

Overdrive Controller ODC1724

Introduction

It may be at my age, but now and then I forget to turn off the Overdrive when I go back to second gear. When you switch back to the third gear, the Overdrive switches back on automatically, which is usually undesirable. In order to prevent this, I have built a small electronic box, which is extremely easy to install without changing the existing cabling. Therefore, the original condition can be restored within seconds.

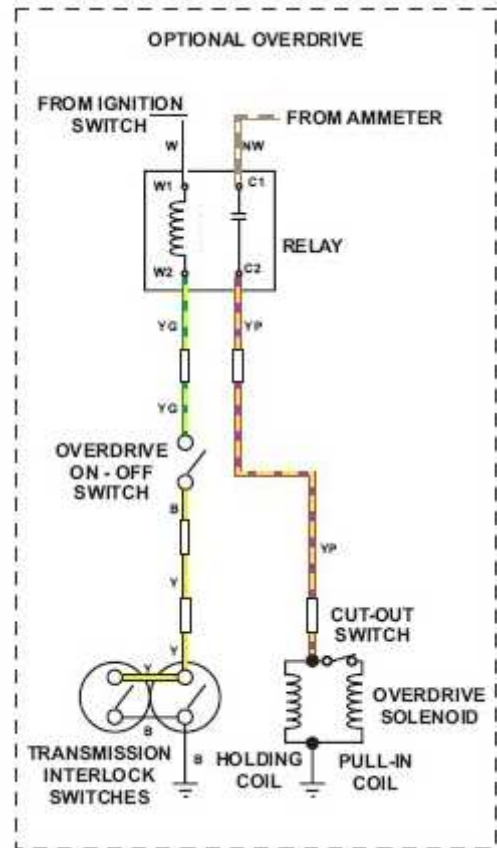
Function

Wiring around the Overdrive is shown in the picture on the right.

An overdrive relay (RELAY) switches the overdrive depending on the position of the "OVERDRIVE ON-OFF SWITCH" ON or OFF.

The Overdrive can be engaged only in 3rd and 4th gear, to prevent destruction due to excessive torque in the 1st and 2nd gear. This is achieved by a switch (TRANSMISSION INTERLOCK SWITCHES) attached to the gearbox, which is actuated only in 3th and 4th gear. This is electrically connected in series with the coil (W1, W2) of the overdrive relay.

The overdrive controller described here can be understood as an additional series-connected switch, which closes when the overdrive is switched on and opens when the gearbox switch opens. As long as the overdrive switch (on the dashboard, steering column, or shift knob) remains turned on, the controller remains in the off-state, even if you change to the 3rd or 4th gear again, the overdrive remains off. Only switching off of the overdrive switch resets the controller to the original state.



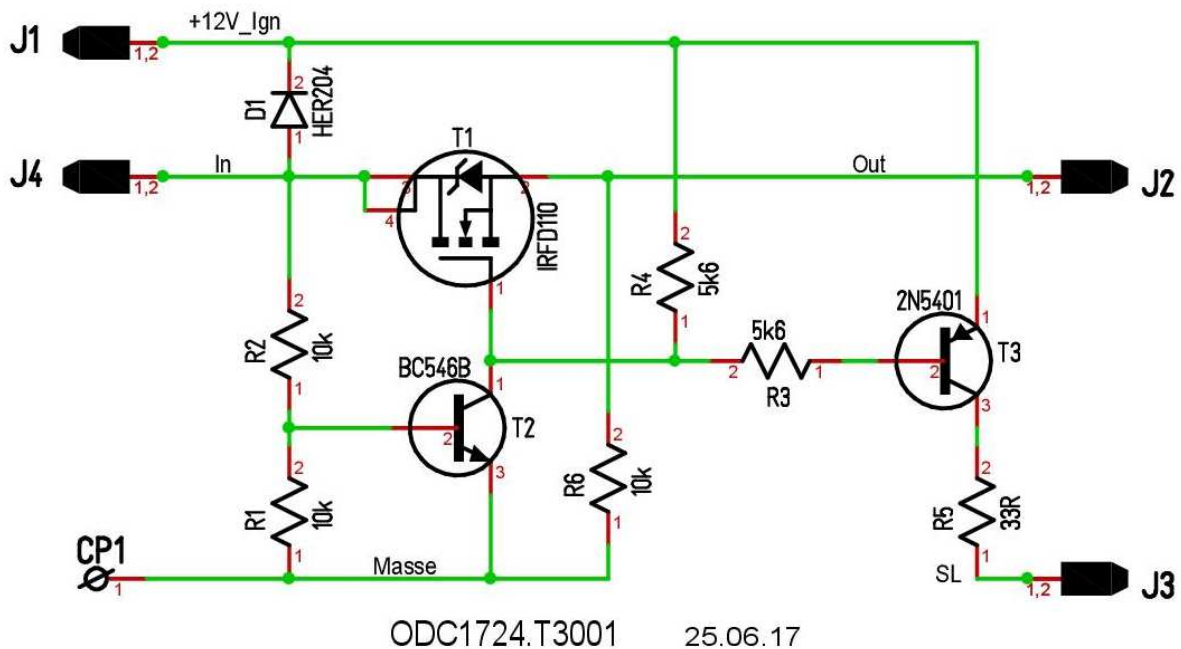
The picture on the right shows the Overdrive relay in the TR6 (upper relay), but may be similar for different Triumph models.



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The controller ODC1724 described in detail below has 5 connections. J1 is to be connected to the so-called Ignition Plus (FROM IGNITION SWITCH - which carries voltage as soon as the ignition key is in the "Driving" position). CP1 is a black lead, which is to be connected to ground (Chassis Ground), the mounting hole of the case is the most obvious point. Disconnect (plugs) B - Y in the figure above, and connect the connector J4 to B (from the overdrive switch) and the connector J2 to Y (to the gear switch). J3 is intended for a lamp "Overdrive forgotten". A flashing LED signal lamp (12V) has proved to be the best solution, since it arouses the driver's attention and can be placed discreetly in the driver's field of vision. Depending on the design, it can be almost invisible in the inactive state. Instead of a control lamp, an (intermittent) piezoelectric buzzer (12V) can also be used.

The Circuit Diagram



A MOSFET transistor (T1) is used as switch. If the overdrive switch is opened, T1 is activated via R4, J4 and J2 are connected. If you switch to the 3th/4th gear, the gearbox switch is closed and J2 is connected to ground. If the Overdrive switch is closed, the overdrive relay is activated and the overdrive is actuated. If you now switch to neutral, 1st or 2nd gear, the gearbox switch opens and J4 now carries +12V via the relay coil. This turns on transistor T2, and also transistor T3. A control lamp connected to J3 signals "Overdrive forgotten". T2 turns off the MOSFET transistor T1, e.g. the connection J4 to J2 is interrupted. If you switch back to the 3rd / 4th, the transmission switch is closed, but the overdrive relay does not switch on because of the interruption J4-J2. Only when the Overdrive switch is opened (Overdrive OFF), T1 becomes conductive again. By closing the overdrive switch the overdrive is switched on again.

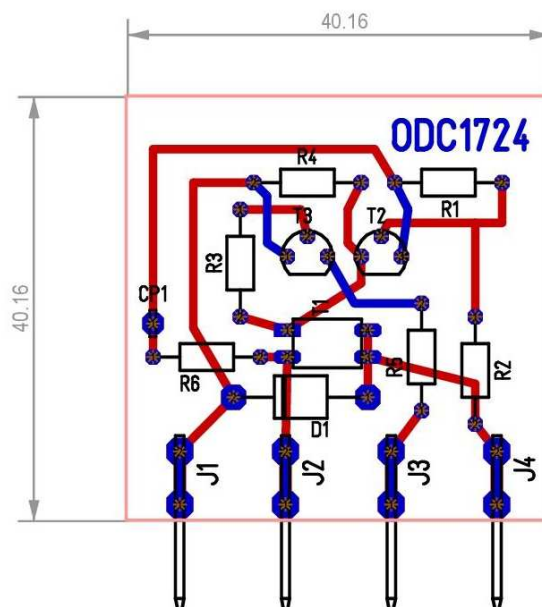
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Circuit board (PCB)

For the circuit, a printed circuit board was developed, which fits into a commercial available case with the dimensions 48x48x18 mm. Only so-called THT components are used, in order to enable any trained craftsman to build it up.

Installation

The installation is easy. The controller has a tab for mounting, a ground wire with a Ring Terminal and 4 Faston connections 6.3 mm. Only suitable connecting leads to the existing connection points have to be made.



Finished Controller



Connect the free wire (black) to the ground (chassis ground).

Dimensions: 48x48x18mm

Notes

The circuit is free for a reproduction for non-commercial use. A list with suppliers and prices (material price approx. USD 10.00), unpopulated PCB, kit or finished product and CAD documents can be obtained from the author.

This description can be downloaded as a PDF from the homepage:

<https://www.swiss-mgb.com/downloads>

The circuit is suitable for all Type A overdrives, as used in the Triumphs.

For the MGB a different Overdrive Controller (ODC1448) has been developed. This Type has wire leads that connect directly to existing bullet connectors in the engine compartment. The description can be downloaded as PDF from the homepage:

<https://www.swiss-mgb.com/downloads>