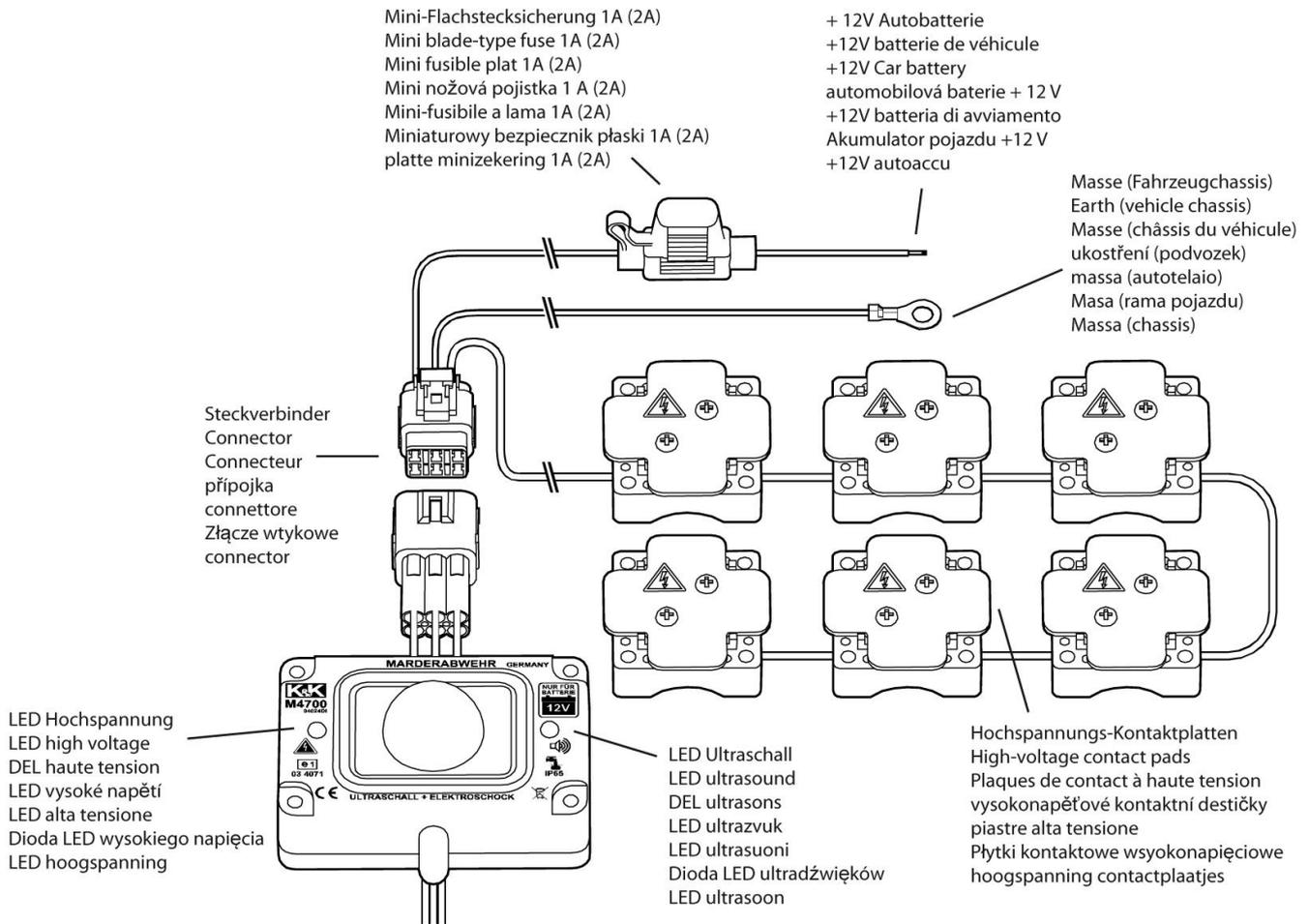




M4700 Marten scarer for 12V = incl. bonnet switch for immediate discharge



The M4700 marten scarer works in three ways: ultrasound, electric shocks and pulsating light

- The M4700 gives electric shocks to the marten when it touches one of the six contact pads in the engine compartment (these are electric shocks that scare away the marten but do not kill it). The stainless-steel contact pads can be placed in any position to achieve flexible shielding that is tailored to the respective vehicle.
- In addition, the control device emits very strong, aggressively pulsating ultrasonic sound in a 360° radius. This sound randomly varies in frequency and rhythm (so the marten cannot become accustomed to it).
- As it is watertight, it can be fitted deep down where the marten gains entry. The innovative voltage circuit automatically operates the device as soon as the engine is switched off.
- The elaborate connection at terminal 15 is now no longer required. There is the simplest 2-pole connection, which saves significant installation time.

Extremely low power consumption (< 0.007 A)

Switches off automatically when the battery voltage < approx. 11.1V +/- 0.3 V (battery monitor).

Also suitable for cars with a CAN bus.

Soft start – without influencing on-board electronics

An intelligent soft start circuit activates our modules slowly at a very low power consumption level. Even the latest highly sensitive on-board computers do not record our modules as consumers in this context. In contrast to devices with a “hard” start-up and current pulses of up to 25mA, our modules do not generate error messages. Battery management systems (BMS) or hybrid vehicles also pose no difficulty for us.

Bonnet switch for immediate discharge

By using it, the device is not only switched off automatically when the bonnet is opened. At the same time, the charging capacitor is immediately discharged through the ignition switch; the high voltage is cleared at a stroke. (However, the same can be achieved by actively pulling apart the compact plug-and-socket connection.)

Technical data:

Operating voltage: 12V car battery, average power consumption: < 7 mA ($\pm 20\%$),

Fitted reverse polarity protection, battery monitor: switches off automatically when battery voltage < 11.1 V ($\pm 3\%$)

Very simple connection, connection to vehicle terminal 15 no longer required

Ultrasonic frequency approx. 22.5 kHz $\pm 10\%$ varies randomly in frequency + rhythm,

Sound pressure: approx. 115 dB $\pm 25\%$

Loudspeaker: Fully-encapsulated loudspeaker dome with circular 360° sound radiation

Output voltage: approx. 250....300 V =, temperature range: approx. – 25...+ 80 degrees C

Function display: 2 flashing LEDs for ultrasound and high voltage (for scaring and function control)

Dimensions of control device: approx. 86x55x50mm, cable length of high voltage cable: approx. 4 m ($\pm 10\%$)

Fuse in fuse holder: Mini 1A (or 2A) blade-type fuse

High-voltage contact pads: 6 sliding cross-shaped stainless-steel contact pads

Also suitable for cars with CAN bus

Automatic reduction of power consumption in the case of short-circuit or contamination (reactive currents) at the high-voltage pads.

Impulse withstand voltage: max. 40V 2msec

Compact plug-and-socket connection at control device for simple disconnection of the control device from the cable installation

Licensed with the e1 symbol by the German Federal Motor Transport Authority

Available accessories (not included):

- Earth mat, article 1003, extends non-conductive floor covering, for example, as an earth surface.
- Extension kit, article M4500-K-kit – 4 additional contact pads for large engine compartments

Proper use:

To scare martens and other wildlife from the engine compartments of vehicles using electric shocks, pulsating light and aggressive, pulsating ultrasonic frequencies.

Disposal:

If the devices have to be disposed of, then they should not be placed with domestic refuse. They must be handed into to collection points for televisions, computers, etc. (please ask your local authority or town council for the location of these electronic disposal points).

Ultrasonic sound extends like light; there are “shadows” cast behind obstacles (no ultrasonic sound). The loudspeaker in the device should therefore radiate towards the areas at risk of being bitten. The ultrasonic sound reaches all points that are visible from the loudspeaker dome in the engine compartment.

Fitting instructions:

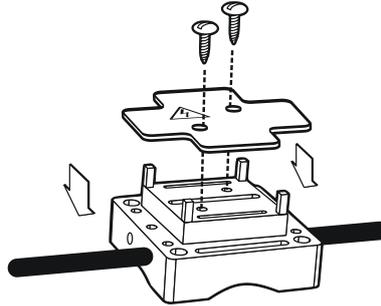
During assembly, please take the fuse of the device from the fuse holder. The base device is installed at a point in the car where it is not too hot (please don't install it directly adjacent to the exhaust manifold or other hot area). The positive cable with the fitted fuse holder is connected to “+ 12 V”.

The earth cable is connected to the vehicle earth or “- 12 V”.

Optionally, you can purchase a bonnet switch (no. 1001) as an accessory. This “short-circuit switch” immediately discharges the high-voltage pads when the bonnet is opened (for maintenance work). However, you can also take the mini blade-type fuse out of the fuse holder by hand and then wait approx. 1 minute until the high voltage has dissipated in order to then carry out maintenance work with the marten scarer switched off. Or you can disconnect the compact plug connection. The marten scarer is then immediately switched off and the high-voltage pads are voltage free. For this reason, please fit the device

so that the plug connection and fuse holder can be reached easily.

The high-voltage cable is laid in the engine compartment so that the contact pads can be fitted at the points of risk of being bitten. The high-voltage cable should not be run directly past very hot engine parts (e.g. exhaust manifold) (the cable insulation may melt). The high-voltage pads can be fitted at any point on the high voltage cable, as shown in the drawing.



The high-voltage cable of the marten scarer is easily identifiable as the longest cable by far (approx. 4 m). The contact pads are fixed in the engine compartment of the car using the 4 drilled holes in the plastic lower section (using screws or cable ties). The cross-shaped stainless-steel pads are attached to the plastic holders.

The contact pads are fastened to the plastic holder using two screws. By turning the screw, the high-voltage cable is “tapped” and the contact is created. The plastic holders can be moved on the high-voltage cable and can be fixed at any point.

Please install the last contact pad at the end of the high-voltage cable so that the cable end does not show at the side (risk of short circuit).

Important: The high-voltage contact pads must be fitted so that the bare contact pads are > 10 mm from other live contacts in the car. In addition, neither must the bare contact surfaces of the contact pads touch other car parts (risk of short circuit). Reason: Because of shielding, plastics (e.g. hoses) are frequently used in cars that are made from an electrically conductive plastic. These plastics would then short circuit the high voltage of the contact pads to earth.

It is also important that the contact pads do not become too wet. A film of water between the vehicle earth and the contact pads will also lead to a short circuit. The water should be able to flow away.

Please stick the enclosed yellow “Caution! High Voltage” warning sticker on an easily visible point close to the high-voltage pads (e.g. on the air filter).

Note: For the marten to get an electric shock, it has to touch one of the high-voltage contact pads (e.g. with its snout or front paw) and the vehicle earth at the same time (e.g. with its rear paw). There are now cars whose engine compartments are almost completely lined with plastic and where the marten will not touch the car chassis. In this case, it will not get an electric shock. For such very rare cases, we sell an additional earth mat (no. 1003), which is simply glued into the engine compartment and connected to earth via a cable.

Commissioning:

Refit the fuse that was taken out of the fuse holder before installation. When everything is correctly connected and the vehicle is parked, the high voltage builds up in the contact pads, the ultrasonic sound starts and two small LEDs on the module start to flash (around every 3 - 12 seconds, independent of each other). On initial commissioning, it may take up to five minutes for the LEDs to flash after being switched on.

Troubleshooting:

- 1) Check: Is the operating voltage 12 V (direct current, car battery) between the + 12 V and earth (- 12 V) connections? (The voltage must be between 11 – 13.4 V; other voltages will cause the marten scarer to switch off).
- 2) Is the engine switched off and no other charger connected to the car battery? The marten scarer will only switch itself on if the battery is not being charged (engine stopped!).
- 3) The contact pads must be freely fitted and must not have any connection to other vehicle parts (risk of short circuit).
- 4) Are all the contacts on the plug connection to the base device straight? Or has a pin been bent to the side by being plugged in crookedly? Is the plug connector connected the right way round? (There is a latch on the side of the plug connector).
- 5) Is the fuse in the fuse holder and intact?

- 6) Please be aware that all of the switching-on and switching-off functions have a few seconds' delay!
- 7) If you have opened the bonnet and fitted a bonnet switch (no. 1001) (not part of the package): Press the bonnet switch down with your hand for a few minutes, because it causes the high voltage to short-circuit when the bonnet is open, and the high-voltage control light on the marten scarer will not flash. When the switch is pressed down, the control LED should flash. Please do not touch the high-voltage pads in this state! The bonnet switch functions properly when the high-voltage LED no longer flashes upon releasing the switch.

Hazard warning for maintenance work:

After switching off the device (by removing the fuse), the high voltage may be present in the contact pads for up to one minute. This is the time required for the fitted charging condenser to discharge. Before carrying out maintenance work, please wait for this length of time after switching off (removing the fuse). If you do not want to wait, then you can also loosen the plug connection of the compact plug, which will immediately make the high-voltage pads voltage free. Or fit the bonnet switch no. 1001, which is available as an accessory, which will also make the high-voltage pads immediately voltage free.

The high voltage is not hazardous for people (there is a very small flow of current). However, if you are very easily startled or will suffer health risks from shocks, then the shock that you receive may constitute a risk. A shock is only received if the vehicle earth and a charged high-voltage contact pad are touched simultaneously (e.g. one hand on the bare chassis and the other hand on the high-voltage contact pad).

General information:

Before fitting the marten scarer, please thoroughly clean the engine compartment of your vehicle (steam clean the engine or use K&K scent-mark remover, article 000300) and also the surface where your vehicle regularly stands (e.g. carport). Martens identify their territory using scent marks and can become very aggressive when they smell the scent marks of another marten in their territory. Our marten scarers with high-voltage contact pads are extremely effective in deterring martens. Nevertheless, we cannot guarantee that the marten will be truly scared off in 100% of all cases!

This marten scarer can only be used in vehicles with a 12V battery. It may not be operated using electronic voltage reducers from 24V lorry batteries, because the marten scarer then cannot identify when the vehicle is parked (in order to switch on automatically).

Be aware of the following BEFORE FITTING:

All our devices are carefully checked during and at the end of production. Please repeat these checks before fitting with the engine switched off: Connect the earth cable to the negative pole of the car battery and the positive cable with the fitted fuse to the positive pole of the car battery. The high-voltage pads should lie on an insulating substrate (cardboard, wood). After no longer than 5 minutes, the LED fitted in the module should flash briefly at intervals of 1 - 12 seconds. This means that the marten scarer is in order and can be fitted. Caution! After switching off, the high-voltage pads may remain charged for up to one minute. Before fitting, please first discharge them (see "Maintenance Work" in operating instructions). When checking, please make sure that you do not touch the high-voltage plates! If the device does not function in spite of a positive test before fitting, then this is clearly due to a fitting error (see fitting instructions). We provide a statutory guarantee for the device; we will not pay for costs associated with fitting and dismantling.