



Many different methods are followed to generate mains synchronised pulses. This circuit employs an opto-coupler to give complete isolation from the mains. The coupler is shown in the diagram; it consists of a LED, a phototransistor and a few standard components.

A resistor is used to connect the LED direct to the mains, or to a transformer. The resistor value is chosen for a LED current of about 15 mA. The reverse-parallel diode D1 by-passes negative peaks across the LED. The light emitted by the LED causes a current to flow through T1, which is amplified by T2

opto-coupler for mains synchronised pulse generator

and T3. The high gain causes a (TTL compatible) square wave to appear at T3 collector.

The phototransistor is made from a BC 107, by carefully filing or sawing down the top of the metal case, which exposes the base.