

Schneider  Series Service Manual

140CPU53414UC

1. Description

The 140CPU53414UC CPU Module from Schneider Electric's Modicon Quantum series features a Quantum Unity processor. This unit supports two local racks and is equipped with 586 KB of RAM, with a program memory capacity of 4 MB. The module ensures robust communication through Modbus RS232/Plus ports.

2. Specifications

| Specification | Value                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Manufacturer  | Schneider Electric                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Product       | Type CPU Module                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Product       | Line Modicon Quantum                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Part          | Number 140CPU53414UC                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Processor     | Type Quantum Unity                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Number        | of Racks 2 local racks                                                                                                                                                                                                                                                                                                                                                                                                                                |
| RAM           | 586 KB                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Instruction   | Rate 1.86-2.49 Kinst/ms                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Memory        | Type Internal RAM                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Communication | Ports Modbus RS232/Plus                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Program       | Memory 4 MB                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Operating     | Temperature Industrial Range                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Power         | Supply 5 V DC                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Execution     | Time (Boolean) 0.1-0.27 µs                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Communication | Memory 1 MB + CC                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Protective    | Coating Yes (CC)                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| LED           | Indicators Status and Error LEDs                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Description   | The Schneider Electric 140CPU53414UC serves as a highly efficient CPU Module within the Modicon Quantum range. Featuring a Quantum Unity processor, this module is designed to handle two local racks, allowing for expanded system capabilities. It incorporates 586 KB of RAM, providing adequate memory for various applications, alongside a robust program memory of 4 MB, demonstrating its ability to manage complex programming requirements. |
|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

3. Product Information

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Technical specifications for 140CPU53414UC

Manufacturer Schneider Electric

Product Type CPU Module

Product Line Modicon Quantum

Part Number 140CPU53414UC

Processor Type Quantum Unity

Number of Racks 2 local racks

RAM 586 KB

Instruction Rate 1.86-2.49 Kinst/ms

Memory Type Internal RAM

Communication Ports Modbus RS232/Plus

Program Memory 4 MB

Operating Temperature Industrial Range

Power Supply 5 V DC

Execution Time (Boolean) 0.1-0.27 µs

Communication Memory 1 MB + CC

Protective Coating Yes (CC)

LED Indicators Status and Error LEDs

Description

The Schneider Electric 140CPU53414UC serves as a highly efficient CPU Module within the Modicon Quantum range. Featuring a Quantum Unity processor, this module is designed to handle two local racks, allowing for expanded system capabilities. It incorporates 586 KB of RAM, providing adequate memory for various applications, alongside a robust program memory of 4 MB, demonstrating its ability to manage complex programming requirements.

The module's communication features are highlighted by Modbus RS232/Plus ports, facilitating effective device communication. The execution time for Boolean operations is notably efficient, ranging between 0.1 and 0.27 microseconds, ensuring rapid processing capabilities that can enhance the performance of automation tasks.

Designed for industrial environments, it operates across a broad temperature range. Powering the 140CPU53414UC requires a 5 V DC supply, making it compatible with standard industrial power systems. The module features a communication memory that exceeds 1 MB while also incorporating CC, further maximizing its data management efficiency. LED indicators for status and errors provide users with immediate feedback on operational health, aiding in diagnostics and maintenance.

Additional to its functional capabilities, the module comes with a protective coating, ensuring durability against environmental factors that may affect its performance. Overall, the 140CPU53414UC is engineered to deliver reliable operation in demanding industrial applications.

ProWORX32, Concept, 2972kB RAM, 100MHz

Range of Product

Modicon Quantum automation platform

Product or Component Type

Processor

Software name

ProWORX 32

Concept

Processor name

80486

Mathematical coprocessor

With

Complementary

Clock frequency

100 MHz

Memory description

Internal RAM 2972 kB

Exact time for 1 Kinstruction

0.1...0.5 ms LL984

Watchdog timer

250 ms

Clock drift

+/-8 s/day 32...140 °F (0...60 °C)

I/O words

30 I/32 O distributed

64 I/64 O max local

64 I/64 O remote

I/O words/network

500 I/500 O distributed  
Drops/network  
63 distributed  
Number of drops  
31 remote  
Number of network  
2 remote  
3 distributed  
Battery type  
Lithium 10  $\mu$ A 420  $\mu$ A  
Battery Capacity  
1.2 Ah  
Battery Life  
10 year(s)  
Switch Function  
Key switch  
Marking  
CE  
Bus current requirement  
1250 mA  
Module format  
Standard  
Net Weight  
1.87 lb(US) (0.85 kg)  
Environment  
Product Certifications  
FM Class 1 Division 2  
cUL  
Standards  
CSA C22.2 No 142  
UL 508  
Resistance to electrostatic discharge  
4 kV contact IEC 801-2  
8 kV on air IEC 801-2  
Resistance to electromagnetic fields  
9.1 V/m (10 V/m) 80...2000 MHz IEC 801-3  
Ambient Air Temperature for Operation  
32...140 °F (0...60 °C)  
Ambient Air Temperature for Storage  
-40...185 °F (-40...85 °C)  
Relative Humidity  
95 % without condensation  
Operating altitude  
<= 16404.2 ft (5000 m)