ReeR MOSAIC-MOR4 Output Expansion Unit

The ReeR MOSAIC (MOdular SAfety Integrated Controller) MOR4 safety relay expansion unit offers configurable outputs.

Features

- Four single channel NO outputs (safety category 1 or 2), or two dual channel NO outputs (safety category 4)
- Removable terminal block plus screw contacts
- Connection to M1 or M1S via MSC 5-way ReeR proprietary bus. Bus connector included.

MOSAIC-MOR4

Safety Data per EN 13849-1		
	Paired Relay	*Single Relay*
Category	4	1-2
Performance level	e	c (category 1) d (category 2)
$MTTF_d$ (years)	Please refer to product insert	
DC_{avg}	High	
Safety Data per IEC/EN 62061, IEC/EN 61508		
SIL CL	3	1 (category 1) 2 (category 2)
SIL	3	1 (category 1) 2 (category 2)
HFT	1	
DC_{avg}	High	
SFF	99.8%	
PFH_d (t-20a)	Please refer to product insert	

Safety data is dependent on circuit architecture. See manual for further details.

MOSAIC-MOR4 Expansion Unit				
Part Number	*Price*	*Voltage*	*Description*	*Connection*
MOSAIC-MOR4	$02exd:	24VDC	Safety relay expansion unit with configurable outputs	Removable terminal block, screw contacts

MOSAIC-MOR4 Specifications	
General Specifications	
Operating Temperature	-10°C to +55°C [14°F to 131°F]
Storage Temperature	-20°C to +85°C [-4°F to 185°F]
Altitude	2000m (max)
Vibration Resistance	Tested to IEC 60068-2-6
Degree of Protection	IP 20
Housing	Polyamide
Weight	300g [10.58 oz]
Agency Approvals and Standard	cULus, CE, TÜV
Terminal Designation per EN 50 005	AWG 12-30 solid/stranded. Use 60/75°C copper (Cu) conductor only.
Wire Fixing	Screw or clamp terminal blocks with 8, 16 or 24 terminals, plus rear panel plug-in connector. Terminal tightening torque 5-7 lb•in (0.6-0.7 N•m).
Input Specifications	
Nominal Voltage	24VDC
Voltage Range	± 20%
Maximum Consumption	3W
Output Specifications	
Electrical Contact LIfe	$>10^5$ switching cycles
Mechanical Life	$>40x10^6$
Contact Type	4 NO positively driven
Signaling Output	–
Input/FBK/Reset	1-4 depending on configuration
Operate Delay	Typ. 10ms
Release Delay	Typ. 5ms
Nominal Output Voltage	240VAC
Thermal Current (I_{th})	6A
Short Circuit Strength	Fuse: NO contacts 10 A gG/gL / NC contacts: 6A gG/gL IEC/EN 60269
Switching Capacity	AC15: 3A/250VAC – DC13:2A/24VDC
Switching Frequency	Max 20 switching cycles/min

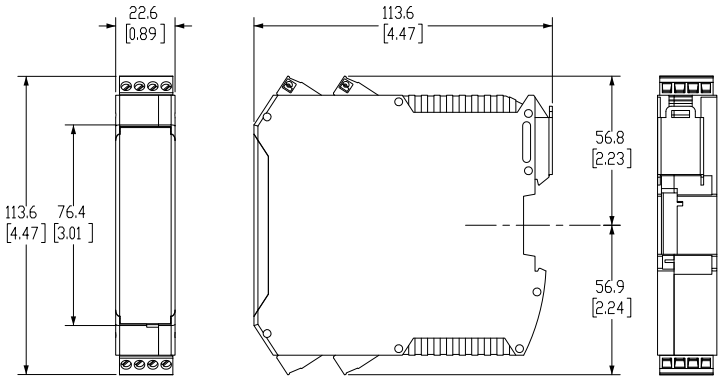
Note: See product manual for complete details.
Note: To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page.

Electrical Connections to MOSAIC-MOR4

- Wire size range: AWG 12-30 (solid/stranded) (UL).
- Use 60/75°C copper (Cu) conductor only.
- Turn off power before making connections.
- The supply voltage must be 24VDC ± 20% (PELV, in compliance with the standard EN 60204-1 (Chapter 6.4).
- Do not use the MOSAIC to supply external devices.
- The same ground connection (0VDC) must be used for all system components.
- Separate power supplies are recommended for the safety module and for other electrical power equipment (electric motors, inverters, frequency converters) or other sources of disturbance.
- Cables used for connections of longer than 50m [164ft] must have a cross-section of at least 1mm^2 (AWG16).

Dimensions

mm [inches]



MOR4 Module Connections			
Terminal	***Signal***	***Type***	***Description***
1	24VDC	–	24VDC power supply
2	NODE_SEL0	Input	Node selection
3	NODE_SEL1	Input	
4	0VDC	–	0VDC power supply
5	REST_FBK1	Input	Feedback/Restart 1
6	REST_FBK2	Input	Feedback/Restart 2
7	REST_FBK3	Input	Feedback/Restart 3
8	REST_FBK4	Input	Feedback/Restart 4
9	A_NO1	Output	NO contact Channel 1
10	B_NO1	Output	
11	A_NO2	Output	NO contact Channel 2
12	B_NO2	Output	
13	A_NO3	Output	NO contact Channel 3
14	B_NO3	Output	
15	A_NO4	Output	NO contact Channel 4
16	B_NO4	Output	

Please see the ReeR MOSAIC Supplemental Manual for basic wiring examples.

MOSAIC

MODULAR SAFETY INTEGRATED CONTROLLER

The MOSAIC system is a unique safety controller that's modular, expandable and configurable for managing all safety functions of a single machine or an entire plant. It offers cost reductions with minimal wiring.

MOSAIC SYSTEM

MOSAIC-M1

MOSAIC-M1S-USBC

MOSAIC M1, M1S, or M1S-USBC controller units are able to interface with up to 14 individual expansion modules (up to a maximum of 4 of any one module type).

Controller units can also be used in a stand-alone configuration.

Blue-highlighted modules work only with the MOSAIC-M1S or MOSAIC-M1S-USBC controller.

COMMS

MOSAIC-MBEI
Industrial Fieldbus: EtherNet/IP.

MOSAIC-MBEM
Industrial Fieldbus: ModBus TCP/IP.

DIGITAL INPUTS

MOSAIC-MI8
8 digital inputs and four test outputs.

MOSAIC-MI16
16 digital inputs and 4 test outputs.

MOSAIC-MI12T8
12 digital inputs, 8 test outputs.

I/O EXPANSION UNIT

MOSAIC-MI8O2
8 digital inputs, 2 EDM/RST inputs, 4 test outputs, 2 OSSD pairs, and 2 status outputs.

MOSAIC-MI8O4
8 digital inputs, 4 test outputs, 4 individual or 2 pair OSSD outputs, and 4 configurable I/O.

SPEED MONITORING

MOSAIC-MV0
2 prox switch inputs.

MOSAIC-MV1T
1 TTL encoder and 2 prox switch inputs.

MOSAIC-MV1H
1 HTL encoder and 2 prox switch inputs.

MOSAIC-MV1S
1 SIN/COS encoder and 2 prox switch inputs.

MOSAIC-MV2T
2 TTL encoder and 2 prox switch inputs.

MOSAIC-MV2H
2 HTL encoder and 2 prox switch inputs.

MOSAIC-MV2S
2 SIN/COS encoder and 2 prox switch inputs.

SAFETY RELAYS

MOSAIC-MR2
2 relays – 2 NO + 1 NC connectable to 1 OSSD pair + 1 NC contact for external device monitoring. 2 safety relays with guided contacts. Screw contacts.

MOSAIC-MR4
4 relays – 4 NO + 2 NC connectable to 2 OSSD pair + 2 NC contacts for external device monitoring. 4 safety relays with guided contacts. Screw contacts.

These extension relays can connect to the outputs on the MOSAIC M1, M1S, or to any of the output cards

DIGITAL OUTPUTS

MOSAIC-MO2
2 EDM/RST inputs, 2 OSSD pairs and 2 status outputs.

MOSAIC-MO4
4 EDM/RST inputs, 4 OSSD pairs and 4 status outputs.

MOSAIC-MOR4
4 single-channel outputs or 2 dual-channel outputs.

MOSAIC-MOR4S8
4 single-channel outputs or 2 dual-channel outputs with 8 status outputs.

MOSAIC-MO4L
4 individual or 2 pair OSSD outputs, and 4 configurable I/O.

ANALOG INPUTS

MOSAIC-MA4
4 analog inputs.

STATUS OUTPUTS

MOSAIC-MOS8
8 status outputs.

MOSAIC-MOS16
16 status outputs.

ACCESSORIES

MOSAIC-MSC-C
Safety communication bus connector and terminal end caps. Required to connect additional module to MOSAIC-M1, MOSAIC-M1S, or MOSAIC-M1S-USBC.

MOSAIC-MCM, MOSAIC-MCMB
A proprietary removable memory card that can be used to save MOSAIC configuration data for subsequent transfer to a new device without using a PC.

Safety Products

Warning: Safety products sold by AutomationDirect are Safety components only. The purchaser/installer is solely responsible for the application of these components and ensuring all necessary steps have been taken to assure each application and use meets all performance and applicable safety requirements and/or local, national and/or international safety codes as required by the application. AutomationDirect cannot certify that our products, used solely or in conjunction with other AutomationDirect or other vendors' products, will assure safety for any application. Any person using or applying any products sold by AutomationDirect is responsible for learning the safety requirements for their individual application and applying them, and therefore assumes all risks, and accepts full and complete responsibility, for the selection and suitability of the product for their respective application.

AutomationDirect does not provide design or consulting services, and cannot advise whether any specific application or use of our products would ensure compliance with the safety requirements for any application.