

High Precision Measurement can be easily realized in your palm

ACO's Simple Vibration Meter

Lv (Vibration level)

Lva (Vibration acceleration level)

Leq (Power average)

Lmax (Maximum value)

Lx (Percentile level)

Vibration Level Meter
TYPE 3233

Dynamic Range
75dB



Data Management Software
NA-0233-3
(Sold separately)



Challenger for your future needs

ACO

Dynamic Range
75dB

TYPE 3233

Allows you
to quickly
switch
**Lv, Lva, Leq,
Lmax and Lx**
at one time.

ACO's state-of-the-art Vibration Meter

The TYPE 3233 conforms to measurement law JIS C 1510-1995, and exerts mobility at every measuring site because of its smallness and light weight. Combination/Integration with Vibration Pickup TYPE 7833 allows you to measure vibration levels and vibration acceleration levels on the ground, floor, foundation and seat etc., simultaneously in three directions of X, Y and Z.

The measuring and computing items are vibration level L_v for which sensory characteristics are taken into account, vibration acceleration level L_{va} of physical quantity, power average L_{eq} , maximum value L_{max} , minimum value L_{min} and Percentile level L_x , of which instantaneous values are digitally displayed on the liquid crystal screen.

These can be simultaneously recorded on an external level recorder with output terminals independent in three directions. In addition, data processing has been simplified by integrating with peripherals using I/O terminal (RS-232C interface). ACO's Sound Meters, TYPES 6224/6226, having the equivalent specifications, are also on sale as popular comparison meters. Please make use of these in combination with the measuring instruments for environment control.

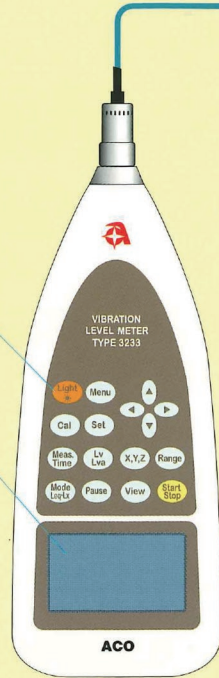
Features

- Easy to handle as a result of its smallness and light weight, high mobility and easy operation. Measurer does not require any special skill. The pickup for measurement offers compatibility.
- Digital values and bar graphs are displayed on a large-scale liquid crystal screen equipped with backlight. Anyone can take a measurement without a reading error, and easily grasp vibration amounts with the bar graph.
- Wide range of linearity 75 dB eliminates switching.
- Maximum and minimum values (L_{max} , L_{min}), Percentile vibration level (L_x ; five values) and power average are computed simultaneously in three directions, and selectively displayed.
- RS-232C interface built-in, data management and processing can be easily carried out by data management software (separately sold).
- A wide range of vibration levels can be easily measured and operability is enhanced by using the tripod stand.

Operating button easy to handle

Large-scale screen easy to read

Dimensions of main body
85(W)×220(H)×48(D)
Weight: Approximately 350g



Specifications of sensor

Main body	Three directional acceleration pickup for public nuisance pickup with built-in pre-amplifier
Structure	Waterproof
Model	7833
Sensitivity	100 mV(/m/s ²)
Transverse sensitivity	5% or less
Frequency characteristic	1~200 Hz
Temperature range	-10~50°C
Dimension, weight	φ70×45 mm, Approximately 300 g



Calibration adjustor
AC output
DC output
Power switch
External power
I/O terminal

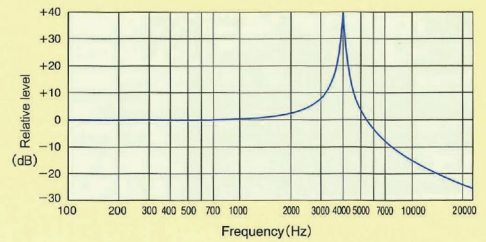


Acceleration pickup (three directional)

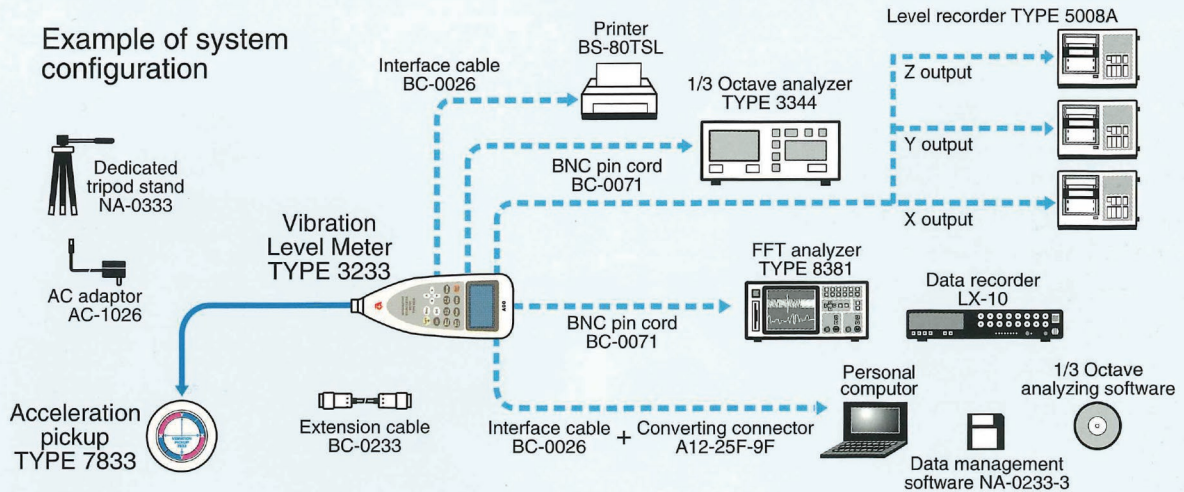
Option

- AC adaptor.....AC-1026
- Extension cable(5~10m).....BC-0233
- Output cable.....BC-0073
- Interface cable.....BC-0026
- BC-0026PC
- Data management software.....NA-0233-3
- Transformation connector.....A12-25F-9F

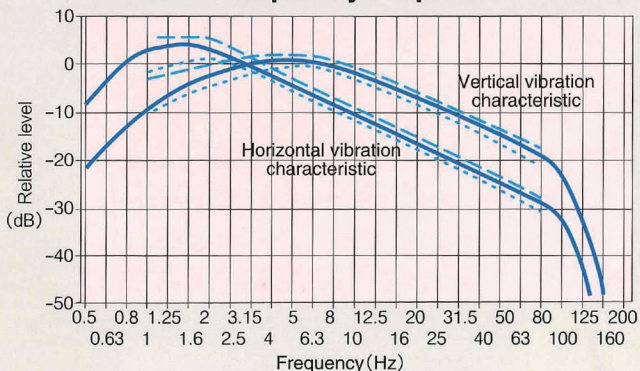
Acceleration pickup frequency characteristic



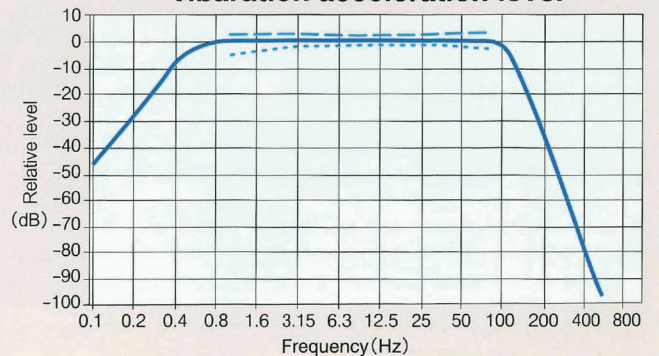
Example of system configuration



Frequency response



Flat characteristic for measuring vibration acceleration level



Vibration Level Meter Specifications

Standard applied	Measuring law JIS C 1510-1995 (Japan)
Measuring functions	
Vibration level	Lv
Vibration acceleration level	Lva
Power average	Leq
Maximum value	Lmax
Minimum value	Lmin
Percentile level	Lx (Five values arbitrarily selected)
Measuring time	10 seconds, 1,5, 10, 15, 30 minutes, 1, 8, 12, 24 hours Manual Longest measuring time: 199 hours 59 minutes 59 seconds
Measuring level	30~120 dB
Self-noise	Not larger than 30 dB
Linearity range	75 dB
Level range switching	2 stage switching by 20 dB step 30~90 dB 50~110 dB
Frequency range	1~80 Hz
Frequency correcting circuit	Vertical characteristic, horizontal characteristic, and flat characteristic
Effective value detecting circuit	Real effective value detecting circuit (digital computing scheme)
Dynamic characteristic	0.63 second
Calibration	Electrical calibration by built-in oscillator (sinusoidal wave of 31.5 Hz)
Sampling period	2 ms (Leq) 64 ms (Lmax, Lmin, Lx)
Computing	Power average (Leq) Computing mean square within measuring time in three directions simultaneously. Percentile level (Lx) Computing L5, L10, L50, L90 and L95 in three directions simultaneously based on cumulative frequency distribution. Maximum, minimum value (Lmax, Lmin) Computing maximum and minimum values within measuring time in three directions simultaneously
Pause function	General pause function

Displayer	Liquid crystal displayer (128×64 dots) with backlight
Digital display	Displayed in numerals: Displayed in 4 digits Displaying cycle: 1 second
Bar display	Displaying cycle Approximately: 64 ms
Alarm display	Over: Overload, displayed in +10 dB from scale upper limit Under: Excessively faint signal, displayed in -0.6 dB from scale lower limit Remaining battery amount: Displayed in 4 stages Clock: Year, Month, Date, Hour, Minute, Second
Output terminal	Independent output in 3 directions respectively
AC output	Output voltage: 1 Vrms (full scale) Output resistance: 600 Ω Load resistance: Not less than 10K Ω
DC output	Output voltage: 2.5V (full scale) 0.25V/10 dB Output resistance: 50 Ω Load resistance: Not less than 10K Ω
I/O terminal	Control of vibration meter and data output by computer (direct output to computer) Interface RS-232C (asynchronous)
Battery	AA batteries four or AC adaptor Battery life: Alkali battery, approximately 20 hours (Manganese battery, approximately 11 hours) Battery life is approximately 1/3 the above when the backlight lights
Operating temperature range	-10~50°C 30%~90%RH (no condensation)
Weight	Approximately 350g including batteries
Configuration	Main body TYPE 3233 1 Vibration pickup TYPE 7833 (Three directional) 1 Cable (3m) BC-0233 1 BNC pin cord BC-0071 1 AA batteries 4 Housing case 1



Head office and Sales office

85-1 Otsuka, Hachioji-shi, Tokyo 192-0352
TEL: 81-426-76-4661 FAX: 81-426-76-5333

Plant and technology research laboratory

1-8 Oaza Kamamuta, Takaharu-cho, Nishimorokata-gun, Miyazaki 889-4414
TEL: 81-984-42-4499 FAX: 81-984-42-0344

ACO CO., LTD. <http://www.aco-japan.co.jp/>