Kenjin SYSTEM

Kenjin System

SPECIFICATIONS

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System Overview

Kenjin system is a transportable vibration analysis system designed for large rotating equipment with journal bearings and for small rotating equipment with roller-element bearings. Kenjin is typically used for temporary monitoring. It provides a variety of plotting and analysis functions required by ISO18436-2 certified engineers.

This system is made up of a portable data acquisition unit which converts vibration waveform, detected by transducers, to digital signals and Portable View Station which aquires/saves provided vibration analysis data and displays analysis results.

The components of this system are as follows.

Kenjin SYSTEM SOFTWARE PRODUCT

Product Name	Specifications No.
XJ-2000 Analysis Software	311201E1.x
XJ-2100 Analysis Software	6H15-010
XJ-3100 Data Viewer Software	6H24-021

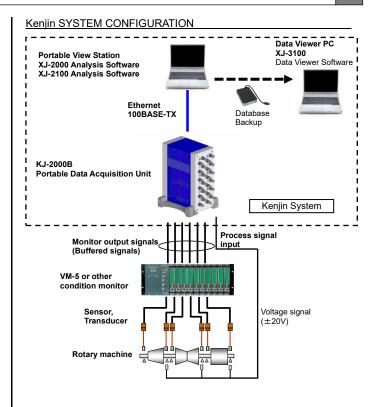
Kenjin SYSTEM HARDWARE PRODUCT

Product Name	Specifications No.
KJ-2000B Portable Data Acquisition Unit	6H15-008

Kenjin SYSTEM TERMINAL NAME

In this system, the combination of the software and the PC in which the software is installed is called as follows.

•	ware to intetance to cance as follows:						
	Combination	Name					
	XJ-2000 + PC	Kenjin Portable View Station					
	XJ-2100 + PC						
	XJ-3100 + PC	Data Viewer PC					



System Specifications

CONFIGURATION

Device connected : 1 unit

Measurement point : Up to 20 points*1

*1 Actual number of points measurable may be limited due to system configuration.

For the sizes of data used for this system, refer to "DATA SIZES OF Kenjin SYSTEM (FOR REFERENCE ONLY)" in the following page.

ANALYSIS DATA

	Data Provided by Analysis Software
Trend Data of	GAP
vibration channel *2	Overall
(Static Data)	Rotation Speed
	1X Amplitude, 2X Amplitude, 0.5X Amplitude, Not-1X Amplitude
	1X Phase, 2X Phase, 0.5X Phase
	S(p-p)max
	nX1 Amplitude, nX2 Amplitude, nX3 Amplitude, nX4 Amplitude, f1 Amplitude、f2 Amplitude
	nX1 Phase, nX2 Phase, nX3 Phase, nX4 Phase
	Inner Race, Outer Race, Ball Spin, <8X Σ
Trend Data of process data channel (Static Data)	Measured value (temperature, rotation speed, pressure, flow rate, etc.)
Waveform Data	Synchronous Waveform
(Dynamic Data)	Asynchronous Waveform

^{*2} Vibration data of trend data is calculated based on synchronous waveform.

Number of frequency analysis lines: 400/800/1,600/3,200

DATA SAVING FEATURES

SAVING INTERVAL

Trend data : 0.1 sec / 0.2 sec / 0.5 sec / 1 sec*4

Waveform data $: 0.1 \sec / 0.2 \sec / 0.5 \sec / 1 \sec / 2 \sec / 5 \sec /$

10 sec *4

*7 May vary depending on the acquisition conditions, number of channels and system configuration

TRANSIENT DATA SAVING FEATURE

Start and end times of the transient is recorded, history of transient period (startup, shutdown) will be saved.

Determination conditions of transient period

Startup period

Time when reached the starting speed – m min to Time when reached the end speed + n min (m:0 to 60 min, n:0 to 180 min)

(E.g : 100 rpm to 2,950rpm + for 20 min)

Shutdown period

Time when reached the starting speed – m min to Time when reached the end speed + m min (E.g: 2,950rpm to 100rpm)

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- X The company and product names herein may be the trademarks or registered trademarks of their respective companies.

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^{*3} Phase is only available during displacement vibration measurement.

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Appendix 1

Kenjin SYSTEM HARD DISK SPACE REQUIRED FOR DATA

STORAGE (FOR REFERENCE ONLY)

Data Type	Single Data Size		
Trend data *1	148 [byte]		
Waveform data *2	400 lines: 8,244 [byte], 800 lines: 16,436 [byte] 1,600 lines: 32,820 [byte], 3,200 lines: 65,588 [byte]		

^{*1} Including overall, 1X amplitude/Phase, etc.

^{*2} Data size may vary depending on the number of sampling (lines).

Data Type	Calculation
Trend data	1 Trend data x(60 [sec] x 60 [min] / Saving interval) x Number of channels x Saving period [yr]
Waveform data	Waveform data x (60 [sec] x 60 [min] / Saving interval) × Number of channels x Saving period [hour]

^{*3} The above data size, and it does not include the size of such management data and log data.

EXAMPLE

Conditions

Number of channels : 20ch
Spectral lines : 800 lines
Saving interval (trend) : 1 [sec]
Saving interval (waveform) : 10 [sec]
Saving period : 3 [hour]

Data

Trend data	148 [byte] x 60 [sec] × 60 [min] / 1[sec] x 20ch × 3 [hour] = 30.5M [byte]
Waveform data	16,436 [byte] x 60 [sec] × 60 [min] / 10 [sec] x 20ch × 3 [hour] = 338.6M [byte]

Total 369.1M [byte]

Others		

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Process channel includes measured value.

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Appendix 2

DATA SAVING LIMIT UNDER HIGH SPEED ACQUISITION MODE (FOR REFERENCE ONLY)

Under the following system environment, the data acquisition capability is as shown below.

Laptop PC for evaluation (OS: Microsoft® Windows7 professional®, CPU: Intel® Core™ i5 CPU M560 2.67GHz, Hard Disk Size: 250GB, Memory Size: 4.00GB) * This data below is for reference only. Results may vary depending on the system or other conditions.

Table 1 Kenjin System limitation of data acuisition (simultaneous acquisition of asynchronous and synchronous data)

Trend data acquisition

Waveform data acquisition

Trend data acquisition							
		Trend Data Acquisition Interval [sec]					
			.1	0.5			
Trend Acquisition		Waveform Data Acquisition Interval [sec]		Waveform Data Acquisition Interval [sec]			
		0.1	0.5	0.1	0.5		
Number of lines	Number of channels						
	4	0	0	0	0		
	8	0	0	0	0		
400	12	0	0	0	0		
	16	0	0	0	0		
	20	0	0	0	0		
	4	0	0	0	0		
	8	0	0	0	0		
800	12	0	0	0	0		
	16	0	0	0	0		
	20	0	0	0	0		
	4	0	0	0	0		
	8	0	0	0	0		
1,600	12	0	0	0	0		
	16	0	0	0	0		
	20	0	0	0	0		

Waveform data acquisition							
		Waveform Data Acquisition Interval [sec]					
		0.	.1	0	.5	1	.0
Waveform Acquisition		Trend Data Acquisition Interval [sec]		Trend Data Acquisition Interval [sec]		Trend Data Acquisition Interval [sec]	
		0.1	0.5	0.1	0.5	0.1	0.5
Number of lines	Number of channels						
	4	Δ	Δ	0	0	0	0
	8	-	=	0	0	0	0
400	12	-	-	Δ	Δ	0	0
	16	-	=	Δ	Δ	0	0
	20	-	-	-	Δ	Δ	0
	4	-	=	0	0	0	0
	8	-	=	Δ	Δ	0	0
800	12	-	-	-	Δ	Δ	0
	16	-	-	-	-	Δ	Δ
	20	-	-	-	-	-	Δ
	4	_	-	Δ	Δ	0	0
	8	-	-	-	Δ	Δ	Δ
1,600	12	-	П	-	-	Δ	Δ
	16	-	-	-	-	-	-
	20	-	-	-	-	-	-

O : Collectable. (No data loss.)

 \triangle : Collectable. (Risk of data loss.)

- : Collectable. (Data loss occurs.)

Table 2 Kenjin System limitation of data acuisition (acquisition of synchronous data)

Waveform data acquisition

Trend data acquisition							
	·	Trend Data Acquisition Interval [sec]					
		0.	.1	0.5			
Trend Acquisition		Waveform Data Acquisition Interval [sec]		Waveform Data Acquisition Interval [sec]			
		0.1	0.5	0.1	0.5		
Number of lines	Number of channels						
	4	0	0	0	0		
	8	0	0	0	0		
400	12	0	0	0	0		
	16	0	0	0	0		
	20	0	0	0	0		
	4	0	0	0	0		
	8	0	0	0	0		
800	12	0	0	0	0		
	16	0	0	0	0		
	20	0	0	0	0		
	4	0	0	0	0		
	8	0	0	0	0		
1,600	12	0	0	0	0		
	16	0	0	0	0		
	20	0	0	0	0		

Waveform Acquisition		Waveform Data Acquisition Interval [sec]					
		0.1		0.5		1.0	
		Trend Data Acquisition Interval [sec]		Trend Data Acquisition Interval [sec]		Trend Data Acquisition Interval [sec]	
		0.1	0.5	0.1	0.5	0.1	0.5
Number of lines	Number of channels						
	4	Δ	Δ	0	0	0	0
	8	-	-	0	0	0	0
400	12	-	-	0	0	0	0
	16	-	-	0	0	0	0
	20	-	=.	Δ	0	0	0
	4	-	=	0	0	0	0
	8	-	-	0	0	0	0
800	12	-	-	Δ	Δ	0	0
	16	-	=.	Δ	Δ	0	0
	20	-	=	-	Δ	Δ	0
	4	_	-	0	0	0	0
	8	-	-	Δ	Δ	0	0
1,600	12	-	-	Δ	Δ	0	0
	16	-	-	-	-	Δ	Δ
	20	_	_	_	-	Δ	Δ

: Collectable. (No data loss.)

△ : Collectable. (Risk of data loss.)

- : Collectable. (Data loss occurs.)

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