X10714

HVAC | HEATER BATTERY CONTROLLER

PR1-DIN-F

Up to 4kW, 230V

DIN Mounted Single Phase Burst Fire HVAC Power

CONTACT US:

0044 (0) 1704-516 501

enquiries@united-automation.com

www.united-automation.com

KEY FEATURES:

- ✓ **Two Models:** 2.5kW or 4kW models available.
- ✓ **Integrated Heatsink:** Ensures maximum power capability
- ✓ **0-10V DC Control Input:** For precise control
- ✓ **Easy Installation:** Simple DIN-rail or panel mounting
- ✓ **LED Power Level Indication:** Clear visual status
- ✓ **Over Temperature Protection:** Auto shutdown and reset for safety

APPLICATIONS:

Ideal for:

- ➢ Electric heater batteries
- ➢ Ceiling or radiant heating
- ➢ Hot water tanks
- ➢ Heating cables
- ➢ Furnaces
- ➢ Ovens
- ➢ Plastic processing equipment

The **PR1-DIN-F 2.5 to 4kW** Power Regulator is a robust, DIN-rail mounted single-phase burst fire controller designed for seamless control of resistive loads. With its advanced zero-voltage switching technology, it minimises flicker and RFI issues, ensuring efficient operation. Built with an integrated heatsink, over-temperature auto-reset protection, and LED power indication, this regulator offers reliable performance and easy installation. Ideal for HVAC and heating applications, it supports control signals via a 5kΩ potentiometer or a 0-10V DC signal.

TECHNICAL SPECIFICATIONS

Power/Current Ratings	2.5kW (10.9A) & 4KW (17.4A) @ a typical supply of 230V RMS
Input Supply Voltage	230V AC RMS ±10%
Remote 24V DC Input Supply	24V DC ±10% (for 24V DC model only)
Frequency	50/60Hz
Ambient Temperature	35°C (maximum)
Control Signal	0 to 10V DC
Working Temperature	Max. 65°C
Cable Terminations	- Mains Supply: 2.5mm² terminal
	- Control Signal: 1.5mm² terminal
	- 24V DC Supply: 1.5mm² terminal
Fusing	- PCB mount TR5-F1A, 250V AC (PCB protection)
	- SCR 250Vrms fast acting HS fuse (16LCT) or breaker MCB (Z-type) - 16A (device protection)
Thermal Cut Out	90°C (off); 85°C (on) ±1°C
Dimensions 	PR1-DIN-F-2KW 83mm (H) x 75mm (W) x 94mm (D)
	PR1-DIN-F-4KW : 105mm (H) x 77.5mm (W) x 94mm (D)
Terminal Torque Settings	0.8Nm (power terminals only)
Fixing	TS35 DIN-rail mounting

Note: SAFETY WARNING – Hazardous live parts exist on this board. Metal parts, particularly the heatsink, may get very hot during operation.

It is essential that a load break switch and a contact breaker is installed in the load supply. The supply to the contactor coil should be interrupted by an over-temperature thermostat located in the heater battery and also upon detection of airflow loss.

PR1-DIN-F

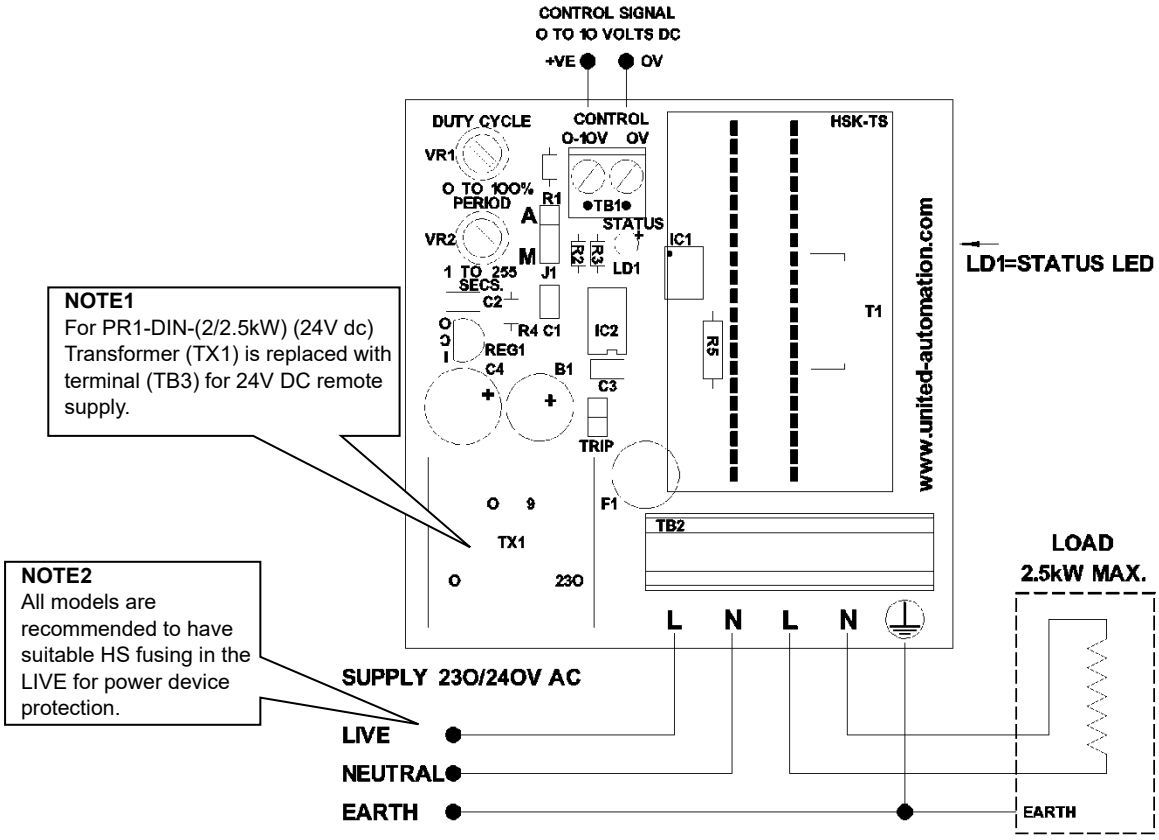
Up to 4kW, 230V | **DIN Mounted Single Phase Burst Fire HVAC Power Regulators**

INSTALLATION

DIMENSIONS & CONNECTIONS

PR1-DIN-F-2.5kW

PR1-DIN-F-4kW



FUNCTIONS

Cycle Time and Signal Rescaling

The cycle time is preset. A 0 to 10V DC input signal controls the load proportionally:

- 5V input signal: 50% load ON
- 2.5V input signal: 25% load ON
- 10V input signal: 100% load ON

CAUTION: Adjusting the cycle time and signal rescaling via VR1 and VR2 is possible but generally unnecessary. Incorrect settings can cause overload, failure, and permanent damage. DO NOT attempt adjustments without consulting the supplier/manufacturer.

Manual Override

The PR1 controller defaults to the auto 'A' position. Manual override is available by moving the J1 jumper plug to the 'M' position, and setting the load to 100% ON. The output load can then be reduced using the signal rescaling feature.

Over Temperature Protection

An electronic thermal cut-out in the heatsink prevents overheating. If the heatsink temperature exceeds 90ºC, the PR1 regulator will disconnect the load. It will reconnect once the temperature drops below 85ºC. Normally, the heatsink temperature stays below 90ºC, but it may rise if the ambient temperature exceeds 35ºC.

RECOMMENDATIONS

FUSING

It is recommended that semiconductor, fast-acting type fuses or circuit breakers (Semiconductor-MCB) be used for unit protection. On initial operation some loads may need an increased Factor of Safety (F of S) for unit and/or device protection. See the SRA datasheet for further information.

CE Marking

This product family carries a “CE” marking. These burst firing type controllers do not require a filter. For information see recommendation section and contact our sales desk. See the Declaration of Conformity.

DOCUMENTS

Other documents available on request, which may be appropriate for your application:

Code	Identity	Description
X10229	RFI	Filter recommendations: Addressing the EMC Directive
X10213	ITA	Interaction: Uses for phase angle and for burst fire control
X10255	SRA	Safety Requirements: Addressing the Low Voltage Directive (LVD) including, Thermal Data/Cooling, Live Parts Warning, Earthing Requirements and Fusing Recommendations
P01.1	COS	UAL Conditions of Sale

It is recommended that installation and maintenance of this equipment should be done with reference to the current edition of the I.E.T. regulations (BS7671) by suitably qualified/trained personnel. The regulations contain important requirements regarding the safety of electrical equipment. For International standards refer STANDARDS on D of C.

PRODUCT CODE AND RELATED PRODUCT CODE

Product Code	Product Description
A407272-HV	PR1-DIN-F- 2.5kW - Standard 230V model
A407274-HV	PR1-DIN-F- 4kW - Standard 230V model