

Manual for Mapping Accessory



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DMMAP Mapping Accessory



DMMAP: A parallel resistor to the throttle potentiometer can be used to reduce the torque and thus the throttle sensitivity.

Principle: smaller resistor value → smaller torque or stronger reduction
larger resistor value → larger torque

With the picoamps mapping accessory such a resistor can be switched on and off on demand. This function doubles the number of possible settings for the DMMAP and enlarges the range of settings.

A continuous mapping range gives you an infinite number of settings to find the optimum for your individual needs.

Mapping Switch

Throttle connector



DMMAP

DMMAP
input connector

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Mapping Values for DMMAP



The standard mapping switch for a **potentiometer type throttle** is equipped with a 10 kOhm resistor. We can supply other resistor values on demand.

Mapping Switch for DMMAP	Torque / Sensitivity
Aus	100%
56 kOhm	92%
33 kOhm	87%
22 kOhm	82%
15 kOhm	75%
10 kOhm	67%
6,8 kOhm	58%

The top speed will not be reduced by all resistor values.

Safety warnings regarding resistor value

Do only use resistors with **tolerance of 1%**.

Without module or when using **DMMA0001 to DMMA0026** the resistor value **must not be smaller than 10 kOhm**.

When using modules **DMMAP** the resistor value **must not be smaller than 6.8 kOhm**.

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DMMAH Mapping Accessory



DMMAH: A series resistor to the throttle hall sensor can be used to reduce the torque. By a mapping switch such a resistor can be activated on demand.

Principle: Larger resistor value → smaller torque or stronger reduction
Smaller resistor value → larger torque

With the picoamps mapping accessory such a resistor can be switched on and off on demand. This function doubles the number of possible settings for the DMMAH and enlarges the range of settings.

A continuous mapping range gives you an infinite number of settings to find the optimum for your individual needs.

Mapping Switch



Hall-Sensor
Throttle connector

DMMAH

DMMAH
Input connector

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Mapping Values for DMMAH



The Mapping Switch for a **Hall Sensor Throttle** can be ordered with different resistor values depending on your individual demand. With large resistor values the top speed will be reduced.

Mapping Switch for DMMAH	Torque / Sensitivity	Top Speed
Aus	100 %	100 %
560 Ohm	92 %	100 %
1,0 kOhm	87 %	100 %
1,5 kOhm	81 %	100 %
2,2 kOhm	73 %	100 %
3,3 kOhm	63 %	100 %
4,7 kOhm	58 %	81%
6,8 kOhm	40 %	62 %

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Simulator for DMMA and Mapping

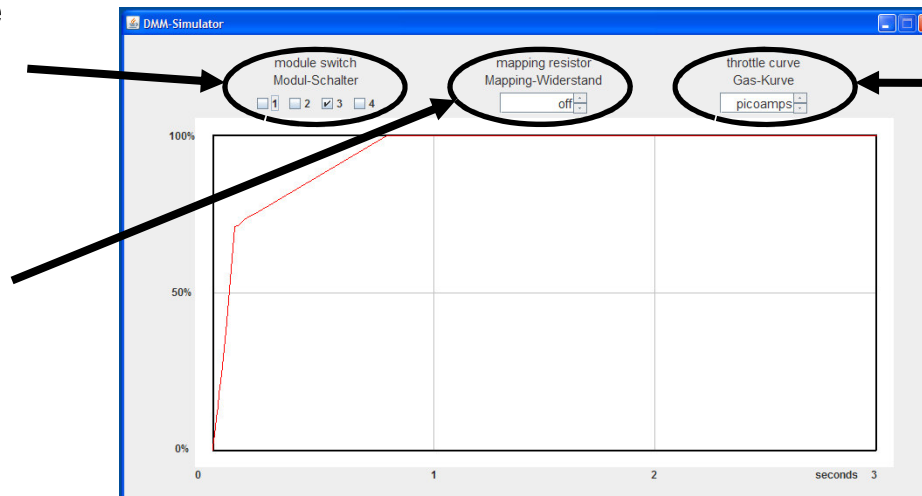


Our simulator calculates the equivalent output voltage of the controller that is applied to the motor. The settings of the torque control module, the mapping resistor value of the mapping accessory and the throttle curve loaded to the ALLTRAX controller can be selected independently and the effect of the settings on the output voltage can be directly seen. The simulator can be used in combination with real driving experience to find the optimum settings for your individual driving style.

The simulator calculates the response to an instant full throttle input (100%) at time 0. The diagram shows the response of the equivalent output voltage from 0 to 3 seconds. If the vehicle is stopped at time 0 the output signal also corresponds to the torque (or the motor current) relative to the maximum current setting in the controller.

Different time constants of the DMMA have impact on the slope of the output signal and thus the slope of the torque.

Different mapping values of the mapping accessory have impact on the initial torque at time 0 and the throttle sensitivity as well as the slope of the output signal.



Impact of different throttle curves in the ALLTRAX controller

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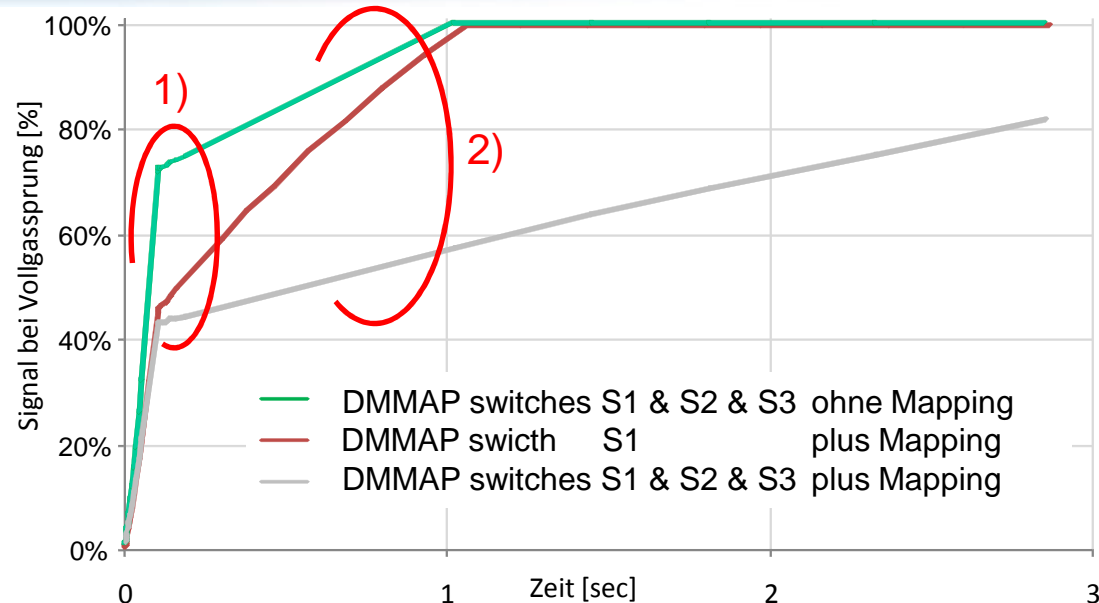


Example for various settings



This example shows a comparison of different module settings combined with a 10 kOhm mapping accessory.

- 1) The throttle sensitivity and initial torque are reduced from 100% to ca. 67% by usage of mapping-
- 2) Different slope of torque over time



Without changing the module time constants the activated mapping will result in a substantially lower initial torque and slower increase of torque over time (grey curve) compared to the green curve without mapping. Mapping combined with large time constants is therefore a good setting for beginners.

If mapping is activated and the time constant is reduced (switching off S2 & S3) the brown curve will result. The initial torque is reduced corresponding to the mapping but the torque will increase much faster and reaches maximum at the same time as with tht setting for the green curve.

This setting will totally change the characteristics of the motorbike and can as an example well be used for technical sektionen.

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Safety instructions



- The **vehicle must be completely switched off** while changing the settings of Mapping Accessory or Torque Control Module.
- Do only use resistors with **tolerance of 1%**.
- Without module or when using **DMMA0001 to DMMA0026** the resistor value **must not be smaller than 10 kOhm**.
- When using modules **DMMAP** the resistor value **must not be smaller than 6.8 kOhm**.
- If you release the throttle completely while driving, the motor current will follow the subsequent upturn of the throttle with a small time delay, which might lead you to turn up the throttle farther than appropriate, which then results in an abrupt strong increase of torque. Therefore we advise you to not always completely release the throttle during driving.
This time delay will be noticed particularly when using large time constants and strong mapping (e.g. 6.8kOhm and all DMMA switches on)
- The above mentioned delay effect can be minimized by using our particularly tailored throttle curve in your ALLTRAX® AXE controller which can be downloaded from our homepage http://www.automotive.picoamps.de/doc/throttlecurve_module.hex

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