



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

Certificate No.: IECEx CES 16.0010X issue No.:0 Certificate history:
Status: **Current**
Date of Issue: **2016-05-30** Page 1 of 3
Applicant: **CEMB S.p.A.**
Via Risorgimento, 9
I- 23826 Mandello del Lario (LC)
Italy

Equipment: **Vibrations Transmitter, Model TR-NC/8**
Optional accessory:

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

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

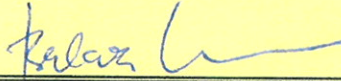
Approved for issue on behalf of the IECEx
Certification Body:

Mirko Balaz

Position:

Head of IECEx CB

Signature:
(for printed version)


30-5-2016

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.

Certificate issued by:

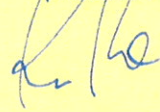
CESI

CESI S.p.A.

Testing & Certification Division
Business Area Certification

Il Responsabile

(Roberto Piccin)





IECEx Certificate of Conformity

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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/ExTR16.0005/00

Quality Assessment Report:

IT/CES/QAR14.0003/02



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The TR-NC/8 transmitter is a transducer of relative vibrations, displacements or rotation speeds operating with a 4 + 20 mA current loop. 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 transmitter.

The TR-NC/8 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 and converting it into a 4 + 20 mA current loop.

For further information see Annex.

CONDITIONS OF CERTIFICATION: YES as shown below:

The TR-NC/8, shall be mounted within a suitable enclosure, to prevent ingress of moisture or dust or by access to conducting parts and in order to protect against unauthorized interference and damage, the components and internal wiring of the equipment. The enclosure shall have ingress protection IP20 or greater.

When the equipment is installed in Zone 0, shall be placed inside a stainless steel housing.

Connection for GAP measurement (terminals 3(+) 4(-)) or BNC outlet (terminals 6), only with instruments suitable with EPL Ga.



IECEX Certificate of Conformity



Prot: B6014164

Annex to certificate:
Applicant:

IECEX CES 16.0010X Issue No.:0 of 2016-05-30
CEMB S.p.A.
Via Risorgimento 9; I- 23826 Mandello del Lario (LC), Italy

Electrical Apparatus: **Vibrations Transmitter, Model TR-NC/8**

Description of equipment

The **TR-NC/8** system generates a high-frequency field that is irradiated from the sensor surface. The system is composed of a sensor fitted in the field, an extension cable that may be integral with or detachable from the sensor by means of an intermediate connector, and a transmitter detachable from the extension cable or the sensor cable.

The sensor and the cable have the following characteristics:

- Sensor

Model **ST-NC/8** consisting of one coil, L = 80 µH maximum, R = approx. 4 Ω
Maximum operating temperatures from -35°C up to +175°C
Electrical parameters: U_i = 28 V; I_i = 100 mA; P_i = 700 mW; C_i = 80 pF/m^{**}; L_i = 80 µH
(*Cable total length max. 12m)

- Cable and extension cable

Maximum operating temperatures from -55°C up to +200°C, maximum operating voltages 2,000 Vdc / 1,000 Vac RMS; C_i = 80 pF/m^{**}; L_i=negligible
(*Cable total length max. 12m)

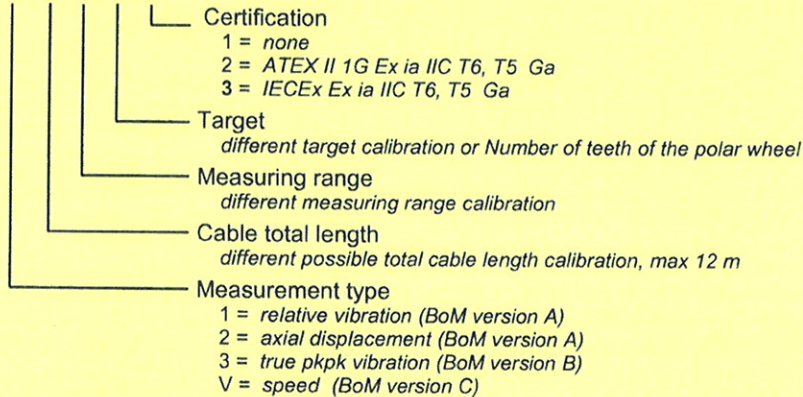
Model identification

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

The **TR-NC/8** is distinguished by the following code

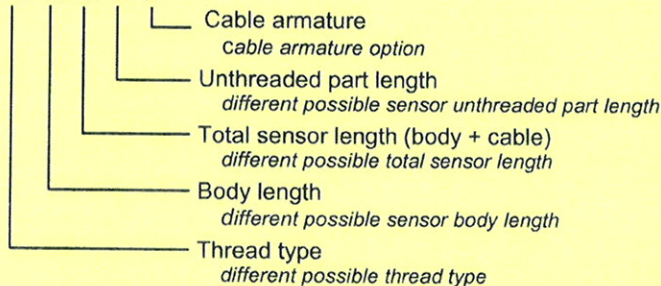
Transmitter

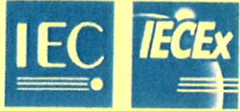
TR-NC/8/x/x/x/x/x



Sensor

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





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CESI

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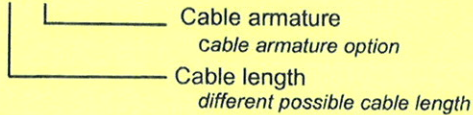
Electrical Apparatus:

Vibrations Transmitter, Model TR-NC/8

Model identification (follows)

Extension cable

CPT-NC/8/ x / x



Electrical characteristics

Intrinsically safe circuits parameters

Supply (terminals 1-2)

- $U_i = 28 \text{ V}$
- $I_i = 100 \text{ mA}$
- $P_i = 650 \text{ mW}$
- $C_i = \text{negligible}$
- $L_i = \text{negligible}$

GAP output (terminals 3(+)-4(-))

- $U_o = 28 \text{ V}$
- $I_o = 100 \text{ mA}$
- $P_o = 650 \text{ mW}$
- $C_o = 10 \text{ nF}$
- $L_o = 90 \text{ } \mu\text{H}$
- $C_i = 50 \text{ nF}$
- $L_i = 200 \text{ } \mu\text{H}$

Analyzer connection (BNC termination - 6)

- $U_o = 28 \text{ V}$
- $I_o = 100 \text{ mA}$
- $P_o = 650 \text{ mW}$
- $C_o = 10 \text{ nF}$
- $L_o = 90 \text{ } \mu\text{H}$
- $C_i = 50 \text{ nF}$
- $L_i = 200 \text{ } \mu\text{H}$

Transducer connection (coaxial termination - 5)

- $U_o = 28 \text{ V}$
- $I_o = 100 \text{ mA}$
- $P_o = 650 \text{ mW}$
- $C_o = 10 \text{ nF}$
- $L_o = 90 \text{ } \mu\text{H}$
- $C_i = 50 \text{ nF}$
- $L_i = 110 \text{ } \mu\text{H}$
- $L_o/R_o = 50 \text{ } \mu\text{H}/\Omega$

Ambient temperature T_{amb}

The vibrations transmitter **TR-NC/8** shall be installed in environments with temperature range from:

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

-20°C up to +70°C for temperature Class T5

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