

MOSAIC MR2/MR4 RELAYS EXPANSION MODULES

The expansion module MR2 is able to provide the MOSAIC system:

- * 2 relays with the following contacts:
 - 2NO + 1NC + 1NC to control external relays (EDM).
- * The module's internal relays are guided safety contact 6A-250Vac and are driven by a pair of external OSSD.
- * Amovable terminal blocks for the electrical connections with external devices.

The expansion module MR4 is able to provide the MOSAIC system:

- * 4 relays with the following contacts:
 - 4NO + 2NC + 2NC to control external relays (EDM).
- * The module's internal relays are guided safety contact 6A-250Vac and are driven by two pairs of external OSSD.
- * Amovable terminal blocks for the electrical connections with external devices.



MR4 safety module

Technical data

Model	MR2	MR4
Rated voltage	24VDC ± 20%	
Dissipated power	3W max	
Contacts	2 N.O. + 1 N.C.	4 N.O. + 2 N.C.
Feedback contacts	1 N.C.	2 N.C.
Mechanical life of contacts	> 20 x 10 ⁶	
Switching voltage	240 VAC	
Switching current	6A max	
Connection cable cross-section	0,5 ÷ 2,5 mm ² / AWG 12÷30 (solid/stranded)	
Max length of connections	100m	
Response time	12ms	
Operating temperature	-10 ÷ 55°C	
Max surrounding air temperature	55°C	
Storage temperature	-20 ÷ 85°C	
Relative humidity	10% ÷ 95%	
Enclosure material	Polyamide	
Enclosure protection class	IP 20	
Terminal blocks protection class	IP 2X	
Fastening	Quick coupling to rail according to EN 60715	
Dimensions (h x l x d)	108 x 22,5 x 114,5	

MR2 - MR4: TECHNICAL DATA CONCERNING SAFETY

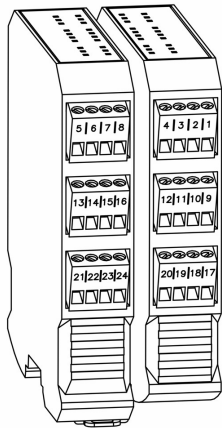
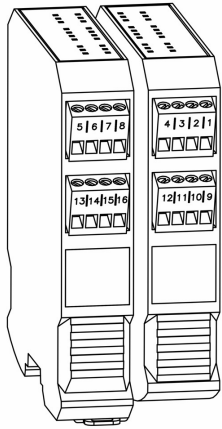
FEEDBACK CONTACT PRESENT					FEEDBACK CONTACT MISSING				
PFHd	SFF	MTTFd	DCavg		PFHd	SFF	MTTFd	DCavg	
3,09E-10	99,6%	2335,94	98,9%	tcycle1	DC13 (2A)	9,46E-10	0,60	2335,93	tcycle1
8,53E-11	99,7%	24453,47	97,7%	tcycle2		1,08E-10	0,87	24453,47	tcycle2
6,63E-11	99,8%	126678,49	92,5%	tcycle3		6,75E-11	0,97	126678,5	tcycle3
8,23E-09	99,5%	70,99	99,0%	tcycle1	AC15 (3A)	4,60E-07	0,50	70,99	tcycle1
7,42E-10	99,5%	848,16	99,0%	tcycle2		4,49E-09	0,54	848,15	tcycle2
1,07E-10	99,7%	12653,85	98,4%	tcycle3		1,61E-10	0,79	12653,85	tcycle3
3,32E-09	99,5%	177,38	99,0%	tcycle1	AC15 (1A)	7,75E-08	0,51	177,37	tcycle1
3,36E-10	99,6%	2105,14	98,9%	tcycle2		1,09E-09	0,60	2105,14	tcycle2
8,19E-11	99,7%	28549,13	97,5%	tcycle3		1,00E-10	0,88	28549,13	tcycle3

tcycle1: 300s (1 commutation every 5 minutes); **tcycle2:** 3600s (1 commutation every hour); **tcycle3:** 1 commutation every day
(PFHd according IEC61508, MTTFd and DCavg according ISO13849-1)



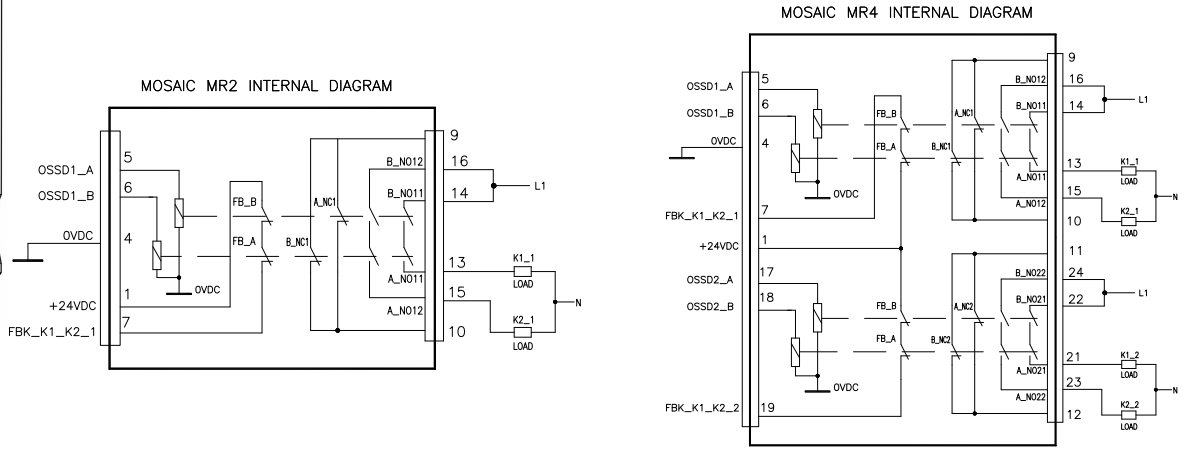
Electrical connections

MR2



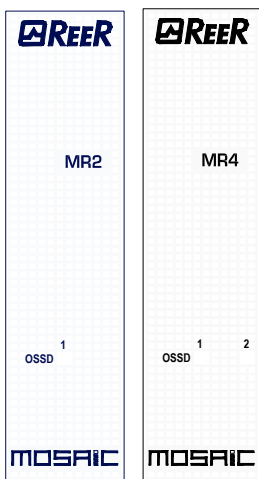
MR4

PIN	SIGNAL		OPERATION
	MR2	MR4	
1	24VDC	24VDC	24VDC power supply
4	GND	GND	OVDC power supply
5	OSSD1_A	OSSD1_A	Control ZONE 1
6	OSSD1_B	OSSD1_B	
7	FBK_K1_K2_1	FBK_K1_K2_1	Feedback K1K2 ZONE 1
9	A_NC1	A_NC1	NC Contact ZONE 1
10	B_NC1	B_NC1	
13	A_NO11	A_NO11	NO1 Contact ZONE 1
14	B_NO11	B_NO11	
15	A_NO12	A_NO12	NO2 Contact ZONE 1
16	B_NO12	B_NO12	
11	-	A_NC2	NC Contact ZONE 2
12	-	B_NC2	
17	-	OSSD2_A	Control ZONE 2
18	-	OSSD2_B	
19	-	FBK_K1_K2_2	Feedback K1K2 ZONE 2
21	-	A_NO21	NO1 Contact ZONE 2
22	-	B_NO21	
23	-	A_NO22	NO2 Contact ZONE 2
24	-	B_NO22	



MR2 - MR4 internal diagram

Light signals



MR2

MR4

MR2	LED	
	NORMAL OPERATION	OSSD1 GREEN
	ON with output activated	

MR4	LED	
	NORMAL OPERATION	OSSD1 GREEN
	ON with output activated	

