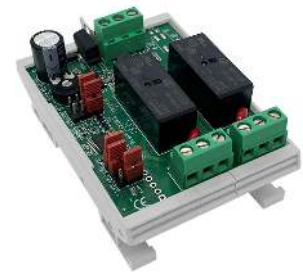


# 2 Stage Control



The IO/2RM is designed to convert a selectable 0-10V or 2-10V control signal to digital relay switching. The IO/2RM offers four selectable control options: Raise/Lower, Hi/Low, Binary and a Time Proportional Control (TPC) output.

A potentiometer setting is available to provide a delay ON time before the relays are energised and each relay has a selectable Auto/Manual/Off selector switch with LED status indication.

The IO/2RM is designed to offer control of motorised valves, damper actuators, step controllers and pump changeover and is compatible with most BMS controllers.

## Specification

Power Supply:	24V AC/DC +/-10%
Input (signal):	0-10 or 2-10V (load 0.5mA max)
Output Contacts:	2 x volt free 5A at 240V AC (inductive)
Switching Voltages:	See table
Selectable Options:	See table
Power Consumption:	55mA
LED Indication:	When relay energised
Terminals:	1.0mm recommended
Operating Temperature:	0 to 50°C
Operating Humidity:	5-80% non-condensing
Mounting:	DIN Rail
Dimensions:	82mm high, 56mm wide, 42mm deep
Approvals:	CE / UKCA
Warranty:	24 months
Country of Origin:	UK
Product Code:	IO/2RM

## Features

- 24VAC or DC supply
- Raise/Lower, Hi/Low or Binary selectable outputs
- Time Proportional Control output
- Converts 0-10 or 2-10V input to relay control
- User selectable input
- Adjustable stage delay
- Low current input 0.5mA max
- Volt free changeover contacts
- LED status indication
- Off/Man/Auto link options
- DIN rail mounting
- UK designed and manufactured

## Timing Potentiometer (Range 0 to 100 seconds)

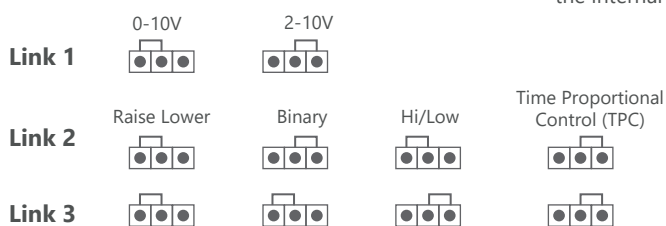
This pot is used to provide an adjustable ON time delay between relays in the Hi / Low (Sequence) and Binary modes.

## TPC Control Synchronisation (Range 10 to 300 seconds - 10 seconds fully anti-clockwise, 300 seconds fully clockwise).

On power up of the module, RL1 is energised for a period equal to the time set on the potentiometer + 10% to ensure that the actuator motor is driven to the fully closed position before the TPC control action is established. During operation the input control signal is sampled at 10 second intervals and if this is greater than 9.8V for a period of 10 times the time period set on the potentiometer then R2 will be energised for a period equal to 50% of the full drive period and the TPC control action will be set at maximum, ensuring the motor position and the control point are synchronised (fully open). Once the auto synchronisation is complete normal control is re-established.

A similar action is taken if the control input value is less than 0.2V (2.2V) over the same period except R1 is then energised for 50% of the full drive period, as set on the pot, and the internal counter is set to zero (fully closed).

## Link Selections for Control Mode



## Switching Voltages

Switching Voltages (V)	Input Voltage Tolerance	Raise/Lower R1	Raise/Lower R2	Binary R1	Binary R2	High/Low R1	High/Low R2
0	<1.5V	Off	Off	Off	Off	Off	Off
3	1.5V<input>4.5V	On	Off	On	Off	On	Off
6	4.5V<input>7.5V	Off	Off	Off	On	On	Off
9	7.5V<input>	Off	On	On	On	On	On

## Connections

