

System Overview

OVERVIEW

The S-Station system is a host integrated vibration monitoring system for the rotating machine vibration diagnostic system (infiSYS RV-200 system), especially targeting the turbine supervisory instrumentation (TSI), various expert systems for performing performance diagnosis, and the distributed control system (DCS).

Note: The "infiSYS RV-200 system" is referred to as "infiSYS" hereinafter in short.

Where several infiSYS RV-200 systems have been introduced in a large-scale vibration diagnostic system, the S-Station system provides an operator with monitoring and/or remote control interfaces, which are integrative and dialogical.

FUNCTIONS

Alarm monitoring function

Displays the alarm state obtained from the infiSYS RV-200 system, enabling the users understand the vibration state of all system machines. The alarm information received from the infiSYS RV-200 system is stored in the database, and the alarm history can be managed. Comments can be added to the alarm information, and the knowledge base can be created through the system operation.

Measured value monitoring function

The vibration and process values received from the infiSYS RV-200 system or other system can be displayed on the graphics screen.

Remote control function

Enables remote access to the infiSYS RV-200 system terminal, located remotely from the S-Station system. Remote use of vibration analysis and diagnosis function for the infiSYS RV-200 system is possible.

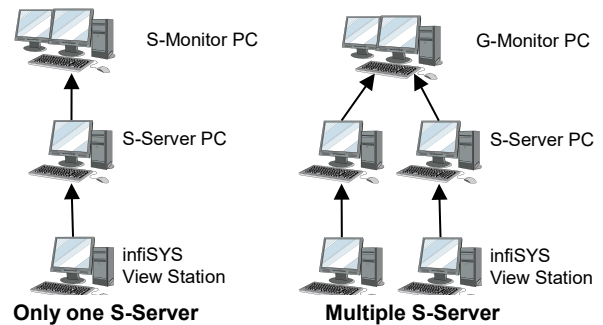
Trend display function

Displays the vibration data of the infiSYS RV-200 system on the trend view. Comparison of the condition/performance or vibration analysis among several rotating machines is possible. The vibration data of several infiSYS RV-200 systems can be displayed in the same window. You can specify the desired time axis to compare the vibration data of different time axes.

Graphics screen creating function

You can create a graphics screen for monitoring the system operating condition. Using this function enables to graphically represent the system state, instantaneous value of the vibration-related data, etc.

BASIC CONFIGURATION



TERMINAL AND INSTALL SOFTWARE

Terminal	Install software product
S-Server PC	S-Server Software, S-Editor Software*1, Microsoft SQL Server
S-Monitor PC	S-Monitor Software, NoMachine(Client)
G-Monitor PC	G-Monitor Software, NoMachine(Client)
infiSYS View Station	S-RS Data Relay Server Software NoMachine(Server)

\*1 S-Editor can also be installed independently on another PC.

System Specification

COLLECTION TARGET DATA (MEASUREMENT VALUE)

The S-Station system collects the trend data from infiSYS, and displays them on the graphics window and trend window of S-Monitor.

Trend data of vibration channel<sup>2</sup> (Static Data)

Data Provided by Analysis Software	DAQpod (Critical)	DAQpod (BOP)	VM-7B	VM-7
GAP <sup>3</sup>	○	○	○	○
Overall	○	○	○	○
Rotation Speed	○	○ <sup>4</sup>	○	○
1X Amplitude, 2X Amplitude, 0.5X Amplitude, Not-1X Amplitude	○	○	○	○
1X Phase, 2X Phase, 0.5X Phase <sup>3</sup>	○	-	○	○
S(p-p)max <sup>3</sup>	○	-	○	-
nX1 Amplitude, nX2 Amplitude, nX3 Amplitude, nX4 Amplitude, fX1 Amplitude, fX2 Amplitude	○	○	○	-
nX1 Phase, nX2 Phase, nX3 Phase, nX4 Phase <sup>3</sup>	○	-	○	-
Inner Race, Outer Race, Ball Spin, <8X Σ	-	○	-	-

Trend data of Process channel (Static Data)

Data Provided by Analysis Software	DAQpod	VM-7B	VM-7
Displacement, Rotor Speed, Rotor Acceleration, Eccentricity, etc.	○	○	○
Temperature(Direct)	○	○	○
Temperature(Composite, Differential)	-	-	-

\*2 Vibration data of trend data is calculated based on synchronous waveform under Critical mode; asynchronous waveform under BOP mode.

\*3 GAP, Phase and S(p-p)max is only available during displacement vibration measurement.

\*4 Provided with phase marker signals input.

COLLECTION TARGET DATA (ALARM DATA)

The S-Station system collects the alarm data<sup>5</sup> from infiSYS, and displays on the Active Alarm List (AAL) and Alarm History Window (AHW) of S-Monitor.

Type	Contents	AAL	AHW
Overall alarm	Danger / Alert alarm occurred	○	○
	Danger / Alert alarm cleared	×	○
Phase alarm	Vector region alarm occurred [1X / 2X]	○	○
	Vector region alarm cleared [1X / 2X]	×	○
Process alarm	Danger / Alert alarm occurred	○	○
	Danger / Alert alarm cleared	×	○
Rotation speed alarm	Alarm [high / low] occurred, cleared	×	○
Collection status	Collection started, stopped	×	○
Communication status	Communication error occurred	○	○
	Communication error cleared, Changes the Communication line	×	○
Transient status	[Startup / shutdown] started, ended, stopped	×	○
Sensor status	Error occurred	○	○
	Error cleared	×	○
External communication status	Error occurred, cleared,	×	○

\*5 The alarm data function supports the infiSYS software alarm, and does not support the hardware alarm (VM-7/VM-7B specific function).

Model Code

- S-Server Software (License)<sup>\*1</sup>  
ST-AS
  - S-Monitor Software (License)<sup>\*2</sup>  
ST-SM
  - G-Monitor Software (License)<sup>\*2</sup>  
ST-GM
  - S-Editor Software (License)  
ST-ED
- S-RS Data Relay Server<sup>\*3\*4</sup>  
S-RS
  - S-Station Software install disk<sup>\*5</sup>  
ST-CD

\*1 Microsoft® SQL Server® is required.

\*2 NoMachine Enterprise Client for windows is required.

\*3 NoMachine Enterprise Desktop for windows is required.

\*4 The S-RS Data Relay Server comes with an installation disk.

\*5 This is the installation disk for S-Server, S-Monitor, G-Monitor, and S-Editor. License registration is required after each software installation.

Software Specification

S-Server

It is a basic softwares provided with the function for collecting and storing the infiSYS alarm information and instantaneous values, and the function for managing the license information and user information.

Number of registrable terminals	
infiSYS	30 devices (Max.) <sup>*6</sup>
OPC Server	10 devices (Max.) <sup>*6</sup>
Monitor	10 devices (Max.)
G-Monitor	10 devices (Max.)
Number of registrable users <sup>*7</sup>	
User	Max. 100
Alarm Data Saving Period	
No upper limit Can store up to the HDD capacity limit. <sup>*8</sup>	
Data Saving period	
infiSYS	Initial value: 30 sec. (can change from 1 to 600 sec.)
OPC Server	Initial value: 5 sec. (can change from 1 to 600 sec.)

\*6 The number of devices that can be actually operated varies depending on the system requirements, the number of measurement channels, collection conditions, and network load.

\*7 S-Station users include administrator, S-Monitor users, and G-Monitor users.

\*8 Functions for deleting and managing the alarm information are not provided. (Continuous operation is possible without deleting the alarm information since the total alarm data size will be approx. 320 MB when a million data (each data size: approx. 331 byte) are stored.)

Time required for calculation function .....

S-Server has a function that collects data of measurement points registered in the machine tree of infiSYS and can perform arbitrary calculations. However, this function requires more time for calculation when the number of data increases, so be careful when constructing the system.

Measurement example of S-Server calculation function

The calculation time when the vibration(Critical) channel (with 21 data per point) is 220 points, 440 points, and 880 points is as follows. (Measured in an environment according to hardware requirements)

Points	Number of data per point	Calculation time
220 points	4620	About 3 minutes 30 seconds
440 points	9240	About 7 minutes
880 points	18480	About 15 minutes

\* The calculation time changes depending on the number of data. The number of data of vibration (BOP) channel is 17, and the number of data of process channel (including OPC channel) is 1.

S-Monitor

Displays the alarm information and instantaneous values stored in the connected S-Server. It is a display software that is connected to infiSYS, and that is used by users for performing remote control, or integrated monitoring and analysis such as taking in and displaying the stored trend data.

Trend	
Number of graphs displayable on the screen	4
Display period	Approx. one month
Window refresh frequency	
Plant Tree panel, Active Alarm List	Initial value: 10 sec. (can change from 1 to 600 sec.)
Graphics panel	Refreshed every sec. (fixed)

G-Monitor

It is a display software that enables the wider range of integrated monitoring than S-Monitor by connecting to plural S-Servers.

Number of terminals	
Number of S-Station that the G-Monitor can monitor	10 devices (Max.)
Window refresh frequency	
Server status list	Initial value: 10 sec. (can change from 1 to 600 sec.)

For other functions, performance is equivalent to S-Monitor.

S-Editor

It is a setting software that edits graphics drawn on the S-Monitor/G-Monitor.

S-RS

It is a service software that is installed on the infiSYS View Station and transmits infiSYS alarm information, instantaneous values, and trend data to the S-Station system.

## System Specification

## S-Server (Included S-Editor)

## Hardware requirements

Server PC	
Processor	Intel Xeon Processor E3 (3.1 GHz) or higher or equivalent recommended
Memory	8 GByte or more recommended
Display	1,024 x 768 or higher resolution recommended*1
Graphics Card	—
HDD	300 GByte or greater free space recommended
Drive	DVD-ROM Drive
Network	Ethernet 100 BASE-TX or higher recommended
Other Devices	Keyboard, mouse

△ WARNING  
HDD partition format must be "MBR".

## Software requirements

Category	Product Name	Edition	Version
OS	Microsoft® Windows Server® 2019	Standard or higher	Any
DB	Microsoft® SQL Server® 2019	Standard or higher	Any
Others	Microsoft® .NET Framework	—	3.5, 4.5

\*1 When writing large graphics with S-Editor, a higher resolution display is recommended.

## S-Monitor/G-Monitor\*2

## Hardware requirements

PC/AT compatible personal computer, Workstation	
Processor	Intel Core i5 (3.4 GHz) or higher or equivalent recommended
Memory	4 GByte or more recommended
Display	2 monitors with 1,920 x 1,080 or higher resolution recommended
Graphics Card	Dual display output recommended
HDD	10 GByte or greater free space recommended
Drive	DVD-ROM Drive
Network	Ethernet 100 BASE-TX or higher recommended*3
Other Devices	Keyboard, mouse

△ WARNING  
HDD partition format must be "MBR".

## Software requirements

Category	Product Name	Edition	Version
OS	Microsoft® Windows® 10 (32/64bit)	Pro or higher	Any
	Microsoft® .NET Framework	—	4.5
Others	NoMachine Enterprise Client for Windows	—	6.x.x

\*2 The S-Monitor software and G-Monitor software cannot be installed together on one PC.

\*3 The network adapter must be disabled except for the one port used. For the PC provided with more than one network adapter, S-Monitor/G-Monitor may not be able to properly recognize the port in use.

## S-RS

## Software requirements

Category	Product Name	Version
Others	NoMachine Enterprise Desktop for Windows	6.x.x

## COMMON

## License requirements

A license code is required for each software (except S-RS) in the S-Station system.

To issue a license code, it is necessary to send server or PC identification information (machine code) in advance using a dedicated tool.

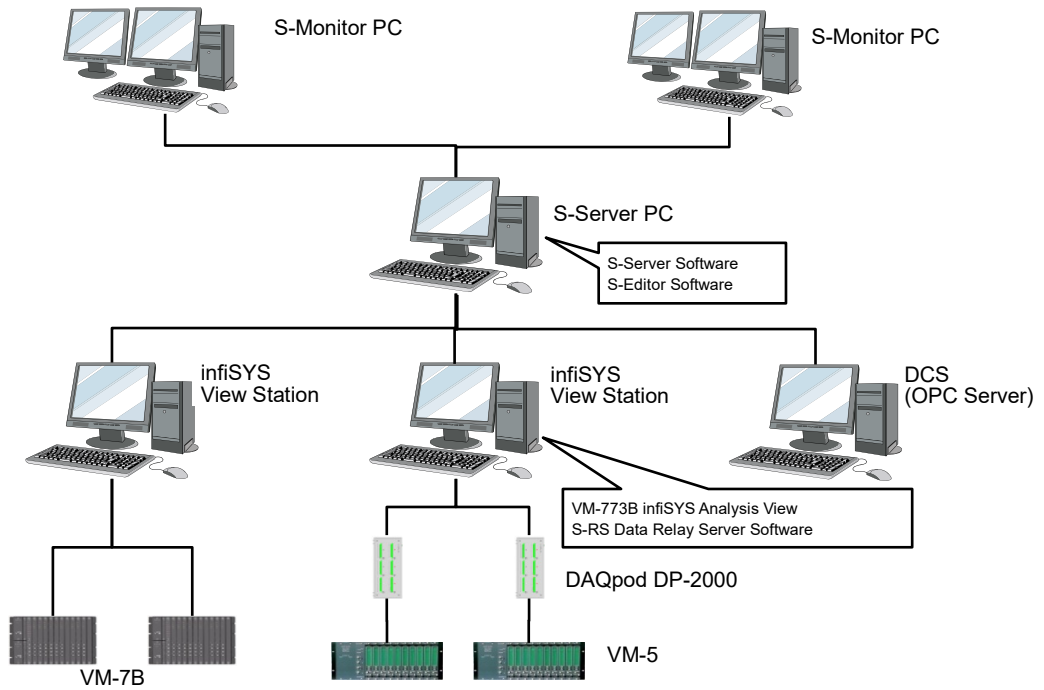
## Network requirements

The IP address of G-Monitor, S-Monitor, S-Server and infiSYS View Station must be assigned a fixed IP address. Communication may not be possible with a dynamic IP address.

## SOFTWARE SUPPLY MEDIA

CD-ROM

## System Configuration (Integrated Monitoring with One S-Server)



## System Configuration (Integrated Monitoring with Two S-Server)

