



SAFETY INSTRUCTIONS

VIBRATIONS TRANSDUCER - MOD. T1-40 ATEX

Document No. I73PRD of 14/03/18 (Rev. 04)

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CESI	
protocollo B8008946	firma
allegato al certificato CESI 01 ATEX 050	data 02/05/2018

1. Product specification



This transducer can provide an electrical signal directly proportional to the vibration velocity of the point to which it is fastened.

Typical applications:

Vibrations measurement on machinery parts such as motors, bearings, pumps, etc...

2. Limits of use - marking

Foreword

The safety measures and the equipment used on the installation, operation and maintenance site, must follow the specific instructions contained in this manual. They must also comply with the applicable equipment rules (basic standards of the installation site) and the additional ones for the areas with risk of explosion due to gas or dust presence: EN 60079-14 and EN 60079-17 for installation and verifications, as well as IEC 60079-19 for maintenance and repairs (unless otherwise specified).

These safety instructions refer to installation, use and maintenance of the T1-40 transducer. The equipment was designed and realised according to EN 60079-0, EN 60079-11 and rules and according to 2014/34/UE directive (ATEX).

These instructions have been conceived for installers and users adequately trained, with a basic technical expertise on using and starting up of electrical machinery and plants, in places with danger of explosion.

ATEX marking

The equipment covered by these instructions is characterized by the following protection modality:

Model with stainless steel body and plastic connector:

**II 1GD Ex ia IIC T6 / T5 / T4 Ga
Ex ia IIIC T 85/100/135 °C Da
Ta = -40°C ÷ +60 / +80 / +100°C**

Other models:



**II 2GD Ex ia IIC T6 / T5 / T4 Gb
Ex ia IIIC T 85/100/135 °C Db
Ta = -40°C ÷ +60 / +80 / +100°C**

The indications contained in these safety instructions must be observed in addition to what prescribed in the user manual provided to Customer.

The installer and the user are always responsible for the correspondence of the installation sites with the above limits and features.

The nameplate data for the various configurations are shown by Drawing No. 48AT020730 and 48AT020731.

Legenda: safety nameplate data

II	Environments other than mines
1GD 2GD	Zone 0 for GAS and Zone 20 for DUST Zone 1 for GAS and Zone 21 for DUST
Ex ia	Equipment of "ia" category
II C	Equipment of IIC group, suitable for substances (gas) of IIC group
T6-T5-T4	Temperature class T6 (60°C); T5 (80°C); T4 (100°C)
IIIC	Equipment of IIIC group, suitable for substances (dust) of IIIC group
T 85/100/135 °C	Surface temperature for dust
	Mark of conformity to European directives applicable
	Marking of conformity according to directive 2014/34/UE and the relevant technical regulations
CESI 01 ATEX 050	Laboratory name that issued the CE type certificate; 01 = year of first issue of the certificate; 050 = number of the certificate.
0722	Number of the Notified Body (CESI) that performs surveillance of the production system
Tamb	Ambient temperature: - 40 / +60°C T6 - 40 / +80°C T5 - 40 / +100°C T4
Ga - Gb	EPL – Protection level for gas
Da - Db	EPL – Protection level for dust

Notes:

- a) The equipment belonging to IIC group is also suitable for IIB and IIA groups;
- b) The choice of the intrinsically safe equipment to interface must be made on the basis of the associated equipment output parameters.

3. Equipment suitability to the installation site

For using in areas with danger of explosion, verify that the involved equipment is suitable for area classification and flammable substances which are present in the system. The safety essential requirements against the risk of explosion in the classified areas are established by the European Directives:

- 2014/34/UE of 26 February 2014, for equipment
- 1999/92/EC of 16 December 1999, for plants

The criteria for classification of areas with potentially explosive atmosphere are listed by EN 60079-10 standard.

The technical requirements of electrical installations in hazardous areas are listed by EN 60079-14 standard.

The transducer marked Ga - Da can be installed in zone 0, 20 or 1, 21 or 2, 22, interfaced by barriers compatible with the power supply parameters.

The transducer marked Gb - Db can be installed in zone 1, 21 or 2, 22, interfaced by barriers compatible with the power supply parameters.

On the nameplate, in addition to functional data, are also indicated the references to the notified bodies responsible for certification.

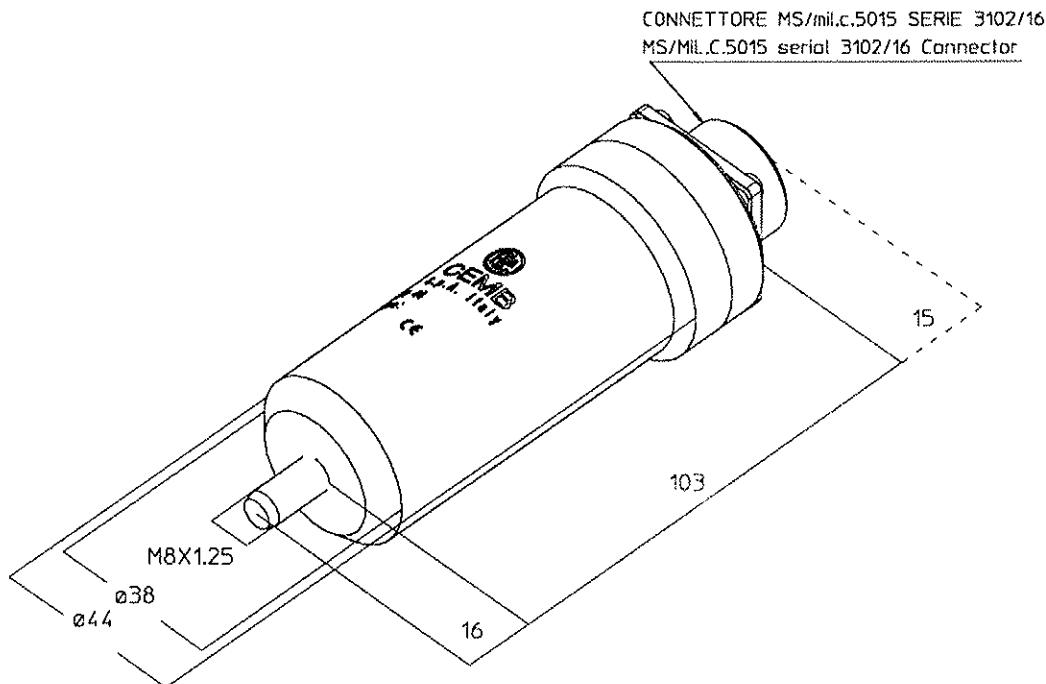
4. Installation

Mechanical assembly

The T1-40 transducer must be fixed to the point where the vibrations have to be detected, usually on the bearing support of pumps, motors, fans, etc..

To ensure a good mechanical coupling between transmitter and support, it is necessary:

- >> A flattening of the fixing surface
- >> A threaded hole, orthogonal to the surface, having depth of 12 mm
- >> A thin layer of grease



Connection and electrical coordination

The electrical connection must be carried out by suitably trained personnel, according to drawing no. 87SE001776.

The only electrical connection concerns the signal cable, shielded bipolar type.

The equipment input / output parameters are defined in the following table and reported with marking:

U _i	11 V
I _i	400 mA
P _i	930 mW
C _i	0 F
L _i	0 H

Or

U _i	18 V
I _i	125 mA
P _i	700 mW
C _i	0 F
L _i	0 H

ATTENTION:

- **The intrinsically safe circuits must be powered by certified associated equipment complying with the electrical characteristics limits above mentioned.**

The evaluation of the system composed by the associated equipment, the intrinsic safety equipment and the connection cables, must be performed by qualified personnel and must be in accordance with EN 60079-14.

5. Verifications and Maintenance

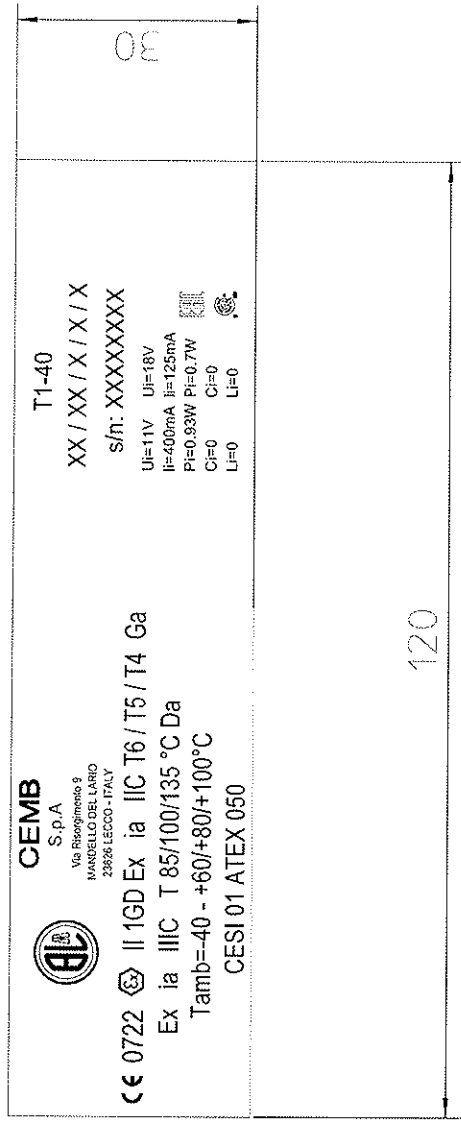
The equipment verification and maintenance operations, must be carried out according to EN 60079-17 criteria.

6. Repair

In case of malfunction or damages, it is recommended to send back the equipment to CEMB Spa for repair.

If not carried out by the manufacturer, all repairs shall be made according to IEC 60079-19, at workshops suitably equipped for repairs and inspections, by operators having adequate technical expertise about protection modalities.

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



ISO 1	NOTE	TOLLERANZE ISO 2768-MH					
		DA	0.5	7	31	121	201
RAGGI NON QUOTATI: 1 MAX	A	6	30	120	100	2000	
SPURSI NON QUOTATI: 0.5x25°							
TOLLERANZE ANGOLARI: 30'	TOLL.	+0.05	+0.1	+0.15	+0.2	+0.5	
Disegnatore:	19/03/2018	Data:					
Cliente:	Andreo Ili D.	Disegnatore:					
Ordine:	CERTIFICATORE CESI	Tipo di macchina: T1-40 ATEX					
		Disegno: 1 di 1					
		FORMATO: A4					
		Descrizione: ATEX marking ZONA 0					
		Cod: 48AT020730					
		Rev. A					

LASER MARKING DIRECTLY ON THE TRANSMITTER BODY



CERTIFICATION

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

CEMB
S.p.A.
Via Risorgimento 5
MANDELLO DEL LARIO
23826 LECCO - ITALY

CE 0722 II 2GD Ex ia IIC T6 / T5 / T4 Gb
Ex ia IIC T 85/100/135 °C Db
Tamb=-40 - +60/+80/+100°C
CESI 01 ATEX 050

T1-40
XX / XX / X / X / X
s/n: XXXXXXXX

Uj=11V Uj=18V
Ii=400mA Ii=125mA
Pi=0,93W Pi=0,7W
Ci=0 Ci=0
Li=0 Li=0

120

	NOTE	TOLLERANZE ISO 2768-MH					
	RAGGI NON QUOTATI: 1 MAX	DA	0,5	7	31	121	401
ROZZI NON QUOTATI: 0,5x0,5	A	6	30	120	400	2000	
ROZZI NON QUOTATI: 1x1	TOLL.	+0,05	+0,1	+0,15	+0,2	+0,5	
Data:	19/03/2018						
Disegnatore:	Andreoli D.						
Cliente:	CERTIFICATORE CESI						
Ordine:							

LASER MARKING DIRECTLY ON THE TRANSMITTER BODY

Rev.	A
Cod:	48AT020731
Descrizione:	ATEX marking ZONA 1
Disegno:	1 di 1
Scala:	1:1
Formato:	A4
Forma di macchina:	T1-40 ATEX

