



CE

TUD 102

Technical Data

Input	0-10Vdc
Power supply	230Vac (derived from load supply)
Terminals	Rising clamp terminals suitable for 0.5-2.5mm ² cable
LED indication	Output ON
Max. heater duty	2 kW
No. of phases	1
Rated supply	220-255Vac/50-60Hz
Rated load	8,7Amps
Terminals	
Control	Rising Clamp for 0,5-2,5mm ²
Power	Rising Clamp for 4mm ² Stranded or 6mm ² Solid Core Cable
Dissipated Heat	11 Watts
Amb.temp. range	0...+55°C
Note:	This units are rated at 40C. If using at higher ambient temperature de-rate the units by 10% for every 5C above 40C
Dimensions	W77 x D85 x H55 mm
Weight	200g

Protection Class IP20

CE-compliant

We reserve the right to make changes and improvements in our products which may effect the accuracy of the information contained in this leaflet.

Features

- Single phase regulation 2kW
- Control Input 0-10Vdc
- PWM Control
- Line Powered
- Over-Temperature Protection with Auto Reset
- Compact Size
- LED pulses when output ON
- DIN rail mounting
- Neutral Pass Through Terminals

Application

- Electric Heater Batteries
- Ceiling Heating
- Radiant Heating
- Hot Water Tanks
- Heating Cable
- Furnaces

General

The TUD 102, DIN rail mounting Power Controllers are designed to provide continuously adjustable control of electric heating loads from a BMS controller or Temperature controller with a 0-10Vdc output.

Applications include electric heating coils, heating cables, duct heaters and electric furnances.

The TUD 102 uses solid-state switching with "zero crossing" technology to reduce RFI problems and provide accurate switching control.

The TUD 102 features Over Temperature Control with Automatic Reset together with a LED indication of output ON and is supplied in a DIN rail mounting carrier suitable for TS35 section DIN rail.

No additional heatsinks are needed.

Ordering

Single Phase Power Controller 220-255Vac @ 50-60 Hz

TUD 102 2 kW

Operation

The TUD 102 is designed to control electric heating loads in linear proportion to the incoming 0-10Vdc 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!

Dangerous voltages exist on the PCB and particular care should be taken.

In normal operation the heat sink will get hot and could reach 90°C

The TUD 102 should be installed in accordance with the relevant statutory regulations and installation must be carried out by an experienced and fully qualified engineer.

Ventilation

The TUD 102 are designed for a maximum ambient temperature of 55C which should not be exceeded.

If necessary, enclosures or control panels should be ventilated with a cooling fan.

See note in product specification for de-rating to be applied above ambient of 40C

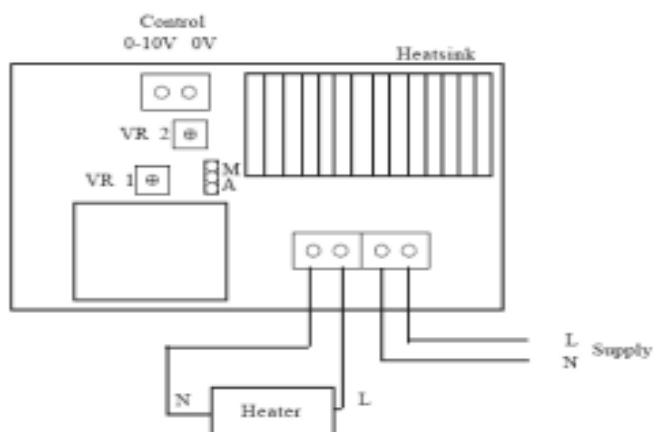
Over Temperature Monitoring

An electronic thermal cutout is fitted to the heatsink to protect against over temperature.

The TUD 102 will switch off the load if the heat sink temperature exceeds approx 90C and will reconnect the load once the heatsink temperature has dropped below 85C.

Under normal operating conditions the heatsink temperature will not reach 90C but this might occur, for example, if the ambient temperature exceeds 40C.

Connection



Installation and Configuration

The TUD 102 Power Controllers are designed for mounting on a TS35 Setion DINRail and must be installed with their heatsink cooling fins in 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 statutory

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 interrupted by sensors 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 Signal

All low voltage signal and supply cables should be kept separate from high voltage or main 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.

Cycle Time & Signal Rescaling

The Cycle Time is preset. An 0-10Vdc Input Signal of 5V equates to the load being 50% ON and likewise with an input of 2,5V the load will be 25% ON.

A 10V input will equal 100% i.e. full ON.

Adjustment of the Cycle Time and signal rescaling is possible using VR1(rescaling) and VR2(cycle time) but is not normally required.

Caution: Adjustment of these controls can cause an overload condition and subsequent destruction of the TUD 102 unit.

DO NOT ATTEMPT TO ADJUST THESE CONTROLS WITHOUT REFERENCE OF THE FACTORY.

Manual Override

The TUD 102 are supplied preset to the Auto position, it is possible to manually override the Input Signal by placing the M/A Jumper in the M position.

With the jumper in the M position the load will be 100% ON.

The output load can be adjusted downwards using the signal rescaling facility. (See Caution above).

Maximum Heating Load

The power rating of the units are given as a guide.

The maximum current (which is dependant on the actually supply voltage and heating load) as shown in the Technical Data must not be exceeded.