

Product overview

The Axio AX-RM3M converts a 0-10Vdc or 2-10Vdc control signal into a 3 relay output with 7 selectable modes: Stage, Sequence, Heat/Cool/Fan, Binary, Circular, Power-on stage and Power-on sequence. In certain modes the output sequence can be reversed. The module is powered by 24Vac or 24Vdc and jumpers for Auto/Hand/Off are provided to aid commissioning with individual LEDs to indicate the relay states. The AX-RM3M is supplied in a DIN rail carrier for mounting on TS35 section DIN rail and features high quality rising clamp terminals for ease of connection.

Features

- 0-10 or 2-10 volt input
- 3 SPCO relays
- Step and reverse options
- Adjustable reaction time
- Binary output
- DIN rail carrier as standard (TS35 DIN rail)
- High quality rising clamp terminals

Product specifications

Input Signals	Control	0-10Vdc or 2-10Vdc at 1mA maximum
	Reverse	Volt free contact to switch 0.5mA
Output Contacts		3 SPCO relays. NO contact 12A, NC contact 3A, 250Vac resistive load
Power Supply		24Vac $\pm 10\%$ at 140mA maximum 24Vdc $\pm 10\%$ at 100mA maximum
Modes of Operation		7 modes, see Mode table
Manual Override		Auto / Hand (On) / Off
LED Indicators		On when relay energised
Time Delay		0-60 seconds
Settling Time		0.1 or 1 seconds
Step Mode		Sequence through intermediate steps
Terminals		Rising clamp for 0.5-2.5mm ² cable
Ambient Temperature Range		0°C to 50°C
Dimensions / Weight		68(W) x 82(H) x 43(D)mm / 100gms
Country of Origin		United Kingdom

Order codes

AX-RM3M Three Stage, Multi Mode, Relay Output Module

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Installation

The AX-RM3M should be installed by suitably qualified technician in conjunction with any guidelines for the equipment it is to be connected to and any local regulations. Field wiring should be installed to satisfy the requirements set out by the manufacturer of the equipment that the module is being connected to.

Description, Tables and Connections

Mode	Mode 1	Mode 2	Reverse	Step	Description	Table
Stage	C	C	Yes	Yes	Outputs accumulate as input increases	1
Sequence	C	B	Yes	Yes	Single output switches on as input increases	1
Heat/Cool/Fan	B	A	Off	Off	Switching heating and cooling and one fan output	1
Binary	B	B	Off	Off	Outputs switch in binary sequence as input increases	2
Circular	A	C	Off	On	Outputs switch on/off in a circular order (duty sharing)	3
Powered on Staged	A	B	Off	On	Outputs accumulate from when power is applied	1
Power on Sequence	B	C	Off	On	Single outputs switch on from when power is applied	1

Modes

The mode table shows the available modes with the MODE1 and MODE2 jumper selection. The Reverse and Step options can only be selected in the modes shown on the table. The Power on modes do not require the control signal input and are intended for soft start of loads with up to 3 circuits.

Output

The output tables show the switching actions provided by the different modes, referred to the input voltages. The circular and binary mode outputs are shown on separate tables. The relay off state is shown by a small dash.

Stage Jumper (On / Off)

When Step is set to Off, the outputs change directly to the demanded. When Step is set to On the outputs step through all intermediate stages using the timing set by the stage delay timer.

Settling Time (0.1 / 1 second)

This sets the time the input has to remain within limits before being actioned. For slowly changing inputs this should be placed in the 1 second position.

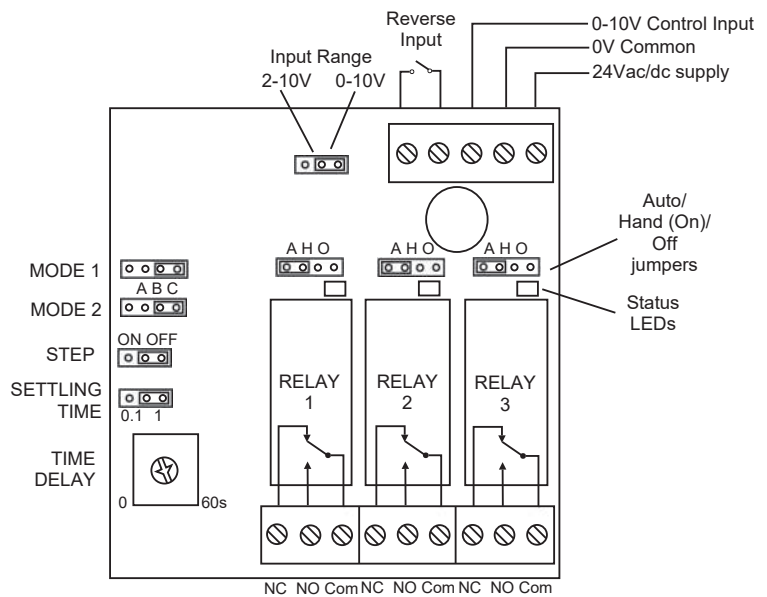


Table 1		Stage			Sequence			Heat/Cool/Fan		
Input		Relay			Relay			Relay		
0-10	2-10	1	2	3	1	2	3	1	2	3
0	2.0	-	-	-	-	-	-	-	-	-
4	5.2	On	-	-	On	-	-	On	On	-
7.0	7.6	On	On	-	-	On	-	On	-	-
10.0	10.0	On	On	On	-	-	On	On	-	On

Input Range (0-10 / 2-10 Volts)

Select the input range between 0-10 and 2-10 Volts.

Time Delay (0 to 60 seconds)

Provides an adjustable time delay between stages switching on and off. Also provides the delay start time setting for the two Power on modes.

Reverse Input

When not connected, the outputs follow the sequence in the tables. When terminals are connected together, the outputs follow a reverse sequence (only available in Stage and Sequence modes).

Guaranteed Input Voltage

The guaranteed input operating switching ranges are shown in the table below. Voltages outside these limits will operate as normal but no guarantee is given on the exact switching points. The standard switching points used within the BMS industry fall within these ranges.

Input	Min	Max
0-10 Volt		
0.00	0.00	1.00
4.00	2.50	4.50
7.00	5.50	7.50
10.00	8.50	10.00
Binary	-0.35	0.35
2-10 Volt		
0.00	2.00	3.20
5.20	2.5	5.60
7.60	6.40	8.00
10.00	8.80	10.00
Binary	-0.25	0.25

Table 2		Binary		
Input		Relay		
0-10	2-10	1	2	3
0	2.0	-	-	-
1.9	3.50	On	-	-
3.2	4.50	-	On	-
4.4	5.50	On	On	-
5.7	6.50	-	-	On
6.9	7.50	On	-	On
8.2	8.50	-	On	On
9.4	9.50	On	On	On

Table 3			Circular		
Input		Dmd	Relay		
0-10	2-10		1	2	3
0	2.0	0	-	-	-
4.0	5.2	1	On	-	-
7.0	7.6	2	On	On	-
10.0	10.0	3	On	On	On
7.0	7.60	2	-	On	On
10.0	10.0	3	On	On	On
7.0	7.6	2	On	-	On
4.0	5.2	1	On	-	-
0	2.0	0	-	-	-

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