

3-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, heat/cool, 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%, 90mA max.
Hysteresis	±0.2Vdc about switching points
Operating modes:	Heat/Cool 3 Stage 1 of 3 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/Auto
Electrical Terminals	Rising cage connectors for 0.5-2.5mm ² cable
Ambient range:	
Temperature	-10°C to +40°C
RH	0-80% non-condensing
Dimensions	H72mm x W64mm x D55mm
Country of origin	UK

Product Codes

IO-RM3
3-Stage relay module



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

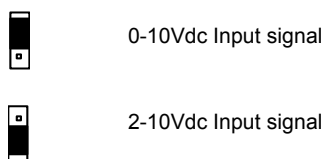
The IO-RM3 is intended for use with BMS controllers to convert an analogue control output to a binary, heat/cool, staged or sequenced relay modes. LEDs indicate correct operation and Hand/Off/Auto jumpers ease commissioning. Low current draw from 0-10Vdc controller output means that the IO-RM3 can work successfully with most BEMS controllers.

Installation

1. The IO-RM3 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-RM3.
3. Maximum cable is 2.5mm², care must be taken not to over tighten terminals.
4. When mounting the IO-RM3 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-RM3 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.
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.

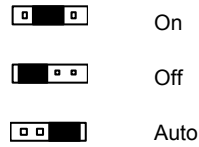
Jumper Settings

Input signal link:

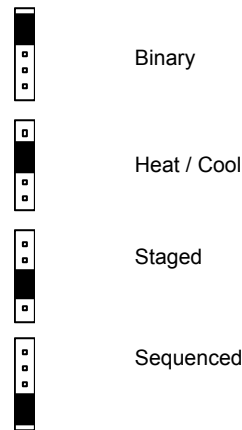


Jumper Settings (continued)

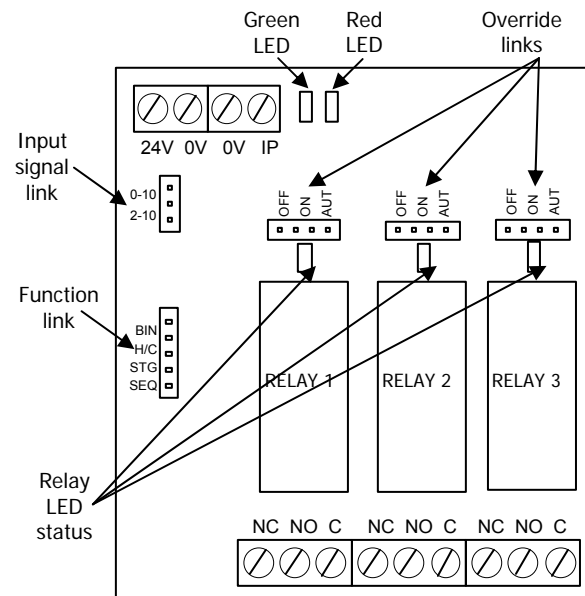
Override links:



Function link:



Connections



Switching sequences

Binary:

Input Voltage	Nominal	Relay 1	Relay 2	Relay 3
0Vdc - 1.25Vdc	0.0Vdc	OFF	OFF	OFF
1.25Vdc - 2.5Vdc	1.87Vdc	ON	OFF	OFF
2.5Vdc - 3.75Vdc	3.12Vdc	OFF	ON	OFF
3.75Vdc - 5Vdc	4.37Vdc	ON	ON	OFF
5Vdc - 6.25Vdc	5.62Vdc	OFF	OFF	ON
6.25Vdc - 7.5Vdc	6.87Vdc	ON	OFF	ON
7.5Vdc - 8.75Vdc	8.12Vdc	OFF	ON	ON
8.75Vdc - 10Vdc	9.37Vdc	ON	ON	ON

Heat / Cool:

Input Voltage	Nominal	Relay 1	Relay 2	Relay 3
0Vdc - 3Vdc	0.0Vdc	OFF	OFF	OFF
3Vdc - 5.5Vdc	4Vdc	ON	ON	OFF
5.5Vdc - 8Vdc	7Vdc	ON	OFF	OFF
8Vdc - 10Vdc	10Vdc	ON	OFF	ON

Staged:

Input Voltage	Nominal	Relay 1	Relay 2	Relay 3
0Vdc - 3Vdc	0.0Vdc	OFF	OFF	OFF
3Vdc - 5.5Vdc	4Vdc	ON	OFF	OFF
5.5Vdc - 8Vdc	7Vdc	ON	ON	OFF
8Vdc - 10Vdc	10Vdc	ON	ON	ON

Sequenced:

Input Voltage	Nominal	Relay 1	Relay 2	Relay 3
0Vdc - 3Vdc	0.0Vdc	OFF	OFF	OFF
3Vdc - 5.5Vdc	4Vdc	ON	OFF	OFF
5.5Vdc - 8Vdc	7Vdc	OFF	ON	OFF
8Vdc - 10Vdc	10Vdc	OFF	OFF	ON

