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 EUT 20.0024X**	Page 1 of 3	Certificate history:
Status:	**Current**	Issue No: 0	
Date of Issue:	2020-11-30		
Applicant:	**CORTEM SpA** Via Aquileia 10 34070 Villesse (GO) **Italy**		
Equipment:	**Explosion proof command, control, signalling and interfaces units EJBC**		
Optional accessory:			
Type of Protection:	**Flameproof, Tight dust**		
Marking:	Ex db IIC T6...T4 Gb	Ta: -60/-40°C to +40/55°C	
	Ex db [ia Ga] IIC T6...T5 Gb		
	Ex tb IIIC T85°C...T135°C Db		
	Ex tb [ia Da] IIIC T85°C...T100°C Db		
	Ex db I Mb (Stainless steel versions)		
	Ex db [ia Ma] I Mb (Stainless steel versions)		

Approved for issue on behalf of the IECEx Certification Body: **Dionisio Bucchieri**

Position: **Head of IECEx CB**

Signature: (for printed version)

Date:

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 www.iecex.com or use of this QR Code.

Certificate issued by:

Eurofins Product Testing Italy S.r.l.
Via Cuorgnè
n.21 - 10156 Torino
Italy

eurofins | Product Testing

IECEx Certificate of Conformity

Certificate No.: **IECEx EUT 20.0024X**

Date of issue: 2020-11-30 Issue No: 0

Manufacturer: **CORTEM SpA**
Via Aquileia 10
34070 Villesse (GO)
Italy

Additional 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 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-1:2014-06 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

IEC 60079-31:2013 Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2

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:

IT/EUT/ExTR20.0025/00

Quality Assessment Report:

IT/CES/QAR06.0002/14

IECEx Certificate of Conformity

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

The command, control, signaling and interface units EJBC... series are made of Ex-d enclosures (already certificated IECEX EUT 20.0023U, EPT 20 ATEX 4074U) with electrical devices. The command, control, signaling and interface units EJBC series can have installed on their walls signal, control operators and maneuvers series M-0... with lamps 3W, 5W or electronic led up to 240V (certificate IECEX CES 14.0030U / CESI 01 ATEX 025U), monoled M-0487 (certificates IECEX CES 11.0030U / CESI 00 ATEX 060U). Inside the enclosure switches, indicators, contactors, transformers, analogue and digital components can be installed. Small cells or batteries, eventually connected in series, are installable inside the enclosure according to the requirements of the § 23 of IEC 60079-0. A transmitting/receiving antenna with an IECEx/ATEX full compliance certificate, suitable for the maximum internal pressure and service temperature, can be also installed on the wall of the equipment.

The EJBC series are manufactured in copper free aluminum alloys EN AB 43000 or EN AB 44100 or EN AB 42000 according to UNI EN 1676. The EJBCX series are manufactured in stainless steel AISI 303, AISI 304, AISI 316, AISI 316L. The products can be supplied with external painting with surface resistance lower than 10^8 Ω, having minimum thickness of 60 µm and maximum thickness of 200 µm, color grey RAL 7035, with or without the coating named CORALUM to protect the box against corrosion. CORALUM is a surface protection treatment based on an electro-ceramic coating applied by electrolytic deposition method directly on the aluminum alloy. Alternatively it is possible the use of other types of painting made in non-metallic materials according to customer specification; various kind of colors are allowed. In this case a warning label is added regarding the risk of electrostatic charge.

Drain and breather valves, manufactured by Elfit, ECD-2... series, certified CESI 01 ATEX 081U, IECEx CES 14.0016U with types of protection Ex d, Ex tb can be installed in accordance with their own specific limitations. The EJBC can also be used with only terminal blocks installed inside.

SPECIFIC CONDITIONS OF USE: YES as shown below:
The flameproof joints of the enclosures are not intended to be repaired.

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

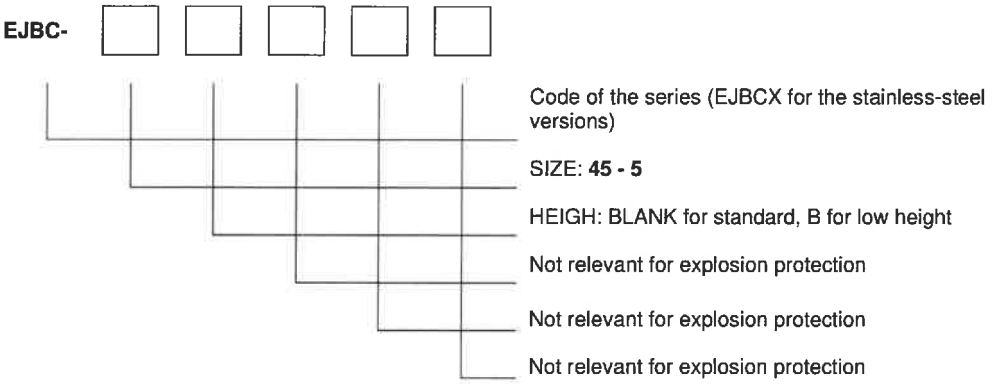
Annex:

EJBC Equip COC ANNEX.pdf

Annex to certificate: **IECEx EUT 20.0024 X Issue 0**

Product variants

The command, control, signaling and interface units EJBC... series are codified according to the following schema:



General electrical characteristics:
Nominal voltage: 12-250 V dc / 24-1000 V ac
Nominal frequency: 0/50/60 Hz
Max. current 650 A
Rated voltage: 750Vdc

Maximum electrical equipment ratings inside the boxes:

Description	V	Output dissipated (W)	A
Analogic 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)	660	-	-
Transformers	660	200	-
Resistors	240	300	-
Terminals	660	-	-
Ballasts	277	40	7,5

Annex to certificate: **IECEx EUT 20.0024 X Issue 0**

Maximum dissipated power:

Type	Maximum dissipated power inside enclosures			
	Tamb. = +40°C (+55°C)			
	No signaling lamps, only LED are allowed		With signaling lamps and/or LED	Without signaling lamps and LED
	T6 / T85°C	T5 / T100°C	T5 / T100°C	T4 / 135°C
EJBC-45	140 W (105 W)	240 W (180 W)	140 W (105 W)	480 W (360 W)
EJBC-45 B	120 W (90 W)	210 W (160 W)	120 W (90 W)	430 W (320 W)
EJBC-5	210 W (160 W)	315 W (235 W)	210 W (160 W)	600 W (450 W)
EJBC-5 B	170 W (130 W)	250 W (190 W)	170 W (130 W)	480 W (360 W)

Boxes are suitable for installation of motor inverter units complete with internal cooling fan having the following characteristics in terms of power and size of the enclosure:

Box size	Motor inverter maximum power for Ta +40°C (+55°C)	Maximum dissipated power	Cooling fan maximum capacity
EJBC-45 / EJBC-45B	2,2 (1,5) kW	73W	44m³/h
EJBC-5 / EJBC-5B	5,5 (4,0) kW	172W	44m³/h

Boxes are suitable for ignition transformer with following electrical characteristics: max primary voltage 1000 V - max secondary voltage 20 kV (impulse 25 kV max for 3 msec) – max secondary current 50 mA.

The radio frequency source for continuous transmissions and for pulsed transmissions inside the enclosures shall not exceed the following values: max threshold power, effective output power of the transmitter multiplied by the antenna gain 2W - thermal initiation time 20µs. 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 50µJ.

Boxes are suitable for incoming and outgoing fiber optics cables; the limits of irradiated power and irradiance are: temperature class T6, power 15mW, irradiance 5mW/mm2

temperature class T4, power 35mW, irradiance 5mW/mm2.

Cable entries

The entries into the enclosures are provided with threaded holes in the walls of the enclosure.

The cable glands to be used with the equipment must be Ex db and Ex tb (IP66) in compliance with the requirements of IEC 60079-0 and IEC 60079-1 / IEC 60079-31.

Annex to certificate: **IECEx EUT 20.0024 X Issue 0**

Warning label

"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".

For Equipment without standard painting:

"Potential electrostatic charging hazards"

Routine tests

Overpressure tests at 19,1 bar (for equipment with minimum T amb -60°C) or at 17,4 bar (for equipment with minimum T amb - 40°C), according to § 15.2.3.2 of IEC 60079-1 standard, must be carried out on each enclosure, including (also separately from the enclosure) all the following components not type tested at least at 51 bar (for equipment with minimum T amb -60°C) or at 46,5 bar (for equipment with minimum T amb - 40°C): control and signal operators series M-0... IECEX CES 14.0030U and IECEX TSA 06.0015U with lamps 3W, 5W or electronic led up to 240V; monoled M-0487 IECEX CES 11.0030U.