MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

SCHNEIDER ELECTRIC

140CPU11302

QUANTUM PROCESSOR MODULE

Used with the applicable Modicon Quantum configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Technical documentation applicable to 140CPU11302

Modicon® Quantum™ automation platform

Concept™/ProWORX™ standard CPUs

Automation platform for Concept and ProWORX software offer		Simple applications	
			
Number of racks 2/3/4/6/10/16 slots	Local I/O	2 racks (1 main + 1 extension)	
	Remote I/O (RIO)	31 drops x 2 racks (1 main + 1 extension)	
	Distributed I/O (DIO)	3 networks with 63 single-rack drops	
Maximum discrete I/O *(1)*	Local I/O	1024 input channels and 1024 output channels (max. 27 slots)	
	Remote I/O (RIO)	31,744 input channels and 31,744 output channels	
	Distributed I/O (DIO)	8000 input channels and 8000 output channels per network	
Maximum analog I/O *(1)*	Local I/O	64 input channels and 64 output channels (max. 27 slots)	
	Remote I/O (RIO)	1984 input channels and 1984 output channels	
	Distributed I/O (DIO)	500 input channels and 500 output channels per network	
Application-specific modules		Intrinsically safe I/O, high-speed counter, axis control, interrupt inputs, serial link, accurate time stamping	
Number of communication modules and axes (in local rack)	Ethernet TCP/IP, Modbus Plus, Profibus DP, Sy/Max® Ethernet, SERCOS™, any combination	2	
Bus connections	Modbus	1 integrated RS 232 Modbus master or ASCII port via EFB XXMIT on Concept or XMIT module on ProWORX	
	AS-Interface actuator/ sensor bus	4 on local rack, 4 on remote rack (RIO), 2 on distributed rack (DIO)	
	INTERBUS™ Generation 3	–	3
	INTERBUS™ Generation 4	–	2
	Profibus DP	2 “option” modules on local rack	
Network connections	Modbus Plus	1 integrated port, 2 “option” modules on local rack	
	Ethernet TCP/IP	2 “option” modules on local rack	
Process control	Control loops *(2)*	10 to 20 programmable channels	
Redundancy		Power supplies, remote I/O network, Modbus Plus modules, Ethernet TCP/IP modules	
Hot Standby	Hot Standby LL984	Yes	
	Hot Standby IEC	–	
Memory capacity	LL984 program (max.)	8 Kwords	16 Kwords
	IEC program (max.)	109 Kb	368 Kb
	Located data (State RAM) I/O bits (max.)	8192 input bits and 8192 output bits	
	Located data (State RAM) 16-bit I/O words (max.)	9999 I/O words	
Functional safety certification		–	
Quantum CPUs		**140CPU11302**	**140CPU11303**
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(1) The maximum values for the number of discrete I/O and analog I/O are not cumulative.
(2) Usage values, including memory resources and processor power.

Modicon® Quantum™ automation platform
Concept™/ProWORX™ standard CPUs

Characteristics

Module type			140 CPU 113 02	140 CPU 113 03	140 CPU 434 12A	140 CPU 534 14B
Functional safety certification			–			
Approvals			UL 508, CSA 22,2-142, C UL, FM Class 1 Div. 2, CE			
Processors			80186		80486	
Math coprocessor			No		Yes	
Clock speed		**MHz**	20		66	100
User memory	Max. IEC program		109 Kb	368 Kb	896 Kb	2.5 Mb
	Max. LL 984 program		8 Kwords	16 Kwords	64 Kwords	
Capacity	Bits	**bps**	8192 I/8192 Q		64 K combined	
	Registers	**words**	9999 max.		57 K max.	
	Extended memory	**words**	–		96 K	
Logic solve time (984 LL instructions)		**ms/K**	0.3…1.4		0.1…0.5	
Watchdog timer		**ms**	250 (software-adjustable)			
Real-time clock accuracy		**s/day**	± 8 at 0…60°C			
Local I/O	Maximum I/O words		64 I/64 Q			
Remote I/O (RIO)	I/O words/drop		64 I/64 Q			
	Number of drops		31			
	Number of networks		2			
Distributed I/O (DIO)	I/O words/drop		30 I/32 Q			
	I/O words/network		500 I/500 Q			
	Drops/network		63			
	Number of networks		3			
Communication ports	Modbus (RS 232)		1		2	
	Modbus Plus		1			
Maximum number of NOM, NOE, CRP or MMS modules			2		6	
Key switch			No		Yes	
Memory backup	Product reference		990 XCP 980 00			
	Battery type		Lithium			
	Voltage	**V**	3 ⎓			
	Capacity	**mAh**	1200			
	Typical current	**µA**	5	7	45	85
	Maximum current	**µA**	110	210	70	135
	Storage life	**yr**	10			
Bus current required		**mA**	780	790	1250	

Modicon® Quantum™ automation platform
Concept™/ProWORX™ standard CPUs

Migration of Quantum CPUs

As both the **140 CPU 434 12A** and **140 CPU 534 14B** Quantum CPUs are compatible with Concept or ProWORX software, they can be upgraded to be compatible with the Unity Pro™ software without any hardware modification.. This process of migrating from Concept to Unity Pro is achieved by updating the CPU operating system.
This update is performed with the aid of the OS-Loader tool included with Unity Pro (see page 7/29).

The upgraded processor **140 CPU 434 12A** is then equivalent to the corresponding Unity™ processor **140 CPU 434 12U.**

Note: *Migration of the* **140 CPU 534 14B** *processor requires the version of Unity Pro ≥ 3.0.*

CPUs

Memory (total)	**Coprocessors**	**Safety**	**Reference**	**Weight kg**
256 Kbytes	No	–	**140CPU11302**	0.300
512 Kbytes	No	–	**140CPU11303**	0.300
2 Mbytes	Integrated	–	**140CPU43412A**	0.850
4 Mbytes	Integrated	–	**140CPU53414B**	0.850

Accessories

Description	**Length**	**Safety**	**Reference** *(1)*	**Weight kg**
Programming cable for Modbus interface	3.7 m	–	**990NAA26320**	0.300
	15 m	–	**990NAA26350**	1.820
Backup battery	–	–	**990XCP98000**	–
Quantum automation series hardware reference guide	–	–	**840USE1000●**	–

(1) Add one of the following digits at the end of the reference: **0***: English,* **1***: French,* **2***: German,* **3***: Spanish.*