



# Multiload LampConserver Dimmer

Product order code: MD2500

The Multiload LampConserver Dimmer (comprising a remote dimmer unit MD2500U with rotary RPS-MRM controller) is a power regulator for all dimmable\* mains voltage lighting loads: tungsten halogen (mains voltage and transformer-driven low voltage); general incandescent; fluorescent (with suitable ballast); neon and argon (with HT transformer). The wall-mounting component, the RPS-MRM controller comprises a single rotary knob on a grid module, which rotates to dim and is pushed to switch ON/OFF: see datasheet MRM001.

The MD2500U has patented SoftStart circuitry, which eliminates large lamp-blowing current surges which would otherwise occur at switch-on, when most lamps blow. This function also stops the nuisance tripping of MCBs and fuses and prolongs the life of switches and other electrical equipment.

\* Lighting load must accept an AC phase-controlled mains input.

## Wiring

The MD2500U can be wired in simply by interposing it in the mains wiring to a lamp (or transformer or ballast) circuit so that the (fixed) live to the lamps from the mains is replaced by the variable live from the MD2500U. The MD2500U also provides a fused fixed live for running lamps at full brightness.

The dimming potentiometer of the MRM controller is wired to the MD2500U via a simple low-current mains-potential cable from dimming terminals D1 and D2 on the MRM to the dimming terminals on the MD2500U. As this cable is at mains potential it can be wired in the same conduit as the switched live from the MRM (Terminal L1 or L2) to the MD2500U (live input terminal).

## Load diversity and rating

The load circuit connected to the load output terminals of the MD2500U (variable live and neutral) may consist of a combination of different lighting loads, provided their total rating does not exceed 10A (2300VA at 230V nominal mains input). All loads must be individually dimmable by phase control.

## Load types

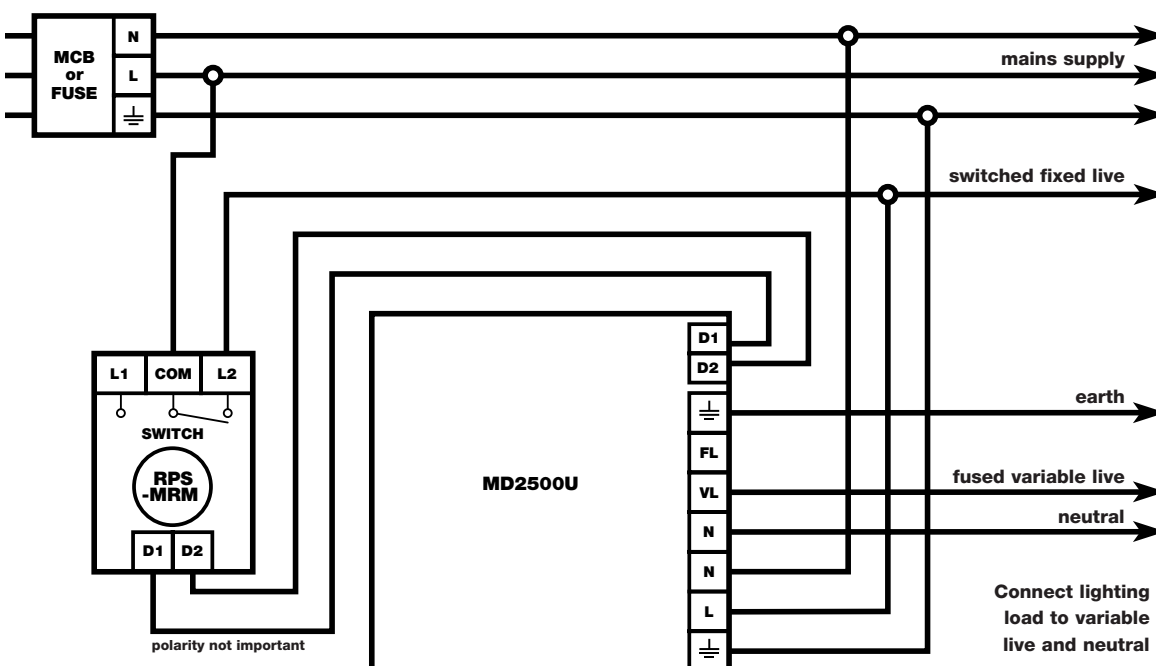
**Low voltage tungsten halogen:** connect the mains supply line for the low voltage transformers to the load output terminals of the MD2500U. Transformers must be normal wirewound copper-iron or electronic high-frequency transformers capable of accepting a phase-controlled supply.

**Mains voltage incandescent and tungsten halogen:** connect lamps directly to the load output terminals of the MD2500U.

**Fluorescent:** Tubes and compacts need to have electronic control ballasts designed to be dimmable by phase control. Connect mains supply for ballasts to output load terminals of MD2500U.

**Neon and argon:** These high-voltage tubes need HT transformers, which, for dimming, should have an output voltage some 50% higher than that normally specified for undimmed applications. Connect mains supply for transformers to load output terminals of MD2500U. (Some Standards require on/off switches to MD2500U to switch both live and neutral if HT transformers are in circuit. In these cases a separate switch should be used).

## Wiring Diagram



## Installation Procedure

### Preparation

Installation should be carried out by a suitably qualified person in accordance with good electrical practice and the appropriate national wiring regulations. Switch **off** mains electrical supply before commencing installation.

### Positioning

Using suitable fixing screws, secure the MD2500U unit in position allowing adequate ventilation around the unit. If several units are adjacent they should be mounted at least 25mm apart. In confined spaces or for slightly increased ambient temperatures, derating will be necessary. For increased ventilation and cooling, spacers may be introduced between the case bottom and the mounting surface. Make sure cupboards are well ventilated.

### Connections

Feed the supply cable (which includes the switched mains from the RPS-MRM), the cable for the load and the mains potential control cable to the RPS-MRM through the holes in the enclosure base (and cable clamps if fitted). Connect the switched mains live, neutral and the mandatory earth to the mains input terminals, L, N, respectively. Connect load variable live and neutral to load output terminals marked VL,N respectively. Connect 2-wire mains potential control cable from RPS-MRM (control terminals D1, D2) to smaller dimming terminals marked D1 and D2 on the MD2500U (polarity not important).

### Fuse Changing

The unit is protected by a 16A (F) Quick Blow ceramic fuse. The fuse should be changed only by a competent person after checking the load circuit for overrating, shorts or bad connections. The fuse is accessible only by removing the enclosure cover. Make sure the mains supply is securely switched **off** before removing cover. Remove and replace fuse avoiding deformation of fuse clips and contamination of fuse end caps.

### Other dimmers

The MD2500U must not be connected to the output of other dimmers since it requires a full sine wave mains input voltage.

## Circuit Considerations

- 1 Under no circumstances should normal high current mains supplies L, VL, N, E, be connected to terminals D1, D2 or RPS-MRM or MD2500U: severe damage will be caused.
- 2 Under no circumstances should the variable live output of different units in a multi-unit installation be paralleled i.e. each unit must feed a separate load circuit.
- 3 To avoid damage, the units must be disconnected if the wiring is to be tested with a circuit tester.
- 4 The mains supply must be capable of delivering the full rated current of the load and must be suitably protected (the 10A MCB feeding the RPS-MRM will usually do this). The fuse in the unit is intended only to protect the semi-conductor device within.
- 5 SoftStart eliminates the high surge currents which flow momentarily into many loads when they are initially supplied with mains voltage. Since this function is activated only by switching off the mains supply to MD2500U, switching in the load circuit should be avoided since it does not stop surges.
- 6 To avoid wastage of special fast acting fuses the load circuit should be carefully checked for short circuits, intermittent contacts and overrating before it is connected to the unit.

## Technical Specification

### MD2500U (RPS-MRM see data sheet MRM001)

#### Mains Input Voltage

230V ± 10% AC 50/60Hz.

NB. MD2500U accepts only a normal full sine wave.

#### Load Rating

Maximum load 10A (2300VA at 230V nominal mains supply).

Minimum load 100W.

#### Ambient Temperature

40°C maximum

#### SoftStart

Turns lamps on smoothly over a period of approximately 2 seconds. Activated by mains interruption >approx 100mS

#### Fusing

16A (F) Quick Blow, ceramic:11/4" x 1/4" or 20mm x 5mm.

Accessible by removing cover.

#### Mains Input Terminals

Each terminal accepts 2 cables up to 2.5mm<sup>2</sup>.

3 terminals, L,N,  $\perp$

Mandatory earth must be connected.

#### Load Output Terminals

Each terminal accepts 2 cables up to 2.5mm<sup>2</sup>.

4 terminals: VL = Fused Variable Live

N = Neutral

FL = Fused Fixed Live (if required)

$\perp$  = Earth (if required)

#### Dimmer terminals

Each 45o terminal accepts one cable up to 2.5mm<sup>2</sup>.

2 terminal D1, D2 connects to RPS-MRM terminals D1, D2.

Polarity not important.

#### Power Dissipation

Less than 1.5% of the rated load – efficiency greater than 98.5%.

#### DC Component

Less than 1V

#### Dimensions

L: 290mm W: 138mm H: 42mm

#### Fixing Dimensions

Lf: 270mm, Wf: 95mm

#### Weight

1.3kg

#### Finish

Stoved Enamel Black

#### Standards

CE: marked

RFI Suppression: to EN55015

Electrical Safety: Conforms to EN60950 and IEC65

Manufacture: to ISO9001