Part Number	Source Voltage	Type	Bus Current Provided
140CPS41400	48 Vdc	Standalone/ Redundant	8 A
140CPS42400	48 Vdc	Standalone/ Redundant	8 A
140CPS51100	100 ... 150 Vdc	Standalone	3 A
140CPS52400	125 Vdc	Standalone/ Redundant	8 A

CPU Specifications

The following table shows specifications for the CPUs.

Part Numbers	Max IEC Program	SRAM Size	Ladder Logic	Available Registers	Bus Current Required
140CPU11302	109 k	256 k	8 k	10 k	780 mA
140CPU11303	368 k	512 k	16 k	10 k	790 mA
140CPU21304	606 k	768 k	32 k or 48 k	64 k or 32 k	900 mA
140CPU42402	570 k	2 M	64 k	64 k	1.8 A
140CPU43412	896 k	2 M	64 k	57 k	1.8 A
140CPU43412A	896 k	2 M	64 k	57 k	1.25 A
140CPU53414	2.5 M	4 M	64 k	57 k	1.8 A
140CPU53414A	2.5 M	4 M	64 k	57 k	1.25A
140CPU53414B	2.5 M	4 M	64 k	57 k	1.25A

Networking Modules – RIO

The following table shows specifications for RIO Networking modules.

Part Numbers (RIO)	Drop Location	Communication Channel(s)	Bus Current Required
140CRA93100	Remote (Drop)	1	600 mA
140CRA93200	Remote (Drop)	2	750 mA
140CRP93100	Local (Head)	1	600 mA
140CRP93200	Local (Head)	2	750 mA
140NRP95400	Local (Head) or Remote (Drop)	2, multimode fiber optic (ST-style); 1 coaxial (F type)	700 mA
140NRP95401C	Local (Head) or Remote (Drop)	2, single-mode fiber optic (LC-style); 1 coaxial (F type)	750 mA

CPU Modules

7

Introduction

This chapter provides information on the specifications, LED indicators and description and error codes for the Quantum CPU modules.

The following table shows an overview of the Quantum CPU modules.

CPU	SRAM (bytes)	Ladder	Registers	Extended	984 Ladder Performance	Max IEC Program
140CPU11302	256 k	8 k	10 k	none	0.3 - 1.4 ms/k	109 k
140CPU11303	512 k	16 k	10 k	none	0.3 - 1.4 ms/k	368 k
140CPU21304	768 k	32 k or 48 k	57 k or 28 k *	80 k or 0 k *	0.3 - 1.4 ms/k	606 k
140CPU42402	2 M	64 k	57 k	96 k *	0.1 - 0.5 ms/k	570 k
140CPU43412	2 M	64 K	57 K*	96 k	0.1 - 0.5 ms/k	896 k
140CPU43412A	2 M	64K	57 K*	96 k	0.1 - 0.5 ms/k	896 k
140CPU53414	4 M	64 K	57 K*	96 k	0.9 - 0.45 ms/k	2.5 M
140CPU53414A	4 M	64 K	57 K*	96K	0.1 - 0.5 ms/k	2.5 M
140CPU53414B	4 M	64 K	57 K*	96K	0.1 - 0.5 ms/k	2.5 M
*Refer to the individual specification pages for detailed information.						

What Is in This Chapter?

This chapter contains the following topics:

Topic	Page
140CPU11302 CPU Module	115
140CPU11303 CPU Module	124
140CPU21304 CPU Module	133
140CPU42402 CPU Module	142
140CPU43412 CPU Module	151

140CPU53414A CPU Module

Overview

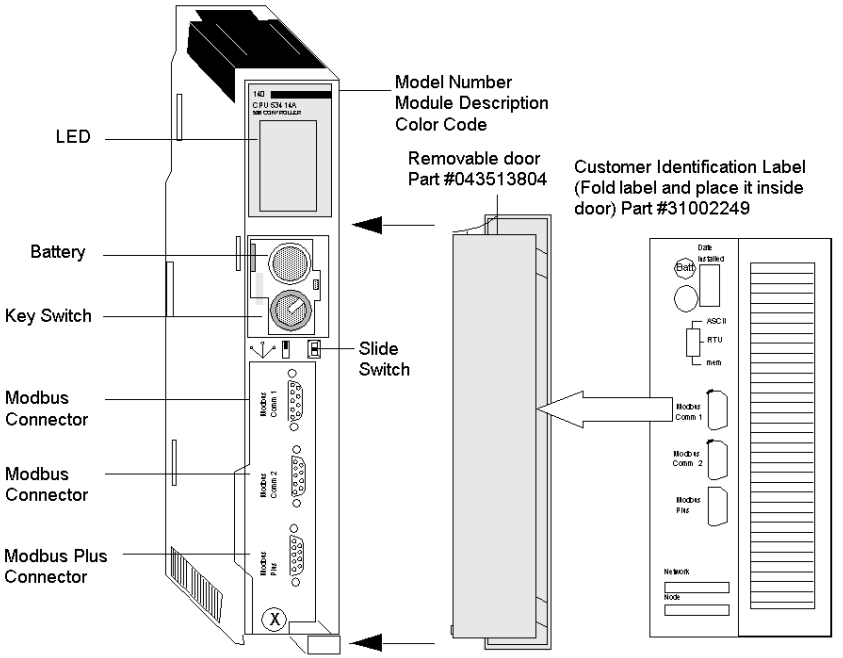
This unit provides information on the specifications, LED indicators and description and error codes for the 140CPU53414A Controller Module.

This module is functionally identical to the non-"A" version, however, the following should be considered:

- If you are using the module in a Hot Standby topology, then you **must** use either two non-"A" models or two "A" models.
- The "A" version requires a new flash executive.
- The "A" version and non-"A" flash executives are **not** interchangeable.
- Schneider Automation software (Concept, ProWORX, and Modsoft) supports the "A" version. Any existing or new 140CPU53414 program configuration will load into a 140CPU53414A without any modifications.

CPU Module

The following figure shows the CPU Module and its components.



Specifications

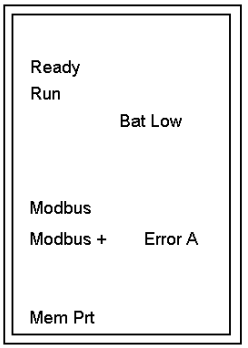
The following table shows the specifications for the CPU53414A Controller module.

Specifications					
User Logic/Reference Capacity	**984 Ladder Logic**	**Discrete**	**Register**	**Extended Register**	**IEC Application Memory**
	64 k words	64 k	57 k	96 k	2.7M
	57,766 4XX registers max Only if: 0XXX = 16 and 1XXX = 16 and 3XXX = 16				
Reference Capacity					
Discrete	64 k - any mix				
Local I/O)					
Maximum I/O Words	64 In and 64 Out*				
Maximum Number of I/O Racks	2 (Requires Expander)				
Remote I/O					
Maximum I/O Words per Drop	64 In and 64 Out*				
Maximum Number of Remote Drops	31				
Distributed I/O					
Maximum Number of Networks per System	3**				
Maximum Words per Network (for every DIO drop, there is a minimum of words input of overhead.)	500 In and 500 Out				
Maximum Words per Node	30 In and 32 Out				
*This information can be a mix if Discrete or Register I/O. For each word of register I/O configured, one word of I/O words must be subtracted from the total available. The same holds true for each block of 8 bits or 16 bits of Discrete I/O configured---one word Register I/O must be subtracted from the total available. **Requires the use of two 140NOM21X00 Option Modules.					
Maximun Number of Network Option Module Interfaces	Supports up to six network modules (i.e., Modbus Plus, Ethernet and Multi-Axis Motion option modules) using the option module interface technique (see *Quantum Network Interface Techniques, page 45*). **Note**: Only two Modbus Plus modules can have full functionality, Including Quantum DIO support.				
Watchdog timer	250 ms (software adjustable)				
Logic Solve Time	0.1 ms/k to 0.5 ms/k				

Specifications		
Battery		
Type	3 V Lithium	
Service Life	1200 mAh	
Shelf Life	10 years with 0.5% loss of capacity per year	
Battery Load Current at Power-off		
Typical	14 µA	
Maximum	420 µA	
Communication		
Modbus (RS-232)	2 serial port (9-pin D-shell)	
Modbus Plus (RS-485)	1 network port (9-pin D-shell)	
Programming Software Capability	Modsoft, version 2.6 Concept, version 2.1 with B2.1 patch exec Concept 2.2 with SR2 ProWorx NxT, version 2.0 ProWorx Plus, version 1.05	
General		
Diagnostics	**Power Up**	**Runtime**
	RAM RAM Address Executive Checksum User Logic Check Processor	RAM RAM Address Executive Checksum User Logic Check
Bus Current Required	1.25 A	
Power dissipation	6.25 W	
TOD Clock	+/- 8.0 seconds/day 0 ... 60° C	
Operating Temperature	0 ... 50° C	

LED Indicators and Descriptions

The following figure shows the LED indicators.



The following table provides a description of the LED indicators for the 140CPU53414A module.

LED Descriptions		
LEDS	**Color**	**Indication when On**
Ready	Green	The CPU has passed power-up diagnostics.
Run	Green	The CPU has been started and is solving logic.
Bat Low	Red	The battery needs replacing or is not present.
Modbus	Green	Communications are active on Modbus port 1 or 2.
Modbus +	Green	Communications are active on the Modbus Plus port.
Error A	Red	Indicates communications error on the Modbus Plus port.
Mem Prt	Amber	Memory is write-protected (the memory protect switch is on).

LED Error Codes

The following table shows the run LED error codes for the 140CPU53414A.

LED Error Codes		
Number of Blinks	**Code**	**Error**
Continuous	0000	requested kernel mode
2	80B	ram error during sizing
	80C	run output active failed
	82E	MB command handler stack error