

# Installation instructions

## AK-Motion DataDisplay NextGen E87

**!!! Installation is only to be carried out by qualified**

**!!! Disconnect the battery before installation !!!**

<b>AKMOTION</b>	Installation instructions	
<b>NextGen E87</b>		
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## Document release notes

Version	Comments	Date	Author
1.0	Initial draft	23.11.2023	A.K.

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## 1 Delivery content



- Display-Unit
- Junction-Box
- Harness: Junctionbox > Car
- Displaycable
- 1x USB Cable (Display Update)
- 2x Housings for car connector
- Step drill

## 2 Benötigtes Werkzeug

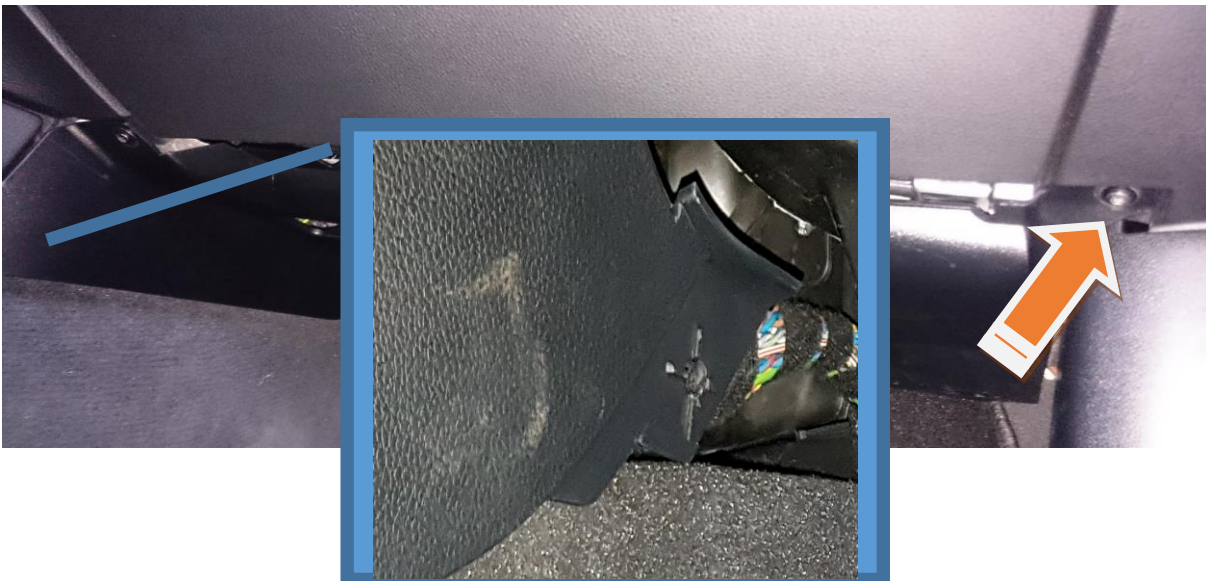
- Torx T20
- Plastic Wedge (optional)
- Sometimes wrench 10 mm
- Small flat-head screwdriver or paperclip (for pin out the contacts)
- Drilling machine

## 3 Disassembly

### 3.1 Disassembly passenger footwell

Usually there are two Torx T20 or Phillips screws on each side which need to be removed. Sometimes there are screws you need a 10mm wrench.

On the drivers side, there is an expanding rivet which needs to be removed



Pull down the cover.

Attention, there is still a plug connection of the footwell lamp to separate.



Take out the cover.

## 4 Connection

### 4.1 Connection Can-Bus

The JunctionBox is now freely accessible in the passenger footwell. This one has a black and a blue plug. The side on which the connectors are located (left / right) may vary.

However, the following always applies: The CAN bus on the blue plug must be connected to the controller and the power supply must always be on the black plug.

The cable colors from the wiring harness (Data Display Controller):

Red / yellow: power supply from JunctionBox (black connector pin 1)

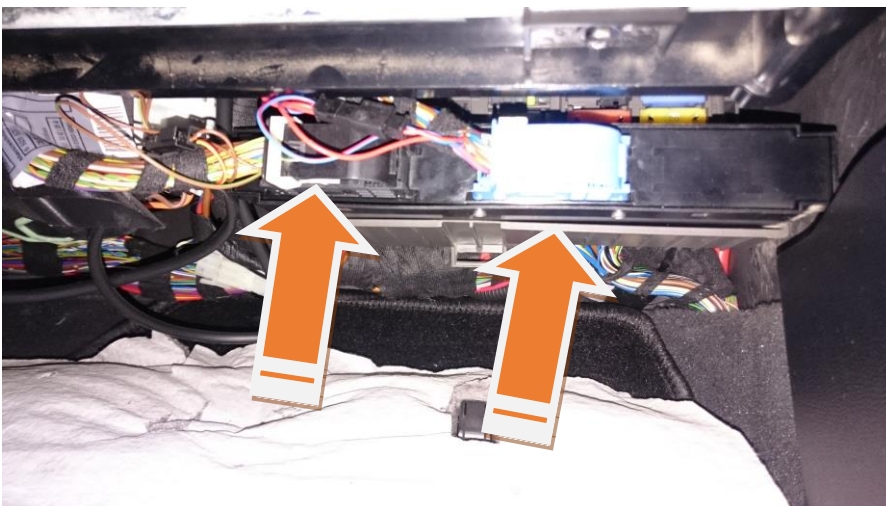
Brown: Ground (GND) from the JunctionBox (black pin 6 pin)

Red / Blue: CAN\_High from JunctionBox (blue pin 1 pin)

Red: CAN\_Low from JunctionBox (blue connector pin 2)

Attention, the colors on the JunctionBox are 99% identical to those on the cable harness of the new controller. However, it can happen occasionally that the 12 Volt power supply is not red / yellow but has a different color. Here should be checked twice that the pin number is correct.

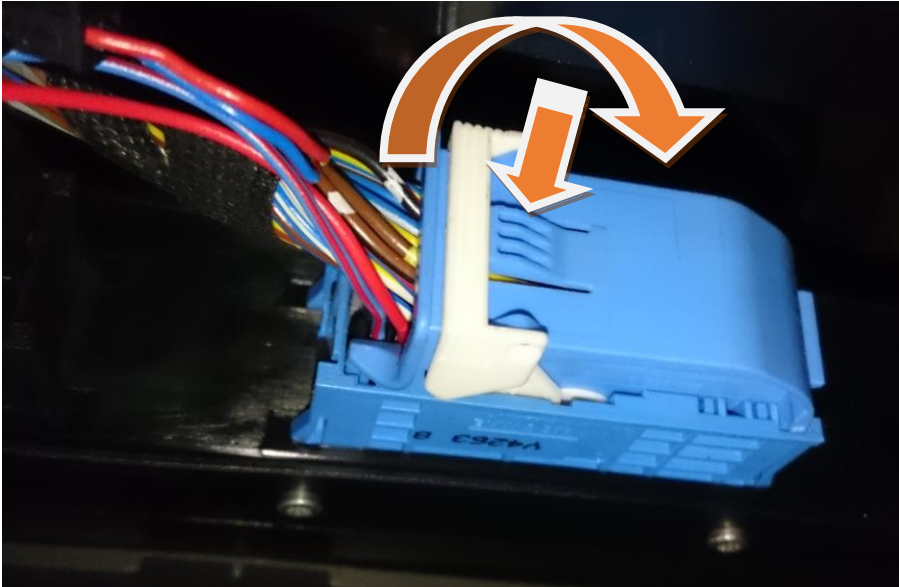
In vehicles without gps device, it may be that the pin 1 on the black connector is not used. In this case, just put the DataDisplay cable (red/yellow) into the housing, nothing needs to be pinned out.



Picture here with black plug left and blue right

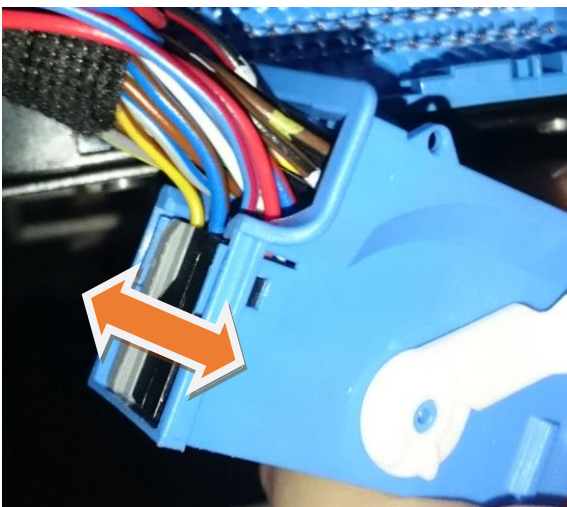
Next, unlock the blue connector.

To do this, press the latch and fold the safety latch around.



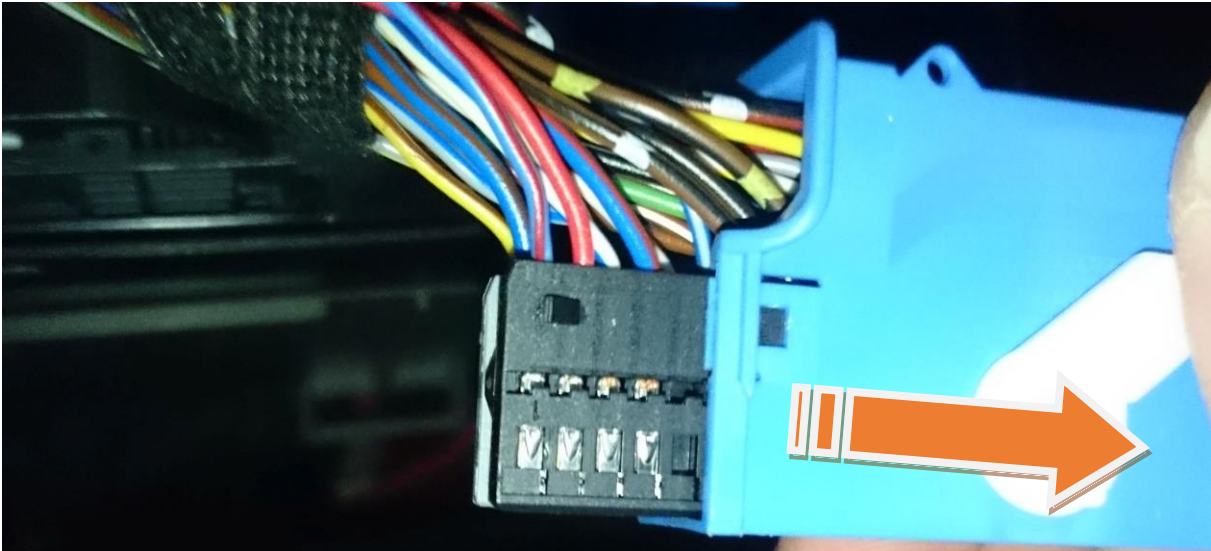
The connector is pressed out of the JunctionBox and you can pull it off.

To remove the connector housing, the sides must be pushed apart. This can be done with your hands or you can use a flat-head screwdriver.



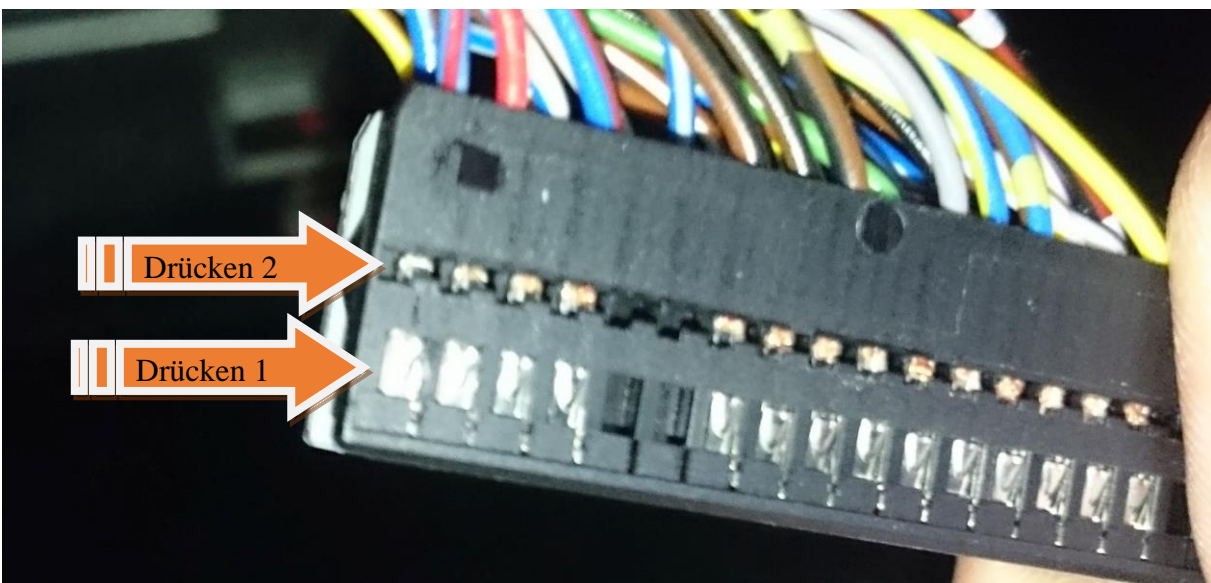


When pushing apart, carefully push the housing backwards so the plugs come out.



Now the cables Pin 1 (CAN\_High with the color red / blue) as well as Pin 2 (CAN\_Low with the color red) are pinned out. Use a small flat-head screwdriver, a needle or something similar. The crimp contacts have a flag which works like a barb. This flag must be pressed and at the same time carefully (!) Pulled on the cable.

Attention: the flag can snap in a second time in the intermediate opening. Here you have to press (Drücken 2) again.



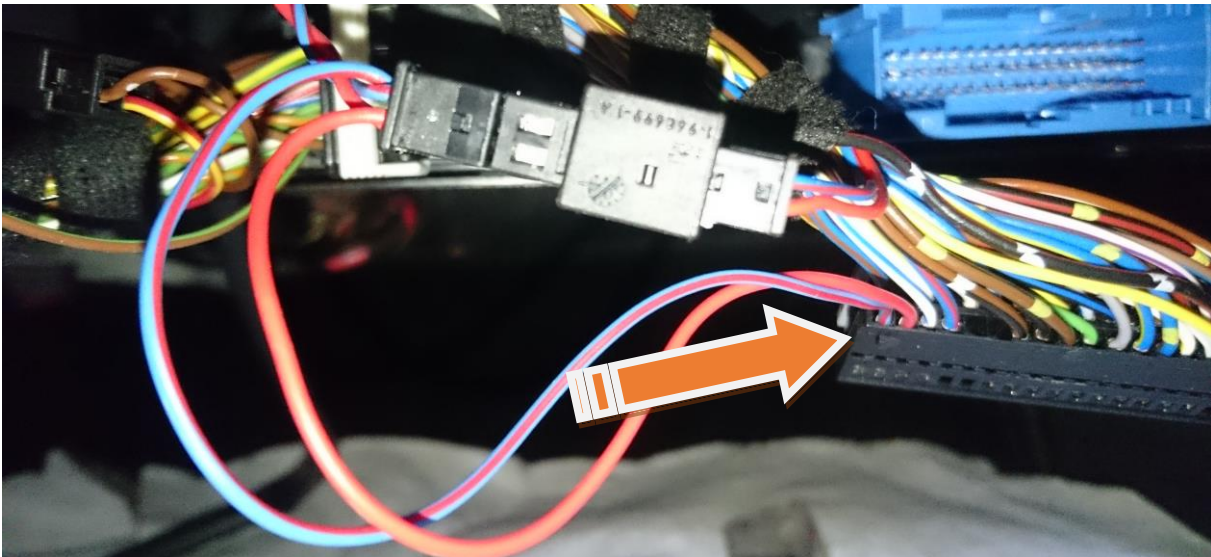
As already mentioned, pin 1 is CAN\_High and is plugged into the supplied socket housing.

It is important to ensure that the colors match the wiring harness when the connectors are connected.

CAN\_High should be piped in on the right side (depending on the viewing).

The open end of the wiring harness is pinned in place in the connector of the JunctionBox. (Pin1 = Blue / Red | Pin2 = Red)

When piecing in, you should make sure that the flag also locks in place - Applies to the supplied socket housing and the plug of the JunctionBox.



The controller is integrated in the bus circuit.

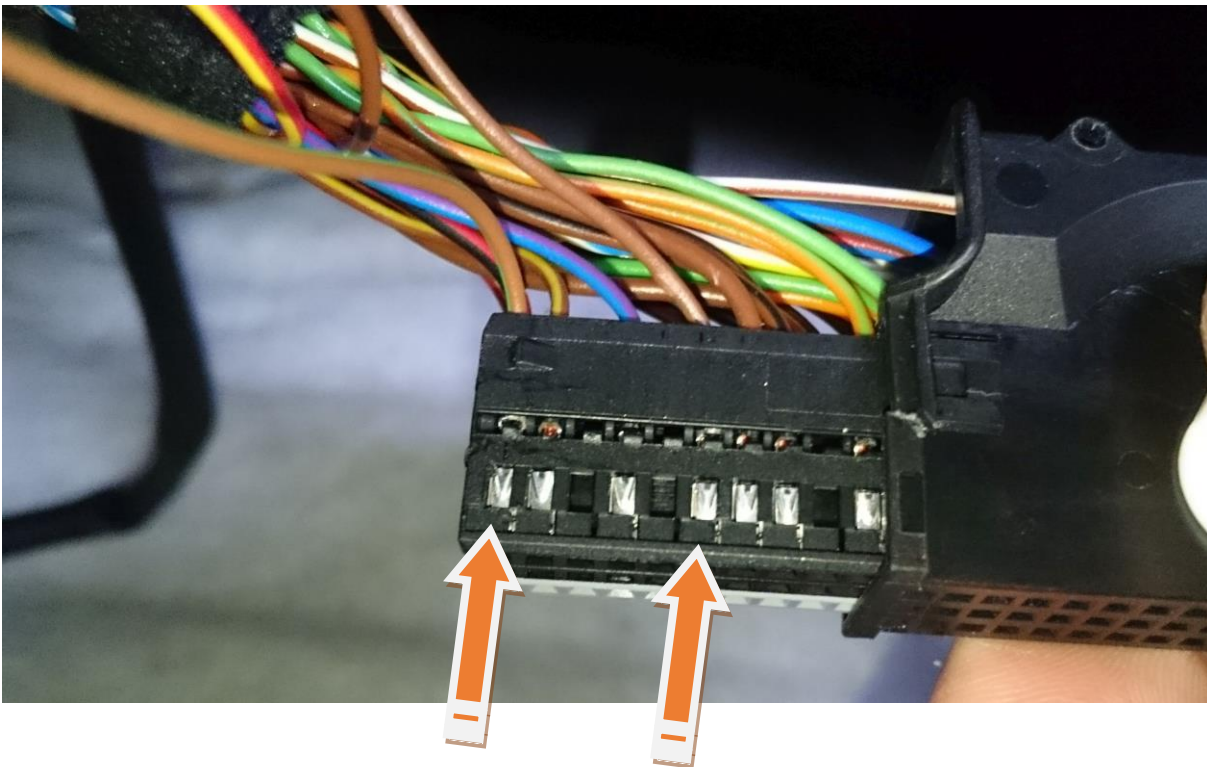
When this blue plug is done, the housing can be pushed back and plugged into the junction box. Fold the safety bar back and check the plug for tightness.

## 4.2 Connection Power supply

The power supply (black plug) is handled similarly.

Pin 1 (in the following picture brown / green but in most cases red / yellow or red / white) is pinned and pinned into the supplied socket housing (right side - check compliance with the controller wiring harness!). The red / yellow cable of the wiring harness is plugged into pin 1 of the connector. It can also happen (especially if no navigation device is installed) that no cable is sitting here. So only the red / yellow cable of the DataDisplay must be plugged.

Pin pin 6 with the color brown and pin in the socket housing. The brown wire of the wiring harness is nipped in the same place.



If the contacts have been inserted into the supplied socket housing, the locking bracket must still be pressed until it snaps into place.

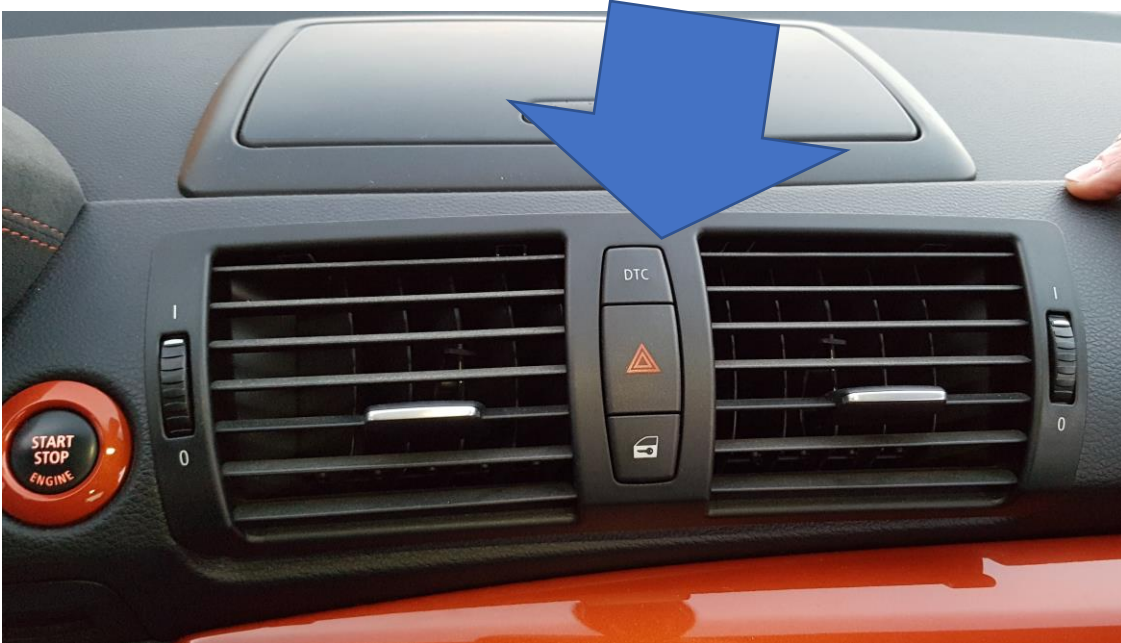
The black plug can be reconnected to the JunctionBox.

Attention, never plug the power supply to the CAN bus and vice versa!

The two plugs are now fitted to the cable harness. Check again that the colors are exactly the same. If something has been done wrong here high costs can arise due to defective vehicle electrics!

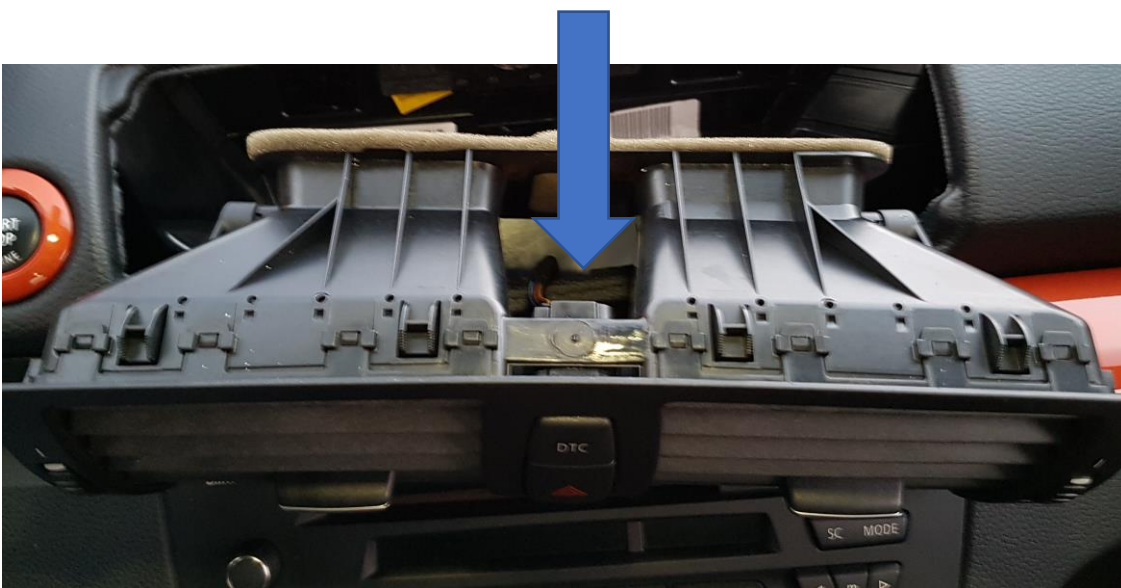
## 5 Display Assembly

First carefully pull out the top of the Fritsch air grill using a wedge or your fingers.



If the fresh air unit has been levered out at the top, pull it slightly forwards and upwards.

Next, the plug for the switch unit must be removed:



After the air duct plug is removed, the outer frame must be removed.

There are brackets all around that need to be pushed up CAREFULLY with a small screwdriver. Pull slightly on the frame so that the pushed-up noses come forward a little.



Then carefully pull the outer frame forward at the top and fold it down.

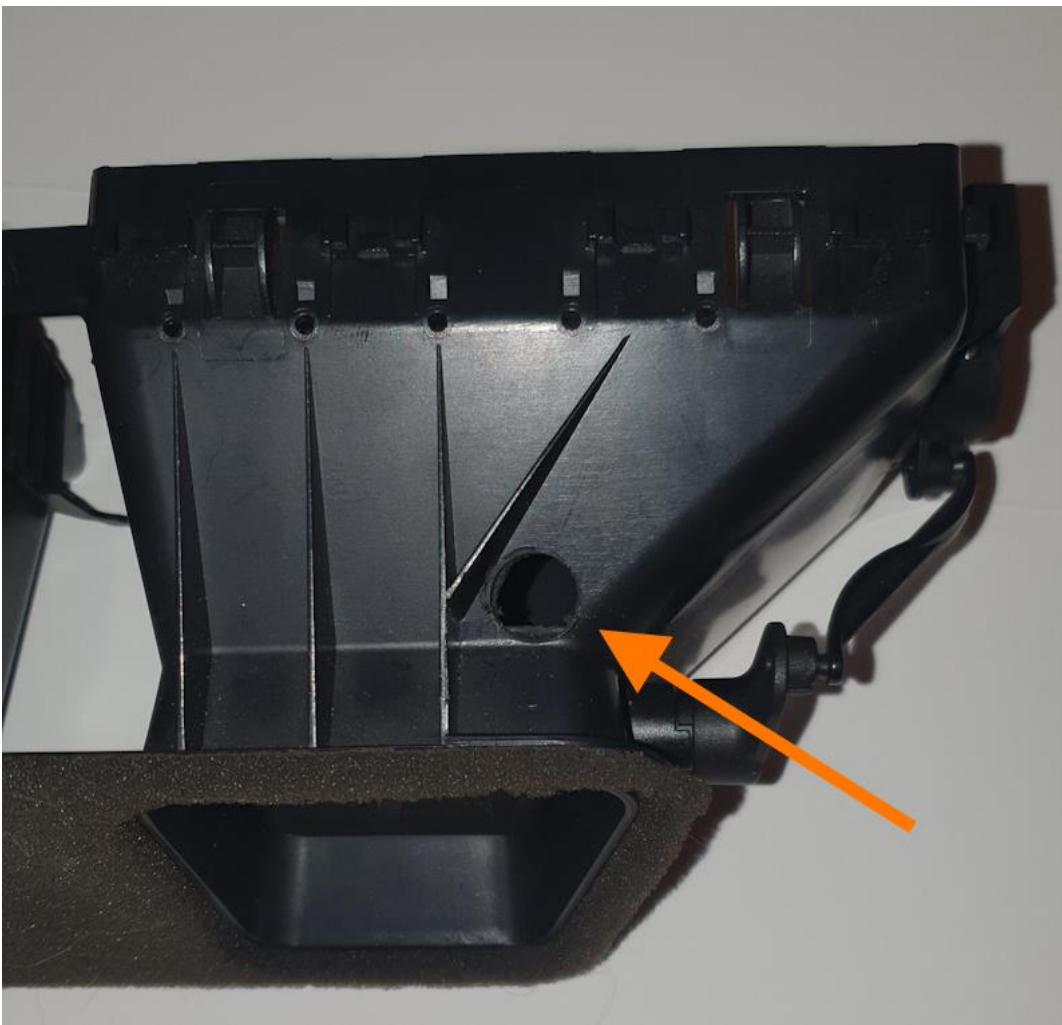
The cover is pushed under the struts in the fresh air grill.

Now remove the inner struts (air ducts) towards the front on the driver's side.

Behind it there are further struts which can easily be pulled out.

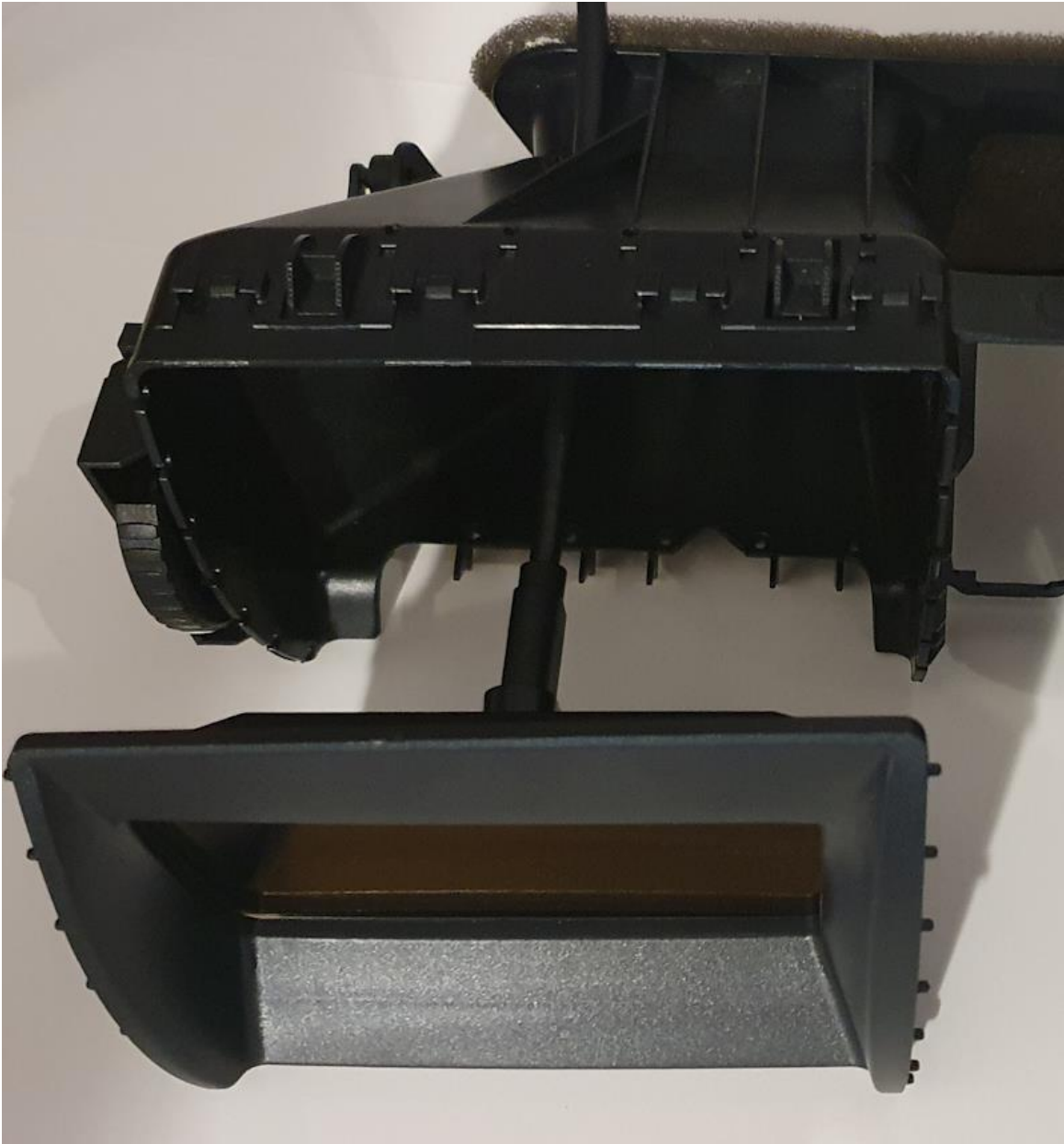
This leaves room for the DataDisplay.

In order to place the display cable in the fresh air grill, a sufficiently large hole must be drilled using the step drill provided. The optimal position is on the top, as shown in the picture:



Route the display cable through the hole and connect it to the display.

Be sure to pay attention to the direction. The plug and the housing have a flattened and a round side. However, it is possible to connect the cable the wrong way round, in which case the display turns on, but has no connection to the vehicle and cannot display any data.



Place the display in the previously removed cover:



First place the cover with the display at the bottom because the cover must be tilted from bottom to top into the fresh air grill.





Make sure that all tabs are seated correctly and press the cover onto the Frusch air grill until all tabs are locked into place.



Then lead the display cable towards the passenger footwell.

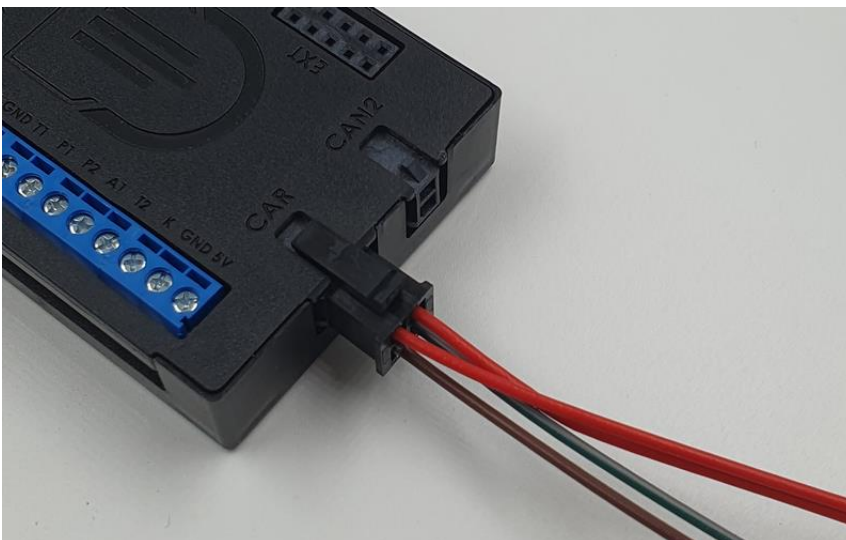
Plug in the plug for the fresh air grill and first insert the fresh air grill into the bottom of the dashboard and then press it in until it clicks into place.

Connecting the junction box:

Connect the display cable like this:



Connect the harness coming from the car:



The USB cable for updating is best laid from the glove compartment, past the fuses and down to the connection box. So that you always have the USB cable at hand for updates.

Connect the USB-Cabel:



Close the cover of the passenger's footwell and stow the controller in a suitable position.

**The DataDisplay by AK-Motion is now ready for use.**

**Have fun with it**

## **6 Technical specifications**

- working voltage 7V - 36V
- Current < 120mA (0mA after vehicle standby about 30-60 minutes after shutting off)
- current consumption 1.0A@12V
- input 12W
- Temperature range -40°C bis +85°C
- weight ca. 200g