

## T1-45 VIBRO ALARM

vibration protection device

### DESCRIPTION

T1-45 is a complete device featuring maximum reliability and favourable cost designed for continuous detection and measurement of the vibrations of any type of rotating machine. As prescribed by international standards, the speed of vibration is measured. When a presettable vibration threshold is reached, the system supplies a digital output signal able to actuate the device installed for protecting the machinery (e.g. relay, PLC etc.). Connection mode is similar to the standardized one for photocells, proximity sensors, etc.

The device consists of professional integrated components embodying SMD technology and is able to withstand electrical tests in accordance with IEC 801 standards.



### SPECIFICATIONS

Type of measurement:	Effective value of the speed of vibration according to ISO 2954 standard
Max acc. of operation:	50 g.
Frequency range:	10 to 700 Hz (600 to 42000 r.p.m.)
Power supply:	15 to 30 Vdc - 33 to 34 mA (normal operation)
Protection:	Fuse 250 mA (installed in device)
Digital output:	NPN or PNP output (I <sub>out</sub> = 200 mA) which can be selected by the user
Standard ranges of measurement: (to be specified with the order)	0 to 10 mm/s 0 to 30 mm/s 0 to 100 mm/s
Alarm threshold calibration:	Graduated linear potentiometer
Ambient conditions:	Protection against external agents = IP 65 (IEC 70-1) Operating temperature range = -40°C to +85°C Storage temperature range = -55°C to +85°C
External casing material:	Anodized aluminium / stainless steel
Weight:	~ 0.4 kg



# CEMB

## Assembly

Prepare the mounting screw M10 and fasten the system using the spacers (supplied as standard) for required cable direction. Tighten. The use of thread compound is advisable.

## Alarm threshold calibration

Unscrew the top cover and set the alarm threshold in % of full scale on the calibration potentiometer (e.g. with f.s. 30 mm/s and threshold alarm 18 mm/s, the setting should be 60% = 60 on the potentiometer). Close the cover making sure it is tightly sealed.

The alarm threshold is normally defined by the manufacturer of the controlled machine or else it can be deduced from international standards.

When it is considered appropriate to make an empirical calibration on a machine operating regularly, proceed as follows:

- 1) Install the system on the machine in service and unscrew the top cover.
- 2) With the machinery under normal operating conditions, adjust the threshold calibration potentiometer until the switching position is accurately determined (as can be seen by the lighting up of the alarm LED).

The operation should be performed in various steps waiting for about 4 seconds between one adjustment and the next in order to allow switching the alarm threshold.

- 3) Turn the potentiometer clockwise by an angle corresponding in percentage to the increase considered acceptable for machine safety (e.g. a value exceeding 50% the value for regular machine operation).

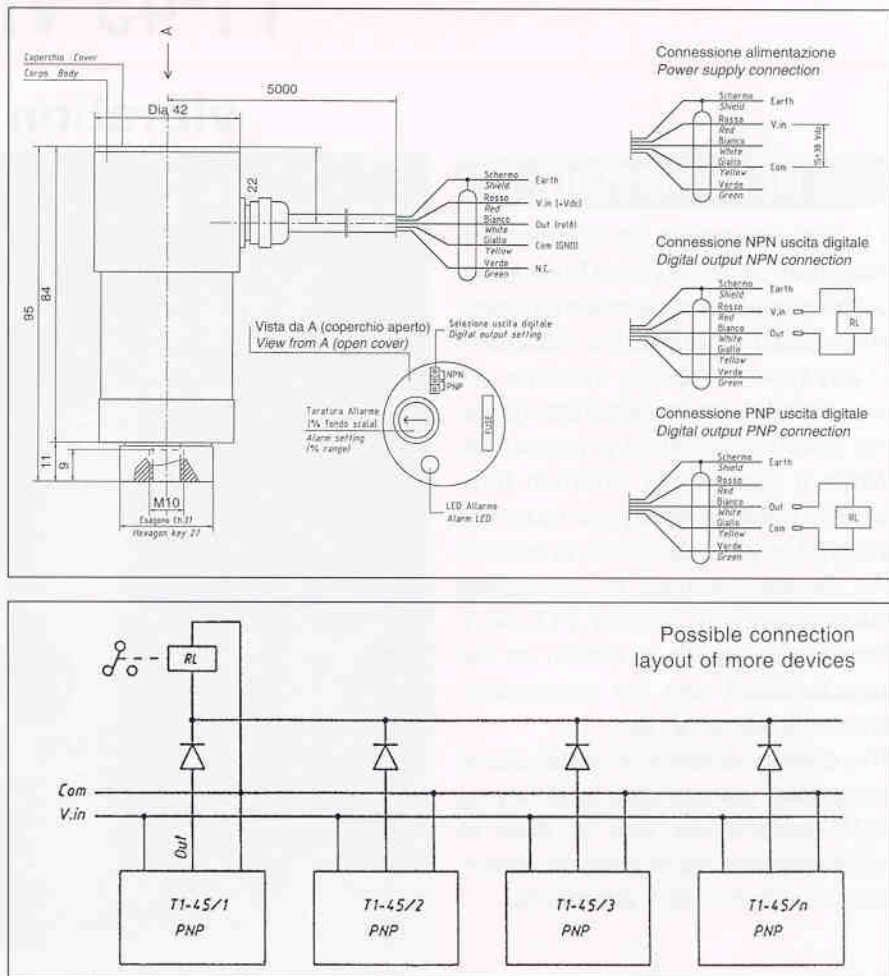
- 4) Refit the cover making sure that it is tightly sealed.

## To change the digital output (NPN or PNP)

Unscrew the top cover, identify the test points referring to the setting. Short circuit the required setting. Refit the cover making sure that it is tightly sealed. Connect the output as indicated in the diagram.

## Connection of various systems in parallel

By following the connection diagram given in the figure and arranging the systems with PNP output, two or more systems can be connected in parallel in order to have just one signalling summing up to status of all the test points.



## ORDER INFORMATION

A B

T1-45 / ☐ / ☐

### A: Range of measurement

1	10 mm/s
2	30 mm/s
3	100 mm/s

### B: Casing material

1	Anodized aluminium
2	Stainless steel