

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 22k Ω impedance |
| Output contacts | 8A at 230Vac (resistive load) |
| Power supply: | 24Vac \pm 15% @ 50Hz or 24Vdc +15% -6%, 115mA max. |
| Hysteresis | \pm 0.2Vdc about switching points (\pm 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 ² 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
4-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-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 2.5mm², 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.

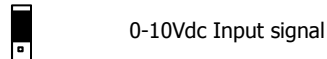
Connections

Installation (continued)

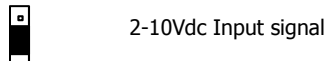
6. The relay outputs are single Pole Change Over (SPCO) so they can be wired as Normally Open (NO) or Normally Closed (NC).
7. The 0-10Vdc signal input requires a minimum of 1mA to operate.

Jumper Settings

Input signal link:



0-10Vdc Input signal



2-10Vdc Input signal

Override links:



On

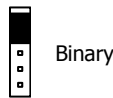


Off

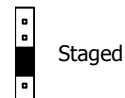


Auto

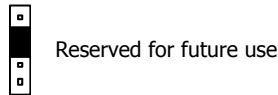
Function link:



Binary



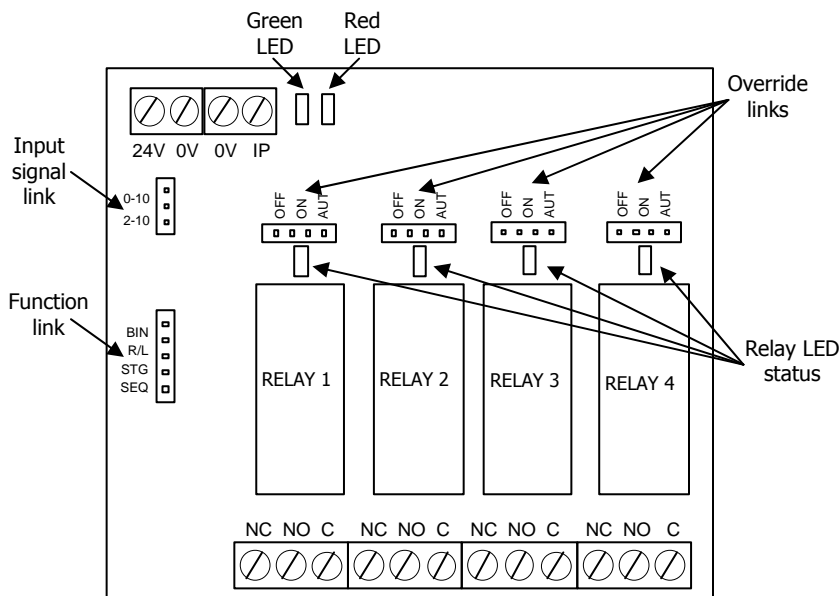
Staged



Reserved for future use



Sequenced



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 | ON | OFF | OFF | OFF |
| 1.25Vdc - 1.875Vdc | 1.56Vdc | OFF | ON | OFF | OFF |
| 1.875Vdc - 2.5Vdc | 2.18Vdc | ON | ON | OFF | OFF |
| 2.5Vdc - 3.125Vdc | 2.81Vdc | OFF | OFF | ON | OFF |
| 3.125Vdc - 3.75Vdc | 3.43Vdc | ON | OFF | ON | OFF |
| 3.75Vdc - 4.375Vdc | 4.06Vdc | OFF | ON | ON | OFF |
| 4.375Vdc - 5Vdc | 4.68Vdc | ON | ON | ON | OFF |
| 5Vdc - 5.625Vdc | 5.31Vdc | OFF | OFF | OFF | ON |
| 5.625Vdc - 6.25Vdc | 5.93Vdc | ON | OFF | OFF | ON |
| 6.25Vdc - 6.875Vdc | 6.56Vdc | OFF | ON | OFF | ON |
| 6.875Vdc - 7.5Vdc | 7.18Vdc | ON | ON | OFF | ON |
| 7.5Vdc - 8.125Vdc | 7.81Vdc | OFF | OFF | ON | ON |
| 8.125Vdc - 8.75Vdc | 8.43Vdc | ON | OFF | ON | ON |
| 8.75Vdc - 9.375Vdc | 9.06Vdc | OFF | ON | ON | ON |
| 9.375Vdc - 10Vdc | 9.68Vdc | ON | ON | ON | ON |

Staged:

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

Sequenced:

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

