AX-RM2L

Adjustable 2 stage relay module with LCD

Product overview

The AX-RM2L is a two stage relay module with an LCD to allow easy setup. The unit can be used to replace a standard AX-RM2T or two AX-RM1AB modules and incorporates a window mode where the relays will only switch on if the inputs are within low and high limits. The 0-10V on IN1 is buffered and retransmitted on OUT1 allowing the unit to be cascaded. The unit has a two line LCD to show current state and provide easy setup via the menu. The unit mounts on standard TS35 DIN rail.

Features

- Dual RM1A mode
- Window and invert mode
- Adjustable switch points
- Adjustable stage delay
- Adjustable settling time
- LCD display for easy setup
- Buffered re-transmission of IN1 0-10Vdc
- 24Vac supply
- DIN rail mounting

Product specifications

Power supply		24Vac/dc (±10%)
Inputs	IN1,IN2	2 x 0 to 10Vdc, 1mA max
Outputs	Relay	2 x SPNO contacts rated at 10A(Res) 250Vac
	OUT1	1 x 0 to 10Vdc, 5mA max
Display		2 line x 8 character LCD
Stage delay		0 to 1200 seconds
Settling time		0 to 60 seconds
Terminals		Rising clamp for 0.5-2.5mm² cable
Dimensions		68(W) x 83(H) x 44(D) mm
Weight		100gms
Country of Origin:		United Kingdom

Order codes

AX-RM2L	Adjustable 2 stage relay module with LCD, 24Vac

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Installation

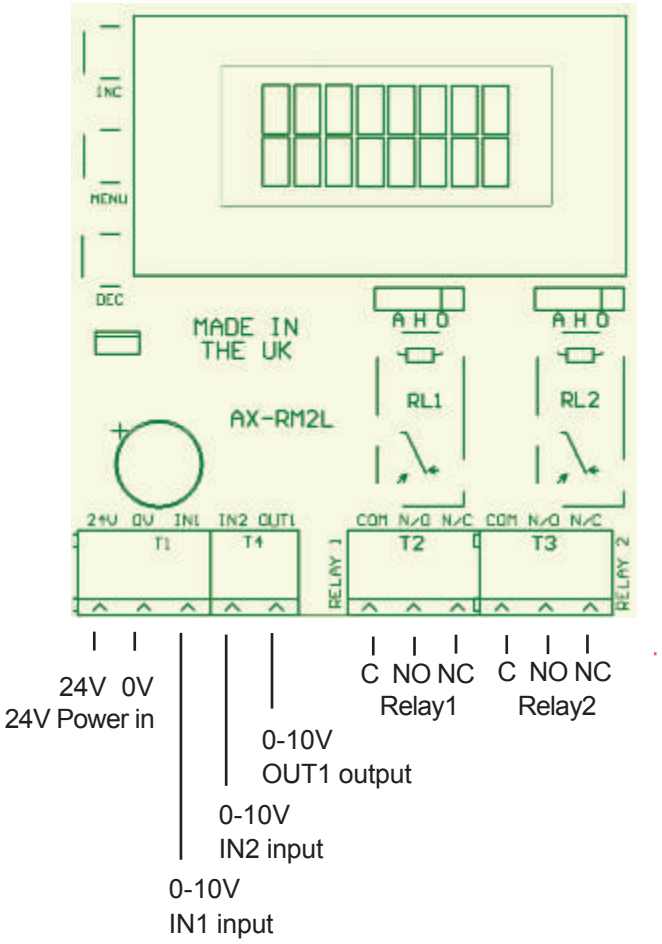
The AX-RM2L should be installed by a suitably qualified technician in conjunction with any guidelines for the equipment which it is to be connected to. Field wiring should be installed to satisfy the requirements set out by the manufacturer of the equipment that the module is being connected to using screened cable where necessary.

Connections

The diagram opposite shows the terminal designations for the AX-RM2L.

Buffered output OUT1

This is a buffered output from IN1 and can be used to connect the unit in cascade with other units if required.



Display and menu

Display

The default display shows which stages are currently on, the control input voltage and the selected mode.

If the unit is in 1xRM2A or 2xRM1A mode pressing INC or DEC will show the stage switching points.

Setup Menu

To enter the setup menu wait until the default display is shown then press and hold the MENU switch down for 10 seconds. The setup options are shown below. Press MENU to scroll through the options/sub-option/sub-menus and INC or DEC to adjust the setting. The display will revert to the default display after no button presses for 10 seconds

Menu

Mode actions

2 x RM1A

This mode provides two independent AX-RM1As with relay 1 being controlled from IN1 input and relay 2 from IN2 input. The voltage switching points and mode are set up as described below, RMXA setup. In this mode each relay has an independent timer therefore it is possible for them both to switch at the same time.

1 x RM2A

This mode is effectively two independent AX-RM1As but with them both using IN1 input voltage. The voltage switching points and mode are set up the same as described below, RMXA setup.

RMXA setup

In the relay mode each relay has a sub menu as described below

Sub mode Normal

VHi sets the voltage at which the relay switches on. The relay switches on when the voltage has risen to VHi, therefore VHi should be set above VLo

VLo sets the voltage at which the relay switches off. The relay will switch off when the voltage falls back to VLo, therefore VLo should be set below VHi or the relay will not switch off.

Sub mode Invert

The above relay action is reversed switching on instead of off and off instead of on.

Sub mode Window

VLo and VHi set the voltages within which the relay switches on. See graph on page 4. The relay switches on when the input voltage is above VLo and below VHi, therefore VHi should be set above VLo. A hysteresis value of 0.1 volts is applied to VLo and VHi therefore the minimum setting for VLo is 0.1V and the maximum setting for VHi is 9.9V.

Sub mode Window invert

The above relay action is reversed switching on instead of off and off instead of on. This mode can be used to set an active band from for example 9.5V to 0.5V (Looping round 10V) useful as a North indicator for wind direction were North is effectively 9.9V to 0.1V.

Selection	Option/Range	Sub mode options	Sub menu options
Mode	1xRM2A 2xRM1A	RL1 mode	Normal Invert Window Window invert
			RL1 VHi RL1 VLo
		RL2 mode	Normal Invert Window Window invert
			RL2 VHi RL2 VLo
	Binary Raise - Lower	None	State 1 voltage State 2 voltage State 3 voltage State 4 voltage
	High - Low	None	State 1 voltage State 2 voltage State 3 voltage
Settling time	0 to 250 seconds	None	None
Stage delay	0 to 1200 seconds	None	None

State voltages

The state voltages can be set between 0 and 10V in any order required. No two voltages should be set closer than 1 volt apart.

Binary (BIN)

This is the standard binary mode, the output switching and default state voltages are shown opposite. A sub menu allows the 4 state voltages to be adjusted. These are the voltages the stages will be on at and should be the aiming voltages for any control input.

Binary mode (BIN)			
Default Input	State	Stage1	Stage2
10V	4	ON	ON
7V	3	OFF	ON
4V	2	ON	OFF
0V	1	OFF	OFF

High - Low (HL)

This mode provides the output switching shown opposite with the default state voltages. A sub menu allows the 3 state voltages to be adjusted. These are the voltages the stages will be on at and should be the aiming voltages for any control input. Please note the default input settings. If the unit is required

High - Low mode (HL)				
Default Input	RM2 Input	State	Stage1	Stage2
7V	10V	3	ON	ON
4V	5V	2	ON	OFF
0V	0V	1	OFF	OFF

to replace an AX-RM2T in High - Low mode the state inputs should be set as per the RM2 input column shown above.

Raise - Lower (RL)

This mode provides the output switching shown opposite with the default state voltages. A sub menu allows the 4 state voltages to be adjusted. These are the voltages the stages will be on at and should be the aiming voltages for any control input.

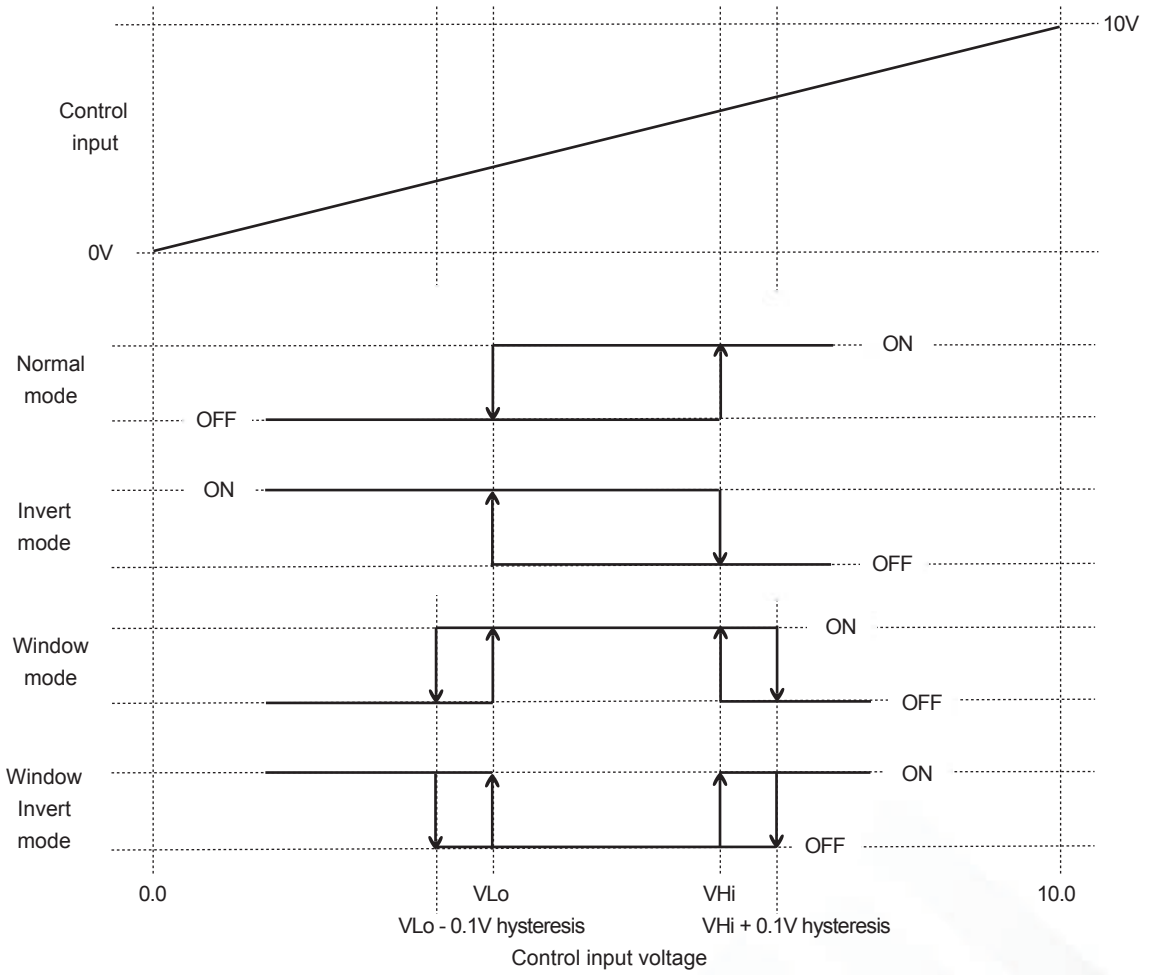
Settling time (0 to 250 seconds)

This is how long the control input has to remain within the stage switching voltage range for that stage to switch.

Raise - Lower mode (RL)			
Default Input	State	Stage1	Stage2
10V	4	OFF	ON
7V	3	OFF	OFF
4V	2	ON	OFF
0V	1	OFF	OFF

Stage delay (0 to 1200 seconds)

This sets the time between any stage switching on or off. Once a stage has switched no other stage can switch before this time has expired. 0 to 120 seconds can be set in 1 seconds increments and then 10 second increments to 1200 seconds (20 minutes).



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