EXTENSION n. 01/14

to EC-Type Examination Certificate CESI 08 ATEX 029 U

Component: Empty enclosures series TTE2xx, TTE3xx , TTE6xx and TTE7xx

Manufacturer: F.P.L
Elettroceramica Industriale Srl

Address: Via Roma, 60
27053 Lungavilla - PV
Italia

Admitted variations

- New identification of the component as series TTExxx rather than AX2 model TTExxx;
- Addition of the series TTE6xx and TTE7xx stainless steel made and removal of the series TTE4xx;
- Addition of the possibility of having three different heights of the cover windowed or not;
- Widening of the ambient and service temperature ranges:
  Ambient temperature within **[-55°C, +60°C]**;
  Service temperature within **[-55°C, +100°C]**;
- Usage of new materials for the sealing O-ring and for the marking label:
  As described in the annexed documentation;
- Constructional modifications:
  As described in the annexed documentation;
- Updating to the following standards:
  EN 60079-0 (2012), EN 60079-1 (2007) , EN 60079-31 (2009);
- Updating of the marking according to the new standards:

II 2G Ex d IIC Gb
II 2D Ex tb IIIC Db

This extension and annexed descriptive documents shall be annexed to the EC-Type Examination Certificate CESI 08 ATEX 029 U.

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Date 25/02/2014 - Translation issued on February 25th 2014

Prepared	**Verified**	**Approved**
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Description of the components

Enclosures series TTE2xx, TTE3xx, TTE6xx and TTE7xx are empty enclosures which can be used for building thermometric complexes, using the axial hole for the connection to the process, or for other purposes where up to three threaded entries were necessary.
With this extension, to the former aluminium alloy made series (TTE2xx and TTE3xx), two new series are added, both stainless steel made: TTE6xx and TTE7xx, and series TTE4xx is removed;
While the body remain, excluding slight differences, unchanged, now three different heights of the cover which can be windowed or not:

Series	*Material*		*Body w. flame proof cylindrical hole*		*Cover*				
					Cover height			*window*	
	Al alloy	Inox	YES	NO	low	medium	high	YES	NO
TTE 200	☑			☑	☑				☑
TTE 250	☑			☑			☑		☑
TTE 270	☑			☑			☑	☑	
TTE 280	☑			☑		☑		☑	
TTE 290	☑			☑		☑			☑
TTE 300	☑		☑		☑				☑
TTE 350	☑		☑				☑		☑
TTE 370	☑		☑				☑	☑	
TTE 380	☑		☑			☑		☑	
TTE 390	☑		☑			☑			☑
TTE 600		☑	☑		☑				☑
TTE 680		☑	☑			☑		☑	
TTE 690		☑	☑			☑			☑
TTE 700		☑		☑	☑				☑
TTE 780		☑		☑		☑		☑	
TTE 790		☑		☑		☑			☑

The identifying code of the enclosure defines the thread type of the three entries and the diameter of the calibrated hole process side besides other characteristics not influencing the type of protection:

TTExxx (a)(b)(c)(d)(ee)

(a) *Identification of the thread of the axial entry (process side):*
- **A** - G ½
- **B** - G ¾
- **C** - ½ NPT
- **D** - ¾ NPT
- **E** - M 24x1.5
- **Z** - Blind entry for wall mounting

(b) *Diameter of the flameproof cylindrical entry hole, process side:*
- **0** - ϕ 6.1mm H8
- **1** - ϕ 8.1 mm H8
- **A** - without flameproof cylindrical entry hole

(c) *Identification of the thread of the radial entry n. 1:*
- **0** - blind hole
- **1** - G ½
- **2** - G ¾
- **3** - ½ NPT
- **4** - ¾ NPT
- **6** - M 20x1.5

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(d) *Identification of the thread of the radial entry n. 2:*

0 - blind hole
1 - G ½
2 - G ¾
3 - ½ NPT
4 - ¾ NPT
6 - M 20x1.5

(ee) *Other characteristics not influencing the type of protection*

Enclosure, category 2G and 2D, shall display the following marking:

II 2G Ex d IIC Gb
II 2D Ex tb IIIC Db

Ambient temperature: **$-55°C < T_{amb} < +60°C$**
Limit service temperature: **$-55°C < T_{amb} < +100°C$**

Ingress protection: **IP66 (EN 60529)**

Ingress protection IP66 is guaranteed by the manufacturer in the connection body-cover and the eventual sealing of the window. The ingress protection IP66 of the entries shall be guaranteed by the user. In absence of the protection IP6x the apparatus made up using this enclosure is only suitable for the protection Ex d.

Cable entries and/or process connection

Accessories used for the cable entries and/or the process connection or for closing unused holes shall be certificated according to the standards EN 60079-0, EN 60079-1 and EN 60079-31 and guarantee a minimum ingress protection IP66, according to the standard EN 60529.
The usage of the calibrated cylindrical hole, for making up a flameproof joint (process side), guarantees the Ex d protection of the enclosure; the insert shall be calibrated with a diameter able to realize a diameter gap less than 0.152 mm with the hole. In order to have the protection against combustible dust as well, it is necessary the usage of an entry device certificated according to the standard EN 60079-0 and EN 60079-31.
In case of cylindrical threads, in order to assure anti-loosening, thread-lock compound shall be interposed between the two parts.

Report n. EX-B4005190

Descriptive documents (prot. EX-B4005192)

-	Technical note NT0108_ATEX_B edition B (6 pages)	dated	10/02/2014
-	Safety instructions (5 pages)	dated	Jan. 2014
-	Drawing CTTE200-1_1 rev. B (2 pages)	dated	11/02/2014
-	Drawing CTTE200-2 rev. B	dated	11/02/2014
-	Data sheet ST001-13 rev. A window glass	dated	16/4/2013
-	Data sheet ST004-13 silicone gasket for the window	dated	1/02/2008
-	Data sheet ST005-13 silicone for the window sealing	dated	Jun. 2012
-	Data sheet ST006_13 rev. 1 (*Compound VMQ 75-F6 ROSSO*) for the O-ring	dated	6/07/2011
-	Data sheet ST0108_2 rev. C (sticking labels for the marking) (4 pages)	dated	Feb. 2001
-	Facsimile attestation of conformity		

One copy of all documents is kept in CESI files.

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Routine tests

The manufacturer is exempted from the routine overpressure test, on the enclosures series TTExxx with blind cover, because it is been overcome the type test, carried out using the static method (par. 15.1.3.1 of the standard EN 60079-1), at pressure 4600 kPa (46 bar), equal to 4 times the reference pressure which takes into account the minimum ambient temperature of -55°C.
The routine overpressure test shall be carried out, using the static method (par. 15.1.3.1 of the standard EN 60079-1), on the windowed enclosures at the pressure of 1750 kPa (17.5 bar) equal to 1.5 times the reference pressure relevant to the temperature -55°C.

Schedule of limitation

- Temperature limit for the usage: -55°C ÷ 100°C;
- In case high and repeated electrostatic charging processes, able to activate propagating brush discharges cannot be excluded it is necessary an extra assessment concerning the risk of electrostatic charges or the usage of unpainted stainless steel enclosures;
- Enclosures are certified as they are, no extra hole 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;
- Follow this certificate and the manufacturer documents for making up the cylindrical flameproof joint process side.

Essential Health and Safety requirements

Essential health and safety requirements are assured by conformity to the standards:

- **EN 60079-0 : 2012** Explosive atmospheres
  Part 0: Equipment - General requirements;
- **EN 60079-1 : 2007** Explosive atmospheres
  Part 1: Equipment protection by flameproof enclosures "d";
- **EN 60079-31 : 2009** Explosive atmospheres
  Part 31: Equipment dust ignition protection by enclosure "t".

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