Yokogawa NFCP501-W15 S2

01 Function and selected configuration

Product function

Yokogawa NFCP501-W15 S2 brings controller execution, retained application data and network access into one FCN processor position. The installed configuration can use a single CPU or a matched duplex pair, with different restrictions on the local serial connection.

Selected configuration

The W15 selection combines extended functions, the extended-temperature option and basic non-explosion-protected construction. Style S2 supports the E2 bus interface. CPU execution uses a real-time operating system with IEC 61131-3 programming support and the Duolet virtual-machine environment.

Functional path

FCN application

CPU execution / memory

Duplex SB bus

Configured field I/O

Processor	Atom E3815 at 1.46 GHz
Memory	256 MB ECC RAM and 2 MB battery-backed ECC SRAM
Network	Two 10/100/1000 Mbps Ethernet ports

Main memory includes error correction, while battery-backed SRAM retains data and the onboard 1 GB flash provides secondary storage. One SDHC slot accepts 4–32 GB Class 10 media. Watchdog and temperature monitoring support controller diagnostics; CPU, Ethernet, SD and EXEC indicators distinguish operating and maintenance states.

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02 Technical operating envelope

Processor	Atom E3815; 1.46 GHz
Main memory	256 MB with ECC
Retained SRAM	2 MB with ECC; battery backed
Onboard flash	1 GB
Removable media	SDHC 4–32 GB; Class 10
Ethernet ports	2 × RJ45
Ethernet rates	10 / 100 / 1000 Mbps

Serial interface	1 × RS-232-C; D-sub 9-pin male
Serial rate	0.3–115.2 kbps; selectable
I/O interface	Duplex SB bus
Power supply	5 VDC ±5%
Maximum current	1200 mA
Temperature option	-20 to +70 °C
Diagnostics	Watchdog and temperature monitoring

The wider-temperature selection does not change the 5 V supply or CPU-pairing requirements. Serial use and E2 expansion depend on configuration.

Signal interpretation

The RS-232-C port is disabled as an application interface in a redundant CPU configuration. Ethernet availability does not remove this serial limitation.

Interface boundary

Use CPUs with matching model, suffix and system software for duplex operation. Style S2 or later is required for E2 bus use; confirm the installed base and expansion arrangement.

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03 System integration and applications

Duplex control execution

A matched pair provides the supported duplex CPU arrangement while retaining the same model, suffix and software configuration.

Ethernet-connected controller

Two RJ45 ports connect the controller to approved plant networks at supported Ethernet speeds.

Extended I/O architecture

Style S2 can work with the E2 interface in the appropriate FCN base and extension-unit arrangement.

Single-CPU serial integration

A nonredundant CPU can use the RS-232-C port with the configured rate, duplex mode and correct 9-pin connection.

System and supply context

The CPU requires a compatible FCN base, power supply and configured I/O arrangement. A second processor, E2 interface and removable media are separate items unless specified.

Application boundary

Apply the extended-function CPU to an FCN-500 control application whose software, network and redundancy settings match the installed system. A CPU module alone does not provide field I/O terminals.

Which parts of the NFCP501-W15 S2 memory system have error correction?

The 256 MB main memory and 2 MB static RAM have ECC. The SRAM is battery backed; the separate onboard flash capacity is 1 GB.

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04 Engineering selection decisions

Can the serial port on NFCP501-W15 S2 remain in service in a duplex CPU pair?

No. The RS-232-C port cannot be used when the CPUs are configured in redundancy. Plan the communication path before enabling duplex operation.

What storage card can be fitted to NFCP501-W15 S2?

The single card slot supports SDHC media from 4 to 32 GB with a Class 10 rating. Media capacity and controller-compatible handling should both be checked.

How much 5 V supply current must be allowed for NFCP501-W15 S2?

Allow a maximum of 1200 mA at 5 VDC ±5% for the NFCP501 CPU. Other base-mounted modules have additional power requirements.

Can NFCP501-W15 S2 use an arbitrary RS-232-C baud rate?

No. The selectable rates run from 0.3 to 115.2 kbps in defined steps. Communication is asynchronous, with full or half duplex selected in software; the serial port is restricted to nonredundant CPU operation.

Check the base	Allow the CPU two slots and verify the selected power supply and I/O allocation.
Handle storage correctly	Use suitable Class 10 SDHC media and follow the controller shutdown and access indications.

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05 Configuration boundary and references

Lifecycle and support

The current manufacturing and factory-support phase of NFCP501-W15 S2 is not confirmed. Product availability alone does not establish its lifecycle status.

Replacement assessment

Preserve the W15 selection, S2 identity, base layout, application software and duplex pairing. Restore network settings before reconnecting the controlled process.

Document roles

Use the original manufacturer excerpt for its preserved technical tables and drawings. This product brief explains selection and system context. The separate installation guide covers preparation, connection, tests and handover; it does not replace manufacturer instructions.

Technical basis

Yokogawa FCN Autonomous Controller Hardware (FCN-500), GS 34P02Q14-01E, 23rd edition.

Related product navigation

- Yokogawa ADV551-P10 S2
- Yokogawa ADV161-P50 S2

These are related references, not confirmed substitutes or an automatically approved assembly.

Product enquiries