

(2) **Equipment and protective systems intended for use in potentially explosive atmospheres
Directive 94/9/EC**

(1) **EC-TYPE EXAMINATION CERTIFICATE**

(3) Number of the EC type examination certificate: **INERIS 02ATEX0067 X**

(4) Equipment or protective system:

ENCLOSURE TYPE ESA ... / ESX...

(5) Manufacturer: **FEAM**

(6) Address: Via Pagano, 3
20090 Trezzano sul Nav (MI)
ITALY

(7) This equipment or protective system and any other acceptable alternative of this one are described in the appendix of this certificate and the descriptive documents quoted in this appendix.

(8) The INERIS, notified body and identified under number 0080, in accordance with article 9 of Council Directive 94/9/EC of the 23rd March 1994, certifies that this equipment or protective system fulfils the Essential of Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, described in appendix II of the Directive.

The examinations and the tests are consigned in official report No P30140/02.

(9) The respect of the Essential Health and Safety Requirements is ensured by:

- conformity with:

EN 50 014 of June 1997 + Amendment 1 and 2

EN 50 019 of July 2000


EN 50 020 of June 2002

EN 50 281-1-1 of September 1998 + Amendment 1

- specific solutions adopted by the manufacturer to meet the Essential Health and Safety Requirements described in the descriptive documents.

(10) Sign X, when it is placed following the Number of the EC type examination certificate, indicates that this equipment and protective system is subjected to the special conditions for safe use, mentioned in the annex of 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 the protective system will have to contain:

 II 2 GD

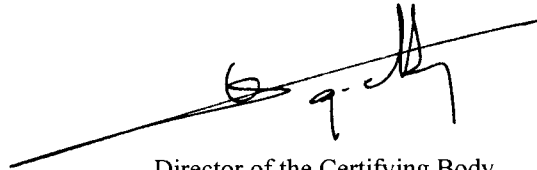
EEEx e II T5 or EEEx ia IIB/IIC T5 or EEEx e[ia]IIB/IIC T5
T100°C IP66

Verneuil-en-Halatte, 2002 12 31



X. LEFEBVRE

Engineer at the Laboratory for Certification
of ATEX Equipment



Director of the Certifying Body,
By delegation
B. PIQUETTE
Deputy manager of Certification



(13)

ANNEX

(14)

EC TYPE EXAMINATION CERTIFICATE N° INERIS 02ATEX0067 X

(15) **DESCRIPTION OF THE EQUIPMENT OR THE PROTECTIVE SYSTEM**

Enclosures of various dimensions made out of light alloy for ESA... type or made out of stainless steel for ESX.... type.

These boxes are intended to receive connecting terminals of certified types or a set of copper bars.

The enclosures of ESX... series can be coupled.

PARAMETERS RELATING TO THE SAFETY

Maximale supply voltage : 750 V, according terminals type.

Maximal current for all types :

Wiring section (mm ²)	1,5	2,5	4	6	10	16	25	35	70	95	120	150	240
Maximal current (A)	8	12	17	23	32	43	58	73	105	127	146	172	225

Some of enclosures can be equipped with sets of bars having the following characteristics :

Section from each of 4 conductive bars (mm ²)	48	100
Maximal current (A)	60	130
Maximal using voltage (V)	750	750

The types and the number of terminals envisaged in the various enclosures are defined in the descriptive documents.

Maximum powers available for a temperature class T5 and a range of T°amb. of -20°C to 55°C:

Ref.ES	1313	1717	2212	2216	2222	3322	3333	4433	4422	4936	5242	6348	7440
P in W	12	17	16	26	30	39	51	61	48	70	102	104	122

MARKING

Marking must be readable and indelible; it must comprise the following indications:

FEAM

I - 20090 TREZZANO SUL NAV (MI)

ESA..... or ESX....(*)
 INERIS 02ATEX0067 X
 (serial number)
 (Year of construction)

 II 2 GD

EEx e II T5 or EEx ia IIB/IIC T5 or EEx e[ia] IIB/IIC T5
 T 100°C IP 66
 DO NOT OPEN WHEN ENERGIZED
 (Rated Voltage and Current)

(*) The type is completed by numbers and letters corresponding to the alternatives execution of the enclosure.

The whole of marking can be carried out in the language of the country of use.

The equipment or protective system must also carry the marking normally envisaged by the standards of construction which relate to it.

ROUTINE EXAMINATIONS AND TESTS

In accordance with 6.1 of the standard EN 50 019, each sample of the enclosure above definite must have undergone successfully, before to delivery, a dielectric rigidity test applied to the connecting terminals.

(16) DESCRIPTIVE DOCUMENTS

The report is composed of the documents quoted hereafter, constituting the descriptive file of the apparatus, object of this certificate.

- Descriptive Note n° N.NT-012/ATEX rev. n°0 du 2002.12.30 (8 pages)
- Instructions Manuel n° IU011/ATEX rev. n° 0 du 2002.11.11 (4 pages)
- Drawing n° AC012/ATEX fig.n°1 on 2002.12.30
- Drawing n° AC012/ATEX fig.n°2 on 2002.12.30
- Drawing n° AC012/ATEX fig.n°3 on 2002.12.30
- Drawing n° AC012/ATEX fig.n°4 on 2002.12.30
- Drawing n° AC012/ATEX fig.n°5 on 2002.12.30
- Drawing n° AC012/ATEX fig.n°6 on 2002.12.30
- Drawing n° AC012/ATEX fig.n°7 on 2002.12.30
- Drawing n° AC012/ATEX fig.n°8 on 2002.12.30

These documents were signed on 30 December 2002.

(17) SPECIAL CONDITIONS FOR SAFE USE

The cable entries must have a protection degrees at least equal to IP 66. The user will have to carry out a regular cleaning of the device in order to avoid the dust residue on the walls of the material.

The apparatus can be used for an ambient temperature range from -20°C to +55°C.

(18) ESSENTIAL REQUIREMENTS OF SAFETY AND HEALTH

The respect of the Essential Health and Safety Requirements is ensured by:

- conformity to the European standards EN 50 014, EN 50 019, EN 50 020 and EN 50 281-1-1.
- the whole of the provisions adopted by the manufacturer and described in the descriptive documents.

ADDITION

(3) INERIS 02ATEX0067X/01

(4) ENCLOSURE TYPE ESA... or ESX...

(5) Made by FEAM

(15) PURPOSE OF THE ADDITION

- Application of the new standards:
EN 60079-0 : 2006 EN 60079-7 : 2007
EN 61241-0 : 2006 EN 61241-1 : 2004
- Modification of the name of the manufacturer.
- Modification of the size of enclosure type ESX....
- Possibility to use these enclosures Ex e in range of ambient temperature -50°C up to 150°C with the terminal blocks PHOENIX covered by EC type certificate examination KEMA 03ATEX2382U or WEIDMULLER covered by the EC type examination certificate SIRA 03ATEX3425U.
- The terminal blocks for other ranges of ambient temperatures are covered by EC type examination certificate in accordance with the new standards and listed on the descriptive documents.

PARAMETERS RELATING TO THE SAFETY


The parameters relating to the safety are modified as follows:

The manufacturer reduce the maximum number of terminal block and/or the maximum intensity intended in the various certificates of the terminals block, to guarantee a maximal heating of 20 K for class T3/T200°C or T4/T135°C and 15 K for class T5/T100°C.

MARKING

The marking is modified as follows:

A - Enclosures for T3 and T200°C:

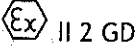
F.E.A.M S.r.l
I - 20090 Trezzano sul Naviglio (MI)
ESA... or ESX... (*)
INERIS 02ATEX0067X
(Serial number)
(Year of construction)
 II 2 GD
Ex e II T3
Ex tD A21 IP65 T200°C
T. Ambient : (**) to +150°C

Cable temperature : 170°C
(Rated voltage and rated current and/or rated power)

WARNINGS : DO NOT OPEN WHEN ENERGIZED

- (*) The type is completed by number and/or letter according to the manufacturing variations.
- (**) One of the following temperature -20°C, -30°C, -40°C or -50°C in accordance with the thermal stability of the terminal blocks.

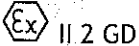
B - Enclosures for T4 and T135°C:

F.E.A.M S.r.l
I - 20090 Trezzano sul Naviglio (MI)
ESA... or ESX... (*)
INERIS 02ATEX0067X
(Serial number)
(Year of construction)
 II 2 GD
Ex e II T4
Ex tD A21 IP66 T135°C
T. Ambient : (**) to +85°C
Cable temperature : 120°C
(Rated voltage and rated current and/or rated power)

WARNINGS : DO NOT OPEN WHEN ENERGIZED

- (*) The type is completed by number and/or letter according to the manufacturing variations.
- (**) one of the following temperature -20°C, -30°C, -40°C or -50°C in accordance with the thermal stability of the terminal blocks.

C - Enclosures for T5 and T100°C:

F.E.A.M S.r.l
I - 20090 Trezzano sul Naviglio (MI)
ESA... or ESX... (*)
INERIS 02ATEX0067X
(Serial number)
(Year of construction)
 II 2 GD
Ex e II T5
Ex tD A21 IP66 T100°C
T. Ambient : (**) to +55°C
Cable temperature : 85°C
(Rated voltage and rated current and/or rated power)

WARNINGS : DO NOT OPEN WHEN ENERGIZED

- (*) The type is completed by number and/or letter according to the manufacturing variations.
- (**) one of the following temperature -20°C, -30°C, -40°C or -50°C in accordance with the thermal stability of the terminal blocks.

Marking may be carried out in the language of the country of use.

The protective system or equipment has also to carry the marking normally stipulated by its construction standards.

ROUTINE EXAMINATIONS AND TESTS

The routine examinations and tests are modified as follows :

In accordance with clause 7.1 of the EN 60079-7 standard, each apparatus defined above has to have successfully passed before delivery a test of dielectric strength on each of the different circuits of the connection units, performed according to the relevant standards, the test voltage being applied during one minute.

(16) DESCRIPTIVE DOCUMENTS

The descriptive document quoted hereafter constitutes the technical documentation describing the modification of the equipment, subject of this present addition.

- Certification file n° 11-10-Ex of 2010.05.11 (26 rubrics) signed on 2010.05.11

(17) SPECIAL CONDITIONS FOR SAFE USE

The special conditions are replaced by the followings:

- The certified cable entries must have a protection degrees at least equal to IP 66 for enclosures class T4 and T5 or at least equal to IP 65 for enclosures class T3.
- The user will have to carry out a regular cleaning of the device in order to avoid the dust residue on the walls of the material.


(18) ESSENTIAL SAFETY AND HEALTH REQUIREMENTS

The respect of the Essential Health and Safety Requirements is completed as follows:

- Conformity to the standards quoted on page 1, clause (15).
- All provisions adopted by the manufacturer and defined in the descriptive documents.

Verneuil-en-Halatte, 2010 06 17




Director of the Certifying Body,
By delegation
T. HOUEIX
Certification Officer
Certification Division

ADDITION

(3) INERIS 02ATEX0067X/02

(4) ENCLOSURE TYPE ESA... or ESX...

(5) Made by FEAM

(15) PURPOSE OF THE ADDITION

- Application of the following standards:
 EN 60079-0 : 2009 IEC 60079-0 : 2007
 EN 60079-7 : 2007 IEC 60079-7 : 2006
 EN 60079-1 : 2007 IEC 60079-1 : 2007
 EN 60079-11 : 2007 IEC 60079-11 : 2006
 EN 60079-18 : 2009 IEC 60079-18 : 2009
 EN 60079-31 : 2009 IEC 60079-31 : 2008
- Modification of the range of ambient temperature and the temperature class.
- Introduction of new lock system for fixing cover.
- Possibility to use some electrical components covered by an ATEX certificate and with different type of protection as "Ex d e", "Ex ia", "Ex ib", "Ex d ia/ib", "Ex e mb", "Ex d e mb", "Ex d e mb ia".
- The previous versions of the enclosures, covered by the addition 01, remain usable in accordance with:
 EN 60079-0 : 2006 EN 60079-7 : 2007
 EN 61241-0 : 2006 EN 61241-1 : 2004

PARAMETERS RELATING TO THE SAFETY

The parameters relating to the safety are modified as follows:

Enclosures "Ex e" and "Ex tb" with internal component and/or terminals:

Maximum supply voltage : 750 V

Maximum current : see table below

Wiring section (mm ²)	1.5	2.5	4	6	10	16	25	35	50	70	95	150
Maximal current (A)	8	12	17	23	32	43	58	73	86	105	127	172

The maximum number of terminals and the permissible rated current depend of the size of the enclosure, the range of ambient temperature and the temperature class. These parameters are described on the descriptive documents.

These enclosures are intended to be used in the following ranges of ambient temperature, in accordance with the temperature class T6/T85°C, T5/T100°C or T4/T135°C, the thermal stability of the terminals and the range of ambient temperature of the component installed in the enclosure:

- Minimum ambient temperature from -20°C to -60°C for "Ex e" and "Ex tb" versions.
- Maximum ambient temperature from +40°C to +80°C for "Ex e" version.
- Maximum ambient temperature from +40°C to +60°C for "Ex tb" version.

The components other than terminals can be installed only when the wiring section of each wire and terminal is 2.5 mm² and with a maximum current of 6 A. This configuration is only for a maximum ambient temperature 40°C.

Enclosures "Ex tb" with internal component and/or terminals:

Maximum supply voltage : 660 V

Maximum power dissipated is indicated on the descriptive documentation in accordance with the size of enclosure, the temperature class and the ambient temperature.

The parameters relating to the safety are unchanged for the previous versions of the enclosures, covered by the addition 01.

MARKING

The marking is modified as follows:

A - Enclosure "Ex e" and "tb" fitted only with terminals:

FEAM

I - 20090 Trezzano Sul Naviglio (MI)

ESA... or ESX... (1)

INERIS 02ATEX0067X

(Serial number)

(Year of construction)

Ex e IIC T6 or T5 or T4 Gb

Ex tb IIIC T85°C or T100°C or T135°C Db IP66

...°C ≤ Tamb ≤ ...°C (2)

T. cable = (3)

(Rated voltage and rated current and/or rated power)

WARNING: DO NOT OPEN WHEN ENERGIZED

- (1) Type is completed by numbers corresponding to the size of the enclosure.
- (2) Indication of the range of temperature ambient if different from -20°C to +40°C.
- (3) Indication when the temperature is higher than 70°C.

B - Enclosure “Ex e” and “tb” fitted with terminals and components:

FEAM

I - 20090 Trezzano Sul Naviglio (MI)

ESA... or ESX... (1)

INERIS 02ATEX0067X

(Serial number)

(Year of construction)

Ex (2) e IIB or IIC T6 or T5 Gb

Ex tb IIIC T85°C or T100°C Db IP66

...°C ≤ Tamb ≤ ...°C (3)

T. cable = (4)

(Rated voltage and rated current and/or rated power)

WARNING: DO NOT OPEN WHEN ENERGIZED

- (1) Type is completed by numbers corresponding to the size of the enclosure.
- (2) The marking code Ex is completed by the indication of the type of protection of the component installed in the enclosure in the alphabetical order.
- (3) Indication of the range of ambient temperature if different from -20°C to +40°C.
- (4) Indication when the temperature is higher than 70°C.

C - Enclosure “Ex tb” only for dust protection:

FEAM

I - 20090 Trezzano Sul Naviglio (MI)

ESA... or ESX... (1)

INERIS 02ATEX0067X

(Serial number)

(Year of construction)

Ex tb IIIC T85°C, T100°C or T135°C Db IP66

...°C ≤ Tamb ≤ ...°C (2)

T. cable = (3)

WARNING: DO NOT OPEN WHEN ENERGIZED

- (1) Type is completed by numbers corresponding to the size of the enclosure.
- (2) Indication of the range of ambient temperature if different from -20°C to +40°C.
- (3) 90°C for T100°C or 120°C for T135°C.

Marking may be carried out in the language of the country of use.

The protective system or equipment has also to carry the marking normally stipulated by its construction standards.

The marking are unchanged for the previous versions of the enclosures, covered by the addition 01.

ROUTINE EXAMINATIONS AND TESTS

The routine examinations and tests are unchanged.

(16) DESCRIPTIVE DOCUMENTS

The descriptive document quoted hereafter constitutes the technical documentation describing the modification of the equipment, subject of this present addition:

- Certification file n° 11_228 rev.0 of 2011.10.20 (15 rubrics) signed on 2011.10.20
- Table ESA-ESX-FEAM dated on 2011.10.10

(17) SPECIAL CONDITIONS FOR SAFE USE

The special conditions are unchanged.

(18) ESSENTIAL SAFETY AND HEALTH REQUIREMENTS

The respect of the Essential Health and Safety Requirements, for this enclosure, is modified as follow:

- Conformity to the standards quoted on page 1, clause (15).
- All provisions adopted by the manufacturer and defined in the descriptive documents.

Verneuil-en-Halatte, 2012 05 16


Director of the Certifying Body,
By delegation
T. HOUEIX
Certification Officer
Certification Division



ADDITION

(3) INERIS 02ATEX0067X/03

(4) ENCLOSURE TYPE ESA... or ESX...

(5) Made by FEAM

(15) PURPOSE OF THE ADDITION

- Extension of the maximum ambient temperature from +80°C to +160°C for enclosures including terminals.
- Possibility to install bus bar in the enclosures for ambient temperatures from -60°C up to +100°C.
- Extension of the maximum ambient temperature from +40°C to +60°C for enclosures using certified components.
- Application of the following standards:
 - EN 60079-0 : 2012/A11:2013
 - EN 60079-7 : 2007
 - EN 60079-1 : 2007
 - EN 60079-11 : 2012
 - EN 60079-18 : 2009
 - EN 60079-31 : 2009

PARAMETERS RELATING TO THE SAFETY

The parameters relating to the safety are modified as follows:

Enclosures “Ex e” and “Ex tb” with internal component and/or terminals:

Maximum supply voltage : 750 V

Maximum intensity : see table below

Wiring section (mm ²)	1.5	2.5	4	6	10	16	25	35	50	70	95	150
Maximal current (A)	8	12	17	23	32	43	58	73	86	105	127	172

The maximum number of the terminals and the permissible rated current depend of the size of the enclosure, the range of ambient temperature and the temperature class. These parameters are described on the descriptive documents.

These enclosures are intended to be used in the following ranges of ambient temperature, in accordance with the temperature class T6/T85°C, T5/T100°C, T4/T135°C or T3/T200°C, the thermal stability of the terminals and the range of ambient temperature of the component installed in the enclosure:

- Minimum ambient temperature from -20°C to -60°C for “Ex e” and “Ex tb” versions.
- Maximum ambient temperature from +40°C to +100°C for “Ex e” version for types of terminals specified in the descriptive documents.
- Maximum ambient temperature from +40°C to +160°C for “Ex e” and “Ex tb” version only with terminals type SAK covered by the certificate SIRA 03ATEX3425U and a maximum current of 8A.

The components other than terminals can be installed only when the wiring section of each wire and terminal is 2.5 mm² and with a maximum current of 6 A. This configuration is only for a maximum ambient temperature 60°C.

Enclosures “Ex e” and “Ex tb” with bus bar:

Maximum supply voltage : 750 V
 Maximum intensity : see table below

Max current (Size of bar)	Max. Ambient temperature	Temperature class for ESA	Temperature class for ESX
85A (48mm ²) 160A (100mm ²) 275A (250mm ²)	+100°C	T4/T135°C	T3/T200°C
130A (48mm ²) 200A (100mm ²) 400A (250mm ²)	+80°C	T4/T135°C	T3/T200°C
300A (250mm ²)	+55°C	T5/T100°C	-
300A (250mm ²)	+60°C	-	T4/T135°C

The maximum number of the bars and the permissible rated current depend of the size of the enclosure, the range of ambient temperature and the temperature class. These parameters are described on the descriptive documents.

The enclosures including bars are intended to be used in the range of ambient temperature from -60°C up to 100°C.

Enclosures “Ex tb” with internal component and/or terminals:

Maximum supply voltage : 660 V

Maximum power dissipated is indicated on the descriptive documentation in accordance with the size of enclosure, the temperature class and the ambient temperature.

MARKING

The marking is modified as follows:

A - Enclosure “Ex e” and “tb” fitted only with terminals or bars:

FEAM

I - 20090 Trezzano Sul Naviglio (MI)

ESA... or ESX... (1)

INERIS 02ATEX0067X

(Serial number)

(Year of construction)

Ex II 2G Ex e (2) IIB or IIC T6 or T5 or T4 or T3 Gb

Ex II 2D Ex tb IIIC T85°C or T100°C or T135°C or T200°C Db IP66 or IP65

...°C ≤ Tamb ≤ ...°C (3)

T. cable = (4)

(Rated voltage and rated current and/or rated power)

WARNING: DO NOT OPEN WHEN ENERGIZED

- (1) Type is completed by numbers corresponding to the size of the enclosure.
- (2) The marking code Ex could be completed by the indication of the type of protection “ia” in accordance with the type of terminals inside the enclosures.
- (3) Indication of the range of temperature ambient if different from -20°C to +40°C.
- (4) Indication when the temperature is higher than 70°C.

B - Enclosure “Ex e” and “tb” fitted with terminals and components:

FEAM

I - 20090 Trezzano Sul Naviglio (MI)

ESA... or ESX... (1)

INERIS 02ATEX0067X

(Serial number)

(Year of construction)

Ex II 2G Ex (2) e IIB or IIC T6 or T5 or T4 Gb

Ex II 2D Ex tb IIIC T85°C or T100°C or T135°C Db IP66 or IP65

...°C ≤ Tamb ≤ ...°C (3)

T. cable = (4)

(Rated voltage and rated current and/or rated power)

WARNING: DO NOT OPEN WHEN ENERGIZED

- (1) Type is completed by numbers corresponding to the size of the enclosure.
- (2) The marking code Ex is completed by the indication of the type of protection of the component installed in the enclosure in the alphabetical order.
- (3) Indication of the range of ambient temperature if different from -20°C to +40°C.
- (4) Indication when the temperature is higher than 70°C.

C - Enclosure "Ex tb" only for dust protection:

FEAM

I - 20090 Trezzano Sul Naviglio (MI)

ESA... or ESX... (1)

INERIS 02ATEX0067X

(Serial number)

(Year of construction)

 II 2D Ex tb IIIC T85°C, T100°C or T135°C Db IP66 or IP65

...°C ≤ Tamb ≤ ...°C (2)

T. cable = (3)

WARNING: DO NOT OPEN WHEN ENERGIZED

- (1) Type is completed by numbers corresponding to the size of the enclosure.
- (2) Indication of the range of ambient temperature if different from -20°C to +40°C.
- (3) 90°C for T100°C or 120°C for T135°C.

Marking may be carried out in the language of the country of use.

The protective system or equipment has also to carry the marking normally stipulated by its construction standards.

ROUTINE EXAMINATIONS AND TESTS

The routine examinations and tests are unchanged.

(16) DESCRIPTIVE DOCUMENTS

The descriptive document quoted hereafter constitutes the technical documentation describing the modification of the equipment, subject of this present addition.

- Certification file n° 11_228 rev.1 of 2015.02.15 (14 rubrics) signed on 2015.02.15
- Excel file CD dated on 2015.02.15

(17) SPECIAL CONDITIONS FOR SAFE USE

The special conditions for safe use are modified as follows:

The enclosures could be used in different ambient temperatures ranges comprised from -60°C up to +160°C following the components fitted on the enclosures and in accordance with the descriptive documents.

(18) ESSENTIAL SAFETY AND HEALTH REQUIREMENTS

The respect of the Essential Health and Safety Requirements is modified as follows:

- Conformity to the standards quoted in clause (15).
- All provisions adopted by the manufacturer and defined in the descriptive documents.

Verneuil-en-Halatte, 2015.04.30




The Chief Executive Officer of INERIS
By delegation
T. HOUEIX
Ex Certification Officer