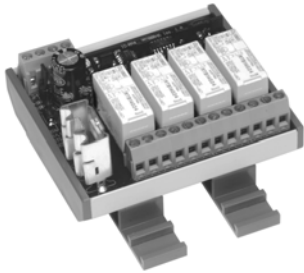


## 4-Stage Relay Module



### Features

- Fault finding LED indication
- Relay status LED indication
- On/Off/Auto links for ease of commissioning
- DIN Rail mounting
- Link selectable binary, staged or sequenced modes

### Specification

Input signal	0-10Vdc 1mA min. into 22kΩ impedance
Output contacts	8A at 230Vac (resistive load)
Power supply:	24Vac ±15% @ 50Hz or 24Vdc +15% -6%, 115mA max.
Hysteresis	±0.2Vdc about switching points (±0.1Vdc in binary mode)
Operating modes:	Raise/Lower(reserved for future use) 4 Stage 1 of 4 sequenced Binary
LED indication:	Supply OK Supply voltage low Supply voltage high Relay Status Hi input voltage Incorrect input mode jumper selection Low input voltage (only in 2-10Vdc mode)
Manual override	On/Off/Sequenced/Staged
Electrical Terminals	Rising cage connectors for 0.5-2.5mm <sup>2</sup> cable
Ambient range:	
Temperature	-10°C to +40°C
RH	0-80% non-condensing
Dimensions	H72mm x W82mm x D55mm
Country of origin	UK

### Product Codes

#### IO-RM4

Analogue to digital converter. It converts a 0-10Vdc input and opens or closes up to 4 relays.



#### Warning!

When installed, the output relay contacts may carry 240Vac. Special care must be taken to isolate the switched voltages prior to any work being undertaken.



### Technical Overview

The IO-RM4 is intended for use with BMS controllers to convert an analogue control output to a binary, staged or sequenced relay modes. LEDs indicate correct operation and Hand/Off/Auto jumpers ease commissioning. Low current draw from 0-10Vdc controller output means that the IO-RM4 can work successfully with most BEMS controllers.

### Installation

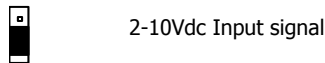
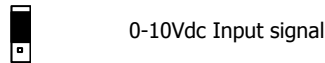
1. The IO-RM4 should only be installed by a competent, suitably trained technician, experienced in installation with hazardous voltages. (>50Vac & <1000Vac or >75Vdc & 1500Vdc)
2. Ensure that all power is disconnected before carrying out any work on the IO-RM4.
3. Maximum cable is 2.5mm<sup>2</sup>, care must be taken not to over tighten terminals.
4. When mounting the IO-RM4 care should be taken not to stress the PCB when fitting to the DIN rail. If it is necessary remove the module from the DIN rail, be sure to use a flat bladed screwdriver to release the DIN clips.
5. The IO-RM4 is designed to operate from a 24Vac/dc supply (so that power can be drawn from a 24Vac transformer used for other purposes if a 24Vdc supply is not available). In either case one side of the supply is common to the signal ground from the BEMS controller.

### XX

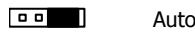
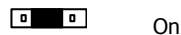
6. The relay outputs are single Pole Change Over (SPCO) so they can be wired as Normally Open (NO) or Normally Closed (NC).
7. The 0-10Vdc signal input requires a minimum of 1mA to operate.

### Jumper Settings

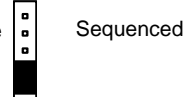
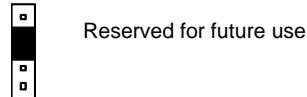
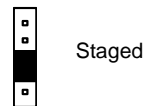
Input signal link:



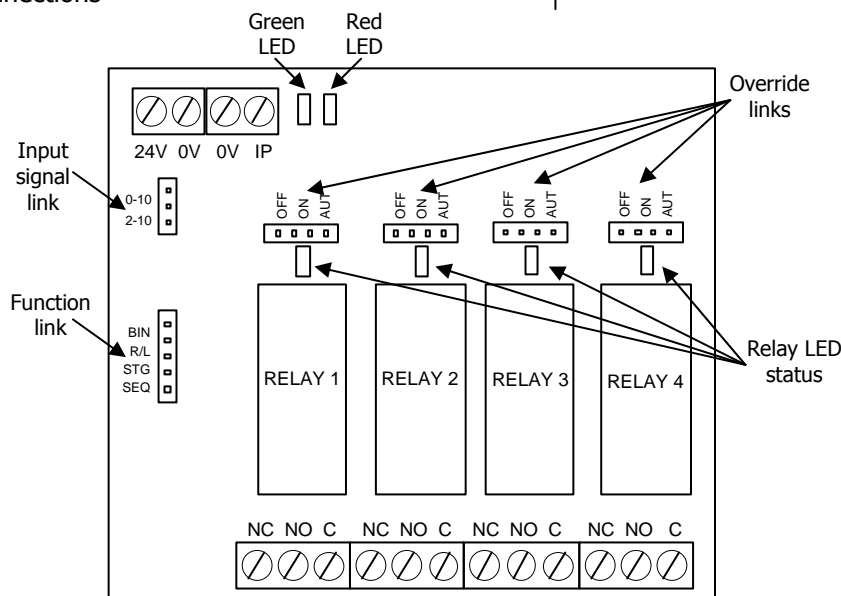
Override links:



Function link:



### Connections



## Switching Sequences

Binary:

Input Voltage	Nominal	Relay 1	Relay 2	Relay 3	Relay 4
0Vdc - 0.625Vdc	0.0Vdc	OFF	OFF	OFF	OFF
0.625Vdc - 1.25Vdc	0.93Vdc	<b>ON</b>	OFF	OFF	OFF
1.25Vdc - 1.875Vdc	1.56Vdc	OFF	<b>ON</b>	OFF	OFF
1.875Vdc - 2.5Vdc	2.18Vdc	<b>ON</b>	<b>ON</b>	OFF	OFF
2.5Vdc - 3.125Vdc	2.81Vdc	OFF	OFF	<b>ON</b>	OFF
3.125Vdc - 3.75Vdc	3.43Vdc	<b>ON</b>	OFF	<b>ON</b>	OFF
3.75Vdc - 4.375Vdc	4.06Vdc	OFF	<b>ON</b>	<b>ON</b>	OFF
4.375Vdc - 5Vdc	4.68Vdc	<b>ON</b>	<b>ON</b>	<b>ON</b>	OFF
5Vdc - 5.625Vdc	5.31Vdc	OFF	OFF	OFF	<b>ON</b>
5.625Vdc - 6.25Vdc	5.93Vdc	<b>ON</b>	OFF	OFF	<b>ON</b>
6.25Vdc - 6.875Vdc	6.56Vdc	OFF	<b>ON</b>	OFF	<b>ON</b>
6.875Vdc - 7.5Vdc	7.18Vdc	<b>ON</b>	<b>ON</b>	OFF	<b>ON</b>
7.5Vdc - 8.125Vdc	7.81Vdc	OFF	OFF	<b>ON</b>	<b>ON</b>
8.125Vdc - 8.75Vdc	8.43Vdc	<b>ON</b>	OFF	<b>ON</b>	<b>ON</b>
8.75Vdc - 9.375Vdc	9.06Vdc	OFF	<b>ON</b>	<b>ON</b>	<b>ON</b>
9.375Vdc - 10Vdc	9.68Vdc	<b>ON</b>	<b>ON</b>	<b>ON</b>	<b>ON</b>

Staged:

Input Voltage	Nominal	Relay 1	Relay 2	Relay 3	Relay 4
0Vdc - 2Vdc	0.0Vdc	OFF	OFF	OFF	OFF
2Vdc - 4Vdc	3Vdc	<b>ON</b>	OFF	OFF	OFF
4Vdc - 6Vdc	5Vdc	<b>ON</b>	<b>ON</b>	OFF	OFF
6Vdc - 8Vdc	7Vdc	<b>ON</b>	<b>ON</b>	<b>ON</b>	OFF
8Vdc - 10Vdc	9Vdc	<b>ON</b>	<b>ON</b>	<b>ON</b>	<b>ON</b>

Sequenced:

Input Voltage	Nominal	Relay 1	Relay 2	Relay 3	Relay 4
0Vdc - 2Vdc	0.0Vdc	OFF	OFF	OFF	OFF
2Vdc - 4Vdc	3Vdc	<b>ON</b>	OFF	OFF	OFF
4Vdc - 6Vdc	5Vdc	OFF	<b>ON</b>	OFF	OFF
6Vdc - 8Vdc	7Vdc	OFF	OFF	<b>ON</b>	OFF
8Vdc - 10Vdc	9Vdc	OFF	OFF	OFF	<b>ON</b>

