

RM4 4-way relay module

Overview

The RM4 allows a single analogue signal to control four relay outputs. There are three operating modes which enable the unit to provide a binary-coded output or four stages of switching or four outputs in sequence.

Each stage has LED status indication and link selectable *On*, *Off* or *Auto* giving manual control to aid commissioning

The response time can be set at 0.01s, 0.1s, or 1s which eliminates unwanted switching in binary mode



Specifications

Operating characteristics

Input signals	0-10V
Hysteresis	±0.075V
Output contacts	10A (6A inductive) at 230VAC
Operating modes	Binary mode: 16 possible configurations Stage mode: 4 stage switching Sequence mode: 1 of 4 sequencing
Response time	Fast mode: 0.01s Slow mode: 0.1s V.Slow mode: 1s
Operating conditions	-10 to +50°C 0-90% RH (non-condensing)

Electrical specifications

Supply voltage	24V AC or DC ±15%
Max operating current	100mA DC
Terminal type	Rising cage connectors for 0.5-2.5mm ² cable
LED status	On when relay powered
Installation category	IEC 664 Category II
Pollution degree	IEC 664 Degree 1

Mechanical details

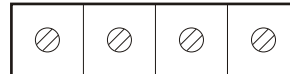
Dimensions	77 x 125 x 55mm
Mass	170g

Features

- 4 relay outputs
- 0-10V input
- 1mA draw on input
- 24V AC/DC powered
- 3 relay operating modes link selectable
- 3 response times link selectable
- LED status indication
- On / Off / Auto override links
- DIN rail mounting
- Hysteresis between stages

Connection diagrams

Input:



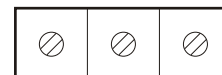
24V 0V IP 0V

24V AC/DC Ground Input Ground

Note: both grounds are common to both signal and power

Outputs:

NC NO C



Normally closed Normally open Common

Mode selection

Auto On Off



Each relay has a link shown here in the Auto position. There are also links for speed and operating mode

Cleaning

Under normal circumstances, relay modules should not require cleaning. However, they can be cleaned by disconnecting and wiping with isopropanol. They must be completely dry before reconnection

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Installation

- 1 The RM4 operates from a 24V AC/DC supply such as a 24V DC power supply or a 24V transformer. One side of the supply is common to the signal ground from the BEMS controller
- 2 The relay outputs are Single Pole Changeover ie they can be wired as Normally Open or Normally Closed
- 3 The input signal requires 1mA and is therefore compatible with all BEMS controllers that have 0-10V outputs
- 4 Ensure that the PCB is not stressed when fitting to the DIN rail. If releasing from the DIN rail, use a flat bladed screwdriver to release the DIN clips
- 5 Connections to BEMS controllers should be made using screened cable. The screen should be earthed at one end only and preferably to a Functional Earth rather than the mains safety earth. Signal cables should be routed separately from power cables.

Operating voltages

Stage mode

Sequence mode

Input voltage	Relay 4	Relay 3	Relay 2	Relay 1	Relay 4	Relay 3	Relay 2	Relay 1
0.0	Off	Off	Off	Off	Off	Off	Off	Off
2.4	Off	Off	Off	On	Off	Off	Off	On
4.8	Off	Off	On	On	Off	Off	On	Off
7.2	Off	On	On	On	Off	On	Off	Off
9.6	On	On	On	On	On	Off	Off	Off

Binary mode

Input voltage	Relay 4	Relay 3	Relay 2	Relay 1
0.6	Off	Off	Off	Off
1.2	Off	Off	Off	On
1.8	Off	Off	On	Off
2.4	Off	Off	On	On
3.0	Off	On	Off	Off
3.6	Off	On	Off	On
4.2	Off	On	On	Off
4.8	Off	On	On	On
5.4	On	Off	Off	Off
6.0	On	Off	Off	On
6.6	On	Off	On	Off
7.2	On	Off	On	On
7.8	On	On	Off	Off
8.4	On	On	Off	On
9.0	On	On	On	Off
9.6	On	On	On	On

Switching occurs at voltages approximately half way between the inputs recommended above

Safety

The RM4 must be installed only by a suitably qualified electrician and may not be safe if installed incorrectly. The RM4 must be used only in an installation which incorporates a switch or circuit breaker. Terminals must be disconnected from hazardous voltages before screwing or unscrewing. A 5A fuse on the 24V supply is recommended. When switching hazardous voltages, the RM4 must be mounted inside a cabinet and must not be accessible from the outside with a 100mm long probe

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