



Expansion for compact PLC XC-CPU121, 10DI, 8DI/DO(T), 6AI, 2AO



Part no. **XIO-EXT121-1**
 Catalog No. **290450**

Delivery program

Description			UL/CSA approval Shipping classification (DNV, GL, ABS, BV, LR) expandable with XI/OC signal modules (except XIOC-NET-DP-M) plug in spring-cage terminals
Inputs expansion (number)			Local I/O expansion for PLC XC121
Outputs expansion (number)			Digital: 10; of which can be used as interrupts: 6; analog: 6 (0 - 10V: 2 or 0 - 20 mA: 2 or Pt100: 2) Digital: An additional 8 (also usable as outputs)
			Digital: 8 (also usable as inputs) Analog: 2 (0 - 10 V)

Technical data

General

Standards			IEC/EN 61131-2 EN 50178
Ambient temperature		°C	0 - +55
Storage	θ	°C	-25 - +70
Mounting position			Horizontal
Relative humidity, non-condensing (IEC/EN 60068-2-30)		%	10 - 95
Air pressure (operation)		hPa	795 - 1080
Vibration resistance			Frequency 5 - 9 Hz; amplitude 3.5 mm 9 - 150 Hz; 1.0 g constant acceleration
Mechanical shock resistance		g	15 Shock duration 11 ms
Overvoltage category/pollution degree			II/2
Degree of Protection			IP20
Rated insulation voltage	U _i	V	500
Emitted interference			EN 61000-6-4
Interference immunity			EN 61000-6-2
Weight		kg	0.15

Connection

X1 plug			
Plug type			Spring-loaded terminal block, 20-pole, B2L 3.5 (Weidmüller)
Terminal capacity (solid)		mm ²	
Terminal capacity, solid/stranded		mm ²	0.5 - 1
X2/X3 plug			
Plug type			Spring-loaded terminal block, 10-pole, BLZF 3.5/180 or BLI/O 3.5/10F with LEDs (Weidmüller)
Terminal capacity (solid)		mm ²	
Terminal capacities		mm ²	0.5 - 1

Power supply

Hold-up time on supply drop-out			
Duration of dip		ms	10
Repetition rate		s	1
Input voltage		V DC	24
Admissible range		V DC	20.4 - 28.8
Power consumption		W	max. 1.68
Input current		mA	70
Residual ripple		%	≤ 5
Maximum power loss (without local I/O)	P _v	W	1.7
Overvoltage protection			Yes

Protection against polarity reversal			Yes
Inrush current		$x I_n$	max. 1 A
Signal module output voltage			
max. field current IL		A	2

Interfaces

Serial interface (RS232) without handshake lines			
Potential isolation			No
X2: DI4...DI9			
Potential isolation			No
X2: DX0...DX7			With X3: Eight (can also be used as inputs)
Connection			Spring-loaded terminal block, 20-pole, B2L 3.5 (Weidmüller)

Power supply of local inputs/outputs (24 V₀/0 V₀)

Input voltage		V DC	24
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Digital inputs

Number			X2: nine with plug BLI/O 3.5/10F or 10 with plug BLZF 3.5/180 X3: eight (can also be used as outputs)
Rated voltage			
Rated voltage	U_e	V DC	24
On 0 signal	U_e	V DC	< 5
On 1 signal	U_e	V DC	> 15
Rated current	I_e	A	
On 1 signal	I_e	mA	3.3
Delay time		s	
X2: DI0...DI3		µs	20
X2: DI4...DI9		µs	250
X2: DX0...DX7		ms	20
Potential isolation			No

Digital outputs

Number			With X3: Eight (can also be used as inputs)
Rated voltage			
Rated voltage	U_e	V DC	24
Admissible range			20.4 ... 28.8 V DC
Residual ripple		%	5
Rated current	I_e	A	
at state "1"	I_e	A	0.5 at 24 V AC
Utilization factor	%	g	1
Duty factor		ms	100 %
Lamp load without R _v per channel		W	5
Potential isolation			No
Residual current on 0 signal per channel		mA	< 0.1
Max. output voltage			
On 0 signal with external load < 10 MΩ		V	2.5
On 1 signal with $I_e = 0.5$ A		V	$U = U_e - 1$ V
Short-circuit detection threshold			
Short-circuit tripping current for R _a ≤ 10 mΩ		A	$0.7 \leq I_e \leq 2$ per output
Total short-circuit current		A	16
Peak short-circuit current		A	32
max. operating frequency		Operations/h	40000
Can be switched in parallel			yes

Analog inputs 0 - 10 V

Number of channels			2
Input voltage range		V	0...10
Resolution		Bit	10

Conversion time		ms	≤ 5
Overall accuracy			≤ ± 1 % (of end of scale)
Input impedance		kΩ	200

Analog inputs 0 - 20 mA

Number of channels			2
Input voltage range		mA	0...20
Resolution		Bit	10
Conversion time		ms	≤ 5
Overall accuracy			≤ ± 1 % (of end of scale)
Input impedance		Ω	50

Pt100

Number of channels			2
Temperature range		°C	-200...+200
Resistance range		Ω	18.5...175.8
Resolution		Bit	10
Overall accuracy			≤ ± 2 %

Analog outputs

Number of channels			2
Output voltage range		V	0...10
Resolution		Bit	12
Conversion time		ms	≤ 5
Overall accuracy			≤ ± 1 % (of end of scale)
External load resistance	R	kΩ	10

Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I _n	A	0
Heat dissipation per pole, current-dependent	P _{vid}	W	0
Equipment heat dissipation, current-dependent	P _{vid}	W	0
Static heat dissipation, non-current-dependent	P _{vs}	W	1.7
Heat dissipation capacity	P _{diss}	W	0
Operating ambient temperature min.		°C	0
Operating ambient temperature max.		°C	55
IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
10.2.2 Corrosion resistance			Meets the product standard's requirements.
10.2.3.1 Verification of thermal stability of enclosures			Meets the product standard's requirements.
10.2.3.2 Verification of resistance of insulating materials to normal heat			Meets the product standard's requirements.
10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects			Meets the product standard's requirements.
10.2.4 Resistance to ultra-violet (UV) radiation			Meets the product standard's requirements.
10.2.5 Lifting			Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 Mechanical impact			Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 Inscriptions			Meets the product standard's requirements.
10.3 Degree of protection of ASSEMBLIES			Meets the product standard's requirements.
10.4 Clearances and creepage distances			Meets the product standard's requirements.
10.5 Protection against electric shock			Does not apply, since the entire switchgear needs to be evaluated.
10.6 Incorporation of switching devices and components			Does not apply, since the entire switchgear needs to be evaluated.
10.7 Internal electrical circuits and connections			Is the panel builder's responsibility.
10.8 Connections for external conductors			Is the panel builder's responsibility.
10.9 Insulation properties			
10.9.2 Power-frequency electric strength			Is the panel builder's responsibility.
10.9.3 Impulse withstand voltage			Is the panel builder's responsibility.
10.9.4 Testing of enclosures made of insulating material			Is the panel builder's responsibility.
10.10 Temperature rise			The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.

10.11 Short-circuit rating		Is the panel builder's responsibility.
10.12 Electromagnetic compatibility		Is the panel builder's responsibility.
10.13 Mechanical function		The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

Technical data ETIM 7.0

PLC's (EG000024) / PLC analogue/digital I/O-module (EC001421)		
Electric engineering, automation, process control engineering / Control / Programmable logic control (SPS) / SPS analog/digital input/output module (ecI@ss10.0.1-27-24-22-02 [AKE525014])		
Supply voltage AC 50 Hz	V	0 - 0
Supply voltage AC 60 Hz	V	0 - 0
Supply voltage DC	V	20.4 - 28.8
Voltage type of supply voltage		DC
Number of digital inputs		8
Number of digital outputs		8
Number of analogue inputs		2
Number of analogue outputs		2
Digital in-/outputs, configurable		Yes
Input current at signal 1	mA	0
Permitted voltage at input	V	20.4 - 28.8
Type of voltage (input voltage)		DC
Type of digital output		Transistor
Output current at digital output	A	0.5
Output voltage at digital output	V	20.4 - 28.8
Type of output voltage		DC
Short-circuit protection, digital outputs available		No
Analogue input, current		Yes
Analogue input, voltage		Yes
Analogue input, resistor		No
Analogue input, resistor temperature		Yes
Analogue input, thermocouple		No
Resolution of the analogue inputs	Bit	10
Analogue input signal configurable		No
Analogue output, current		No
Analogue output, voltage		Yes
Resolution of the analogue outputs	Bit	12
Analogue output signal configurable		No
Type of electric connection		Plug-in connection
Time delay at signal exchange	ms	0 - 0
Suitable for safety functions		No
Category according to EN 954-1		
SIL according to IEC 61508		None
Performance level acc. EN ISO 13849-1		None
Appendant operation agent (Ex ia)		No
Appendant operation agent (Ex ib)		No
Explosion safety category for gas		None
Explosion safety category for dust		None
Width	mm	90
Height	mm	100
Depth	mm	47

Approvals

Product Standards		IEC: see Technical Data; UL508; CSA-C22.2 No. 0-M; CSA-C22.2 No. 142-M; CE marking
UL File No.		E135462
UL Category Control No.		NRAQ
CSA File No.		012528

CSA Class No.	2252-01
North America Certification	UL listed, CSA certified
Specially designed for North America	No
Current Limiting Circuit-Breaker	No
Degree of Protection	IEC: IP20, UL/CSA Type: -

Dimensions

