

# VIBRO Shock Sensor

## INSTALLATION INSTRUCTIONS

### INTRODUCTION

VIBRO is an intelligent Microprocessor controlled shock sensor. The sensitivity is automatically set in Learn Mode by the level of a recognised impact made to the protected area. The number of impacts i.e. Pulse count required to generate an alarm is determined by the number of recognised impacts made in Learn Mode.

### PROCEDURE

1. Remove the sensor from its packaging and retain the two screws and grommet.
2. Remove the cover by removing the screw cap, then unscrewing the single captive screw.
3. Carefully release the printed circuit board from the base.
4. Select the intended position for installation, ensuring the surface is clear of any irregularities.
5. Move the base to the mounting position and mark the desired fixing holes, then by using the two self tapping screws fix the base (ensure the base is in complete contact with the mounting surfaces and firm).
6. Carefully push the printed circuit board onto the base.
7. Make the electrical connections to the VIBRO as per connection diagram and details. Make sure no power is applied to the VIBRO while making the connections.
8. Cable entry to the VIBRO can be gained:-
  - (i) through the hole in the base mounting plate,
  - (ii) at the end of the cover using single cable knock-out,
  - (iii) using grommet knockout.
9. Proceed to TEST/LEARN MODE (see under Calibration section).
10. After the unit is calibrated to your satisfaction, select the required latch mode, replace the cover of the sensor, tighten the fixing screw. (Do not over tighten) replace screw cap and check its response to the desired impact.

### COVERAGE

SURFACE	RADIUS	SURFACE	RADIUS
Concrete	1.5m	Steel	3.0m
Brick wall	2.5m	UPVC	2.25m
Breezeblock	1.5m	Wood	3.5m

\* The above are for guidance only

### Gross Attack

The gross attack feature enables the VIBRO to create an alarm from a single impact. This feature bypasses the pulse counting in cases of gross impact detection.

### CALIBRATION

#### Test Mode

After power up the VIBRO goes through a self test for 2 seconds. Test result indication by LED are as follows:

- Test satisfactory - Several flashes of green light.
- Test fail - No light or constant Red light or short flashes of Red light.

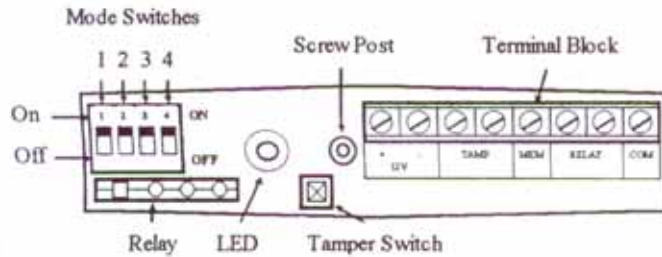
If test fails - check all connections and power. Repeat power up 3 times. If test still fails replace the unit.

#### Learn Mode

1. Install the VIBRO according to installation procedure.
2. Power up the VIBRO. Wait 2 seconds for self test.
3. Choose sensitivity mode (switch 4) before calibrating.
4. Make sure the alarm system is in Unset mode.
5. Turn ON switch 1 (learn switch) - Red LED will light.
6. When the learn switch is turned on, the VIBRO will automatically recognise polarity of the latch voltage.
7. Wait 2 seconds and start tapping the area of coverage for number of pulses required - While red LED is on.
8. Each valid tap will change LED colour to Green and then return to Red (the LED should go to Red before the next pulse count is registered).
9. The sensitivity and pulse count are automatically determined by the number and level of impacts made to the area to be protected at the furthest point from the detector.
10. If a Green light doesn't appear, that area is out of coverage range at the impact level entered and the tap was "not counted" - try using high sensitivity or install more VIBROs.
11. Each tap is added to the pulse count, so at the end, the number of valid taps will be the pulse count of the unit.
12. After 15 seconds the Red LED will extinguish and the LED will flash Green confirming the number of pulse counts.
13. It is recommended that the learn switch is not returned to the OFF position until the red LED goes off, and the number of pulses set is indicated by the number of Green LED flashes.
14. If you switch off the learn switch before the Red LED goes off, additional pulses may be entered (there is a safety feature which deletes the last pulse made, if the time that elapses is less than 2 seconds).
15. If in the future recalibration is needed and the learn switch has been left in the ON position, switch to OFF for 10 seconds and then turn to ON and proceed to set-up as normal.
16. To restore default values just move the learn switch to ON for 15 seconds, do not enter any impacts after 15 seconds, the Red LED will go out and the number of pulses will be indicated by the green LED flashes.



## CONNECTIONS

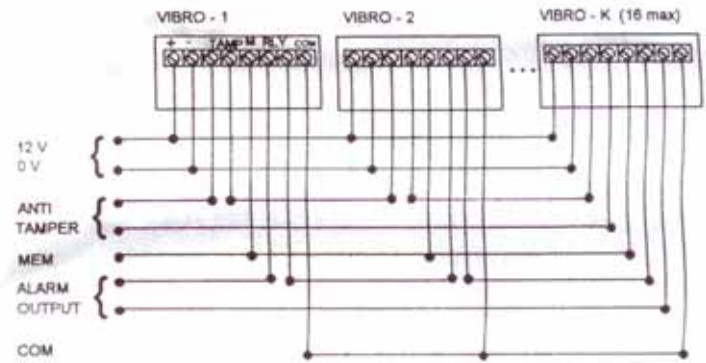


### Terminals

- + - 12V** 12V power connection, reverse polarity protected.
- TAMP** N.C. anti-tamper switch, opens when cover is removed.
- MEM** Latching connection. Connect to Set/Unset terminal of the alarm system.
- RELAY** N.C. opens when alarm occurs.
- COM** Communications between units. Connects to all other units in the same zone. (Used in first to alarm and sequential latch only).

**VIBRO sensors have a non-volatile memory and will retain the settings you have made, even if the supply voltage is removed and subsequently restored.**

## Multiple VIBRO Connection



### Six to Eight wire Connection

**Six wires:** 2 Power, 2 Anti-Tamper, 2 Alarm.

**Seven wires:** Add the above and MEM Set/Unset for normal latch - also used for all other types of latching.

**Eight wires:** All the above and COM used for first to alarm and sequential latch. Ensure that the supply to the VIBRO is disconnected before connecting the communications link.

## MODE SELECTION

SWITCH	1
Learn mode	on
* Normal mode	off

SWITCH	2	3
* Walk test	off	off
Normal latch	off	on
First to alarm	on	off
Sequential latch	on	on

SWITCH	4
Low sensitivity	on
* High sensitivity	off

\* Factory setting

### Sensitivity

Use low sensitivity in a noisy environment - near roads, airports, factories, etc.

Use high sensitivity in a quiet environment -when you need a large coverage area.

### Walk Test

Use this mode to test the installation.

A green light indicates that the VIBRO recognises an impact.

A red light indicates that enough impacts have been received to generate an alarm condition, according to the number of impacts and current calibration of the sensors.

With this feature you can test if the VIBRO is calibrated to your satisfaction.

### Sequential

After an alarm occurs in Set mode all connected VIBROs will save their order in the alarm sequence. The first 8 units will flash the red LED a number of times, according to their alarm sequence number.

The rest of the units will flash the green LED according to their number as follows: unit 9 will flash the green LED once; unit 10 will flash the green LED twice, etc.

### Reset

All LED alarm indications will clear on setting the alarm.

## SPECIFICATION

Supply Voltage	9V - 16V DC
Current - Quiescent	16.5 mA
- Alarm	15.8 mA
Sensitivity	Automatic from learn mode impact
Pulse Count	1 to 8 Programmed in learn mode
Indication	Two colour LED
Latch Modes	Any - First to alarm - Sequential
Alarm Output	NC 24VDC 150mA Resistive

Alarm Period	Approx 2.0sec
Tamper Switch	NC Open when cover removed
Operating Temperature	-20 <sup>o</sup> C to +50 <sup>o</sup> C
Environmental Humidity	90% Max
Dimensions	93 x 25 x 24mm
Max. No. Any latch	128
Max. No. 1st or Sequential	16