

LED Test Screwdriver

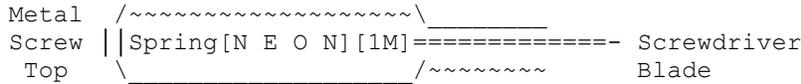
By G8MNY

(Updated Nov 07)

(8 Bit ASCII Graphics use code page 437 or 850)

NEON TYPE

Neon lamps used to be used as a mains testing screwdriver using a high voltage resistor (spiral cut) in series with a neon in a clear screwdriver body.



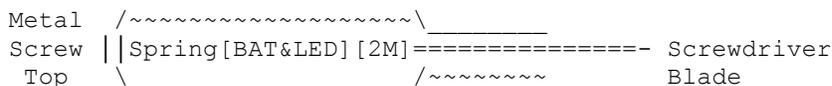
There were dangers with this..

- 1/ It was unsafe in sunlight where the dim orange light could not be seen,
- 2/ If dropped the neon was often broken & you could not easily tell.
- 3/ The current needed for the neon (100uA) flowed through you.
- 4/ Voltage > 80V was needed to strike the neon so not so good for 110V.

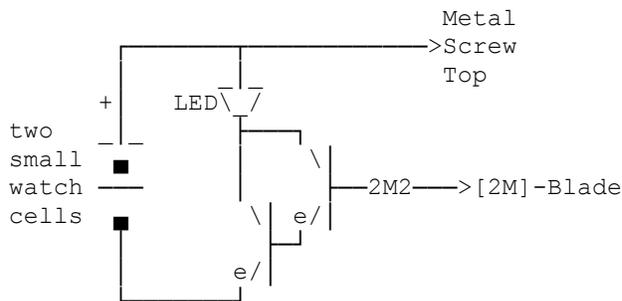
But they were much liked in TV trade as a instant guide to Line O/P stage working with the high AC field near the LOPT.

LED TYPE

The new LED versions sometimes called "Voltstick" at first sight the layout looks identical to the neon type. But they have an internal battery & are very sensitive to electric AC fields e.g. around live cables (see my "Christmas Mains Light Chains" bul, & it can do touch continuity testing as well, so an instant battery test is possible each time the tester is used.



But in the battery & LED capsule is this circuit..



It works by operating a high gain darlington with current fed through the external high voltage safety R through its own 2M2. It only needs 1 volt positive (compared to -ve) to turn on the darlington.

The test circuit load is next to nothing & it can easily see the spiral voltage field on the outside of double insulated internally twisted mains flex.

Problems with it are:-

- 1/ There is no limit on the LED current so it easily flattens the battery if operated too long.
- 2/ It can't detect negative voltage, so can be dangerous on -ve DC circuits!

Why don't U send an interesting bul?

73 de John G8MNY @ GB7CIP