



Multiload Analogue Dimmer

Product order code: AD2500

The Multiload Analogue Dimmer AD2500 is connected to the mains supply and provides regulated power 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 dimmer is controlled by a standard 0-10V analogue dimming signal, which may come from a simple wall plate rotary control or from a more complex lighting control system. The signal input terminals on the dimmer are SELV compatible (Separated or Segregated Extra Low Voltage), although the signal common (0V) will usually be earthed.

The AD2500 includes a relay, which switches OFF and isolates the phase controlled variable live dimming output (and the ancillary switched live output) when the input signal falls below approximately 1V.

The AD2500 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 AD2500 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 AD2500: retrofitting in existing mains wiring is very easy. The AD2500 also provides a fused and switched fixed live for running lamps at full brightness.

Load diversity and rating

The load circuit connected to the load output terminals of the AD2500 (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. Any loads connected to the switched live output must be included in the total 10A rating.

Load types

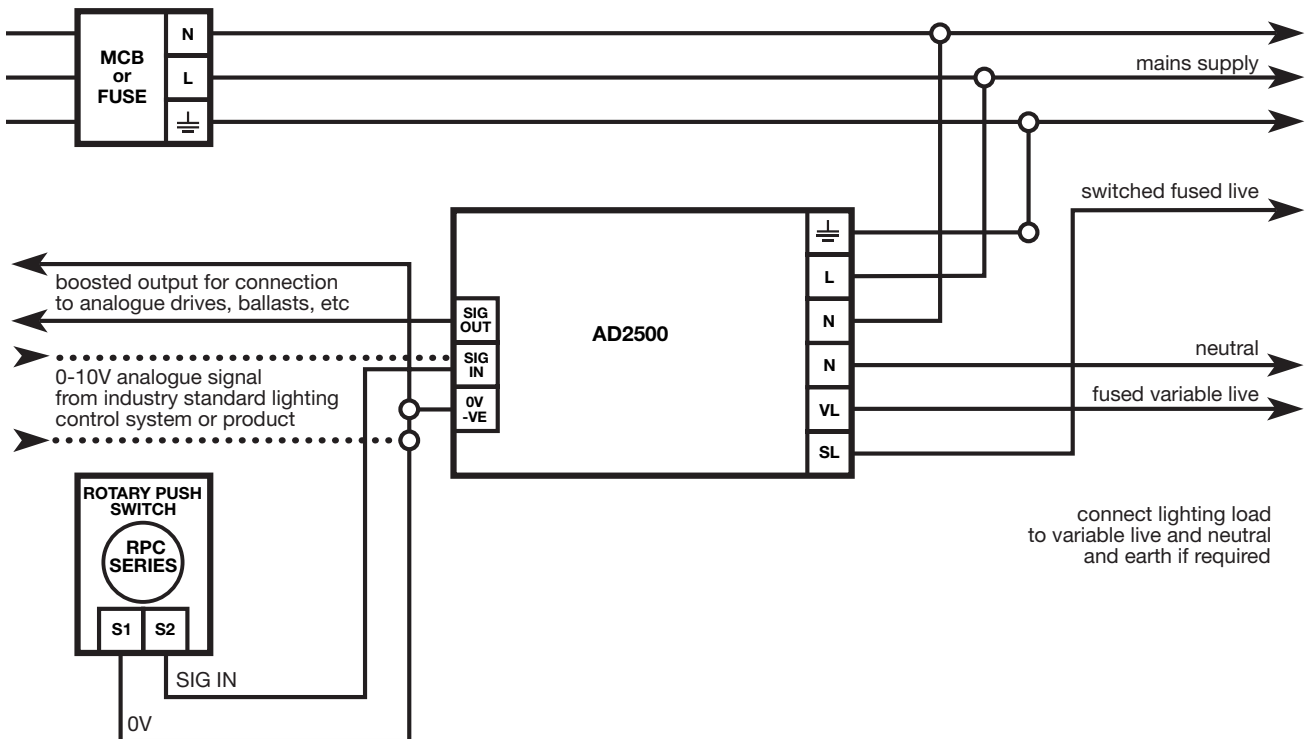
Low voltage tungsten halogen: connect the mains supply line for the low voltage transformers to the load output terminals of the AD2500. Transformers must be normal wirewound copper-iron or electronic high-frequency transformers is designed to be dimmed by a phase-controlled supply.

Mains voltage incandescent and tungsten halogen: connect lamps directly to the load output terminals of the AD2500.

Fluorescent: tubes and compacts need to have electronic control ballasts designed to be dimmable by phase control. Connect mains supply for ballasts to load output terminals of AD2500.

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 AD2500. Some standards require on/off switches to AD2500 to switch both live and neutral if HT transformers are in circuit. In these cases a separate 2-pole switch should be interposed in the Live and Neutral mains supply to the AD2500.

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 AD2500 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, de-rating 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 mains supply cable for the load and the signal cable through the holes in the enclosure base (and cable clamps if fitted). Connect the mains live, neutral and the mandatory earth to the mains input terminals: L, N, \perp , respectively. Connect load (variable) live and neutral to load output terminals marked VL,N respectively. If load earth is required connect to mandatory earth input terminal. Connect 2-wire 0-10V signal cable to smaller signal terminals marked 0V-VE and SIG IN. A buffered (ie. current boosted) version of the input signal appears on the SIG OUT terminal for connection to 0-10V ballasts, analogue drives, etc.

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.

Circuit Considerations

- 1 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.
- 2 To avoid damage, the AD2500 must be disconnected if the wiring is to be tested with a circuit tester.
- 3 The mains supply wiring must be capable of delivering the full rated current of the load and must be suitably protected (the 10A MCB feeding the AD2500 will usually do this). The fuse in the AD2500 is intended only to protect the semi-conductor device within.
- 4 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 AD2500 or the switching of the on-board relay, switching in the load circuit should be avoided since it does not stop surges.
- 5 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

AD2500

Mains Input Voltage

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

NB. AD2500U 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 approx 2 seconds.

Activated by mains interruption > approx 100ms

Fusing

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

Accessible by removing cover.

Mains Input Terminals

Each terminal accepts 2 cables up to 2.5mm².

3 terminals, L,N,

Mandatory earth must be connected.

Load Output Terminals

Each terminal accepts 2 cables up to 2.5mm².

3 terminals: VL = Fused Variable Live

N = Neutral

SL = Fused Fixed Live (if required)

\perp = Earth (if required) using the same mandatory earth input terminal \perp

Signal Input Terminal

0-10V terminals: 0V -VE and SIG IN.

Signal Output terminals

A buffered (ie. current boosted) version of the input signal appears on the SIG OUT terminal for connection for 0-10V ballasts, analogue drives, etc.

Each 45° terminal accepts cable up to 2.5mm².

Efficiency

Power dissipation less than 1% of the rated load – efficiency greater than 99%.

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

Knockouts

Mains: 3 x 20mm

Signal 2 x 20mm

Standards

CE: marked

RFI Suppression: to EN55015

Electrical Safety: Conforms to EN60950 and IEC65

Manufacture: to ISO9001