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SAFETY INSTRUCTIONS

VIBRATIONS TRANSDUCER - MODEL T-NC/8-API

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1. Product specifications



The T-NC/8-API converter, together with ST-NC/8 sensor and CPT-NC/8 cable, measures the relative vibrations or axial displacement of a shaft with respect to a support. The output is a negative voltage value proportional to the target distance.

Electrical characteristics

Nominal voltage	-24 V
Nominal current	10mA

Ambient conditions

Converter temperature	-20 ÷ +80 °C
Cable/Sensor temperature	-55 ÷ +175 °C
Converter relative humidity	95% non condensing
Cable/Sensor relative humidity	100%
Sensor degree of protection	IP67

2. Limits of use – IECEx marking

Introduction

The safety measures and equipment used in the place of installation, operation and maintenance must follow the specific instructions contained in this manual and the applicable installation regulations (basic regulations of the place of installation) and the additional regulations for places with an explosive gas atmosphere in accordance with IEC 60079-14 and IEC 60079-17 as regards installation and testing as well as IEC 60079-19 as regards maintenance and repair (unless otherwise specified).

These safety instructions refer to installation, use and maintenance of the T-NC/8-API converter, ST-NC/8 sensor and CPT-NC/8 cable. The devices have been designed and constructed according to the requirements of the European standards IEC 60079-0, IEC 60079-11.

These instructions are intended for suitably trained and informed installers and users that already have basic technical experience in installation and use of electrical systems and machinery in places where there is a risk of explosion.

IECEx marking of T-NC/8-API

The device described in these instructions is characterised by the following protection level:

IECEx Ex ia IIC T6 / T5 Ga
Ta = -20 °C - +60 / +80 °C

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

These safety instructions as well as the warnings indicated in the user manual provided to the customer must be observed.

If the T-NC/8-API device is installed in Zone 0, it needs to be enclosed in a stainless steel container or in any case according to the regulations for use in Zone 0 in order to prevent possible charge accumulation.

The installer and user are always responsible for ensuring that the characteristics of the places of installation are in accordance with the above mentioned limits and specifications.

Drawing no. 04PT002145 shows the identification data plate.
Drawing nos. 04PT002870 and 04PT002871 show the warning labels.

Legend of safety-related data indicated on the identification data plate

Ex ia	Class "ia" equipment
IIC	Group IIC equipment suitable for Group IIC substances (gas)
T6-T5	Temperature class T6 (85 °C); T5 (100 °C)
CES _ _ . _ _ _ X	Name of the laboratory that issued the certificate and the certificate number
Tamb	Ambient temperature: -20 to +60 °C T6 -20 to +80 °C T5
Ga	EPL (equipment protection level)

Notes:

- Group IIC equipment is also suitable for group IIB and IIA.
- The intrinsic safety device to be interfaced must be chosen based on the output parameters of the associated device.

3. Device suitability for the place of installation

If used in areas where there is a risk of explosion, it must be verified that the type of device identified is suitable for the area classification and for flammable substances in the system. The essential safety requirements against the risk of explosion in the classified areas are laid down by the European Directives 94/9/EC of 23 March 1994 (as regards equipment) and 1999/92/EC of 16 December 1999 (as regards systems). The criteria for classification of areas with a risk of explosion are specified in IEC 60079-10. The technical requirements for electric systems in the classified areas are specified in IEC 60079-14.

The measurement chain, composed of converter, sensor and cable, must be installed in zone 0 or 1 and interfaced with suitable barriers compatible with the power supply (terminals 1 - 2) and signal output (terminals 2 - 3).

As well as the functional data, also the references to the notified certification bodies are indicated on the data plate.

4. Installation

Fitting

The T-NC/8-API converter must be connected to a sensor type CT-NC/8 by means of a dedicated extension cable CPT-NC/8.

For details on mechanical installation and sensor positioning, refer to the instruction manual.

The T-NC/8-API, 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.

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

Electrical connection and coordination

The electrical connection must be carried out by appropriately trained persons following the indications in the drawing no. 87SE002022.

The electrical connections regard:

- Tripolar shielded power/signal cable (TERMINALS 1-2-3).
- Connection to CEMB sensor model ST-NC/8 API (TERMINAL 4) directly or using CEMB cable model CPT-NC/8

The device input/output parameters are defined in the table below and indicated in the marking.

	TERMINALS	PARAMETERS	
Power supply Output	1 – 2	Max terminals 1-2-3	
		Ui = 28 V	Ui = 26.6 V
	2 – 3	li = 120 mA	li = 135 mA
		Pi = 840 mW	Pi = 900 mW
		Ci = 30nF	
		Li = 200uH	
Sensor connection (miniature threaded coaxial connector)	4	CEMB sensor model ST-NC/8 Cable model CPT-NC/8	<i>General parameters</i>
			Uo = 28 V
			lo = 120 mA
			Po = 840 W
			Co = 2nF
			Lo = 90uH
			Lo/Ro = 40uH/Ω

CEMB sensor model ST-NC/8 parameter are:

Ui=28V – li=120mA – Pi=840mW – Ci=1nF* - Li=80uH

CEMB cable model CPT-NC/8 parameter are:

Ui=28V – li=120mA – Pi=840mW – Ci=1nF* - Li=negligible

*Cable total length max. 12m

WARNING:

- **The cable must not be shortened or lengthened as it would result in a measurement error.**
- **The intrinsic safety circuits must be powered by associated devices that comply with the above mentioned electrical specifications.**

Experts must assess whether the system composed of the associated device, the intrinsic safety device and the connection cables is in accordance with the IEC 60097-14 requirements.

5. Testing and maintenance

Device testing and maintenance must be carried out according to the criteria specified in IEC 60079-17.

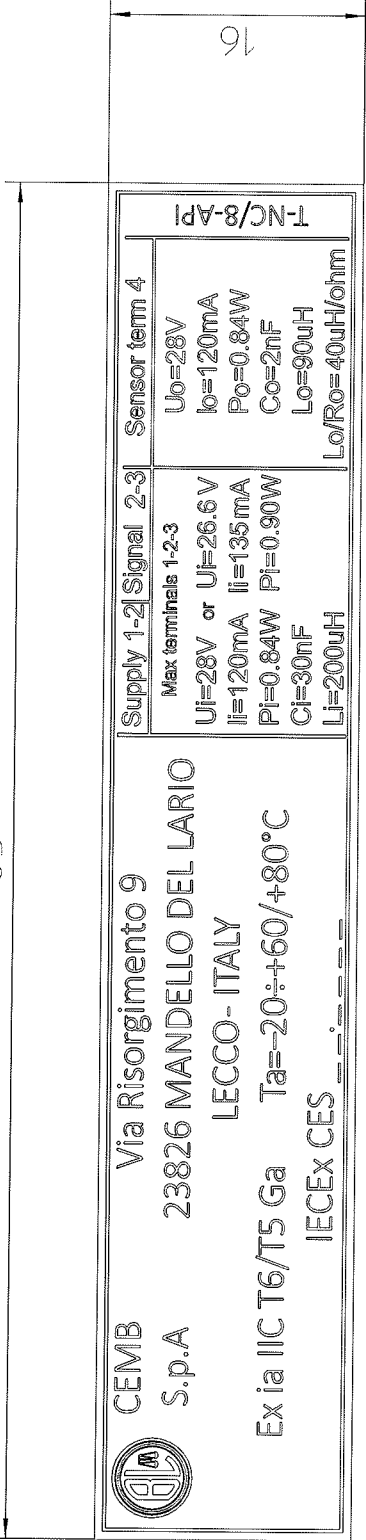
6. Repair

In the event of malfunctioning or damage, it is advisable to send the device to CEMB S.p.A. for repair.

If repairs are not carried out by the manufacturer, they must be carried out according to the criteria specified in IEC 60079-19 at workshops equipped with the necessary tools for repair and subsequent testing, and who have adequate technical knowledge also relating to the protection levels.

0	1	2	3	4	5	6	7	8	9
					Rev.	Creazione	Descrizione Modifica		Disegnatore
					B	02/03/2017	Aggiornamento per certificazione IECE		Andreotti D

85



Material: SOLID FOIL sp. 0.05mm
 Min. application temperature: +10°C
 Service temperature: -20° +150°C
 Written lines and silk-screened: black
 Fixing: adhesive
 Font and size and written lines: best compromise for maximum readability and proportion to the design

ISO 9001	NOTE	TOLLERANZE ISO 2768-fH					
	RAGGI NON QUOTATI: 1 MAX	DA	0.5	7	31	121	401
	SMUSSI NON QUOTATI: 0.5x45°	A	6	30	120	400	2000
	TOLLERANZE ANGOLARI: ± 30'	TOLL.	±0.05	±0.1	±0.15	±0.2	±0.5

Data: 03/12/2015
 Disegnatore: Andreotti D.
 Cliente:
 Ordine :

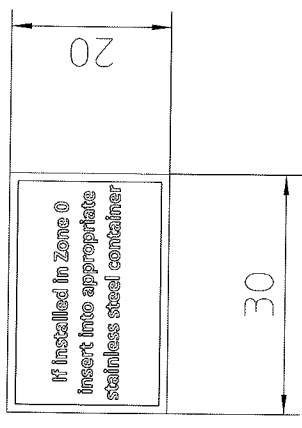


SCALE 2:1
 FOGLIO 1 di 1
 FORMATO A4
 Tipo di macchina:
 Disegno:
 Descrizione: TARGHETTA IECEX MARKING

WARNING: DO NOT CHANGE WITHOUT PERMISSION ENTITY NOTIFIED

Cod: 04PT002145
 Rev. B

0	1	2	3	4	5	6	7	8	9
					Rev.	Creazione	Descrizione Modifica		Disegnatore



	NOTE	TOLLERANZE ISO 2768-fH									
	RAGGI NON QUOTATI: 1 MAX	DA	0.5	7	31	121	401				
	SMUSSI NON QUOTATI: 0.5x45°	A	6	30	120	400	2000				
	TOLLERANZE ANGOLARI: ± 30'	TOLL.	+0.05	+0.1	+0.15	+0.2	+0.5				

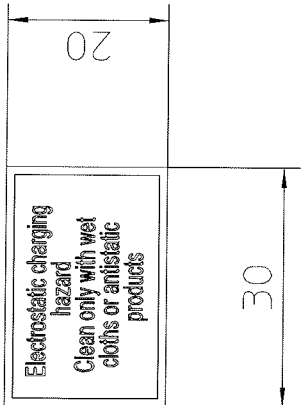
Data: 20/01/2016
 Disegnatore: Andreotti D.
 Cliente:
 Ordine:



WARNING: DO NOT CHANGE WITHOUT PERMISSION ENTITY NOTIFIED

SCALE	1:1	Tipo di macchina:	
FOGLIO	1 di 1	Disegno:	
FORMATO	A4	Descrizione:	IECEX zero zone marking
		Cod:	04PT002870
			Rev. A

0	1	2	3	4	5	6	7	8	9
					Rev.	Creazione	Descrizione Modifica		Disegnatore



ISO-E Ra 3.2 V	NOTE	TOLLERANZE ISO 2768-MH					
	RAGGI NON QUOTATI: 1 MAX	DA	0.5	7	31	121	401
	SMISSI NON QUOTATI: 0.5x45° A		6	30	120	400	2000
	TOLLERANZE ANGOLARI: ± 30' TOLL.		±0.05	±0.1	±0.15	±0.2	±0.5

Data: 20/01/2016
 Disegnatore: Andreatti D.
 Cliente:
 Ordine:



SCALE	1:1	Tipo di macchina:
FOGLIO	1 di 1	Disegno:
FORMATO	A4	Descrizione: IECEX clean marking

Cod: 04PT002871

Rev. A

WARNING: DO NOT CHANGE WITHOUT PERMISSION ENTITY NOTIFIED

