

# Manual for Torque Module DMMOH for OSET<sup>®</sup> Motrobikes



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# Torque Module DMMOH



By the use of the extension module, the throttle characteristic of OSET motorbikes can be changed. The original RPM control characteristic will be changed into a torque control characteristic which results in much smoother control similar to that of gas motorbikes. Different torque characteristics can be selected in 8 steps by switches.

Easy to install:

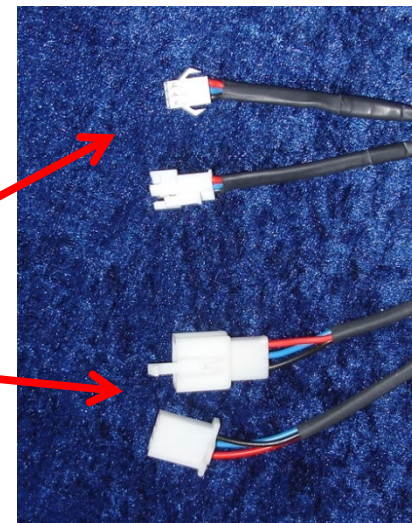
Connect the module interfaces in between the throttle sensor and the motor controller and fix the module on the bike, ready!

Module variants:

DMMOH with small connectors for older OSET

DMMOH with large connectors for older OSET

**Please specify connector type with your order**



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# Driving with the Torque Module



With your DMMOH torque control module the throttle response of your OSET electrical motorcycle will be similar to that of a traditional gas bike.

The electronics of the module will smoothen the unwanted abrupt spikes of high torque that appear at low and medium RPM values. Thus it will be easier to find the throttle position where the vehicle will take up speed.

If you release the throttle completely, the motor current will immediately be stopped. This is important e.g. for emergency break situations.

However, if you release the throttle completely while driving, the motor current will follow the subsequent upturn of the throttle with a small delay, which might lead you to turn up the throttle farther than appropriate. Therefore we advise you to not always completely release the throttle during driving.

The above mentioned delay effect is more perceptible in the case of a strong throttling by the potentiometer.

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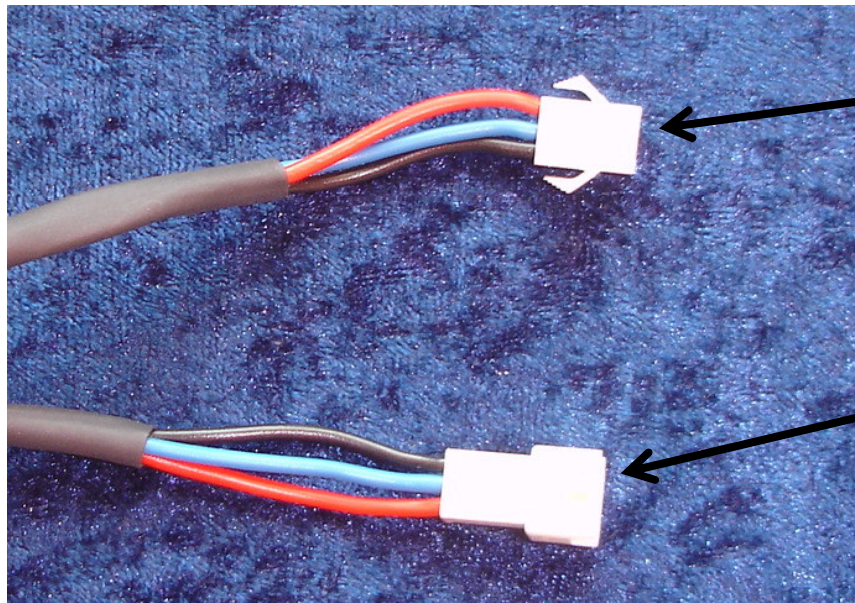
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# DMMOH Connections



The torque module for OSET controllers and Hall throttle sensor, labeled as DMMOH has the following interfaces :  
(Variant with small connectors is shown, large connectors respectively)



Module outputs (triple jack)

- Black cable (ground)
- Blue cable (signal)
- Red cable (DMMOH supply)

Module inputs (triple plug)

- Black cable (ground)
- Blue cable (signal)
- Red cable (Hall sensor supply)

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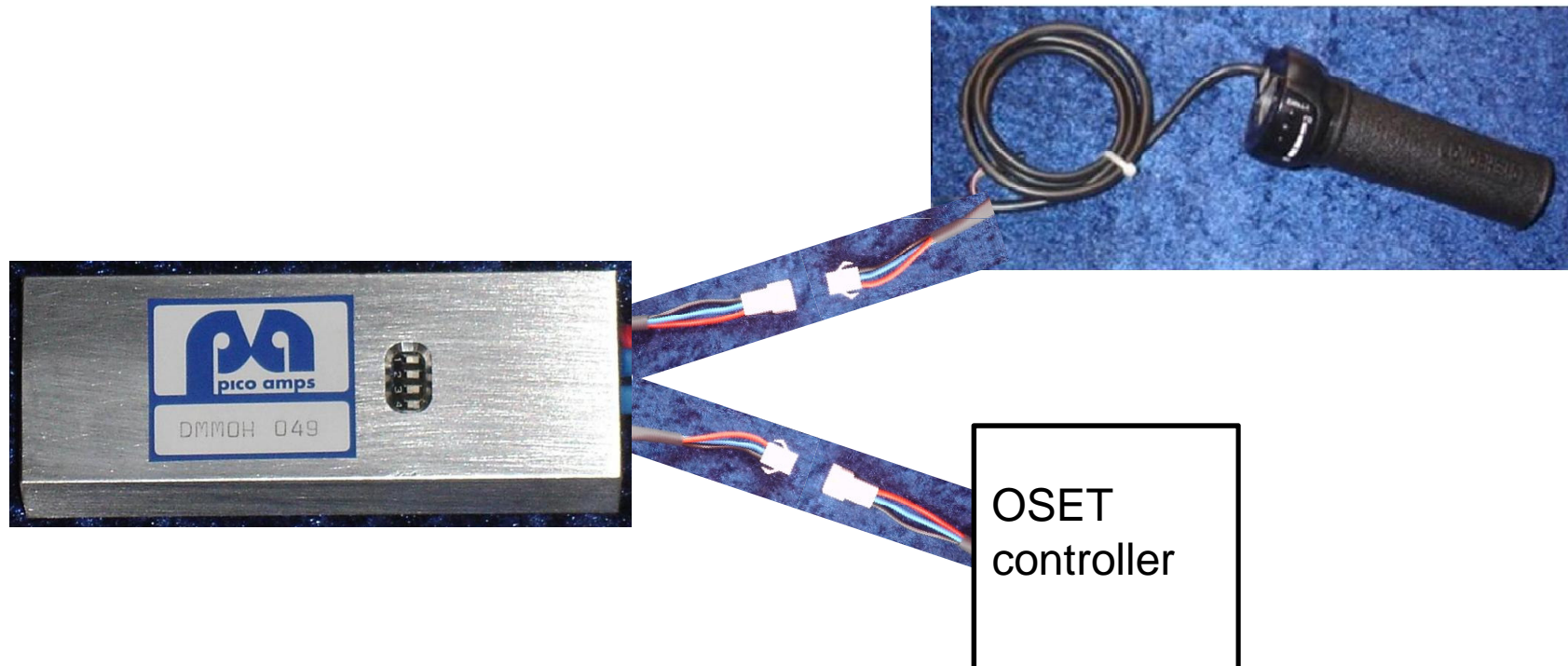
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# Connecting DMMOH



First disconnect triple patch cable between throttle and controller. Then connect triple jack of throttle with triple plug of the module. Next connect triple jack of the module with the triple plug of the controller. Finally mount and fix the module on a suitable place.



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# Torque Module Switches



Switches

- 1
- 2
- 3
- 4

off ← → on

switch setting

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# Combination of Switches



All switches can be combined without restrictions

Setting	Switch combination			Time constant
	1	2	3	
				[s]
0	off	off	off	0,2
1	on	off	off	0,7
2	off	on	off	1,2
3	on	on	off	1,7
4	off	off	on	2,3
5	on	off	on	2,8
6	off	on	on	3,3
7	on	on	on	3,8

## Safety Instructions:

Switch settings must be changed in power down mode only.

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# Recommendation to switches



Setting	Description and Application
0	Very fast to medium torque ramp
1	<b>Suitable for short transmission factors and/or high grip levels</b>
2	
3	
4	Medium to slow torque ramp
5	<b>Suitable for long transmission factors and/or low grip levels</b>
6	
7	

It is up to the driver to find the suitable settings according to their own needs.

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# Torque Module Filter



Filter for damping of throttle response and distortions by matured throttles (spikes)



←  
Off state for switch 4  
Very weak damping  
Time constante 1 msec  
Very fast throttle response

→  
On state for switch 4  
Medium damping  
Time constante 100 msec  
Moderate throttle response

Switch 4 can be combined with all other switches 1 to 3.

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# Solving problems of DMMAH



Problem or failure	Solution
Immediately after power on the motor starts turning although the throttle is zero or closed.	Throttling potentiometer disconnected or damaged. Maximum resistor value is 100 kOhms.  Hall sensor damaged or housing broken, renew hall throttle.
Full throttle not possible	Hall sensor damaged or housing broken  Wrong Hall sensor type

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# Safety Instructions for DMMO



**The DMMO-Module must not be used without the following additional safety measures:**

- Install an wrist coupled emergency plug or switch in series to the ignition key

Defects in electronic devices cannot be completely avoided. Under certain conditions such a defect may cause an output signal of the DMMO-module which is equivalent to “throttle active” signals.

This may lead to unwanted acceleration of the vehicle and in worst case to accidents.

## **Safety Instructions for Mounting the DMMO**

- All contacts to other surfaces carrying electrical signals, especially to the high current pins of the controller must be avoided under all conditions.
- If covers are mounted take care that no mechanical stress is applied to the module or the connected cables. Bending of the module might mechanically damage the module and causes risk of making contact to the high current pins.
- Take care of sufficient isolations on cables and connectors.
- Take care of good electrical contacts of all connectors. Loose or corrosive connectors must be exchanged immediately.

**For additional safety instructions please refer to:**

[http://www.automotive.picoamps.de/doc/safety\\_instructions\\_electrical\\_vehicles.pdf](http://www.automotive.picoamps.de/doc/safety_instructions_electrical_vehicles.pdf)

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