

Foreword

On the MGA (and other English cars of this era), a LUCAS 31250 TPS-1 direction selector switch or a latching rotary switch is installed in the dashboard. The toggle actuator is used to operate the left or right indicators.



The TPS1 is reset by a pneumatic mechanism inside the switch. When the switch is

actuated, a piston is pushed backwards. The amount of air flowing into the housing can be adjusted via a metering screw on the rear, which returns the piston to its original position. A spiral spring provides the return force. A time of approx. 20 s is set as standard and as delivered.



On the MGA 1500 MkII and MGA 1600, the switch directly energises the indicator lamps (3-4A), causing the contacts to burn out. Instructions on how to clean them can be found in abundance on the Internet, although it should be noted that the use of emery cloth is strongly discouraged, as this will damage the precious metal coating of the contacts! You can find detailed instructions in English on YouTube entitled 'MGA Turn Signal Indicator Fix', which also shows the function.

A revision of this switch requires several hours of work and sometimes ingenuity when replacing parts and cleaning and disassembling or assembling. There are plenty of instructions for repairing the TPS-1 on the Internet. The multi-page instructions from the MGA guru are particularly worth reading:

<http://www.mgaguru.com/mgtech/electric/ts101.htm>

Replacements are still available, but these are priced at \$120 - \$380!

Both switches can be replaced by a horizontally installed spring-loaded toggle switch. Installation in the existing hole in the dashboard is possible with suitable washers (see separate document).



New solution

Only suitable for MGA 1500 MkII and MGA1600, positive or negative ground.

The new solution TSC (TurnSignalController) works with non-functioning delayed reset, in fact it requires it. Switches that still function half-way are made to do so by removing the adjusting screw on the rear. Alternatively, a spring-loaded 3-position toggle switch (installed horizontally) can also be used.

The TSC can do much more because

- the flashing time is selectable (DIP switch)
- it replaces the flasher relay
- can also be used with LED lamps
- has a built-in piezo buzzer
- a hazard warning function is built in, more on this later
- puts very little strain on the direction selector switch (no burn-out)
- the flashing lights are switched via relays

The new solution is based on microprocessor electronics in a plastic flange housing (115x90x35mm) and is connected exclusively with 6.3mm flat terminals (no flying leads). It is designed for negative ground as well as positive ground. Installation is extremely simple and can be reversed at any time.



Flashing function

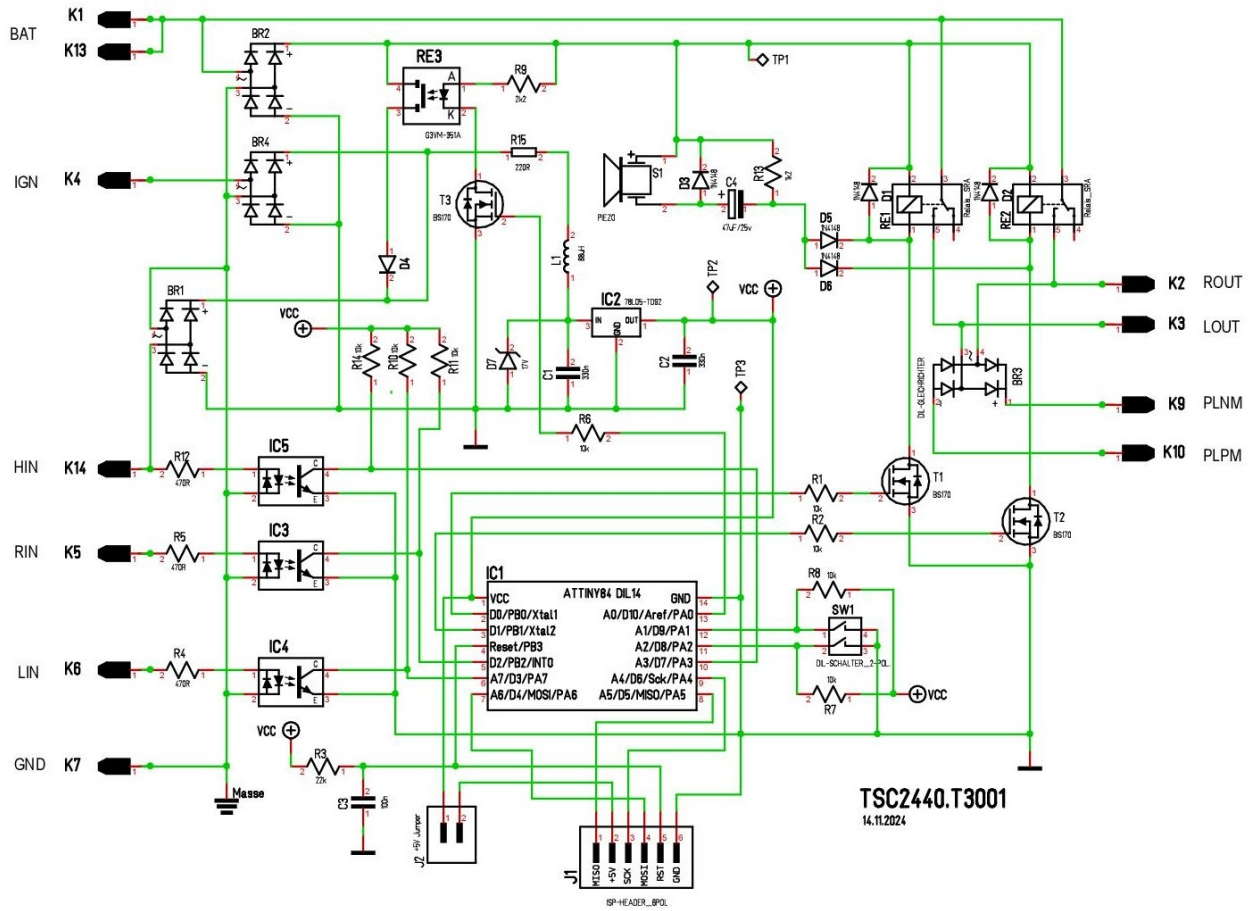
The function is simple and quickly explained: A brief tap on the direction selector switch (now a direction selector push button) starts the corresponding flashing function and the preset flashing time runs down. If you want to interrupt this, tap the direction selector switch again and the flashing function is interrupted immediately.

Hazard warning light function

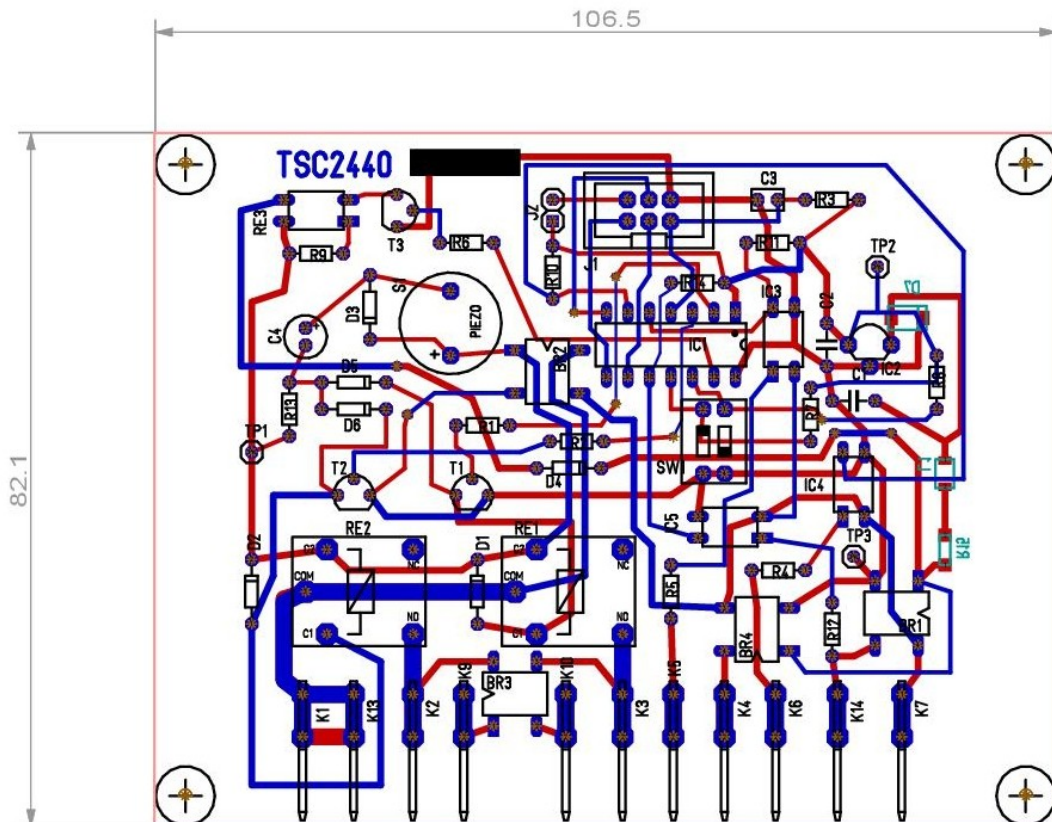
The hazard warning function is also possible without any additional switch. It is triggered by pressing the direction selector switch (right or left) for longer than 4 seconds. The ignition can then be switched off, as the module continues to be supplied by an internal electronic bridge.

In an installation with an additional Hazard-Switch, the ignition does not have to be switched on.

Schematic



PCB



Installation

The MGA has only 2 fuses. One only protects the horns and is connected directly to the battery. The other is switched via the ignition switch and supplies all consumers, including the indicator circuit. A hazard warning flasher system should actually also work when the ignition is switched off. To do this, the continuous signal from the 'horn fuse' would have to be used. Connect this to BAT.

- The flasher relay (flasher unit) is bridged by connecting the stranded wire G to the same connection as GN. It may be disregarded.
- The LG connection on the flasher relay is disconnected. The LG wire (the indicator warning light in the dashboard) is connected to PLPM if ground is positive, otherwise to PLNM.
- Connection F (GN) is powered by Ignition ON. No change.
- The IGN connection on the TSC is connected to Ignition ON signal.
- The GR connection (indicator left) is moved from the TPS-1 to the LOUT connection.
- The GW connection (indicator right) is moved from the TPS-1 to the ROUT connection.
- The now free connection on TPS-1 for indicator left (formerly GR) is wired to the LIN connection on the TSC.
- The now free connection on TPS-1 for indicator right (formerly GW) is wired to the RIN connection on the TSC.
- The GND connection is connected to earth.

Adapter cables (cable colour according to application)

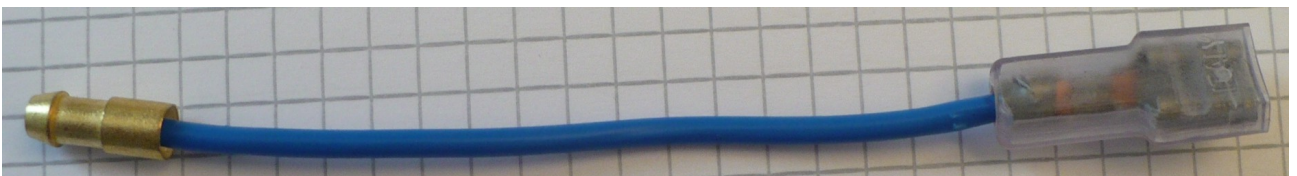
with lustre terminal



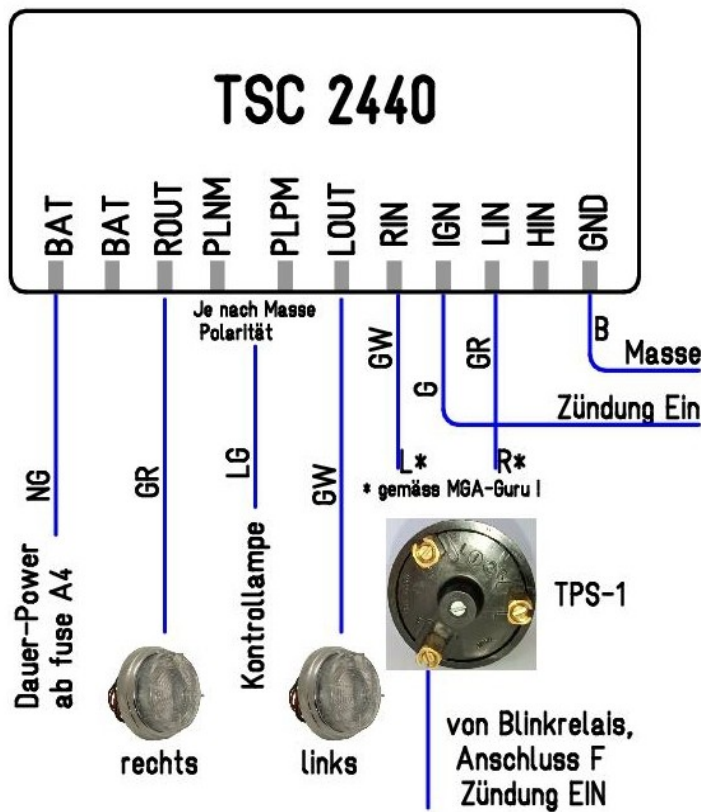
Free strand end



with Bullet



Installation without additional hazard switch



Installation with hazard switch (hazard flasher ON) is similar:

A 'hazard flasher' switch is connected between BAT and HIN

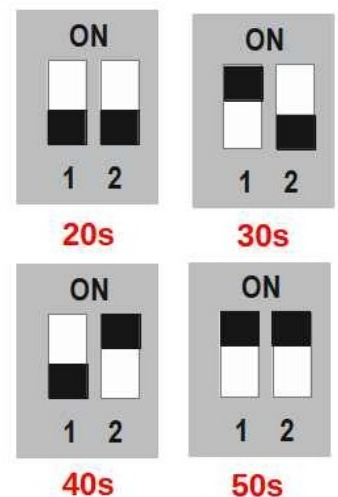
Strand colours according to original LUCAS

Connecting the indicator lamp (dashboard)

Depending on where the TSC is installed, the indicator lamp (in the dashboard) is connected with a luster terminal from the flasher or with a so-called 'current thief' (scotch lock) on the LG wire.

Setting the flashing time

The flashing time, i.e. the time until the flashing stops automatically, can be set on the circuit board with a so-called DIP switch from 20 - 50 seconds. This flashing time can be interrupted at any time by pressing the directional lever (TPS-1) again.



Alternative to the TSC

If the latching rotary switch is to be retained, a similar function can be achieved with the TSR24xx (TurnSignalReminder). This unit has the same advantages as the TSC and is housed in the same casing. The flashing lights are also switched off after a selectable time and this status is signalled by means of a greatly increased frequency of the buzzer and the indicator lamp in the dashboard.

The TSC may be used with latching turn-switch by setting the direction for less than 4 seconds and immediately switch back to neutral position.

These documents (german and english) can be downloaded as PDF files.

<http://www.swiss-mgb.com/Projekte>