
USER MANUAL

Item Nr.: P0000014325

US UNIVERSAL CONVERSION KIT 1.1

Electrical conversion kit for homologation of US cars according to ISO 11446

1 SAFETY INSTRUCTIONS



The device may only be mounted by trained and experienced personnel. According to these mounting and operating instructions, trained personnel refers to persons who are able to judge the work they are assigned to and recognize possible dangers due to their specialized training, their knowledge and experience as well as their knowledge of the relevant standards.

2 GENERAL NOTES

2.1 Limitation of liability

All information and notes in this manual have been compiled taking into account the applicable standards and regulations, the state of the art and our knowledge and experience. The manufacturer accepts no liability for damage due to:

- Non-observance of the listed safety instructions,
- Non-compliance with the operating instructions,
- improper use,
- Use of untrained personnel,
- unauthorized modifications,
- technical changes.

2.2 Intended use

The product is a conversion kit (adapter) for trailer connectors of American cars. The conversion kit is going to be installed instead of the trailer socket.

2.3 Disposal

For disposal, the device is considered to be waste from electrical and electronic equipment (electrical/electronic scrap) and must not be disposed of as household waste.

3 FEATURES OF THE ADAPTER

The US Universal Conversion Kit 1.1 is an adapter from the US 7-pin trailer connector to the 13-pin EU trailer connector. The adapter separates the "stop" signal of the two-line system from US cars and offers a plug-and-play solution for TÜV-compliant integration of the 13-pin EU trailer connector.

The adapter provides the following functions:

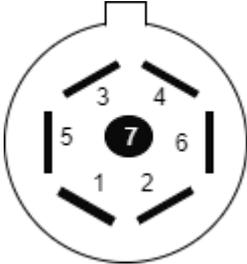
- Separation of the «stop» signal
- Recognition and control of the hazard warning function
- Trailer detection
- Trailer simulation: The vehicle's own electronics reliably detect whether a trailer is connected or not, even with the connected adapter thanks to its built-in trailer simulation circuit. Vehicle-specific functions such as the automatic deactivation of parking sensors or the adaptation of stability programs to trailer operation can thus continue to be used.
- Detection of defective flashing lights on the Trailer
- Signaling of defective flashing lights by means of a buzzer (if not already provided by the vehicle)

The following functions are also available via additional inputs and outputs:

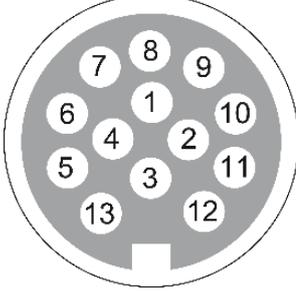
- Control of the rear fog light of the trailer
- Control of the rear fog light from the vehicle
- Automatic cut-off of the rear fog light from the vehicle when a trailer is connected (NSL cut-off)

The adapter allows a fully TÜV-compliant integration of the 13-pin trailer connector on US vehicles. No further components are necessary.

3.1 Assignment US 7-pin RV Blade connector

Ground	1	 <p>(view looking into connector of the car)</p>
trailer brake	2	
Tail and Running Lights	3	
12V Battery Power	4	
Left turn / stop light	5	
Right turn / stop light	6	
backup lights	7	

3.2 Assignment EU 13-pin trailer connector (ISO 11446)

Left turn	1	 <p>(view looking into connector of the car)</p>
Rear fog light	2	
Ground	3	
Right turn	4	
Rear light right	5	
stop light	6	
Rear light left	7	
Reversing headlights	8	
12V Battery Power	9	
Charging Power	10	
n.c.	11	
n.c.	12	
Ground	13	

3.3 General power supply and charging cable

The 13-pin EU trailer connector has two poles for the power supply of the trailer adapter:

12V Battery Power (Pos. 9): This pole is connected to the 12V Battery Power line of the US connector and thus the function is plug-and-play.

Hint:

Some US vehicles (e.g. Ford F150) switch this wire on and off depending on the status of the vehicle. In this case the wiring must be changed accordingly so that this line is permanently supplied with 12V. This is necessary for a correct function of the adapter.

Charging Power (Pos. 10) The charging cable of the EU trailer connector is activated when the ignition of the vehicle is switched on.

This function is not available on the US connector. The wire is connected to the trailer brake connection. **To use the function of the charging cable, the Trailer Brake cable must be rewired on the vehicle so that it is connected to 12V when the ignition is switched on.**

3.4 Assignment of additional functions

For the additional functions, a 3-pin cable is available:

Name	Colour	Description
Rear fog light car	White	12V output for the rear fog light of the car
Rear fog light input	Black	12V input for activating the rear fog light A 12V level at this input activates the rear fog light.
Stop input	Brown	12V input for stop activation. A 12V level at this input activates the stop lights on the trailer.

3.5 Additional function: rear fog light (optional)

The rear fog light of the trailer can be controlled via the additional input (black) of the 3-pole cable. An already existing switch can be wired to this input. If the vehicle does not already have a switch, this must be retrofitted (not included).

The rear fog light of the vehicle is connected to the additional output (white) of the 3-pole cable.

The adapter automatically detects whether a trailer is connected and activates either the rear fog light on the trailer or on the car.

3.6 Additional function: Stop input

The additional input (brown) for activating the stop lights on the 3-pole cable is used to control the stop light separately.

The use of this input is optional, the stop lights work even without the use of this signal. The adapter automatically detects the stop condition by evaluating the two-line system of the US vehicle.

The input is used for a completely accurate detection of hazard situations. Without this signal, the adapter requires two hazard warning signal pulses until the hazard warning situation is detected. During this time the stop lights are activated.

This situation can be avoided (if desired and/or necessary), by using the additional Stop input by connecting the brake input to the 3rd stop light of the US vehicle. In this way the adapter clearly recognizes whether it is a stop situation or a hazard warning signal situation.

Hints:

- In some countries, this additional stop input must be connected in order to ensure that integration is fully compliant with the law
- The adapter automatically detects whether the input is connected or not and applies the stop accordingly.
- The function of the stop lights is fully guaranteed in any case. The stop lights always have priority: If the adapter cannot clearly distinguish between a hazard warning light situation and a braking situation, the stop lights are activated.

3.7 Buzzer

If a turn indicator light on the trailer is broken, this is signaled by a whistle sound of the buzzer. For a good detection of a fault case, the buzzer should be placed inside the vehicle.

Hint:

- Many vehicles have already integrated the detection of broken lights. In this case the buzzer is not necessary and can be removed by cutting it off.

4 INSTALLATION OF THE ADAPTER

The following steps must be carried out to install the adapter:

1. Disconnect the ground wire from the battery
2. Wiring/control General power supply and charging cable
3. Connecting the adapter
4. Wiring of the additional functions (optional)
5. Functional test

4.1 Disconnect the ground wire from the battery

For safety reasons, it is essential to disconnect the ground wire from the battery before starting work. In order to prevent stored data from being lost, the use of a current maintenance device is recommended. (consult manufacturer's instructions)

4.2 Wiring/control General power supply and charging cable

Before installation, it should be checked whether the general power supply or the 12V battery power line at the US connector permanently provides 12V. If this is not the case (e.g. Ford F150), this line must be rewired. See also the vehicle-specific installation instructions.

If the function of the charging line is to be used, the trailer-brake line of the vehicle must be rewired to switched 12V.

4.3 Connecting the adapter

Disconnect the original US connector from the vehicle plug and plug in the adapter. With the included accessories the 13-pin connector can be mounted on the vehicle.

4.4 Wiring of the additional functions



3-pole cable short (0.8m)	White	Output to fog lamp from car - Connect rear fog light of car
	Black	Fog lamp input - Connect a switch for fog light
	Brown	Stop input - Connect the stop signal from 3. stop light - Do not use signal from rear lights!

2-pole cable long (4.5m)	If the buzzer is used, it should be placed inside of the vehicle.
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4.5 Functional test

Reconnect the vehicle with the battery.

The trailer connector must be tested with a real trailer or load carrier. Trailer test equipment must have load resistors. Simple diode test plugs are not suitable for proper testing of all functions.

5 VEHICLE-SPECIFIC INSTALLATION INSTRUCTIONS

5.1 Ford F150

In the Ford F150 the 12V Battery Power line is switched. The line must therefore be rewired so that it is permanently connected to 12V.

For this purpose, the orange cable must be disconnected (red marking) and connected to the brown/red cable (green marking) on the control unit under the footwell:

