

**CESI****CERTIFICATE**

ISMES



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Schema di certificazione

CESI-ATEX**[1] SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE**

**[2] Component intended for use on/in equipment or protective system
intended for use in potentially explosive atmospheres
Directive 2014/34/EU**

[3] Supplementary EU-Type Examination Certificate number:

CESI 01 ATEX 080 U /04

[4] Component: Sealing bushings type CP., TP., NPS., NCS., LPS..

[5] Manufacturer: EL.FIT S.p.A.

[6] Address: Via Aquileia, 12 – 34070 Villesse (GO) – Italy.

[7] This supplementary certificate extends EC-Type Examination Certificate CESI 01 ATEX 080 U, to apply to products designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

[8] CESI, notified body n. 0722 in accordance with Article 17 of the Directive 2014/34/EU of the Parliament and Council of 26 February 2014, certifies that this component 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- B8014758.

[9] In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Supplementary certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20 April 2016

[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 EU-TYPE EXAMINATION CERTIFICATE relates only to the design, examination and tests of the specified component in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this component. These are not covered by this certificate.

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



II 2 G

Ex db IIC Gb

or



II 2 GD

Ex db IIC Gb

Ex tb IIC Db

IP66/67

(for NPS types only)

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

Date 2019.09.20

(Revision n. 01 of the supplement n. 04 issued on 30/07/2018)

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



PRD N. 018B
Membro degli Accordi di Mutuo
Riconoscimento EA, IAF e ILAC
Signatory of EA, IAF and ILAC
Mutual Recognition Agreements

[13]

Schedule

[14] SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 01 ATEX 080 U /04

[15] Description of the variation to the component

- Updating to EN 60079-0: 2012 + A11: 2013, EN 60079-1: 2014 and EN 60079-31: 2014 Standards.
- New cable sizes and number of cores have been added.

Description of component

The sealing bushings type CP**, TP** and LPS** are bushings with a threaded or cylindrical joint and can be used for the passage of cabling between two separate inner enclosure compartments with different types of protection. The NPS** types are bushings for the passage of cabling between two flameproof enclosures or between a flameproof enclosure and an enclosure with another type of protection.

The NPS** types are bushings with two threaded joints (male-male same sizes nipple) while types NCS** are bushings with one threaded joint and one cylindrical joint. For sealing bushings type TP**, NPS** and NCS** the standard threads are cylindrical ISO Metric 965/1 and ISO 965/3 from M10x1.5 up to M42x1.5 or tapered NPT ANSI ASME B1.20.1 from 1/8" up to 1"1/2. Alternatively other threads can be supplied.

To guarantee the IP 66/67 degree of protection on the NPS** bushings, a sealant agent is put on at least two complete threads engaged of the threaded coupling.

The above mentioned bushings can be made of stainless steel, carbon steel (A 105), low temp. steel (A 203) and brass. The bushings containing cables which are sealed by means of bi-component resin set into the bushing and around each conductor.

All sealing bushings types are suitable for the service temperature range from -50°C up to +110°C with the exception of the bushings made of carbon steel A 105 (-20°C up to +110 °C).

Types of Sealing bushings:

The types of Sealing bushing are the following:

- TP - Sealed bushing with cylindrical threaded joint (ISO Metric);
- CP - Sealed bushing with cylindrical joint;
- NPS - Sealed bushings with two threaded joints (cylindrical or tapered);
- NCS - Sealed bushing with one cylindrical threaded joint (ISO Metric) and one cylindrical joint;
- LPS - Sealed bushing with cylindrical joint and fixed by means of threaded lock nut.

Electrical characteristics

Types TP**, CP**, NPS**, NCS** and LPS**:

- Cables type BETA THERM 155 or RADOX 155 (COT from -55 °C up to +155 °C for each other);
 - Conductor size: 0.5 + 70 mm²;
 - Rated voltage: 750 V for sizes ≤ 0.75 mm² and 1000 V for sizes ≥ 1 mm²;
 - Number of conductors:
 - 1 to 48 for sizes 0.5 – 0.75 mm²;
 - 1 to 21 for size 1 mm²;
 - 1 to 36 for size 1.5 mm²;
 - 1 to 24 for size 2.5 mm²;
 - 1 to 12 for size 4 mm²;
 - 1 to 6 for sizes 6 – 10 – 16 mm²;
 - 1 to 3 for sizes 25 – 35 mm²;
 - 1 for sizes 50 – 70 mm².
- Compensated cables type K (S1TA and S2PA);
 - Conductor size: 2 x 0.22 + 2 x 1.5 mm²;
 - Rated voltage: 100 V;
 - Number of conductors: 1 + 9 for sizes from 2 x 0.22 to 2 x 1.5 mm².

The maximum current for each conductor shall take into account the heating caused by the current flowing through it, the heating of the enclosure and the maximum permissible ambient temperature.

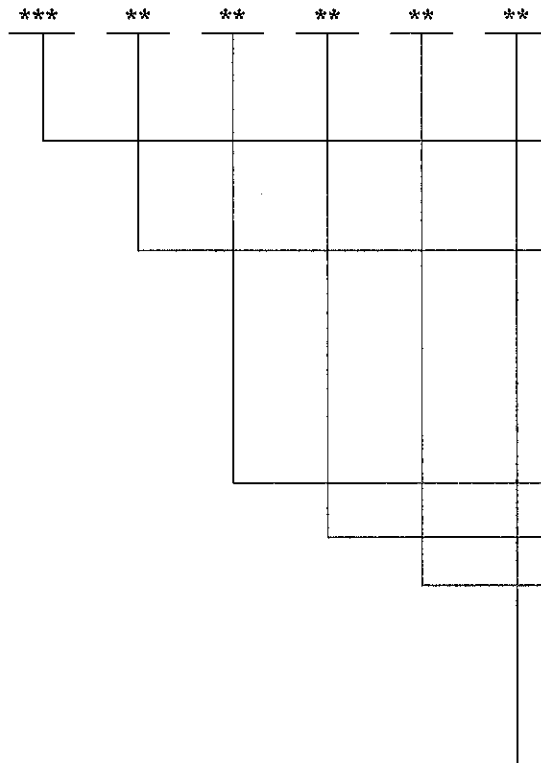
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Schedule

[14] **SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 01 ATEX 080 U /04**

Identification of Sealing bushings:



Type of bushings: **CP, TP, NPS, NCS** or **LPS**

Size or thread:

10, 12, 16, 20, 24, 25, 33, 36, 38, 42
03, 02, 01, 1, 2, 3, 4, 5

Type of thread (for NPS only):

N: NPT ANSI ASME B1.20.1
I: ISO Metric pitch 1.5
NC: NPSM ANSI ASME B1.20.1
P: PG DIN 40430
C: GAS ISO 228/1
Blank: ISO 7/1

Number of cores.

Size of cores (sqmm).

Material of bushings:

G: Carbon steel for temperature of -20°C
GL: Galvanized steel for low temp. of -50°C
B: Brass
S: Stainless steel

Code marked on sealed bushing			Type of thread of sealed bushing
NPS10	TP10	NCS10	M10x1.5
NPS12	TP12	NCS12	M12x1.5
NPS16	TP16	NCS16	M16x1.5
NPS20	TP20	NCS20	M20x1.5
NPS24	TP24	NCS24	M24x1.5
NPS25	TP25	NCS25	M25x1.5
NPS32	TP32	NCS32	M32x1.5
NPS33	TP33	NCS33	M33x1.5
NPS36	TP36	NCS36	M36x1.5
NPS38	TP38	NCS38	M38x1.5
NPS42	TP42	NCS42	M42x1.5

Code marked on sealed bushing	Type of thread of sealed bushing
NPS03N	1/8" NPT
NPS02N	1/4" NPT
NPS01N	3/8" NPT
NPS1N	1/2" NPT
NPS2N	3/4" NPT
NPS3N	1" NPT
NPS4N	1 1/4" NPT
NPS5N	1 1/2" NPT

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Schedule

[14] **SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 01 ATEX 080 U /04**

Identification of Sealing bushings, follows:

Code marked on sealed bushing		Cylindrical size of sealed bushing
CP10	LPS10	Ø 10
CP12	LPS12	Ø 12
CP16	LPS16	Ø 16
CP24	LPS24	Ø 24
CP25	LPS25	Ø 25
CP29	LPS29	Ø 29
CP33	LPS33	Ø 33
CP36	LPS36	Ø 36
CP38	LPS38	Ø 38
CP42	LPS42	Ø 42

Note: the bushings with threads M42x1.5 (code 42), 1”1/4 NPT (code 4) and 1”1/2 NPT (code 5) have the same sizes, all internal dimensions and sealing dimensions are identical, same maximum number and size of conductors.

[16] **Report n. EX- B8014758.**

Routine tests

None.

[17] **Schedule of limitations**

- The connection cables of the sealing bushings should be connected inside enclosures conforming to one of the types of protection foreseen by the Standard EN 60079-0, section 1.
- It is the final assemblers/users responsibility to ensure the threaded joint (or the cylindrical joint) between the bushing and the associated enclosures meet all the requirements of the applicable standards for the assembly.
- If the reference pressure for the apparatus should exceed 20 bar, the sealing bushings shall be included into the type test according to EN 60079-1, section 15.1.3 (overpressure test) as required by the classification of the electrical apparatus in question (grouping IIA, IIB or IIC).
- The cylindrical joint of the sealing bushings shall be included into the type test according to EN 60079-1, section 15, according to grouping of the respective electrical apparatus (grouping IIA, IIB or IIC).
- The sealing bushings shall be fixed to the electrical apparatus in such a way that rotation and accidental loosening will be prevented.
- The service temperature range is:
 - from -20 up to +110 °C for sealing bushings made of carbon steel ASTM A 105;
 - from -50 up to +110 °C sealing bushings made of stainless steel, brass and low temperature steel ASTM A203.
- The maximum admitted current for each conductor/terminal must be established taken into account the heating caused by the current flowing through it, the heating of the apparatus and the maximum permissible ambient temperature.
- If the sealing bushings NPS** are intended for use with dust protection “Ex tb” the holes into which cable bushings are mounted shall be suitably sealed to maintain the ingress protection rating of the enclosure. To this scope the correct positioning of the gaskets (for cylindrical threads) or the application of sealant on the threads (for tapered threads), shall be done as indicated in the manufacturer instruction

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Schedule

[14] **SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 01 ATEX 080 U /04**

[18] **Essential Health and Safety Requirements**

Compliance with the Essential Health and Safety Requirements has been assured by compliance to the following Standards:

- EN 60079-0: 2012 + A11:2013 Explosive atmospheres – Part 0: Equipment - General requirements;
- EN 60079-1: 2014 Explosive atmospheres – Part 1: Equipment protection by flameproof enclosure “d”;
- EN 60079-31: 2014 Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure “t”.

[19] **Descriptive documents** (prot. EX- B8014764).

- Technical note A4-1137 (pg. 5) rev.1 dated 27.06.2018
- Mounting Instruction A/18 (pg. 5) rev.4 dated 27.06.2018
- Attestation of Conformity FACSIMILE no. 0141 (pg. 1) dated 27.06.2018
- Drawing A3-238 (pg. 1) rev.3 dated 27.06.2018
- Drawing A4-817 (pg. 1) rev.2 dated 27.06.2018

One copy of all documents is kept in CESI files.

Certificate history

Issue nr	Issue Date	Summary description of variation
04 (Rev. 01)	2019.09.20	Editorial corrections.
04	2018.07.30	Updating to EN 60079-0: 2012 + A11: 2013, EN 60079-1: 2014 and EN 60079-31: 2014 Standards. New cable sizes and number of cores have been added
03	2012.10.05	Update to new edition of EN 60079-0: 2009, EN 60079-1: 2007 and EN 60079-31: 2009. Use of new type of resin. New minimum ambient temperature of -50°C. New sizes of M20 and 1/2” had been added.
02	2007.11.26	Update to EN 60079-0: 2006, EN 60079-1: 2004 Standards. New type of protection to Combustible dust (tD) according to EN 61241-0: 2006 and EN 61241-1: 2004 Standards.
01	2005.12.22	Use of alternative new resin, alternative service temperature from -40°C up to +110°C for new models CPt, TPt, NPSt, NCSt and LPSt. Conductor of 1 mm ² and use in one bushing of conductors having various sizes have been added.
00	2001.11.27	First Issue of the Certificate.