBT6	EJB-6	EJBX-6	460	460	680	1300
EJBT6B	EJB-6B	EJBX-6B	370	370	550	1040
/	EJB-6BB	/	295	295	440	832
/	EJB-7	/	590	590	890	2090
/	EJB-7B	/	460	460	680	1300
/	/	EJBX-7	470	470	690	1310
/	AQS-1	/	75	75	110	205
/	/	EJBX-8	1061	1061	1553	2925
/	/	EJBX-8B	884	884	1296	2443
/	/	EJBX-8BB	711	711	1043	1970

Table 3: Ambient temperature 70°C

Type of enclosure			Maximum dissipated power [W] with ambient temperature Tamb = +70°C		
Aluminum alloy		Stainless steel	With signalling lamps and/or LEDs	Without signalling lamps, only LEDs are allowed	Without lamps and without LEDs
			T5/T100°C	T5/T100°C	T4/T135°C
EJBT0 / EJBT2CB	EJB-01	EJBX-01 / 01B	20	35	60
EJBT1 / EJBT2C	EJB-1	EJBX-1	23	35	70
EJBT2	EJB-2	EJBX-2	30	45	94
EJBT3	EJB-3	EJBX-3	37	54	123
EJBT3B	EJB-3B	EJBX-3B	25	40	90
EJBT4	EJB-4	EJBX-4	50	85	174
EJBT4B	EJB-4B	EJBX-4B	37	70	130
EJBT45	EJB-45	EJBX-45	70	120	240
EJBT45B	EJB-45B	EJBX-45B	60	110	210
/	EJB-48BA	/	60	110	210
EJBT5	EJB-5	EJBX-5	110	155	300
EJBT5B	EJB-5B	EJBX-5B	90	130	240
/	EJB-503	/	122	165	330
EJBT55	EJB-55	EJBX-55B	140	220	390
EJBT55B	EJB-55B	/	110	155	300
/	EJB-55C	EJBX-55	180	250	480
EJBT6	EJB-6	EJBX-6	320	450	860
EJBT6B	EJB-6B	EJBX-6B	250	380	690
/	EJB-6BB	/	200	305	550
/	EJB-7	/	410	610	1910
/	EJB-7B	/	320	450	860
/	/	EJBX-7	330	450	840
/	AQS-1	/	50	70	130
/	/	EJBX-8	738	1020	1893
/	/	EJBX-8B	615	853	1583
/	/	EJBX-8BB	494	688	1279

Caution and Warning labels:

"Use screws of quality A2-70 according to UNI 7323 with tensile strength of at least 700 N/mm2"

"Warning - do not open when energized"

In case of boxes with capacitors: "After de-energizing, wait 10 minutes before opening"

For equipment with temperature class T5: "Use cables suitable for temperature of 90°C"

For equipment with temperature class T4 and T3: "Use cables suitable for temperature of 100°C"

For enclosures with batteries or cells:

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

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"

In the case of socket installation:

"After de-energizing, delay 30 minutes before opening"

"Do not open when an explosive atmosphere is present"

List of Ex components used

The followings Ex equipment and Ex components have been assessed into the units certificate

Manufacturer	Description	Marking	IECEx Certificate	Standards
CORTEM S.p.A.	Empty enclosure for control and signalling equipment series EJB..-.. and AQS-1	Ex db I Mb (stainless steel enclosures only) Ex db IIB Gb Ex db IIB+H2 Gb Ex tb IIIC Db	IECEx FIDI 25.0003U	IEC 60079-0:2017 IEC 60079-1:2014 IEC 60079-31:2022
CORTEM S.p.A.	Range of adaptors, Plugs and Fittings RE.., REB.., REM.., REN.. and PLG..	Ex db IIC Gb Ex eb IIC Gb Ex tb IIIC Db	IECEx CES 10.0001X	IEC 60079-0:2011 IEC 60079-1:2014 IEC 60079-7:2015 IEC 60079-31:2013
CORTEM S.p.A.	Three-pieces connection fittings series R.., B.. and RB..	Ex db IIB Gb Ex db IIC Gb Ex tb IIIC Db	IECEx CES 10.0002U	IEC 60079-0:2011 IEC 60079-1:2014 IEC 60079-31:2013
CORTEM S.p.A.	Conductor sealing bushings types NPS..,	Ex db IIC Gb Ex tb IIIC Db	IECEx CES 10.0003U	IEC 60079-0:2011 IEC 60079-1:2014 IEC 60079-31:2013
CORTEM S.p.A.	Sealing fittings series EYS.., EZS.., EYD.. and EZD..	Ex db IIC Gb Ex tb IIIC Db	IECEx CES 14.0019X	IEC 60079-0:2011 IEC 60079-1:2014 IEC 60079-31:2013
CORTEM S.p.A.	Nipples, Couplings and Elbow series NP.., EM.., ELF..,	Ex db IIC Gb Ex eb IIC Gb Ex tb IIIC Db	IECEx CES 15.0005U	IEC 60079-0:2011 IEC 60079-1:2014 IEC 60079-7:2015 IEC 60079-31:2013
CORTEM S.p.A	Socket serie PYNC	Ex db eb IIC Gb Ex tb IIIC Db	IECEx IMQ 22.0010U	IEC 60079-0:2017 IEC 60079-1:2014 IEC 60079-7:2017 IEC 60079-31:2022

For Ex components which are not certified according to standard specified in certificate IECEx FIDI 25.0004X gap analysis was performed.