

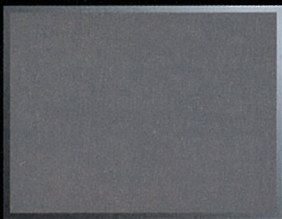


**V**IBRATION



**I**m  
**m**asuring  
Instruments

*General Catalog*



**SHOWA SOKKI**

# DIGI-VIBRO MODEL-1332B

- Enables practical and speedy vibration measurement with simple operation.
- Compliant with JIS B 0907, the standard for vibration severity measurement instruments.
- Usable for a wide range of applications, including daily inspection of equipment and devices, product development design, and product shipment inspections.
- The set includes the detector, magnet, and everything needed for measurement. Comes with inspection log.

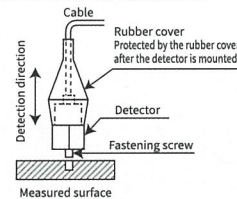


## Compact and light digital display vibrometers

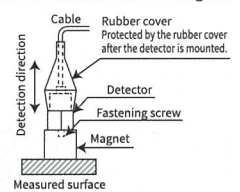
### Vibration detection method

DIGI-VIBRO can measure vibration by just pressing the detector against the subject, but the magnet and contact pin accessories enable various other measurement methods.

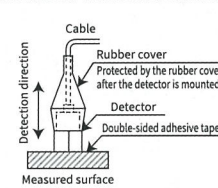
Fasten the detector with a screw



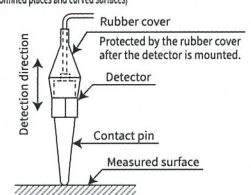
Fasten the detector with a magnet.



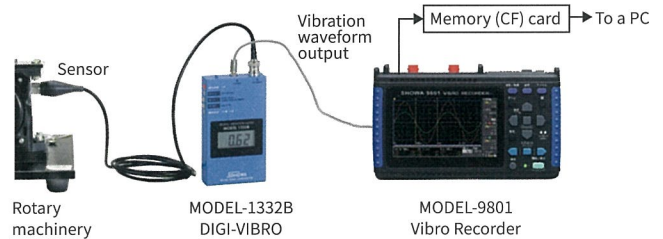
Fasten the detector with double-sided tape.



Press the detector against the measured surface using the contact pin.  
(Useful for confined places and curved surfaces)



### Connection to a recorder or PC



### Vibration severity JIS B 0906(ISO 10816-1)

Rms value of vibration velocity (mm/s)	Class 1	Class2	Class 3	Class 4
0.71mm/s	A	A	A	A
1.12mm/s	B	1.12mm/s	A	A
1.8mm/s	B	B	B	A
2.8mm/s	C	2.8mm/s	B	B
4.5mm/s	C	C	C	B
7.1mm/s	D	7.1mm/s	C	C
11.2mm/s	D	D	D	C
18mm/s	D	D	D	D

A: Excellent  
B: Good  
C: Usable  
D: Not usable

### Machine group

Class 1	Engines and machinery built in as components in an overall configuration (general-purpose motorized machinery up to 15kW)
Class 2	Medium-sized machines without special footings (motors of 15-75kW), and engines and machines installed on robust footings (up to 300kW).
Class 3	Large motors or large rotary machinery installed on rigid footings.
Class 4	Large motors or large rotary machinery installed on footings of relatively low stiffness (turbo generator sets and gas turbines etc. with output of 10MW or more)

### Specifications

Acceleration measurement range	Hi(Peak) 0.1 ~ 199.9m/s <sup>2</sup> /Lo(Peak) 0.01 ~ 19.99m/s <sup>2</sup>
Velocity measurement range	Hi(RMS) 0.1 ~ 199.9mm/s/Lo(RMS) 0.01 ~ 19.99mm/s
Displacement measurement range	Hi(P-P) 0.01 ~ 19.99mm/Lo(P-P) 0.001 ~ 1.999mm
Measurement precision	Acceleration ±3%, ±1 digit 80Hz, 1/2FS Velocity ±5%, ±1 digit 23±5°C Displacement ±5%, ±1 digit
Temperature range	Detector part: -20 - 110°C, body: -10 - 50°C
AC output	±2V (full scale)
Power supply	LR6 (AA) alkaline batteries x2, at least 30 hours continuous operation
Dimensions and weight (body)	75(W)×130(H)×24(D) mm, approx. 200g
Content of standard configuration	MODEL-1332B body, MODEL-2304A piezoelectric acceleration detector, LNC-3F-1.5L low-noise cable, LC-90 contact pin, MG-1 magnet, alkaline batteries, carrying case, inspection log

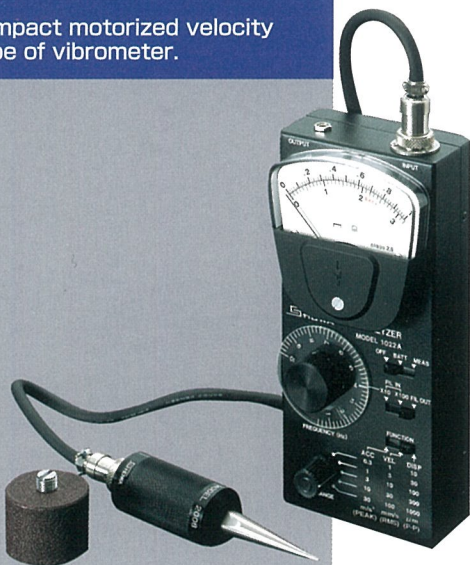
### Optional type specifications

Model	High-input type MODEL-1332B-01H	High-sensitivity type MODEL-1332B-01L	Lightweight sensor type MODEL-1332B-00F
Measurement range	0.1~1999m/s(2 Peak) 0.1~1999mm/s(RMS) 0.001~19.99mm(P-P)	0.001~19.99m/s(2 Peak) 0.001~19.99mm/s(RMS) 0.1~1999μm(P-P)	* Detectors are the 1g lightweight type. Measurement range is the same as the standard configuration.

Mini Vibro

# MODEL-1022A

- Because this is an analog meter, it gives stable readout of intensely variable vibrations, with low oscillation.
- With a built-in frequency analysis filter, it can read vibration components of rotation speed only.
- Compliant with JIS B 0907, the standard for vibration severity measurement instruments.
- This is a compact motorized velocity detector type of vibrometer.


*High-function compact analog vibrometer*

## ■ Specifications

Acceleration measurement range	0.3, 1.3, 10, 30m/s <sup>2</sup> (Peak)/ full scale
Velocity measurement range	1, 3, 10, 30, 100mm/s (RMS)/ full scale
Displacement measurement range	10, 30, 100, 300, 1000 μm (P-P)/ full scale
Frequency range	10 ~ 1000Hz
Analysis frequencies	10 ~ 1000Hz Q=10
AC output	±1V/ full scale
Accuracy	3% (80Hz sine wave, 100 μm (P-P))
Temperature range in use	-10°C ~ +50°C
Power supply (dry batteries)	Prismatic cells in 6P configuration 6F22(9V) x1, at least 24 hours of continuous operation
Dimensions and weight	Body (W)85×(H)190×(D)55mm, 750g Detector (H)72×(Dia)30mm, 140g Contact pin (L)55mm, 20g
Standard configuration	Body 1022A, MODEL-2008 motorized velocity detector CA2411-1 detector cable CA1311-1 output cable Portable aluminum case, 6P prismatic cell type
Options	MG-2 magnet

Portable Vibration Calibrator

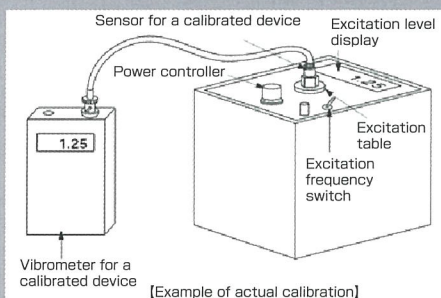
# MODEL-8100

- Applies excitation in acceleration and displacement modes.
- Adjustable excitation level.
- Ideal for checking sensitivity after long-term use and before measurements, etc.


*Designed for easy calibration of sensors and vibrometers*

## ■ Specifications

Excitation force	Maximum 9.8N
Maximum amplitude	5mm(P-P)
Acceleration range	0~199.9m/s <sup>2</sup> (Peak)
Displacement range	0~1.999mm(P-P)
Accuracy	Within 3% (80Hz, 10m/s <sup>2</sup> , 25°C)
Excitation frequencies	80Hz, 500Hz switchable Signal inputs from external function generators etc. can also be used. (5 - 5kHz)
Excitation table	φ25mm, holes tapped for M6 P=1 screws
Output	AC±2V/ full scale
Temperature range	-20°C~50°C
Power supply	Within AC100V±10V 50/60Hz 1A
Dimensions and weight	116 (W) × 199 (H) × 199 (D) mm, approx. 4.2kg
Options	Excitation table φ25mm, holes tapped for M5 screws Excitation table φ25mm, holes tapped for 10-32UNF screws



## Vibro Converter MODEL-2502

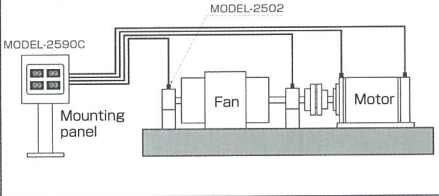
- Choose between the acceleration type, velocity type, and displacement type.
- Convenient 4-20 mA output type. Usable with long-distance wiring.
- For vibration monitoring for pumps, blowers, and all other kinds of rotary machinery.



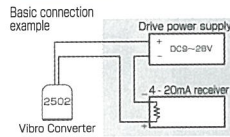
### Applications

- For simple, low-cost vibration monitoring systems
- For building into rotary devices such as motors, pumps, and blowers
- As a vibration detector for automatic testing systems
- As a simple dedicated vibrometer
- For equipment diagnostics in construction equipment and chemical and manufacturing plants
- For other vibration measurement and monitoring

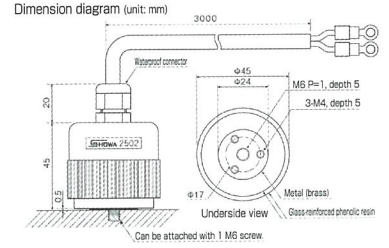
Example 1: Fan vibration monitoring



## Delivering simple, low-cost vibration monitoring



Our 2590B digital monitor includes this portion, as well as a warning circuit.



### Specifications

Measurement mode	Acceleration	Velocity	Displacement	Displacement
Model	2502-01	2502-02	2502-03	2502-03H
Full scale range	100m/s <sup>2</sup> Peak	50mm/sRMS	200 μm (P-P)	2mm (P-P)
Frequency range	5 ~ 1,000Hz	10 ~ 1,000Hz	10 ~ 500Hz	10 ~ 500Hz
Measurement range	1 - 110% of full scale			
Output	DC4-20mA/0- full scale			
Linearity	Within 1% of full scale			
Accuracy	Within 5% (80Hz, 1/2 full scale, 20°C)			
Drive power supply	DC9 ~ 28V			
Temperature range	-20 ~ 80°C			
Protective structure	IP64			
Vibration resistance	Vibration 200m/s <sup>2</sup> , shock 1,000m/s <sup>2</sup>			
Insulation resistance	100M Ω DC500V (terminal to casing)			
Withstand voltage	AC1,500V, 1 minute (terminal to casing)			
Output cable	3m, direct from unit, crimp terminals at end			
External dimensions and weight	φ 45×45(H)mm, 105g (not including cables)			
Material	Glass-reinforced phenolic resin			
Mounting	M6 screws			
Options	Extension cable CA02743-XXm (Including cost of attaching the dedicated connector to the body) MG-6 magnet for mounting			

## Digital monitor MODEL-2590C

- A digital monitor which displays signals of 4-20mA with a scaling display.
- Incorporates an alarm circuit with 2 upper limit values, AL1 and AL2, and a delay timer.
- Combines with MODEL-2502 to configure a simple, low-cost vibration monitoring system.



## Digital display monitor with alarm function

### Specifications

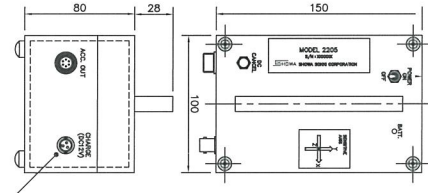
Input signal	4-20mA
Analog output	4-20mA
Input resistance	10 Ω
Display	Settable to between 0 and the desired full scale value
Display unit	5-digit 7-segment red LED display
Display cycle	Settable to 0.1-5s, default is 1s
Power supply for driving external devices	DC24V, 100mA Max.
Alarm settings	The two upper limit values, AL1 and AL2, can be set to any level, Automatic reset or self-hold possible. Delay setting: Settable to 0.1-99.9s, default is 5s
Alarm relay	Each 1C contact, rated AC250V 5A, DC30V 5A Max.
Panel face protective structure	IP65 (when used with rubber seals)
Temperature in use	0 ~ 50°C
Dimensions and weight	96(W)×48(H)×92(D)mm approx. 300g
Power supply	AC85 ~ 264V 50/60Hz 15VA Max.
Options	① Analog output change Output types: 4-20mA, 0 - 5V, 1 - 5V, 0 - 10V ② DC24V power supply type

## Triaxial micro vibration detector MODEL-2205B

- Measures triaxial micro vibrations with high precision, with a built-in triaxial servo-type detector.
- Measurement mode can be switched to acceleration, velocity, and displacement.
- Ideal for measurement of microtremors in structures, and for floor vibration measurement in semiconductor factories.



*Triaxial vibrometer for measurement of low-frequency micro vibration*



Charger connector  
(Also serves to charge the internal battery)

### Usage examples



**Installation floor vibration measurement for precision machining tools**  
Floor vibration measurement in precision machining factories where small vibrations can affect equipment.



**Bridge vibration measurement**  
Bridge vibration measurement to analyze bridge vibration characteristics.



**Seismic resistance of school buildings**  
The seismic resistance strength of school buildings can be studied using microtremor measurement data for each floor.



**Survey of ruins**  
Microtremor measurement to analyze the vibration characteristics of ruins and other structures.

### Specifications

Detector	Triaxial servo-type accelerometer, resolution: Not exceeding 1 $\mu$ G
Output sensitivity	Acceleration: 5V/10m/s <sup>2</sup> Velocity: 5V/10mm/s Displacement: 5V/100 $\mu$ m
Output terminals	RO1 type 6 pin connector
Frequency range	DC acceleration: DC-100Hz ( $\pm$ 10%) AC acceleration: 0.5-100Hz ( $\pm$ 10%) Velocity: 1-100Hz ( $\pm$ 10%) Displacement: 1-100Hz ( $\pm$ 10%)
Low-pass filter	200Hz
Accuracy	$\pm$ 3% (16Hz, 5m/s <sup>2</sup> , room temperature)
Noise	DC acceleration: Up to 0.001m/s <sup>2</sup> AC acceleration/ velocity/ displacement: Up to 2 $\mu$ G (When using internal battery)
Shock resistance	1,000m/s <sup>2</sup> .5ms
DC cancel function	Simultaneously cancel all three axes to zero with the DC cancel button.
Temperature range	-10 ~ 60°C
Power supply	Rechargeable sealed lead battery, usable for at least 5 hours continuously.
Battery alarm	Green LED goes out when battery level is low.
Dimensions and weight	See the external diagram, approx. 2kg
Options	MODEL-2205-80 Charger MODEL-2205-81 AC Adapter MODEL-2205-91 Output Cable (RO1 at body end, BNCx3 at output end)

## Vibration monitor unit MODEL-2205-12

- This monitor unit is used in combination with our MODEL-2205B.
- It has an amplification function to enable measurement with even higher sensitivity.
- Vibration values can be checked with the analog meter.



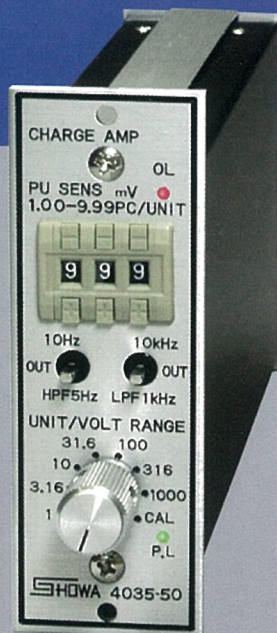
*A handy monitor unit that's convenient for combinations*

### Specifications

Compatible detectors	MODEL-2205B
Full scale range	Acceleration: 0.1/0.316/1/3.16/10 m/s <sup>2</sup> (Peak) Velocity: 0.1/0.316/1/3.16/10mm/s (Peak) Displacement: 1/3.16/10/31.6/100 $\mu$ m (P-P)
Output terminals	BNC
Power supply	6F22(9V) cells x2, at least 40 hours continuous operation with alkaline type
Dimensions and weight	96(W) x 155(H) x 48(D)mm, approx. 700g
Standard configuration	MODEL-2205-12 Monitor unit CA6811-1.5 Monitor cable

# Charge amplifier MODEL-4035-50

- Dynamic range is at least 100dB.
- Ideal for high-precision measurement.
- Supports charge output type and built-in amplifier type sensors.



Usable as single channel with an AC adapter, or with multiple channels with a power supply unit.

## Configuration

Single channel configuration example  
 Charge amplifier: MODEL-4035-50 x1 unit  
 AC adapter: MODEL-4035-91 x1 unit

Four-channel configuration example  
 Charge amplifier: MODEL-4035-50 x4 units  
 Power supply unit: MODEL-4035-10M x1 unit  
 4 channel housing case: MODEL-4035-21 x1 unit

## General-purpose charge amplifier



### 仕様

Standard configuration	MODEL-4035-50
Input terminals	Insulated BNC connector
Compatible detectors	Charge output type and built-in amplifier type detectors
Rated current drive power supply	+24V, 3mA rated current (when using a built-in amplifier type detector).
Frequency properties	0.5Hz ~ 100kHz...+1, -3dB 1Hz~50kHz...±1dB 5Hz~20kHz...±0.5dB
Full scale sensitivity	1V/1pC(mV) ~ 10,000pC(mV)
Sensor sensitivity	Measurement range
	0.100~0.999pC(mV) 10,30,100,3,000,1,000,3,000,10,000 UNIT/V 1.00~9.99pC(mV) 1,3,10,30,100,300,1,000 UNIT/V* 10.0~99.9pC(mV) 0.1,0.3,1,3,10,30,100 UNIT/V 100~999pC(mV) 0.01,0.03,0.1,0.3,1,3,10 UNIT/V
Output	AC output (BNC connector) Maximum output voltage ± 10V (± 1V/FS) Note: Maximum is ±3.16V with 300 range, and ±1V with 1,000 range DC output (DSUB connector) Maximum output voltage + 10V (+ 1V/FS) Note: Maximum is +3.16V with 300 range, and +1V with 1,000 range
Noise level (typ.)	Full band: ① The input value converted from [0.008pCrms+ 0.005pCrms per 1,000pF of input capacitance], or ② 5mV (RMS), whichever is larger. Narrow band: 0.5Hz, 100pC/V → 10μV/√Hz 20 - 1,000Hz, 100pC/V → 1μV Full band (mV): ① The input value converted from 10μV rms, or ② 5mV rms, whichever is larger.
Accuracy	Within 1.5% of full range when not exceeding 1,000Hz and input capacitance 1,000pF
Filter	LPF: 1,000Hz, 10,000Hz(-12dB/OCT) HPF: 3Hz, 10Hz(-12dB/OCT)
Temperature and humidity ranges	Not exceeding -20°C - +60°C, 90%RH
Power supply	DC±9V - ±15V, or AC100 - 240V from an AC adapter The power supply unit can be used when built into a multichannel housing case. Power supply unit: MODEL-4035-10M (AC100V, can drive up to 10 channels)
Dimensions and weight	34.5(W)×99(H)×152(D)mm, approx. 350g

### Optional types

High-sensitivity type	MODEL-4035-51
Full scale sensitivity	1V/0.1pC(mV) ~ 1,000pC(mV)
Sensor sensitivity	Measurement range
	0.100~0.999pC(mV) 1,3,10,30,100,300,1,000 UNIT/V* 1.00 ~ 9.99pC(mV) 0.1,0.3,1,3,10,30,100 UNIT/V 10.0 ~ 99.9pC(mV) 0.01,0.03,0.1,0.3,1,3,10 UNIT/V
High-input type	MODEL-4035-52
Full scale sensitivity	1V/10pC(mV) ~ 100,000pC(mV)
Sensor sensitivity	Measurement range
	10.0 ~ 99.9pC(mV) 1,3,10,30,100,300,1,000 UNIT/V* 1.00~9.99pC(mV) 10,30,100,300,1,000,3,000,10,000 UNIT/V 0.100~0.999pC(mV) 100,300,1,000,3,000,10,000,30,000,100,000 UNIT/V
Other options	MODEL-4035-91 AC adapter MODEL-4035-10M power supply unit MODEL-4001-20 3CH housing case MODEL-4035-21 4CH housing case MODEL-4035-23 10CH housing case MODEL-4035-30 blank panel The AC adapter is only for single channel drive. Use a power supply unit and a housing case for multiple channels.

The panel face shows the display range. Other ranges are used with conversion.

# Sensor amplifier for PLC MODEL-9401

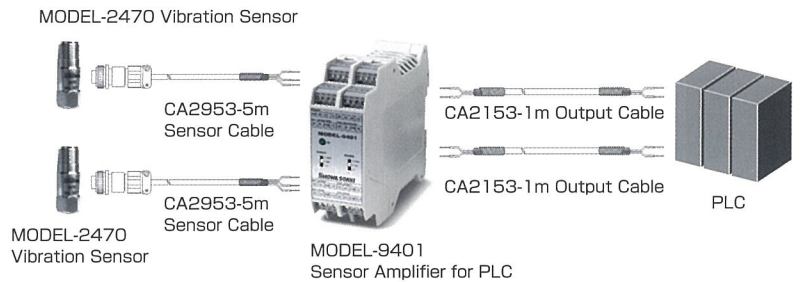
- Connectable to high-speed input units from major PLC manufacturers.
- Broadly applicable to diverse applications and environments.
- A vibration measurement system which combines low cost with high precision.



Ideal for vibration monitoring and analysis by PLC

## Basic system configuration example

This product can be combined with various vibration sensors to suit diverse applications and environments, and provides real-time high-precision waveform information, ideal for monitoring and analysis by PLC etc.



## Specifications

Input Specifications	
No. of input channels	2 channels
Input terminals	Terminal panel (3.8mm pitch)
Compatible detectors	Built-in pre-amplifier type
Output specifications (AC out)	
No. of output channels	2 channels
Output terminals	Terminal panel (3.8mm pitch)
Output signal	Maximum output $\pm 10V$
Frequency response properties	1Hz~20kHz( $\pm 1.0dB$ ) 0.5Hz ~ 20kHz(+1.0dB, -3.0dB)
Precision	$\pm 2\%$ (23°C $\pm 5^\circ C$ , 1 kHz/1 V (peak) input, Range x10)
General specification	
Power supply	DC18 ~ 36V
Temperature and humidity ranges	Not exceeding -10 ~ +60°C, 90%RH (no condensation)
Weight	210g (not including sensors and cables)
Optional specification	
With DC output, 2CH	MODEL-9401-04 DC output (maximum 0.707V)
2CH (frequency changing type)	MODEL-9401-06 Frequency response properties 1Hz~10kHz

Each model can also be made with 1 channel. Please contact us for details.

## 2CH system configuration

Product name	Model (Qty.)
Vibration sensor	MODEL-2470 (2)
Sensor cable, 5m	CA2953-5m (2)
Sensor amplifier for PLC	MODEL-9401-02 (1)
Output cable, 1m	CA2153-1m (2)

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