



[1] **EC-TYPE EXAMINATION CERTIFICATE**

[2] **Component intended for use on/in equipment or protective system
intended for use in potentially explosive atmospheres
Directive 94/9/EC**

[3] EC-Type Examination Certificate number:

CESI 00 ATEX 031 U

[4] Component: Electronic reactors series EB..
Electronic inverters series EI-58.

[5] Manufacturer: **COR.TEM S.p.A.**

[6] Address: Via Aquileia 6 - Villesse (Gorizia - Italy)

[7] This component and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] CESI, notified body n° 0722 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this component has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of components 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-A0/022477.

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 50014: 1997 + A1..A2 EN 50018: 1994

[10] The sign "U" placed after the certificate number indicates that this certificate must not be mistaken for a certificate intended for an equipment or protective system. This partial certification may be used as a basis for certification of an equipment or protective system.

[11] This EC-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified component. If applicable, further requirements of this Directive apply to the manufacture and supply of this component.

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

 **II 2 G EEx d IIC**

This certificate may only be reproduced in its entirety and without any change, schedule included.

date July 4th, 2000 - translation issued on July 7th, 2000

prepared CERT - M. Balaz

CESI

CENTRO ELETTROTECNICO SPERIMENTALE ITALIANO
Responsabile Area Certificazione

approved CERT - U. Colombo

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[13]

Schedule

[14] EC-TYPE EXAMINATION CERTIFICATE N° CESI 00 ATEX 031 U

[15] Description of component

The electronic reactors series EB.. and the electronic inverters series EI-58. are used for installation in increased safety fluorescent luminaires. The electronic reactors series EB.. and the electronic inverters series EI-58. are identified by a code as follows:

EB $\frac{--}{|}$ $\frac{--}{|}$
| — 22, 32, 42: voltage range (see drawing A3-4056 annexed)
— 18, 36: lamps power [W]

EI-58. electronic inverter

Two types of enclosures are used for electronic reactors and inverters:

- a) tubular body with two ends sealed with resin for cable entry (drawing A3-4056, for reactors and inverters).
- b) cylindrical body with one end sealed with resin for cable entry (drawing A3-4059, for inverters only).

Electrical characteristics

Electronic reactors EB..

Rated voltage [V]	110/230
Frequency [Hz]	50/60
Lamps power [W]	1x18; 1x36; 2x18; 2x36

Electronic inverters EI-58.

Rated voltage [V]	220/240
Frequency [Hz]	50/60
Power [W]	13....65

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[13]

Schedule

[14] EC-TYPE EXAMINATION CERTIFICATE N° CESI 00 ATEX 031 U

[16] Report N° EX-A0/022477

Routine tests

The manufacturer shall carry out the routine tests prescribed at clause 24 of the EN 50014 standard. The manufacturer is exempted from the routine overpressure test on the reactors series EB.. and the inverters series EI-58. since they have passed the type test at a pressure of:

- 38 bar for the enclosure type a)
 - 31 bar for the enclosure type b)
- equal to 4 times the reference pressure.

Descriptive documents (prot. EX-A0/022482)

- n° A4-4057 Rev. 1 (2 p.)	dated 21.06.2000
- n° A3-4056 Rev. 1 (2 p.)	dated 21.06.2000
- n° A3-4059 Rev. 1	dated 21.06.2000
- n° F-258 Rev.0 (2 p.) instructions for resin application	dated 21.06.2000
- n° F-250 Rev.0 (5 p.) safety instructions	dated 21.06.2000
- attestation of conformity for components	dated 21.06.2000

One copy of all documents is kept in CESI files.

[17] Schedule of limitations

The operating temperature of the sealing compound must be within the range - 20 ÷ + 100 °C. The operating temperature reported on the plate (70 °C) shows the maximum temperature allowable inside the enclosure in which the reactor or inverter is installed.

[18] Essential Health and Safety Requirements

Covered by standards

This certificate may only be reproduced in its entirety and without any change, schedule included.



EXTENSION n° 01/01

to EC-Type Examination Certificate CESI 00 ATEX 031 U

Manufacturer: COR.TEM S.p.A.

Address: Via Aquileia 6, 34070 Villesse, Gorizia, Italy

Equipment: Electronic reactors series EB..
Electronic inverters series EI-58.

Admitted variation

- new electrical characteristics of the electronic inverters

Electrical characteristics of the electronic inverters series EI-58.

Rated voltage [V]: 110/230
Rated frequency [Hz]: 50/60
Power [W]: 13...65

Report EX-A1/003412

Descriptive documents (prot. A1/003411)

Technical note A4-4057 rev. 2 (2 p.) dated 25.01.2001
TELELECTRONICS technical note (8 p.) dated 11.01.2001

This extension and annexed descriptive documents must be annexed to the EC-Type Examination Certificate CESI 00 ATEX 031 U.

This document may only be reproduced in its entirety and without any change.

date 21st February, 2001 translation issued on 22nd February, 2001

prepared CERT - M. Balaz

approved CERT - U. Colombo

CESI
CENTRO ELETTROTECNICO SPERIMENTALE ITALIANO
Responsabile Area Certificazione

Prot. A1/006302 P: 1
keywords: 13010R 27520L 48010M 54250O 66540E



EXTENSION n° 02/01

to EC-Type Examination Certificate CESI 00 ATEX 031 U

Manufacturer: COR.TEM S.p.A.

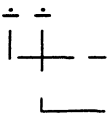
Address: Via Aquileia 6, 34070 Villesse, Gorizia, Italy

Equipment: Electronic reactors series EB..
Electronic inverters series EI-58.

Admitted variation

- new type of electronic reactor EB-.58

Identification of the component EB-.58

EB-  22, 32, 42: voltage range (see drawing A3-4154 annexed)
58: lamp power [W]

This extension and annexed descriptive documents must be annexed to the EC-Type Examination Certificate CESI 00 ATEX 031 U.

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date 15th May, 2001 translation issued on 15th May, 2001

prepared CERT - M. Balaz 

approved CERT - U. Colombo

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CENTRO ELETTROTECNICO SPERIMENTALE ITALIANO
Responsabile Area Certificazione

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EXTENSION n° 02/01**to EC-Type Examination Certificate CESI 00 ATEX 031 U**

Electrical characteristics

Electronic reactors EB-.18 and EB-.36

Rated voltage	110/230 [V a.c.]	110/230 [V d.c.]
Rated frequency	50/60 [Hz]	-
Lamp power	1x18; 1x36; 2x18; 2x36 [W]	1x18; 1x36; 2x18; 2x36 [W]

Electronic reactors EB-.58

Rated voltage	110/230 [V a.c.]	110/230 [V d.c.]
Rated frequency	50/60 [Hz]	-
Lamp power	1x58; 2x58 [W]	1x58; 2x58 [W]

Electronic inverters EI-58

Rated voltage	110, 220/240 [V a.c.]	110, 220/240 [V d.c.]
Rated frequency	50/60 [Hz]	-
Power	13 ÷ 65 [W]	13 ÷ 65 [W]

Report EX-A1/010951

Descriptive documents (prot. A1/012222)

Drawing n° A3-4154 rev. 0 (2 p.)

dated 02.03.2001

One copy of the document is kept in CESI files.

EXTENSION n. 03/09



to EC-Type Examination Certificate CESI 00 ATEX 031U

Component: Electronic ballasts series EB and electronic inverters series EI-58

Manufacturer: **COR.TEM S.p.A.**

Address: Via Aquileia, 6 – 34070 Villesse (GO) - Italy

Admitted variation

- Conformity to new edition of the harmonized European standard
- Constructional modifications: new electronic circuits to assure the conformity at annex H di EN 60079-7: 2007 standard


Conformity to new edition of the harmonized European standard

The components subject of the certificate CESI 00 ATEX 031U and annexed extension are conform to the standards:

EN 60079-0: 2006 EN 60079-1: 2007

EN 61241-0: 2006 EN 61241-1: 2004

The equipment shall be marked as follows:

 II 2GD Ex d IIC Ex tD A21 IP66

This extension and annexed descriptive documents must be annexed to the EC-Type Examination Certificate CESI 00 ATEX 031U.

This document may only be reproduced in its entirety and without any change.

date 4th May 2009 - translation issued the 4th May 2009

prepared Damiano Cavanna 

verified Mirko Balaz 

approved Fiorenzo Bregani 

CESI S.p.A.
Divisione Energia
"Area Tecnica Certificazione"
Responsabile

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EXTENSION n. 03/09

to EC-Type Examination Certificate CESI 00 ATEX 031U

Description of component

Electronic ballasts series EB and electronic inverters series EI-58, have unchanged Ex-d constructional characteristics compared to those indicated in the certificate CESI 00 ATEX 031U and annexed extension.

Admitted constructional modifications

The electronic ballasts series EB are realized with a new electronic circuits to assure the conformity at annex H of EN 60079-7: 2007 standard, regarding End Of Life lamp protection (EOL).

The type of electronic ballasts and electronic inverters are identified by a code as below indicated.

Electrical characteristics

Type of EOL electronic ballasts:	EB4118	EB4218	EB4136	EB4236	EB158	EB258
- Rated power (lamp):	1x18 W	2x18 W	1x36 W	2x36 W	1x58 W	2x58 W
- Rated voltage:	110/240 V ac-dc				240 V ac-dc	
- Working voltage:	100 ÷ 264 V ac; 110 ÷ 264 V dc				208 ÷ 264 V ac; 208 ÷ 254 V dc	
- Rated frequency:	50/60 Hz				50/60 Hz	

Electronic inverters type EI-58

- Rated power : for lamp of 6 W up to 58 W
- Rated voltage: 110/240 V ac-dc
- Working voltage: 90 ÷ 264 V ac-dc
- Rated frequency: 50/60 Hz
- Battery pack: NiCd 6V 4 A/h or 7 A/h

Operating temperature: -40÷ +75 °C

Report n. EX-A9014203

Routine tests

The manufacturer shall carried out the routine tests prescribed at paragraph 27 of EN 60079-0 (2006) standard.

Descriptive documents (prot. EX-A9014205)

- | | | |
|--|-------|------------|
| - Technical note A4-4970 + annex (pg. 3+9) | dated | 16.03.2009 |
| - A3-4568 (2 sheets) | dated | 24.11.2003 |
| - Safety Instruction mod. F-250 rev. 1 (pg. 5) | dated | 06.10.2008 |
| - Declaration of Conformity N° 0016 | dated | 06.10.2008 |

One copy of all documents is kept in CESI files.

Schedule of limitations

The components in subject shall be use to inside of Ex apparatus enclosure subject of separate certification.

The operating temperature of the sealing compound must be within the range -40 ÷ +100 °C.

The operating temperature reported on the plate (75÷ 264 °C) shows the maximum temperature allowable inside the enclosure in which the reactor or inverter is installed.

Essential Health and Safety Requirements

The Essential Health and Safety Requirements are assured by compliance to the following standards:

- EN 60079-0: 2006 - Electrical apparatus for explosive gas atmosphere - General requirements.
- EN 60079-1: 2007 - Equipment protection by flameproof enclosure "d"
- EN 60079-7: 2007 - Equipment protection by increased safety "e"
- EN 61241-0: 2006 - Electrical apparatus for use in the presence of combustible dust - General requirements
- EN 61241-1: 2004 - Protection by enclosures "tD"

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EXTENSION n. 04/13

to EC-Type Examination Certificate CESI 00 ATEX 031U

Component: Electronic ballasts series EB and electronic inverters series EI-58

Manufacturer: **COR.TEM S.p.A.**

Address: Via Aquileia, 6 – 34070 Villesse (GO) - Italy

Admitted variation

- Constructive variations
- Updating of nameplate
- Updating to the new edition of the harmonized European standards

Updating of ATEX marking

The components subject of the certificate CESI 00 ATEX 031U and annexed extension are conform to the standards:

EN 60079-0: 2012; EN 60079-1: 2007; EN 60079-7 (ALL H): 2007

And they shall marked as follows:

II 2GD Ex de IIC Gb

This extension and annexed descriptive documents must be annexed to the EC-Type Examination Certificate CESI 00 ATEX 031U

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Date 01/07/2013 - translation issued the 01/07/2013**Prepared**

Sergio Mezzetti

Verified

Mirko Balaz

Approved

Fiorenzo Bregani

CESI S.p.A.Testing & Certification Division
Business Area Certification

/ Responsabile

Fiorenzo Bregani

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PRD N. 018B
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P.I. IT00793580150

N. R.E.A. 429222

EXTENSION n. 04/13

to EC-Type Examination Certificate CESI 00 ATEX 031U

Description of component

The electronic ballasts series EB..., are installed within light fixture enclosures and can drive one or two fluorescent lamps ; they are realized with adequate protection to prevent lamp cap overheating at the end of the lamp life and have been submitted to the test procedure of EN 60079-7 , Annex H with positive results.

The electronic inverters series EI-58 are installed inside the lighting fixture enclosure in combination with a battery pack CORTEM series G-0309 and a signaling led , object of separate ATEX certification.

Constructive characteristics

The variations admitted with this extension are related to the use of the same type of enclosure both for ballast and for inverter. The enclosure, already used for ballast, is of tubular shape and has the two ends sealed with bi-component resin type WEVO PU 403FL + 300RE.

Electrical characteristics

Ballasts series EB...

Ballast	EB4118	EB4218	EB4136	EB4236	EB158	EB258
Rated power (lamps)	1x18 W	2x18 W	1x36 W	2x36 W	1X58W	2x58 W
Rated voltage	110 ÷ 240 Vac - Vdc				240 Vac - Vdc	
Working voltage	100 ÷ 264 Vac; 110 ÷ 264 Vdc				208 ÷ 264 Vac; 208 ÷ 254 Vdc	
Rated frequency	50/60 Hz					

Inverter series EI-58

- Rated voltage: 110/240 V ac-dc
- Working voltage: 90 ÷ 264 V ac-dc
- Rated frequency: 50/60 Hz
- Rated power (lamps) da 6 W a 58 W
- Group of battery: G-03009 - NiCd 4 A/h or 7 A/h

Report n. EX3019799

Routine tests

The Manufacturer is exempted from overpressure test on ballast and inverter enclosures since they have been submitted, with positive result, to an overpressure test at 55 bar, equal to 4 times the reference pressure at Ta - 40 °C.

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EXTENSION n. 04/13

to EC-Type Examination Certificate CESI 00 ATEX 031U

Descriptive documents (Prot. EX- B3019806)

- Technical Note A4-5655 (3 sheets)	Rev. 1	dated	19/04/2013
- Drawing A4-4568 (2 sheets)	Rev. 1	dated	19/04/2013
- Fac-simile of Attestation of Conformity for components N° 0016		dated	19/04/2013
- Safety Instruction F-250 (5 sheets)	Rev. 2	dated	19/04/2013
- Instruction for deposition of resin F-258	Rev. 1	dated	19/04/2013
- Annex (37 sheets)	Rev. 1	dated	05/06/2013

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

Schedule of limitations

- The components shall be installed into Ex enclosures with separated ATEX certification having a minimum degree of protection IP66.
- The operating temperature of the sealed parts of ballasts or inverter shall be within the range $-40\text{ °C} + + 100\text{ °C}$.
- The maximum service temperature for ballasts and inverters shall not be higher than $+75\text{ °C}$ (as reported on the marking label).
- When electronic inverter is used with battery group G-0309, the minimum temperature shall not exceed -20 °C as indicated on battery tag and on external tag of lighting fixture

Essential Health and Safety Requirements

Covered by compliance to the following standards:

- EN 60079-0 : 2012 - Explosive atmospheres: General requirements
- EN 60079-1 : 2007 - Explosive atmospheres: protection by flameproof enclosures "d"
- EN 60079-7: 2007 - Explosive atmospheres: protection by increased safety "e" – Annex H