› Expansion Modules
Digital Expansions AC
Size 35 & 70 mm

- › Compatible with many base (See Datasheet for Supply constraint)
- › Can be used to reach a 60 I/Os configuration
- › 2 Dimensions available: 35 and 70 mm
- › External power supply
- › Possibility to add several extensions

Digital Expansions 35 mm

Digital Expansions 70 mm

Selection guide					
Type	**Inputs**	**Outputs**	**Power supply**	**Dimensions**	**Part Number**
MXR	4	4 relays	110 → 240 V⏦	35 mm	**MXR08U3**
MXR	8	8 relays	110 → 240 V⏦	70 mm	**MXR16U3**
MXR	4	4 relays	24 V⏦	35 mm	**MXR08U1**
MXR	8	8 relays	24 V⏦	70 mm	**MXR16U1**

	MXR08U3	MXR16U3	MXR08U1	MXR16U1
Power Supply				
Supply characteristics				
Nominal voltage	110-240 V⏦		24 V⏦	
Operating limits	85 → 265 V∿ / 100 → 253 V⎓	86 → 265 V∿ / 100 → 253 V⎓	20.4 → 26.4 V∿ / 20.4 → 28.8 V⎓	
Max. absorbed power	6.5VA @ 90 V∿ 6.5VA @ 265 V∿ 3W @ 100 V⎓ 3W @ 253 V⎓		6VA @ 20.4 ➡∿ 6VA @ 26.4 ➡∿ 3W @ 20.4 ➡⎓ 3W @ 28.8 ➡⎓	
Supply frequency range	50 → 60 Hz (AC) (±3 Hz)			
Power supply earthing	None			
Reverse polarity protection	Yes			

Codification EXPANSION

M	X	R	16	U1
M: Millenium	**X:** Expandable	**S:** Static Output **R:** Relay Output **AI:** Analog Input **AO:** Analog Output	**Input/Output** **16:** 08 / 08 **08:** 04 / 04 **02:** 02 / 00 00 / 02	**Power Supply** **U1:** 24 V⏦ **U3:** 110-230 V⏦ **D1:** 24 V⎓ **D7:** 12-24 V⎓

Codification BASE

M	X	D	12	R	U1	ET
M: Millenium	**X:** Expandable	**Display** **D:** With **B:** Without	**Input/Output** **08 / 04**	**S:** Static Output **R:** Relay Output **AI:** Analog Input **AO:** Analog Output	**Power Supply** **U1:** 24 V⏦ **U3:** 110-230 V⏦ **D1:** 24 V⎓ **D7:** 12-24 V⎓	**ET:** Ethernet

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Description:

The Millenium is the latest product in Crouzet's Millenium series.This is a compact, networked, and communicative PLC. Its flexible deployment and extensive configuration options with various extensions make it suitable for a wide range of applications.
Accompanied by powerful, intuitive software, it will support you throughout your automation needs.

For more information about ***Millenium***: please visit www.crouzet.com

	MXR08U3	MXR16U3	MXR08U1	MXR16U1
Inputs				
Digital input				
Number of Inputs	4	8	4	8
Input voltage	0 - 265 V~ / 0 → 253 V⎓		0 – 26.4 V~ / 0 → 28.8 V⎓	
Input current AC	≈ 0.6153 mA @ 85 V~ ≈ 0.8002 mA @ 110 V~ ≈ 1.7620 mA @ 240 V~ ≈ 1.9469 mA @ 265 V~		≈ 3.7875 mA @20.4 V~ ≈ 4.5363 mA @24 V~ ≈ 5.0354 mA @26.4 V~	
Input current DC	≈ 0.5096 mA @ 100 V⎓ ≈ 0.5620 mA @ 110 V⎓ ≈ 1.2421 mA @ 240 V⎓ ≈ 1.3729 mA @ 265 V⎓		≈ 2.5453 mA @20.4 V⎓ ≈ 3.0748 mA @24 V⎓ ≈ 3.7808 mA @28.8 V⎓	
Input Impedance	400 KΩ	400 KΩ	13.4 KΩ	13.4 KΩ
Logic 1 voltage threshold	> 79 V~, > 79 V⎓		> 12 V≂	
Making current at logic state 1	0.5371 mA – 79 V~ / 0.3761 mA – 79 V⎓		2.0405 mA – 12 V~ / 1.3097 mA – 12 V⎓	
Logic 0 voltage threshold	< 40 V~, < 30 V⎓		< 5 V≂	
Release current at logic state 0	0.2824 mA – 40 V~ / 0.1349 mA – 30 V⎓		0.5846 mA – 5 V~ / 0.2890 mA – 5 V⎓	
Response time	1 to 2 cycle time (normal input)			
Input type	Resistive			
Conforming to IEC/EN 61131-2	Type 1			
Isolation between power supply and inputs	None			
Isolation between inputs	None			
Protection against polarity inversion	Yes			
Max cable length	≤30m			
Status indicator	On Display (LCD) when used with LCD base			
Outputs				
Relay Outputs				
Quantity	4 relays outputs	8 relays outputs	4 relays outputs	8 relays outputs
Max. breaking voltage	250 V~ 30 V⎓			
Max. Breaking current	5 A @ 230 V~ (resistive) 5 A @ 30 V⎓ (resistive)			
Mechanical life	1x 10^7			
Electrical durability	Resistive load at 85 °C: 5 A, 250 V~, 50 K Cycles			
Minimum switching capacity	100 mA (at minimum voltage of 12V)			
Maximum rate	10Hz			
Voltage for withstanding shocks	2kV			
Response time	Make = 1 cycle time + 8 ms Release = 1 cycle time + 5 ms			
Isolation between power supply and outputs	Yes			
Isolation between outputs	Yes			
Built-in protections	▪ Against short-circuits: None ▪ Against overvoltages and overloads: None			
Status indicator	On LCD screen (Only on PLC with display)			
Cable length	≤ 30 meter			

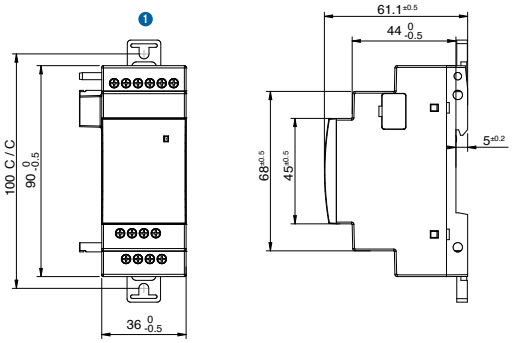
	MXR08U3	MXR16U3	MXR08U1	MXR16U1
General & environment characteristics				
Certifications	CE, cULus			
Environmental certifications	REACH, ROHS			
Conformity with the EMC directive	▪ IEC/EN 61000-6-1 (Residential, commercial, and light-industrial environments) ▪ IEC/EN 61000-6-2 (Industrial) ▪ IEC/EN 61000-6-3 (Residential, commercial, and light-industrial environments) ▪ IEC/EN 61000-6-4 (Industrial)			
Protection rating	In accordance with IEC/EN 60529: ▪ IP40 on front panel ▪ IP20 on terminal block			
Overvoltage category	2 in accordance with IEC/EN 60664-1			
Pollution	Degree: 2 in accordance with IEC/EN 61131-2			
Max operating Altitude (m)	▪ Operation: 2000 ▪ Transport: 3000			
Mechanical resistance	▪ Immunity to vibrations IEC/EN 60068-2-6, Test Fc ▪ Immunity to Shock IEC/EN 60068-2-27 ,15 g peak, 11 ms duration			
Resistance to electrostatic discharge	IEC 61000-4-2 Level III (AD: ± 8 KV and CD: ± 4 KV), Criteria B			
Resitance to HF interference	▪ Immunity to radiated electrostatic fields IEC 61000-4-3 ▪ Electrical fast transients IEC 61000-4-4 ▪ Surge IEC 61000-4-5 ▪ Conducted Susceptibility IEC 61000-4-6, ▪ Voltage dips ▪ As per IEC61131 -2			
Conducted and radiated emissions	CISPR11 Class B			
Operating temperature	-20 → +55 °C (-4 → 131 °F)			
Storage temperature	-30 → +70 °C (-22 → 158 °F)			
Relative humidity	10-95 % no condensing			
Screw terminals connection capacity	▪ Euro type terminal ▪ Wire Size 1 x 24 to 12 (AWG) ▪ Solid wire Range: 1*2.5 mm2 or 2*1.5 mm2 ▪ Flexible wire Range: 1*2.5 mm2 or 2*1.5 mm2			
Screw tightening Torque	0.4 N. m. (3.54 lb. in) (Including earth terminal)			
Clearance and creepage	IEC 60664, IEC 61131-2, IEC 61010			
Mechanical Specifications				
Mounting Type	Base / Din-Rail Mounting			
Housing material	Polycarbonate			
Housing Color	Light Gray RAL 7035 (sole black RAL9011)			
Dimension (W x H x D) (mm)	36 x 90 x 61.1	72 x 90 x 61.1	36 x 90 x 61.1	72 x 90 x 61.1
Weight (g)	123	220	120	211
Enclosure type	2 M	4 M	2 M	4 M
DIN Rail mounting	Mounting in 35 mm symmetrical DIN rail (see installation sheet of instructions), compatible with modular enclosures			
Panel Mounting	Flat panel mounting by screws (see installation sheet of instructions)			
LED Indication				
Power/Status LED indicator	Yes			

Product Dimensions

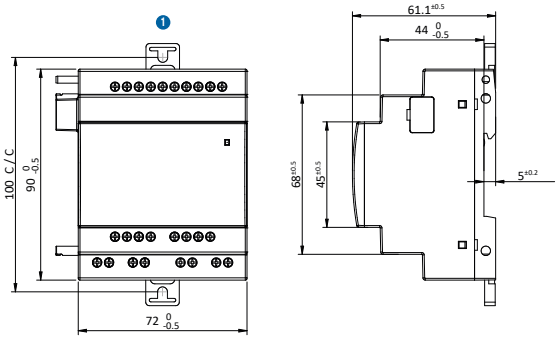
Front and Side

Digital Expansions

Version 35 mm



Version 70 mm



1 Fixing Bracket

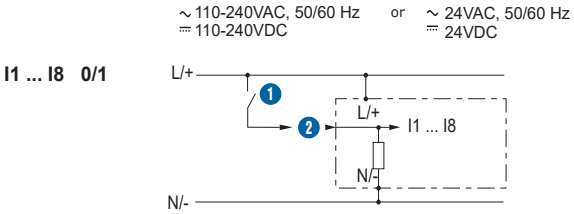
Electronic & Wiring Diagrams

Inputs

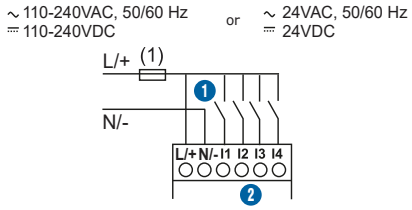
Digital Inputs (AC/DC Voltage)

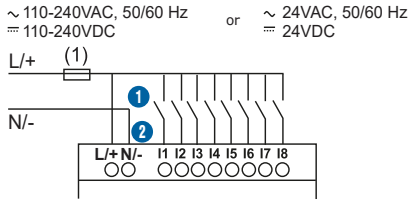
MXR08U3, MXR08U1 → Inputs I1....I4
MXR16U3, MXR16U1 → Inputs I1....I8

Electronic Diagram



Wiring Diagram





1 Contact
2 Digital Input

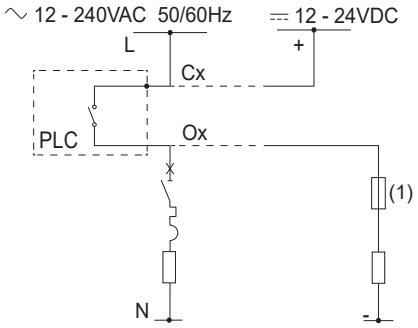
(1) 1A quick blowing fuse, circuit breaker, or circuit protector
L: Line
N: Neutral

Outputs

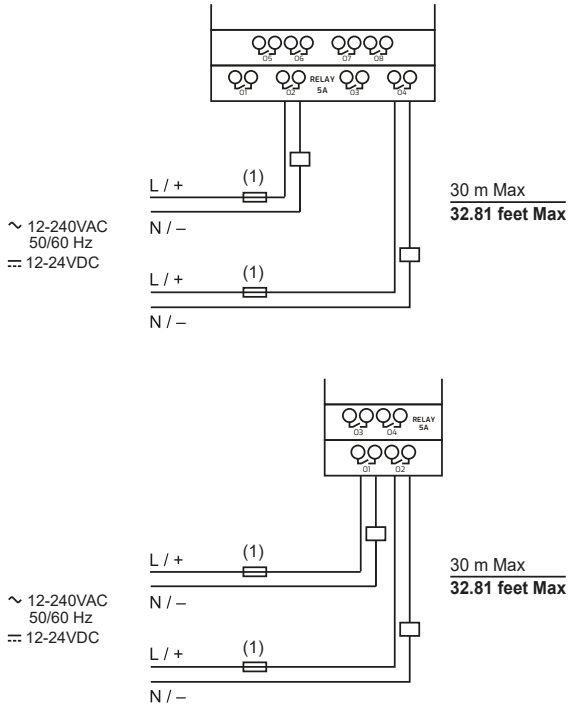
Relay Outputs

MXR08U3, MXR08U1
MXR16U3, MXR16U1

Electronic Diagram



Wiring Diagram



(1) Fuse, circuit breaker or current protector as per relay rating.
For 8A relay use 8A circuit breaker or current protector.
For 5A relay use 5A circuit breaker or current protector.