ReeR MOSAIC-MO4 Output Expansion Unit

ReeR

The ReeR MOSAIC (MOdular SAfety Integrated Controller) MO4 output expansion unit provides additional outputs.

Features

- Four pair OSSD Cat. 4 safety outputs (PNP 400mA)
- Four inputs for start/restart interlock and EDM
- Four programmable digital signal outputs (PNP 100mA)
- LED input/output status and fault diagnostics indicators
- Removable terminal block plus screw contacts
- Connection to M1 or M1S via MSC 5-way ReeR proprietary bus. Bus connector included.

MOSAIC-MO4

Safety Data per EN 13849-1	
Category	4
Performance level	e
MTTF$_d$ (years)	30-100
DC$_{avg}$	High
Safety Data per IEC/EN 62061, IEC/EN 61508	
SIL CL	3
SIL	3
HFT	1
DC$_{avg}$	High
SFF	99.8%
PFH$_d$ (t-20a)	5.83e^{-9}

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

CE   c(UL)us   TÜV SÜD

MOSAIC-MO4 Expansion Unit				
Part Number	*Price*	*Voltage*	*Description*	*Connection*
MOSAIC-MO4	$342.00	24VDC	Output expansion unit providing 4 pair OSSD safety outputs	Removable terminal block, screw contacts

MOSAIC MO4 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	240g [8.47 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 pluggable terminal blocks. Terminal tightening torque 5-7 lb•in (0.6-0.7 N•m).
Specifications	
Nominal Voltage	24VDC
Voltage Range	± 20%
Maximum Consumption	3W
Digital Inputs	–
Input FBK / Reset	4 for EDM control/possible automatic or manual operation with RESTART button
Test Outputs	–
OSSD Outputs	4 pairs solid state safety outputs PNP active high 400mA@24VDC max
Signaling Outputs	4 programmable - PNP high

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.
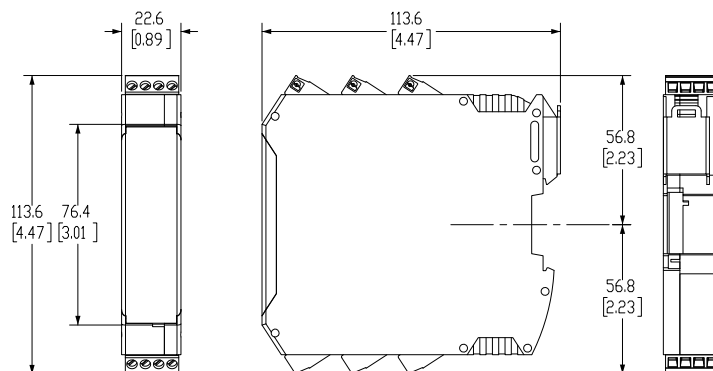
Electrical Connections to MOSAIC-MO4

ReeR

- 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]

MO4 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	OSSD1_A	Output	Static safety output 1
6	OSSD1_B	Output	
7	RESTART_FBK1	Input	Feedback/Restart1
8	OUT_STATUS1	Output	Programmable signal output
9	OSSD2_A	Output	Static safety output 2
10	OSSD2_B	Output	
11	RESTART_FBK2	Input	Feedback/Restart2
12	OUT_STATUS2	Output	Programmable signal output
13	24VDC	–	24VDC power supply
14	24VDC	–	24VDC power supply
15	0VDC	–	0VDC power supply
16	0VDC	–	0VDC power supply
17	OSSD4_A	Output	Static safety output 4
18	OSSD4_B	Output	
19	RESTART_FBK4	Input	Feedback/Restart 4
20	OUT_STATUS4	Output	Programmable signal output
21	OSSD3_A	Output	Static safety output 3
22	OSSD3_B	Output	
23	RESTART_FBK3	Input	Feedback/Restart 3
24	OUT_STATUS3	Output	Programmable signal output

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

MOSAIC

MODULAR SAFETY INTEGRATED CONTROLLER

REER

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-M1S-USBC

MOSAIC-M1

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
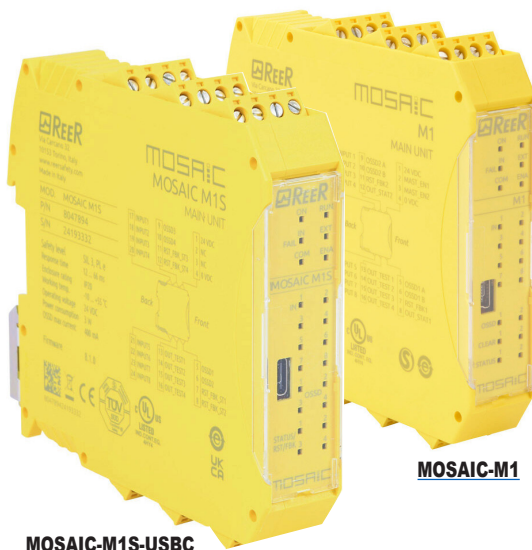2 TTL encoder and 2 prox switch inputs.

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

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

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
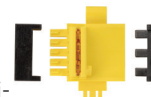
MOSAIC-MOS8
8 status outputs.

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 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

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.