180/280/400kW Three Phase Power Regulators

Product Overview

The AX-PPR3-180/280/400 Power Regulators are designed to provide continuously adjustable control of electric heating loads from a BMS Controller or similar. Applications include electric heating coils, heating cables and electric furnaces. The AX-PPR3 use Solid-state switching with "zero crossing technology" to reduce RFI problems and provide accurate switching control. LED Indication of Output ON and are designed for panel mounting. The units feature three cooling fans which turns on automatically when the built in thermostat exceeds 60°C. No Additional heatsink or fans are needed.

Products Features

• 0-10Vdc Control input

Input:

Fan Supply:

Dissipated Heat:

LED Indication:

Terminals:

Dimensions:

Rated Supply:

Fuses:

- 180, 280 & 400kW Models
- · Fused to meet your load requirement
- Built in Thermostat to switch on integral fans

Product Specifications

0-10Vdc 230Vac 50/60Hz Max. Heater Duty: PPR3-180 165kW PPR3-280 280kW 400kW PPR3-400 Depends on load 415Vac / 50/60Hz Power Consumption: 110mA @ 24Vdc (2.7VA) or 185mA @ 24Vac (4.5VA) 3 x fuses dependant on load ON when output is on Control M8 Stud connections Power M8 Stud connections 0 to 45°C Ambient Temperature Range: See drawings Country of Origin: United Kingdom

Product Order Codes

Order Code	Description
AX-PPR3-180-108	Panel Mount Three Phase Power Regulator, (108kW)
AX-PPR3-180-117	Panel Mount Three Phase Power Regulator, (117kW)
AX-PPR3-180-150	Panel Mount Three Phase Power Regulator, (150kW)
AX-PPR3-180-165	Panel Mount Three Phase Power Regulator, (165kW)
AX-PPR3-280-180	Panel Mount Three Phase Power Regulators, (180kW)
AX-PPR3-280-192	Panel Mount Three Phase Power Regulators, (192kW)
AX-PPR3-280-236	Panel Mount Three Phase Power Regulators, (236kW)
AX-PPR3-280-280	Panel Mount Three Phase Power Regulators, (280kW)
AX-PPR3-400-324	Panel Mount Three Phase Power Regulators, (324kW)
AX-PPR3-400-378	Panel Mount Three Phase Power Regulators, (378kW)
AX-PPR3-400-385	Panel Mount Three Phase Power Regulators, (385kW)
AX-PPR3-400-400	Panel Mount Three Phase Power Regulators, (400kW)

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- Three Integral Fans (400 has one large fan)
- Controls all three phases
- LED Indication

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Installation & Configuration

The AX-PPR3 Large Power Regulators are designed for mounting on a vertical panel. It is important that free air movement around the unit is not restricted. Allow sufficient air space between adjacent units to allow optimum performance of the heatsink. Installation must be carried out by a suitably trained electrician, and in accordance with the relevant statutory regulations. These units MUST be earthed using the M6 stud provided and the Load Terminals must be tightened to the torque specified in the Specification Table.

Load Supply and Back-up Protection:

The AX-PPR3 Large Power Controllers feature internal quick acting semiconductor fuses to protect the switching devices. The Load Cables must be protected by external appropriate fuses or MCB's in the usual manner. Load cables must be sized such that they are rated in excess of the fuse ratings. If in doubt, contact Axio for advice.

Ratings:	Output	Current	Fuse		Dimensions (L x W x H) mm
AX-PPR3-180-108	108kW	150A	180A MT	FM4 Semiconductor Type	403 x 238 x 196.7
AX-PPR3-180-117	117kW	163A	200A MT	FM4 Semiconductor Type	403 x 238 x 196.7
AX-PPR3-180-150	150kW	209A	250A MT	FM4 Semiconductor Type	403 x 238.1 x 196.8
AX-PPR3-180-165	165kW	230A	280A MT	FM4 Semiconductor Type	403 x 238.1 x 196.8
AX-PPR3-280-180	180kW	250A	315A MT	FM4 Semiconductor Type	407 x 333 x 198.3
AX-PPR3-280-192	192kW	267A	350A MT	FM4 Semiconductor Type	407 x 333 x 198.3
AX-PPR3-280-236	236kW	328A	400A MT	FM4 Semiconductor Type	407 x 338 x 198.3
AX-PPR3-280-280	280kW	390A	500A MT	FM4 Semiconductor Type	407 x 338 x 198.3
AX-PPR3-400-324	324kW	451A	550A MT	FM4 Semiconductor Type	571.5 x 262 x 234.5
AX-PPR3-400-378	378kW	526A	630A MT	FM4 Semiconductor Type	571.5 x 262 x 234.5
AX-PPR3-400-385	385kW	536A	700A MT	FM4 Semiconductor Type	571.5 x 262 x 234.5
AX-PPR3-400-400	400kW	556A	710A MT	FM4 Semiconductor Type	571.5 x 262 x 234.5

Semiconductor Fuse Replacement:

Disconnect from the main supply before attempting to remove the cover. Remove the main cover earth strap and then the four cover retaining screws. The main cover earth strap must be fitted before re-applying the power.

Cables: Screened cable should be used for connections to BMS Controllers, where possible the cable screen should be connected to a functional earth (not mains saftey earth); normally the screen should be earthed at one end only to avoid earth loops.

Cycle Time: The Cycle Time is preset. An 0-10Vdc Input Signal of 5V equates to the load being at 50% ON and likewise with an input of 2.5V load will be 25% ON. A 10V input will equal 100% i.e. full ON.

Operation: The AX-PPR3-xxx is designed to control electric heating loads in linear proportion to the incoming 0-10Vdc control signal. Control is by solid-state semiconductor devices which control the load using pulse width modulation (PWM)N 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 inside the unit and particular care should be taken. The AX-PPR3-xxx 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-PPR3-xxx are designed to operate in a maximum ambient temperature of 45°C. Which should not be exceeded. If necessary, enclosures or control panels should be ventilated with a cooling fan.

Over Temperature Monitoring: A thermostat is fitted to the unit to protect against over temperature. When the temperature of the unit reaches 60°C the three fans places above the Thyristors are automatically switched on.

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Dimensions (AX-PPR3-180 Series)



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Dimensions (AX-PPR3-280 Series)













INTERNAL WIRING DETAILS

Connection :-

(do not touch inhibit link T1 & T2) the three yellow dots are the input the three black dots are the output T3 0-10V input T4 0-10V input

T5	0V	

T6 0V

NOTE: It is imperative that the power connections are fully tightened, without excessive force, and ensure the maximum are of cable is in contact with the terminals.

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Dimensions (AX-PPR3-400 Series)





Detail A



NOTE:

It is imperative that the power connections are fully tightened, without excessive force, and ensure the maximum are of cable is in contact with the terminals.

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CLOCKWISE TO INCREASE CYCLE TIME FULLY ANTI-CLOCKWISE: 330 ms FULLY CLOCKWISE: 5 sec. NOMINAL MAX: FOR ADJUSTING THE OUTPUT SPAN (FACTORY SET) MIN: FOR ADJUSTING ZERO OUTPUT

(FACTORY SET)

Datasheet Contents

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