

Fig.1 The MRAC16 module.

### APPLICATION

The relay module used to work as an executive element with an analog output of the controller to activate peripheral equipment requiring greater power. Among others it can control gas burners sets, heaters set, pumps system, etc.

### DESCRIPTION

The MRAC16 and the MRAC16T are four relay modules that convert the analog input signal (0 - 10V) from the controller to seven discrete, voltageless output states. Relays have SPST-NO contacts. Built-in input voltage level detection circuit allows enforce logical signals without transition states (no short switching of contacts). An important parameter is **the input signal settling time**. Typically it is 400ms and can be adapted to the needs of the customer in the range of 20ms up to several minutes. Time should be chosen to be equal to or greater than the output signal settling time of the controller, which proofing the module for short-term

interference. The hysteresis circuit prevents contacts from "flickering" in switching points. The MRAC16 has electromechanical relays with normally open contacts. The MRAC16T has a MOSFET solid state relays. LED diodes indicate output states according to enclosed diagram.

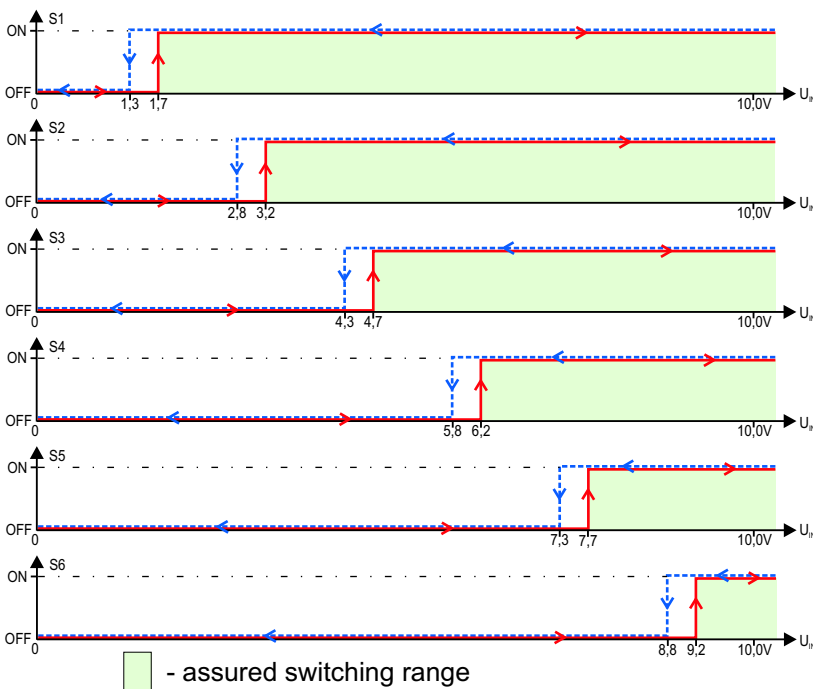


Fig.2 Switching diagram.

### TABLE OF STATES

$U_{IN}$ [V] rising	$U_{IN}$ [V] falling	S1	S2	S3	S4	S5	S6
0	0	○	○	○	○	○	○
1,7	1,3	●	○	○	○	○	○
3,2	2,8	●	●	○	○	○	○
4,7	4,3	●	●	●	○	○	○
6,2	5,8	●	●	●	●	○	○
7,7	7,3	●	●	●	●	●	○
9,2	8,8	●	●	●	●	●	●

○ - opened contacts    ● - closed contacts  
adjust accuracy  $\pm 0,5\%$

**REMARK:** The hysteresis width and thresholds can be individually set according to the specification.

# MRAC16, MRAC16T

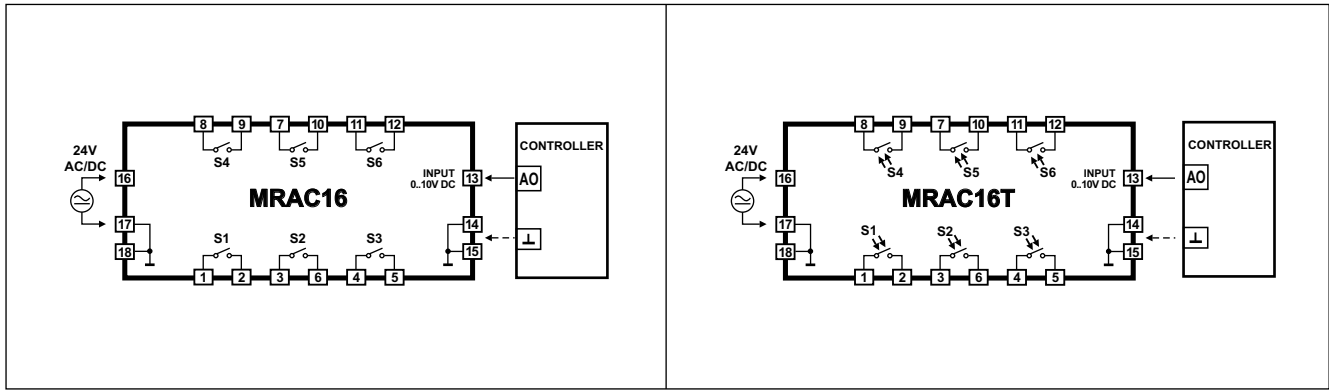


Fig.3 Connections of the MRAC16 and the MRAC16T.

## TECHNICAL DATA

Module name	MRAC6	MRAC6T
Power supply	24 V AC/DC $\pm$ 10%	
Max. current consumption	65 mA for 24 V AC / DC	30 mA for 24 V AC / DC
Input resistance	100k $\Omega$	
Input voltage	0 - 10V	
Sensitivity	10mV	
Input signal settling time	400ms	
Hysteresis width	400mV	
Type of relay	Electromechanical	Solid state MOSFET
Contact switching capacity alternating current $\cos\phi=1$ direct current	400V, 8A [2000VA] 32V, 8A	270V, 130mA 400V, 130mA
Contact resistance	100m $\Omega$	30 $\Omega$
Protection class of the case	IP-40	
Compliance with EU standards	2004/108/EC	
Ambient temperature range	-10...+55 $^{\circ}$ C	
Diameter of terminals	2,5 mm <sup>2</sup>	
Protections	against reverse polarisation	
Mounting	DIN-35 rail	
Dimensions (L x W x H)	90mm x 35mm x 56mm	
Weight	115 g	95 g

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