

CP451-10 S2

CENTUM VP Field Control Unit Processor Module

INSTALLATION, INTERFACE AND VALIDATION WORKBOOK

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.

STEP	GATE	ENGINEERING PURPOSE
01	IDENTIFY	Confirm article, host and hardware
02	ISOLATE	Secure power and stored energy
03	CONNECT	Restore documented interfaces
04	VALIDATE	Prove diagnostics and function

WORKBOOK PURPOSE

Field-ready identity, isolation, connection, commissioning and closeout records for this exact Yokogawa article.

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Installation Readiness Gate

Complete the identity, host-system and isolation checks before disturbing the installed hardware.

- 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.

Pre-Work Evidence

EVIDENCE ITEM	RECORDED VALUE
Complete article marking	CP451-10 S2
Host / carrier	Yokogawa CENTUM VP AFV10S / AFV10D Field Control Unit
Primary system role	Executes the CENTUM VP field-control application
Acceptance boundary	Complete controlled loop, sequence and diagnostic tests before process release.
Source record	Field Control Unit AFV10S / AFV10D General Specifications

WORK AUTHORIZATION RECORD

Work order: _____ Drawing / revision: _____
 Checked by: _____ Date: _____

Isolation and Access Register

CONTROL POINT	ENGINEER RECORD
Incoming supply	Isolated / proved
Stored energy	Discharged / proved
Field connections	Identified / protected
ESD control	Established / recorded

Pre-Work Documentation

DOCUMENT	ENGINEER RECORD
Connection photograph	Reference / file
Configuration backup	Reference / revision
Diagnostic baseline	Reference / result

Connection and Installation Sequence

INSTALLATION PRINCIPLE

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.

- 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.

Connection Record

CONNECTION GROUP	AS-FOUND / AS-LEFT RECORD	STATUS
Power / field connection	Reference / terminal	Checked
Signal / interface	Reference / connector	Checked
Ground / shield	Reference / point	Checked
Accessory / carrier	Reference / part	Checked

MODEL-SPECIFIC RELEASE LIMIT

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.

Interface Acceptance Criteria

ACCEPTANCE ITEM	REQUIRED EVIDENCE
Identity	CP451-10 S2
Host match	Yokogawa CENTUM VP AFV10S / AFV10D Field Control Unit
Connection proof	Restore the approved software, database and communication configuration.
Configuration proof	Verify redundant synchronization, Vnet/IP paths and all configured node units.

Commissioning and Acceptance Record

Record each controlled verification step before the equipment returns to automatic operation.

NO.	ACCEPTANCE CHECK	RESULT	RECORD
1	Article and host identity	PASS / FAIL	Initial / date
2	Mechanical installation	PASS / FAIL	Initial / date
3	Power and field wiring	PASS / FAIL	Initial / date
4	Grounding and shielding	PASS / FAIL	Initial / date
5	Configuration restoration	PASS / FAIL	Initial / date
6	Signal or power-path response	PASS / FAIL	Initial / date
7	Diagnostics and alarms	PASS / FAIL	Initial / date
8	Final functional release	PASS / FAIL	Initial / date

Engineering Notes

RECORD AREA	ENGINEER ENTRY
As-found condition	
Corrective action	
As-left configuration	
Outstanding restriction	
Release authorization	

CONTROLLED COMMISSIONING

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

Diagnostics and Release Log

EVENT	ENGINEERING RECORD
Initial energization	Result / observation
Interface or signal response	Result / observation
Alarm and diagnostic review	Result / observation
Functional release	Name / date

Maintenance Verification and Closeout

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.

Related Engineering Pages

MODEL	ENGINEERING ROLE	APTER POWER PAGE
SB311-S1	SOE interface module	View SB311-S1 page
ANB10D-427-CU2T	ESB node unit	View ANB10D-427-CU2T page
EC402-S1	ESB bus coupler module	View EC402-S1 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

MANUFACTURER SOURCE RECORD

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

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