CESI

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

Ex COMPONENT CERTIFICATE

Certificate No.: IECEx CES 14.0005U

Issue No: 1

Certificate history:
Issue No. 1 (2019-01-31)
Issue No. 0 (2014-02-28)

Status: **Current**

Date of Issue: **2019-01-31**

Applicant: **F.P.L. Elettroceramica Industriale S.r.l.**
Via Roma, 60
I - 27053 Lungavilla - PV
Italy

Ex Component: **Empty enclosures series TTE10., TTE16., TTE17., TTE16.M and TTE17.M**

This component is NOT intended to be used alone and requires additional consideration when incorporated into other equipment or systems for use in explosive atmospheres (refer to IEC 60079-0).

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

Marking:

Ex db IIC Gb

Ex eb IIC Gb

Ex tb IIIC Db

Ex db I Mb (only series TTExx.M)

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

Position: Head of IECEx CB

Signature:
(for printed version)

Date: 31-1-2019

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
Centro Elettrotecnico
Sperimentale Italiano S.p.A.
Via Rubattino 54
20134 Milano
Italy

CESI

CESI S.p.A.
Testing & Certification Division
Business Area Certification
Il Responsabile
(Roberto Piccin)

PAD B90041160 (2609208) - USO AZIENDALE

IECEx Certificate of Conformity

Certificate No:	IECEx CES 14.0005U	Issue No: 1
Date of Issue:	2019-01-31	Page 2 of 5
Manufacturer:	**F.P.L. Elettroceramica Industriale S.r.l.** Via Roma, 60 I - 27053 Lungavilla - PV **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 Component 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 Ex Component 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 : 2017 Edition:7.0	Explosive atmospheres - Part 0: Equipment - 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"
IEC 60079-7 : 2017 Edition:5.1	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"

*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 Ex Component listed has successfully met the examination and test requirements as recorded in

Test Report:

IT/CES/ExTR14.0007/00 IT/CES/ExTR14.0007/01

Quality Assessment Report:

IT/CES/QAR11.0003/07

IECEx Certificate of Conformity

Certificate No:	IECEx CES 14.0005U	Issue No: 1	
Date of Issue:	2019-01-31	Page 3 of 5	

Schedule

Ex Component(s) covered by this certificate is described below:

Enclosures series TTE10., TTE16., TTE17., TTE16.M and TTE17.M, subject of this certificate, are empty flame proof enclosures, which can be made of aluminium alloys, stainless steel or cast iron: the type of metal actually used is specified on the marking plate. All the series have the same constructional characteristics apart from the material used.

The enclosures have two threaded bores: a side one, for the cable entry, and an axial one, at the bottom, for the possible connection to the process. In the inner wall of the bottom threaded bore it is possible to drill a calibrated cylindrical bore, 13.5 mm long, to realize a cylindrical flameproof joint. These enclosures can be used for building thermometric complexes, exploiting the axial bore for the connection to the process, or for different purposes where up to two threaded entries are necessary. The sizes of the side and bottom hole thread and of the possible calibrated bore, for the realization of the cylindrical flameproof joint, are identified in the component code and written in full on the marking plate, placed inside the enclosure.

Cable entries and process connection

The accessory used for the cable entries and the connection to the process or for closing the holes not used shall be certified, according to the protection used by the complete apparatus, according to the standards IEC 60079-0, IEC 60079-1, IEC 60079-7 and IEC 60079-31 and guarantee a minimum ingress protection IP66, according to the standard IEC 60529.

The use of the calibrated bore, for the realization of the cylindrical flameproof joint (process side), guarantees the protection Ex d of the enclosure; the insert shall be calibrated with a diameter useful for the realization of a diametrical gap not higher than 0.15 mm. In case cylindrical threads are foreseen, to assure anti-loosening, a thread-lock compound shall be interposed between the two parts.

SCHEDULE OF LIMITATIONS:

- The enclosures series TTE10. and TTE16. are suitable for service temperatures in -55°C + 100°C; the enclosures series TTE17. are suitable for the range -20°C + 100°C;
- In case high and repeated electrostatic charging processes cannot be excluded, for the enclosures with non-conductive paintings, it will be necessary an extra assessment concerning the risk of electrostatic charging;
- The enclosures are certified as they are, no extra bore can be drilled;
- The devices installed inside the enclosure shall leave at least 40% of the area of any section free for unimpeded air flow;
- To realize the cylindrical flameproof joint process side, follow the certificate and the manufacturer's documents; the size and tolerance of the calibrated bore is written on the plate and the maximum diametral gap made with the cylindrical insert shall not exceed 0.15 mm.

IECEx Certificate of Conformity

Certificate No: IECEx CES 14.0005U Issue No: 1

Date of Issue: **2019-01-31** Page 4 of 5

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Variation 1:

- The coding of the enclosures has been reviewed and the third numeric digit of the code is intended to identify characteristics not influencing the type of protection; series TTE150 has been deleted;
- It has been added the marking for group I (mines), EPL Mb, using the type of protection Ex db, only for series: TTE16.M (stainless steel made); TTE17.M (cast iron made);
- Standards updating according to: **IEC 60079-0:2017, IEC 60079-1:2014, IEC 60079-31:2013**;
- It has been added the increased safety protection (Ex eb), for group II, according to the standard: **IEC 60079-7: 2017**;
- It has been added the possibility of threading entries, process side and cable entry, with the same type of thread, already foreseen, but with different sizes and where the bore diameter is not greater than the one of the previous issue;
- It has been added the possibility of drilling a calibrated bore, process side, with diameter lower than Ø15.1 mm, inside the threaded stretch;
- Extended the ambient temperature up to 100°C without changing the maximum service temperature;
- Following the updating, it has been modified the marking written on the plate,

IECEx Certificate of Conformity

Certificate No:	IECEx CES 14.0005U	Issue No: 1
Date of Issue:	2019-01-31	Page 5 of 5

Additional Information:

The characteristics of the enclosures are defined by the internal plate and by their identifying code:

- **TTE10 x - Ip Ic.ve fc** Aluminium enclosures
- **TTE16 x (M) - Ip Ic fc ve** Stainless steel enclosures
- **TTE17 x (M) - Ip Ic fc ve** Cast iron enclosures
  - **X** Digit for the manufacturer's use defining characteristics not influencing the type of protection;
  - **(M)** Optional character M which identifies the series suitable for the installation in mines (EPL Mb);
  - **Ip** Character identifying the thread process side (1 digit); The relation code-thread is managed by the quality system of the manufacturer; The datum, useful for the user, is written on the marking plate;
  - **Ic** Character identifying the thread of the side hole for cable entry (1 digits); The relation code-thread is managed by the quality system of the manufacturer; The datum, useful for the user, is written on the marking plate;
  - **fc** Characters identifying the calibrated bore at the bottom (2 or 3 digits); the relation code-bore size is managed by the quality system of the manufacturer; the datum, useful for the user, is written on the marking plate;
  - **ve** Characters identifying surface treatment and colour of the enclosure (1 or 2 digits). The codes are managed by the quality system of the manufacturer. The information is also stated on the marking plate.

The enclosures series **TTExx.M-...** shall be marked as follows:

Ex db IIC Gb, Ex eb IIC Gb

Ex tb IIIC Db

Ex db I Mb

The enclosures series **TTExx.-...** shall be marked as follows:

Ex db IIC Gb, Ex eb IIC Gb

Ex tb IIIC Db

Ambient temperature:

- -55°C < Tamb < +100°C (All but cast iron made)
- -20°C < Tamb < +100°C (Cast iron made)

Temperature limits for use:

- -55°C < Tamb < +100°C (All but cast iron made)
- -20°C < Tamb < +100°C (Cast iron made)

Ingress protection: IP66 (IEC 60529). - *Ingress protection IP66 is guaranteed in the connection body-lid and in the possible window sealing. The protection IP66 of the entries shall be guaranteed by the complete product. In absence of the protection level IP6x, the apparatus will not be suitable for an ambient requiring EPL Db. In case the level of protection is lower than IP54, the apparatus will not be suitable for the type of protection Ex e.*