



# 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](http://www.iecex.com)

Certificate No.: IECEx CES 17.0017X

Issue No: 0

Certificate history:

Issue No. 0 (2017-04-13)

Status: **Current**

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Date of Issue: **2017-04-13**

Applicant: **CEMB S.p.A.**  
via Risorgimento, 9  
I-23826 Mandello del Lario (LC)  
Italy

Equipment: **Vibrations Transducer, Model T-NC/8-API**

Optional accessory:

Type of Protection: **Intrinsic Safety 'i'**

Marking: **Ex Ia IIC T6, T5 Ga**


Approved for issue on behalf of the IECEx  
Certification Body:

Mirko Balaz

Position:

Head of IECEx CB

Signature:  
(for printed version)

  
13-4-2017

Date:

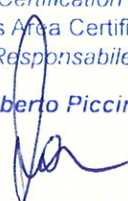
1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

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 B7009605 (2366508) - USO RISERVATO





# IECEX Certificate of Conformity

Certificate No: IECEX CES 17.0017X Issue No: 0

Date of Issue: 2017-04-13 Page 2 of 3

Manufacturer: **CEMB S.p.A.**  
via Risorgimento, 9  
I-23826 Mandello del Lario (LC)  
**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 products 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 electrical apparatus 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 : 2011** Explosive atmospheres - Part 0: General requirements

Edition:6.0

**IEC 60079-11 : 2011** Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "I"

Edition:6.0

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

### Test Report:

[IT/CES/ExTR16.0024/00](#)

### Quality Assessment Report:

[IT/CES/QAR14.0003/03](#)



# IECEx Certificate of Conformity

Certificate No: IECEx CES 17.0017X

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## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

The T-NC/8-API converter, together with ST-NC/8 sensor and CPT-NC/8 cable, is a transducer of relative vibrations or displacements.

The operating principle of the transducer is based on the generation of eddy currents in the metal target induced by the coil powered at high frequency by the converter. The T-NC/8-API system generates a high-frequency field that is irradiated from the sensor surface. When this field hits the reference surface facing the sensor, an eddy current is generated on the surface, which determines a signal variation; appropriately conditioned, this variation allows making the desired measurement of displacement or relative vibration.

For further information see Annex.

### SPECIFIC CONDITIONS OF USE: YES as shown below:

- The T-NC/8-API, shall be mounted within a suitable enclosure, to prevent that moisture or dust accumulates on connection terminals and protects the equipment against damage and unauthorized operations. The enclosure shall have ingress protection IP20 or greater.
- When the equipment is installed in Zone 0, it needs to be enclosed in a stainless steel enclosure or in other way, according to the regulations for use in Zone 0.

### Annex:

[CEMB IECEx CES 17.0017X Issue 0 ANNEX - TR-NC\\_8-API.pdf](#)



# IECEX Certificate of Conformity



Prot: B7009605

Annex to certificate:

IECEX CES 17.0017X Issue No.:0 of 2017-04-13

Applicant:

CEMB S.p.A.

Via Risorgimento 9; I- 23826 Mandello del Lario (LC), Italy

Electrical Apparatus:

Vibrations Transducer, Model T-NC/8-API

## Description of equipment

The **T-NC/8-API** converter, together with **ST-NC/8** sensor and **CPT-NC/8** cable, is a transducer of relative vibrations or displacements.

The operating principle of the transducer is based on the generation of eddy currents in the metal target induced by the coil powered at high frequency by the converter.

The **T-NC/8-API** system generates a high-frequency field that is irradiated from the sensor surface. When this field hits the reference surface facing the sensor, an eddy current is generated on the surface, which determines a signal variation; appropriately conditioned, this variation allows making the desired measurement of displacement or relative vibration.

The **T-NC/8-API** device is designed for installation in Zone 0 (*enclosed in a suitable stainless steel housing*), Zone 1 and Zone 2.

The **T-NC/8-API** device is composed of a sensor (*ST-NC/8*) fitted in the field, an extension cable (*CPT-NC/8*) that may be integral with or detachable from the sensor by means of an intermediate connector and a converter detachable from the extension cable or the sensor cable.

Sensor and Cable have the following characteristics:

- Sensor model **ST-NC/8**, consisting of one coil:  $L = 80 \mu\text{H}$  max,  $R = 4 \Omega$  min (*Cable total length max. 12m*)
- Cable model **CPT-NC/8** and extension cable (*FEP RG180 coaxial*):  $C_i = 1\text{nF}$ ;  $L_i = \text{negligible}$ ; length max 12m

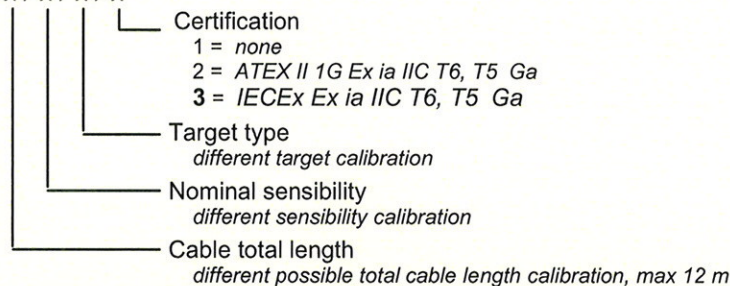
## Model identification

Identification of the equipment **T-NC/8-API** (*the detail of the code is indicated in the Manufacturer documents*)

The **T-NC/8-API** is distinguished by the following code:

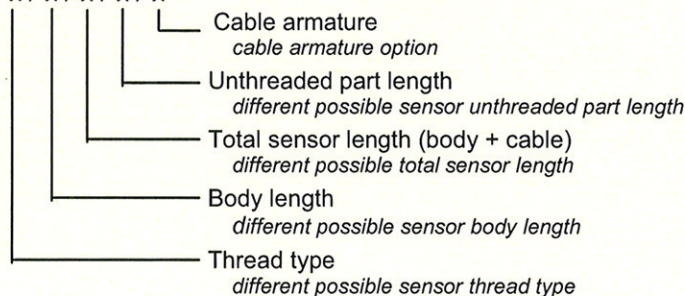
### Converter

T-NC/8-API/x/x/x/x



### Sensor

ST-NC/8/x/x/x/x/x





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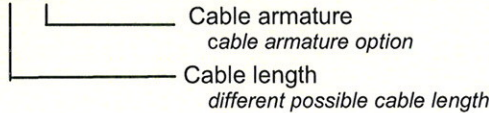
Electrical Apparatus:

Vibrations Transducer, Model T-NC/8-API

## Model identification (follows)

Extension cable

CPT-NC/8/ x / x



## Electrical characteristics

*Intrinsically safe circuits parameters*

Supply (terminals 1-2) Signal (terminals 2-3)

*Max supply+signal (terminal 1-2-3)*

- |                                  |    |                       |
|----------------------------------|----|-----------------------|
| - $U_i = 28\text{ V}$            | or | $U_i = 26.6\text{ V}$ |
| - $I_i = 120\text{ mA}$          |    | $I_i = 135\text{ mA}$ |
| - $P_i = 840\text{ mW}$          |    | $P_i = 900\text{ mW}$ |
| - $C_i = 30\text{ nF}$           |    |                       |
| - $L_i = 200\text{ }\mu\text{H}$ |    |                       |

Sensor (terminal 4)

*Coaxial connector*

- $U_o = 28\text{ V}$
- $I_o = 120\text{ mA}$
- $P_o = 840\text{ mW}$
- $C_o = 2\text{ nF}$
- $L_o = 90\text{ }\mu\text{H}$
- $L_o/R_o = 40\text{ }\mu\text{H}/\Omega$

The **T-NC/8-API** shall be supplied and interfaced with certified associated apparatus according to IEC 60079-0 and IEC 60079-11 [Ex ia] complying with the limits of the above electrical characteristics

### Ambient temperature ( $T_{amb}$ )

The vibrations Transducer **T-NC/8-API** shall be installed in environments with temperature range from:

- 20 up to +60 °C for temperature Class T6
- 20 up to +80 °C for temperature Class T5

The Sensor **ST-NC/8** and cable **CPT/NC/8** have operating temperature from -55 °C up to +175 °C.

The temperature classification depends of the machine temperature on which the product is fitted: T6 up to +60°C; T5 up to +80°C; T4 up to +110°C; T3 up to 175°C.

### **WARNING MARKINGS:**

- If installed in Zone 0 insert into appropriate stainless still container.
- Electrostatic charging hazard: Clean only with wet cloths or antistatic products.