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Charity No. 1159816

Energy Advice Drop In  
The Wellbeing Centre  
Church Stretton  
Thursday's 10.00 – 12.00



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## MR16 12V LED transformer issues

Incompatible MR16 LED transformers symptoms - The symptoms which you may experience when incompatible transformers are used with MR16 LEDs are; no light at all, flickering lights and random shut down of the LED lights.

### Background

There are primarily 2 types of light fitting for the traditional halogen bulb LED replacement: the 240V GU10 and the 12V MR16. The GU10 bulbs have a small transformer inside each bulb; the MR16 bulbs require an external transformer to reduce the mains voltage from 240V to the required 12V.

These external transformers fall into 3 categories:

- 1) traditional wire-wound magnetic transformers
- 2) 1st generation electronic transformers
- 3) 2nd generation electronic transformers

All MR16 LED bulbs will work with the wire-wound and the 2nd generation transformers.

The 1st generation transformers require a minimum load of about 8 Watts before they will work. (The minimum required load is usually stated on the actual transformer) A typical MR16 LED bulb is less than 8 Watts and therefore insufficient to enable these 1st generation electronic transformer to supply a constant 12V output.

Connecting 4 LED bulbs in parallel to the same transformer will provide a higher load which is sufficient to operate the LEDs. Alternatively, combining one halogen lamp with several LED lamps on the same circuit also provides a solution; although of course, one will not achieve all the electricity consumption savings if this is one of your desired objectives.

In many installations, the transformers are positioned in a convenient place for replacement as they are the weak link within the lighting circuit, almost a consumable item.

The 2nd generation electronic transformers have been designed to operate with zero loads and therefore work perfectly with all LED lights.