

## **STRESSLESS TOWBAR ELECTRICAL KIT V1.5 INSTALLATION INSTRUCTIONS**

### **A. GENERAL INFORMATION :**

It is important to read these instructions in full before starting installation.

The StressLess towbar electrical kit includes 5 sensors, an **MGA** electronic control unit (ECU) and a wiring harness with a 7-pin towbar socket and some minor accessories (wire, 15A fuse and fasteners).

Each sensor is placed on an electric power supply wire of the car's rear lights. The ECU receives and processes the informations supplied by the sensors and controls the lighting of the trailer lights.

The system uses the vehicle's constant +12V power supply (Direct battery).



**A.1 Preliminary checks**

Check that the car's rear lights are working properly. Observe functioning of rear lights with the engine working and the engine switched off, tailgate (hatchback) open and tailgate closed. Check if one of the bulbs is used for two functions by changing its intensity, for example side light / brake light or side light / fog light.

N.B. A 2-filament bulb is generally not used for a dual function.

N.B. If a bulb is defective or not working on the car, the system won't work! The lighting system must first be repaired.

N.B. On certain cars the lights on the tailgate and those on the rear body don't work in the same way. In particular, there may be a dual function on only one set of lights.

This stage is necessary in order to select the lights to be used. You must then locate the wires which correspond to the various light functions: side lights, right indicator, left indicator, brake lights, fog lights (use a voltmeter or follow the wires inside the tail light units) .

**A.2 Installation of sensors :**

Sensor installation depends on the presence or absence of a dual light function.

**Vehicle without dual function :**

5 sensors must be installed as follows:

- Red sensor on the brake light wire
- Black sensor on the left side light wire
- Green sensor on the right indicator wire
- Blue sensor on the fog light wire (this is optional but follow local legislation)
- Yellow sensor on the left indicator wire

**Vehicle with dual side light / brake light function :**

4 sensors must be installed as follows:

- Don't install the red sensor
- Black sensor on the side light / left brake light wire
- Green sensor on the right indicator wire
- Blue sensor on the fog light wire (this is optional but follow local legislation)
- Yellow sensor on the left indicator wire

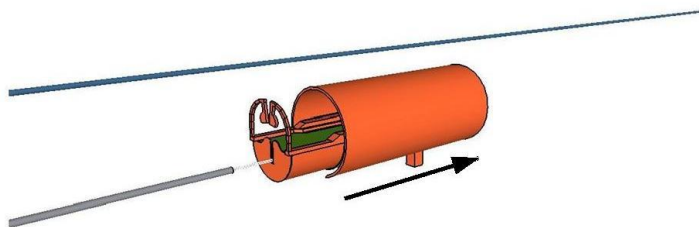
**Vehicle with dual side light / fog light function :**

4 sensors must be installed as follows :

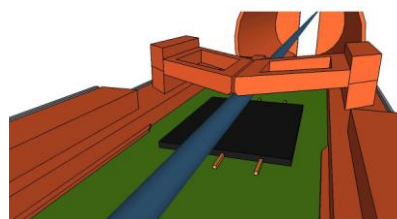
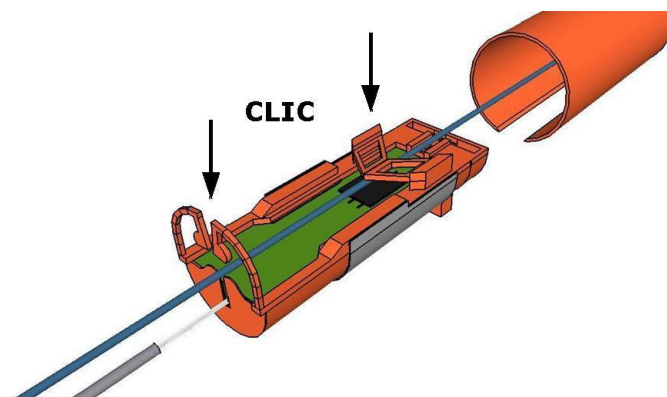
- Red sensor on the brake light wire
- Don't install the black sensor
- Green sensor on the right indicator wire
- Blue sensor on the side light / fog light wire (installation compulsory)
- Yellow sensor on the left indicator wire

Placing a sensor on a wire :

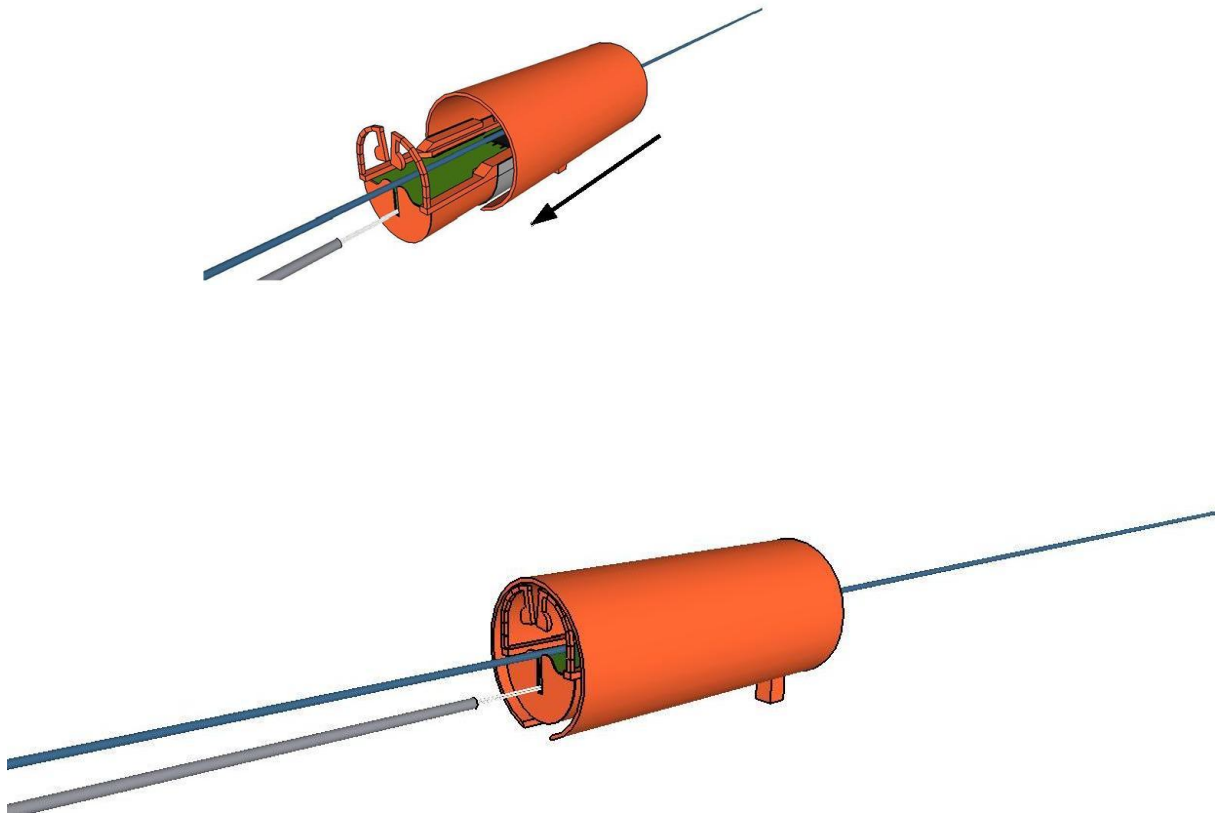
- Slide back the sensor's external protection.



- Clamp the electrical wire between the sensor's two clips.



- Slide the external protection back in position.



The sensor is mounted and closed on the wire

### **A.3 Connection to power supply :**

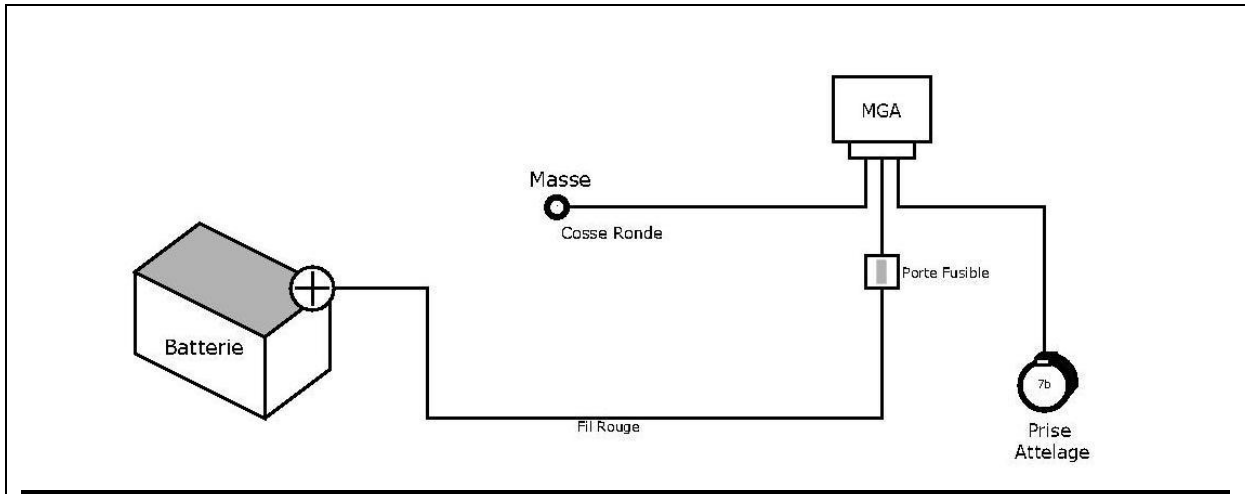
N.B. Never disconnect the battery from the car.

Attach the ring tongue terminal (white wires of the wiring harness) to the car chassis. This electrical connection (grounding) must be carried out with care. Remove any paint or varnish which may be present on the connection surface in order to ensure excellent contact quality.

Connect the red wire supplied directly to the constant positive of the battery. Check the quality of the electrical connection. We cannot guarantee the functioning of the StressLess system if the red wire is not directly connected to the battery.

Place the fuse-holder in an easily accessible place between this red wire and the red wire of the Stressless wiring harness.

See the schematic drawing on next page



**B. Initialisation of the system**

The StressLess system's **MGA** electronic control unit is supplied non-parameterised and its sensors are not initialised. The procedure consists in initialising these sensors (magnetic initialisation), then the parameters of the ECU (electrical initialisation). This initialisation remains stored in the ECU's non-volatile memory, even if the ECU is disconnected from the battery (or if the car battery is changed, for example).

A small lamp (green LED), located inside the ECU, is provided to make the initialisation procedure easier. The lamp is visible between the connectors of the yellow and blue sensors.



**MGA**

N.B. This initialisation is specific to one installation and a particular vehicle. If you move, change, turn, add or remove a sensor, you must recommence this initialisation procedure, even more so if you use an ECU which has been previously installed on another vehicle.

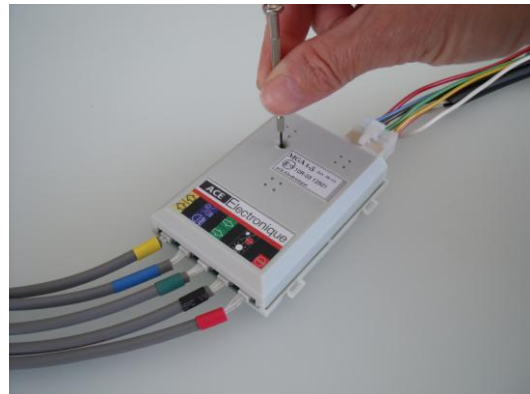
### **B.1 Magnetic initialisation of sensors**

This stage can be carried out either before or after installation of the fuse.

- **Start the vehicle**, then deactivate the automatic headlamp function (if the car is equipped with this system).
- switch on the right indicator for a few seconds, then the left indicator for a few seconds, then switch off the indicators.
- switch on the side lights for two seconds, then the rear fog lights for two seconds, then switch off the rear fog lights then the side lights.
- switch on the reverse light for two seconds, then switch off the reverse light.
- press the brake pedal for two seconds, then release.

### **B.2 Deleting the parameters from the ECU**

- the 15 amp fuse must be in place in the fuse holder, the MGA is powered with 12v and the sensors are all mounted and closed on each wire.
- use a pointed object (paper clip, rivet, small screwdriver) to press the reset button of the **MGA** electronic control unit and keep pressing until the green LED flashes quickly (this will take about 10 seconds).



The green LED is placed between yellow and blue sensor connectors.

### **B.3 Electrical initialisation of the **MGA** electronic control unit**

- the 15 amp fuse must remain in place in the fuse holder.
- connect a trailer or tester to the 7-pin plug.
- switch on the left indicator and check on the trailer or tester.
- switch on the right indicator and check. Switch off the indicator.
- switch on the side lights and check, then the rear fog lights and check. Switch off the rear fog lights and side lights.
- press the brake pedal and check. Release the brake pedal.
- the green LED located on the ECU must be off. If you switch on an indicator, it flashes at the same rate as your indicator light. If you switch on your side lights, it stays on all the time.
- **your ECU is now configured,**  
**you can turn off the vehicle's ignition.**

**C. Troubleshooting**

Most problems are due to an incorrect selection of electrical wire. Check the location of the sensors and restart the installation procedure at « B.1 Magnetic initialisation ».

Make sure the test system (trailer striplight) is working correctly.

In the case of certain LED lights or non-standard multiplexing of the car (BMW...) it is often possible to use the number plate lights instead of the side lights.

As far as the brake lights are concerned, the centre high mount brake light can also be used (3<sup>rd</sup> brake light).

Certain manufacturers provide two wires for each lamp, one for control and the other for **checking**. The system only works on the control wire. The only way to find out which wire to use is to test them.

N.B. The system measures the electric current in the wire in the car and not the voltage. If the car bulb is defective, for example, the voltage is still there, but there is no electric current so the system detects nothing.

**D. Limitations of use**

The trailer must not have an total power consumption of over 150 W.