Yokogawa AFV10D S2

Duplexed Field Controller

01 / WORK SCOPE AND PRE-REMOVAL EVIDENCE

This guide converts the AFV10D S2 architecture into a controlled maintenance sequence. It preserves processor, Vnet/IP, power and I/O identities while avoiding unsupported supply-voltage or project assumptions.

Capture the live architecture → **Protect both redundant paths** → **Restore and prove service**

Record each redundant member

Capture both CP451 slots, both power modules, both Vnet/IP paths and every installed EC401 position before isolation.

Preserve the project boundary

Export the relevant configuration and identify the LFS1500/LFS1550 package and node licenses that define the installed capacity.

Pre-work evidence set

Physical identity	Full AFV10D nameplate, Style 2 marking and supply execution
Network baseline	Both Vnet/IP paths, switches, ports and link states
I/O topology	Local modules, node units, ESB or ER-bus path and coupler slots
Control baseline	Processor states, project assignment and current diagnostics

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Approved process state

Place the controlled process in the permitted maintenance condition before any processor, power, network or I/O path is disturbed.

Separate energy sources

Identify both FCU power paths and any field energy entering the I/O system. Redundant power does not create an automatically safe removal condition.

Maintain slot identity

Label CP451, EC401 and I/O positions. Preserve the slot-7/slot-8 relationship required by the selected ESB arrangement.

Protect network routing

Keep Vnet/IP cables associated with their original Layer 2 switch ports and redundant path design.

Stop conditions

Style cannot be confirmed	Do not claim SEM for Vnet/IP compatibility until the Style 2 or later marking is verified.
Coupler layout differs	Resolve whether the project uses redundant ESB, single ESB or an ER-bus arrangement.
Barrier I/O lacks partition	Check the T9083ND requirement before reassembly.
Power suffix is unknown	Read the installed supply identity; do not infer voltage from AFV10D S2 alone.

Controlled removal order

1 / Baseline	Save diagnostics, node inventory and both network-path states before changing the FCU.
2 / Isolate	Apply the approved process and energy controls to every path entering the work boundary.
3 / Label	Mark slot, connector, cable and switch-port identity before disconnecting hardware.
4 / Protect	Use grounded ESD handling and protect exposed connectors from contamination and contact.

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Rack and module seating

Inspect guides, connectors and retention hardware. Reinstall each recorded module in its intended slot without using force or swapping redundant members.

ESB coupler arrangement

For redundant ESB operation, restore EC401 modules to slots 7 and 8. For a documented single ESB arrangement, use slot 7 and leave slot 8 empty.

Network restoration

Reconnect both CAT5e-or-better Vnet/IP cables to their recorded Layer 2 switch ports and preserve path separation.

I/O and node inventory

Reconcile local I/O and remote node-unit identities with the saved project before applying power.

Status-contact circuit

Check NC/C wiring and ensure the external circuit remains within 30 V DC and 0.3 A.

Before energization

Confirm no loose hardware, misplaced insulating partition, unassigned network cable or temporary conductor remains in the FCU. Apply the approved site sequence only after the physical record and project topology agree.

Topology cross-check

Processor pair	Both recorded CP451 modules are seated in their original duplexed positions.
Power pair	Both power modules and their supply feeds match the pre-work record.
Network pair	Each Vnet/IP cable returns to its recorded switch, port and redundant path.
Remote I/O path	EC401 positions and ESB or ER-bus connections match the project topology.
Local I/O	Every local module is identified by slot before the inventory comparison begins.

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Check	Acceptance evidence	If not
Power-up state	Both supply paths and processor modules reach their documented operating state.	Hold release and inspect power identity, module seating and diagnostics.
Vnet/IP redundancy	Both network paths link through the recorded Layer 2 switches.	Trace cable identity, switch port and configured path separately.
Local I/O inventory	All intended local modules are recognized in their original positions.	Compare slot records and project definitions; do not auto-accept a different module.
Remote node inventory	Configured ESB or ER-bus nodes return without unexplained diagnostics.	Check coupler slots, bus cabling, package capacity and licenses.
Failure contact	NC/C state matches normal FCU operation.	Test only within the approved contact circuit and rating.
Functional proof	Permitted process signals and control responses match the baseline.	Keep unresolved points under maintenance control.

Observe the battery boundary

If the unpowered interval approaches or exceeds the documented 72-hour maximum, treat memory restoration as an explicit commissioning activity. Allow at least 48 hours for battery recharge after power returns.

Release condition

Both redundant paths, configured nodes and the permitted functional checks pass with no unexplained diagnostic.

Hold condition

Any identity, slot, license, network, I/O inventory or battery-restoration discrepancy remains unresolved.

Evidence attached to the work record

Before/after diagnostics	Retain the processor, Vnet/IP and node-status comparison.
Physical record	Keep slot, cable and nameplate evidence for the as-left FCU.
Witnessed result	Identify the responsible person and the permitted process response that was observed.

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As-left identity	AFV10D S2 style and complete nameplate ordering identity
Redundant hardware	Both processors, power modules and Vnet/IP paths recorded
Expansion topology	Local I/O, node units, bus type and EC401 slot relationship
Software capacity	LFS1500/LFS1550 package and node-license evidence
Acceptance evidence	Diagnostics, network states, I/O inventory and functional result
Exceptions	Every unresolved item retained with owner and release restriction

Technical reference record

Yokogawa Duplexed Field Control Unit AFV10D

GS 33K50E30-50E, 4th edition, March 2013; selected pages 2-4.

Related Apter Power catalog references

Catalog navigation only. These entries do not establish compatibility, substitution or approval of a changed installation.

Yokogawa ADV551-P10 S2 | View Yokogawa ADV551-P10 S2 page

Yokogawa S9129FA | View Yokogawa S9129FA page

Yokogawa MRI-234*B | View Yokogawa MRI-234*B page

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Send the exact model, quantity and requested condition for a quotation.

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