

up to and including Land Rover Defender Td5



Dismantling the old controller:

Remove the instrument panel fastened to the dashboard with 4 screws. After removal, the tap changer mounted on the side wall of the dashboard installation frame will be visible. The tap changer can be removed by loosening the two screws and removing the Bowden cable. This Bowden cable is no

longer required as the flap is then always open and has therefore become superfluous. The upper screw is located directly behind a part of the dashboard, which must either be partially dismantled for good accessibility, or you can leave this screw in the hole after unscrewing it and secure it with a nut.

Remove the wiring harness (green cable) up to the black three-pin connector.



Installation of the new control unit and wiring:

In the engine compartment, free one of the spare grommets in the bulkhead (top right) and guide the end of the wiring harness, which is fitted with heat-shrink tubing, with the crimped connector ends (it is best to tie a cable tie around one of the 3 flat connectors and bend the other two backwards) first from the passenger compartment into the engine

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potentiometer. Please only tighten the screw hand-tight, this is sufficient. Then place the new regulator in the recess in the dashboard (with the red and white cable pointing upwards). Reattach the entire unit to the dashboard. Only now tighten the two countersunk screws (M3) and check whether the slider can be moved easily.



compartment. Apply a little washing-up liquid to the beginning of the wiring harness so that it can slide easily through the rubber. Grasp the cable tie on the engine compartment side and carefully pull the wiring harness through until it is long enough to connect it to the control unit.

Connect the plug of the wiring harness to the slide control. Remove the handle from the old controller and place it on the

Mounting the motor controller:

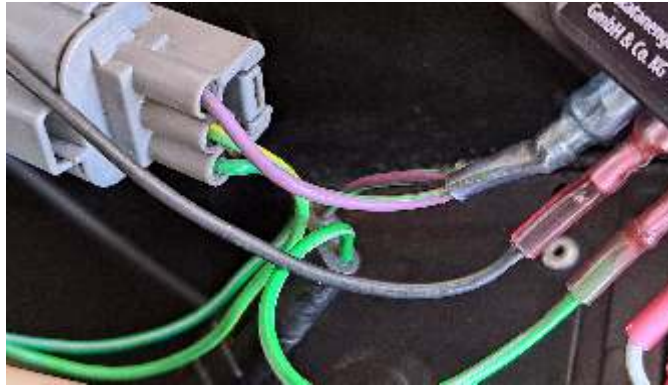
Mark the position of the mounting holes on the side wall or the sloping front of the heater housing. This position is favourable for mounting the engine control unit, as the electronics in the engine control unit must be cooled and the air always flows past the marked position when the fan is running and ensures the necessary heat

dissipation. Mounting elsewhere will damage the electronics as the heat cannot be dissipated. Also take into account the curvature of the bonnet and ensure that the motor controller is not mounted too high. After marking, the holes can be drilled with a 2.5 mm drill and then tapped with an M3 thread. Apply the heat-conducting paste to the back of the control unit and screw it in place using the M3 screws supplied.

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Connecting the motor control unit:

Cut the purple-green cable in the centre and strip the insulation from both ends. Attach the blue flat connector to these ends. Cut the green-grey cable leading from the Bullit plug to the resistors and connect the red flat plug.



Then slide the blue blade terminal to position 1 of the motor control unit and the red blade terminal to position 3.

Connect the black earthing cable to item 2. Attach the ring cable lug to the earth point behind the coolant tank on the bulkhead. (M6 bolt, often covered with a hexagonal plastic cap)

To connect the wiring harness to the last three positions, follow the colour coding on the control unit.

The device is now ready for use.

ATTENTION!

Always check that the fan motor runs smoothly and check the old plug connections for corrosion. If the plugs are corroded or the motor is stiff, the contact resistance will increase, leading to overheating and destruction of the control unit!



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Note: Before the module or device is put into operation or installed for the first time, the proper functioning of the module or device must be checked by the person installing or commissioning the part.

Important! The aluminium base plate must not be exposed to mechanical stresses (do not drill holes, do not screw onto uneven cooling surfaces, etc.). Sensitive electronic components are mounted directly on the inside of the aluminium base plate, which can become defective if moved mechanically and the module will then no longer work!

Intended use: The module is designed for the power regulation of DC loads such as motors and lamps and is controlled by a control voltage. During installation, please note that the module generates heat depending on the load and must therefore be installed in a dry, well-ventilated location. Additional cooling is required for loads above 5 A (up to a maximum of 10 A). For this purpose, the module should be mounted flat on a heat sink or a larger piece of metal to ensure that the temperature of the metal base plate does not exceed 70°C even at maximum load.

The operating voltage of the module must be in the range of 9 to 28 V and correspond to the voltage of the connected load. For example, the operation of a 12V motor requires a corresponding operating voltage of 12V. The supplied potentiometer is connected to the module via plug contacts in accordance with these instructions. It is important to connect the cables correctly and keep them as short as possible. Cables with a cross-section of 1.5 to 2.5 mm² are recommended in order to avoid power losses and prevent overheating due to high currents. It is also necessary to connect a 10 A fuse upstream in accordance with the connection diagram.

Important! The module can be loaded up to a maximum of 10 A. It is crucial that the connected loads do not exceed this limit, as some motors can briefly draw significantly higher currents during start-up or when blocked, which would destroy the controller. After switching on the operating voltage, the power can be adjusted using the potentiometer.

Important! Never use larger screws than specified and do not drill out the holes on the module! The screw heads must rest on the sheet metal of the module and not on the plastic edge of the module! The module must not warp during installation (if the surface is not flat)!

Technische Daten

Operating voltage	9 - 28 V/DC
Max. current carrying capacity	5 A
Control range	ca. < 5% bis > 95%
Control type	PWM Pulse width control with a frequency between 10 kHz - 20 kHz
Potentiometer	4,7 k lin
Permissible loads	DC motors, light bulbs, heaters, LEDs with series resistors. Up to max. 10 A current consumption (peak) in each case.
Dimensions	ca. 87 x 60 x 33 mm (with mounting base)

Important notes on disposal

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This electrical appliance should not be disposed of with household waste! For proper disposal, please contact the public collection centres in your town or municipality. The locations of the collection points in your neighbourhood and any applicable quantity restrictions per day/month/year can be found on the information pages of your city.