

# OTHER PRODUCTS

## 3-CHANNEL HUMAN VIBRATION FRONT-END TYPE 1700

### Human Vibration Measurements using Type 1700

Type 1700 is a 3-channel Human Vibration Front-end that allows triaxial accelerometer measurements to be made with 1/3-octave sound measuring instruments, for example, 2260 Investigator, 2260 Observer, Portable PULSE Type 3560 C and 2238 Mediator.

### USES

- Triaxial accelerometer measurements
- Occupational health surveys
- Product certification
- Hand-arm vibration risk assessment
- Whole-body vibration risk assessment

### FEATURES

- Whole-body filters ( $2 \times W_d$ ,  $W_k$ ) in X, Y, and Z channels respectively
- Hand-arm filter ( $W_h$ ) available in each channel
- Battery powered

### BRIEF SPECIFICATIONS

**Standards:** ISO 5349:1986, ISO 5349 – 1:2001, ISO 5349 – 2:2001, ISO 2631 – 1:1997, EC Physical Agents (Vibration) Directive

#### Measurement Modes:

HAV-lin (X or Y or Z), HAV-wtd (X or Y or Z), WBV-lin, WBV-wtd.

#### Measured Parameters:

2260 with BZ 7210 ver. 2.0, BZ 7219 ver. 1.0 or BZ 7206 ver. 2.1:

**WBV:**  $a_{wx}$ ,  $a_{wy}$ ,  $a_{wz}$ ,  $a_v$ ;  
**HAV:**  $a_{hw}$

Type 2238 with BZ 7123 ver. 1.1.0:

**WBV:**  $Leq_x$ ,  $Leq_y$ ,  $Leq_z$ ,  
**HAV\*:**  $Leq_{hw}$

**Inputs:** DeltaTron® compatible, max. 0.78 VRMS (1.1 V peak)

**Overloads:** Overload detector on all three input channels. For HAV, overload condition is latched for 1 s, for WBV 8 s.

**\*NOTE:** This does not conform to ISO 5349, but can be used for explorative measurements



### ORDERING INFORMATION

**Type 1700 A:** 3-channel Human Vibration Front-end for use with 2260 Investigator, 2260 Observer or PULSE Type 3560 C  
**Type 1700 B:** 3-channel Human Vibration Front-end for use with 2238 Mediator

**Also required for use with 2260:** Software BZ 7219 or BZ 7210 version 2.0 or BZ 7206 version 2.1  
AO 0440 BNC – Triaxial LEMO Cable (1.5 m)

### Also required for use with 2238:

Software BZ 7123 and a Filter Set  
**JP 0145:** Microdot to BNC Connector  
**AO 1382:** Microdot Cable (1.2 m)  
**WA 0302A:** 1/2" Microphone Adaptor, 12 pF

### Accessories

**Type 4506:** Miniature Triaxial Accelerometer  
**EE 0388:** Seat Pad ISOTRON® Triaxial Accelerometer  
**AO 0526:** 4-pin Microtech to 3 x BNC Cable (5 m)

## SEAT PAD ISOTRON TRIAXIAL ACCELEROMETER EE 0388

### Whole-body Vibration

#### Measurements using EE 0388

EE 0388 is specially designed for the measurement of whole-body vibration. It consists of a triaxial accelerometer housed in a semi-rigid, nitrile rubber disc and complies with ISO 10326-1. It can be placed under a seated person, on a vibrating surface with a suitable weight on top, or strapped onto the body. It detects vibration in directions along the body, back-to-front and side-to-side.

### USES

- Occupational health surveys
- Whole-body vibration risk assessment

### FEATURES

- Nylon straps allowing the user to directly attach the accelerometer to the subject
- Low impedance output
- 100 mV/g sensitivity

### BRIEF SPECIFICATIONS

**Range:**  $\pm 10$  g  
**Voltage Sensitivity:** Typically 100 mV/g  
**Amplitude Response:** 0.5 Hz to 3000 Hz  $\pm 1$  dB  
**Resonance Frequency:**  $> 15$  kHz  
**Output Impedance:** 100  $\Omega$   
**Full-scale Output Voltage:**  $\pm 5$  V DC DeltaTron<sup>®</sup> compatible

### ORDERING INFORMATION

**EE 0388:** Seat Pad ISOTRON<sup>®</sup> Triaxial Accelerometer



## BUILDING VIBRATION FILTER WB 1438

### Building Vibration Measurements using WB 1438

WB 1438 is a single-channel front-end that allows building vibrations to be measured with Type 2260. Typically, building vibrations are measured in the frequency range from 0.8 Hz to 100 Hz. This frequency range is much lower than the normal range that can be measured by Type 2260. To overcome this, WB 1438 is designed to convert the vibration signal to a frequency range that lies within the normal sound range and that can be measured and displayed by Type 2260.

### USES

- Whole-body vibration risk assessment
- Building vibration measurements

### FEATURES

- Internal Whole-body combined filter
- Powered directly from Type 2260
- Charge amplifier input, connects directly to a charge type accelerometer

### BRIEF SPECIFICATIONS

**Input Socket:** Microdot (10-32 UNF)

**Weighting Filter:** Whole-body Vibration Combined Filter, according to ISO 2631-2 (First edition, 1989-02-15) and described in ISO 8041 (First edition, 1990-07-15)

**Display:** The RMS acceleration level is shown as a single  $1/3$ -octave spectrum column in the 8 kHz band

**Sensitivity:** 1 mV/pC (0 dB range)  
**Gain:** 0, 10, 20 or 30 dB  $\pm 0.3$  dB

**Dynamic Range:** Using Type 2260 in the 43.7 – 123.7 dB range  $> 60$  dB. By using the amplification of WB 1438, the dynamic range is increased to  $> 90$  dB

### Dimensions:

**W**  $\times$  **H**  $\times$  **D:** 40  $\times$  95  $\times$  120 mm  
(1.6  $\times$  3.7  $\times$  4.7")

### ORDERING INFORMATION

**WB 1438:** Building Vibration Filter. Included with WB 1438

**AO 0441:** 10-pin LEMO cable, 3 m

### Required Extras

Type 2260 with BZ 7219, BZ 7210, or BZ 7206 software

### Optional Accessories

**Type 4381:** Piezoelectric Delta-Shear<sup>®</sup> Accelerometer

**AO 0122:** 10 – 32 UNF Cable



# OTHER PRODUCTS

## EXHAUST NOISE INSPECTOR TYPE 3638

### Type 3638

Exhaust Noise Inspector is a complete, all-in-one system, designed for automatic measurement of exterior exhaust sound levels from road vehicles under stationary conditions, simultaneously with RPM detection. The noise level and engine RPM are measured using the same microphone. A large display and indicator lights, showing all the necessary information, allow extremely simple and quick measurements, in accordance with standards. Local authorities and police inspectors will appreciate the ergonomics of the system, allowing measurements to be performed by a single operator.

### USES

- Measurement of exterior exhaust sound level from motorbikes, cars, trucks and mopeds under stationary conditions according to 70/157/EEC and ISO 5130 (engine sweep test)

### FEATURES

- Intuitive setup menu using four keys
- Non-contact measurements of engine RPM – computed from the exhaust noise signal
- Simultaneous measurement and display of sound level and engine RPM
- Non-invasive test – no need to open the engine compartment
- Acoustic detection of engine RPM for gasoline and diesel engines
- Red and green lights indicator for throttle control setup
- All in one suitcase for easy transport by motorcycle police
- Automatic triggering of the noise level measurement when the correct RPM is reached
- Battery operated
- Integral printer for on the spot measurement reports
- Optional Electromagnetic Tachometer Type 2979, with “Plug and Play” interface



### BRIEF SPECIFICATIONS

#### Types of Engine

2- or 4-stroke

#### Number of Cylinders

1, 2, 3, 4, 5, 6, 8, 10, 12

#### Accuracy of the Acoustic

#### Detection RPM Meter

Error < 2%

#### Dimensions

L x W x H:  
426.7 x 337.8 x 111.7 mm  
(16.8 x 13.3 x 4.4")

#### Weight:

6 kg ( 13 lb. 3 oz)

### ORDERING INFORMATION

**Type 3638 A:** Complete system including Type 2238 A and Type 4231

**Type 3638 B:** System without Sound Level Meter and calibrator; to be used with Types 2238 and 2239

**Type 2979:** Optional Electromagnetic Tachometer

## SOUNDEAR 2000 / POKETEAR

### VU 2509

SoundEar® is an attractively designed sound level indicator that displays a simple warning when noise levels reach uncomfortable or harmful levels. It can be adjusted to indicate the chosen threshold level between 40 and 115 dB.

The green rim of the ear is always displayed. If you set the warning level at, for example, 85 dB, the yellow ring lights up at 5 dB below the warning level, that is, 80 dB. As soon as the noise reaches 85 dB the red eardrum lights up together with the word "WARNING". SoundEar® is available in six languages and was awarded the Danish Design Prize in 2000.

#### SoundEar® can be used to:

- Warn you about uncomfortably high noise levels, for example, 60 dB or over in an office environment
- Teach people, including children, to keep noise levels down for the benefit of all, for example, in educational institutions or in hospitals
- Warn you about harmful noise levels in excess of 85 dB in a working environment or 105 dB in a music rehearsal room

### VU 2511

PocketEar® is a smartly designed noise indicator containing a pair of good quality earplugs. In other words, it's a quick and easy sound check you can carry around in your pocket. If the sound level exceeds the pre-set level (you can choose between 65, 85 or 105 dB) a red light will appear.

- The 65 dB level should be used for situations where concentration and effortless conversation are required, for example, schools and offices
- The 85 dB level is the noise-at-work limit for 8-hour exposure. If you are exposed to more than 85 dB, the risk of hearing damage is significantly increased and it would be a good idea to use hearing protection
- The 105 dB level is useful at concerts, music rehearsals, etc.

PocketEar® can be attached to your key ring. It comes in a small display box that also includes two high-quality earplugs from Alpine MusicSafe, a multilingual instruction leaflet, a Type CR 2430/3V battery, and a black keystrap.



#### BRIEF SPECIFICATIONS

##### SoundEar 2000 VU 2509

**Threshold Tolerance:** ±1 dB

##### Power Supply

Connect to normal electrical socket using the supplied transformer

##### Power Consumption

Approximately 3 W

##### Dimensions

28 × 28 × 6 cm  
(11.0 × 11.0 × 2.3")

##### Weight

Approximately 1.5 kg (3 lb. 5 oz)

##### PocketEar VU 2511

**Accuracy:** ±3 dB

##### Battery

Type CR 2430/3 V

##### Lifetime

Approximately 2500 5-second measurements

##### Dimensions

70 × 47 × 23 mm (2.8 × 1.9 × 0.9")

##### Weight

25 g (0.9 oz) with battery