

Schneider Electric

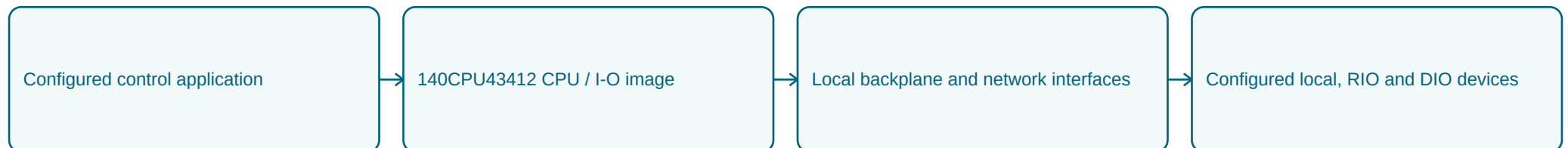
140CPU43412

CPU Module

Schneider Electric 140CPU43412 is a Modicon Quantum CPU with 2 MB SRAM, two RS-232 Modbus ports and one Modbus Plus network port. It executes the configured control application and coordinates local, remote and distributed I/O within the supported Quantum architecture.

Schneider Electric 140CPU43412 executes the Quantum control application and connects the CPU to its configured I/O and communication services. Its non-A hardware and executive identity must remain explicit during service or migration.

Functional position



Keep the non-A executive and hot-standby identity separate from 140CPU43412A. Match the communication switch positions and rear node address to the restored application before starting the controller.

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Control and integration highlights

Coordinates the configured local and remote I/O image.

Supports distributed I/O through the documented Modbus Plus architecture.

Separates serial Modbus communication from the Modbus Plus network.

Provides front-panel diagnostics and memory-protection controls.

Technical capability map

SRAM capacity	2 MB
Maximum IEC program	896 k
984 ladder-logic capacity	64 k words
Discrete reference capacity	64 k, any mix
Register capacity	57 k
Extended register capacity	96 k
Modbus serial ports	2, RS-232, 9-pin D-shell
Modbus Plus ports	1, RS-485, 9-pin D-shell
Local I/O capacity	64 input words and 64 output words
Maximum local racks	2, requires expander
Maximum remote drops	31
Remote I/O capacity per drop	64 input words and 64 output words
Maximum DIO networks	3, requires two 140NOM21x00 modules

DIO capacity per network	500 input words and 500 output words
DIO capacity per node	30 input words and 32 output words
Option-module interfaces	Up to 6; only 2 Modbus Plus modules with full DIO functionality
Watchdog timer	250 ms, software-adjustable
Logic solve time	0.1-0.5 ms/k
Battery type	3 V lithium, 1200 mAh
Operating temperature	0-60 degrees C
TOD clock accuracy	+/-8 seconds/day at 0-60 degrees C
Fixed ASCII setting	2400 baud, even parity, 7 data bits, 1 stop bit
Fixed RTU setting	9600 baud, even parity, 8 data bits, 1 stop bit
Rear-switch node range	1-64
Software Modbus address range	1-247
Modem-capable serial interface	Modbus port 1; port 2 does not support modems

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Integration and applications

Quantum control execution

Runs the installed control logic and coordinates the configured local I/O image.

Modbus-connected equipment

Exchanges serial data using the selected ASCII, RTU or software-defined communication settings.

Remote-drop coordination

Supports the documented Quantum remote-I/O architecture through the configured RIO head interface.

Distributed I/O integration

Uses the Modbus Plus architecture and the required option modules for the configured DIO networks.

Use the recorded rack configuration, I/O map and communication settings as the integration baseline. After replacement, confirm the application, processor state and each configured communication path before releasing the process.

Integration boundary

Capacity is a configured word allocation, not a count of free sockets. Register words and blocks of discrete I-O consume the available I-O image. A second local rack requires an expander, and three distributed networks require the two specified Modbus Plus option modules.

140CPU43412 and 140CPU43412A require different flash executives; hot-standby pairs must use matching A or non-A CPU identities.

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Model-specific engineering FAQ

Can 140CPU43412 use the same flash executive as 140CPU43412A?

No. The A and non-A executives are not interchangeable. In hot standby, pair two non-A CPUs or two A CPUs rather than mixing them.

Which 140CPU43412 Modbus port can be connected to a modem?

Port 1 provides full modem interfacing. Port 2 supports normal RTS/CTS serial communication but not modem operation.

Why does the 140CPU43412 Modbus Plus indicator stay on after changing the rear switches?

An address of zero or a value above 64 is invalid and produces a steady Modbus Plus indication. The upper switch sets tens and the lower switch sets units; use a valid unique node from 1 to 64.

What changes when the 140CPU43412 communication selector moves between ASCII and RTU?

The fixed ASCII position uses 2400 baud, even parity, seven data bits and one stop bit. Fixed RTU uses 9600 baud, even parity, eight data bits and one stop bit. The bottom position permits software-defined settings.

Does the 140CPU43412 Mem Prt key position stop a running controller?

It prevents programmer changes without changing the current run state. The Stop position stops the controller; the Start position permits programmer changes and programmer start/stop commands.

What expansion is required for a second local rack on 140CPU43412?

The supported two-rack local configuration requires an expander. Local I/O allocation remains limited to 64 input words and 64 output words, with discrete and register I/O consuming that allocation.

How should 140CPU43412 distributed-I/O capacity be checked?

Three DIO networks require two 140NOM21x00 option modules. Each network allows 500 input and 500 output words; each node allows 30 input and 32 output words, and drop overhead must be included.

Which diagnostic indications distinguish start-up from execution on 140CPU43412?

Ready means power-up diagnostics have passed; Run means logic is being solved. Bat Low identifies a missing or depleted battery, while Error A identifies a Modbus Plus communication error.

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Installation and service precautions

Read the Quantum hardware instructions before work. Verify 140CPU43412, the non-A executive, rack configuration, communication switches and the approved process maintenance state.

01 Keep the exact non-A CPU identity; do not load a 140CPU43412A flash executive.	02 For hot standby, use two matching non-A CPUs or two matching A CPUs, never one of each.
03 Set the key switch and memory-protection controls for the authorized maintenance operation.	04 Retain the rear rotary-switch address within 1-64; zero or values above 64 are invalid for Modbus Plus.
05 Match the front communication switch to the actual serial client; fixed ASCII and RTU modes use different baud and data-bit settings.	06 Connect modem equipment to Modbus port 1; port 2 does not provide full modem support.
07 Respect I/O-word allocations and the required expander or option modules; do not infer capacity from the connector count.	08 Confirm Ready, Run, memory protection and communication indications before returning the restored controller to service.

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Evidence and related portfolio

Technical evidence record

Quantum with Concept and ProWORX, Hardware Reference Manual - 35013379, 12/2013

Quantum CPU programming-software compatibility - FA309888

Related portfolio navigation

These separate product pages are reference navigation, not a statement of interchangeability or approval for the installed system.

Schneider Electric 140ACO02000	View Schneider Electric 140ACO02000 page
Schneider Electric 140AI133010	View Schneider Electric 140AI133010 page
Schneider Electric 140ARI03010C	View Schneider Electric 140ARI03010C page
Schneider Electric 140ATI03000	View Schneider Electric 140ATI03000 page
Schneider Electric 140DDI35300	View Schneider Electric 140DDI35300 page
Schneider Electric 140DDO35300	View Schneider Electric 140DDO35300 page
Schneider Electric 140XBP00600	View Schneider Electric 140XBP00600 page
Schneider Electric 990XCP98000	View Schneider Electric 990XCP98000 page

The technical reference separates CPU resources, interfaces and diagnostic states; the installation guide covers switch setup, application restoration, communication checks and controlled start-up.

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