› Expansion Modules
Digital Expansions DC
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	12 → 24 V⎓	35 mm	**MXR08D7**
MXR	8	8 relays	12 → 24 V⎓	70 mm	**MXR16D7**
MXS	4	4 solid state	24 V⎓	35 mm	**MXS08D1**
MXS	8	8 solid state	24 V⎓	70 mm	**MXS16D1**

	MXR08D7	MXR16D7	MXS08D1	MXS16D1
Power Supply				
Supply characteristics				
Nominal voltage	12 → 24 V⎓		24 V⎓	
Operating limits	10.8 → 28.8 V⎓		20.4 → 28.8 V⎓	
Max. absorbed power	1W @ 12 V⎓ 2W @ 28.8 V⎓	2W @ 12 V⎓ 3W @ 28.8 V⎓	1W @ 20.4 V⎓ 1W @ 28.8 V⎓	
Immunity to micro power cuts	1 ms			
Power supply earthing	None			
Reverse polarity protection	Yes			
Inputs				
Digital Inputs				
Number of Inputs	4	8	4	8
Input voltage	0-28.8 V⎓			
Input current	≈ 1.1332 mA @ 10.8 V ≈ 1.3097 mA @ 12 V ≈ 2.5453 mA @ 20.4 V ≈ 3.0748 mA @ 24 V ≈ 3.7808 mA @ 28.8 V		≈ 2.5453 mA @20.4V ≈ 3.0748 mA @24V ≈ 3.7808 mA @28.8V	

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

	MXR08D7	MXR16D7	MXS08D1	MXS16D1
Input Impedance	13.4 KΩ			
Logic 1 voltage threshold	> 8.5 V⎓		> 12 V⎓	
Making current at logic state 1	0.7949 mA		1.3097 mA	
Logic 0 voltage threshold	< 5 V⎓			
Release current at logic state 0	0.2890 mA			
Response time	1 to 2 cycle time (normal input)			
Input type	Resistive			
Conforming with IEC 61131-2	Type 1			
Isolation between power supply and inputs	None			
Isolation between inputs	None			
Protection against polarity inversion	Yes			
Max cable length	≤100m (Shielded)			
Status indicator	On Display (LCD) when used with LCD base			
Outputs				
Relay Outputs				
Quantity	4 relays outputs	8 relays outputs	NA	
Max. breaking voltage	250 V∿ 30 V⎓		NA	
Max. Breaking current	5 A @ 230 V∿ (resistive) 5 A @ 30 V⎓ (resistive)		NA	
Mechanical life	1x 10^7		NA	
Electrical durability	Resistive load at 85 °C: 5 A, 250 V∿, 50 K Cycles		NA	
Minimum switching capacity	100 mA (at minimum voltage of 12V)		NA	
Maximum rate	10Hz		NA	
Voltage for withstanding shocks	2kV		NA	
Response time	Make = 1 cycle time + 8 ms Release = 1 cycle time + 5 ms		NA	
Isolation between power supply and outputs	Yes		NA	
Isolation between outputs	Yes		NA	
Built-in protections	▪ Against short-circuits: None ▪ Against overvoltages and overloads: None		NA	
Status indicator	On LCD screen (Only on PLC with display)		NA	
Cable length	≤ 30 meter		NA	
Static (transistor - Sourcing) Outputs				
No. of Outputs	NA		4 static outputs	8 static outputs
Breaking voltage	NA		10 to 28.8 V⎓	
Nominal voltage	NA		12 / 24 V⎓	
Nominal current	NA		0.5 A	
Max. breaking current	NA		0.625 A	
Voltage drop	NA		< 2V for I=0.5A	
Min. load	NA		10 mA	
Response time	NA		Make = 1 cycle time + 60 µs max Release = 1 cycle time + 60 µs max	
Built-in protections - Short circuit proof	NA		Yes	
Built-in protections - Over load protection	NA		Over-temperature shutoff	
Built-in protections - Over voltage protection	NA		Yes	
Built-in protections - Short circuit current limitation	NA		Internally Protected (Max 1.7 A Per output)	
Polarity inversion protection	NA		Yes	
Isolation between power supply and outputs	NA		None	

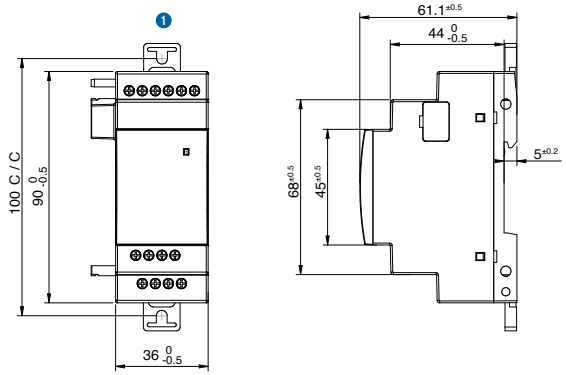
	MXR08D7	MXR16D7	MXS08D1	MXS16D1
Isolation between outputs	NA		None	
Wiring	NA		PNP	
Status indicator	NA		On LCD screen (Only on PLC with display)	
Cable length (Shielded)	NA		Max. 30 meter	
General & environment characteristics				
Certifications	CE, cULus			
Environmental certifications	REACH, ROHS			
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	Degree 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			
Resistance 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)	120	210	95	165
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

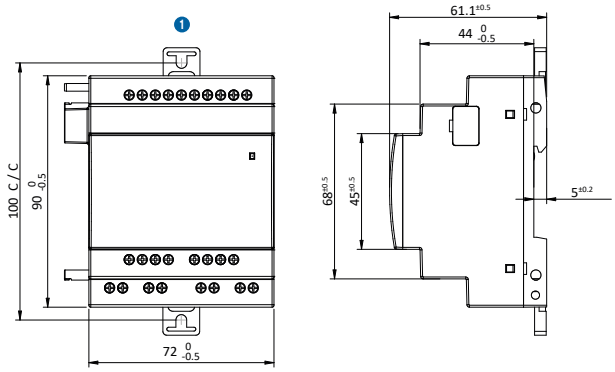
Front and Side

Digital Expansions DC

Version 35 mm



Version 70 mm



1 Fixing Bracket

Electronic & Wiring Diagrams

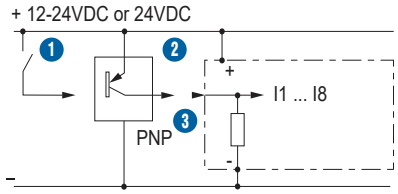
Inputs

Digital Inputs (DC Voltage)

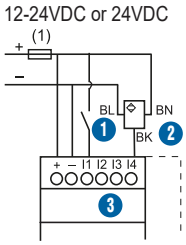
MXR08D7, MXS08D1 → Inputs I1....I4
MXR16D7, MXS16D1 → Inputs I1....I8

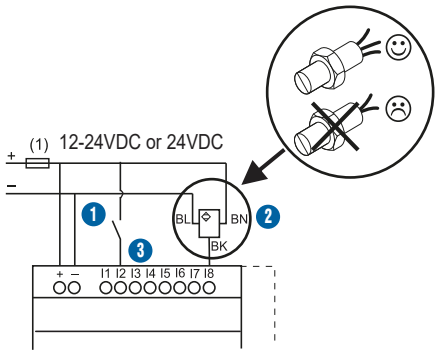
Electronic Diagram

I1 ... I8 0/1



Wiring Diagram





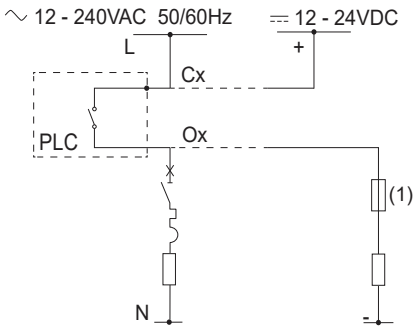
(1) 1A quick blowing fuse, circuit breaker, or circuit protector
BN: Brown cable of the 3-Wire PNP sensor
BL: Blue cable of the 3-Wire PNP sensor
BK: Black cable of the 3-Wire PNP sensor

Outputs

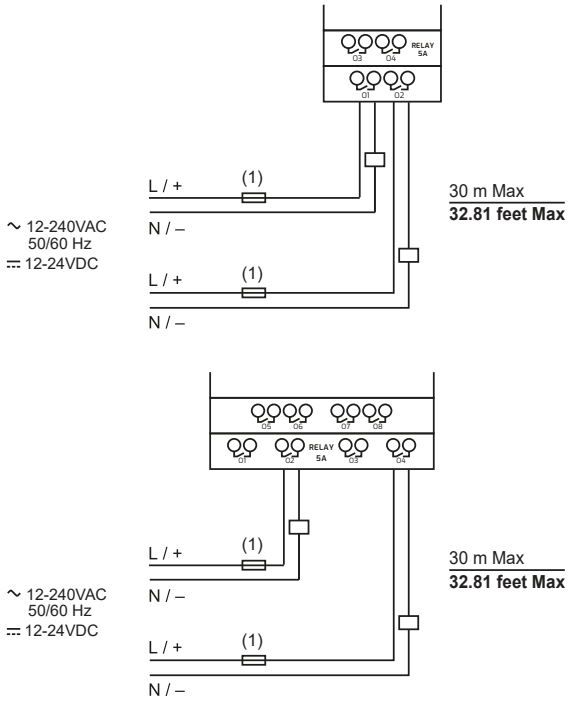
Relay Outputs

MXR08D7, MXR16D7

Electronic Diagram



Wiring Diagram



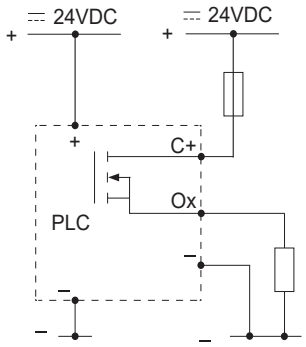
(1) Fuse, circuit breaker or current protector as per relay rating.
For 8A relay use 8A circuit breaker or current protector.
For 5A relay use 5A circuit breaker or current protector.

Outputs

Static / PWM Outputs

MXS08D1, MXS16D1

Electronic Diagram



Wiring Diagram