Schneider □□□ Series Service Manual

140CPU43412UC

1. Description

The 140CPU43412UC is a CPU module from Schneider Electric's Modicon Quantum series. This unit operates at a clock frequency of 66 MHz, accommodating two racks and offering extensive input and output capabilities.

2. Specifications

Specification	Value
Manufacturer	**Schneider Electric**
Product	**Type CPU Module**
Product	**Line Modicon Quantum**
Part	**Number 140CPU43412UC**
EAN	**3595863839838**
Clock	**Frequency 66 MHz**
Racks	**2**
Remote	**I/O 31.7K in / 31.7K out**
Exec	**Time (Boolean) 0.12–0.59 µs**
RAM	**1056 KB**
Remote	**I/O Stations 31**
I/O	**Interrupts High-speed, counters**
Instr.	**per ms 2.49 Kinst/ms**
Distributed	**I/O 8K in / 8K out**
Comm	**Ports 1 Modbus Plus, 2 Modbus**
Power	**1800 mA @ 5 V**
Optional	**Modules 6**
LEDs	**7**
Max	**Ethernet Connections 6**

3. Product Information

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Technical specifications for 140CPU43412UC

Manufacturer Schneider Electric

Product Type CPU Module

Product Line Modicon Quantum

Part Number 140CPU43412UC

EAN 3595863839838

Clock Frequency 66 MHz

Racks 2

Remote I/O 31.7K in / 31.7K out

Exec Time (Boolean) 0.12–0.59 µs

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Instr. per ms 2.49 Kinst/ms

Distributed I/O 8K in / 8K out

Comm Ports 1 Modbus Plus, 2 Modbus

Power 1800 mA @ 5 V

Optional Modules 6

LEDs 7

Max Ethernet Connections 6

Description

The part number 140CPU43412UC from Schneider Electric is a robust CPU module within the Modicon Quantum series. With a clock frequency set at 66 MHz, it is engineered to support two racks for versatile mounting options. This CPU module features impressive memory capacity, equipped with 1056 KB of RAM to enhance data processing and storage.

In terms of remote I/O functionalities, the module can manage a total of 31 remote I/O stations, offering extensive input and output capabilities of 31.7K inputs and 31.7K outputs. It excels in managing high-speed interrupts and counters, optimizing response times with execution times for Boolean operations ranging from 0.12 to 0.59 microseconds. Furthermore, this unit supports distributed I/O configurations with an additional capacity of 8K inputs and 8K outputs.

For communication, it includes 1 Modbus Plus port and 2 Modbus ports, facilitating robust networking and data exchange. The CPU module requires a power supply of 1800 mA at 5 V for operation and can accommodate up to 6 optional modules for enhanced functionality. It is also equipped with 7 indicator LEDs to display operational statuses, ensuring efficient monitoring. With its capabilities, the 140CPU43412UC is a critical component for high-performance control systems.

Range of Product

Modicon Quantum automation platform

Product or Component Type

Unity processor

Complementary

Clock frequency

66 MHz

Number of slots

16

6

4

10

2

Number of racks

2 - local

Number of distributed I/O station

63 1 3 Modbus Plus

Number of remote I/O station

31 - 2 S908 remote I/O

0 - 0 ethernet remote I/O

Discrete I/O number

31744 inputs, 31744 outputs - remote

8000 inputs, 8000 outputs - distributed - per network Modbus Plus

Unlimited (26 slots max) - local

Analogue I/O number

500 inputs, 500 outputs - distributed - per network Modbus Plus

1984 inputs,1984 outputs - S908 remote I/O

Unlimited (26 slots max) - local

Application specific I/O

High-speed interrupt inputs

Counter

Accurate time stamping

Serial link

Number of optional modules

6 Ethernet, Modbus, Modbus Plus, Profibus DP, Sy/Max)

Maximum number of connections

2 AS-Interface - distributed

2 Modbus RS232/485 Modbus/ASCII)

4 AS-Interface - remote

6 Ethernet TCP/IP - local

6 Modbus Plus - local

6 Profibus DP - local

Integrated connection type

1 Modbus Plus

2 Modbus

Checks

Process control

Memory description

Internal RAM 1056 kB

Switch Function

Slide switch communication port : ASCII/RTU/Memory

Key switch memory start/stop memory protection

Application structure

1 cyclic/periodic master task -

1 periodic fast task -

16 timer interrupt tasks -

64 I/O interrupt tasks -

64 interrupt tasks -

No auxiliary task -

Execution time per instruction

0.1...0.27 µs floating points

0.1...0.27 µs on fixed-point arithmetic

0.12...0.585 µs Boolean

0.12...0.585 µs on word

Number of instructions per ms

1.86 Kinst/ms 100 % Boolean

2.49 Kinst/ms 65 % Boolean and 35 % numerical

System overhead

0.2 ms fast task

1 ms master task

Bus current requirement

1800 mA

Local signalling

1 LED (green) for communications are active on the Modbus Plus port (Modbus Plus)

1 LED (green) for communications are active on the Modbus port (Modbus)

1 LED (green) for CPU has been started and is solving logic (RUN)

1 LED (green) for CPU has passed the power-up diagnostic tests (READY)

1 LED (orange) for write-protected memory (memory port)

1 LED (red) for battery needs replacing or is not present (BAT LOW)

1 LED (red) for communications error on the Modbus Plus port (ERROR A)

Electrical connection

1 female connector SUB-D 9 for connecting to the Modbus Plus network

2 female connectors SUB-D 9 for connecting to the Modbus bus

Environment

Protective treatment

Conformal coating Humiseal 1A33

Product Certifications

CSA

CE

UL

Misc (Marine)

GOST

Standards

HazLoc