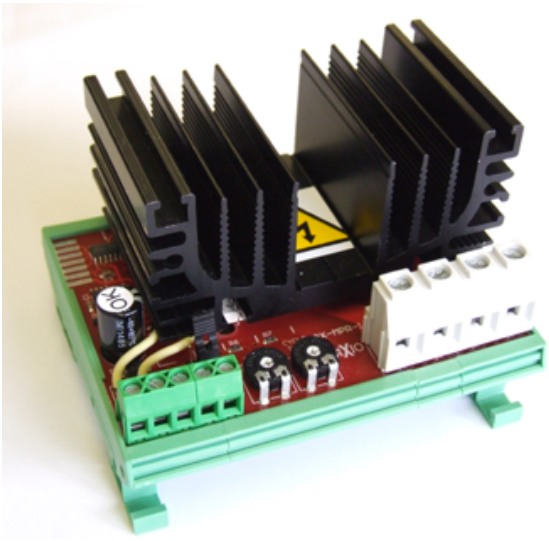
AX-MPR-1-x-RL

4kW to 9kW Single Phase Power Regulators with Raise/Lower Input



Product Overview

The AX-MPR1-x-RL DIN Rail mounting range of Power Regulators is designed to operate from the output of a raise lower valve controller. The normal Raise/Lower (valve open/close) signal is converted to a pulse width modulated output for an electric heater. The AX-MPR1-x-RL range are intended to operate with a 2.5 minute signal from fully closed to fully open; the output tracks the inputs in a linear fashion, automatically calibrating each time the minimum or maximum extremes are met. The output to the electric heater is controlled by solid-state switching with "zero crossing" technology to reduce RFI problems and provide accurate switching control. LED indication of Output On.

Features

- 24Vac Raise/Lower Input
- 4kW, 6kW and 9kW Models
- PWM Control
- 24Vac/dc Powered (AX-MPR1-9-RL line powered)
- DIN Rail (TS35) Mounting
- LED Indication

Product Specifications

Input:		24Vac Raise/Lower Input
Power Supply:	-4-RL,-6-RL	24Vac/dc +/-10%
	-9-RL	line powered
Max Heater Duty:		See Overleaf
Rated Load:		See Overleaf
Rated Supply:		220 -255Vac / 50-60Hz
LED Indication:		ON when output is on.
Dissipated Heat:		See Overleaf
Terminals:		
Control:		Rising Clamp for 0.5-2.5mm^2 Cable
Power:		Rising Clamp for 4mm^2 Stranded or 6mm^2 Solid Core Cable
Ambient Temp. Range:		
AX-MPR-1-9-RL:		0 to 55°C Note; The units are rated at 30°C. If using at higher ambient temperature de-rate the units by 10% for every 5°C above 30°C.
Others:		0 to 55°C Note; The units are rated at 40°C. If using at higher ambient temperature de-rate the units by 10% for every 5°C above 40°C
Country of Origin:		United Kingdom

Order Codes

AX-MPR-1-4-RL	-	4kW Single Phase Power Regulator with Raise/Lower input
AX-MPR-1-6-RL	-	6kW Single Phase Power Regulator with Raise/Lower input
AX-MPR-1-9-RL	-	9kW Single Phase Power Regulator with Raise/Lower input

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Specification Contd.

PART NO	Max Heater Duty (kW)	Rated Load (Amps)	Rated Supply	Dissipated Heat (Watts)	Fusing (Amps)	Dimensions (W X H x D) (mm)	Weight (kgs)
AX-MPR1-4-RL	4	18	220-255V 50-60Hz	22	20	160 x 95 x 85	0.4
AX-MPR1-6-RL	6	25	220-255V 50-60Hz	34	30	160 x 95 x 85	0.4
AX-MPR1-9-RL	9	37.5	220-255V 50-60Hz	63	40	160 x 95 x 95	0.7

dimensions and weights are approximate

Installation and Configuration

The AX-MPR1-x-RL Series Power Controllers are designed for mounting on a TS35 Section DIN Rail and must be installed with their heatsink cooling fins in a vertical plane. Allow a minimum of 100mm between units mounted in a vertical plane.

Electrical Installation:
Installation must be carried out by a suitably trained electrician, and in accordance with the relevant statuatory regulations.

Load Supply and Back-up Protection:
It is recommended that a load disconnect switch and a contactor are installed in the load supply. The supply to the contactor coil should be interupted by sensors for over temperature in the heater and also upon air flow loss. Fuses or MCB's (miniature circuit breakers) are required to provide back-up protection. High Speed Fuses will protect the solid-state switching devices against short circuit currents.

Control Supply:
The control circuitry is fully isolated from the load supply and needs its own 24V (ac or dc) supply. All low voltage signal and supply cables should be kept separate from high voltage or mains cables, separate trays or conduit should be used. Screened cable should be used for connections to BMS Controllers, where possible the cable screen should be connected to a functional earth (not mains safety earth); normally the screen should be earthed at one end only to avoid earth loops.

Maximum Heating Load
The power rating of the units are given as a guide. The maximum current (which is dependant on the actual supply voltage and heating load) as shown in the above table must not be exceeded.

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Operation

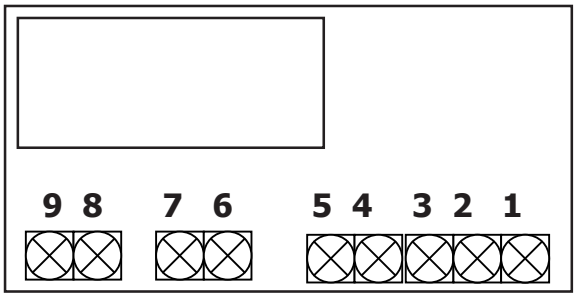
The AX-MPR1-x-RL range are designed to control electric heating loads in linear proportion to a Raise/Lower control signal. Control is by a solid-state semiconductor device which controls the load using pulse width modulation (PWM) techniques. These devices feature zero crossing point switching of the AC load which virtually eliminates RFI problems.

CAUTION!
In normal operation the heatsink surface can exceed 90°C. Dangerous voltages exist on the PCB and particular care should be taken. The AX-MPR1-RL Series Power Controllers must be installed in accordance with the relevant statutory regulations and installation must be carried out by an experienced and fully qualified engineer.

Ventilation:
The AX-MPR1-RL Series are designed for a maximum ambient temperature of 55°C which should not be exceeded. If necessary, enclosures or control panels should be ventilated with a cooling fan. When using the AX-MPR1-9-RL running at full power, enclosures or control panels should provide forced cool air movement over the heatsink.
See note in product specification for de-rating to be applied above ambient of 40°C. (30°C for AX-MPR1-9-RL)

Connection

AX-MPR1-4-RL& AX-MPR1-6-RL

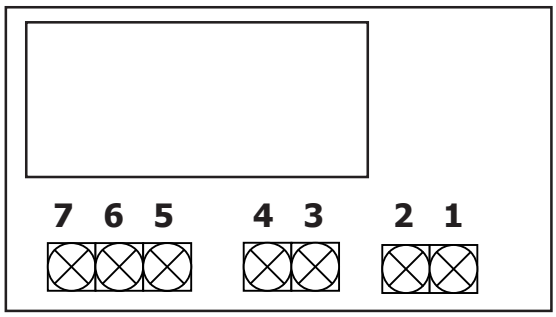


Terminals

1	Lower
2	Raise/Lower common
3	Raise
4	0V
5	24V power supply
6	Live in
7	Live out
8	Neutral in
9	Neutral out

NB: Terminals N & N1 are connected internally. Neutral may be connected directly to heater if permitted by local regulations. The AX-MPR1-RL Series are fully isolated and do not require a separate earth conductor.

AX-MPR1-9-RL



Terminals

1	Live in
2	Live out
3	Neutral in
4	Neutral out
5	Raise
6	Raise/Lower common
7	Lower

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