



OPERATION MANUAL
VIBRATION METER
BALTECH
VP-3410

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1 DEVICE DESCRIPTION

1.1 Application

The vibration meter BALTECH VP-3410 is designed to perform vibration monitoring of a wide range of machines for the purpose of checking their technical condition.

The vibration meter is a simple, portable measurement device, which allows to perform the following tasks:

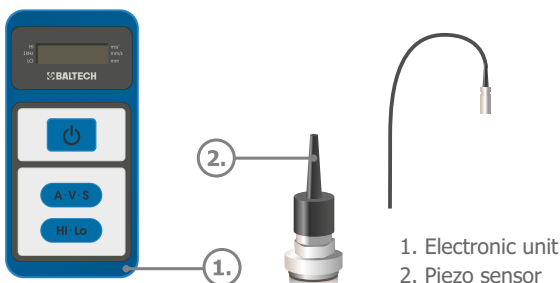
- measurement of vibration acceleration in two frequency bands;
- measurement of RMS vibration velocity and vibration displacement within the range from 10 to 1000 Hz.

1.2 Design and principle of operation

The vibration meter BALTECH VP-3410 consists of electronic unit and piezo sensor. The piezo sensor is connected to the device via cable. Sensor type: piezoelectric acceleration sensor.

The device housing is made of ABS plastic and has one sensor input, screen, which displays measurements and current settings. Measurement and setting control is performed with a film keyboard. Battery is inside the housing in a battery cabinet.

During the measurement procedure the sensor is connected to the device, via cable and is pressed by probe or mounted on a measurement object with magnet or pin.



1.3 Technical data

1.3.1 Application conditions

- ambient temperature, °C from 0 to +50
- relative humidity at 25 °C, % to 95

The device is powered from 9V battery, type D (6F22, 6LF22).

1.3.2 Main technical data of the device BALTECH VP-3410

Technical data of the device is listed in the table

DEVICE TECHNICAL DATA

Table 1.1

Measurement range: vibration acceleration, m/s ²	1 - 199,9
RMS vibration velocity, mm/s	1 - 199,9
vibration displacement, mkm	1 - 1999
Frequency range, kHz	0,01 ~ 1 1 ~ 10*
Relative measurement error, %	±5 +2 dgt
Supply voltage, V	9
Dimensions, mm	138×68×30
Weight (including battery), g.	270*

*Measurement within the range 1 – 10 kHz is only for vibration acceleration

1.4 Delivery set

The delivery set is listed in the Table 1.2

DELIVERY SET

Table1.2

No.	Item name	Article	Number
1	Measurement unit (electronic)	34-10.01	1
2	Vibration sensor with cable and magnet	34-10.02	1
3	Battery, 9 V, type D (6F22, 6LF22)		1
4	Manual	34-10.00-OM	1
5	Packing	34-10.011	1

1.5 Transportation and storage

The vibration meter BALTECH VP-3410 must be protected from heavy shocks and vibrations.

If the vibration meter is not used for a long period of time, it is necessary to remove the battery, in order to prevent outflow of liquid from it, which may result in the device damage.

1.6 Acceptance certificate

The vibration meter BALTECH VP-3410 No. _____
coming with the Acceleration Sensor

No. _____ is ready for operation.

Issue date « ____ » _____ 201_

Place for seal

Job position and signature of the manufacturer's representative

Commissioning date « ____ » _____ 201_

_____/_____/_____
Signature of the responsible person

1.7 Manufacturer's warranty

The manufacturer guarantees the conformance of the produced devices BALTECH VP-3410 to the technical data upon observance of conditions of operation, maintenance, storage, transportation, specified in the operational documentation.

Guarantee period - 12 months

Warranty is not valid:

- if there are visible mechanical damages;
- if power supply, which doesn't conform to the present technical documentation, was used.

② OPERATION MANUAL

2.1 Appearance and operation elements of the device

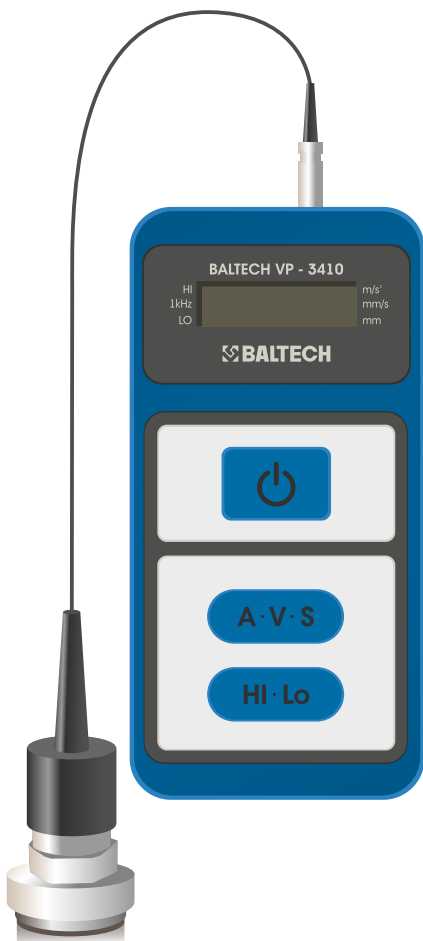
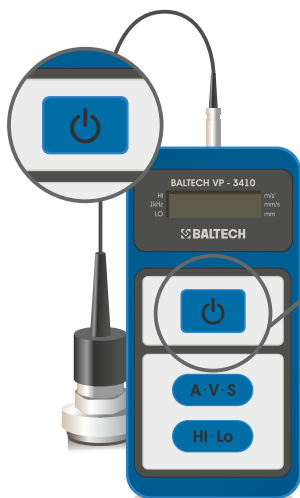


Figure 1

2.2 Operation mode

2.2.1 Device on/off



ON

Press the measurement button to switch on the device.

The vibration meter SWITCHES OFF in a minute AUTOMATICALLY.

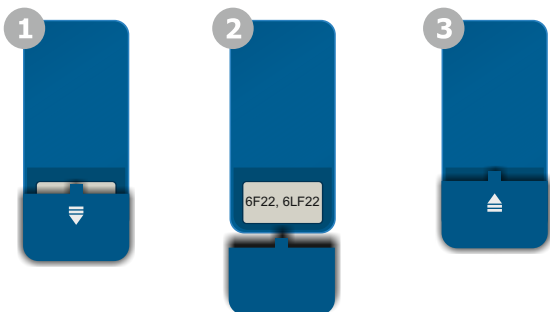
2.2.2 Battery monitoring



If during the device operation the screen displays «BAT», it means, that the battery is low and it is necessary to replace it.

To do this:

1. Open the battery cabinet;
2. Insert the battery type D (6F22, 6LF22) in accordance with the battery polarity marking;
3. Close the battery cabinet.



2.2.3 Measurement mode

Press the button «SET» to select a measurement mode: acceleration, velocity or displacement; the selected mode is indicated by the arrow on the right side of the screen.

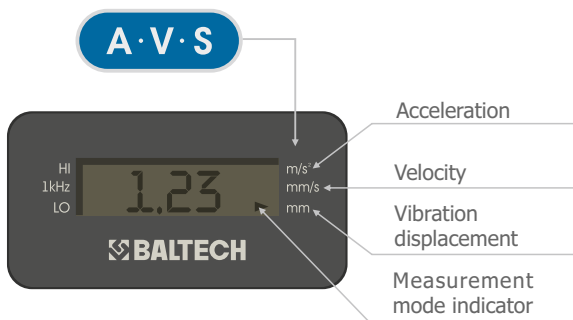


Figure 2

2.2.4 Selection of frequency range interval

When measuring acceleration, you can use a button of the frequency range change. The selected frequency range is indicated by the arrow on the left side of the screen. Measurement ranges (LO/HI) are shown on the figure 3.



Figure 3

HI: 1kHz– 10 kHz is used for high-frequency vibration measurement

LO: 10 Hz – 1 kHz is used for overall vibration measurement

Note: selection of the frequency range is possible only for acceleration measurement

2.3 Work with the device

2.3.1 Preparation for measurement procedure

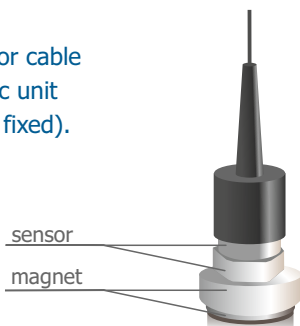
Before you start measuring, make sure, that the battery is not low. If necessary, replace it. Remove the shield from the magnet before mounting the sensor.

2.3.2 Sensor mounting

The vibration meter BALTECH VP-3410 uses the acceleration sensor, which is connected to the electronic device via low noise cable. The sensor can be mounted on the measurement object in the following way:

- 1.** Mounting with a magnet is used for performing ordinary measurements with relatively accurate measurement results. When operating with the magnet, make sure, that the sensor is connected to the magnet tightly.
- 2.** Mounting with a probe, when there is little space for mounting the magnet, or when the measurement object is nonmagnetic. The probe is connected to the sensor with the help of thread connection. When measuring, make sure, that the sensor and the probe are mounted on the measurement object tightly. This measurement method is not applicable when operation with high-frequency band.
- 3.** Mounting on the pin for measurement of high-frequency vibration.

Connect the sensor cable
to the electronic unit
(make sure, it is fixed).



2.3.3 Execution of measurement

- 1.** Hold the measurement button during 10 seconds, after this the vibration meter is ready for measurement;
- 2.** Press the measurement button and hold it, mount the sensor on the measurement object. The screen will display the measurement results; release the measurement button. The measured value will be saved on the screen, you can read and record it.
- 3.** Press the measurement button for further measurements.
 - If the measurement button is not pressed within one minute, the device will switch off automatically;
 - The sensor must be mounted on the measurement object tightly, otherwise you can have inaccurate measurement results.

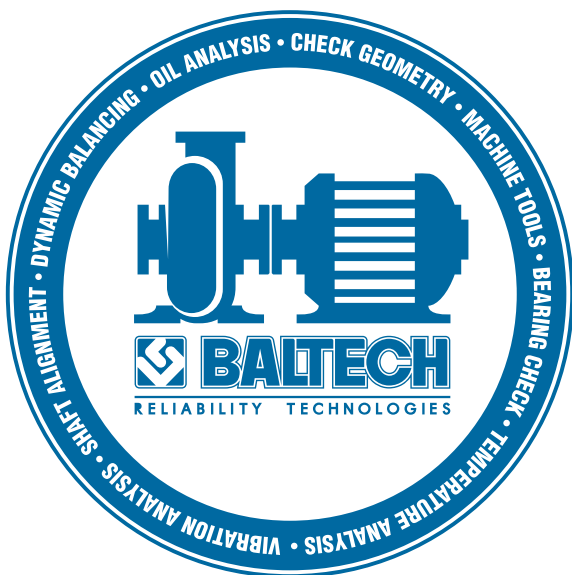
③ INFORMATION ABOUT MAINTENANCE AND REPAIR

No.	Scope of work	Date, signature

④ TRAINING

**For efficient and qualitative operation of the device
BALTECH VP-3410, we recommend you to pay
attention to:**

- Specialists who work with the device must be certified on the course «Reliability technologies» in the BALTECH training centre.
- Or organize a group of at least 5 persons for conducting the training course at your premises.



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