

# CardVibro Neo

## Model : VM-2004Neo


CardVibro Neo, VM-2004Neo succeeds the excellent basic features of CardVibro VM-2001 and is improved to be used with Pocket PC.



### Features

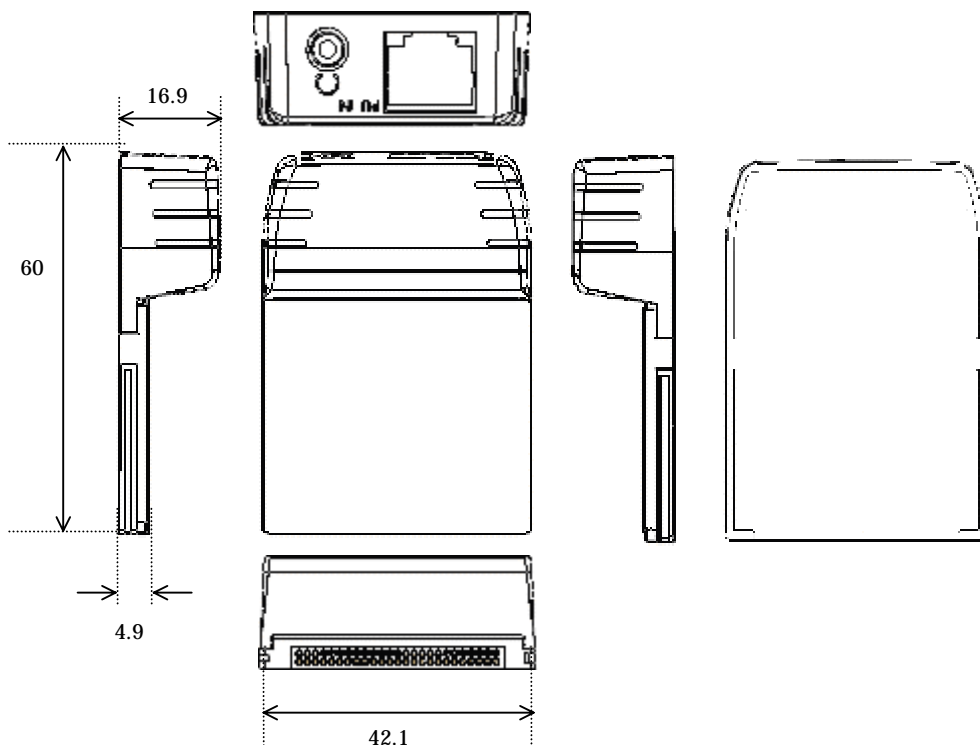
- Conforms to the CF card expansion slot (Type )
  - Highly expandable
  - Versatile – Provides vibration measurements and all other PocketPC functions.
- Compact and light weight
- Simultaneous measurement of overall vibration level, multi-mode
- FFT spectrum analysis
- Abnormal vibration analysis
- Time waveform analysis
- Data analysis and data control available when data is stored in common host computer
  - Saved data is transferred to host computer using ActiveSync
- Abnormal judgment function by vibration severity (ISO-10816)
- Abnormal bearing judgment function by enveloped acceleration(E3) mode
- Earphone function allows audio analysis
- Low to high frequency measurements
  - Use with accelerometer, electro-dynamic velocity pickup, (Piezo-resistive: Planning)
  - Selects pickup best suited for measurement type
- Vibration terminology dictionary included

**General Specificaitons**

| Item   | Specifications   |
|--|--|
| Suiting PDA  | Conforms to the PocketPC<br>Indispensable specification<br>OS:Microsoft PocketPC 2002 (WindowsCE3.0)<br>Processor: ARM Processor<br>Interface:Compact Flash TYPE II Slot 3.3V only<br>Recommendation specification<br>Processor:PXA255 400MHz(or more than it)<br>Memory(RAM):64MB or more |
| Interface with PocketPC  | Compact Flash TYPE II Slot 3.3V only   |
| Power supply   | +3.3V (It is supplied from PocketPC.)  |
| Current  | Standby :44mA<br>Under measurement : 48mA  |
| Pickup Input (PU IN)   | AC voltage signal Max $\pm 2.5V$<br>Input Terminal: 8-pin modular jack(RJ-45) (*1)   |
| Raw Waveform Output (PU OUT)  | AC voltage signal Max $\pm 2.5V$<br>Output Terminal: 2.5 mini-jack   |
| Sampling Frequency   | MAX. 76.8kHz (Changes according to Mode.)<br>76.8kHz/38.4kHz   |
| Aliasing Filter  | 20kHz/2kHz (Changes according to Mode and Sampling Frequency.)   |
| A/D  | 16bit  |
| Temperature Range  | 0 ~ + 45° C  |
| Humidity Range   | 30 ~ 90% RH not due condensation   |
| Weight   | 25 g approx. (Only the card)   |
| Dimensions   | 60.0x42.1x16.9 (mm), See below figure  |
| Shape  | Conforms to CF Card TYPE II ,Card Type, See next page  |
| Color  | Black  |

\*1: ICP type pre-amp built-in accelerometer is not connected.  
When accelerometer (charge output) is used, connect via charge amplifier.

**Dimensions & Outside View**



Measurement Specifications

\* When VP-2001A is used

| Item                                   | Specifications  |
|--|---|
| Frequency Range                        |   |
| A                                      | Acceleration 10~15kHz (*1)  |
| V                                      | Velocity 10~1000Hz  |
| D                                      | Displacement 10~150Hz   |
| E1                                     | Envelope Detection 5~100Hz  |
| E2                                     | Envelope Detection 50~1kHz  |
| E3                                     | Envelope Detection 500~10kHz  |
| E4                                     | Envelope Detection 5k~20kHz   |
| Sampling Frequency                     | A,E3,E4: 76.8 kHz<br>E1,E2,V,D: 38.4 kHz  |
| Aliasing Filter                        | A, E3, E4: 20kHz<br>E1, E2, V, D: 2kHz  |
| Range                                  |   |
| A,E1,E2,E3,E4                          | 0~ 1G (x100 range)<br>0~ 5G (x20 range)<br>0~ 20G (x5 range)<br>0~100G (x1 range)   |
| V                                      | 0~ 10mm/s (x100 range)<br>0~ 50 mm/s (x20 range)<br>0~ 200 mm/s (x5 range)<br>0~1000 mm/s (x1 range)  |
| D                                      | 0~ 50 μ m (x100 range)<br>0~ 250 μ m (x20 range)<br>0~1000 μ m (x5 range)<br>0~5000 μ m (x1 range)  |
| Overall Value Simultaneous measurement | Simultaneous measurement of overall vibration level, multi-mode (A, V, D, E1~E4)<br>Range = Auto<br>Measuring time = 0.1s/0.5s/1.0s<br>Measurement Data = RMS value, PEAK value, C.F value<br>Measured value display digit :<br>Significant figure 4digit<br>Ex.9999/999.9/99.99/9.999<br>Status display (under measurement, measurement end) |
| Judgment                               | Abnormal judgment by vibration severity standard (ISO-10816 standard)<br>Abnormal bearing judgment by Enveloped Acceleration E3 mode  |

\*1: The upper bound frequency can be changed by Utility Menu's A Filter.

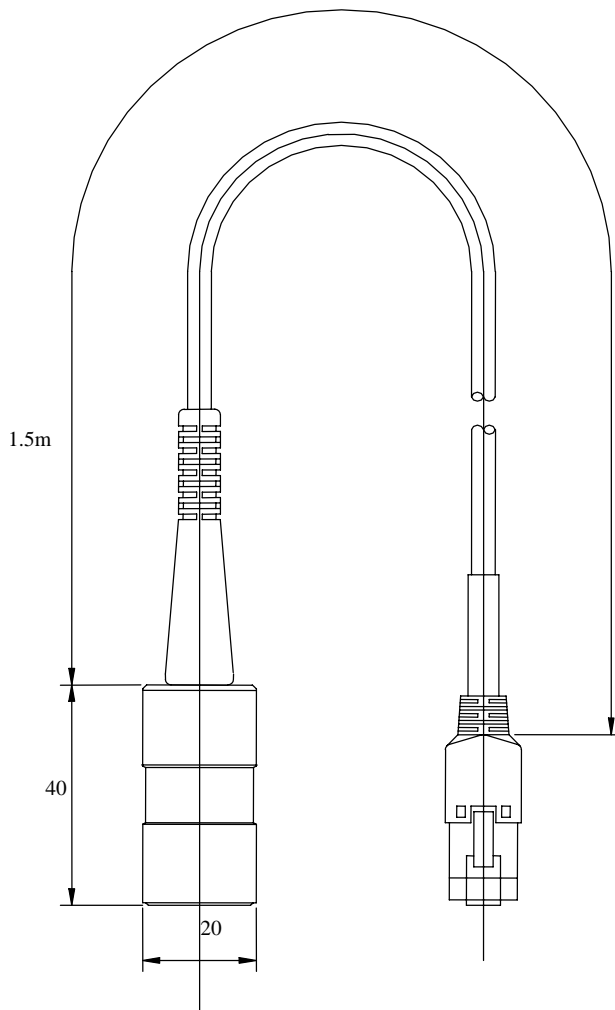
# IMV CORPORATION

| Item                   | Specifications  |
|------------------------|---|
| FFT, Waveform Analysis | <p>Mode = A/V/D/E1/E2/E3/E4<br/>           Range = Fixed/Auto<br/>           FFT measurement condition<br/>           Analysis frequency : Selectable list<br/>             A :250/500/1k/2k/5k/10k/15k/30k Hz<br/>             V :250/500/1k Hz<br/>             D :250/500 Hz<br/>             E1:50 Hz<br/>             E2:250/500 Hz<br/>             E3:250/500/1k/2k/5k Hz<br/>             E4:250/500/1k/2k/5k/10k Hz<br/>           Lines of Resolution : 1600/800/400<br/>           Averaging : Stable/ Exponential/ Peak Hold<br/>                       1/2/4/8 times<br/>           Window: Hanning/Rectangular/Flat Top<br/>           Measured Type : Normal/Recorder/Post Process<br/>           Normal type:<br/>             Recording time of waveform data is determined by FFT measurement condition (analysis frequency, line number). Executes the measurement for average cycle in FFT and records the waveform for frame time (final frame time.)<br/>           Recorder type:<br/>             Records the waveform of specified time by Rec.time. Average cycle of FFT is 1-time. (but it is impossible to specify the FFT measurement condition which the specified Rec.time is less than frame time. )<br/>             Rec.Time:1/2/5/10 sec<br/>           PostProcess type:<br/>             Calculates from the just before raw waveform data (temporary saved data).<br/>             Average cycle of FFT is 1-time.<br/>             Range setting and trigger function is unavailable.<br/>           Trigger Function<br/>             Trigger: Input signal trigger<br/>             Trigger level :0/10/20/30/40/50/60/70/80/90 %<br/>                       Specify % of the used range<br/>             Delay :0/10/20/30/40/50 %<br/>                       Specify % of the specified waveform measurement time<br/>           Status Display: During measurement, Measurement end</p> |
| Graph Display          | <p>FFT graph<br/>             Dominant frequency component highest High5 display<br/>             Cursor indication value display<br/>             Zoom scroll value display<br/>           Waveform graph<br/>             Cursor indication display<br/>             Zoom.scroll display</p>  |

**\* VP-2001A - Accelerometer**

| Item                        | Specifications                                    |
|-----------------------------|---|
| Detecting Method            | Pre-amp is built-in. Compression type, shear type |
| Power Supply                | $\pm 5$ VDC                                       |
| Voltage Sensitivity         | 20 mV/G   |
| Resonance Frequency         | 20 kHz approx.                                    |
| Frequency Range             | 3 ~ 10,000 Hz                                     |
| Max. Acceleration           | 500 m/s <sup>2</sup>                              |
| Max. Allowable Acceleration | 5000 m/s <sup>2</sup>                             |
| Max. Output Voltage         | $\pm 1$ V   |
| Output Impedance            | Below 100   |
| Used Temperature            | $\sim 20^{\circ} \sim 80^{\circ}$ C               |
| Material                    | SUS   |
| Weight                      | 60 g approx.                                      |
| Mounting Screw              | M6, P=1, depth 5, internal thread                 |
| Cable                       | Direct leading 4, 1.5 m                           |
| Connector                   | 8-pin modular plug                                |
| Dimensions                  | See below figure                                  |
| Structure                   | Dust-proof, spray-proof                           |

**Dimensions & Outside View**



\* When VP-2001V is used

| Item                                   | Specifications  |
|--|---|
| Frequency Range<br>V<br>D              | Velocity 10~1000Hz<br>Displacement 10~1000Hz  |
| Sampling Frequency                     | V, D: 38.4 kHz  |
| Aliasing Filter                        | V, D: 2kHz  |
| Range<br>V<br><br>D                    | 0~ 5mm/s (x100 Range)<br>0~ 25 mm/s (x 20 Range)<br>0~ 100 mm/s (x 5 Range)<br>0~ 500 mm/s (x 1 Range)<br>0~ 25 μ m (x100 Range)<br>0~ 125 μ m (x 20 Range)<br>0~ 500 μ m (x 5 Range)<br>0~2500 μ m (x 1 Range)   |
| Overall Value Simultaneous measurement | Simultaneous measurement of overall vibration level, multi-mode (V, D)<br>Range = Auto<br>Measuring time = 0.1s/0.5s/1.0s<br>Measurement Data = RMS value, PEAK value, C.F value<br>Measured value display digit: Significant figure 4digit<br>Ex.9999/999.9/99.99/9.999<br>Status display (under measurement, measurement end)   |
| Judgment                               | Abnormal judgment by vibration severity standard (ISO-10816 standard)   |
| FFT, Waveform Analysis                 | Mode = V/D<br>Range = Fixed/Auto<br>FFT measurement condition<br>Analysis frequency : Selectable list<br>V :250/500/1k Hz<br>D :250/500/1k Hz<br>Lines of Resolution : 1600/800/400<br>Averaging : Stable/ Exponential/ Peak Hold 1/2/4/8 times<br>Window: Hanning/Rectangular/Flat Top<br>Measured type: Normal/Recorder/Post Process<br>Normal type :<br>Recording time of waveform data is determined by FFT measurement condition (analysis frequency, line number). Executes the measurement for average cycle in FFT and records the waveform for frame time (final frame time.)<br>Recorder type:<br>Records the waveform of specified time by Rec.time. Average cycle of FFT is 1-time. (but it is impossible to specify the FFT measurement condition which the specified Rec.time is less than frame time. )<br>Rec.Time:1/2/5/10 sec<br>Post Process type:<br>Calculates from the just before raw waveform data (temporary saved data). Average cycle of FFT is 1-time.<br>Range setting and trigger function is unavailable.<br>Status Display: During measurement, Measurement end |
| Graph Display                          | FFT graph<br>Dominant frequency component highest High5 display<br>Cursor indication value display<br>Zoom scroll display<br>Waveform graph<br>Cursor indication value display<br>Zoom.scroll display   |

**\* VP-2001V - Velocity Sensor**

| Item                        | Specifications                   |
|-----------------------------|----------------------------------|
| Detecting Method            | Electro-dynamic velocity pickup  |
| Detecting Direction         | Horizontal or Vertical           |
| Voltage Sensitivity         | 4.0 [mV/(mm/s)]                  |
| Natural Frequency           | 14 Hz                            |
| Frequency Range             | 10 ~ 1000 Hz                     |
| Max. Tolerable Acceleration | 100 m/s <sup>2</sup>             |
| Max. Measuring Displacement | 1000 μmP-P                       |
| Usable Temperature          | -10~50 C                         |
| Material (case)             | SUS                              |
| Weight                      | 140 g approx.                    |
| Mounting Screw              | M6,P=1,depth, 5、 internal thread |
| Cable                       | Direct leading 4, 1.5 m          |
| Connector                   | 8-pin modular plug               |
| Dimensions                  | See below figure                 |
| Structure                   | Dust-proof, spray-proof          |

**Dimensions & Outside View**

