

Expansion Modules

DC Digital Expansion

35 & 70 mm



Electrical Control & Protection > Expansion Modules > DC Digital Expansion > 35 & 70 mm

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: please visit www.crouzet.com

Offer description

- › 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

The Offer

MXR08D7



Digital Expansions
Inputs: 4
Outputs: 4 relays
Power supply: 12 → 24 V $\overline{\text{DC}}$
Dimensions: 35 mm

MXR16D7



Digital Expansions
Inputs: 8
Outputs: 8 relays
Power supply: 12 → 24 V $\overline{\text{DC}}$
Dimensions: 70 mm

MXR08D1



Digital Expansions
Inputs: 4
Outputs: 4 relays
Power supply: 24 V $\overline{\text{DC}}$
Dimensions: 35 mm

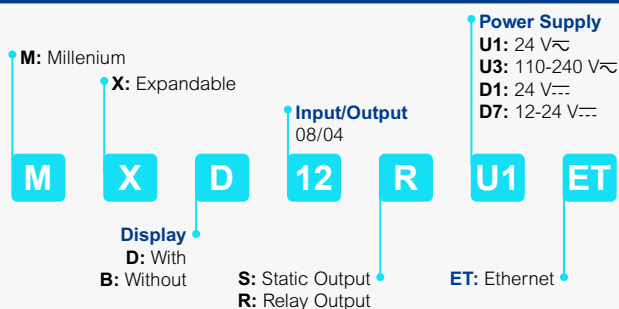
MXR16D1



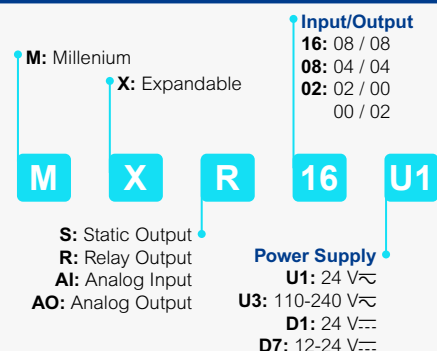
Digital Expansions
Inputs: 4
Outputs: 4 relays
Power supply: 24 V $\overline{\text{DC}}$
Dimensions: 70 mm

Codification

CONTROLLER



EXPANSION



Specifications

	MXR08D7	MXR16D7	MXS08D1	MXS16D1
Power Supply				
Supply characteristics				
Nominal voltage	12 → 24 V $\overline{\text{---}}$		24 V $\overline{\text{---}}$	
Operating limits	10.8 → 28.8 V $\overline{\text{---}}$		20.4 → 28.8 V $\overline{\text{---}}$	
Max. absorbed power	1.5 W @ 12 V $\overline{\text{---}}$	2 W @ 12 V $\overline{\text{---}}$	1W @ 20.4 V $\overline{\text{---}}$	
	2 W @ 28.8 V $\overline{\text{---}}$	5.5 W @ 28.8 V $\overline{\text{---}}$	1W @ 28.8 V $\overline{\text{---}}$	
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 $\overline{\text{---}}$			
Input current	$\approx$ 1.13 mA @ 10.8 V		$\approx$ 2.55 mA @20.4V	
	$\approx$ 1.31 mA @ 12 V		$\approx$ 3.07 mA @24V	
	$\approx$ 2.55 mA @ 20.4 V		$\approx$ 3.78 mA @28.8V	
	$\approx$ 3.07 mA @ 24 V			
	$\approx$ 3.78 mA @ 28.8 V			
Input Impedance	13.4 K Ω			
Logic 1 voltage threshold	> 8.5 V $\overline{\text{---}}$		> 12 V $\overline{\text{---}}$	
Making current at logic state 1	0.79 mA		1.31 mA	
Logic 0 voltage threshold	< 5 V $\overline{\text{---}}$			
Release current at logic state 0	0.29 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	$\leq$ 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 $\sim$		NA	
	30 V $\overline{\text{---}}$		N/A	
Max. Breaking current	5 A @ 230 V $\sim$ (resistive)		NA	
	5 A @ 30 V $\overline{\text{---}}$ (resistive)			
Mechanical life	1 x 10 ⁷		NA	
Electrical durability	Resistive load at 85 °C:		NA	
	5 A, 250 V $\sim$, 50 K Cycles			
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		NA	
	Release = 1 cycle time + 5 ms			

Specifications

	MXR08D7	MXR16D7	MXS08D1	MXS16D1
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 $\overline{DC}$	
Nominal voltage	NA		12 / 24 V $\overline{DC}$	
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 μ s max Release = 1 cycle time + 60 μ s 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	
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: $\pm$ 8 KV and CD: $\pm$ 4 KV), Criteria B			

Specifications

	MXR08D7	MXR16D7	MXS08D1	MXS16D1
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). Limited to +40 °C (104 °F) in a non-ventilated enclosure			
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

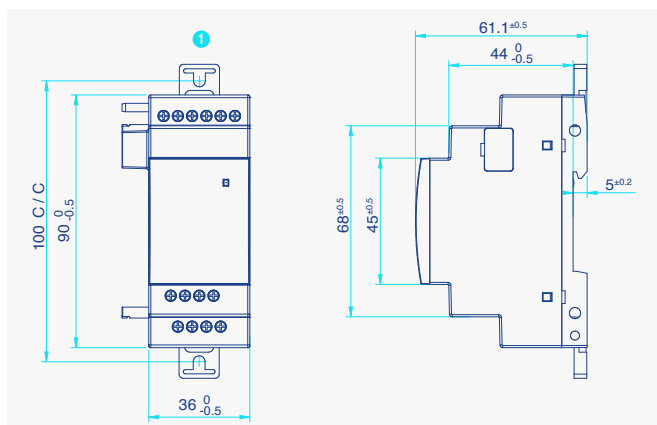
Mounting type	Base / Din-Rail Mounting			
Housing material	Polycarbonate			
Housing Color	Light Gray RAL 7035 (sole black RAL9011)			
Dimension (W x H x D) (mm)	36 x 90 x 61.1	72 x 90 x 61.1	36 x 90 x 61.1	72 x 90 x 61.1
Weight (g)	120	210	95	165
Enclosure type	2 M	4 M	2 M	4 M
DIN Rail mounting	Mounting 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

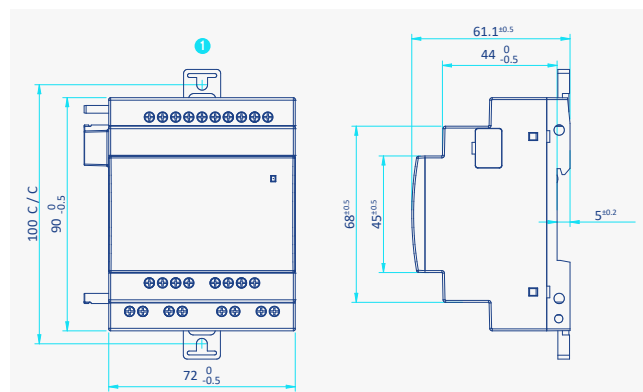
Digital Expansions DC

Version 35 mm



1 Fixing Bracket

Version 70 mm



Electronic & Wiring Diagrams

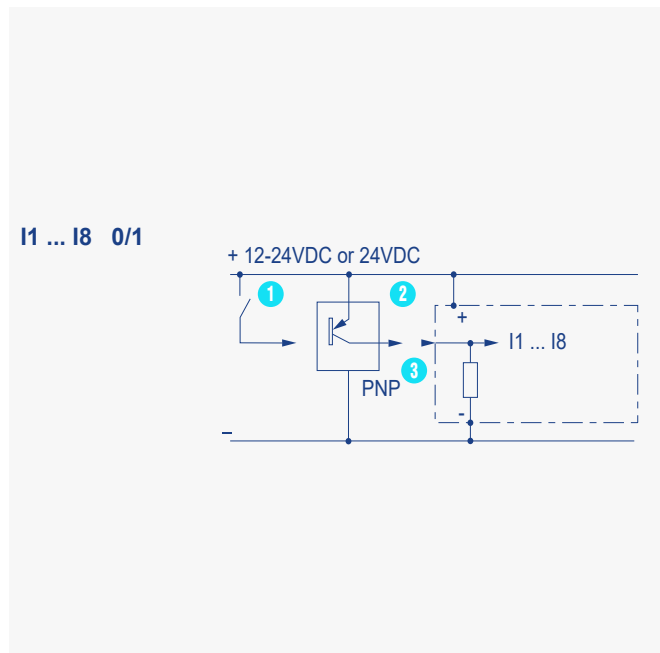
Inputs

Digital Inputs (DC Voltage)

MXR08D7, MXS08D1 → Inputs I1....I4

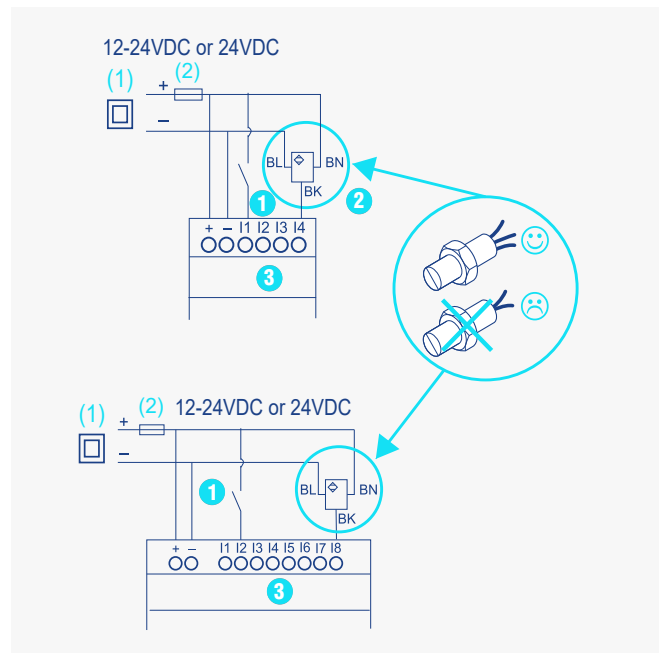
MXR16D7, MXS16D1 → Inputs I1....I8

Electronic Diagram



- ① Contact
- ② 3-wire PNP sensor
- ③ Digital Input

Wiring Diagram



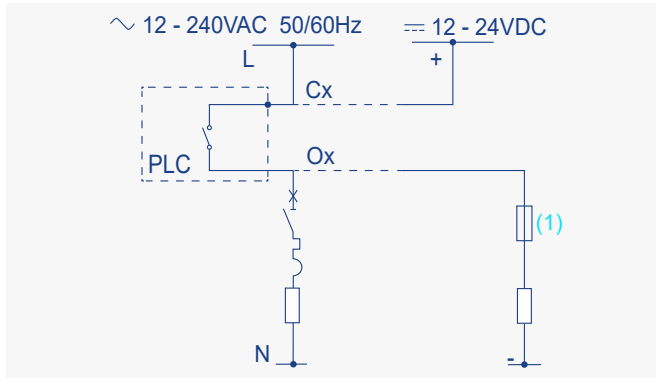
- ① Isolated source
- ② 1A quick blowing fuse, circuit breaker, or circuit protector
- BN: Brown cable of the 3-Wire PNP sensor
- BL: Blue cable of the 3-Wire PNP sensor
- BK: Black cable of the 3-Wire PNP sensor

Outputs

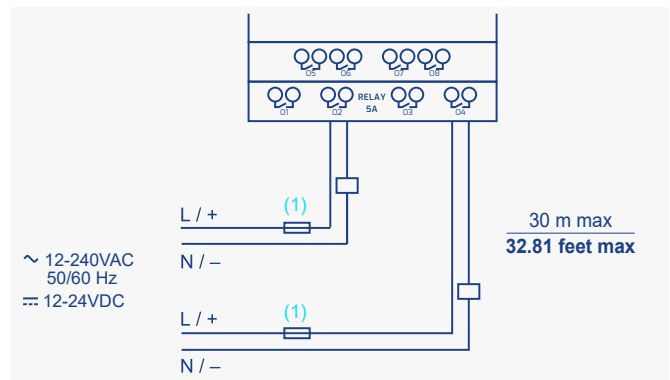
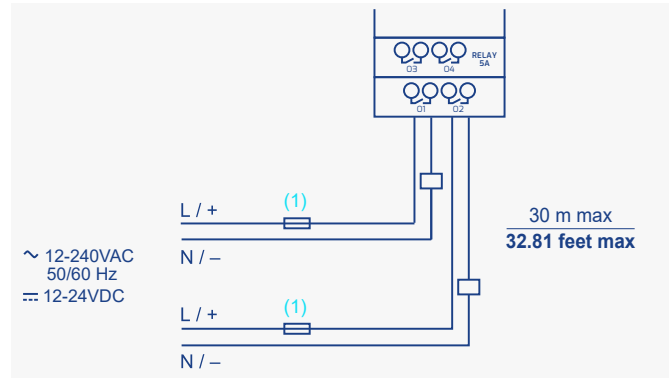
Relay Outputs

MXR08D7, MXR16D7

Electronic Diagram



Wiring Diagram

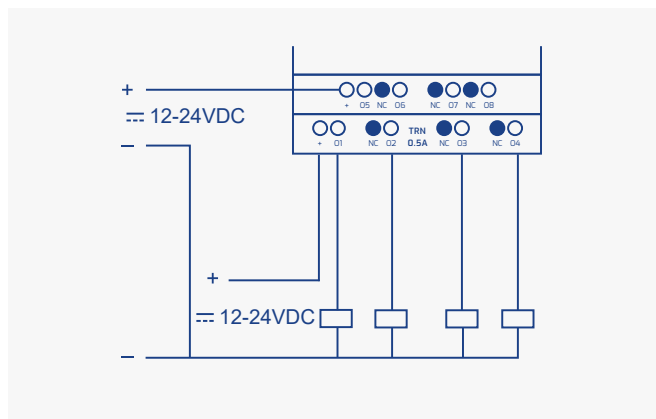
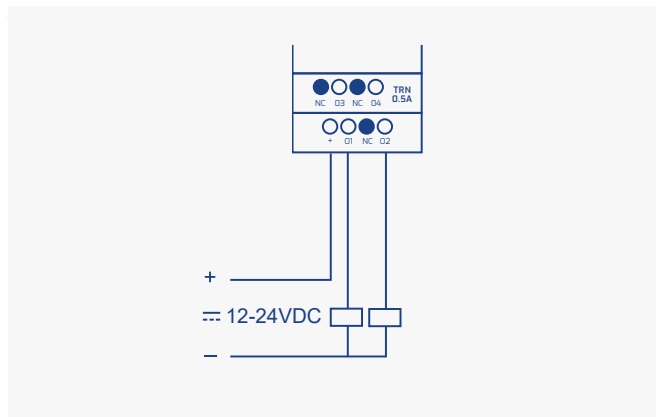
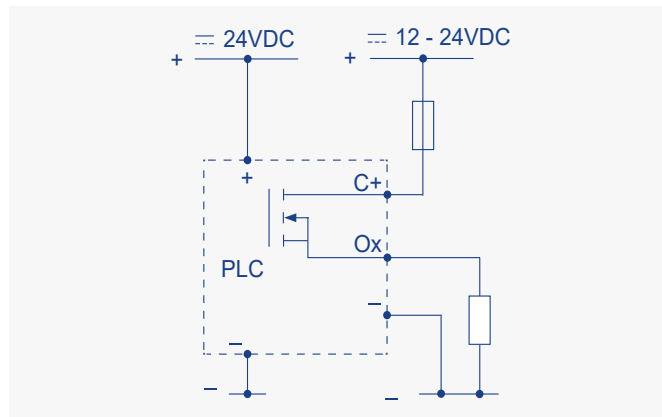


(1) Fuse, circuit breaker or current protector as per relay rating.
For 8A relay use 8A circuit breaker or current protector.
For 5A relay use 5A circuit breaker or current protector.

Outputs
Static / PWM Outputs

MXS08D1, MXS16D1

Electronic Diagram



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