

INDUSTRIAL AUTOMATION PRODUCT

CP451-10 S2

CENTUM VP Field Control Unit Processor Module

Yokogawa CP451-10 S2 is a CP451 processor-module execution for the AFV10S or AFV10D CENTUM VP Field Control Unit. It executes field-control functions and participates in the documented redundant processor arrangement.

IDENTITY	VERIFIED VALUE
Manufacturer	Yokogawa
System family	Yokogawa CENTUM VP AFV10S / AFV10D Field Control Unit
Part number	CP451-10 S2
Product role	Executes the CENTUM VP field-control application
Lifecycle	Installed product record

DOCUMENT SCOPE

Exact-article identity, technical data, host role, installation checks, applications, precautions and engineering verification.

MODEL-SPECIFIC ENGINEERING NOTE

Install CP451-10 S2 in the assigned AFV10S or AFV10D processor position and match the partner module, FCU configuration and CENTUM VP software release. After replacement, verify redundant synchronization, Vnet/IP communications, node-unit status and the retained control application before process release.

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CP451-10 S2

Technical Specifications

Technical values below are limited to the named Yokogawa product record and directly applicable manufacturer documentation.

PARAMETER	VALUE	PARAMETER	VALUE
Processor module	CP451	Redundant configuration	Two CP451 modules
Host FCU	AFV10S / AFV10D	Vnet/IP interface	Dual-redundant
Processor	VR5432, 133 MHz	Maximum node units	14 per FCU
Main memory	32 Mbyte	Maximum ESB node units	9 per FCU
Memory backup	Battery; maximum 72 hours	Style requirement for SEM	Style 2 or later
Battery recharge	Minimum 48 hours		

Verified Product Record

DATA GROUP	VERIFIED VALUE
Installed host / carrier	Yokogawa CENTUM VP AFV10S / AFV10D Field Control Unit
Primary system role	Executes the CENTUM VP field-control application
Connection boundary	Install CP451-10 S2 in the assigned AFV10S or AFV10D processor position and match the partner module, FCU configuration and CENTUM VP software release. After replacement, verify redundant synchronization, Vnet/IP communications, node-unit status and the retained control application before process release.
Controlled acceptance duty	CENTUM VP process-control execution

ENGINEERING BOUNDARY

Confirm CP451-10 S2, AFV10S or AFV10D host, processor partner, hardware style, power modules, Vnet/IP network, ESB/ER interfaces, CENTUM VP software and database versions, time synchronization, SEM requirement and controlled process-test results before commissioning.

Pre-Installation Checks

1	Confirm the full CP451-10 S2 marking, hardware style and assigned AFV10 FCU.	2	Place the controlled process and redundant partner in the approved maintenance state.
3	Back up the CENTUM VP control database and record active diagnostics.	4	Use ESD controls and isolate the affected processor position according to Yokogawa procedure.

Documented Service Record

RECORD ITEM	REQUIRED ENTRY
As-found article	CP451-10 S2
Installed host	Yokogawa CENTUM VP AFV10S / AFV10D Field Control Unit
Connection record	Capture before removal
Controlled release	Diagnostics and functional proof

System Role and Architecture

Yokogawa CP451-10 S2 is a CP451 processor-module execution for the AFV10S or AFV10D CENTUM VP Field Control Unit. It executes field-control functions and participates in the documented redundant processor arrangement.

FUNCTION 1
Executes the CENTUM VP field-control application

FUNCTION 2
Supports a two-processor redundant FCU arrangement

FUNCTION 3
Coordinates configured ESB and ER bus node-unit communications

FUNCTION 4
Maintains battery-backed control memory during an approved outage

Matched System Components

NO.	DOCUMENTED COMPONENT / ROLE
1	Yokogawa CENTUM VP AFV10S / AFV10D Field Control Unit
2	AFV10S / AFV10D
3	CENTUM VP process-control execution
4	Install CP451-10 S2 in the assigned AFV10S or AFV10D processor position and match the partner module, FCU configuration and CENTUM VP software release. After replacement, verify redundant synchronization, Vnet/IP communications, node-unit status and the retained control application before process release.

System Integration Record

INTEGRATION ITEM	DOCUMENTED ROLE
Host identity	Yokogawa CENTUM VP AFV10S / AFV10D Field Control Unit
Interface role	Executes the CENTUM VP field-control application
Field / power context	The processor operates with the AFV10S or AFV10D FCU, associated power modules and configured ESB or ER bus interfaces. Commissioning includes identity, partner-module state, control software, Vnet/IP path, node-unit recognition and controlled process-function verification.
Commissioning evidence	Complete controlled loop, sequence and diagnostic tests before process release.

Installation and Connection Checks

1 Inspect the FCU connector and verify the partner CP451 module identity.

2 Restore the approved software, database and communication configuration.

3 Verify redundant synchronization, Vnet/IP paths and all configured node units.

4 Complete controlled loop, sequence and diagnostic tests before process release.

MANUFACTURER SOURCE RECORD

Field Control Unit AFV10S / AFV10D General Specifications
Yokogawa GS 33K50E30-50E, 4th Edition, 1 April 2013

Applications and Engineering Context

CENTUM VP process-control execution

Runs field-control strategies for an AFV10-series control station.

Redundant controller maintenance

Restores one CP451 processor position while preserving the approved partner state.

Distributed I/O coordination

Coordinates configured ESB or ER bus node units through the FCU architecture.

Sequence-of-events support

Supports SEM use when the installed FCU hardware meets the documented style requirement.

TECHNICAL NOTE

Install CP451-10 S2 in the assigned AFV10S or AFV10D processor position and match the partner module, FCU configuration and CENTUM VP software release. After replacement, verify redundant synchronization, Vnet/IP communications, node-unit status and the retained control application before process release.

Model-Specific Acceptance Evidence

CHECK	ACCEPTANCE CONDITION
Identity	CP451-10 S2 recorded
Host / carrier	Yokogawa CENTUM VP AFV10S / AFV10D Field Control Unit
Physical interface	Executes the CENTUM VP field-control application
Configuration	Verify redundant synchronization, Vnet/IP paths and all configured node units.
Functional proof	Complete controlled loop, sequence and diagnostic tests before process release.

IMPORTANT NOTICE

Confirm CP451-10 S2, AFV10S or AFV10D host, processor partner, hardware style, power modules, Vnet/IP network, ESB/ER interfaces, CENTUM VP software and database versions, time synchronization, SEM requirement and controlled process-test results before commissioning.

Controlled Release Summary

RELEASE ITEM	MODEL-SPECIFIC CONDITION
Article identity	CP451-10 S2
Approved role	CENTUM VP process-control execution
Final validation	Complete controlled loop, sequence and diagnostic tests before process release.

Engineering Precautions

1	Confirm the full CP451-10 S2 marking, hardware style and assigned AFV10 FCU.	2	Place the controlled process and redundant partner in the approved maintenance state.
3	Back up the CENTUM VP control database and record active diagnostics.	4	Use ESD controls and isolate the affected processor position according to Yokogawa procedure.
5	Inspect the FCU connector and verify the partner CP451 module identity.	6	Restore the approved software, database and communication configuration.
7	Verify redundant synchronization, Vnet/IP paths and all configured node units.	8	Complete controlled loop, sequence and diagnostic tests before process release.

Related Products on Apter Power

MODEL	SYSTEM ROLE	APTER POWER PAGE
EB401-50-S1	ER bus interface module	View EB401-50-S1 page
ALF111-S50-S1	FOUNDATION Fieldbus module	View ALF111-S50-S1 page
ET5-B	YS1000 terminal component	View ET5-B page
PW401	power supply module	View PW401 page
PW404-S1	power supply module	View PW404-S1 page
A2EE1A-T	system component	View A2EE1A-T page
VF702	interface module	View VF702 page
SB311-S1	SOE interface module	View SB311-S1 page

MANUFACTURER SOURCE RECORD

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