

**XC Series PLCs**



**XC152 Series PLCs**



**XN300 Series Remote I/O**



<b>4.1</b>	<b>XC Series Programmable Logic Controllers</b>	
	Product Overview . . . . .	V7-T4-2
	Product Selection Guide . . . . .	V7-T4-3
	System Overview . . . . .	V7-T4-4
	Product Selection . . . . .	V7-T4-6
	Technical Data and Specifications . . . . .	V7-T4-12
	Dimensions . . . . .	V7-T4-28
<b>4.2</b>	<b>XC152 Series Programmable Logic Controllers</b>	
	Product Description . . . . .	V7-T4-30
	Product Selection . . . . .	V7-T4-31
	Technical Data and Specifications . . . . .	V7-T4-32
	Dimensions . . . . .	V7-T4-33
<b>4.3</b>	<b>XN300 Series Remote I/O</b>	
	Product Description . . . . .	V7-T4-34
	Features . . . . .	V7-T4-34
	Standards and Certifications . . . . .	V7-T4-34
	Product Selection . . . . .	V7-T4-35

**Note:** For EASY Programmable Relays, see Tab 3 in this volume.

# Revision notes

## Volume 7—Logic Control, Operator Interface and Connectivity Solutions, CA08100008E

Tab 4—PLC, I/O and Communications Products

Revision date	Section	Change page(s)	Description
01/08/2018	—	V7-T4-1	Updates to Tab TOC
01/08/2018	4.1	V7-T4-2–V7-T4-28	ELC Section deleted
01/08/2018	4.2	V7-T4-29–V7-T4-56	Updated to 4.1, new V7-T4-2–V7-T4-29
01/08/2018	4.3	V7-T4-57–V7-T4-60	Updated to 4.2, new V7-T4-30–V7-T4-33
01/08/2018	4.4	V7-T4-61, V7-T4-62	Updated to 4.3, new V7-T4-34, V7-T4-35
01/08/2018	4.5	V7-T4-63–V7-T4-67	Updated to 4.4, new V7-T4-36–V7-T4-40
01/08/2018	4.6	V7-T4-68, V7-T4-69	Updated to 4.5, new V7-T4-41, V7-T4-42
01/08/2018	4.7	V7-T4-70–V7-T4-116	XI/ON Section deleted



*Powering Business Worldwide*

#### XC Series Programmable Logic Controllers



4

#### Product Overview

The XC100 and XC200 series modular PLCs stand out on account of their highly scalable design. Different CPU performance classes and a wide range of expansion modules are available. An important feature is their ability to be integrated in modern communication systems. Innovative solutions can be created thanks to the possibility of exchanging data with OPC clients via the Ethernet interface and the integrated web server.

#### Features and Benefits

##### Flexible Range

- Compact and modular CPU versions to suit the needs of the application
- With or without on-board Ethernet and/or built-in web server
- Range of CPU performance
- Integrated CANopen interface for easy integration with XI/ON remote I/O

#### Contents

##### Description

	<i>Page</i>
XC Series Programmable Logic Controllers	
Product Selection Guide . . . . .	<b>V7-T4-3</b>
Catalog Number Selection . . . . .	<b>V7-T4-4</b>
System Overview . . . . .	<b>V7-T4-4</b>
Product Selection . . . . .	<b>V7-T4-6</b>
Accessories . . . . .	<b>V7-T4-9</b>
Technical Data and Specifications . . . . .	<b>V7-T4-12</b>
Dimensions . . . . .	<b>V7-T4-28</b>

##### High Performance

- Parallel backplane bus for faster processing speed
- Fiber optic CANopen interface for environments with severe electromagnetic interference
- High performance XC202 CPU with
  - 10/100 Mbit Ethernet
  - XSoft-CoDeSys programming software

#### Standards and Certifications

- IEC—UL508; CSA C22.2 No. 0-M; CSA C22.2 No. 142-M; CE marking
- UL File No.—E135462
- UL CCN—NRAQ
- CSA File No. 012528
- CSA Class No. 2252-01
- NA Certification—
  - UL Listed
  - CSA certified/cUL
- RoHS



**Product Selection Guide**

**XC Series Programmable Logic Controllers**



**XC121 Compact PLC**

**Page V7-T4-6**

This PLC is particularly suitable for applications where space is at premium and with high communication requirements.

- Two serial and two CAN interfaces enable:
  - the coupling of two CAN networks
  - Modbus master/slave coupling (RS-232 or RS-485)—CAN
  - RS-232—CAN coupling
- I/O expansion with 18 digital and 8 analog inputs/outputs
- 6 interrupt inputs
- Expandable with standard XIOC modules



**XC101 Modular PLCs**

**Page V7-T4-6**

The modular PLCs of the XC101 series are universal automation devices for small and medium-sized applications.

- Locally expandable with up to 15 XIOC modules
- Data storage on SD card
- CAN interface



**XC201 Modular PLCs**

**Page V7-T4-7**

The modular PLCs of the XC201 series offer a high CPU performance, a high speed and a wide range of communication options.

- Locally expandable with up to 15 XIOC modules
- Ethernet interface for communication and programming
- CAN interface
- Data storage on SD card or USB stick
- Web server enables visualization via CoDeSys
- Operating system update SD card or USB



**XC202 Modular PLCs**

**Page V7-T4-7**

The modular PLCs of the XC202 series offer higher CPU performance and memory than the XC201 PLCs.

- Locally expandable with up to 15 XIOC modules
- Ethernet interface for communication and programming
- CAN interface
- Data storage on SD card or USB stick
- Operating system update via Ethernet, SD card or USB
- Up to three IP addresses can be configured
- 29-bit CAN identifier

Features	XC121	XC101	XC201	XC202
Input voltage	24 Vdc	24 Vdc	24 Vdc	24 Vdc
Memory size	256 kB	64, 128 or 256 kB	256 kB or 2 MB	4 MB
Microprocessor	Infineon CC161	Infineon C164	MIPS RISC	ARM11
Processor speed	36 MHz	24 MHz	131 MHz	532 MHz
Cycle time per 1k instructions	<0.3 ms	<0.5 ms	<0.15 ms	<0.025 ms
SD card slot	Yes	Yes	Yes	Yes
USB interface	No	No	Yes	Yes
Real time clock	Yes	Yes	Yes	Yes
On-board digital inputs	—	8	8	8
On-board digital outputs	—	6	6	6
Interrupt inputs	6	4	2	2
Expandability	XIO-EXT base module + Up to 15 XIOC modules	Up to 15 XIOC modules	Up to 15 XIOC modules	Up to 15 XIOC modules
Removable terminal blocks	Yes	Yes	Yes	Yes
Screw terminal option	No	Yes	Yes	Yes
Spring-cage terminal option	Yes	Yes	Yes	Yes
Serial interface	1, RS-232 1, RS-232/RS-485	1, RS-232	1, RS-232	1, RS-232
Ethernet port	No	No	Yes	Yes
CANopen interface	2	1	1	1
On-board high speed counters	No	No	Yes	Yes
On-board encoder inputs	No	No	Yes	Yes
OPC server	Yes	Yes	Yes	Yes
Integrated web server	No	No	On suffix “-XV” models	Yes
FTP server	No	No	On suffix “-XV” models	Yes
Networks master	CANopen/easyNet	CANopen/PROFIBUS-DP/easyNet	Ethernet/CANopen/PROFIBUS-DP/easyNet	Ethernet/CANopen/PROFIBUS-DP/easyNet
Networks node/device	CANopen/PROFIBUS-DP®/ easyNet	CANopen/PROFIBUS-DP/ easyNet	Ethernet/CANopen/PROFIBUS-DP/ easyNet	Ethernet/CANopen/PROFIBUS-DP/ easyNet
Operating system	Proprietary	Proprietary	Windows CE	Windows CE
X-Soft-CoDeSys version	V2.3	V2.3	V2.3	V2.3 and 3.0

#### Catalog Number Selection

##### Controllers

4

### XC - CPU 201 - EC 512K - XV

Model Number
<b>101</b> = Modular (Infineon C164—16 bit at 24 MHz)
<b>121</b> = Compact (Infineon XC161—16 bit at 36 MHz)
<b>201</b> = Modular (MIPS RISC—32 bit at 131 MHz)
<b>202</b> = Modular (ARM 11—32 bit at 532 MHz)

Communication Ports
<b>C</b> = 1 CANopen
<b>2C</b> = 2 CANopen
<b>EC</b> = Ethernet and CANopen

User Memory
<b>64K</b> = 64 kB
<b>128K</b> = 128 kB
<b>256K</b> = 256 kB
<b>512K</b> = 2 MB
<b>4M</b> = 4 MB

Visualization Option
<b>XV</b> = Web server

#### System Overview

##### System Configuration

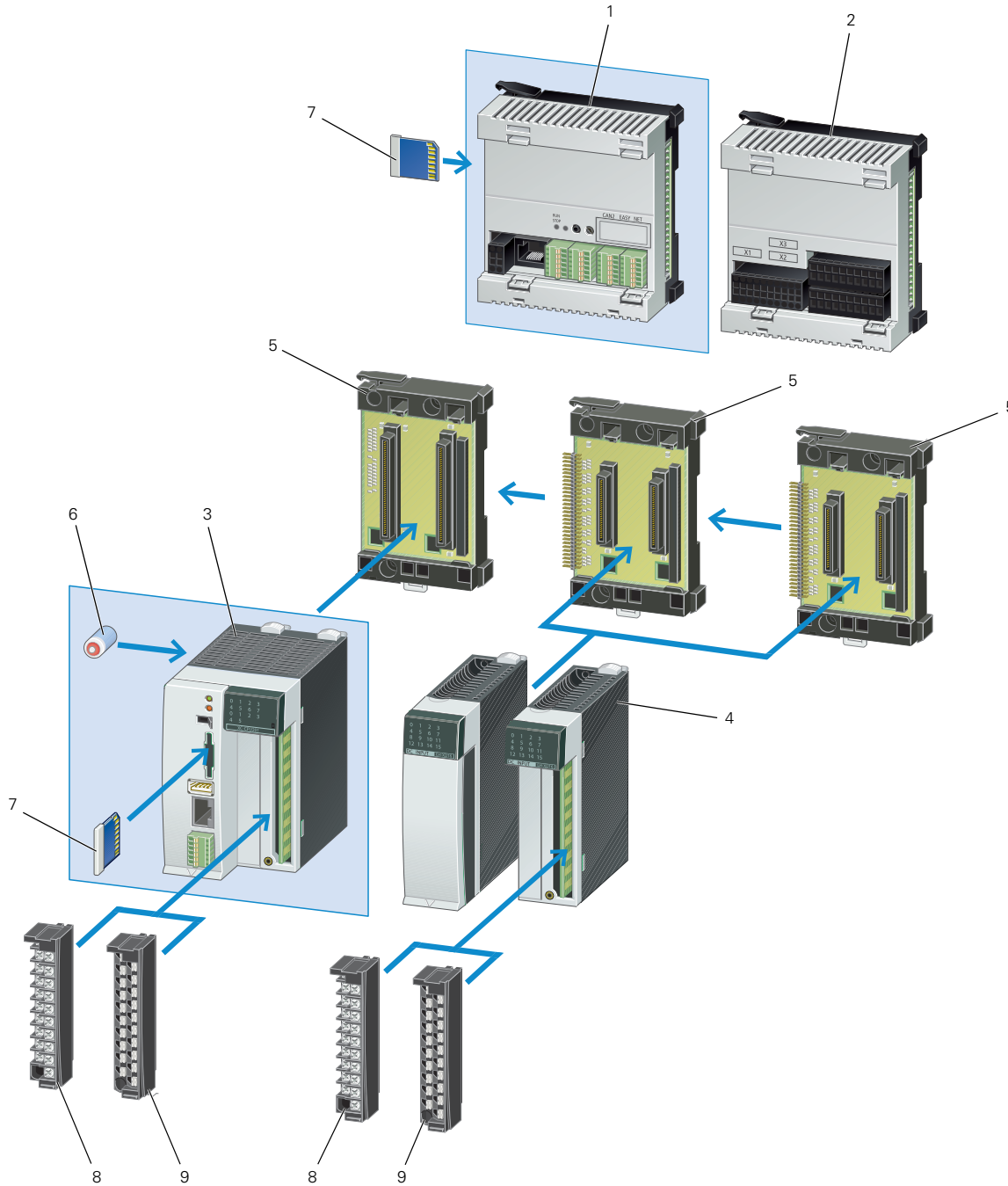
CPU	1	2	3	4	5	6	7
①	XIOC-BP-XC	XIOC-BP-2	XIOC-BP-2	XIOC-BP-3			XIOC-BP-3
	XIOC-BP-XC1		XIOC-BP-3		XIOC-BP-3		

CPU	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
②	XIOC-BP-XC	XIOC-BP-2	XIOC-BP-3	XIOC-BP-EXT		XIOC-BP-3	XIOC-BP-2	XIOC-BP-2							
	XIOC-BP-XC1		XIOC-BP-2	XIOC-BP-2	XIOC-BP-EXT		XIOC-BP-3	XIOC-BP-2	XIOC-BP-2						

##### Notes

- ① Maximum basic version, ≤7 signal modules.
- ② Maximum total version, ≤15 signal modules.

Product Identification



Item Number	Description
1	XC121 Compact PLC CPU
2	XC121 I/O Expansion module
3	XC100/XC200 Modular PLC
4	XIOC I/O modules
5	XIOC Module backplane

Item Number	Description
6	Battery
7	SD Memory card
8	XIOC Terminal block, screw terminals
9	XIOC Terminal block, spring-cage terminals

### Product Selection

#### XC121 Compact PLC CPU

Can be locally expanded with I/O module XIO-EXT-121-1.

- 24 Vdc input supply
- Real time clock
- 2 CANopen interfaces (500 kB)
- RS-232 interface for programming and communication
- Second RS-232/RS-485 interface
- Slot for SD memory card
- Spring-cage terminal blocks
- OPC server
- RUN/STOP switch

#### XC121



#### XC121 Compact PLC

Program Memory Size	Cycle Time ①	Ethernet	CAN	Serial Interface	Web Server	Pkg. Qty.	Style Number	Catalog Number
256 kB	<0.3 ms	—	2	1, RS-232 1, RS-232/RS-485	—	1	290446	<b>XC-CPU121-2C256K</b>

#### XC121 I/O Expansion Module

Base I/O module for the XC121.

- 10 digital inputs 24 Vdc
- 6 interrupt inputs
- 8 digital inputs/outputs 24 Vdc 0.5A
- 2 analog inputs 0–10V
- 2 analog inputs 0–20 mA
- 2 analog inputs PT100 RTD
- 2 analog outputs 0–10V
- Removable spring-cage terminals
- Expandable with 15 XIOC modules ②

#### XC121 I/O Module



#### XC121 I/O Expansion Module

Digital Inputs	Digital Inputs/Outputs	Analog Inputs	Analog Outputs	Pkg. Qty.	Style Number	Catalog Number
10, 24 Vdc	8, 24 Vdc 0.5A	2, 0–10V 2, 0–20 mA 2, PT100 RTD	2, 0–10V	1	290450	<b>XIO-EXT121-1</b>

#### XC101 Modular PLCs

Order backplane, terminals and battery separately.

- 24 Vdc input supply
- Real time clock
- Expandable with 15 XIOC modules
- 8 digital inputs
- 4 interrupt inputs
- 6 digital outputs
- RS-232 interface for programming and communication
- CANopen interface (500 kB)
- Slot for SD memory card
- RUN/STOP switch and LED indicators

#### XC101



#### XC101 Modular PLCs

Program Memory Size	Cycle Time ①	Ethernet	CANopen	Serial Interface	Web Server	Pkg. Qty.	Style Number	Catalog Number
64 kB	<0.5 ms	—	1	1, RS-232 typ.	—	1	262152	<b>XC-CPU101-C64K</b>
128 kB	<0.5 ms	—	1	1, RS-232 typ.	—	1	262146	<b>XC-CPU101-C128K</b>
256 kB	<0.5 ms	—	1	1, RS-232 typ.	—	1	274399	<b>XC-CPU101-C256K</b>

#### Notes

- ① Cycle time per 1k of instructions.
- ② Except the XIOC-NET-DP-M module.

**XC201 Modular PLCs**

Order backplane, terminals and battery accessories separately.

- 24 Vdc input supply
- Real time clock
- Expandable with 15 XIOC modules
- 8 digital inputs
- 2 interrupt inputs
- Incremental encoder inputs
- High speed counter (50 kHz) inputs
- 6 digital outputs
- Ethernet and RS-232 interface for programming and communication
- CANopen interface (1 MB)
- Slot for SD memory card
- USB interface
- RUN/STOP switch and LED indicators
- Built-in Web server on XV models

**XC201**



**XC201 Modular PLCs**

Program Memory Size	Cycle Time ①	Ethernet	CANopen	Serial Interface	Web Server	Pkg. Qty.	Style Number	Catalog Number
256 kB	<0.15 ms	✓	1	1, RS-232	—	1	262155	<b>XC-CPU201-EC256K</b>
2 MB	<0.15 ms	✓	1	1, RS-232	—	1	262157	<b>XC-CPU201-EC512K</b>
256 kB Integrated web server	<0.15 ms	✓	1	1, RS-232	✓	1	262156	<b>XC-CPU201-EC256K-XV</b>
2 MB Integrated web server	<0.15 ms	✓	1	1, RS-232	✓	1	262158	<b>XC-CPU201-EC512K-XV</b>

**XC202 Modular PLCs**

Order backplane, terminals and battery accessories separately.

- 24 Vdc input supply
- Real time clock
- Expandable with 15 XIOC modules
- 8 digital inputs
- 2 interrupt inputs
- Incremental encoder inputs
- High speed counter (50 kHz) inputs
- 6 digital outputs
- Ethernet and RS-232 interface for programming and communication
- CANopen interface (1 MB)
- Slot for SD memory card
- USB interface
- RUN/STOP switch and LED indicators
- Built-in Web server

**XC202**



**XC202 Modular PLCs**

Program Memory Size	Cycle Time ①	Ethernet	CANopen	Serial Interface	Web Server	Pkg. Qty.	Style Number	Catalog Number
4 MB Integrated web server	<0.025 ms	✓	1	1, RS-232	✓	1	134238	<b>XC-CPU202-EC4M-XV</b>

**XIOC Expansion Modules**

Order screw, spring-cage terminals or 40-pin connector cable for 32 I/O modules separately.

- 8, 16 and 32 input modules
- 8, 16 and 32 output modules
- User configurable input/output module
- Isolated relay output module

**XIOC—Digital**



**XIOC Digital Expansion Modules**

Description	Pkg. Qty.	Style Number	Catalog Number
8 inputs, 24 Vdc	1	257891	<b>XIOC-8DI</b>
16 inputs, 24 Vdc	1	257892	<b>XIOC-16DI</b>
32 inputs, 24 Vdc	1	267411	<b>XIOC-32DI</b>
8 outputs, 24 Vdc, 0.3A	1	257894	<b>XIOC-8DO</b>
16 outputs, 24 Vdc, 0.3A	1	257896	<b>XIOC-16DO</b>
16 outputs, 24 Vdc, 0.8A, short-circuit protected	1	257895	<b>XIOC-16DO-S</b>
16 terminals, 4 inputs, 12 configurable as inputs/outputs, 24 Vdc—outputs 0.5A	1	262322	<b>XIOC-16DX</b>
32 outputs, 24 Vdc, 0.2A	1	267413	<b>XIOC-32DO</b>
12 relay outputs, isolated	1	257897	<b>XIOC-12DO-R</b>

**Note**

① Cycle time per 1k of instructions.



## XIOC—Analog



## XIOC Analog Modules

Description	Pkg. Qty.	Style Number	Catalog Number
Inputs: 8 inputs 4–20 mA	1	262549	<b>XIOC-8AI-I2</b>
Inputs: 8 voltage inputs 0–10V	1	257899	<b>XIOC-8AI-U1</b>
Inputs: 8 voltage inputs, ±10V	1	257900	<b>XIOC-8AI-U2</b>
Inputs: 4 inputs for temperature monitoring, PT100/1000	1	257901	<b>XIOC-4T-PT</b>
Inputs: 4 inputs for thermocouples Type K, J, L, B, N, E, R, S, T	1	289933	<b>XIOC-4AI-T</b>
Outputs: 2 outputs, ±10V	1	257904	<b>XIOC-2AO-U2</b>
Outputs: 2 outputs 0–10V, 2 outputs 4–20 mA	1	257902	<b>XIOC-2AO-U1-2AO-I2</b>
Outputs: 4 outputs 0–10 V	1	257903	<b>XIOC-4AO-U1</b>
Combination modules: 2 inputs and 1 output 0–10V/1 ms conversion time	1	262409	<b>XIOC-2AI-1AO-U1</b>
Combination modules: 2 inputs and 1 output 0–10V, 0–20 mA/1 ms conversion time, individual changeover	1	281545	<b>XIOC-2AI-1AO-U1-I1</b>
Combination modules: 4 inputs and 2 outputs 0–10V/1 ms conversion time	1	262405	<b>XIOC-4AI-2AO-U1</b>
Combination modules: 4 inputs and 2 outputs 0–10V, 0–20 mA/1 ms conversion time, individual changeover	1	281544	<b>XIOC-4AI-2AO-U1-I1</b>

## XIOC—Counter



## Counter Modules

Description	Pkg. Qty.	Style Number	Catalog Number
1 input up to 100 kHz, 24 Vdc, 5 Vdc, 2 digital transistor outputs, opto-isolated, 24 Vdc 30-pin connector required for counter module	1	257906	<b>XIOC-1CNT-100KHZ</b>
2 inputs up to 100 kHz, (24 Vdc or 5V diff), 4 digital transistor outputs, opto-isolated, 24 Vdc 30-pin connector required for counter module	1	257907	<b>XIOC-2CNT-100KHZ</b>
2 incremental encoders up to 400 kHz, 5 Vdc, 2 analog outputs ±10V	1	262417	<b>XIOC-2CNT-2AO-INC</b>

## XIOC—Communication Card



## Communication Modules

Description	Pkg. Qty.	Style Number	Catalog Number
PROFIBUS-DP master module	1	257908	<b>XIOC-NET-DP-M</b>
PROFIBUS-DP node module	1	286419	<b>XIOC-NET-DP-S</b>
Serial interfaces: RS-232C, RS-485, RS-422 (for XC101, XC201 and XC202) Modes of operation: Transparent mode, Modbus master/node	1	267191	<b>XIOC-SER</b>
Serial interfaces: RS-232C, RS-485, RS-422 (for XC201 and XC202 only) Modes of operation: Transparent mode, Modbus master/node	1	135265	<b>XIOC-TC1</b>

**Accessories**

**Terminals**



**Terminals**

One 18 pole terminal plug is required for each digital and analog module.

Description	Pkg. Qty.	Style Number	Catalog Number
18-pin connector with screw terminals for digital or analog I/O	10	258102	<b>XIOC-TERM-18S</b>
18-pin connector with spring-cage terminal for digital or analog I/O	10	258104	<b>XIOC-TERM-18T</b>
40-pin connector for digital module, with 4 m cable XIOC-32DI XIOC-32DO	1	267414	<b>XIOC-TERM32</b>
30-pin connector for counter module, with 4 m cable XIOC-1CNT-100KHZ XIOC-2CNT-100KHZ	1	262248	<b>XIOC-TERM30-CNT4</b>

**Module Backplane**

**Backplane**



Description	Pkg. Qty.	Style Number	Catalog Number
Basic backplane for mounting XC100/200 on top-hat rail, can be expanded Width: 2 slots for controller	1	260792	<b>XIOC-BP-XC</b>
Expansion backplane for mounting XIOC modules on top-hat rail, can be expanded Width: 2 slots for XIOC modules	1	260794	<b>XIOC-BP-2</b>

**Backplane**



Basic backplane for mounting XC100/200 on DIN rail, can be expanded Width: 3 slots for controller and one XIOC module	1	260793	<b>XIOC-BP-XC1</b>
Expansion backplane for mounting XIOC modules on DIN rail, can be expanded Width: 3 slots for XIOC modules	1	260795	<b>XIOC-BP-3</b>
Expansion backplane for mounting XIOC modules on DIN rail, can be expanded Width: 3 slots for XIOC modules ①	1	274291	<b>XIOC-BP-EXT</b>

**Memory Card**



**Memory Card**

For storage of programs, data, recipes for XC100, XC121, XC200.

Description	Pkg. Qty.	Style Number	Catalog Number
512 MB	1	138257	<b>XT-MEM-MM512M</b>
32 MB	1	262731	<b>XT-MEM-MM32M</b>

**Note**

① Module backplane for expansion with up to 15 modules, must be plugged into the 6th slot.

#### Battery



#### Battery

Description	Pkg. Qty.	Style Number	Catalog Number
Lithium 1/2 AA 3.6V battery for backup of real-time clock	1	256209	<b>XT-CPU-BAT1</b>

#### Programming Cables

#### D-Sub 9-Pin



Description	Pkg. Qty.	Style Number	Catalog Number
2m, D-sub 9-pin, serial	1	262186	<b>XT-SUB-D/RJ45</b>

#### Ethernet Cross



2m, Ethernet cross	1	256487	<b>XT-CAT5-X-2</b>
5m, Ethernet cross	1	256488	<b>XT-CAT5-X-5</b>

#### Programming



Programming cable for XC through USB interface	1	115735	<b>EU4A-RJ45-USB-CAB1</b>
--	---	--------	---------------------------

#### Connection Cable



#### Connection Cables

Description	Pkg. Qty.	Style Number	Catalog Number
0.3m: Connection cable for XC200 to interface switch	1	256283	<b>EASY-NT-30</b>
0.8m: Connection cable for XC200 to interface switch	1	256284	<b>EASY-NT-80</b>
1.5m: Connection cable for XC200 to interface switch	1	256285	<b>EASY-NT-150</b>

#### Empty Module



#### Empty Module

Description	Pkg. Qty.	Style Number	Catalog Number
Empty module to cover open XIOC slots	1	288894	<b>XIOC-NOP</b>

#### Interface Switch



#### Interface Switch

Description	Pkg. Qty.	Style Number	Catalog Number
Interface adapter to split the combined RS-232/Ethernet interface of the XC200 into RJ45 sockets. Connection cable EASY-NT-30/80/150 usable for connection to XC200	1	289170	<b>XT-RJ45-ETH-RS232</b>

#### Filter



#### Filter

Description	Pkg. Qty.	Style Number	Catalog Number
Interference suppression of the external 24 Vdc supply of the XC100/200. Maximum current consumption: 2.2A	1	285316	<b>XT-FIL-1</b>
Power supply interference suppression of I/O modules of XC100/200. Maximum current consumption: 12A	1	118980	<b>XT-FIL-2</b>

**XSoft-CoDeSys-2 Software**

**Combined Logic and Visualization Development for XC Series PLCs**

**IEC 61131-3 Programming Languages**

- Ladder Diagram
- Structured Text
- Sequential function chart
- Function block diagram
- Freely definable function block chart/continuous function chart
- Instruction List

**Project Development**

- Automatic variable declaration
- On-line editing
- Pop-up variable and function search/pick tools
- Automatic formatting and color coding of logic/declaration text
- Re-usable Visual-Logic Function Blocks

**Debugging and commissioning**

XSoft-CoDeSys-2 offers you a number of important functions for debugging, testing and commissioning your applications quickly and efficiently.

All these features are available as soon as you log on to the XV HMI-PLC or XC200 PLC (online mode) over an Ethernet connection.

**Target Visualization**

Integrated design of Operator Interface screens for the XV HMI-PLC series. Visualization and logic developed as part of the same project. Simplifies screen design and always keeps the Logic and visualization in synch.

**Web Visualization**

Optionally XSoft-CoDeSys-2 can automatically generate XML-based runtime screens to make the screens from the XV HMI-PLC accessible remotely using a web browser with a JavaScript plug-in such as Internet Explorer®, Firefox® and others.

**Simulation**

Users can also test the application when the XV HMI-PLC is not connected to the process. This is possible thanks to the integrated online simulation feature. Simulation supports both the screens and logic that have been designed using XSoft-CoDeSys.

**Advanced Features**

- Up to 16 time and/or event driven tasks per project
- Each task can include multiple logic programs or subroutines
- Programs and screen designs can be exported and imported to support reuse
- Powerful, built-in function block libraries
- Ability to create user-defined function blocks

- Fieldbus Configurator for CANopen, PROFIBUS-DP and SmartWire-DT® device I/O
- Ethernet and serial communication function blocks (OPC server, UDP, TCP/IP, FTP client/ server, Modbus Master/Node, email, SMS, and more)
- 8 level password protection
- Web access selectable per screen
- System function libraries (OS Storage Card, and more)
- On-line and historical alarms
- On-line and historical trends

**System Requirements**

Windows XP and Windows 7 32-bit systems

**XSoft-CoDeSys-2**



**XSoft-CoDeSys-2 Software**

Description	Catalog Number
Single Seat License	SW-XSOFT-CODESYS-2-S
Multiple Seat License (3)	SW-XSOFT-CODESYS-2-M

## Technical Data and Specifications

### XC121 Compact PLC

Description	Unit	XC-CPU121-2C256K
<b>General</b>		
Standards		IEC/EN 61131-2; EN 50178
Ambient temperature	°F (°C)	32° to 131° (0° to 55°)
Storage	°F (°C)	–13° to 158° (–25° to 70°)
Mounting position		Horizontal
Relative humidity, noncondensing (IEC/EN 60068-2-30)	%	10–95
Air pressure (in operation)	hPa	795–1080
Vibration resistance		Frequency 5–9 Hz; 3.5 mm amplitude 9–150 Hz; 1.0g constant acceleration
Mechanical shock resistance		15g/11 ms
Overvoltage category		II
Pollution degree		2
Degree of protection		IP20
Rated insulation voltage (U <sub>i</sub> )	V	500
Emitted interference		EN 61000-6-4
Interference immunity		EN 61000-6-2
Backup time		At least 72 hours
Weight	kg	0.15
<b>Electromagnetic Compatibility (EMC)</b>		
Refer to Page <b>V7-T4-27</b>		
<b>Connections</b>		
Supply voltage		—
Connection type		—
Terminal capacity	mm <sup>2</sup>	0.14–1 (AWG28-18)
COM1 interface		
Connection type		RJ45
COM2, CAN1, CAN2 interfaces		
Connection type		Spring-loaded terminal block, 6-pole
Terminal capacity	mm <sup>2</sup>	0.14–0.5 (AWG28-20)
<b>Power Supply</b>		
Input voltage	Vdc	24
Permissible range	Vdc	20.4–28.8
Input power	W	Max. 1.44
Input current	mA	60
Ripple	%	≤5
Maximum heat dissipation (without local I/O) (P <sub>v</sub> )	W	6
Overvoltage protection		Yes
Protection against polarity reversal		Yes
Inrush current	x I <sub>n</sub>	No limitation (limited only by upstream 24 Vdc power supply unit)
Supply failure bridging		
Duration of power failure	ms	10
Repetition rate	s	1
External supply filter		Part No.: XT-FIL-1, Refer to <b>Page V7-T4-10</b>
<b>Memory</b>		
Program code/program data	kByte	256/244
Marker/input/output/retain data	kByte	16/4/4/8
Cycle time for 1k of instructions (bits, bytes)	ms	<0.3

**XC121 Compact PLC, continued**

Description	Unit	XC-CPU121-2C256K
<b>Interfaces</b>		
Serial interface (RS-232) without handshake lines		
Baud rate	kbit/s	Programming (character format: 8 data bits, No parity, 1 stop bit) 19.2, 38.4 (default), 57.6
Connector type		RJ45
Potential isolation		No
In transparent mode		
Baud rate	kbit/s	0.3, 0.6, 1.2, 2.4, 4.8, 9.6, 19.2, 38.4, 57.6, 115.2
Character formats		8E1, 8O1, 8N1, 8N2, 7E2, 7O2, 7N2, 7E1
Number of send bytes for block		190
Number of receive bytes for block		190
COM2 (RS-232/RS-485) without handshake lines		
Baud rate	kbit/s	Transparent mode (setting through function blocks) 0.3, 0.6, 1.2, 2.4, 4.8, 9.6, 19.2, 38.4, 57.6
Character formats		8E1, 8O1, 8N1, 8N2, 7E2, 7O2, 7N2, 7E1 (setting through function blocks)
Potential isolation		No
Bus termination		External, for RS-485
CAN1/CAN2 interface		
Baud rate	kbit/s	10 – 500
Potential isolation		No
Stations		126
Bus termination		Adjustable for each interface (CAN1/CAN2)
PDO type		Asyn., cyc., acyc.
<b>Power Supply of Local Inputs/Outputs (24 V<sub>Q</sub>/0 V<sub>Q</sub>)</b>		
Input voltage	Vdc	24
Voltage range	Vdc	19.2–30, observe polarity
Potential isolation		
Between power supply and CPU voltage		Yes
Overvoltage protection		Yes

## XC121 Expansion Module

Description	Unit	X10-EXT121-1
<b>General</b>		
Standards		IEC/EN 61131-2; EN 50178
Ambient temperature	°F (°C)	32° to 131° (0° to 55°)
Storage	°F (°C)	−13° to 158° (−25° to 70°)
Mounting position		Horizontal
Relative humidity, noncondensing (IEC/EN 60068-2-30)	%	10–95
Air pressure (in operation)	hPa	795–1080
Vibration resistance		Frequency 5–9 Hz; 3.5 mm amplitude 9–150 Hz; 1.0g constant acceleration
Mechanical shock resistance		15g/11 ms
Overvoltage category		II
Pollution degree		2
Degree of protection		IP20
Rated insulation voltage (U <sub>i</sub> )	V	500
Emitted interference		EN 61000-6-4
Interference immunity		EN 61000-6-2
Backup time		At least 72 hours
Weight	kg	0.15
<b>Electromagnetic Compatibility (EMC)</b>		
Refer to Page <b>V7-T4-27</b>		
<b>Connections</b>		
X1 connector		
Connector type		Spring-loaded terminal block, 20 pole, B2L 3.5
Terminal capacity (solid)	mm <sup>2</sup>	0.5–1
X2/X3 connector		
Connector type		Spring-loaded terminal block, 10-pole, BLZF 3.5/180 or BLI/O 3.5/10F with LEDs
Terminal capacity (solid)	mm <sup>2</sup>	0.5–1
<b>Power Supply</b>		
Supply failure bridging		
Duration of power failure	ms	10
Repetition rate	s	1
Input voltage	Vdc	24
Permissible range	Vdc	20.4 – 28.8
Input power	W	Max.1.68
Input current	mA	70
Ripple	%	≤5
Overvoltage protection		Yes
Protection against polarity reversal		Yes
Inrush current	x I <sub>n</sub>	Max. 1A
Output voltage for signal modules		
Max. field current (I <sub>f</sub> )	A	2
<b>Digital Inputs</b>		
Number		X2: 9 with plug BLI/O 3.5/10F or 10 with plug BLZF 3.5/180 X3: 8 (can also be used as outputs)
Rated voltage (U <sub>o</sub> )	Vdc	24
At state "0" (U <sub>o</sub> )	Vdc	<5
At state "1" (U <sub>o</sub> )	Vdc	>15
Rated operational current		
At state "1" (I <sub>o</sub> )	mA	3.3
Delay time		
X2: DI0–DI3	μs	20
X2: DI4–DI9	μs	250
X2: DX0–DX7	ms	20
Potential isolation		No

**XC121 Expansion Module, continued**

Description	Unit	X10-EXT121-1
<b>Digital Outputs</b>		
Number		At X3: 8 (can also be used as inputs)
Rated voltage		
Rated voltage ( $U_o$ )	Vdc	24
Permissible range		20.4–28.8 Vdc
Ripple	%	≤5
Rated operational current		
At state “1” ( $I_o$ )	A	0.5 at 24 Vac
Utilization factor (%)	g	1
Maximum duty factor	ms	100%
Lamp load without ( $R_v$ )	W	5
Potential isolation		No
Residual current at state “0” per channel	mA	<0.1
Max. output voltage		
At state “0” with external load <10M ohms	V	2.5
At state “1” at $I_o = 0.5A$	V	$U = U_o - 1V$
Short-circuit tripping current		
Short-circuit tripping current for $R_a < 10M$ ohms	A	$0.7 \leq I_o \leq 2$ for output
Total short-circuit current	A	16
Peak short-circuit current	A	32
Max. operating frequency	ops/h	40,000
Parallel connection capability		Yes
<b>Analog Inputs 0–10V</b>		
Number of channels		2
Primary voltage range	V	0–10
Resolution	bit	10
Conversion time	ms	≤5
Overall accuracy		≤ ± 1% (of full-scale value)
Input resistance	kohm	200
<b>Analog Inputs 0–20 mA</b>		
Number of channels		2
Primary voltage range	mA	0–20
Resolution	bit	10
Conversion time	ms	≤5
Overall accuracy		≤ ± 1% (of full-scale value)
Input resistance	ohm	50
<b>PT100 RTD</b>		
Number of channels		2
Temperature range	°F (°C)	–348° to 392° (–200° to 200°)
Resistance range	ohm	18.5–175.8
Resolution	bit	10
Overall accuracy		≤ ± 2%
<b>Analog Outputs</b>		
Number of channels		2
Secondary voltage range	V	0–10
Resolution	bit	12
Conversion time	ms	≤5
Overall accuracy		≤ ± 1% (of full-scale value)
External load resistance (R)	kohm	10



## XC101 Modular PLCs

Description	Unit	XC-CPU101-C64K-8DI-6DO	XC-CPU101-C128K-8DI-6DO	XC-CPU101-FC128K-8DI-6DO	XC-CPU101-C256K-8DI-6DO
<b>General</b>					
Standards		IEC/EN 61131-2; EN 50178	IEC/EN 61131-2; EN 50178	IEC/EN 61131-2; EN 50178	IEC/EN 61131-2; EN 50178
Ambient temperature	°F (°C)	32° to 131° (0° to 55°)	32° to 131° (0° to 55°)	32° to 131° (0° to 55°)	32° to 131° (0° to 55°)
Storage	°F (°C)	−13° to 158° (−25° to 70°)	−13° to 158° (−25° to 70°)	−13° to 158° (−25° to 70°)	−13° to 158° (−25° to 70°)
Mounting position		Horizontal	Horizontal	Horizontal	Horizontal
Relative humidity, noncondensing (IEC/EN 60068-2-30)	%	10–95	10–95	10–95	10–95
Air pressure (in operation)	hPa	795–1080	795–1080	795–1080	795–1080
Vibration resistance		10–57 Hz ±0.075 mm/57–150 Hz ±1.0g			
Mechanical shock resistance		15g/11 ms	15g/11 ms	15g/11 ms	15g/11 ms
Overvoltage category		II	II	II	II
Pollution degree		2	2	2	2
Degree of protection		IP20	IP20	IP20	IP20
Rated insulation voltage (U <sub>i</sub> )	V	500	500	500	500
Emitted interference	U <sub>i</sub>	EN 61000-6-4, Class A	EN 61000-6-4, Class A	EN 61000-6-4, Class A	EN 61000-6-4, Class A
Interference immunity		EN 61000-6-2	EN 61000-6-2	EN 61000-6-2	EN 61000-6-2
Battery (lifespan)		Normally 5 years	Normally 5 years	Normally 5 years	Normally 5 years
Weight	kg	0.23	0.23	0.23	0.23
Terminals		Plug-in terminal block	Plug-in terminal block	Plug-in terminal block	Plug-in terminal block
Terminal capacity					
Screw terminals					
Flexible with ferrule	mm <sup>2</sup>	0.5–1.5	0.5–1.5	0.5–1.5	0.5–1.5
Solid	mm <sup>2</sup>	0.5–2.5	0.5–2.5	0.5–2.5	0.5–2.5
Spring-cage terminal					
Flexible	mm <sup>2</sup>	0.34–1.0	0.34–1.0	0.34–1.0	0.34–1.0
Solid	mm <sup>2</sup>	0.14–1.0	0.14–1.0	0.14–1.0	0.14–1.0
<b>Electromagnetic Compatibility (EMC)</b>		Refer to Page <b>V7-T4-27</b>			
<b>Power Supply</b>					
Mains failure duration	ms	10	10	10	10
Repetition rate	s	1	1	1	1
Input voltage	Vdc	24	24	24	24
Permissible range	Vdc	20.4–28.8	20.4–28.8	20.4–28.8	20.4–28.8
Input power	W	Max. 26	Max. 26	Max. 26	Max. 26
Ripple	%	≤5	≤5	≤5	≤5
Maximum heat dissipation (without local I/O) (P <sub>v</sub> )	W	6	6	6	6
Overvoltage protection		Yes	Yes	Yes	Yes
Protection against polarity reversal		Yes	Yes	Yes	Yes
Mains filter (external)		Yes	Yes	Yes	Yes
Inrush current	x I <sub>n</sub>	Not limited, (limiting only by a supply-side 24 Vdc PSU)			
Output voltage for signal modules					
Rated value	Vdc	5	5	5	5
Output current	A	3.2	3.2	3.2	3.2
Short-circuit rating		Yes	Yes	Yes	Yes
Isolated from supply voltage		No	No	No	No
<b>CPU</b>					
Microprocessor		Infineon C164	Infineon C164	Infineon C164	Infineon C164
<b>Memory</b>					
Program code/program data	kByte	64/64	128/128	128/128	256/256
Marker/retain data	kByte	4/4	8/8	8/8	8/8
Cycle time for 1k of instructions (bits, bytes)	ms	<0.5	<0.5	<0.5	<0.5

**XC101 Modular PLCs, continued**

Description	Unit	XC-CPU101-C64K-8DI-6DO	XC-CPU101-C128K-8DI-6DO	XC-CPU101-FC128K-8DI-6DO	XC-CPU101- C256K-8DI-6DO
<b>Interfaces</b>					
Serial interface (RS-232) without handshake lines					
Baud rate	kbit/s	Max. 57.6	Max. 57.6	Max. 57.6	Max. 57.6
Connections		RJ45	RJ45	RJ45	RJ45
Potential isolation		No	No	No	No
CANopen					
Maximum data transfer rate	bit/s	500,000	500,000	500,000	500,000
Potential isolation		Yes	Yes	Yes	Yes
Device profile		To DS 301 V4	To DS 301 V4	To DS 301 V4	To DS 301 V4
PDO type		Asyn., cyc., acyc.	Asyn., cyc., acyc.	Asyn., cyc., acyc.	Asyn., cyc., acyc.
Connection		Plug-in terminal block	Plug-in terminal block	Optical fiber interface, wavelength 660 nm, plug for example HFBR-4516 Agilent Technologies	Plug-in terminal block
Bus terminating resistors					
Stations	Number	Max. 126	Max. 126	Max. 126	Max. 126
Watchdog		Yes	Yes	Yes	Yes
RTC (real-time clock)		Yes	Yes	Yes	Yes
<b>Power Supply of Local Inputs/Outputs (24 V<sub>Q</sub>/0 V<sub>Q</sub>)</b>					
Input voltage	Vdc	24	24	24	24
Voltage range	Vdc	19.2–30, observe polarity	19.2–30, observe polarity	19.2–30, observe polarity	19.2–30, observe polarity
Potential isolation					
Between power supply and CPU voltage		Yes	Yes	Yes	Yes
Overvoltage protection		Yes	Yes	Yes	Yes
Protection against polarity reversal		Yes	Yes	Yes	Yes
<b>Digital Inputs</b>					
Input current for channel at rated voltage	mA	Normally 3.5	Normally 3.5	Normally 3.5	Normally 3.5
Heat dissipation for channel	mW	Normally 85	Normally 85	Normally 85	Normally 85
Voltage level to IEC/EN 61131-2					
Limit value type 1		Low <5 Vdc/High >15 Vdc	Low <5 Vdc/High >15 Vdc	Low <5 Vdc/High >15 Vdc	Low <5 Vdc/High >15 Vdc
Input delay					
OFF → ON	ms	Normally 0.1	Normally 0.1	Normally 0.1	Normally 0.1
ON → OFF	ms	Normally 0.1	Normally 0.1	Normally 0.1	Normally 0.1
Inputs	Number	8 (of which 4 interrupt inputs)	8 (of which 4 interrupt inputs)	8 (of which 4 interrupt inputs)	8 (of which 4 interrupt inputs)
Channels with the same reference potential	Number	8	8	8	8
Status indication		LED	LED	LED	LED
<b>Digital Outputs</b>					
Channels	Number	6	6	6	6
Heat dissipation for channel	W	0.08	0.08	0.08	0.08
Load circuits	A	0.5	0.5	0.5	0.5
Output delay					
OFF → ON		Normally 0.1 ms	Normally 0.1 ms	Normally 0.1 ms	Normally 0.1 ms
ON → OFF		Normally 0.1 ms	Normally 0.1 ms	Normally 0.1 ms	Normally 0.1 ms
Channels with the same reference potential	Number	6	6	6	6
Status indication		LED	LED	LED	LED
Switching capacity		IEC/EN 60947-5-1, utilization category DC-13	IEC/EN 60947-5-1, utilization category DC-13	IEC/EN 60947-5-1, utilization category DC-13	IEC/EN 60947-5-1, utilization category DC-13
Duty factor	% DF	100	100	100	100
Utilization factor	g	1	1	1	1

## XC200 Series Modular PLCs

Description	Unit	XC-CPU201-EC256K-8DI-6DO(-XV)	XC-CPU201-EC512K-8DI-6DO(-XV)	XC-CPU202-EC4M-8DI-6DO-XV
<b>General</b>				
Standards		IEC/EN 61131-2; EN 50178	IEC/EN 61131-2; EN 50178	IEC/EN 61131-2; EN 50178
Ambient temperature	°F (°C)	32° to 131° (0° to 55°)	32° to 131° (0° to 55°)	32° to 131° (0° to 55°)
Storage	°F (°C)	-13° to 158° (-25° to 70°)	-13° to 158° (-25° to 70°)	-13° to 158° (-25° to 70°)
Mounting position		Horizontal	Horizontal	Horizontal
Relative humidity, noncondensing (IEC/EN 60068-2-30)	%	10–95	10–95	10–95
Air pressure (in operation)	hPa	795–1080	795–1080	795–1080
Vibration resistance		10–57 Hz ±0.075 mm 57–150 Hz ±1.0g	10–57 Hz ±0.075 mm 57–150 Hz ±1.0g	10–57 Hz ±0.075 mm 57–150 Hz ±1.0g
Mechanical shock resistance		15g/11 ms	15g/11 ms	15g/11 ms
Overvoltage category		II	II	II
Pollution degree		2	2	2
Degree of protection		IP20	IP20	IP20
Rated impulse withstand voltage (U <sub>imp</sub> )	V	850	850	850
Emitted interference		EN 61000-6-4, Class A	EN 61000-6-4, Class A	EN 61000-6-4, Class A
Interference immunity		EN 61000-6-2	EN 61000-6-2	EN 61000-6-2
Battery (lifespan)		Normally 5 years	Normally 5 years	Normally 5 years
Weight	kg	0.23	0.23	0.23
Terminals		Plug-in terminal block	Plug-in terminal block	Plug-in terminal block
Terminal capacity				
Screw terminals				
Flexible with ferrule	mm <sup>2</sup>	0.5–1.5	0.5–1.5	0.5–1.5
Solid	mm <sup>2</sup>	0.5–2.5	0.5–2.5	0.5–2.5
Spring-cage terminal				
Flexible	mm <sup>2</sup>	0.34–1.0	0.34–1.0	0.34–1.0
Solid	mm <sup>2</sup>	0.14–1.0	0.14–1.0	0.14–1.0
<b>Electromagnetic Compatibility (EMC)</b>			Refer to Page <b>V7-T4-27</b>	
<b>Power Supply</b>				
Duration of mains failure	ms	10	10	10
Repetition rate	s	1	1	1
Input voltage	Vdc	24	24	24
Permissible range	Vdc	20.4–28.8	20.4–28.8	20.4–28.8
Input power	W	Max. 33	Max. 33	Max. 33
Ripple	%	≤5	≤5	≤5
Maximum heat dissipation (P <sub>v</sub> )	W	6	6	6
Overvoltage protection		Yes	Yes	Yes
Protection against polarity reversal		Yes	Yes	Yes
Line filter		Yes	Yes	Yes
Inrush current	x I <sub>n</sub>	Not limited (limiting only by a supply-side 24 Vdc PSU)		
Output voltage for signal modules				
Rated value	Vdc	5	5	5
Output current	A	3.2	3.2	3.2
Short-circuit rating		Yes	Yes	Yes
Isolated from supply voltage		No	No	No
<b>CPU</b>				
Microprocessor		NEC VR4181 A MIPS	NEC VR4181 A MIPS	ARM 532 MHz
<b>Memory</b>				
Program code/program data		256 kByte/256 kByte	2 Mbyte/512 kByte	4 Mbyte/512 kByte
Marker/retain data	kByte	16/32	16/32	16/64
Cycle time for 1k of instructions (bits, bytes)	ms	<0.15	<0.15	<0.025

**XC200 Series Modular PLCs, continued**

Description	Unit	XC-CPU201-EC256K-8DI-6DO(-XV)	XC-CPU201-EC512K-8DI-6DO(-XV)	XC-CPU202-EC4M-8DI-6DO-XV
<b>Interfaces</b>				
Ethernet				
Baud rate	Mbit/s	10/100–Autodetect	10/100–Autodetect	10/100–Autodetect
Connector type		RJ45	RJ45	RJ45
Potential isolation		No	No	No
Serial interface (RS-232) without handshake lines				
Baud rate	kbit/s	Max. 115.2	Max. 115.2	Max. 115.2
Connector type		RJ45	RJ45	RJ45
Potential isolation		No	No	No
USB interface		1.0	1.0	2.0
CANopen				
Maximum data transfer rate	Mbit/s	1	1	1
Potential isolation		Yes	Yes	Yes
Device profile		To DS 301 V4	To DS 301 V4	To DS 301 V4
PDO type		Asyn., cyc., acyc.	Asyn., cyc., acyc.	Asyn., cyc., acyc.
Connection		Plug-in terminal block	Plug-in terminal block	Plug-in terminal block
Bus terminating resistors		External	External	Internal
Stations	Number	Max. 126	Max. 126	Max. 126
Watchdog		Yes	Yes	Yes
RTC (real-time clock)		Yes	Yes	Yes
<b>Power Supply of Local Inputs/Outputs (24 V<sub>Q</sub>/0 V<sub>Q</sub>)</b>				
Input voltage	Vdc	24	24	24
Voltage range	Vdc	19.2–30, observe polarity	19.2–30, observe polarity	19.2–30, observe polarity
Potential isolation				
Between power supply and CPU voltage		Yes	Yes	Yes
Between power supply and inputs/outputs		No	No	No
Status indication		LED	LED	LED
Terminals		Plug-in terminal block	Plug-in terminal block	Plug-in terminal block
Overvoltage protection		Yes	Yes	Yes
Protection against polarity reversal		Yes	Yes	Yes
<b>Digital Inputs</b>				
Input current per channel at rated voltage	mA	Normally 3.5	Normally 3.5	Normally 3.5
Heat dissipation per channel		Normally 85m W	Normally 85m W	Normally 85m W
Voltage level to IEC/EN 61131-2				
Limit value type 1		Low <5 Vdc/High >15 Vdc	Low <5 Vdc/High >15 Vdc	Low <5 Vdc/High >15 Vdc
Input delay				
OFF → ON	ms	Type 0.1	Type 0.1	Type 0.1
ON → OFF	ms	Type 0.1	Type 0.1	Type 0.1
Inputs	Number	8, of which parameterizable: 2 counters, 50 kHz, 2 interrupt inputs, 1 incremental input		
Channels with the same reference potential	Number	8	8	8
Status indication		LED	LED	LED
<b>Digital Outputs</b>				
Channels	Number	6	6	6
Heat dissipation per channel	W	0.08	0.08	0.08
Load circuits	A	0.5	0.5	0.5
Output delay				
OFF → ON		Normally 0.1 ms	Normally 0.1 ms	Normally 0.1 ms
ON → OFF		Normally 0.1 ms	Normally 0.1 ms	Normally 0.1 ms
Channels with the same reference potential	Number	6	6	6
Status indication		LED	LED	LED
Switching capacity		IEC/EN 60947-5-1, utilization category DC-13		
Duty factor	% DF	100	100	100
Utilization factor	g	1	1	1

## XIOC Digital Input Modules

Description	Unit	XIOC-8DI	XIOC-16DI	XIOC-32DI
<b>Modules</b>				
Input type		DC input	DC input	DC input
Input voltage	Vdc	24	24	24
Permissible range	Vdc	20.4–28.8	20.4–28.8	20.4–28.8
Input voltage	Vac	—	—	—
Permissible range	Vac	—	—	—
Input resistance		Normally 3.5 kohm	Normally 5.9 kohm	Normally 5.6 kohm
Input current	mA	Normally 6.9	Normally 4.0	Normally 4.3
Voltage level to IEC 61131-2, limit value type 1				
ON	Vdc	≥15	≥15	≥15
OFF	Vdc	≤5	≤5	≤5
Input delay				
OFF → ON	ms	5 (normally 4)	5 (normally 4)	5 (normally 4)
OFF → ON	ms	5 (normally 4)	5 (normally 4)	5 (normally 4)
Input channels	Number	8	16	32
Channels with the same reference potential	Number	8	16	32
Potential isolation		With optocouplers	With optocouplers	With optocouplers
Indication		LED (green)	LED (green)	16 LEDs (green), switchable: 0–15, 16–31
Terminals		Plug-in terminal block	Plug-in terminal block	XIOC-TERM32 (connector and cable)
Internal current consumption (5 Vdc)	mA	Normally 26	Normally 51	Normally 100
Weight	kg	0.16	0.16	0.16

## XIOC Digital Output Modules

Description	Unit	XIOC-8DO	XIOC-16DO	XIOC-16DO-S	XIOC-32DO
<b>Modules</b>					
Output type		Transistor (source type)	Transistor (source type)	Transistor (source type)	Transistor (source type)
Output voltage	Vdc	24 (–15 to +20%)	24 (–15 to +20%)	24 (–15 to +20%)	24 (–15 to +20%)
Switching current, minimum	mA	1	1	1	1
Leakage current	mA	0.1	0.1	0.1	0.1
Maximum load current					
Per circuit	A	0.3	0.3	0.8	0.2
Per common potential terminal	A	2.4	4	5	3.2
Output delay					
OFF → ON	ms	≤0.3	≤0.3	≤0.3	≤0.3
OFF → ON	ms	≤1	≤1	≤1	≤1
Output channels	Number	8	16	16	32
Channels with the same reference potential	Number	8	16	16	32
Overvoltage protection		Diode	Diode	Integrated	Diode
Fuse rating	A	4	8	None	8
Potential isolation		With optocouplers	With optocouplers	With optocouplers	With optocouplers
Indication		LED (green)	LED (green)	LED (green)	16 LEDs (green) switchable: 0–15, 16–31
Terminals		Plug-in terminal block	Plug-in terminal block	Plug-in terminal block	XIOC-TERM32 (connector and cable)
Internal current consumption (5 Vdc)	mA	Normally 30	Normally 50	Normally 50	Normally 250
External voltage for outputs/module (30 mA for module supply) (U <sub>s</sub> )	Vdc	24 (–15 to +20%)	24 (–15 to +20%)	24 (–15 to +20%)	24 (–15 to +20%)
Short-circuit protection		—	—	Yes	—
Weight	kg	0.16	0.16	0.16	0.16

**XIOC Relay Output Module**

Description	Unit	XIOC-12D0-R
<b>Modules</b>		
Output type		Relays
Output voltage	Vdc	24
Output voltage	Vac	100/240
Switching current, minimum	mA	1
Maximum load current		
Per circuit	A	2
Per common potential terminal	A	5
Output delay		
OFF → ON	ms	≤10
ON → OFF	ms	≤10
Output channels	Number	12
Channels with the same reference potential	Number	12
Overvoltage protection		External
Fuse rating	A	External
Potential isolation		With optocouplers
Indication		LED (green)
Terminals		Plug-in terminal block
Internal current consumption (5 Vdc)	mA	Normally 40
External voltage for operating the relay		24 Vdc (-15 to +20%, max. 70 mA)
Weight	kg	0.2

**XIOC Digital Input/Output Module**

Description	Unit	XIOC-16DX
<b>Power Supply</b>		
Supply voltage		24 Vdc (–15 to +20%)
Ripple	%	≤5
Overtoltage protection		Yes
Protection against polarity reversal		Yes
Potential isolation		
Between power supply and I/O bus		Yes
Between power supply and I/O		No
Internal current consumption (5 Vdc)	mA	Normally 80
Channels	Number	16
Terminals		Plug-in terminal block
Status indication		LED
<b>Inputs</b>		
Input type		DC input
Input voltage	Vdc	24
Inputs	Number	4, 12, configurable
Input current	mA	Normally 4
Voltage level to IEC 61131-2, limit value type 1		
ON	Vdc	≥15
OFF	Vdc	≤5
Input delay		
OFF → ON	ms	Normally 0.1
OFF → ON	ms	Normally 0.1
<b>Outputs</b>		
Output type		Transistor (source type)
Output voltage	Vdc	12/24 –15 to +20%)
Output current	A	Normally 0.5
Outputs	Number	Max. 12, configurable
Short-circuit tripping current	A	Max. 1.2 over 3 ms for output
Lamp load	W	Max. 3
Drop-out delay (High → Low)	μs	Normally 100
Switching capacity		IEC/EN 60947-5-1, utilization category DC-13
Short-circuit rating		Yes
Parallel connection of outputs		In groups 0 – 3, 4 – 7, 8 – 11; Actuation of the outputs within a group only in the same program cycle
Number of outputs that can be switched in parallel		Max. 3
Total maximum current	A	2 for group
<b>Weight</b>	kg	0.16

**XIOC Analog Modules**

Description	Unit	XIOC-8AI-I2	XIOC-8AI-U1	XIOC-8AI-U2	XIOC-4T-PT
<b>Modules</b>					
Input voltage	Vdc	—	0 to 10	-10 to +10	—
Input current	mA	4-20	—	—	—
Resolution, digital	bit	12	12	12	15 bit with sign
Conversion time		≤5 ms	≤5 ms	≤5 ms	—
Total errors	%	≤ ± 1 (of full-scale value)	≤ ± 1 (of full-scale value)	≤ ± 1 (of full-scale value)	≤ ± 1 (of full-scale value)
Input resistance	kohm	—	100	100	—
Potential isolation					
Circuit within each channel		With optocouplers	With optocouplers	With optocouplers	With optocouplers
Between the input channels		No	No	No	No
Input channels	Number	8	8	8	4
Terminals		Plug-in terminal block	Plug-in terminal block	Plug-in terminal block	Plug-in terminal block
External power supply		24 Vdc (-15 to +20%), approx. 150 mA	24 Vdc (-15 to +20%), approx. 150 mA	24 Vdc (-15 to +20%), approx. 150 mA	24 Vdc (-15 to +20%), 100 mA
External resistance (R)	kohm	—	—	—	Max. 0.4, 4 channels
Connection type		2-core shielded cable (≤20m)	2-core shielded cable (≤20m)	2-core shielded cable (≤20m)	Shielded cable
Platinum RTD		—	—	—	PT100 (IEC 751), PT1000
Accuracy					
-20° to 40°C (PT100)	°C	—	—	—	±0.5
-50° to 400°C (PT100)	°C	—	—	—	±3
-50° to 400°C (PT1000)	°C	—	—	—	±6
Temperature measuring range		—	—	—	-20 to 40°/-50 to 400° (uninterrupted current: 2 mA)
Internal current consumption (5 Vdc)	mA	Normally 100	Normally 100	Normally 100	Max. 200
Additional function		—	—	—	Linearization
Fault detection					
-20° to 40°C		—	—	—	≤ -25°C or ≥ +45°C = resistance value 7FFFhex
-50° to 400°C		—	—	—	≤ -60°C or ≥ +410°C = resistance value 7FFFhex
Response to cable break or unused inputs		—	—	—	In these cases, the resistance value is 7FFFhex
Weight	kg	0.18	0.18	0.18	0.18

**XIOC Thermocouple Module**

Description	Unit	XIOC-4AI-T
<b>Channels</b>		
Number		4
Temperature measuring range	°C	Type K: -270 to 1370 Type J: -210 to 1200 Type B: 100 to 1800 Type N: -270 to 1300 Type E: -270 to 1000 Type R: -50 to 1760 Type T: -200 to 400
Voltage measurement	mV	-50 to 50 -100 to 100 -500 to 500 -1000 to 1000
Cold-junction compensation		Yes, built-in
Interference suppression		50 Hz, 60 Hz
Unit		0.1°C, 0.1 F
Resolution	bit	16
Total errors	%	±0.5 of measurement range
Conversion time		<1s
Temperature coefficient		<200 ppm/°C of measurement range



## XIOC Analog Modules

Description	Unit	XIOC-2A0-U1-2A0-I2	XIOC-4A0-U1	XIOC-2A0-U2
<b>Modules</b>				
Output voltage	Vdc	0–10	0–10	–10 to 10
Output current	mA	4–20	—	—
Resolution	bit	12	12	12
Conversion time		≤5 ms	≤5 ms	≤5 ms
Total errors	%	≤±1 (of full-scale value)	≤±1 (of full-scale value)	≤±1 (of full-scale value)
External load resistance				
Voltage output		≥10 kohm	≥10 kohm	≥10 kohm
Current output	ohm	0 to 500 ohm	—	—
Potential isolation				
Circuit within each channel		With optocouplers		
Between channels		No	No	No
Number of outputs				
Output voltage		2 (channels 0 and 1)	4	2
Output current		2 (channels 2 and 3)	—	—
Terminals		Plug-in terminal block	Plug-in terminal block	Plug-in terminal block
Internal current consumption (5 Vdc)	mA	Normally 100	Normally 100	Normally 100
External power supply		24 Vdc (–15/+20%), approx. 150 mA	24 Vdc (–15/+20%), approx. 150 mA	24 Vdc (–15/+20%), approx. 150 mA
Connection type		2-core shielded cable (≤20m)	2-core shielded cable (≤20m)	2-core shielded cable (≤20m)

## XIOC Analog Modules

Description	Unit	XIOC-2AI-1A0-U1	XIOC-2AI-1A0-U1-I1	XIOC-4AI-2A0-U1	XIOC-4AI-2A0-U1-I1
<b>Inputs</b>					
Input voltage	Vdc	0–10	0–10	0–10	0–10
Input current	mA	—	0–20	—	0–20
Resolution	bit	14	14	14	14
Conversion time		<1 ms	<1 ms	<1 ms	<1 ms
Total errors	%	Normally 0.4	Normally 0.4	Normally 0.4	Normally 0.4
Potential isolation					
Circuit within each channel		No	No	No	No
Between the input channels		No	No	No	No
Between input/output channels		No	No	No	No
Channels	Number	2	2	4	4
Input resistance	kohm	40	40	40	40
<b>Outputs</b>					
Output voltage	Vdc	0–10	0–10	0–10	0–10
Output current	mA	—	0–20	—	0–20
Resolution	bit	12	12	12	12
Errors		Normally 0.4%	Normally 0.4%	Normally 0.4%	Normally 0.4%
Potential isolation					
Circuit within each channel		No	No	No	No
Between the output channels		No	No	No	No
Number of channels		1	1	2	2
External load resistance		≥2 kohm	≥2 kohm	≥2 kohm	≥2 kohm
Short-circuit rating		Yes	Yes	Yes	Yes
<b>Terminal Connection</b>					
Terminals		Plug-in terminal block	Plug-in terminal block	Plug-in terminal block	Plug-in terminal block
Internal current consumption (5 Vdc)	mA	Normally 200	Normally 200	Normally 200	Normally 200
Weight	kg	0.16	0.16	0.16	0.16

**XIOC Communication Modules**

Description	Unit	XIOC-NET-DP-M	XIOC-NET-DP-S	XIOC-SER	XIOC-TC1
<b>Interfaces</b>					
Interfaces		PROFIBUS-DP, RS-485, EN 50170	PROFIBUS-DP, RS-485, EN 50170	RS-232(C), RS-422, RS-485	RS-232(C), RS-422, RS-485
Protocol		PROFIBUS-DP master (class 1)	PROFIBUS-DP slave	Transparent mode, Modbus master/slave	Transparent mode, Modbus master/slave, DNP3 protocol
Character formats		—	—	8E1, 8O1, 8N1, 8N2, 7E2, 7O2, 7N2, 7E1	8E1, 8O1, 8N1, 8N2, 7E2, 7O2, 7N2, 7E1
Control and signal cables		—	—	RTS, CTS, DTR, DSR, DCD	RTS, CTS, DTR, DSR, DCD
Transfer rate	kbit/s	9.6 to 12,000	9.6 to 12,000	0.3–57.6	0.3–57.6
Potential isolation		Yes	Yes	Yes (RS-485, RS-422)	Yes (RS-485, RS-422)
Number of slaves		124	—	—	—
Send/receive data		3500 Byte each	Max. 244 Byte	250 Byte per slave 120 Byte per slave	250/500
Bus terminating resistors		Switchable	Switchable	Switchable for RS-485, RS-422	Switchable for RS-485, RS-422
Connector type		D-sub 9-pin socket	D-sub 9-pin socket	RS-232: D-sub 9-pin RS-485, 422: plug-in terminal block	RS-232: D-sub 9-pin RS-485, 422: plug-in terminal block
Current consumption	mA	<300	<300	<275	<275
Weight	kg	Approx. 0.2	Approx. 0.2	Approx. 0.2	Approx. 0.2
Number of modules		XC100: 1/XC200: 3	XC100: 1/XC200: 3	XC100: 2/XC200: 4	XC200: 4
Slots		1, 2, 3	1, 2, 3	Any	Any

## XIOC Counter Modules

Description	Unit	XIOC-1CNT-100KHZ	XIOC-2CNT-100KHZ	XIOC-2CNT-2A0-INC
<b>Inputs</b>				
Counter limits		0–4294967295 (32 bit)	0–4294967295 (32 bit)	0–4294967295 (32 bit)
Internal current consumption	mA	200	200	450
Frequency	kHz	100 (25 with four times resolution)	100 (25 with four times resolution)	400 (100 with four times resolution)
Number of channels		1	2	2
Input voltage	Vdc	12–24	12–24	—
Voltage for ON	Vdc	>10	>10	—
Voltage for OFF	VA/W	<4	<4	—
Input current	mA	≥4	≥4	—
Differential input voltage	Vdc	±5	±5	±5
Voltage for ON	Vdc	2–5	2–5	0.2–5
Voltage for OFF	Vdc	–5 to 8	–5 to 8	–5 to –0.2
Differential input current	mA	35	35	5
Minimum pulse width	µs	ON ≥4/OFF ≥4	ON ≥4/OFF ≥4	—
Potential isolation		With optocouplers	With optocouplers	—
Connection for external cabling		30-pin plug: XIOC-TERM30-CNT4	30-pin plug: XIOC-TERM30-CNT4	Plug-in terminal block
External cabling		Shielded, twisted pair cable	Shielded, twisted pair cable	Shielded, twisted pair cable
<b>Outputs</b>				
Output type		Transistor (open collector)	Transistor (open collector)	Analog
External power supply		12/24 Vdc (30 max.)	12/24 Vdc (30 max.)	—
Minimum load current	mA	1	1	—
Maximum load current (I <sub>o</sub> )	mA	20	20	—
Max. leakage current	mA	0.5	0.5	—
Max. voltage drop at ON	V	1.5	1.5	—
Debounce OFF				
OFF → ON	ms	≤1	≤1	—
OFF → ON	ms	≤1	≤1	—
Output channels	Number	2	4	2
Potential isolation		With optocouplers	With optocouplers	—
Output voltage	Vdc	—	—	–10 to 10
Resolution	bit	—	—	12
Conversion time		—	—	≤1 ms
Total errors	%	—	—	Normally 0.4
Load resistance		—	—	≥1 kohm
Connection for external cabling		30-pin plug: XIOC-TERM30-CNT4	30-pin plug: XIOC-TERM30-CNT4	Plug-in terminal block
External cabling		Shielded, twisted pair cable	Shielded, twisted pair cable	Shielded 2-core cable
Current per channel	mA	—	—	≤300
Power supply of encoders		—	—	5 Vdc
Current consumption	mA	200	200	Max. 450
Weight	kg	0.16	0.16	0.18

**Power Supply Suppression Filters**

Description	Unit	XT-FIL-1	XT-FIL-2
<b>General</b>			
Standards		IEC/EN 61131-2; EN 50178	IEC/EN 61131-2; EN 50178
Ambient temperature	°F (°C)	32° to 131° (0° to 55°)	32° to 131° (0° to 55°)
Storage	°F (°C)	-13° to 158° (-25° to 70°)	-13° to 158° (-25° to 70°)
Mounting position		Vertical or horizontal	Vertical or horizontal
Vibration resistance		10–57 Hz ± 0.075 mm 57–150 Hz ± 1.0g	10–57 Hz ± 0.075 mm 57–150 Hz ± 1.0g
Mechanical shock resistance		15g/11 ms	15g/11 ms
Impact strength		500g/50 mm ±25g	500g/50 mm ±25g
Overvoltage category		II	II
Pollution degree		2	2
Protection type		IP20	IP20
Rated impulse withstand voltage (U <sub>imp</sub> )	V	850	850
Interference immunity		EN 61000-6-2	EN 61000-6-2
Weight	kg	0.1	0.1
Dimensions (W x H x D)	mm	35 x 90 x 30	35 x 90 x 57
Terminals		Screw terminals	Screw terminals
Terminal capacity			
Screw terminals			
Flexible with ferrule	mm <sup>2</sup>	0.2–2.5 (AWG22–12)	0.2–2.5 (AWG22–12)
Solid	mm <sup>2</sup>	0.2–2.5 (AWG22–12)	0.2–2.5 (AWG22–12)
<b>Power Supply</b>			
Input voltage	Vdc	24	24
Permissible range	Vdc	20.4–28.8	20.4–28.8
Ripple	%	≤5	≤5
Mains overvoltage protection		Yes	Yes
Potential isolation			
Between input voltage and PE		Yes	Yes
Between input voltage and output voltage		No	No
Between output voltage and PE		Yes	Yes
Rated value	Vdc	24	24
Output current	A	2.2	12

**General Information on Electromagnetic Compatibility (EMC) of Automation Systems**

Description	Specification
Emitted interference	EN 55011/22 Class A (VDE 0875, Part 11)
Interference immunity	
ESD	IEC/EN 61000-4-2 Contact discharge: 4 kV Air discharge 8 kV
RFI	IEC/EN 61000-4-3 AM (80%)    80–1000 MHz    10V/m
Mobile phones/cellphones	IEC/EN 61000-4-3 PM            800–960 MHz    10V/m
Burst	IEC/EN 61000-4-4 Mains/digital I/O (direct): 2 kV Analog I/O, fieldbus (capacitive coupling): 1 kV
Surge	IEC/EN 61000-4-5 Digital I/O, asymmetric, analog I/O, asymmetric, connection to shielding: 0.5 kV Mains DC, asymmetric: 1 kV Mains DC, symmetric: 1 kV Mains AC, asymmetric: 0.5 kV Mains AC, symmetric: 2 kV
Conducted interference, induced by high-frequency fields	IEC/EN 61000-4-6; 2003 AM (80%)    150 kHz–80 MHz    3V

# 4.1

## PLC, I/O and Communications Products

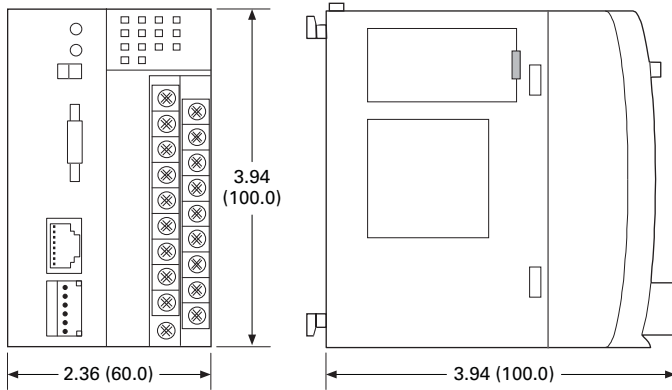
### XC Series Programmable Logic Controllers

4

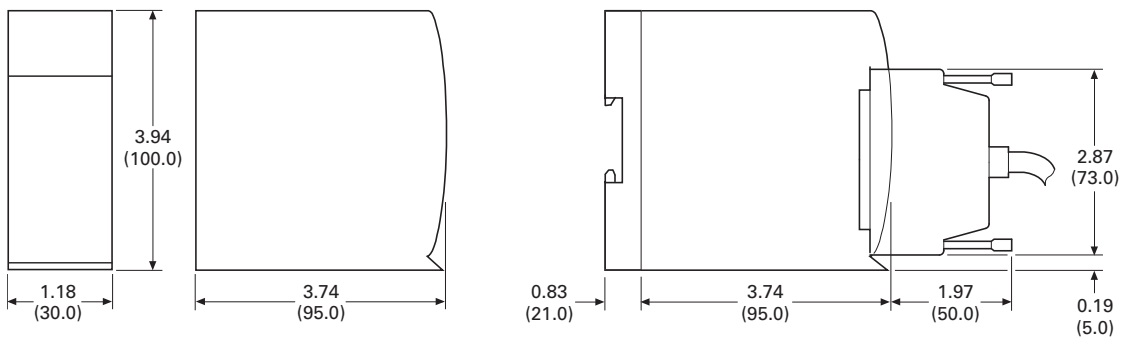
#### Dimensions

Approximate Dimensions in Inches (mm)

**XC-CPU101, XC-CPU201, XC-CPU202**



#### XIOC

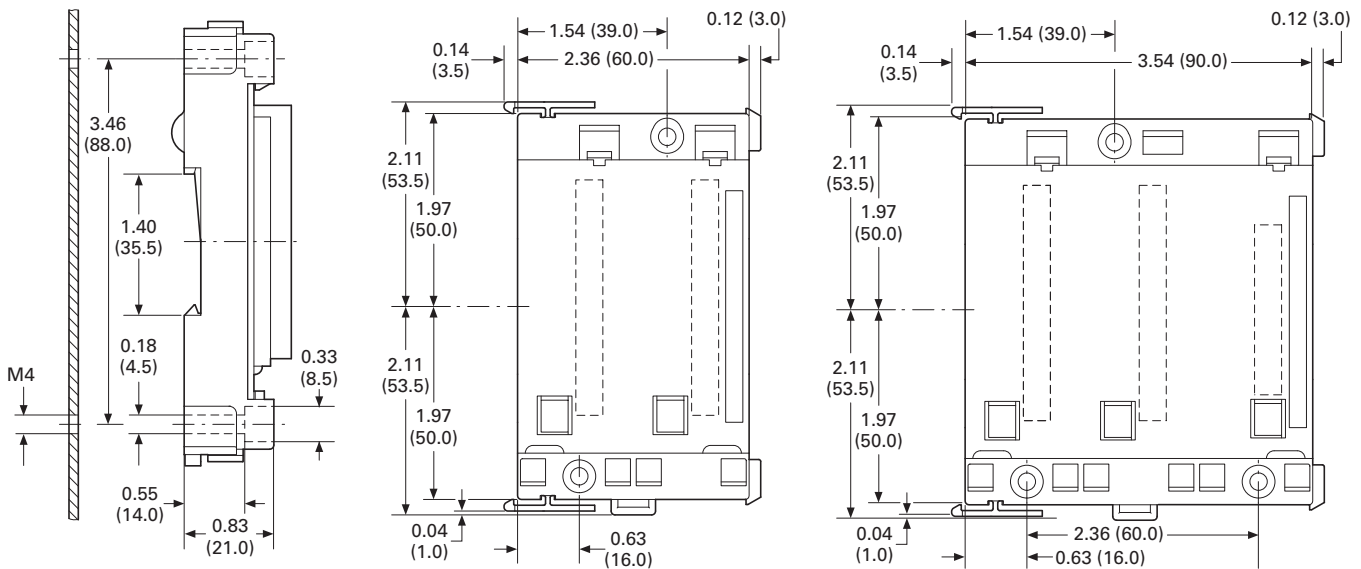


#### Backplates

**XIOC-BP-2  
XIOC-BP-XC**

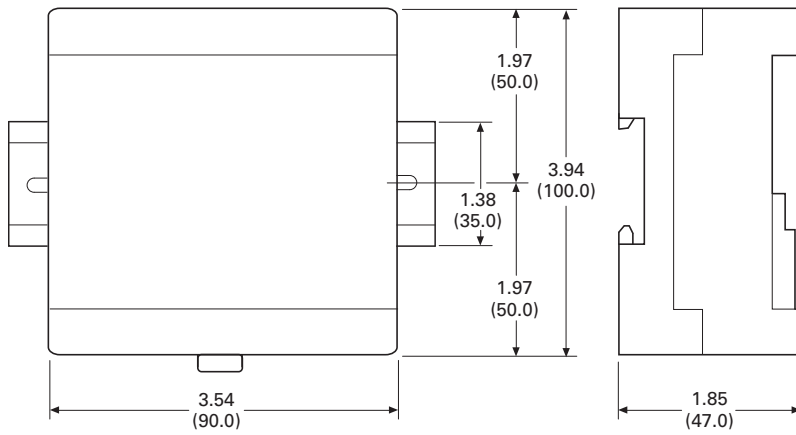
**XIOC-BP-3  
XIOC-BP-EXT**

**XIOC-BP-XC1**

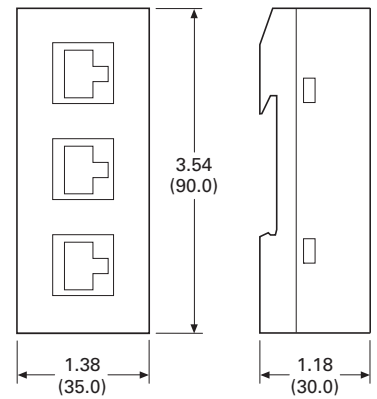


Approximate Dimensions in Inches (mm)

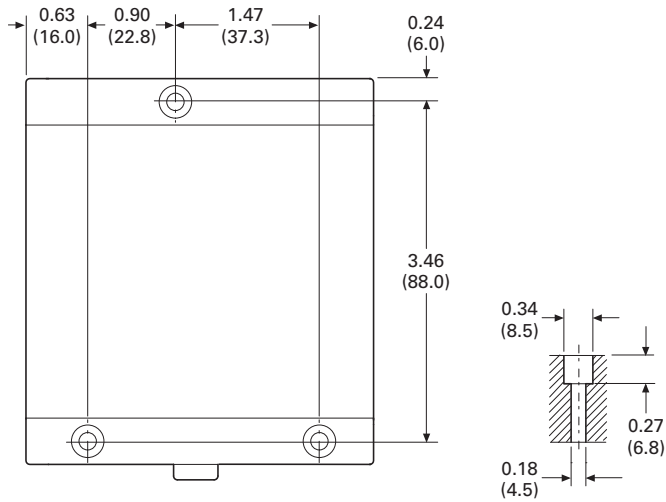
**XC-CPU-121\_, XIO-EXT121-1**



**XT-RJ45-ETH-RS232**



4



XC152 Series Programmable Logic Controllers



### Contents

<b>Description</b>	<b>Page</b>
XC152 Series Programmable Logic Controllers	
Catalog Number Selection . . . . .	<b>V7-T4-31</b>
Product Selection . . . . .	<b>V7-T4-31</b>
Accessories . . . . .	<b>V7-T4-31</b>
Technical Data and Specifications . . . . .	<b>V7-T4-32</b>
Dimensions . . . . .	<b>V7-T4-33</b>

### Product Description

The XC152 compact PLC combines plenty of processing power with a large number of communication interfaces. This makes the device particularly well-suited to standardized automation solutions in modular machine building applications.

The XC152 not only provides machine segment control functions that can be programmed with CoDeSys, but it can store module-specific visualizations. These visualizations can be retrieved and displayed on a central HMI or a computer as needed.

In addition, the XC152 connects SmartWire-DT systems to standard fieldbus systems via its interfaces. This enables the XC152 PLC to support Eaton’s Lean Automation strategy while enabling users to design automation systems in a flexible manner and run them cost-effectively.

### Application Description

#### Flexible Solutions for Modular Machine Units

In the field of automation, complex processes are subdivided into easily manageable functional units to make programming, production and installation easier. For example, a packaging machine can be subdivided into infeed, positioning (erector), filling and sealing (gluing) modules. Other systems and machines can also be effectively subdivided to create a wide variety of different models or to delimit various expansion stages.

With the XC152, a powerful PLC controls individual system modules while making it possible to directly connect SmartWire-DT system devices and standard fieldbus components. Data transfers via the Ethernet interface to OPC clients, together with the available remote visualization system, support a connection to a central control and visualization system.

#### SmartWire-DT

The XC152 relies on Eaton’s tried-and-true SmartWire-DT connection system, eliminating the need for control current wiring in every single machine module and simplifying the commissioning process by means of better diagnostic options. This results in significant design, commissioning and maintenance cost reductions.

#### Standard CAN and PROFIBUS Fieldbus Systems

Servo drives, frequency inverters and hydraulic components can all be easily connected using the large number of fieldbus interfaces available on the XC152.

#### Visualization

The integrated Web visualization function offers a key advantage, as machine module diagnostic and visualization information can be displayed on a central HMI or a terminal.

### Features and Benefits

- CoDeSys PLC and Web visualization
- Galileo/CoDeSys remote visualization
- Ethernet port on all models
- Windows® CE 5 operating system
- 32-bit RISC CPU at 400 MHz
- 64 MB internal memory
- SD card slot for external memory
- Run/Stop switch
- Optional: Integrated SmartWire-DT master for 99 nodes
- Optional: RS-232, RS-485, PROFIBUS-DP/MPI, CANopen/easyNet

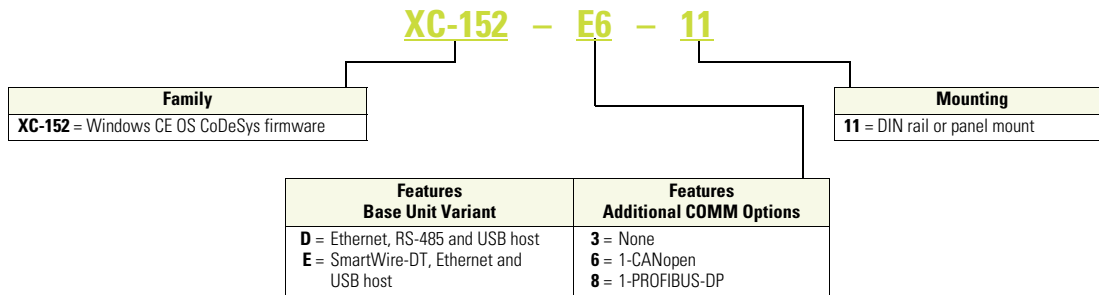
### Standards and Certifications

- IEC/EN 61131-2, EN 50178
- EN 61000-6-2, EN 61000-6-4
- cULus
- CE



**Catalog Number Selection**

**XC152 PLCs with and without SmartWire-DT**



**Product Selection**

**XC152 PLC**



**XC152 PLC**

CoDeSys Firmware	Fieldbus Type	RS-232	RS-485	Ethernet	Catalog Number
Yes	CANopen	Yes	Yes	Yes	<b>XC-152-D6-11</b>
Yes	PROFIBUS-DP	Yes	Yes	Yes	<b>XC-152-D8-11</b>

**XC152 PLC SmartWire-DT**



**XC152 PLC SmartWire-DT**

CoDeSys Firmware	Fieldbus Type	RS-232	RS-485	Ethernet	SmartWire-DT	Catalog Number
Yes	None	Y	None	Yes	Yes	<b>XC-152-E3-11</b>
Yes	CANopen	None	Yes	Yes	Yes	<b>XC-152-E6-11</b>
Yes	PROFIBUS-DP	None	Yes	Yes	Yes	<b>XC-152-E8-11</b>

**Accessories**

**XC PLC Accessories**

Description	Catalog Number
PLC programming software, single seat license	<b>SW-XSOFT-CODESYS-2-S</b>
PLC programming software, multiple seat license	<b>SW-XSOFT-CODESYS-2-M</b>
SD memory card	<b>MEMORY-SD-A1-S</b>



## Technical Data and Specifications

### XC152 Series Programmable Logic Controllers

Description	Unit	XC-152-D6-11	XC-152-D8-11	XC-152-E3-11	XC-152-E6-11	XC-152-E8-11
<b>System</b>						
Processor		RISC, 32 bit at 400 MHz	RISC, 32 bit at 400 MHz	RISC, 32 bit at 400 MHz	RISC, 32 bit at 400 MHz	RISC, 32 bit at 400 MHz
Internal memory						
DRAM (OS-, program and data memory)	Mbyte	64	64	64	64	64
NAND FLASH (can be used for data security)	Mbyte	Approx. 128 available	Approx. 128 available	Approx. 128 available	Approx. 128 available	Approx. 128 available
NVRAM (retain)	kByte	Approx. 32 available	Approx. 32 available	Approx. 32 available	Approx. 32 available	Approx. 32 available
External memory						
SD memory card slot		SDA Specification 1.00	SDA Specification 1.00	SDA Specification 1.00	SDA Specification 1.00	SDA Specification 1.00
Real-time clock (battery backup)						
Battery (not rechargeable)		Zero maintenance	Zero maintenance	Zero maintenance	Zero maintenance	Zero maintenance
Backup time at zero voltage		Normally 10 years	Normally 10 years	Normally 10 years	Normally 10 years	Normally 10 years
Operating system		Windows CE 5	Windows CE 5	Windows CE 5	Windows CE 5	Windows CE 5
<b>Engineering</b>						
PLC-Programming software		CoDeSys 2/3	CoDeSys 2/3	CoDeSys 2/3	CoDeSys 2/3	CoDeSys 2/3
Visualization						
WEB-VISU		CoDeSys	CoDeSys	CoDeSys	CoDeSys	CoDeSys
Remote Client		Galileo/CoDeSys	Galileo/CoDeSys	Galileo/CoDeSys	Galileo/CoDeSys	Galileo/CoDeSys
<b>Communication Interfaces</b>						
Ethernet		100Base-TX/10Base-T	100Base-TX/10Base-T	100Base-TX/10Base-T	100Base-TX/10Base-T	100Base-TX/10Base-T
USB host <sup>①</sup>		—	—	—	—	—
USB device <sup>①</sup>		USB 2.0	USB 2.0	USB 2.0	USB 2.0	USB 2.0
System port (RS-232) <sup>①</sup>		■	■	■	—	—
SmartWire-DT <sup>①</sup>		—	—	■	■	■
CAN <sup>①</sup>		■	—	—	■	—
PROFIBUS/MP <sup>①</sup>		—	■	—	—	■
RS-485 <sup>①</sup>		■	■	—	■	■
<b>General</b>						
Rated operating voltage		24 Vdc SELV	24 Vdc SELV	24 Vdc SELV	24 Vdc SELV	24 Vdc SELV
Power consumption	W	Max. 5	Max. 5	Max. 5	Max. 5	Max. 5
Protect against polarity reversal		Yes	Yes	Yes	Yes	Yes
Approvals		CE, cULus	CE, cULus	CE, cULus	CE, cULus	CE, cULus
Ambient air temperature	°C	0 to 55	0 to 55	0 to 55	0 to 55	0 to 55
Storage temperature	°C	−40 to +70	−40 to +70	−40 to +70	−40 to +70	−40 to +70
Protection type		IP20	IP20	IP20	IP20	IP20
Flush mounting		DIN rail EN 60715, 35 mm	DIN rail EN 60715, 35 mm	DIN rail EN 60715, 35 mm	DIN rail EN 60715, 35 mm	DIN rail EN 60715, 35 mm
Dimensions (H x W x D)	mm	105 x 155 x 40	105 x 155 x 40	105 x 155 x 40	105 x 155 x 40	105 x 155 x 40
Weight (approximate)	kg	0.3	0.3	0.3	0.3	0.3
Applied standards and directives						
Product standard		IEC/EN 61131-2, EN50178	IEC/EN 61131-2, EN50178	IEC/EN 61131-2, EN50178	IEC/EN 61131-2, EN50178	IEC/EN 61131-2, EN50178
EMC		EN 61000-6-2, EN 61000-6-4	EN 61000-6-2, EN 61000-6-4	EN 61000-6-2, EN 61000-6-4	EN 61000-6-2, EN 61000-6-4	EN 61000-6-2, EN 61000-6-4

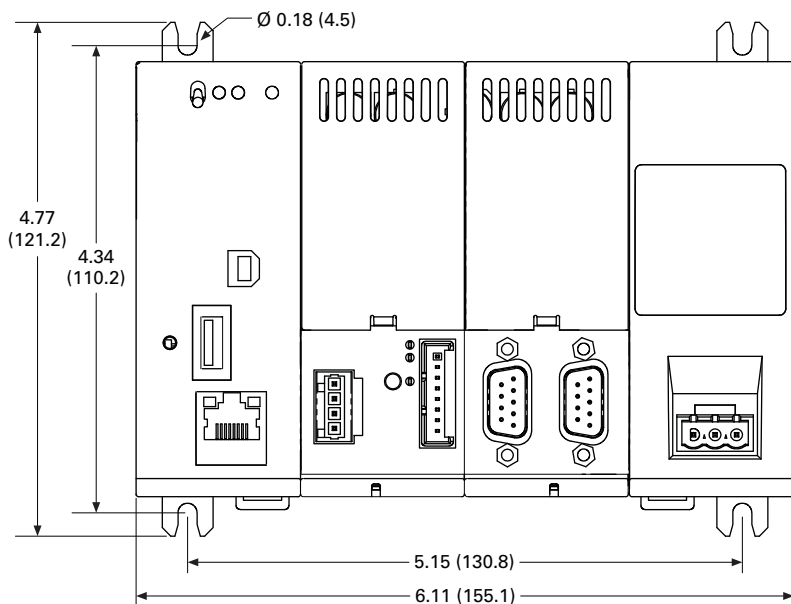
#### Note

<sup>①</sup> Interface not galvanically isolated.

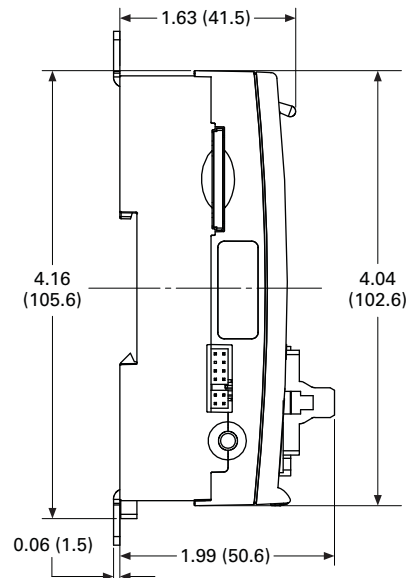
**Dimensions**

Approximate Dimensions in Inches (mm)

**XC152 Series Programmable Logic Controllers**



**With Fixing Brackets**



**Without Fixing Brackets**

XN300 Series Remote I/O



4

### Product Description

The XN300 family of slice I/O modules offers the highest density I/O available on the market today. With a very cost-effective price per I/O point, it meets the needs of machinery OEMs for high-speed, low-cost and compact I/O systems. The CANopen Gateway provides a remote I/O connection that can connect to all Eaton XC PLCs and XV HMI-PLCs as well as many third-party PLCs. The tool-less assembly saves time in connecting modules on a DIN rail and the PUSH-IN technology makes wiring up the I/O a breeze. Status LEDs on all I/O points make it easy to quickly identify any wiring errors and to determine current signal conditions. The free XN300 Assist programming tool helps you to generate and check the I/O configuration and produce both electronic documentation and EDS files to simplify PLC configuration of XN300 I/O.

Coupled with the new XV300 HMI-PLC, the XN300 I/O products provide a high-powered low-cost system solution for MOEMs. Bundled with Visual Designer and CoDeSys 3 on an XV300 HMI-PLC, you get the smallest, most cost-effective and powerful HMI-PLC and SCADA system available on the market. This industry-leading combination of compact I/O solutions and HMI-PLCs can significantly reduce the overall control panel size, helping MOEMs in the never-ending quest to reduce the size and cost of their machinery.

### Contents

#### Description

XN300 Series Remote I/O

Product Selection .....

Page

V7-T4-35

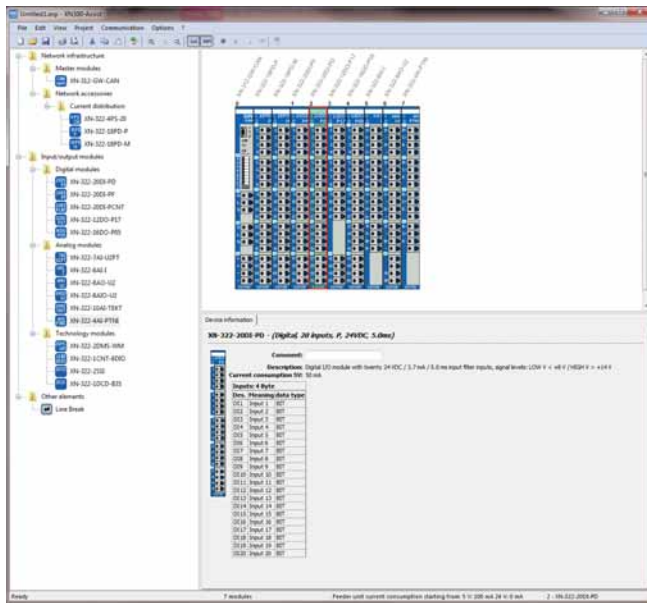
### Features

- Efficient—a wide range of discrete and analog input and output modules along with specialty modules focused on solving application needs
- Compact—up to 20 channels per slice (12.5 x 102 mm) helps reduce installation space and cost
- Simple—tool-free assembly with PUSH-IN & plug connection, with simple dismantling of plug connectors
- Fast identification of errors and signal conditions via LED status displays for all points
- Application specific, free, programmable module status LED
- CANopen Gateway connects up to 32 slices per block to connect I/O to both Eaton PLCs and HMI-PLCs and many third-party PLCs. Mini USB port to connect to XN300 Assist
- XN300 Assist software tool to generate electronic documentation and EDS files for PLC configuration

### Standards and Certifications

- CE Mark
- UL/cUL
- RoHS





Product Selection

XN-322 XN300 Series Remote I/O



Description	Style Number	Catalog Number
<b>Digital Inputs</b>		
Digital, 20 input, P, 24 Vdc, 5.0 ms	178786	<b>XN-322-20DI-PD</b>
Digital, 20 input, P, 24 Vdc, 0.5 ms	178768	<b>XN-322-20DI-PF</b>
Digital, 20 input, P, 24 Vdc, 2/4 cnt, 25 kHz	178767	<b>XN-322-20DI-PCNT</b>
<b>Counters</b>		
Counter, 1 cnt, 125 kHz, 16 bit, 4 DO, 4 DI	178795	<b>XN-322-1CNT-8DIO</b>
<b>Digital Outputs</b>		
Digital, 16 output, P, 24 Vdc, 0.5 A, sp	178787	<b>XN-322-16DO-P05</b>
Digital, 12 output, P, 24 Vdc, 1.7 A, sp	178788	<b>XN-322-12DO-P17</b>
<b>Analog</b>		
Analog, 6 input, ±10 V, 1 PT/KTY, U <sub>ref</sub>	178789	<b>XN-322-7AI-U2PT</b>
Analog, 8 input, 0/4–20 mA	179288	<b>XN-322-8AI-I</b>
Analog, 8 input, thermo element, 2 KTY	178792	<b>XN-322-10AI-TEKT</b>
Analog, 4 input, PT/Ni/KTY/R, 2/3 wire	178772	<b>XN-322-4AI-PTNI</b>
Analog, 8 output, ±10 V	178790	<b>XN-322-8AO-U2</b>
Analog, 4 In-/4 output, ±10 V, U <sub>ref</sub>	178791	<b>XN-322-8AIO-U2</b>
<b>Specialty</b>		
Weigh module, 2 DMS, 24 bit	178793	<b>XN-322-2DMS-WM</b>
DC-motor driver, 12–30 V, brush, 3.5 A	178794	<b>XN-322-1DCD-B35</b>
<b>Power</b>		
Power supply, 4 x 24 Vdc / 2 A, sp	178796	<b>XN-322-4PS-20</b>
Power distribution, 18 channel, GND	178769	<b>XN-322-18PD-M</b>
Power distribution, 18 channel, VCC	178770	<b>XN-322-18PD-P</b>
<b>Serial and SSI</b>		
Serial, 2 SSI, RS-422, 32 bit	178773	<b>XN-322-2SSI</b>
<b>Gateways</b>		
CANopen Gateway module (supports 32 slices)	178782	<b>XN-312-GW-CAN</b>