

SAFETY SPEED MONITORING MODULES MOSAIC MV0/MV1/MV2

The Mosaic MV0/MV1/MV2 expansion modules allow the monitoring (PLe) of:

- * Zero speed
- * Max speed
- * Speed range
- * Motion direction; rotation / translation.

The modules allow to configure up to 4 speed thresholds for each logic output (axis).

Each module integrates two logic outputs configurable via the MSD and is therefore capable to control up to two independent axes.

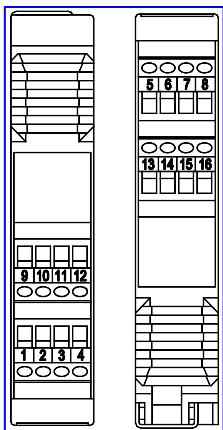
- * RJ45 for encoder connections (1 of MV1, MV2 of 2) and terminal blocks for connection of proximity (up to 2 proximity switches per module).
- * Inputs frequency: Encoder up to 500 KHz (300 KHz for HTL); Proximity up to 5 KHz.



MV2 safety module

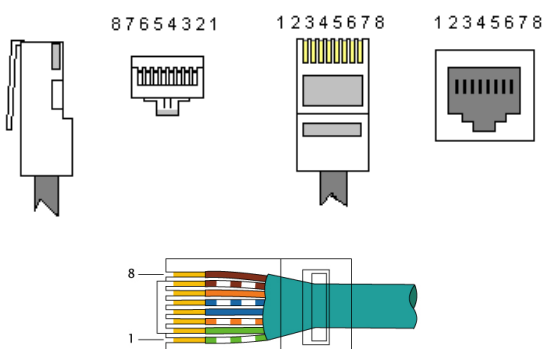
Electrical connections

PROXIMITY CONNECTIONS ON TERMINAL BLOCKS



PIN	SIGNAL	IN/OUT	FUNCTION
1	24V	IN	24VDC Power Supply
2	NODE_SELO	IN	Node Selection
3	NODE_SEL1	IN	
4	GND	IN	0VDC Power Supply
5	PROXI1_24V	OUT	PROXIMITY 1 connections
6	PROXI1_REF	OUT	
7	PROXI1 IN1 (3 WIRES)	IN	
8	PROXI1 IN2 (4 WIRES)	IN	
9	PROXI2_24V	OUT	PROXIMITY 2 connections
10	PROXI2_REF	OUT	
11	PROXI2 IN1 (3 WIRES)	IN	
12	PROXI2 IN2 (4 WIRES)	IN	
13	N.C.		Not connected
14	N.C.		
15	N.C.		
16	N.C.		

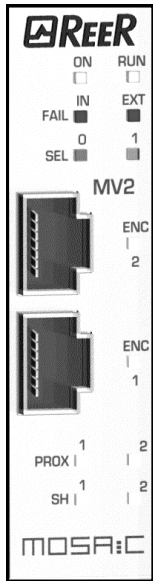
ENCODER CONNECTIONS WITH RJ45 CONNECTOR (MV1, MV2)



PIN	COLOR	MVT	MVH	MVS
1	BROWN	5VDC	N.C.	N.C.
2	WHITE	EXT_OV	EXT_OV	EXT_OV
3	BLUE	N.C.	N.C.	N.C.
4	GREEN	A	A	A
5	YELLOW	\bar{A}	\bar{A}	\bar{A}
6	RED	N.C.	N.C.	N.C.
7	GREY	B	B	B
8	PINK	\bar{B}	\bar{B}	\bar{B}



Light Signals



ON	RUN	IN FAIL	EXT FAIL	SEL	ENC	PROX	SH
GREEN	GREEN	RED	RED	ORANGE	YELLOW	YELLOW	YELLOW
ON Module turned on	OFF the module waits for the first M1 Communication	OFF operation OK	OFF operation OK	Brings back the table of signals NODE SEL0/1	ON Encoder connected and operative	ON Proximity connected and operative	OFF axis in normal speed range
	BLINKING configuration does not require INPUT or OUTPUT from Module					BLINK. 0,5s Proximity not connected but requested from the configuration	BLINKING axis in overspeed
	ON configuration requires INPUT or OUTPUT from Module				BLINKING Encoder not connected but requested from the configuration	BLINK. 2s Proximity malfunction	ON axis in stand still

Technical data concerning safety

	MV0	MV1	MV2
Device lifetime	20 years		
Safety level	SIL 3 - PL e - Category 4		
PFHd	5,98E-09	7,08E-09 (TTL)	8,18E-09 (TTL)
		7,93E-09 (SIN/COS)	9,89E-09 (SIN/COS)
		6,70E-09 (HTL)	7,42E-09 (HTL)
MTTFd	500,33	337,72 (TTL)	254,88 (TTL)
		269,49 (SIN/COS)	184,41 (SIN/COS)
		380,05 (HTL)	306,40 (HTL)
DCavg	99,0%		



Technical data

	MV0	MV1	MV2
Rated Voltage	24VDC \pm 20%		
Power Dissipation max	3W		
Encoder Interface	-	TTL (MV1T - MV2T models) HTL (MV1H - MV2H models) sin/cos (MV1S - MV2S models)	
Encoder input signals electrically insulated in accordance with EN 61800-5	-	Rated insulation voltage 250V Overvoltage category II Rated impulse withstand voltage 4.00 kV	
Max number of axes	2		
Max number of encoders	0	1	2
Max encoder frequency	-	500KHz (HTL: 300KHz)	
Encoder connections	-	RJ45 connector	
Max number of proximity	2		
Max proximity frequency	5KHz		
Proximity connections	Terminal blocks		
Proximity type	PNP/NPN - 3/4 wires		
M1 connections	Via MSC bus		
Operating Temperature	-10 \div 55°C		
Storage temperature	-20 \div 85°C		
Relative Humidity max	95%		
Dimensions (h x l x p)	108 x 22,5 x 114,5 mm		



Encoder <-> MVT/MVH/MVS modules connection

