4071

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 16.0013X Issue No.:0

Certificate history:

Status: **Current**

Date of Issue: **2016-05-30** Page 1 of 3

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

Equipment: **Command, control and signalling units, series CCA.. and GUB-..**
Optional accessory:

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

Marking: **Ex db I Mb (for stainless steel enclosures)**
Ex db IIC T6 or T5 Gb
Ex tb IIIC T85°C or T100°C Db
IP66

Approved for issue on behalf of the IECEx Certification Body: Mirko Balaz

Position: Head of IECEx CB

Signature:
(for printed version)

Date: 30-5-2016

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 Riccio)

IECEx Certificate of Conformity

Certificate No.: IECEx CES 16.0013X

Date of Issue: **2016-05-30** Issue No.: **0**

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/ExTR16.0004/00

Quality Assessment Report:

IT/CES/QAR06.0002/09

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Schedule

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

The CCA... and GUB-.. 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 transparent glass window sealed on the cover to permit instrument reading, etc.
The CCA... and GUB-.. 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, Ex db IIC and Ex tb IIIC execution. They can be equipped with command and signalling operators series M-0.. certified as components with separate certificate, mounted on the walls or on the cover (for the version CCAI-C..), with window on the cover and with extension for the cover.
The covers of CCA-..C and CCAI.. versions have a cylindrical joint and are fixed with quality A2-70 stainless steel screws.

The command, control and signalling units, Series CCA... and GUB-.. 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.

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 db enclosure it shall respect the limits indicated at the clause 6.6.1 of the IEC 60079-0 standard for IIC gas group.

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Prot: B6019325

Annex to certificate: **IECEx CES 16.0013X Issue No.:0** of 2016-05-30

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

Electrical Apparatus: **Command, control and signalling units, series CCA... and GUB-..**

Description of the equipment

The **CCA...** and **GUB-..** command, control and signalling units series, are equipment's composed by an Ex db or Ex tb enclosure covered by IECEx CES 14.0012U certificate. Terminal blocks, fuses, transformers, power supplies, PLC's, electronic circuits, sensors, relay, circuit breakers, contactors, resistors, capacitors, inductors and other electrical and electronic devices may be mounted inside the enclosures.
The **CCA...** and **GUB-..** 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, Ex db IIC and Ex tb IIIC execution. All versions of enclosures for Group I are made in stainless steel only. They can be equipped with command and signalling operators certified as components covered by IECEx CES 14.0030U, IECEx TSA 06.0015U and IECEx CES 11.0030U certificates, mounted on the walls or on the cover (for the version CCAI-C..), with window on the cover and with extension for the cover.
The covers of **CCA-..C** and **CCAI..** versions have a cylindrical joint and are fixed with quality A2-70 stainless steel screws.
Gaskets between cover and body and for all other accessories are made in silicon to guarantee the protection degree IP66.
The walls of the enclosures can be drilled and threaded with maximum size and maximum number of holes as specified in the manufacturer documents. Each enclosure is provided with internal and external earthing screw or bolt.
The CCA and GUB Series of Command, Control and Signalling Enclosures may be marked with the CCA model number or marked with the corresponding GUB model number.

Model Identification:

Aluminium alloy enclosures			Aluminium alloy enclosures with glass window	
GUB series	**CCA series**		**GUB series**	**CCA series**
GUB	-	-	-	-
GUB-S	-	-	-	-
GUB-0	CCA-0E	CCA-0C	GUB-0V	CCA-0EH
GUB-01	CCA-01E	CCA-01C	GUB-01V	CCA-01EH
-	CCA-01PF	-	-	-
GUB-02	CCA-02E	CCA-02C	GUB-02V	CCA-02EH
GUB-03	CCA-03E	CCA-03C	GUB-03V	CCA-03EH
GUB-04	CCA-04E	CCA-04C	GUB-04V	CCA-04EH
GUB-05	-	-	-	-

Stainless steel enclosures				Stainless steel enclosures with glass window	
GUB series	**CCA series**			**CCAI series**	**CCAIF series**
GUBSS	-	-	-	-	-
GUB-SSS	-	-	-	-	-
GUB-0SS	CCA-0ESS	CCAI2020	CCAIF-2020	CCAI2020H	CCAIF-2020H
GUB-01SS	CCA-01ESS	CCAI3020	CCAIF-3020	CCAI3020H	CCAIF-3020H
GUB-02SS	CCA-02ESS	CCAI3030	-	CCAI3030H	-
GUB-03SS	CCA-03ESS	CCAI4030	CCAIF-4030	CCAI4030H	CCAIF-4030H
GUB-04SS	CCA-04ESS	-	-	-	-
GUB-05SS	-	-	-	-	-

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Annex to certificate: **IECEx CES 16.0013X Issue No.:0** of 2016-05-30

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

Electrical Apparatus: **Command, control and signalling units, series CCA... and GUB-..**

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 Tamb. +55°C

Table of typical electrical and electronic equipment's 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. The maximum power dissipation for each model at ambient temperature up to Ta 40 °C or Ta 55 ° C given in Tables 1, 2, 3 and 4 bellow, for the temperature class of T5 or T6, T 85 °C or T 100 °C, shall not be exceed.

Degree of protection (IEC 60529): IP66

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 II and group III;
- from -40°C up to +55°C: all versions of Command, control and signalling units for group II and group III with polycarbonate pilot lights;
- from -60°C up to +55°C all versions of Command, control and signalling units for group II and group III without polycarbonate pilot lights.

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I - 34070 Villesse (GO), Italy

Electrical Apparatus: **Command, control and signalling units, series CCA... and GUB-..**

Maximum dissipated power:

Table 1.

Maximum dissipated power inside enclosures					
Enclosure type		Tamb. = +40°C		Tamb. = +55°C	
		T6 / T85 °C	T5 / T100 °C	T5 / T100 °C	T4 / T135 °C
GUB	-	4 W	6 W	3 W	4 W
GUB-S	-	6 W	9 W	5 W	6 W
GUB-0	GUB-0V	10 W	16 W	8 W	12 W
GUB-01	GUB-01V	15 W	24 W	13 W	19 W
GUB-02	GUB-02V	32 W	51 W	26 W	39 W
GUB-03	GUB-03V	51 W	74 W	37 W	55 W
GUB-04	GUB-04V	112 W	197 W	84 W	150 W
GUB-05	-	165 W	250 W	125 W	190 W

Table 2.

Maximum dissipated power inside enclosures							
Enclosure type		Tamb. = +40°C			Tamb. = +55°C		
		No signalling lamps, only LED are allowed.	With signalling lamps and/or LED	No signalling lamps, only LED are allowed.	No signalling lamps, only LED are allowed.	With signalling lamps and/or LED	No signalling lamps, only LED are allowed.
		T6 / T85 °C	T5 / T100 °C	T5 / T100 °C	T6 / T85 °C	T5 / T100 °C	T5 / T100 °C
CCA-0E	CCA-0EH	8 W	9 W	13 W	6 W	7 W	9 W
CCA-01E	CCA-01EH	11 W	12 W	17 W	9 W	10 W	13 W
CCA-02E	CCA-02EH	23 W	25 W	36 W	20 W	22 W	28 W
CCA-03E	CCA-03EH	40 W	44 W	58 W	29 W	32 W	43 W
CCA-04E	CCA-04EH	93 W	100 W	164 W	70 W	77 W	125 W

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Electrical Apparatus: **Command, control and signalling units, series CCA... and GUB-..**

Maximum dissipated power *(follows)*:

Table 3.

Maximum dissipated power inside enclosures						
Enclosure type	**Tamb. = +40°C**			**Tamb. = +55°C**		
	No signalling lamps, only LED are allowed.	With signalling lamps and/or LED	No signalling lamps, only LED are allowed.	No signalling lamps, only LED are allowed.	With signalling lamps and/or LED	No signalling lamps, only LED are allowed.
	T6 / T85 °C	**T5 / T100 °C**	**T5 / T100 °C**	**T6 / T85 °C**	**T5 / T100 °C**	**T5 / T100 °C**
CCA-0C	8 W	9 W	13 W	6 W	7 W	9 W
CCA-01C	11 W	12 W	17 W	9 W	10 W	13 W
CCA-02C	23 W	25 W	36 W	20 W	22 W	28 W
CCA-03C	40 W	44 W	58 W	29 W	32 W	43 W
CCA-04C	93 W	100 W	164 W	70 W	77 W	125 W

Table 4.

Maximum dissipated power inside enclosures						
Enclosure type	**Tamb. = +40°C**			**Tamb. = +55°C**		
	No signalling lamps, only LED are allowed.	With signalling lamps and/or LED	No signalling lamps, only LED are allowed.	No signalling lamps, only LED are allowed.	With signalling lamps and/or LED	No signalling lamps, only LED are allowed.
	T6 / T85 °C	**T5 / T100 °C**	**T5 / T100 °C**	**T6 / T85 °C**	**T5 / T100 °C**	**T5 / T100 °C**
CCAI2020	30 W	35 W	42 W	25 W	27 W	34 W
CCAI3020	50 W	54 W	68 W	39 W	42 W	53 W
CCAI3030	80 W	85 W	120 W	60 W	65 W	100 W
CCAI4030	105 W	112 W	170 W	90 W	100 W	140 W

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Electrical Apparatus: **Command, control and signalling units, series CCA... and GUB-..**

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 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

- For circuit breakers or contactors 600 A - 650 A the distances between devices and between device and wall sides as indicated on drawing A1-5261 Rev.1 for the version GUB-05 shall be respected.

Warning labels:

- *"Use screws of quality A2-70 with tensile strength of at least 700 N/mm^2" (for covers with cylindrical joint CCA-..C and CCAI.. models).*

- For enclosures with capacitors:
"*After de-energizing. Wait 10 minutes before opening*".

- For boxes with batteries:
"Warning – Do not open when an explosive gas atmosphere is present".

- For enclosures with temperature class T5:
"Use cables suitable for temperatures of 90°C".