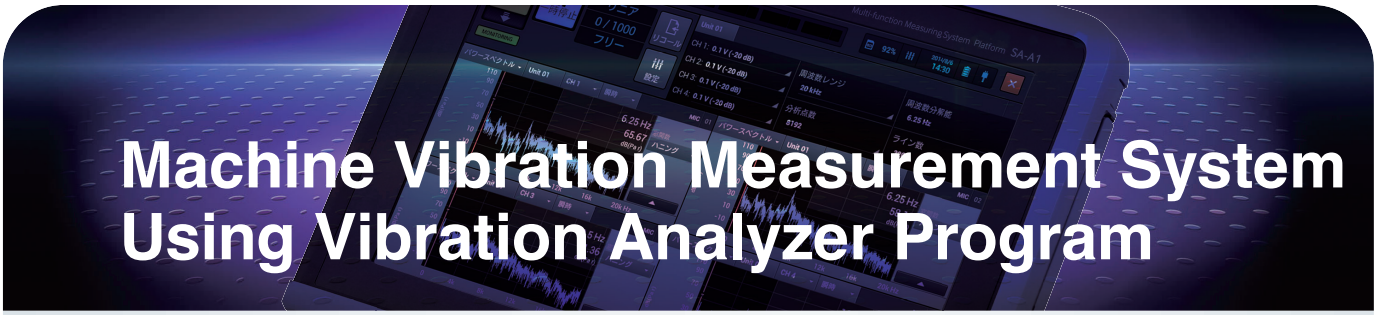
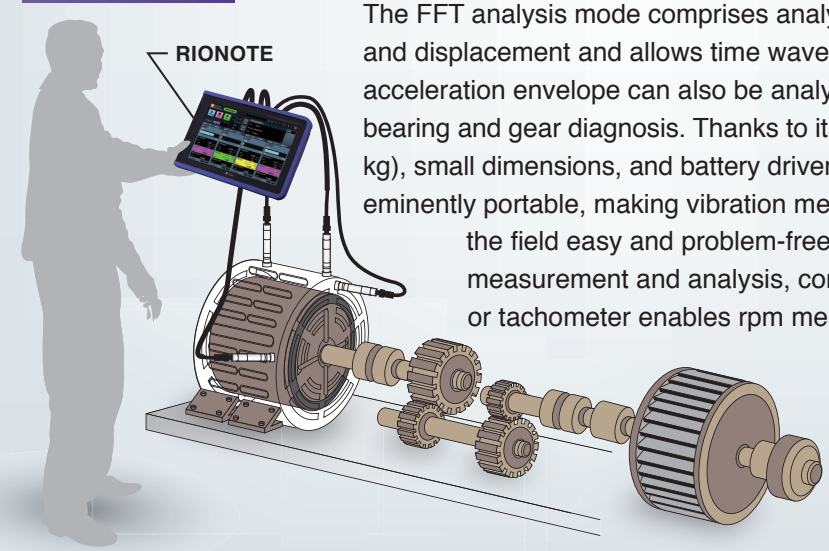


Machine Vibration Measurement System Using Vibration Analyzer Program

Installing the Vibration Analyzer Program SX-A1VA for the RIONOTE Multifunction Measurement System enables easy measurement of machine vibrations. The program offers a vibration meter mode and FFT mode, both specially designed for this purpose. Because the RIONOTE supports up to four input channels, simultaneous 3-axis measurement (such as for two horizontal axes and one vertical axis) or measurement at multiple locations can be easily realized. The measurement requires less time and enables more detailed diagnosis than with conventional methods.
In vibration meter mode, besides simultaneous measurement of acceleration, velocity, and displacement, it is also possible to continuously save instantaneous values (in 100 ms intervals) and record the vibration waveform. Other features include an absolute value evaluation function required for equipment diagnosis based on the threshold values as defined in the ISO 10816 series. The user can specify an evaluation standard for pass/fail classification of measurement results. It is also possible to periodically output measurement data for acceleration, velocity, and displacement together, and use spreadsheet software such as Excel to perform trend management of daily changes (relative value evaluation).
The FFT analysis mode comprises analysis of acceleration, velocity, and displacement and allows time waveform display. In addition, the acceleration envelope can also be analyzed, which is useful for bearing and gear diagnosis. Thanks to its light weight (only about 1.2 kg), small dimensions, and battery driven operation, the RIONOTE is eminently portable, making vibration measurement and analysis in the field easy and problem-free. Besides vibration measurement and analysis, connection of a rotation sensor or tachometer enables rpm measurement as well.

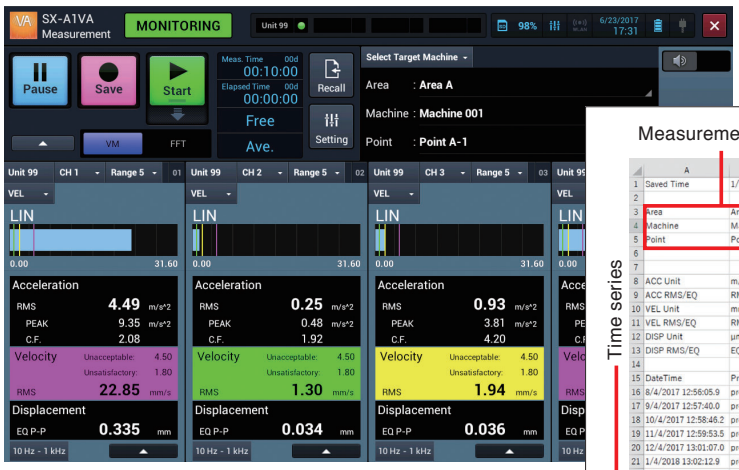
System Diagram



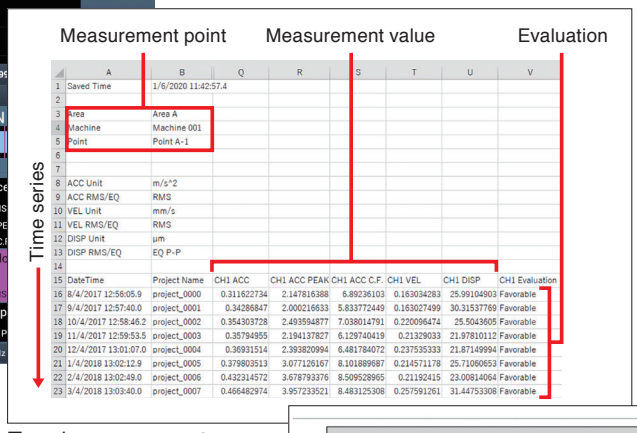
Equipment configuration

Product	Model
Multi-function Measuring System (2 channel/4 channel FFT package)	SA-A1FTB2/SA-A1FTB4
Vibration Analysis Program	SX-A1VA
SD card (512 MB/2 GB/32 GB)	MC-51SD1/20SD2/32SP3
Piezoelectric accelerometer (integrated amplifier)	PV-91C/97I/57I etc.
Accelerometer cable	VP-51 series
BNC adapter	VP-52C (Not required for charge output types)
Attachment devices such as magnet attachment	
Rotation sensor, tachometer or similar	

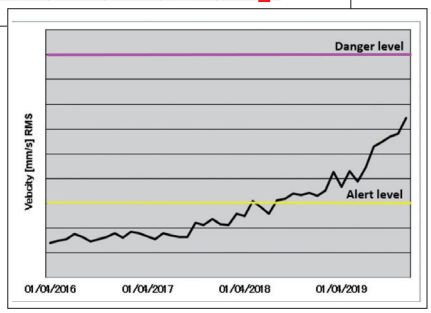
Measurement result examples



Vibration meter mode
Absolute value evaluation
(red = danger, yellow = warning, green = normal)



Trend management
(Relative value evaluation)



FFT mode
2-channel display (Unbalanced condition)

FFT mode
2-channel display (bearing problem)

Application examples

- **Vibration measurement for machine equipment**
- **Absolute value evaluation**
- **Relative value evaluation**
- **Detailed diagnosis of bearings, gears, machine equipment etc.**

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