Transducers

T1-40 T1-40BF T1-40V
T1-38 T1-38BF T1-38V

Velocity transducers

CEMB
BALANCING MACHINES

CEMB
BALANCING MACHINES

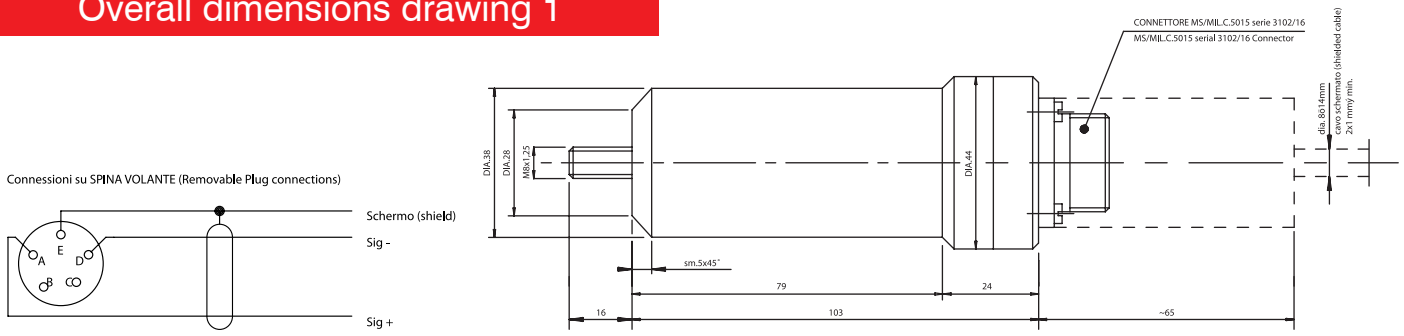
Principle of operation

A voltage proportional to the velocity of vibration is induced in a coil that moves in a field generated by a permanent magnet. The coil is suspended seismically on the body of the transducer which is fixed to the measuring point.

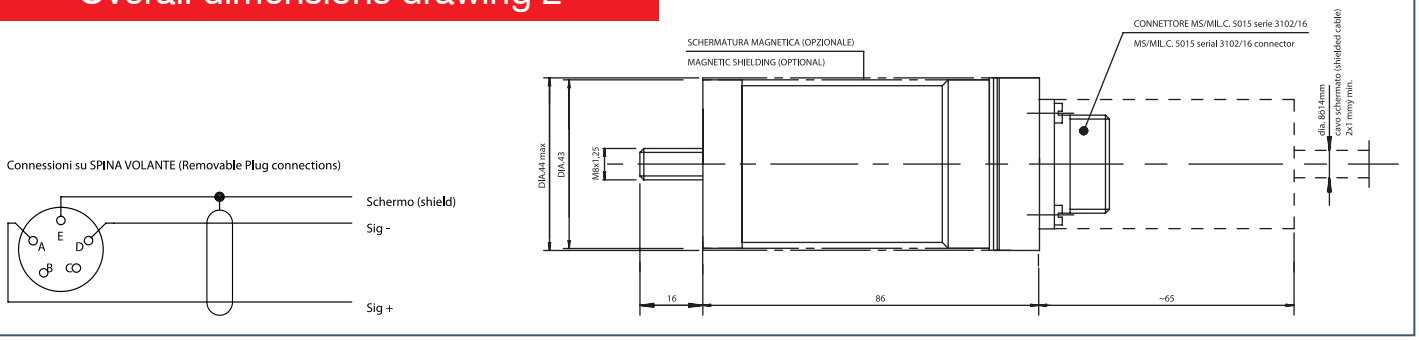
Typical applications

The transducer is normally connected to a vibration monitoring unit. This creates a measuring chain able to detect the vibrations of any rotating machine. The most frequent applications regard motors, pumps, fans, compressors, turboalternators, etc. considered strategic in any manufacturing cycle. Various models are available according to the different fields of application; the transducer should be chosen on the basis of the frequency response, direction of measurement, type of material of the outer case, temperature range or application in a classified area. Each transducer is designed with characteristics to suit the industrial environment and is provided with a connector to MIL standards or integral teflon cable, with high degree of protection against atmospheric agents. Installation is very easy and can even be carried out under normal working conditions.

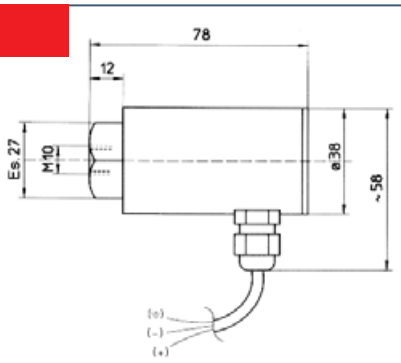
Overall dimensions drawing 1



Overall dimensions drawing 2



Overall dimensions drawing 3

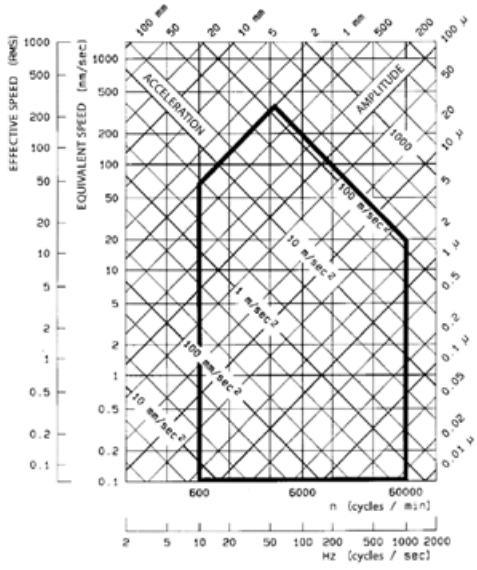


The transducers of this series supply a signal proportional to the velocity of vibration of the point where they are fixed.

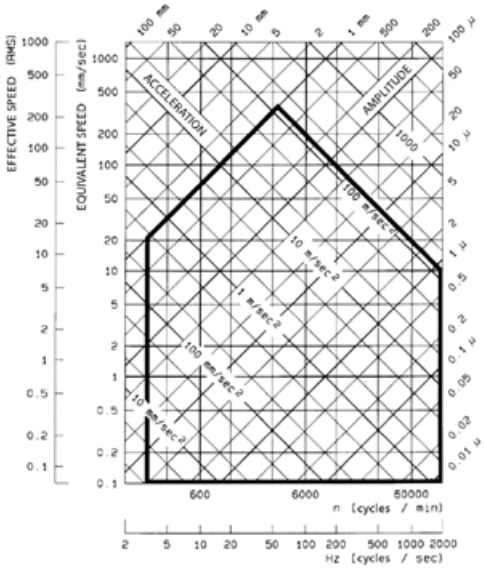
T1-40/T1-40BF/T1-40V

VELOCITY TRANSDUCERS	T1-40	T1-40BF	T1-40V
Type of measurement	absolute	absolute	absolute
Direction of measurement	any	horizontal	vertical
Frequency range	10 ÷ 1000 Hz	3 ÷ 2000Hz	10 ÷2000 Hz
Maximum amplitude	± 1 mm	± 1 mm	± 1 mm
Nominal sensitivity	21.2 mV/mm/s	21.2 mV/mm/s	21.2 mV/mm/s
Resonant frequency	12 Hz	4.5 Hz	10 Hz
Transverse sensitivity	< 7%	< 3%	< 3%
Output impedance	~ 1 K Ω at 25°C	~ 1 K Ω at 25°C	~ 1 K Ω at 25°C
Operating temperature range	-40 ÷ +100°C	-40 ÷ +100°C (-40 ÷ +170°C)* * on request	-40 ÷ +100°C (-40 ÷ +170°C)* * on request
External connection	MS3102A-16S-8S	MS3102A-16S-8S	MS3102A-16S-8S
External case	anodized aluminium	anodized aluminium	anodized aluminium
Transducer weight	~ 300 gr	~ 300 gr	~ 300 gr
Mounting Screw	M8 screw	M8 screw	M8 screw
Protection class	IP 65	IP 65	IP 65
Overall dimensions	according to Dwg. 1	according to Dwg. 2	according to Dwg. 2

T1-40



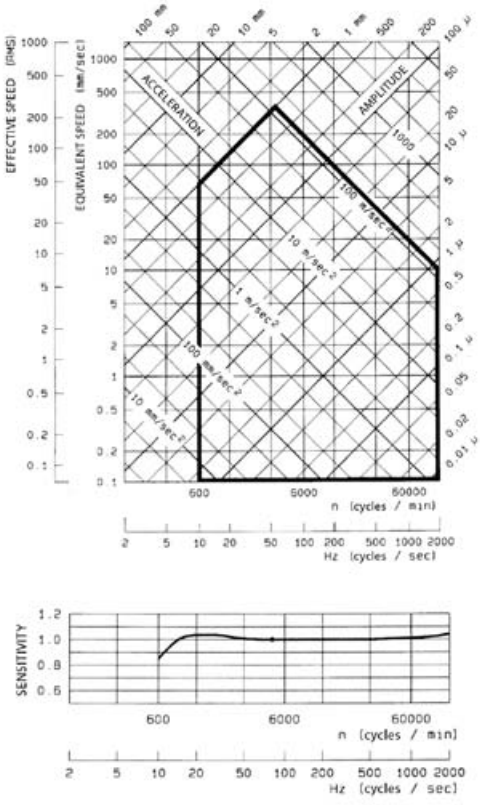
T1-40BF / T1-38BF



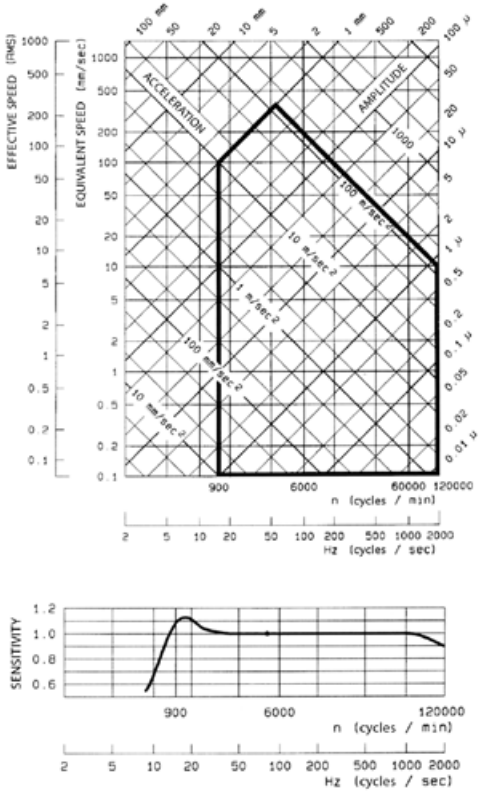
T1-38/T1-38BF/T1-38V

VELOCITY TRANSDUCERS	T1-38	T1-38BF	T1-38V
Type of measurement	absolute	absolute	absolute
Direction of measurement	any	horizontal	vertical
Frequency range	15 ÷ 2000 Hz	3 ÷ 2000Hz	10 ÷2000 Hz
Maximum amplitude	± 1 mm	± 1 mm	± 1 mm
Nominal sensitivity	100 mV/mm/s	21.2 mV/mm/s	21.2 mV/mm/s
Resonant frequency	15 Hz	4.5 Hz	10 Hz
Transverse sensitivity	< 3%	< 3%	< 3%
Output impedance	~ 3.6 K Ω at 25°C	~ 1 K Ω at 25°C	~ 1 K Ω at 25°C
Operating temperature range	-40 ÷ +100°C	-40 ÷ +100°C (-40 ÷ +170°C)* * on request	-40 ÷ +100°C (-40 ÷ +170°C)* * on request
External connection	through integral cable (optional protection of cable with flexible conduit)	through integral cable (optional protection of cable with flexible conduit)	through integral cable (optional protection of cable with flexible conduit)
External case	anodized aluminium stainless steel	anodized aluminium stainless steel	anodized aluminium stainless steel
Transducer weight	300 / 500 gr	300 / 500 gr	300 / 500 gr
Mounting Screw	M10 screw	M10 screw	M10 screw
Protection class	IP 66	IP 66	IP 66
Overall dimensions	according to Dwg. 3	according to Dwg. 3	according to Dwg. 3

T1-40V / T1-38V



T1-38



Ordering data

T1 - A / B / C / D / E / F / G

A : type of transducer

38	model 38
40	model 40

B : direction of measurement

00	in all directions
BF	horizontal
VO	vertical

C : temperature range

00	standard
HT	170° C

D : certified version
(only for model T1-40)

0	standard
1	Certifications according to ATEX 94/9/CE
	CE 0722 ⟨Ex⟩ II 1 GD EEx ia IIC T6 IP65 T85°C
	CE 0722 ⟨Ex⟩ II 1 GD EEx ia IIC T5 IP65 T100°C
	CE 0722 ⟨Ex⟩ II 1 GD EEx ia IIC T4 IP65 T135°C
	CE 0722 ⟨Ex⟩ II 2 GD EEx ia IIC T6 IP65 T85°C
	CE 0722 ⟨Ex⟩ II 2 GD EEx ia IIC T5 IP65 T100°C
	CE 0722 ⟨Ex⟩ II 2 GD EEx ia IIC T4 IP65 T135°C

E : housing material
(only for model T1-38)

0	anodized aluminium
1	stainless steel

F : length of integral cable
(only for model T1-38)

0	5 meters
1	10 meters
2	20 meters
3	special to be defined

G : cable protection
(only for model T1-38)

0	without protection
1	with protection

Example of an order:

T1 - A / B / C / D / E / F / G

T1 - 38 BF 00 0 1 0 0

- G : without protection
- F : with 5 meters of cable
- E : of stainless steel
- D : not certified
- C : standard temperature
- B : for measuring in horizontal direction
- A : model 38

► Technical data

Electrical connection

The connection cable should be shielded, bipolar type with minimum cross section of 1 mm^2, joined to the connector supplied as standard with the transducer (model T1-40) or else directly fitted to the transducer (model T1-38).

Mounting

The transducer should be fitted by tapping a hole at the point where it has to be fixed. If this is not possible, apply a block with tapped hole on the machine support. The use of adhesive is advisable when tightening the transducer.

CEMB also manufactures

- Universal horizontal balancing machines with coupling and/or belt drive for balancing rotors from 10 g to 100.000 Kg.
- Vertical balancing machines for balancing rotors from 50 g to 1500 Kg on 1 or 2 correction planes.
- Special purpose balancing machines for complete assemblies.
- Special purpose balancing machines including various types of units for correcting unbalances semi-automatically or automatically.
- Portable equipments for measuring and analyzing vibrations as well as balancing under service conditions.
- Fixed supervisory and testing equipment for continuous monitoring of large scale plants with rotating machines (turbines, pumps, compressors) including checking for vibrations, displacements, deformations, eccentricity, etc.

and offers the following services:

- Balancing on a contract work basis
- Vibration analysis on a contract work basis
- Periodic maintenance data acquisition service
- Training courses in balancing and vibration technology at CEMB or customer's premises
- Specific technical booklets on balancing and vibration technology are available upon request, free of charge:

Booklet N.2 - "Mechanical vibration technology"
Booklet N.3 - "Balancing technology"
Booklet N.8 - "Accuracy in balancing rigid rotors"
Booklet N.10 - "Balancing of flexible rotors"
Booklet N.11 - "Testing of balancing machines"
Booklet N.17 - "Theoretical principle of wheel balancing"
Booklet N.18 - "Wheel balancing"
Booklet N.19 - "Crankshaft balancing"
Booklet N.20 - "Balancing under service conditions"
Booklet N.23 - "Testing of vibrations in machines during service"
Booklet N.24 - "Machinery monitoring and supervisory instrumentation"
Booklet N.26 - "Protection of balancing machines" Safety precautions and devices for use on balancing machines
Booklet N.27 - "Choice of a balancing machine"

CEMB
BALANCING MACHINES

CEMB IRAN
Mobile: +98-912-313-1941
Fax: +98-21-8809-5858
E-Mail: info@cemb-iran.com
www.cemb-iran.com

All the data and features mentioned in this catalogue are purely for information and do not constitute any commitment on the part of our company, which reserves the right to make any and all alterations it may consider suitable without notice.