



# Multiload LampConserver

Product order codes: MLC

Multiload LampConserver (MLC2500) is the cost-effective solution for problematic tungsten lighting installations, dramatically increasing lamp life and eliminating nuisance tripping of fuses and MCBs. As a general purpose mains conditioning unit it 'softens' mains supplies and provides more suitable running conditions for the sensitive lamp types now increasingly in use. It is particularly beneficial for use with both mains voltage and transformer-driven low voltage tungsten halogen lamps.

Tungsten lamps are plagued by two serious life-reducing problems – overvoltage and surge currents. MLC2500 overcomes both these problems at minimum cost (product and installation), paying for itself in a very short time. In difficult lamp replacement situations there can be huge savings in maintenance labour costs.

## Overvolting

Many installations regularly experience a mains supply voltage considerably greater than the running voltage for which they were designed. Each 5% increase in voltage will reduce lamp life by half, so that, even if the electricity supply remains within the 230V ± 10% now harmonised in the EC, lamp life can be reduced by a factor of 4.

## Voltage adjustment

A small screwdriver adjustment of the trimmer potentiometer (situated to the side of the terminals within the unit) allows the variable voltage to the lamps to be 'tweaked' in order to achieve the optimum voltage for the installation. Simply, turn the trimmer potentiometer slowly anti-clockwise to decrease voltage to lamps.

## Surge currents

When tungsten lamps are first switched on, the filaments are cold and at low resistance. Huge surge currents can flow, producing a physical shock which breaks the filament and blows the lamp.

## Multiload's patented 'SoftStart'

MLC2500 turns lamps **on** slowly, using a smoothly increasing voltage which is activated every time the mains switch is pressed. This eliminates the large life-reducing current surges which otherwise plague lamps connected directly to the mains – either at switch-on or when power is restored after a mains interruption (sensitive reset ensures operation after the shortest interruption).

The surge currents which rupture filaments also flow in the rest of the circuit, and, besides causing nuisance tripping of MCBs (or blown fuses), also cause malfunction and deterioration of switches and lighting contactors. MLC2500's elimination of damaging surge currents solves all these problems.

## Low voltage lighting

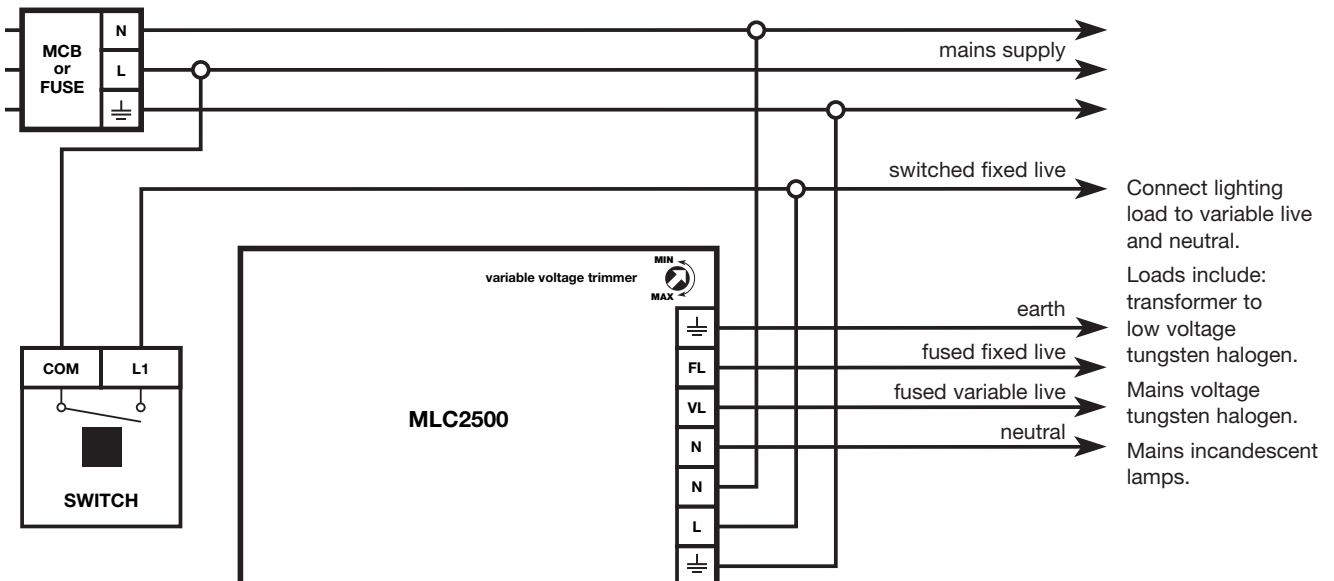
MLC2500 is designed for connection into the mains supply line to the low voltage transformers. Transformers must be normal wire-wound copper-iron or electronic high frequency transformers capable of accepting a phase controlled supply. Taking into account the particular mains voltage on site and the transformer loading, the unit output can be adjusted to achieve the optimum transformer output voltage.

## Load diversity and rating

The load circuit connected to the output (variable live and neutral) may incorporate a combination of different lighting loads provided their total rating does not exceed 10A (2300VA at 230V nominal mains input).

**NB.** When calculating the rating of inductive loads, the volts **x** amps rating must be taken and not the simple wattage. All loads must be individually dimmable by phase control.

## 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 unit in position allowing adequate ventilation around the unit (inter-unit spacing at least 25mm). If installing in a cupboard allow adequate ventilation. In retrofit situations where the unit is interposed in the mains supply to the load, there may be sufficient slack in the cable to allow the cut ends to be taken directly into the unit.

### Connections

Feed the supply cable and the cable for the load through the holes in the enclosure base (and cable clamps if fitted). Connect the mains **live** and **neutral** and the mandatory **earth** connection to the mains input terminals, L,N, $\underline{\underline{}}$  respectively. Connect load **live** and **neutral** to load output terminals marked VL,N respectively.

### Output Adjustment

Progressively turn internal preset (next to the terminals) anti-clockwise to reduce the voltage to the lamps. **NB.** Over-rotation of the trimmer potentiometer using excessive force will damage the unit. Measure voltage to lamps with an RMS meter with the circuit in a safe condition.

### 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.

### Dimming

The MLC2500 must not be connected to the output of dimmers since it requires a full sine wave mains input voltage. If dimming is required use LampConserver Dimmer MD2500.

## Circuit Considerations

- i. Under no circumstances should the variable live output of different units in a multi-unit installation be paralleled ie. each unit must feed a separate load circuit.
- ii. To avoid damage, units must be disconnected if wiring is to be tested with a circuit tester.
- iii. The mains supply must be capable of delivering the full rated current of the load and must be suitably fused (the fuse in the unit is intended only to protect the semi-conductor device within and the load wiring).
- iv. SoftStart eliminates high surge currents which flow momentarily into many loads when initially supplied with mains voltage.
- v. To avoid wastage of special fast acting fuses the load circuit should be carefully checked for short circuits, intermittent contacts and over-rating before it is connected to the unit.

## Technical Specification

### Mains Input Voltage

230V  $\pm$  10% 50/60Hz.

**NB.** MLC2500 accepts only a normal full sine wave.

### Load Rating

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

Minimum load 50W.

### Ambient temperature

40°C maximum

### SoftStart

Turns lamps on smoothly over a period of approximately 2 secs.

Reset 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 Termination

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

3 terminals, L,N,  $\underline{\underline{}}$

Mandatory **earth** must be connected.

### Load Output Termination

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)

$\underline{\underline{}}$  = Earth (if required)

### Power Dissipation

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

### DC Component

Less than 1V

### Product details

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 EN5501

Electrical Safety: Conforms to EN60950 and IEC65

Manufacture: to ISO9001