

# General Specifications

PM4S7740  
PRM Advanced Diagnosis  
Server



GS 30B05A21-01EN

[Release 4]

## ■ GENERAL

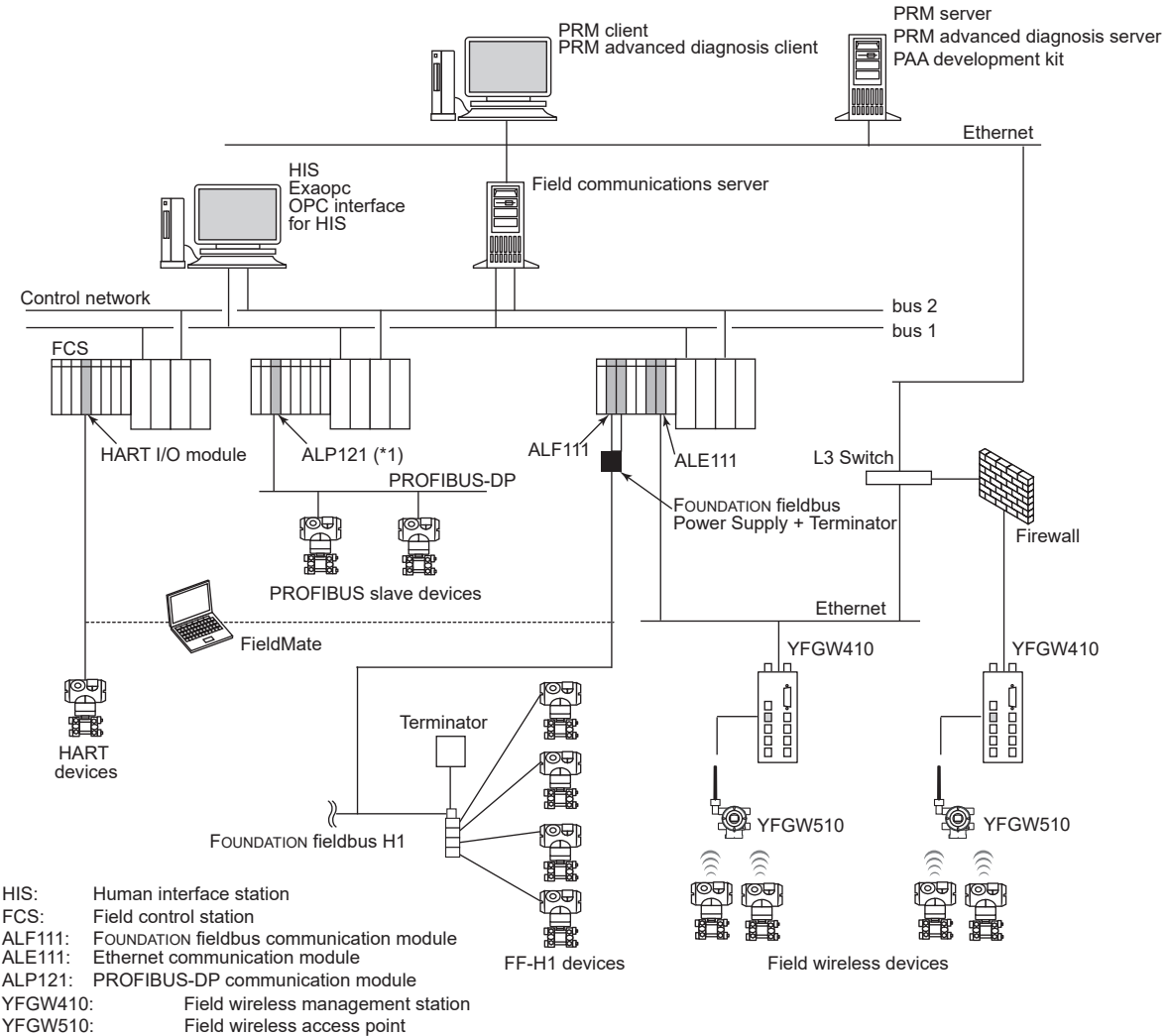
*PRM advanced diagnostic function is an optional feature of plant resource manager (PRM) package. It diagnoses plant equipment status by acquiring necessary parameter information from FOUNDATION fieldbus, HART, PROFIBUS, and ISA100 wireless devices. This advanced diagnosis function utilizes device parameters and process data information to diagnose device and equipment statuses. And these diagnosis results can be monitored by PRM.*

## ■ PRM ADVANCED DIAGNOSIS SYSTEM CONFIGURATION

PRM advanced diagnosis function is composed of the following software.

- PRM advanced diagnosis server
  - Advanced diagnosis server
  - Device diagnosis data historian
- PRM advanced diagnosis client
  - Diagnostic navigator
  - Diagnostic tool
- PRM advanced diagnostic application

An example of the system configuration for connecting the PRM advanced diagnosis server and CENTUM VP is shown below.



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Note: A PRM server, a PRM client and a field communications server can run on a single computer.  
 PRM client can run on the same computer where HIS/ENG is already installed.  
 A PRM server or a field communications server cannot run on the same computer where HIS/ENG is already installed.  
 \*1: ALP121 is supported by CENTUM VP R5.02 or later revision.

● **PRM advanced diagnosis server**

A PRM advanced diagnosis server consists of an advanced diagnosis server and a device diagnosis data historian.

- Advanced diagnosis server  
Performs diagnosis registered in the advanced diagnosis server.
- Device diagnosis data Historian

A PRM server acquires and transfers the device data for diagnosis to the diagnosis application via a field communications server or an OPC server (Exaopc OPC interface package or Exaopc for HIS). The accumulated data can be saved in the device diagnosis data historian server as historical data.

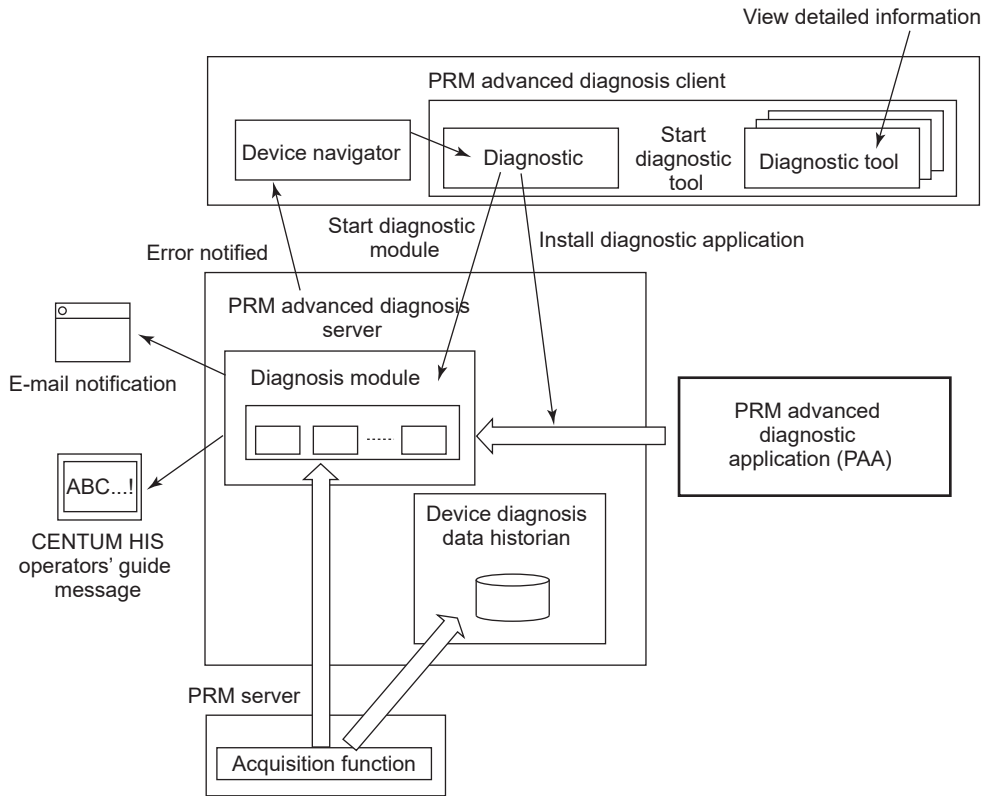
● **PRM advanced diagnosis client**

A PRM advanced diagnosis client defines the diagnosis data to be acquired, monitors the diagnosis status, registers diagnosis applications, starts/stops diagnosis, and starts/stops collecting data. The following client functions are available.

- Diagnostic navigator
- Diagnostic tool

## ■ PRM ADVANCED DIAGNOSIS FUNCTIONAL DIAGRAM

The functional diagram of the advanced diagnosis is as shown below.



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## ■ DIAGNOSTIC DATA ACQUISITION

A PRM server obtains the following diagnostic data via a field communications server or an OPC server (Exaopc OPC interface package or Exaopc for HIS).

- Data required by PRM advanced diagnostic application
- User-defined data
- Data defined in the acquisition definition file

### ● Data required by PRM advanced diagnostic application

The diagnostic module starts collecting diagnostic data, when launched by the diagnostic navigator, and saves those data automatically.

### ● User-defined data

User-defined data can also be saved as the diagnostic data to be collected. The registration is done by the diagnosis client.

### ● Data defined in acquisition definition file

Acquisition definition files are provided by device vendors, and the data defined in those files can also be collected. Two files are used by the acquisition definition file: one is the device viewer definitional file that each device vendor defines and the other is an acquisition definition file which is modifiable by a user.

## ■ DIAGNOSTIC EXECUTION

Device diagnosis is performed by the individual diagnostic module. Diagnosis start/stop is also performed by the diagnostic module. The PRM advanced diagnostic application is composed of several diagnostic modules.

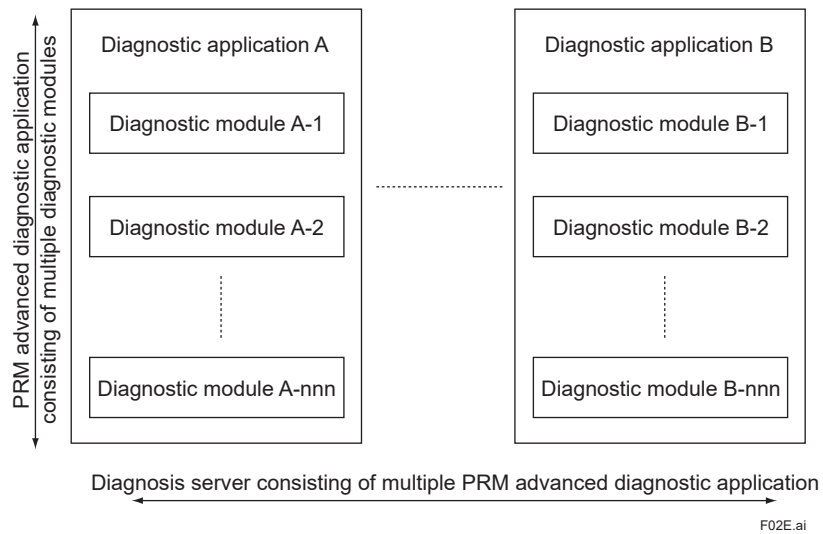


Figure: Relationship between diagnostic modules and PRM advanced diagnostic application

## ■ DEVICE DIAGNOSTIC DATA HISTORIAN

This is a function to collect and save parameter data for device diagnostics. PRM advanced diagnosis server acquires those parameter data and save them as historical data. Other than the field device parameters data, diagnosis computation results can also be saved.

## ■ SOFTWARE REQUIREMENT

### ● PRM advanced diagnosis server

	Windows Server 2008 R2 Standard	Windows Server 2016 Standard
	64-bit	64-bit
	SP1	non-SP
R4.01	X	–
R4.02	X	X

SP: Service pack    X: Applicable    –: Not applicable

## ■ HARDWARE OPERATING ENVIRONMENT

PRM advanced diagnosis client function is included in PRM client function.

PRM advanced diagnosis server consists of an advanced diagnosis server for diagnosing PAA and a device diagnosis data historian for historical database. The tables below show hardware requirements for each server.

When both of these server functions reside in a same computer, the CPU requirement of the PRM advanced diagnosis server is applied. As for the main memory and the hard disk capacity, the sum of the two servers is required. The PAA application development kit is to be installed on a computer where PRM server, PRM client, and PRM advanced diagnosis server functions are installed.

**PRM advanced diagnosis server hardware requirements**

	Number of devices			
	300 devices or less	1000 devices or less	3000 devices or less	6000 devices or less
CPU	2.8 GHz or higher	2.8 GHz or higher	2.8 GHz or higher	2.8 GHz or higher
Main memory	2 GB or greater	2 GB or greater	2 GB or greater	8 GB or greater
Hard disk space	11 GB or more	20 GB or more Use of a high-speed disk drive such as a SCSI or RAID drive is recommended.	40 GB or more Use of a high-speed disk drive such as a SCSI or RAID drive is recommended.	60 GB or more Use of a high-speed disk drive such as a SCSI or RAID drive is recommended.
Database capacity (*1)	3 GB	10 GB	30 GB	50 GB

\*1: The data base capacity of device diagnosis data historian indicates the hard disk space required for one year operation, on assumptions as below:  
 - Ten numerical device parameters per field device are acquired for 24-hour interval.  
 - A result of the device diagnosis per field device is stored every 10 minutes cycle.

## ■ NOTIFYING DETECTED ERRORS TO USER

When the result of the diagnosis detects an error or abnormality, it is notified to a user by the following methods.

- CENTUM VP operator guide message
- CAMS for HIS consolidated alarm management (screen)
- Send E-mail
- Maintenance alarm messages on the PRM client
- Device status icons in the PRM client's device navigator.

## ■ BUILDING DIAGNOSTIC APPLICATION

PRM advanced application software development kit (PAA development kit) runs on a PRM advanced diagnostic server (PRM server) and allows a user to create its own diagnostic application. This user-made diagnostic application is registered via a PRM client. The diagnosis samples are provided in the PAA development kit. It enables users to easily build diagnosis applications by referring to or modifying these samples. The diagnosis samples included in the kit are as shown below.

- Device parameters' upper and lower limit check
- Area monitoring
- Difference monitoring among devices
- Error monitoring of automatic reciprocating compressors

## ■ PRM ADVANCED DIAGNOSIS SERVER SPECIFICATIONS

The below table shows the PRM advanced diagnosis server specifications which differ by other server functions resided together.

	Server functions resided with PRM advanced diagnosis server (except for PRM server)	
	PRM advanced diagnosis server	PRM advanced diagnosis server, field communications server
No. of diagnostic applications simultaneously executed	10	10
No. of modules to be executed simultaneously	1000	300
Diagnosis cycle	from 1 minute to 1 day	from 1 minute to 1 day
No. of acquisition points for device diagnosis	10000 points	3000 points
No. of acquisition points for device diagnosis data historian	11000 points	3100 points
No. of data items unique to diagnosis	400000	120000
No. of acquisition points to be stored	30000 points	10000 points
No. of devices supported per diagnostic module	5 devices; A single diagnostic module handles device data for up to 5 units.	
No. of device data supported per diagnostic module	400 data; 400 parameters per diagnostic module	

## ■ MODELS AND SUFFIX CODES

### PRM advanced diagnosis server

Model		Description
PM4S7740		PRM Advanced Diagnosis Server
Suffix Codes	-V	Software license
	-E	For expansion
	1	Always 1
	1	English version
	N0100	Number of applications: 1
	N0200	Number of applications: 2 or less
	N0500	Number of applications: 5 or less
	N1000	Number of applications: 10 or less
	N0102	Expansion for application: 1 to 2
	N0105	Expansion for application: 1 to 5
	N0110	Expansion for application: 1 to 10
	N0205	Expansion for application: 2 to 5
	N0210	Expansion for application: 2 to 10
N0510	Expansion for application: 5 to 10	

### PRM advanced diagnostic application software kit

Please order NTPS220-S11. The software license is issued by ordering this software.

## ■ ORDERING INFORMATION

Specify model and suffix codes.

## ■ TRADEMARKS

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