

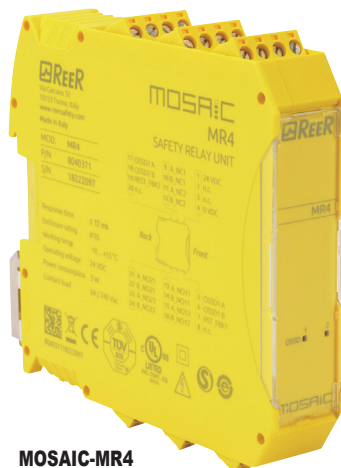
# ReeR MOSAIC-MR4 Safety Relay



The ReeR MOSAIC (MODular Safety Integrated Controller) MR4 safety relay module provides four relays (4 NO) safety contacts plus 2 NC connectable to two OSSD pairs plus 2 NC auxiliary contacts for external device monitoring.

## Features

- Four NO dry contact safety outputs
- Two NC dry contact monitoring outputs
- Two NC contacts for external device monitoring
- Four safety relays with guided contacts
- Removable terminal block plus screw contacts
- MR4 is not on the MSC 5-way ReeR proprietary bus



**MOSAIC-MR4**

## Safety Data per EN 13849-1

| Safety Data per EN 13849-1                 |                                |
|--|--------------------------------|
| Category                                   | 4                              |
| Performance level                          | e                              |
| MTTF <sub>d</sub> (years)                  | 2335                           |
| DC <sub>avg</sub>                          | 98.9%                          |
| Safety Data per IEC/EN 62061, IEC/EN 61508 |                                |
| SIL CL                                     | 3                              |
| SIL  | 3                              |
| HFT  | 1                              |
| DC <sub>avg</sub>                          | 98.9%                          |
| SFF  | 99.6%                          |
| PFH <sub>d</sub> (t-20a)                   | Please refer to product insert |

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

## MOSAIC-MR4 Expansion Unit

| Part Number       | Price    | Voltage | Description  | Connection                               |
|-------------------|----------|---------|--|--|
| <b>MOSAIC-MR4</b> | \$214.00 | 24VDC   | Safety relay extension module, 4 NO safety outputs, 2 NC monitoring output | Removable terminal block, screw contacts |



## MOSAIC-MR4 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                             | 260g [9.17 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.<br>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 <sup>5</sup> switching cycles  |
| Mechanical Life                    | >20x10 <sup>6</sup>  |
| Contact Type                       | 4 NO positively driven, 2 NC auxiliary contacts  |
| Operate Delay                      | Typ. 10ms  |
| Release Delay                      | Typ. 5ms   |
| Nominal Output Voltage             | 240VAC   |
| Thermal Current (I <sub>th</sub> ) | Max 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.

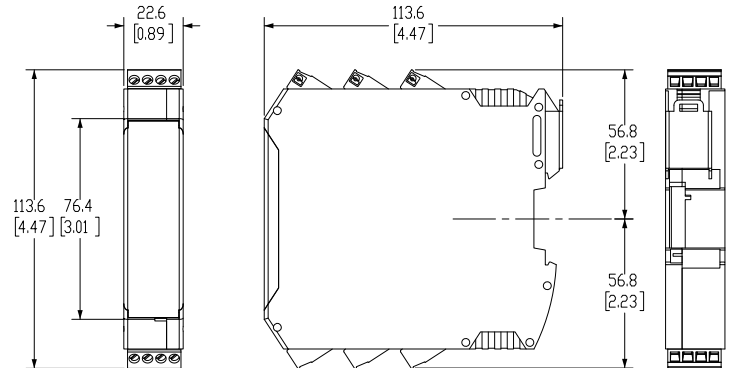
Note: To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page.

# Electrical Connections to MOSAIC-MR4



- 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  $\pm$  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<sup>2</sup> (AWG16).

## Dimensions mm [inches]



### MR4 Module Connections

| Terminal | Signal      | Type   | Description          |
|----------|-------------|--------|----------------------|
| 1        | 24VDC       | -      | 24VDC power supply   |
| 4        | 0VDC        | -      | 0VDC power supply    |
| 5        | OSSD1_A     | Input  | Control ZONE 1       |
| 6        | OSSD1_B     | Input  |                      |
| 7        | FBK_K1_K2_1 | Output | Feedback K1K2 ZONE 1 |
| 9        | A_NC1       | Output | NC contact ZONE 1    |
| 10       | B_NC1       | Output |                      |
| 13       | A_NO11      | Output | NO1 contact ZONE 1   |
| 14       | B_NO11      | Output |                      |
| 15       | A_NO12      | Output | NO2 contact ZONE 1   |
| 16       | B_NO12      | Output |                      |
| 11       | A_NC2       | Output | NC contact ZONE 2    |
| 12       | B_NC2       | Output |                      |
| 17       | OSSD2_A     | Input  | Control ZONE 2       |
| 18       | OSSD2_B     | Input  |                      |
| 19       | FBK_K1_K2_2 | Output | Feedback K1K2 ZONE 2 |
| 21       | A_NO21      | Output | NO1 contact ZONE 2   |
| 22       | B_NO21      | Output |                      |
| 23       | A_NO22      | Output | NO2 contact ZONE 2   |
| 24       | B_NO22      | Output |                      |

Please see the Mosaic manual for wiring examples.

# 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.*