General Specifications

VP6E5420
Test Function

CENTUM VP

GS 33J10D50-01EN

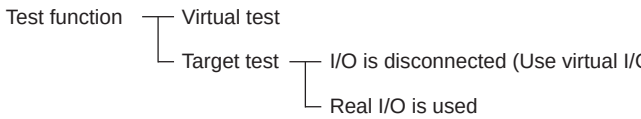
[Release 6]

■ GENERAL

Test function runs on a Human Interface Station (HIS) to create an environment for various tests of applications for CENTUM VP systems with or without Field control stations.

■ FUNCTIONAL SPECIFICATIONS

With Test Function, a user can perform a virtual test without a Field control station (FCS) and a target test using an FCS. To check the FCS operation Operation and monitoring function is used. The following shows the configuration of the test function.



Safety Control Stations (SCS) can also be tested when ProSafe-RS and CENTUM VP systems are integrated.

Virtual test

The virtual test uses the FCS simulator instead of a real FCS. The FCS simulator simulates functions and applications of the FCS on a computer.

Target test

The target test uses a real FCS, but without field wiring. I/O signals generated by software are used for testing. Neither I/O cards nor virtual I/O devices are required.

Function List

The virtual test and the target test execute different functions as shown in the table below.

Test Item	Test Method		Description
	Virtual Test	Target Test	
Test function main window	X	X	Calls up various functions of the test functions. Sub-window, menu bar, and tool bar of each function are displayed on this window.
I/O disconnect/connect (*1)	—	X	Connects or disconnects real FCS process I/O in individual process I/O units. When the virtual test is performed, I/Os are always isolated.
Global switch disconnection/connection function	X	X	Connects or disconnects communication (scan transmission) related to global switches. Data transmissions from the target station from/to other stations can be connected or disconnected. When the transmission of data received from the other station is disconnected, values of the global switches can be changed to desired values on the target station.
Wiring function (*2)	X	X	Simulates test target station I/O
Test target station operation and monitoring function	X	X	Changes and displays the actual status (run, stop, or pause) of the target station
Step execution	X	X	Executes the control function for the specified number of times, and temporarily stops the target station
Change scan period magnification	X	X	Changes the scan period of the target station to a multiple of the basic scan period
Breakpoint function	X	X	Sets the break conditions to the function block of the target station and temporarily stops the target station when the defined condition is established

X: Available —: Not Available

*1: Process I/O and communication I/O cannot be connected to Advanced Process Control Station (APCS) so that the “I/O Disconnect/connect” task is not available.
*2: Since the APCS is not applicable for connecting the process I/O and communication I/O, the wiring function is not available. Generic Subsystem Gateway (GSGW) does not support the wiring function.

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Test Item	Test Method		Description
	Virtual Test	Target Test	
One-shot execution function	X	X	Consists of Function block one-shot execution and Message one-shot output functions. The function block one-shot execution function executes the function blocks on the target station that can be executed at one-shot. The message one-shot output function generates messages on the target station.
Profiler function	X	X	Consists of CPU usage rate display, All function block completed profile data display, and Log file function to monitor the operation status of the target FCS/ FCS simulator control function. The CPU usage rate display and the All function block completed profile data display are available only for the target test, since those displays are not needed in the virtual testing.
Snapshot function	X	X	Stores and recovers function block tuning parameters, annunciator status, common switch status, process I/O status, and wiring status
I/O Error Test (*3)	X	X	Enforces to create I/O abnormal status such as IOP by writing data status from HIS to the function blocks connected by the process IOs
FOUNDATION fieldbus Faceplate Block Test (*4)	X	X	Generates fake alarms, changes block modes, or implements input/output operations to the FOUNDATION fieldbus faceplate blocks. Thus the fieldbus control test can be performed using the FOUNDATION fieldbus faceplate blocks without real fieldbus devices.
Virtual Access to Other Station Data	X	—	Simulates transmissions from FCS simulator or HIS to FCSs which is not in the test environment and out of scope of the test during the virtual test
Change FCS for Testing	X	X	Changes the target FCSs during the test. Without stopping the test function, the target FCS can be switched to other FCS in the same project.
Simulation function	X	—	Configured by an FCS simulator and other station data access simulation functions to test user-developed software without using a real FCS. This function is launched automatically when a virtual test is launched.

X: Available —: Not Available

*3: The I/O error test for APCS can be applied only to the PVs of global switches (%GS).
*4: Each function of the FOUNDATION fieldbus faceplate block test function is performed only by generating events instead of simulating the operations of the fieldbus function blocks, therefore, functional tests using real fieldbus devices are required for verifications.

■ APPLICATION CAPACITIES

In a virtual test environment, maximum of eight (8) FCS/SCS simulators can run on a single computer.

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■ OPERATING ENVIRONMENT

The test function runs on a general-purpose IBM PC/AT-compatible computer which meets the following specifications:

Hardware Requirements

Conforms to the operating environment of VP6E5100 Standard Engineering Function.

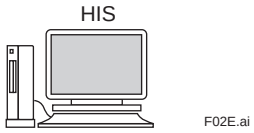
Software Requirements

Conforms to the operating environment of VP6H1100 Standard Operation and Monitoring Function, and VP6E5100 Standard Engineering Function.

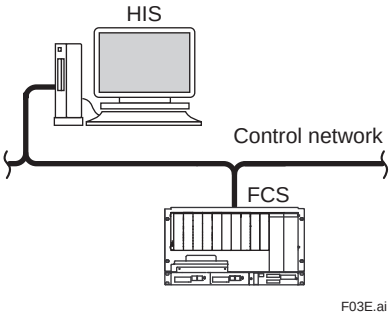
When AFV30☐, AFV40☐, A2FV50☐, or A2FV70☐ is used as a target machine or for the virtual testing, the following licenses are required respectively.

- Model VP6F1700 Control Function for Field Control Station (for AFV30☐/AFV40☐)
- Model VP6F1800 Control Function for Field Control Station (for A2FV50☐)
- Model VP6F1900 Control Function for Field Control Station (for A2FV70☐)
- Model VP6F1705 Control Function for FCS Simulator (for AFV30☐/AFV40☐)
- Model VP6F1805 Control Function for FCS Simulator (for A2FV50☐)
- Model VP6F1905 Control Function for FCS Simulator (for A2FV70☐)
- Model VP6F8100 Compressor Control for FCS
- Model VP6F8105 Compressor Control for FCS Simulator

In order to perform the virtual tests, licenses of the control function for field control station and optional software are required in accordance with the number of the FCS in the CENTUM VP project and/or the number of the SCS in the ProSafe-RS project to be used in the plant. For segregating the virtual test environment from the target test with the target FCS or SCS, software licenses for those FCS and SCS are required. A license for the real FCS is also available in a virtual test environment.
In the virtual test environment only system such as OTS, no project I/O license is required. In this case, a reduced-priced license for a FCS simulator is available.



A system configuration for virtual test



A system configuration for target test

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■ MODEL AND SUFFIX CODES

		Description
Model	VP6E5420	Test Function
Suffix Codes	-V	Software license
	-E	For Expansion
	1	Always 1
	1	English version
	N01	For Small/Middle Scale Project
	N03	For Large Scale Project
	N13	For Project Scale Expansion

Note: VP6E5100 Standard Engineering Function and VP6H1100 Standard Operation and Monitoring Function are required.
Note: VP6H6660 Process Management Package is required for VP Batch testing . Type-A is applicable when only the test function is used.
Note: When ordering this license for the first time, be sure to select '-V', and 'N01' or 'N03' to specify the project scale from the suffix codes.
Note: When expanding the project scale, select '-E' and 'N13' from the suffix codes.

■ ORDERING INFORMATION

Specify model and suffix codes.

■ TRADEMARK ACKNOWLEDGMENT

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