

V100 VIBRATION MONITOR

DIN 96

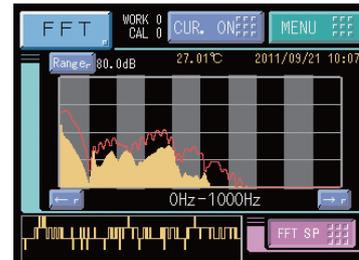


Judgment

- Measuring result is compared with upper/lower limit setting value, and judgment output is possible.

HH, HI, OK, LO, LL

- Input waveform frequency diagnosis function by FFT
Frequency changes in a vibrational input waveform can be easily monitored by FFT spectrum. Equipment abnormality can be detected by monitoring the frequency changes that cannot be judged from the level shift of the vibrational input waveform.



All in one measurement, judgment, and vibration records.

Measurement

- Extraction of vibration components through a bandpass filter (Eliminating unnecessary noise components from vibration waveform.)
- Elimination of noise components by a band elimination filter (Eliminating unique frequency components, such as inductive noise.)
- Vibration detect mode
Vibration value mode, Envelope mode, Peak value mode, RMS (root mean square) value mode, Crest factor mode, Form factor mode

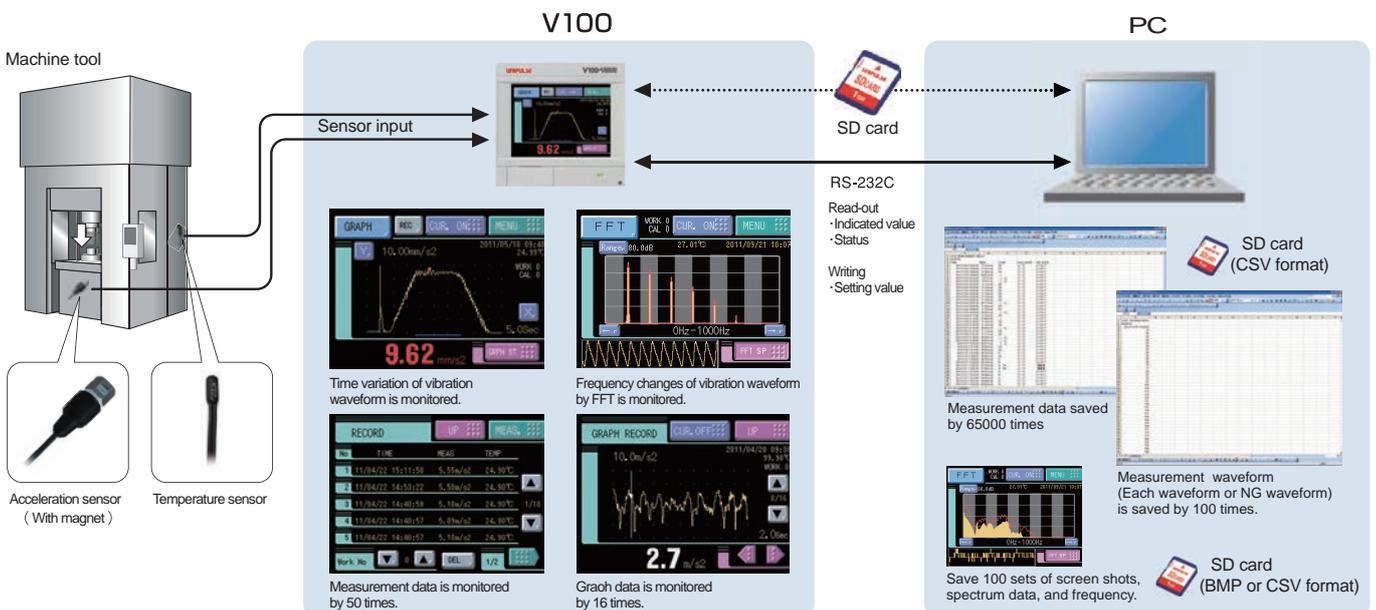
Measurement record

- Measurement data save: Internal memory
Measurement data saved by 50 work per batch.
Save data: Time/ Measurement value/ Unit/ Judgment result/ Vibration detection mode/ Hold mode/ Temperature
- Graph data save: Internal memory
Drawing data is saved by 16 work per batch.
- Measurement data save: SD card (CSV format)
Measurement data saved by 65000 data per batch.
- Measurement wave save: SD card (CSV format)
Input waveform (Each waveform or NG waveform) 100 times per batch.
- FFT display, save: SD card (BMP or CSV format)
Save 100 sets of screen shots, spectrum data, and frequency.

Application example

Vibration measurement of machine tool

- Facility management · Abnormal diagnosis
- Processing and setting condition
- Product quality judgement

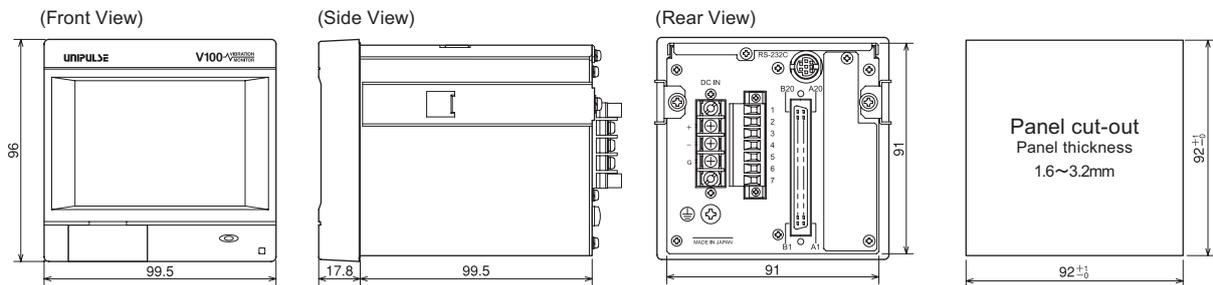


Specifications

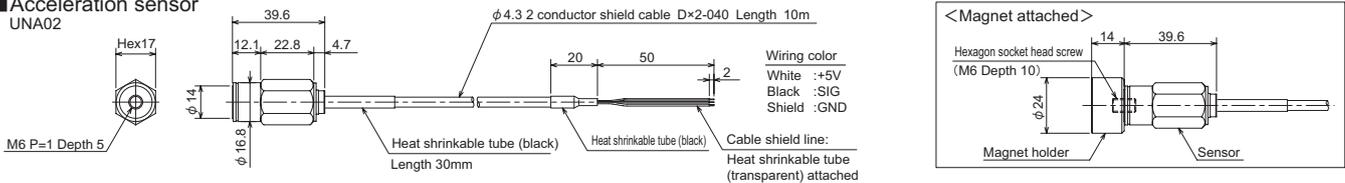
ANALOG	Sensor excitation Signal input range Analog filter A/D conversion Voltage output	+5V±10% Output current: Within 30mA ±150mV (Up to 3G can be measured when UNA02 is used.) First-order low-pass filter Cut-off frequency:30/ 100/ 1k Hz Speed: 2000 times/sec. Resolution: 24 bits (binary) 1/10000 (at 150mV input) When the input is 50mV, the output is approximately 1V. Load resistance 2kΩ or more
VIBRATION DIAGNOSIS	Vibration detect Vibration analysis(FFT)	Band pass filter: High-pass filter :1 to 500 Hz Low-pass filter :1 to 500 Hz (Second-order Butterworth digital filter) * However, HPF < LPF Judgment mode: Vib. Val, Envelope, Peak, RMS, Crest, Form * Peak, RMS, Crest, and Form are calculated at each half-wave. Due to half-wave processing, a delay of 100mSec occurs in each output, such as judgment. Also, half-wave processing can be performed at 10Hz or more. Hold mode: Sample, Peak, Valley, P-P, Average Comparison judgment: HH Limit, HI Limit, LO Limit, LL Limit Setting selection: 16 patterns (selectable by external input and communication) FFT Samp. Magnif.: 1 times, 2 times, 4 times, 8 times * Analyzed frequency unit [Hz] = 1000Hz / (FFT Samp. Magnif.×256) FFT Window: Rectang., Hanning, Hamming, Blackman Analysis mode : Vib. Val, Envelope FFT Average: 1 to 16 times (moving average at each frequency) Disp Range: 99.9dBmax. FFT Disp Mode: Continuation, Single
TEMPERATURE MEASUREMENT	Temperature measuring range	-10 to 90°C, Accuracy:±1.5°C, Resolution:0.01°C
RECORD	Recording medium Record data	SD card Wave data (up to 99.9 seconds; 100 files) Measurements result data (10 files for each work: 1 file ≐ 5MB, 65530 measurements) FFT disp data (100 file)
DISPLAY	Display Indicated value Decimal point Unit Number of display times	3.5-inch STN color LCD (320×240dot) four-digit ±9999 0/ 0.0/ 0.00/ 0.000 None, m/s ² , mm/s ² , m/s, mm/s, mm, μm, % Fixed at 3 times/sec.
OPERATION	Input unit	Analog type touch panel
EXTERNAL SIGNAL	External output (9) External input (11)	Comparison result (HH, HI, OK, LO, LL), Hold end (HOLD END), Normal operation (RUN), Graph plotting end (EVENT), SD card OK (SD CARD) Open collector output circuit (sink type plus common input equipment connectable) Rated voltage:DC30V, Rated current 30mA or less, Isolation:Photocoupler Hold control (T/H, SECTION), Graph control (GRAPH TRIG), FFT control (FFT TRIG), Work selection (WORK0 to WORK3), Calibration selection (CAL0, CAL1), Prohibit(LOCK) Voltage input circuit (plus common/minus common shared) ON voltage:DC12V or more, OFF voltage:DC3V or less Forward current:Approx. 5mA (at DC24V), Isolation:Photocoupler
INTERFACE		RS-232C Communication interface
GENERAL SPECIFICATIONS	Power source Power consumption Rush current Operating conditions Dimensions Weight	DC24V (±15%) 7W typ 2A, 10mSec (Typ: ordinary temperature, at cold-start time) Operation temperature: 0°C to +40°C Storage temperature: -20°C to +60°C Humidity: 85%RH or less (non-condensing) 99.5 (W)×96.0 (H)×117.3 (D) mm (excluding projected parts) Approx. 1.0kg
ATTACHMENTS		Operation manual×1, Control signal Input/Output connector×1, SD card×1, Acceleration sensor×1, Temperature sensor×1
ACCELERATION SENSOR		Model:UNA02, Pickup system:Shear type piezoelectric, Signal output sensitivity:5.0mV/(m/s ²) (±10%), Resonance frequency:Approx. 24kHz, Frequency band:3 to 10000Hz±3dB, Insulation resistance:10000MΩ or more, Maximum transverse sensitivity:5% or less, Maximum operating acceleration:400m/s ² , Maximum impact resistance:10000m/s ² or more, Output impedance:100Ω or less, Power supply voltage:DC+5V, Operating temperature range:-20 to +60°C, DC output voltage:+2.5V±0.3, Outer dimensions:17 (Hex) × 39.6 (H) mm (not including projections and cable), External case material:Stainless steel (SUS304), Main body mass: Approx. 48g (not including cable), Cable Length:10m (+5Vdc input line, Acceleration output line, GND line), 4.3 φ 2-core shielded cable (ETFE/soft fluorine resin) Magnet Attracting force :120N or more (in a vertical direction at ordinary temperature), Operating temperature range:-20 to +100°C, Mass:Approx. 44g, Magnet material:Samarium-cobalt magnet, External case material:SUS420J
TEMPERATURE SENSOR		Model:UNT5M, Nominal zero-power resistance:5kΩ±1%, B-constant:3324K±1%, Heat dissipation constant:Approx. 2.6mW/°C, Thermal time constant:Approx. 75 sec. (in air), Operating temperature range:-50 to +105°C, Outer dimensions:6 (W)×5 (H)×15 (D) mm (not including projections and cable), Cable length:5m

External dimension

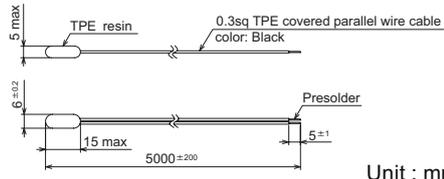
■ V100



■ Acceleration sensor UNA02



■ Temperature sensor UNT5M



Unit : mm

DTC1 : Case for V100 (with AC power supply)

