

Modular and compact PLCs



XC100 and XC200 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 concepts. The data exchange via the Ethernet interface to OPC clients or the integrated web server allows the creation of innovative solutions.

The compact class with the EC4P controllers now offers the performance of a PLC in the housing of the renowned easy control relay. This enables the convenient creation of solutions for small and medium-sized control tasks.



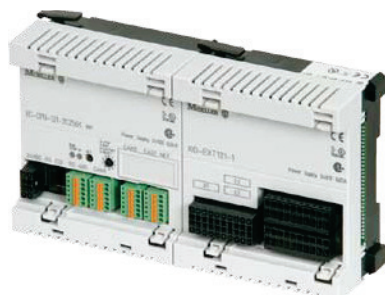
XC100

The XC100 series modular PLC is a powerful automation system for small and medium-sized applications, and is locally expandable with up to 15 XI/OC modules.

XC100-FC

The XC-CPU101-FC is a modular PLC with an integrated CANopen fieldbus interface using fibre optic technology. It is therefore particularly suitable for use in environments susceptible to severe electromagnetic interference.

PLC		XC-CPU101-C64K-8DI-6DO	XC-CPU101-C128K-8DI-6DO	XC-CPU101-FC128K-8DI-6DO	XC-CPU101-C256K-8DI-6DO
Power supply:					
Input voltage	V DC	24			
Memory:					
Program code/program data	kByte	64/64	128/128		256/256
Marker/Retain data	kByte	4/4	8/8		
Cycle time for 1k instructions (Bit, Byte)	ms	< 0.5			
Operating system		proprietary			
Interfaces		RS232, CANopen			
RTC (Real Time Clock)		ja			
Digital inputs:					
Inputs	No.	8 (of which 4 interrupt inputs)			
Status indication		LED			
Digital outputs:					
Channels	No.	6			
Status indication		LED			
Utilization factor	g	1			
Article no.		262152	262146	289169	274399



XC-CPU-121

The XC-CPU121 is particularly suitable for applications where space is at premium and with high communication requirements. Two serial interfaces and two CAN interfaces are provided on the basic unit. This flexibility is also reflected in terms of I/O expansion. Eight of the 18 digital I/Os can be used as either inputs or outputs. Eight analog inputs/outputs complete the I/O level.

PLC		XC-CPU121-2C256K
Power supply:		
Input voltage	V DC	
Memory:		
Program code/program data	kByte	256/244
Marker/Input/Output/Retain data	kByte	16/4/4/8
Cycle time for 1k instructions (Bit, Byte)	ms	< 0.3
Operating system		
Interfaces		RS232, COM2, CAN1/CAN2
RTC (Real Time Clock)		-
Digital inputs:		
Inputs	No.	-
Status indication		-
Digital outputs:		
Channels	No.	-
Status indication		-
Utilization factor	g	-
Article no.		290446

I/O expansion for XC121			XIO-EXT121-1		
Power supply:			Analog inputs 0...20 mA		
Input voltage	V DC	24	Number of channels		2
Digital inputs:			Primary voltage range	mA	0...20
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)	Resolution	Bit	10
Potential isolation		no	Overall accuracy		≤ ± 1% (of full-scale value)
Digital outputs:			Pt100:		
Number		at X3: 8 (can also be used as inputs)	Number of channels		2
Utilization factor	g	1	Temperature range	°C	-200...+200
Potential isolation		no	Resolution	Bit	10
Parallel connection capability		yes	Overall accuracy		≤ ± 2%
Analog inputs 0...10 V:			Analog outputs:		
Number of channels		2	Number of channels		2
Primary voltage range	V	0...10	Secondary voltage range	V	0...10
Resolution	Bit	10	Resolution	Bit	12
Overall accuracy		≤ ± 1% (of full-scale value)	Overall accuracy		≤ ± 1% (of full-scale value)
Article no.	290450				



XC200

The modular PLC of the XC200 series offers a high CPU performance and outstanding communication options. This includes an integrated Ethernet interface in addition to an RS232 interface and CANopen fieldbus interface.

A technological highlight of the range is that all XV-type devices come with an integrated web server.

PLC	XC-CPU201-EC256K-8DI-6DO / XC-CPU201-EC256K-8DI-6DO-XV		XC-CPU201-EC512K-8DI-6DO / XC-CPU201-EC512K-8DI-6DO-XV		XC-CPU202-EC4M-8DI-6DO-XV
Power supply:					
Input voltage	V DC	24			
Memory:					
Program code/program data		256 kByte/256 kByte	2 MB/512 kByte	4 MB/512 kByte	
Marker/Retain data	kByte	16/32		16/64	
Cycle time for 1k instructions (Bit, Byte)	ms	< 0.15		< 0.025	
Operating system		Windows CE			
Webserver		yes (XV type only)			
Interfaces		Ethernet, RS232, USB, CANopen			
RTC (Real Time Clock)		yes			
Digital inputs:					
Inputs	No.	8, of which parameterizable: 2 counters, 50 kHz, 2 interrupt inputs, 1 incremental input			
Status indication		LED			
Digital outputs:					
Channels	No.	6			
Status indication		LED			
Utilization factor	g	1			
Article no.	262155 / 262156		262157 / 262158		134238

XI/OC – Simple Expansion

XI/OC are local expansion modules for direct connection to all XControl PLCs. Up to 15 modules can be connected directly to each PLC. You can also choose between a wide range of digital, analog and technology functions.

Analog I/O modules



Digital I/O modules



Counter modules



Network modules



Digital inputs		XIOC-8DI	XIOC-16DI	XIOC-32DI
Input type		DC input		
Input voltage	V DC	24		
Input channels	No.	8	16	32
Potential isolation		with optocouplers		
Indication		LED (green)		16 LED (green), switchable: 0 - 15, 16 - 31
Terminals		Plug-in terminal block		XIOC-TERM32 (connector and cable)
Article no.		257891	257892	267411

Digital outputs		XIOC-8DO	XIOC-16DO	XIOC-16DO-S	XIOC-32DO
Output type		Transistor (source type)			
Output voltage	V DC	24 (-15...+20 %)			
Output channels	No.	8	16		32
Channels with the same reference potential	No.	8	16		32
Overvoltage protection		Diode			
Potential isolation		with optocouplers			
Indication		LED (green)			16 LED (green), switchable: 0 - 15, 16 - 31
Terminals		Plug-in terminal block			XIOC-TERM32 (connector and cable)
Short-circuit protection		-		yes	-
Article no.		257894	257896	257895	267413

Digital output		XIOC-12DO-R
Output type		Relays
Output voltage	V DC	24
Output voltage	V AC	100/240
Maximum load current:		
per circuit	A	2
per common potential terminal	A	5
Output channels	No.	12
Overvoltage protection		external
Potential isolation		with optocouplers
Indication		LED (green)
Terminals		Plug-in terminal block
Article no.		257897

Input / output modules		XIOC-16DX
Power supply:		
Supply voltage		24 V DC (-15/+20%)
Potential isolation:		
between power supply and I/O bus		yes
between power supply and I/O		no
Indication		LED
Inputs:		
Input type		DC input
Inputs	No.	4, 12, configurable
Outputs:		
Output type		Transistor (source type)
Outputs	No.	max. 12 configurable
Short-circuit rating		yes
Number of outputs that can be switched in parallel		max. 3
Article no.		262322

Analog inputs		XIOC-8AI-I2	XIOC-8AI-U1	XIOC-8AI-U2	XIOC-4T-PT
Input voltage	V DC	-	0 to 10	-10 to +10	-
Input current	mA	4 - 20	-	-	-
Resolution digital	Bit	12			15 with sign
Total errors	%	± 1% (of full-scale value)			
Potential isolation:					
Circuit within each channel		with optocouplers			
between the input channels		no			
Input channels	No.	8			4
Platinum RTD		-			Pt100 (IEC 75t), Pt1000
Temperature measuring range		-			-20 to +40 °C/-50 to +400 °C (uninterrupted current: 2 mA)
Article no.		262549	257899	257900	257901

Analog input / output modules		XIOC-2AI-1AO-U1	XIOC-2AI-1AO-U1-I1	XIOC-4AI-2AO-U1	XIOC-4AI-2AO-U1-I1
Inputs:					
Input voltage	V DC	0 - 10			
Input current	mA	-	0 - 20	-	0 - 20
Resolution	Bit	14			
Total errors	%	normally 0.4			
Potential isolation: Circuit within each channel		no			
Channels	No.	2		4	
Outputs:					
Output voltage	V DC	0 - 10			
Output current	mA	-	0 - 20	-	0 - 20
Resolution	Bit	12			
Errors	%	normally 0.4			
Potential isolation: Circuit within each channel		no			
Potential isolation: Between the output channels		no			
Number of channels		1		2	
Terminals		Plug-in terminal block			
Article no.		262409	281545	262405	281544

Analog outputs		XIOC-4AI-T
Number of channels		4
Temperature measuring range		Type K: -270...1370 Type J: -210...1200 Type B: 100...1800 Type N: -270...1300 Type E: -270...1000 Type R: -50...1760 Type T: -200...400
Voltage measurement		-50 mV...50 mV -100 mV...100mV -500 mV...500mV -1000 mV...1000mV
Cold-junction compensation		yes, built-in
Resolution	Bit	16
Total errors	%	±0.5 of measurement range
Article no.		289933

Analog outputs		XIOC-2AO-U1-2AO-I2	XIOC-4AO-U1	XIOC-2AO-U2
Output voltage	V DC	0 - 10		-10 - 10
Output current	mA	4 - 20	-	
Resolution	Bit	12		
Total errors		≤ ± 1% (of full-scale value)		
Potential isolation:				
Circuit within each channel		with optocouplers		
Between channels		no		
Terminals		Plug-in terminal block		
Article no.		257902	257903	257904

Network modules		XIOC-NET-DP-M	XIOC-NET-DP-S	XIOC-NET-SK-M	XIOC-SER	XIOC-TC1
Interfaces		Profibus-DP, RS485, EN 50170		RS485	RS232(C), RS422, RS485	
Protocol		Profibus-DP master (class 1)	Profibus-DP slave	Suconet K, K1	Transparent mode, Modbus master/slave, SUCOM-A, Suconet-K slave	Transparent mode, Modbus master/slave, SUCOM-A, DNP3 protocol
Transfer rate	kBit/s	9.6 to 12000		187.5, 375	0.3...57.6 187.5, 375 (Suconet)	0.3...57.6
Potential isolation		yes			yes (RS485, RS422)	
Number of slaves		124	-	16	-	
Send/receive data		3500 Byte each	max. 244 Byte	250 Byte each	250 Byte per slave 120 Byte per slave (Suconet-K-Slave)	250/500
Number of modules		XC100: 1 XC200: 3		XC100: 2 XC200: 4		XC200: 4
Article no.		257908	286419	289982	267191	135265

Counter modules		XIOC-1CNT-100KHZ	XIOC-2CNT-100KHZ	XIOC-2CNT-2AO-INC
Inputs:				
Counter limits		0 - 4294967295 (32 Bit)		
Frequency	kHz	100 (25 with four times resolution)		400 (100 with four times resolution)
Number of channels		1	2	
Input voltage	V DC	12 - 24		-
Potential isolation		with optocouplers		-
Outputs:				
Output type		Transistor (open collector)		analog
Output channels	No.	2	4	2
Potential isolation		with optocouplers		-
Output voltage	V DC	-		-10 - 10
Resolution	Bit	-		12
Total errors		-		≥ 1 kΩ
Connection for external cabling		30-pin plug: XIOC-TERM30-CNT4		Plug-in terminal block
Article no.		257906	257907	262417



EC4P with and without display

EC4P controllers now offer the performance of a PLC in the housing of the renowned easy control relay. This enables the convenient creation of solutions for small and medium-sized control tasks. Simple programming to IEC-61131 using easySoft-CoDeSys is the basis for this, in conjunction with a powerful CPU. This communication capability of the controller is a special feature. Serial and Ethernet interfaces for programming and connecting to OPC clients, as well as CANopen and easyNet for networking with other fieldbus components allow a wide range of communication options.

Basic units	easyControl							
Application	Compact PLC for different applications							
Type	EC4P-221-MTXD1*) EC4P-221-MTXX1*)	EC4P-221-MRXD1*) EC4P-221-MRXX1*)	EC4P-221-MTAD1*) EC4P-221-MTAX1*)	EC4P-221-MRAD1*) EC4P-221-MRAX1*)	EC4P-222-MTXD1*) EC4P-222-MTXX1*)	EC4P-222-MRXD1*) EC4P-222-MRXX1*)	EC4P-222-MTAD1*) EC4P-222-MTAX1*)	EC4P-222-MRAD1*) EC4P-222-MRAX1*)
Supply voltage	24 V DC							
Heat dissipation	7 W							
Inputs, digital	12	12	12	12	12	12	12	12
of which the following can be used as: inputs, analog 0 - 10 V	4	4	4	4	4	4	4	4
Outputs (R=Relay,T=Trans.), also (A=analog)	8T	6R	8T 1 A	6R 1 A	8T	6R	8T 1 A	6R 1 A
Continuous current outputs, digital [1]	0.5 A	8 A	0.5 A	8 A	0.5 A	8 A	0.5 A	8 A
Expandable/networkable	Yes /Yes	Yes /Yes	Yes /Yes	Yes /Yes	Yes /Yes	Yes /Yes	Yes /Yes	Yes /Yes
easyNet/CANopen	Yes /Yes	Yes /Yes	Yes /Yes	Yes /Yes	Yes /Yes	Yes /Yes	Yes /Yes	Yes /Yes
Ethernet	-	-	-	-	Yes	Yes	Yes	Yes
Temperature range	-25 °C to +55 °C							
Shipping approvals	DNV, GL, ABS, BV, LR							
Article no.	106391 106392	106393 106394	106395 106396	106397 106398	106399 106400	106401 106402	106403 106404	106405 106406

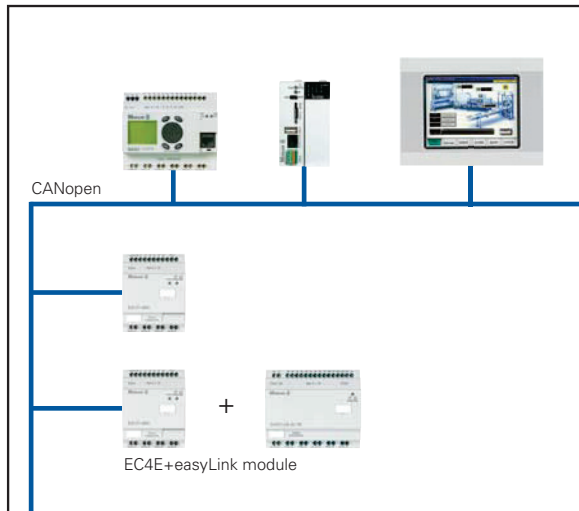
[1] Relay = 8 A (10 A to UL) with resistive load, 3 A with inductive load/transistor outputs = 0.5 A / 24 V DC, max 4 outputs switchable in parallel
*) D1 with display, X1 without display

The controllers of the EC4P series can be expanded with the standard easy I/Os:

Application	Expansions, analog inputs / outputs		Expansions, digital inputs / outputs					
	easyLink							
Type, Article no.	EASY406-DC-ME 114294	EASY411-DC-ME 116567	EASY202-RE 232186	EASY410-DC-RE 114293	EASY410-DC-TE 114294	EASY618-AC-RE 212314	EASY618-DC-RE 232112	EASY620-DC-TE 212313
Supply voltage	24 V DC	24 V DC	-	24 V DC	24 V DC	100-240 V AC	24 V DC	24 V DC
Inputs, digital	1 (3)	1 (3)	-	6	6	12	12	12
Inputs, analog	2*	6**	-	-	-	-	-	-
Outputs, digital (R=Relay, T= Trans.)	2T	2T	2R	4R	4T	6R	6R	8T
Outputs, analog (0-10 V)	1	2	-	-	-	-	-	-
Continuous current of outputs, digital ¹⁾	1A	1A	8A	8A	0,5A	8A	8A	0,5A
Degree of protection	IP 20							
Ambient operating temperature	- 25 °C ... + 55 °C							
Dimensions (WxHxD) mm	71,5x90x58		35,5x90x58	71,5x90x58			107,5x90x58	

1) Relay = 8 A (10 A to UL) with resistive load, 3 A with inductive load/transistor outputs = 0.5 A / 24 V DC, max 4 outputs switchable in parallel
* 2x 0-10 V or 2x 0-20 mA or 2x Pt100 (2/3 wire connection); voltage inputs (0-10V) also suitable for optional digital use
** 2x 0-10 V and 2x 0-20 mA and 2x Pt100 (2/3 wire connection); voltage inputs (0-10V) also suitable for optional digital use

Application	Expansions, CANopen with digital inputs / outputs	
Type	EC4E-221-6D4R1	EC4E-221-6D4T1
Supply voltage	24 V DC	24 V DC
Inputs, digital	6	6
Outputs (R=Relay,T=Trans.)	4R	4T
Continuous current of outputs, digital ¹⁾	8 A	0,5 A
Degree of protection	IP 20	
Ambient operating temperature	- 25 °C ... + 55 °C	
Dimensions (WxHxD) mm	71,5 x 90 x 58	
Article no.	114296	114297



Flexible MFD-80 Text Display for CANopen and RS232

Display systems are being increasingly used in more and more applications. With smaller PLCs, the costs for these devices and the effort required for configuring the data exchange between the PLC and the display unit are often considerable. The MFD text display offers here the ideal solution for many applications. It consists of the MFD-80 display and a communication port either with a serial interface (MFD-CP4) or with a CANopen fieldbus connection (MFD-CP4-CO). The MFD-80 4-line display has IP65 protection at the front, offers customised laser inscription and can be used at temperatures as low as -25 °C. The display is programmed directly from the user program. Ready-to-use function blocks are simply assigned parameters with texts and variables.

Display	MFD-80
Display	4 x 16 characters
Character height	1, 2, 4-line
Degree of protection	IP65
Customised laser inscription	yes
Temperature range	-25 to 55°C
Article no.	265250

Communication module	MFD-CP4 Article no. 280888	MFD-CP4-CO Article no. 115736
Interface	RS232	RS485
Protocol	easy	CANopen
Baud rate	max. 19,2kB	max. 1 MB
Address		1-63
Temperature range	-25 to 55°C	

Description	Type / Article-No.	for use with
Terminals		
18-pin connector with spring-cage terminal	XIOC-TERM-18T / 258104	XC100, XC200, XIOC
18-pin connector with screw terminal	XIOC-TERM-18S / 258102	XC100, XC200, XIOC
30-pin connector for counter module, with 4m cable	XIOC-TERM30-CNT4 / 262248	XIOC counter modules
40-pin connector for digital module, with 4m cable	XIOC-TERM32 / 267414	XIOC-32DI, XIOC-32DO
Module backplane		
Basic backplane for mounting on top-hat rail. Width: 2 slots	XIOC-BP-XC / 260792	XC100/200
Expansion backplane for mounting on top-hat rail. Width: 2 slots	XIOC-BP-2 / 260794	XI/OC modules
Basic backplane for mounting on top-hat rail. Width: 3 slots	XIOC-BP-XC1 / 260793	XC100/200
Expansion backplane for mounting on top-hat rail. Width: 3 slots	XIOC-BP-3 / 260795	XI/OC modules
Expansion backplane for mounting on top-hat rail. Width: 3 slots	XIOC-BP-EXT / 274291	XI/OC modules
Memory cards		
For storage of programs, data and recipes with 512 MByte	XTMEM-MM512M / 138257	XC100, XC121, XC200
For storage of programs, data and recipes with 32 MByte	XTMEM-MM32M / 262731	XC100, XC121, XC200
Adapter with at least 64 MB memory card	EU4A-MEM-CARD1 / 106409	EC4P
Battery		
For backup of real-time clock and retentive data	XT-CPU-BAT1 / 256209	XC100, XC200
Empty module		
Empty module to cover free XIOC slots	XIOC-NOP / 288894	XIOC
Interface switch		
Interface adapter to split the combined RS232/Ethernet interface into RJ45 sockets	XT-RJ45-ETH-RS232 / 289170	XC200
Filter		
Interference suppression of the external 24 V DC supply	XT-FIL-1 / 285316	XC100/200
Power supply interference suppression of I/O modules	XT-FIL-2 / 118980	XC100/200
Connecting cables		
for connecting EC4P (RJ45) to MFD-CP4-CO or EC4E (terminal block)	EU4A-RJ45-CAB2 / 115387	EC4P