



instruction manual
mo.lock NFC

V1.3

CAUTION!

THIS PRODUCT OPERATES ON STRONG CURRENTS. CONNECTION FAILURE MAY LEAD TO CABLE FIRE OR EXPLOSION OF THE VEHICLE'S BATTERY. THERE IS A RISK OF SEVERE OR LETHAL INJURIES.

IF YOU ARE NOT A CERTIFIED MOTORCYCLE TECHNICIAN, PLEASE STOP HERE AND ASK YOUR LOCAL MOTORCYCLE SHOP FOR PROFESSIONAL INSTALLATION.

SEMICONDUCTOR SWITCHES IN USE! MEASURED VOLTAGES AT TERMINALS ARE NOT SUITABLE TO DIAGNOSE A FAILURE OR DEFECT.

MOUNTING ON UNEVEN FACES WILL CRACK THE HOUSING AND CAUSE A FAILURE.

Thank you very much for purchasing a high quality *motogadget* product - Made in Germany.

Please read the following information and recommendations **thoroughly** and follow these instructions during installation and use. No liability shall be assumed by motogadget for damage or defects resulting from negligence or failure to follow the operating and installation guide.

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1 Review of Delivery

All products from *motogadget* are thoroughly checked to ensure they are completely fault-free when dispatched. Please check the received goods immediately for possible transport damage. If you find any damage or other deficiencies, please contact us immediately.

In this regard, we refer to our General Terms of Business and Delivery, which are published at www.motogadget.com. Should a return of the received delivery be agreed, please note that we only take back goods in their original packaging. The *mo.lock* and its accessories must be returned within the legal period of time and without any traces of use. We shall not assume any liability for returns which are insufficiently insured or packed.

2 Exclusion of Liability

THE *MO.LOCK* OPERATES STRONG CURRENTS. FAULTY CONNECTION MAY LEAD TO CABLE FIRE OR EXPLOSION OF THE VEHICLE'S BATTERY. THERE IS A RISK OF SERIOUS OR LETHAL INJURIES. A MAIN VEHICLE FUSE (MAXIMUM 40A) MUST BE USED. THE DEVICE AND ITS ACCESSORIES MUST BE INSTALLED BY A CERTIFIED MOTOR-CYCLE TECHNICAN AND IN AN AUTHORIZED SERVICE CENTER. REVERSE POLARITY OR VOLTAGE ABOVE 25V MAY RESULT IN DAMAGE TO THE *MO.LOCK*. THE DEVICE THEN HAS TO BE REPLACED AND ALL CLAIMS OF WARRANTY ARE DELETED.

***MOTOGADGET* ACCEPTS NO LIABILITY FOR DIRECT OR INDIRECT DAMAGE OR SUBSEQUENT DAMAGE OF ANY KIND RESULTING FROM THE USE, INSTALLATION OR CONNECTION OF THE DEVICE OR OTHER DELIVERED EQUIPMENT. THIS EXCLUSION OF LIABILITY PARTICULARLY INCLUDES DAMAGE TO PERSONS, MATERIAL LOSSES AND FINANCIAL DAMAGES.**

DEVICE HOUSINGS AND ALL OTHER DELIVERED PARTS MUST NOT BE OPENED OR DISMANTLED. IN CASE OF NON-COMPLIANCE, ALL WARRANTY CLAIMS BECOMES INVALID. THE USE OF THE DELIVERED DEVICE AND ITS ACCESSORIES FOR RACING OR OTHER COMPETITIONS AS WELL AS FOR ANY USE NOT CORRESPONDING TO THE RECOMMENDED APPLICATION ALL WARRANTY CLAIMS SHALL BE INVALID.

3 Safety Instructions

- **THE VEHICLE BATTERY MUST BE COMPLETELY DISCONNECTED PRIOR TO ANY WORK ON THE VEHICLE'S ELECTRICAL SYSTEM. FIRST, DISCONNECT THE NEGATIVE TERMINAL AND THEN THE POSITIVE TERMINAL. FOR RECONNECTION PROCEED IN THE REVERSE ORDER.**
- **USING THE *MO.LOCK* WITH PLUS POLE CONNECTED TO VEHICLE FRAME (OLDER ENGLISH MOTORCYCLES) IS NOT POSSIBLE.**
- **INSTALLATION AND ELECTRICAL CONNECTION OF THE *MO.LOCK* MAY ONLY BE CARRIED OUT BY A CERTIFIED MOTORCYCLE TECHNICIAN.**
- **ALL CABLE DIAMETERS MUST BE DIMENSIONED ACCORDING TO THE CURRENT FLOW.**
- **ALL ELECTRICAL CONNECTIONS IN THE WIRING LOOM AND AT THE CONNECTION TERMINALS HAVE TO BE CARRIED OUT PROFESSIONALLY. FAILURES AT CONNECTING JOINTS MAY CAUSE A CONTACT RESISTANCE AND LEAD TO HEAT GENERATION DURING HIGH CURRENT FLOW. THERE IS A RISK OF SERIOUS OR LETHAL INJURIES.**

- **THE DEVICE WILL BECOME DAMAGED BEYOND REPAIR IF A BATTERY CABLE IS DISCONNECTED (DUE TO LOOSE OR WORN CONTACT ETC.) WHILE THE ENGINE IS RUNNING. PLEASE MAKE SURE THAT THE VEHICLE'S BATTERY IS CONNECTED CORRECTLY AND THAT THE CONNECTOR CABLES ARE FIXED TIGHTLY.**

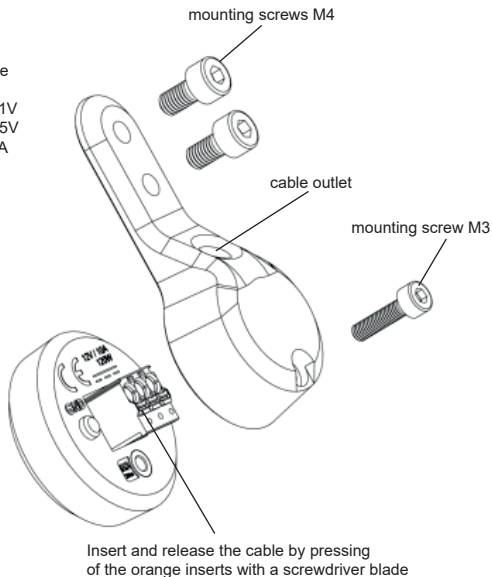
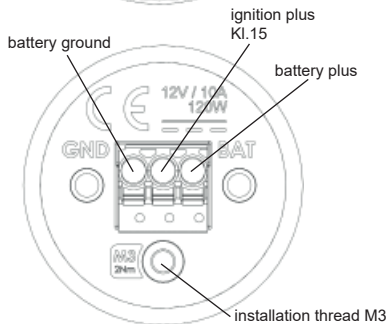
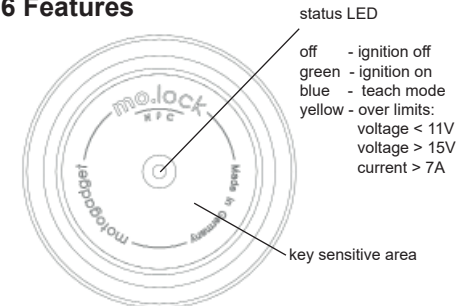
4 Registration obligation

According to the regulations of the respective country, a steering wheel lock may be required by law. If there are no ignition locks with an integrated steering wheel lock, a separate lock may have to be carried along as anti-theft device and an entry made in the vehicle documents.

5 Technical specifications

operating voltage	9 – 16V
standby current	3,2 mA
(average)	after 16h 1,5mA
	after 8 days 0,75mA
switching current	7A (continuous), maximum 10A for 10s
operating temperature	-20°... + 80°C
switching distance	Teardrop Key (20 – 40mm)
weight	ca. 40 g
mounting thread	1 x M3

6 Features



7 Mechanical attachment

The mo.lock will be attached to the supplied bracket with an M3 screw.

The bracket can be mounted to the vehicle using two M4 screws (10mm distance) on a flat surface. Alternatively, the mo.lock can be attached to a self-made bracket with an M3 screw.

No tensile or compressive stresses must act on the housing, otherwise the housing may break.

The switching distance between the mo.lock and the key is max. 40mm.

Any electrically non-conductive material can be between mo.lock and key. Thus the mo.lock can be hidden behind plastic covers or other plastic parts to be invisible from outside.

The mounting location must be protected against spray water and at least 20cm away from high-voltage ignition parts or hot motor and exhaust parts. The maximum outside temperature during operation must not exceed +80°C and -20°C.

The plastic housing must not be altered. Guarantee or warranty claims in the event of mechanical damage are rendered invalid.

8 Electrical connection

The mo.lock is suitable for 12V on-board networks in which battery minus is connected to the vehicle frame. Operation on vehicles without a battery is not possible.

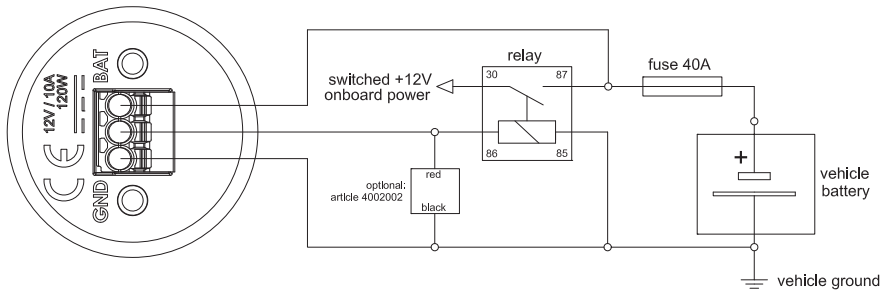
The cross-section of the mo.lock connection cable is at least 0.5mm². 5mm of insulation is stripped from the connection cable and plugged into the terminal strip, using a screwdriver blade to push-in the orange button on the terminal.

The mo.lock **BAT** output is connected via the fuse to the positive battery pole, the **GND** output is connected to vehicle ground. The switching output on the middle terminal provides +12V with a continuous current of 7A when the mo.lock is activated. This output is connected to the supplied relay, which switches the on-board voltage, fused with 40A. A cable cross-section of at least 5mm² must be used here. Refer the schematic below.

When used with the mo.unit, the switching output is connected directly to the mo.unit input **LOCK**. Refer the mo.unit instruction manual.

When starting large engines, high current flow and voltage drop in the vehicle electrical system may cause the relay to drop. In this case motogadget item no. 4002002, which is connected to relay contacts 85 and 86 solve the issue.

BASIC REQUIREMENT FOR A SAFE FUNCTION IS AN INTERFERENCE SUPPRESSED IGNITION SYSTEM. SUPPRESSED SPARK PLUG CAP OR IGNITION WIRE MUST BE USED. THE DISTANCE FROM MO.LOCK TO THE IGNITION COIL AND IGNITION CABLES MUST BE AT LEAST 20CM.



wire cross-sections

min. 5mm² from battery plus via 40A fuse to relay terminals 87 and 30

0.5mm² all remaining lines

9 How it works

The mo.lock works on the basis of NFC technology.

The ignition lock sends electromagnetic pulses, which the key can use to send back its identifier. Therefore the key does not need an internal battery.

The mo.lock penetrates electrically non-conductive material and can sofore be integrated hidden into the vehicle (e.g. behind a side cover). Also the key can be sewn into the glove, for example. Material between the mo.lock and the key may reduce the switching distance.

In order to prevent vehicle battery from discharging during the winter break, we recommend disconnecting the ground pole of the battery from the vehicle.

10 How to use

When the key approaches the active surface of the mo.lock, the on-board voltage is switched on, which is displayed by a green status LED. When approaching again, on-board voltage will be switched off, then the status LED is also off. A waiting time of 2s between these two switching operations is required.

If the mo.lock is not used for more than 16 hours, it enters power-saving mode, after further 8 days it goes into a sleep mode.

The key must then be brought close to the lock for a period of 2 seconds in order to trigger a switching process.

11 Teaching new keys

The scope of delivery includes two keys, which can be used both for switching the vehicle and for teaching new keys. To do so, either key is presented in front of the mo.lock for 30s until the LED lights up blue.

Each key then presented subsequently is saved, which is acknowledged with a brief green flashing of the status LED. Up to 125 keys can be stored.

The learning process ends if the initial key is presented again. Each taught key can be used to learn new keys.

Only motogadget keys are compatible. Incompatible keys are indicated by brief status LED flashing red during teach-in.

12 Returns and complaints

Before sending a mo.lock for a check to motogadget, please contact the technical support. To do so, visit our website and follow the instructions under "Support". To return a item, follow the instructions under "Service" on our website.

We from motogadget wishing you a safe ride and fun with your new mo.lock.

Declaration of Conformity

Hereby, motogadget GmbH declares that the radio equipment type mo.lock NFC is in compliance with Directive 2014/53/EU.

The full text of the EU Declaration of Conformity is available at the following internet address:

<https://manuals.motogadget.com/mo-lock-nfc/en/>



WEEE directive

The wheeie bin symbol on the product or its packaging indicates that this product shall not be treated as household waste. In line with EU Directive 2002/96/EC for waste electrical and electronic equipment (WEEE), this electrical product must not be disposed of as unsorted municipal waste. Please dispose of this product by returning it to the point of sale or to your local municipal collection point for recycling. By doing this you will help conserve the environment.

Regulations

PRODUCT INFORMATION:

Manufacturer: motogadget GmbH
Model: mo.lock NFC

