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Schema di certificazione

CESI-ATEX


Il CESI è stato autorizzato dal governo italiano ad operare quale organismo di certificazione di apparecchi e sistemi destinati a essere utilizzati in atmosfera potenzialmente esplosiva con D.M. 1/3/1983, D.M. 19/6/1990, D.M. 20/7/1998 e D.M. 27/9/2000

1043



CERTIFICATE

EC-TYPE EXAMINATION CERTIFICATE

- [1] **EC-TYPE EXAMINATION CERTIFICATE**
- [2] **Equipment or Protective System intended for use in potentially explosive atmospheres Directive 94/9/EC**
- [3] EC-Type Examination Certificate number:
CESI 02 ATEX 091
- [4] Equipment: Terminal boxes series S, S.1, GUA, GUF, EAH.
- [5] Manufacturer: **COR.TEM S.p.A.**
- [6] Address: Via Aquileia 10, Villesse (Gorizia - Italy)
- [7] This equipment or protective system 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 equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems 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-A2/030027.
- [9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 50014: 1997 + A1..A2 EN 50018: 2000 EN 50281-1-1:1999
- [10] If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.
- [11] This EC-TYPE EXAMINATION CERTIFICATE relates only to the design, examination and tests of the specified equipment or protective system in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.
- [12] The marking of the equipment or protective system shall include the following:
 **II 2 GD EEx d IIC T6 or T5 IP 66/67 T85 °C or T100 °C**

Date September 26th, 2002 translation issued on September 26th, 2002

Prepared
Mirko Balaz

Approved
Ulisse Colombo

CESI
CENTRO ELETTROTECNICO SPERIMENTALE ITALIANO
Business Unit Certificazione

Il Responsabile

[13]

Schedule

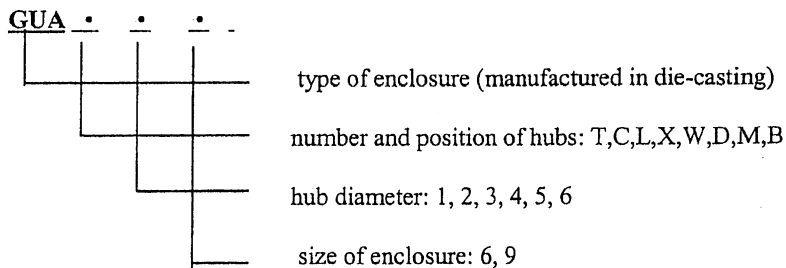
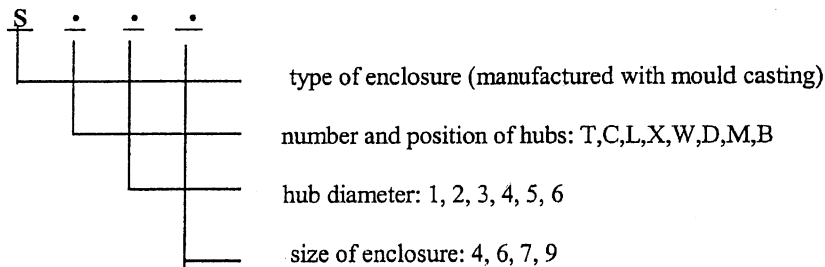
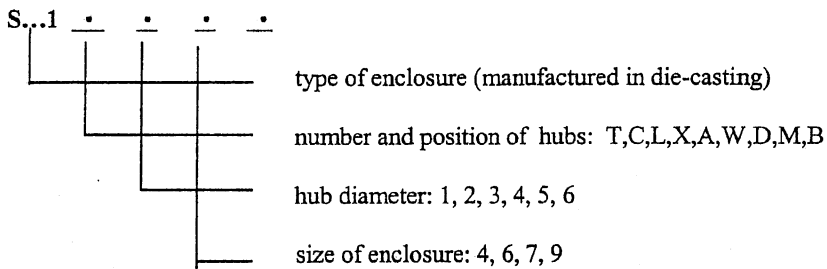
[14] **EC-TYPE EXAMINATION CERTIFICATE n. CESI 02 ATEX 091**

[15] **Description of equipment**

Terminal boxes series S.1, S, GUA, GUF, EAH.

The enclosures of these terminal boxes are generally made in aluminium alloy. As an alternative they can also be made in brass or in stainless steel (see technical note A4-842 annexed to this certificate).

The various models of the terminal boxes subject of this certificate are identified by a code as follows:



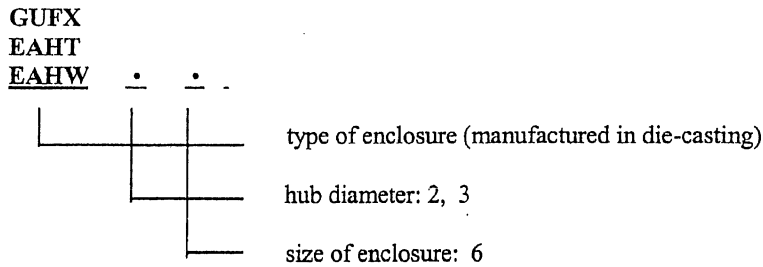
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[13]

Schedule

[14] EC-TYPE EXAMINATION CERTIFICATE n. CESI 02 ATEX 091

[15] Description of equipment (follows)



The complete code of all the terminal boxes subject of this certificate is reported in the drawings A1-013, A1-014 and A1-015 annexed to this certificate.

Electrical characteristics

Rated voltage	750 [V]
Rated frequency	50 ÷ 60 [Hz]

Terminals

Terminal section	2.5; 4; 6; 10; 16; 25; 35; 70 [mm ²]
Rated current	12.5 ÷ 175 [A]
Max. current density	2.5 ÷ 5 [A/mm ²]

The type and number of terminals which can be installed in the various enclosures is indicated in detail, together with the maximum admissible currents and current densities, in the drawing A2-191 and in the safety instructions A/17 annexed to this certificate.

Degree of protection IP 66/67 (EN 60529 – 1991)

Ambient temperature:

- 20 ÷ + 40 °C and - 20 ÷ + 60 °C	for the enclosures of size 4, 6, 7 and 9
- 40 ÷ + 40 °C and - 40 ÷ + 60 °C	for the enclosures of size 4 and 6

Temperature class for the terminal boxes category 2 G:

T6 for ambient temperature - 20 ÷ + 40 °C and - 40 ÷ + 40 °C
T5 for ambient temperature - 20 ÷ + 60 °C and - 40 ÷ + 60 °C

Maximum surface temperature of the enclosure for the terminal boxes category 2 D:

T85 °C for ambient temperature - 20 ÷ + 40 °C and - 40 ÷ + 40 °C
T100 °C for ambient temperature - 20 ÷ + 60 °C and - 40 ÷ + 60 °C

The accessories used for cable entry and for closing unused apertures shall be certified according to the standards EN 50014, EN 50018 and EN 50281-1-1 and shall guarantee a degree of protection IP 66/67.

Warning label

“Use screws of quality A2-70 according UNI 7323 with ultimate tensile strength of at least 700 N/mm²”.

Additional warnings

In case of enclosures of temperature class T5 :

“Use cables suitable for a temperature of 90 °C”

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[13]

Schedule

[14] EC-TYPE EXAMINATION CERTIFICATE n. CESI 02 ATEX 091

[16] Report n. EX-A2/030027

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 since the terminal boxes have passed the type overpressure test carried out with the static method at 4 times the reference pressure:

- 51.5 bar for enclosures of size 4 and 6 (for operation at - 40°C)

- 35.5 bar for enclosures of size 7 and 9 (for operation at - 20°C)

Descriptive documents (prot. EX-A2/030028)

- n° A4-842 Rev. 0 (7 p.)	dated	15.02.2002
- n° A3-229 Rev. 0	dated	19.03.2001
- n° A3-230 Rev. 0	dated	15.03.2001
- n° A3-239 Rev. 0	dated	01.10.2001
- n° A2-191 Rev. 0	dated	15.03.2001
- n° A4-801 Rev. 0	dated	01.06.2000
- n° A1-013 Rev. 0	dated	20.03.2001
- n° A1-014 Rev. 0	dated	20.03.2001
- n° A1-015 Rev. 0	dated	20.03.2001
- Technical data of resin EPDM 70 black	dated	29.11.2001
- Technical data of resin NBR 70 black	dated	03.11.2000
- Technical data of resin Silicon 70 red	dated	04.02.2002
- Technical data of resin FKM (VITON) 70 black	dated	29.11.2001
- Safety instructions Annexe A/17 Rev. 0 (6 p.)	dated	01.06.2000
- EC declaration of conformity n° CE/0031	dated	19.03.2001

One copy of all documents is kept in CESI files.

[17] Special conditions for safe use

None.

[18] Essential Health and Safety Requirements

Covered by standards.



EXTENSION n. 01/07

to EC-Type Examination Certificate CESI 02ATEX091

Equipment: Terminal boxes series: S, S.1, GUA, GUF, EAH

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





Address: Via Aquileia 10, Villesse (Gorizia – Italy)

Admitted variation

- Update to EN 60079-0 (2006), EN 60079-1 (2004), EN 60079-7 (2003), EN 60079-11 (2007)
EN 61241-0 (2006), EN 61241-1 (2004) Standards
- Update of nameplate
- Constructional modification, new material (cast iron)
- Use of terminal block with 1,5 mm² section
- New execution “Ex e ”, “Ex i” and “Ex d [ia]”
- New max. ambient temperatures (+65°C, +80°C and +150°C, see table 1)

Equipments identification and description

According to the protection mode, the terminal boxes S, S.1, GUA, GUF EAH shall include the following markings:

	II 2GD	Ex d IIC T6, T5, T3 ; Ex tD A21 IP66/67 T 85 °C, T 100 °C, T200°C
	II 2GD	Ex e II T6, T5, T4 ; Ex tD A21 IP66/67 T 85 °C, T 100 °C ; T135°C
	II 2 or 1 GD	Ex i. IIC T6, T5, T4 ; Ex tD A21 IP66/67 T 85 °C, T 100 °C, T135°C
	II 2 (1 or 2) GD	Ex d[i.] IIC T6, T5 ; Ex tD [i.D] A21 IP66/67 T 85 °C, T 100 °C

This extension and annexed descriptive documents must be annexed to the EC-Type Examination Certificate CESI 02ATEX091.

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date 19/12/2007 - translation issued the 19/12/2007

prepared Pierluigi Molinari

verified Mirko Balaz

approved Fiorenzo Bregani

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

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EXTENSION n. 01/07

to EC-Type Examination Certificate CESI 02ATEX 091

Equipments identification and description (follows)

Electrical characteristics

Rated voltage 750 [V]
 Rated frequency 50 ÷ 60 [Hz]

Terminals

Terminal section 1,5; 2,5; 4; 6; 10; 16; 25; 35; 70 [mm²]
 Rated current 10.0 ÷ 175 [A]
 Max. current density 2.5 ÷ 6,6 [A/mm²]

The type and number of terminals which can be installed in the various enclosures is indicated in detail, together with the maximum admissible currents and current densities, in the drawings A2-191; A2-209; A2-210 and in the safety instructions F-274 annexed to this certificate.

The electrical characteristics of junction boxes in the version Ex-i depends on the characteristics of the intrinsic safety circuits and of the associated apparatus used.

Degree of protection IP 66/67 (EN 60529 – 1991)

The standard ambient temperature range:

- 20 ÷ + 40 °C for the enclosures of size 4, 6, 7 and 9

- 40 ÷ + 40 °C for the enclosures of size 4 and 6

The boxes can also be installed with other range of ambient temperatures . In this case shall be used terminals made in material as indicated on following tables 1 and 2.

TABLE 1

Junction boxes execution Ex d IIC			
Ambient temperature	Terminals Material	Temperature class	Maximum surface temperature
-20°C +40°C -40°C +40°C (*)	Poliammide (PA) or upper	T6	T85°C
-20°C +65°C -40°C +65°C (*)	Melamine (KrG) Wemind Stamin (KrS)	T5	T100°C
-20°C +150°C -40°C +150°C (*)	Ceramic (Steatite)	T3	T200°C

TABLE 2

Junction boxes execution Ex e II or Ex i IIC (terminals ATEX certified)			
Ambient temperature	Terminals Material	Temperature class	Maximum surface temperature
-20°C +40°C -40°C +40°C (*)	Poliammide (PA) or upper	T6	T85°C
-20°C +65°C -40°C +65°C (*)	Melamine (KrG) Wemind Stamin (KrS)	T5	T100°C
-20°C +80°C -40°C +80°C (*)	Melamine (KrG) Stamin (KrS) Ceramic (Steatite)	T4	T135°C

(*) – valid only for junction boxes size 4 and 6

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EXTENSION n. 01/07

to EC-Type Examination Certificate CESI 02ATEX 091

Cable entries

The accessory used for cable entries and for closing unused aperture shall be certified according to the following Standards:

- terminal boxes in execution "Ex d" : EN 60079-0, EN 60079-1, EN 61241-0, EN 61241-1
- terminal boxes in execution "Ex e" : EN 60079-0, EN 60079-7, EN 61241-0, EN 61241-1
- terminal boxes in execution "Ex i" : EN 60079-0, EN 61241-0, EN 61241-1

and shall guarantee a degree of protection IP 66/67.

Warning label

For the enclosures with temperature class T5, T4 and T3 when the temperature under rated condition is higher than 70°C at the cable entry point or 80°C at the branching point of the conductors: - suitable heat resisting cables shall be used.

Report n. EX-A7035517

Routine tests

The manufacturer shall carry out the routine tests prescribed at par. 27 of the EN 60079-0 and at par. 24 of the EN 61241-0 Standards.

The manufacturer is exempted from the routine overpressure test since the terminal boxes have passed the type overpressure test carried out with the static method at 4 times the reference pressure:

- 51.5 bar for enclosures of size 4 and 6 (for operation at - 40°C)
- 35.5 bar for enclosures of size 7 and 9 (for operation at - 20°C)

The dielectric test on terminal box "Ex e" assembled by manufacturer, shall be performed according to the par. 7.2 of the EN 60079-7 Standard.

Descriptive documents (prot. EX-A7035520)

- Technical Note A4-4982 (3 pg.)	Rev. 0	dated	03/04/2007
- Drawing n° A2-191	Rev. 2	dated	03/04/2007
- Drawing n° A2-209	Rev. 0	dated	03/04/2007
- Drawing n° A2-210	Rev. 0	dated	03/04/2007
- Drawing n° A3-239	Rev. 2	dated	03/04/2007
- Drawing n°. A4-998	Rev. 0	dated	03/04/2007
- Drawing n°. A4-999	Rev. 0	dated	03/04/2007
- Drawing n°. A4-1010	Rev. 0	dated	03/04/2007
- Document n°. A4-4951	Rev. 0	dated	02/04/2007
- Document n°. A4-4952	Rev. 0	dated	02/04/2007
- EC Declaration of Conformity n° 0031		dated	03/04/2007
- Safety Instruction F-274 (12 pg.)	Rev. 1	dated	03/04/2007

One copy of all documents is kept in CESI files.

Essential Health and Safety Requirements

The Health and Safety Requirements are assured by compliance with the following Standards:

- EN 60079-0 : 2006: Electrical apparatus for explosive gas atmospheres.
General requirements
- EN 60079-1 : 2004 Flamoproof enclosures "d".
- EN 60079-7: 2003 Increased safety "e"
- EN 60079-11: 2007 Intrinsic safety "i"
- 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. 02/14

to EC-Type Examination Certificate CESI 02 ATEX 091

Component: Terminal boxes series S, S.1, GUA, GUF, EAH

Manufacturer: COR.TEM S.p.A.

Address: Via Aquileia, 10 – 34070 Villesse (GO) – Italy.

Admitted variation

- Update to new edition of the harmonized European standard;
- Update marking label;
- Change of the ambient temperature range of the boxes GUA-49, 59, 69, S.1-27, 37, 47, 19, 29, 39, 49, 59, 69, S-27, 37, 47, 49, 59, 69 series;
- All boxes are provided with standard O-Ring made of silicon material, placed in between the body and the cover.

Conformity to new edition of the harmonized European standard

The equipments subject of the certificate CESI 02 ATEX 091 and annexed extension are conforming to the standards:

EN 60079-0: 2012 EN 60079-1: 2007 EN 60079-7: 2007 EN 60079-11: 2012 EN 60079-31: 2009

The equipments shall be marked as follows:

- | | | | | |
|--|--------|----------------------|----------------------------------|---------|
| | II 2GD | Ex d IIC T3/T5/T6 Gb | Ex tb IIC T200°C/T100°C/T85°C Db | IP66/67 |
| | II 2GD | Ex e IIC T4/T5/T6 Gb | Ex tb IIC T130°C/T100°C/T85°C Db | IP66/67 |
| | II 2GD | Ex i IIC T4/T5/T6 Gb | Ex tb IIC T130°C/T100°C/T85°C Db | IP66/67 |

This extension and annexed descriptive documents must be annexed to the EC-Type Examination Certificate CESI 02ATEX091.

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Date 26th May 2014 - translation issued the 26th May 2014

Prepared
Gian Pietro Toledo

Verified
Mirko Balaz

Approved
Fiorenzo Bregani

CESI S.p.A.
Testing & Certification Division
Business Area Certification
Il Responsabile Page 1/4

EXTENSION n. 02/14

to EC-Type Examination Certificate CESI 02 ATEX 091

Description of the equipments**Electrical characteristics**

- Ex d terminal boxes:
 - Rated voltage of terminals: 750 V ac/dc Max.
 - Rated frequency: 50 ÷ 60 Hz
 - Rated cross section of terminals: 1.5 mm² ÷ 70 mm² Max.
 - Rated current of terminals: 8 A ÷ 175 A Max.
 - Current density of terminals and cables wiring: 2.5 A/mm² ÷ 6.6 A/mm² Max.
 - Degree of protection of enclosures: IP 66 or IP 67
 - Ambient temperature: -40 or -20 ÷ +40 or +65°C or +150°C

- Ex e and Ex i terminal boxes:
 - Rated voltage of terminals: 630 V ac/dc Max.
 - Rated frequency: 50 ÷ 60 Hz
 - Rated cross section of terminals: 1.5 mm² ÷ 25 mm² Max.
 - Rated current of terminals: 5.5 A ÷ 65 A Max.
 - Current density of terminals and cables wiring: 3.0 A/mm² ÷ 6.6 A/mm² Max.
 - Degree of protection of enclosures: IP 66 or IP 67
 - Ambient temperature: -40 or -20 ÷ +40 or +65°C or +80°C.

The equipments covered by this certificate may be used as terminal boxes.

The boxes are basically manufactured with an aluminium alloy.

They can also be manufactured with AISI 303-304-316 stainless steel or cast iron.

The boxes manufactured with aluminium alloy or with stainless steel have a service temperature of -40 ÷ +160 °C, while the boxes manufactured with cast iron have a service temperature of -20 ÷ +160 °C.

All the boxes are supplied with gaskets Silicon red.

The type of terminals used depending to ambient temperature range of boxes, temperature class and maximum surface temperature.

In case of execution Ex-e and Ex-i., terminals shall be ATEX certified according to EN 60079-7 standard. The terminals normally used are manufactured by Cabur or Weidmuller, other type or brand of terminals can be used.

The type and number of terminals which can be installed in the various enclosures is indicated in detail, together with the maximum admissible voltage, currents and current density, in the drawings annexed to this certificate.

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EXTENSION n. 02/14

to EC-Type Examination Certificate CESI 02 ATEX 091

Tab. 1 Junction boxes execution Ex d IIC		
Ambient temperature	Terminals operating temperature	Temperature class
-20 °C ÷ +40 °C	≥80 °C	T6
-40 °C ÷ +40 °C	≥80 °C	T6
-20 °C ÷ +65 °C	≥100 °C	T5
-40 °C ÷ +65 °C	≥100 °C	T5
-20 °C ÷ +150 °C	≥180 °C	T3
-40 °C ÷ +150 °C	≥180 °C	T3

Tab. 2 Junction boxes execution Ex e IIC or Ex i IIC (Terminals ATEX certified)		
Ambient temperature	Terminals operating temperature	Temperature class
-20 °C ÷ +40 °C	≥80 °C	T6
-40 °C ÷ +40 °C	≥80 °C	T6
-20 °C ÷ +65 °C	≥100 °C	T5
-40 °C ÷ +65 °C	≥100 °C	T5
-20 °C ÷ +80 °C	≥130 °C	T4
-40 °C ÷ +80 °C	≥130 °C	T4

The contents of the boxes shall be in accordance with the appropriate requirements of the standards relating to the electrical construction.

The cables and the accessories shall be appropriate to the terminals operating temperature and the value of temperature is reported in the marking label.

The accessories used for cable entries and for unused holes shall be subject of separate certification according to the standards:

- Terminal boxes in execution “Ex d” end “Ex tb”: EN 60079-0, EN 60079-1, EN 60079-31;
- Terminal boxes in execution “Ex e” end “Ex tb”: EN 60079-0, EN 60079-7, EN 60079-31;
- Terminal boxes in execution “Ex i” end “Ex tb”: EN 60079-0, EN 60079-31;

and shall guarantee a degree of protection IP 66/67.

The safety instruction provided by Manufacturer shall be strictly respected

Report n. EX- B4005394

Routine tests

The manufacturer shall carry out the routine tests prescribed at par. 27 of the EN 60079-0.

The boxes type S- 14, 24, 16, 26, 36, 27, 37, 47, 49, 59, 69, type S.1- 14, 24, 16, 26, 36, 27, 37, 47, 19, 29, 39, 49, 59, 69, type GUA- 16, 26, 36, 49, 59, 69 e type GUFX - EAH- 26, 36, series are exempted from routine overpressure tests, as they have positively passed the test carried out at 3,55 MPa, corresponding to 4 times the reference pressure for the minimum Tamb of -20 °C.

The boxes type S.1-14, -24, -16, -26, -36, type S-14, -24, -16, -26, -36, type GUA-16, -26, -36 series are exempted from routine overpressure tests, as they have positively passed the test carried out at 5,15 MPa, corresponding to 4 times the reference pressure for the minimum Tamb of -40 °C.

While, the boxes type S-27, -37, -47, -49, -59, -69, type S.1-27, -37, -47, -19, -29, -39, -49, -59, -69, type GUA-49, -59, -69 series shall be subjected to routine test to overpressure of 1,93 MPa, corresponding to 1.5 times the reference pressure for the minimum Tamb of -40 °C.

EXTENSION n. 02/14

to EC-Type Examination Certificate CESI 02 ATEX 091

Descriptive documents (prot. EX- B4005480)

- Technical note A4-5672 (pagg. 8)	rev.0	dated	10.09.2012;
- Safety, maintenance and mounting instructions F-274 (pagg. 11)	rev.2	dated	10.09.2012;
- Declaration of Conformity n° 0031	---	dated	10.09.2012
- Drawing n° A2-191	rev.3	dated	10.09.2012
- Drawing n° A2-209	rev.1	dated	10.09.2012
- Drawing n° A2-210	rev.1	dated	10.09.2012
- Drawing n° A3-239	rev.3	dated	10.09.2012
- Drawing n° A4-998	rev.1	dated	10.09.2012
- Drawing n° A4-999	rev.1	dated	10.09.2012

One copy of all documents is kept in CESI files.

Essential Health and Safety Requirements

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

- EN 60079-0: 2012 Explosive atmospheres – Part 0: Equipment - General requirements;
- EN 60079-1: 2007 Explosive atmospheres – Part 1: Equipment protection by flameproof enclosure “d”;
- EN 60079-7: 2007 Explosive atmospheres – Parte 1: Equipment protection by increased safety “e”;
- EN 60079-11: 2012 Explosive atmospheres – Parte 1: Equipment protection by intrinsic safety “i”;
- EN 60079-31: 2009 Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure “t”.