



Installation Manual DataDisplay F2X

Dokument Referenz #: 101836

Version: 1.40

Zuletzt geändert: August 12, 2019

Installation Manual

DataDisplay BMW F2X

BMW F20 F21 F22 F87

!!! Installation only by qualified persons !!!

!!! Disconnect battery before installation !!!

	<p style="text-align: center;">Installation Manual DataDisplay F2X</p>	
<i>Dokument Referenz #: 101836</i>	<i>Version:1.40</i>	<i>Zuletzt geändert: August 12, 2019</i>

Document release notes

Version	Comments	Date	Author
1.0	Initial draft	21.11.2016	Konzack
1.1	Fix Pin Number Page 14	27.11.2016	Konzack
1.2	Add technical specs	14.02.2017	Konzack
1.3	Add new cable colors since march 2017	29.03.2017	Konzack
1.4	Add LCI description	12.08.2019	Konzack



Installation Manual

DataDisplay F2X

Dokument Referenz #: 101836

Version:1.40

Zuletzt geändert: August 12, 2019

Inhalt

1	PACKAGE	4
2	REQUIRED TOOLS	5
3	DISASSEMBLY	5
3.1	DISASSEMBLING THE PASSENGER FOOTWELL COVER.....	5
3.2	CAN BUS CONNECTION	10
3.3	POWER SUPPLY CONNECTION	13
3.4	DISPLAY INSTALLATION	15
3.4.1	Installation VFL (pre facelift)	15
3.4.2	Installation LCI (Facelift)	23
3.5	IF THE CRIMP CONTACTS DO NOT FIT.....	33

1 Package



- Display with frame
- Harness for controller → junction box
- Display cable
- 1x Socket housing for pinning the open side of the display cable
- 1x USB cable (controller and display update)
- 2x Socket housing for the wiring harness

2 Required tools

- Torx T20
- plastic wedge (optional)
- Ratchet (socket wrench) 10mm (possibly 8mm)
- Flat-head screwdriver
- Small flat-head screwdriver or "paper clip" (to spin around)

3 Disassembly

3.1 Disassembling the passenger footwell cover

Tool: Ratchet with 10mm nut

Remove 2 screws:

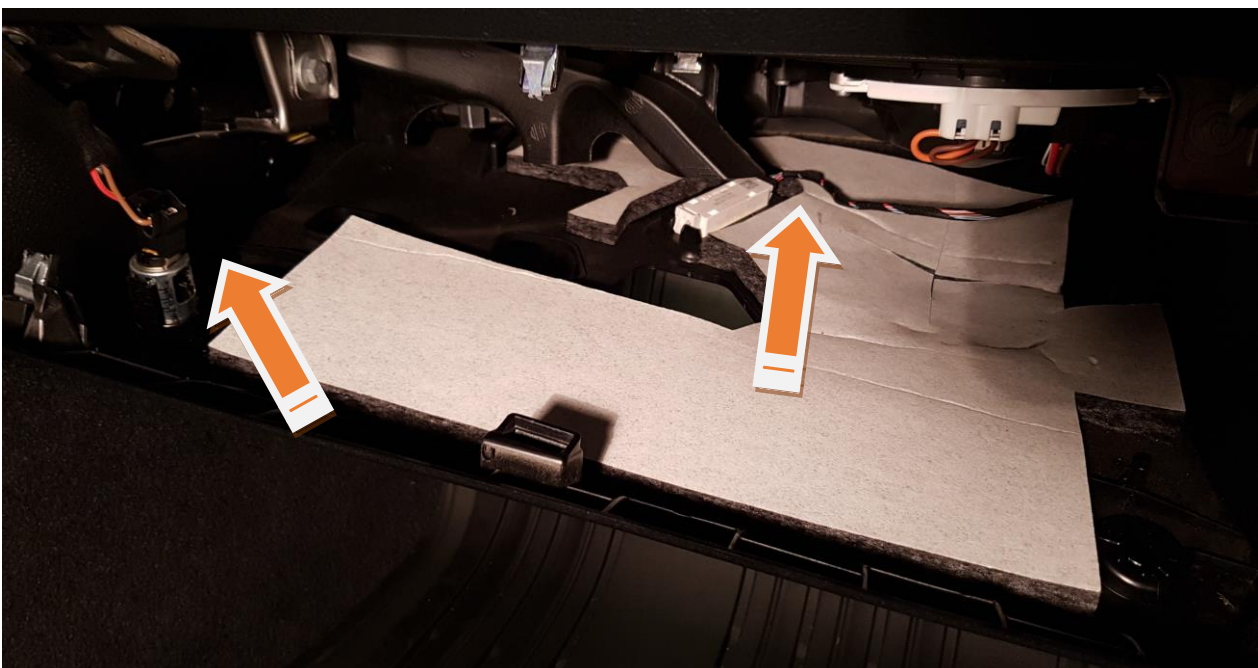


Pull down the front cover. This is held with 3 clips.

Attention: there are still at least 1 plug that needs to be removed.



Disconnect plug for 12 volt socket (if available) and footwell lighting.



The cover can now be removed.

Lift off the door sill strip at the front.

It does not have to be completely removed, but the FEM cover sits underneath.



Now remove the FEM cover. This is held by 3 clips.

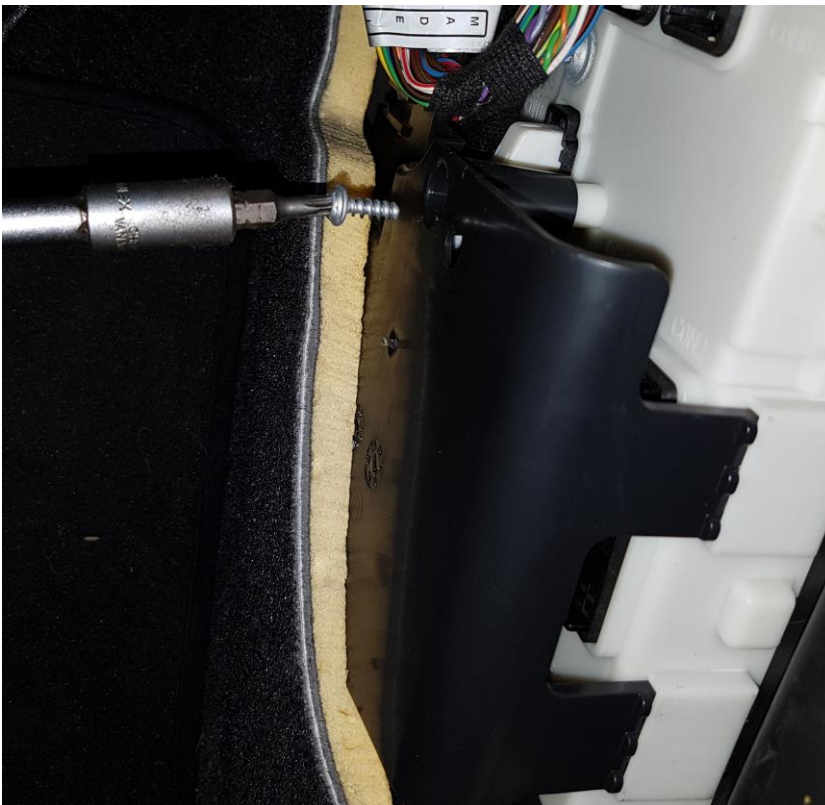


FEM Abdeckung:



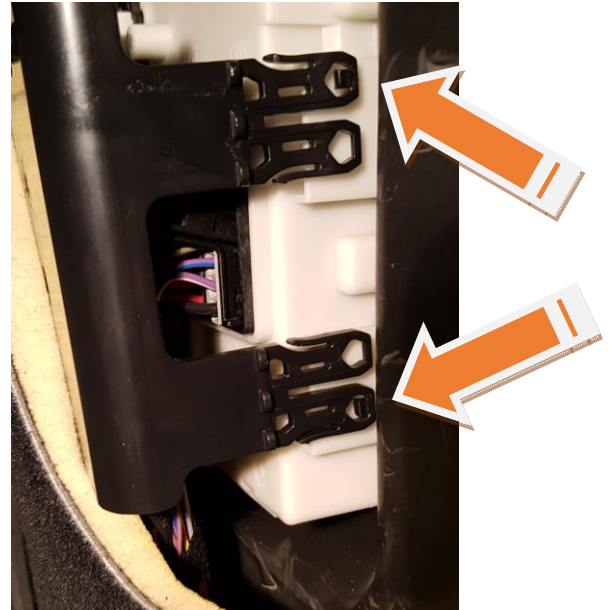
Remove the cover on the FEM:

Tool: Torx T20



The cover is still held by 2 retaining lugs.

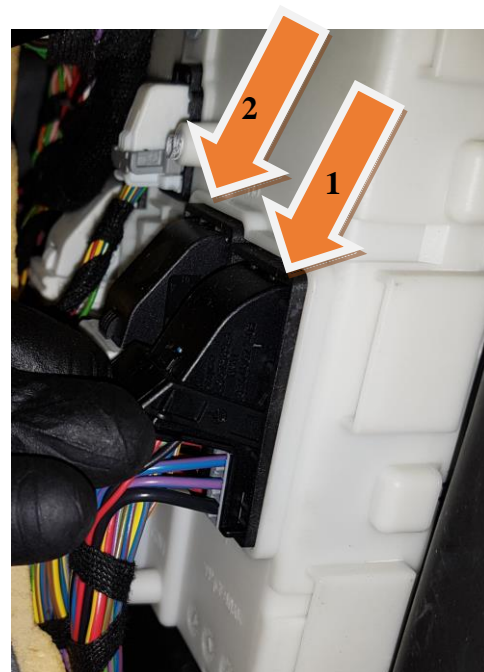
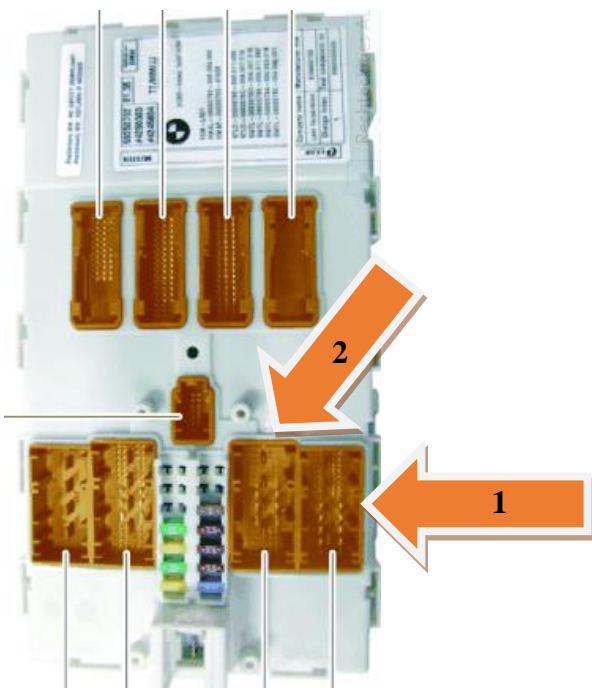
Press them one after the other and carefully pull on the cover:



The cover can now be put backwards.

Access to the FEM is now free. The DataDisplay is connected to the following plugs:

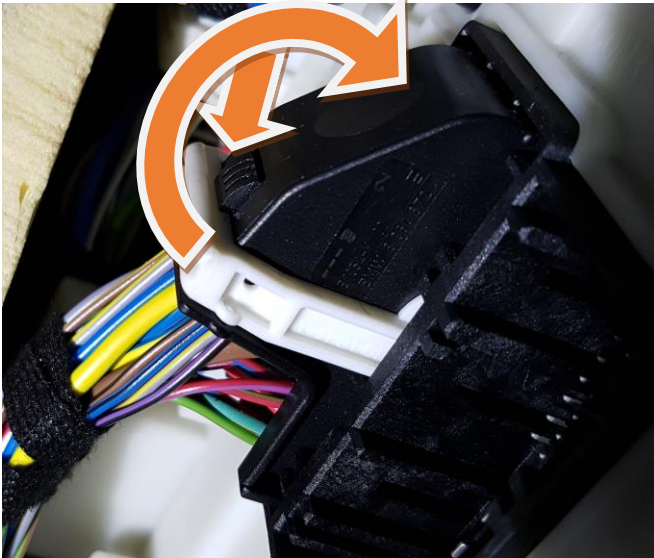
FEM:



3.2 CAN bus connection

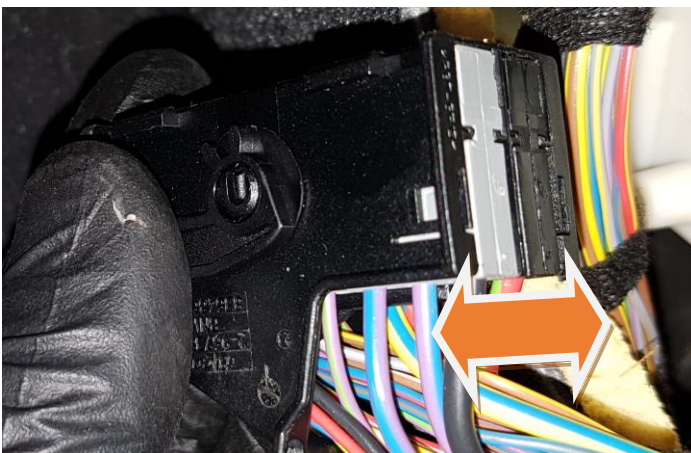
The first connector (1) has the CAN bus to which the DataDisplay is connected.

Press the latch and fold the handle:

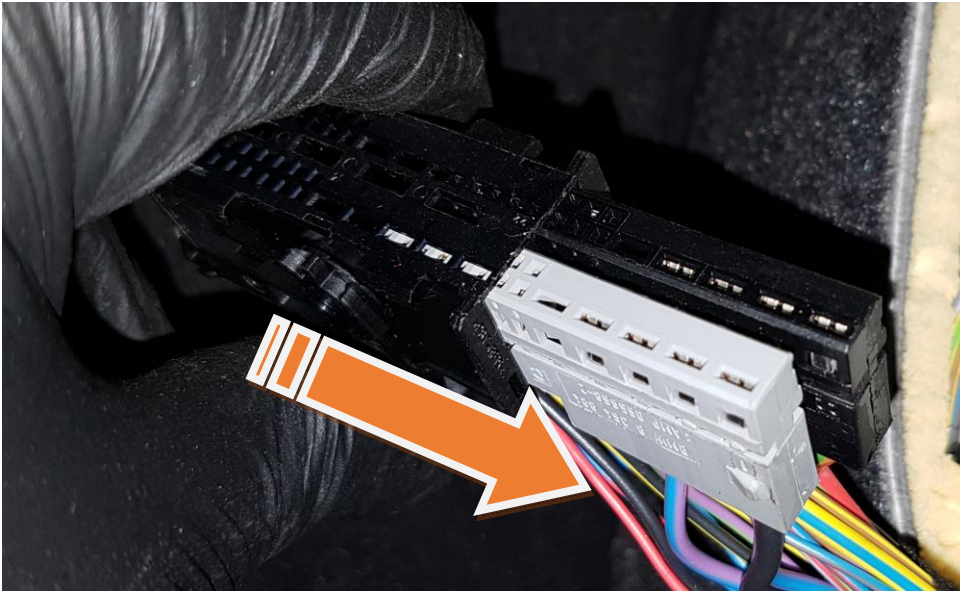


While When the clip is folded down, the plug is pressed out of the FEM a bit and can then be removed.

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

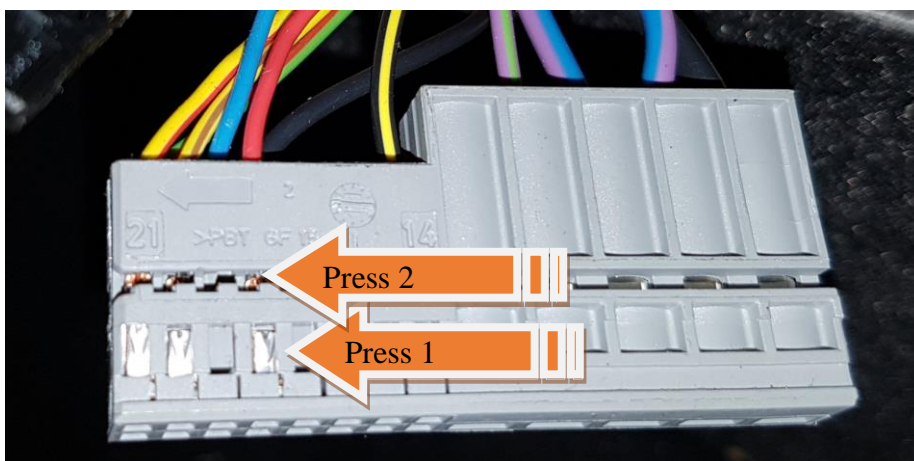


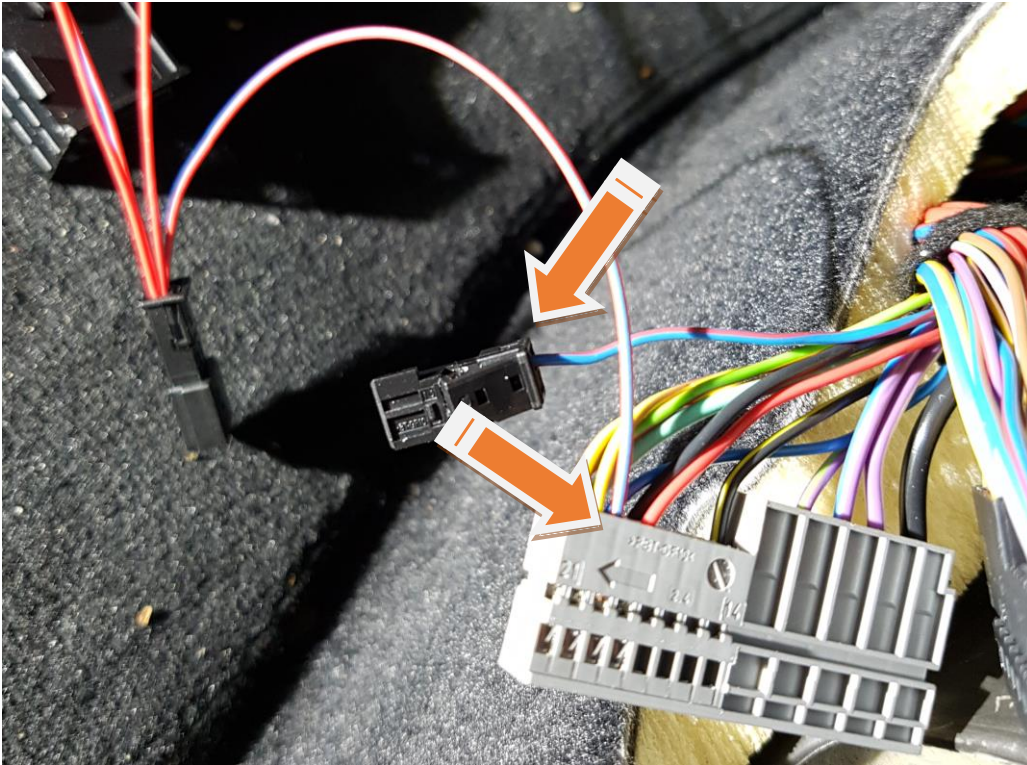
When pulling the housing carefully backwards, the plugs come out.



Now the cables Pin # 19 (CAN_High with the color red / blue) and Pin 18 (CAN_Low with the color red) are spun 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.

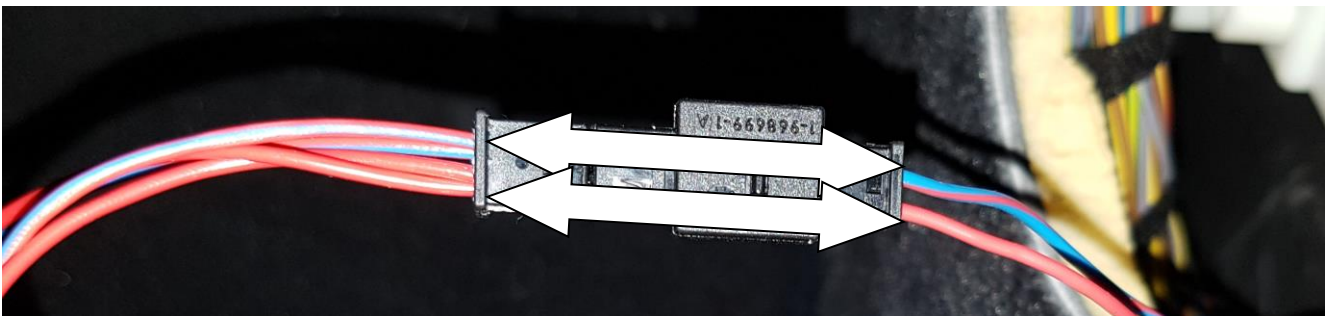
Attention: the flag can snap into the intermediate opening a second time. Here you have to press again.





Insert the removed cables into the supplied socket housings.

Caution: The side on which the cable is inserted is specified by the supplied cable harness! **The colors must match!**



If both cables have been inserted into the socket housing, press the safety clip until it clicks into place. This again prevents slipping out of the contacts.



Now connect the plug of the DataDisplay cable harness and the just connected socket.
Pay attention to the correct match again!

3.3 Power supply connection

ATTENTION: Be sure to note point 3.5 !!!

The second plug (2) has the power supply. (See figure in 3.1)

The power supply is tapped on the plug (2) directly next to the Can bus connector.

The access is exactly the same as the already described Can-Bus.

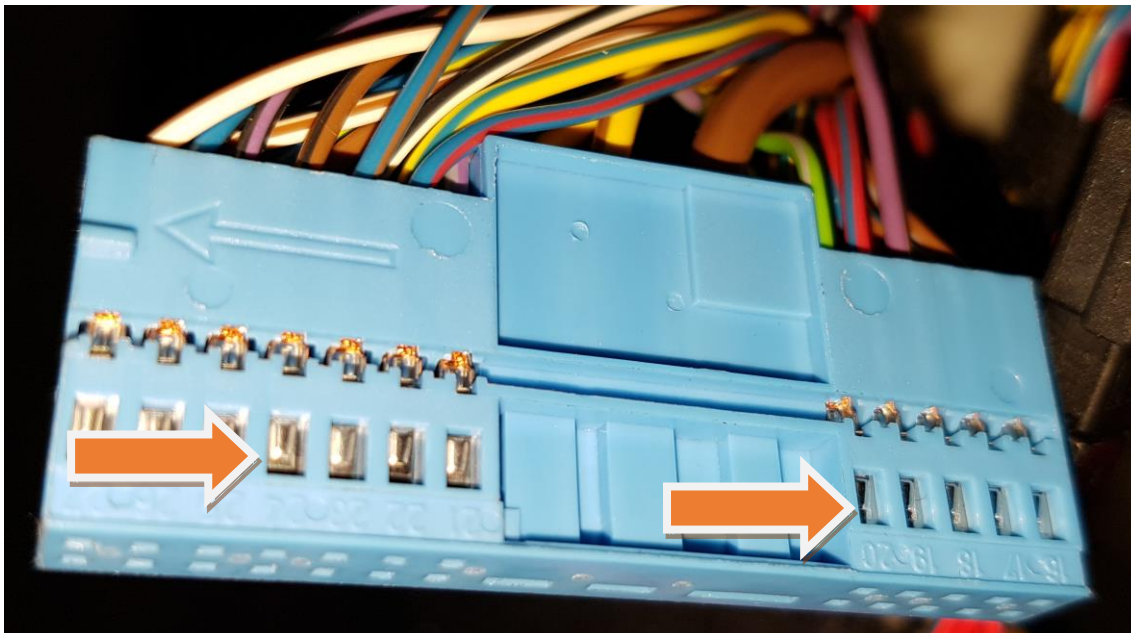
The connections are as follows:

Voltage 12 Volt Clamp 15N: Pin 20 Color Green / Gray

Ground: Pin 24 brown / black

Since March 2017, the cables of the DataDisplay have been delivered to match the colors of the vehicle's cables. Previously, the text crossed out here was small:

Attention: The colors of the wiring harness are universal and do not match. Please note the following: DataDisplay wiring harness: red / yellow = power supply 12 volts, Brown = Ground

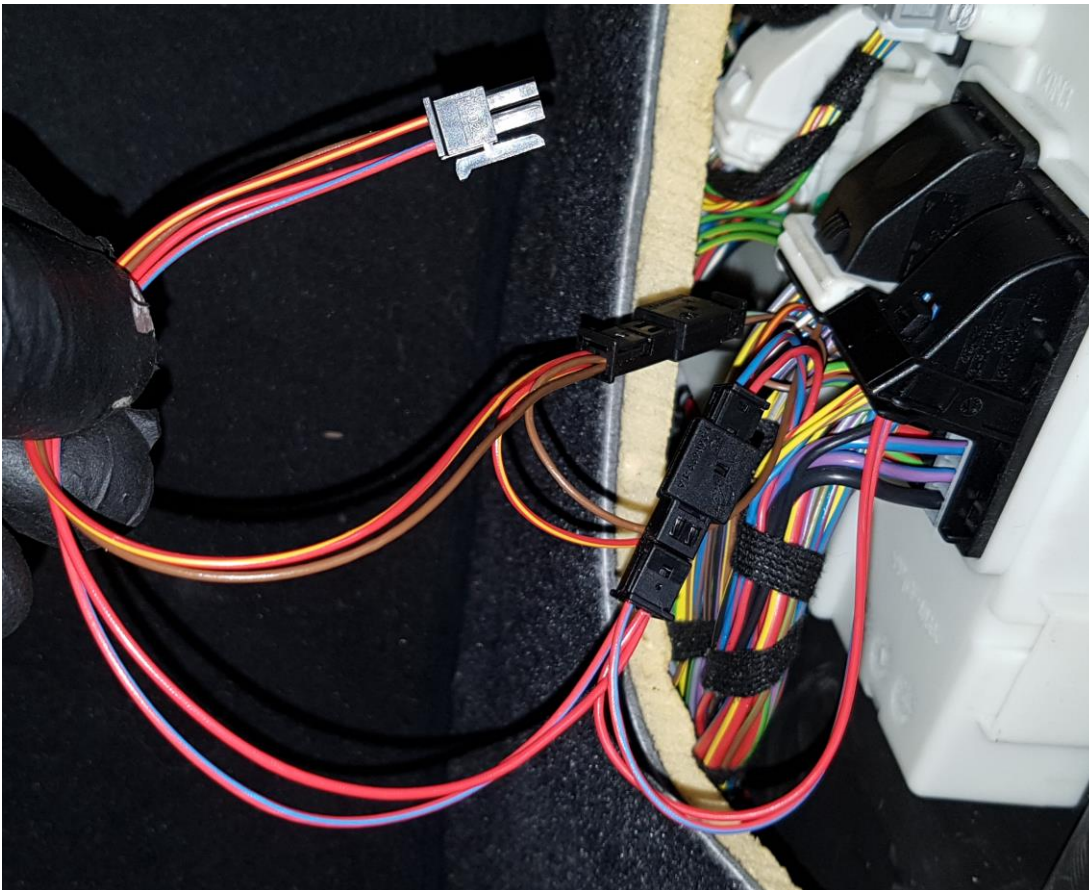


Disconnect **pin 20 green / gray** and insert into the second supplied socket housing. Make sure that the page matches the green / gray cable of the DataDisplay when they are put together.

Disconnect **pin 24 brown / black** and put it in the free space of the socket housing next to the green / gray pin. This is then opposite the brown / black cable of the DataDisplay harness.

When all cables are plugged in and the housings are plugged back into the FEM, it looks like this:

Attention, the following picture shows an outdated version of the cable colors. The red / yellow cable shown here is displayed incorrectly here. It is green / gray (matching the vehicle).



3.4 Display installation

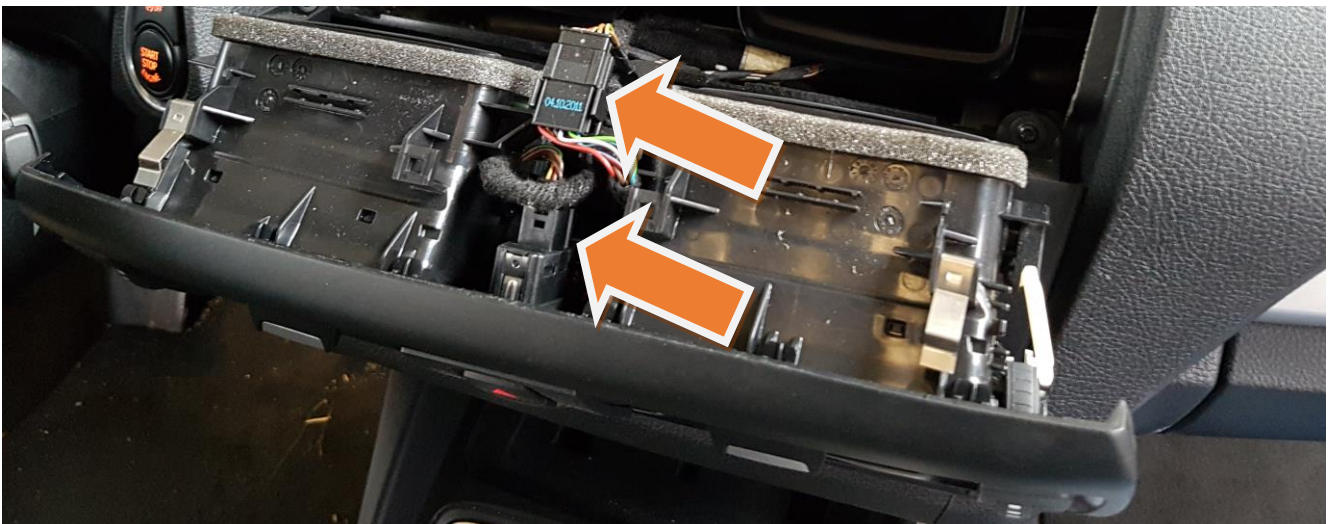
3.4.1 Installation VFL (pre facelift)

Pull out the fresh air grill at the top first (possibly use plastic lever):



Now you can pull out the fresh air grill only one then on the other side.

The plugs on the back can but do not need to be terminated.

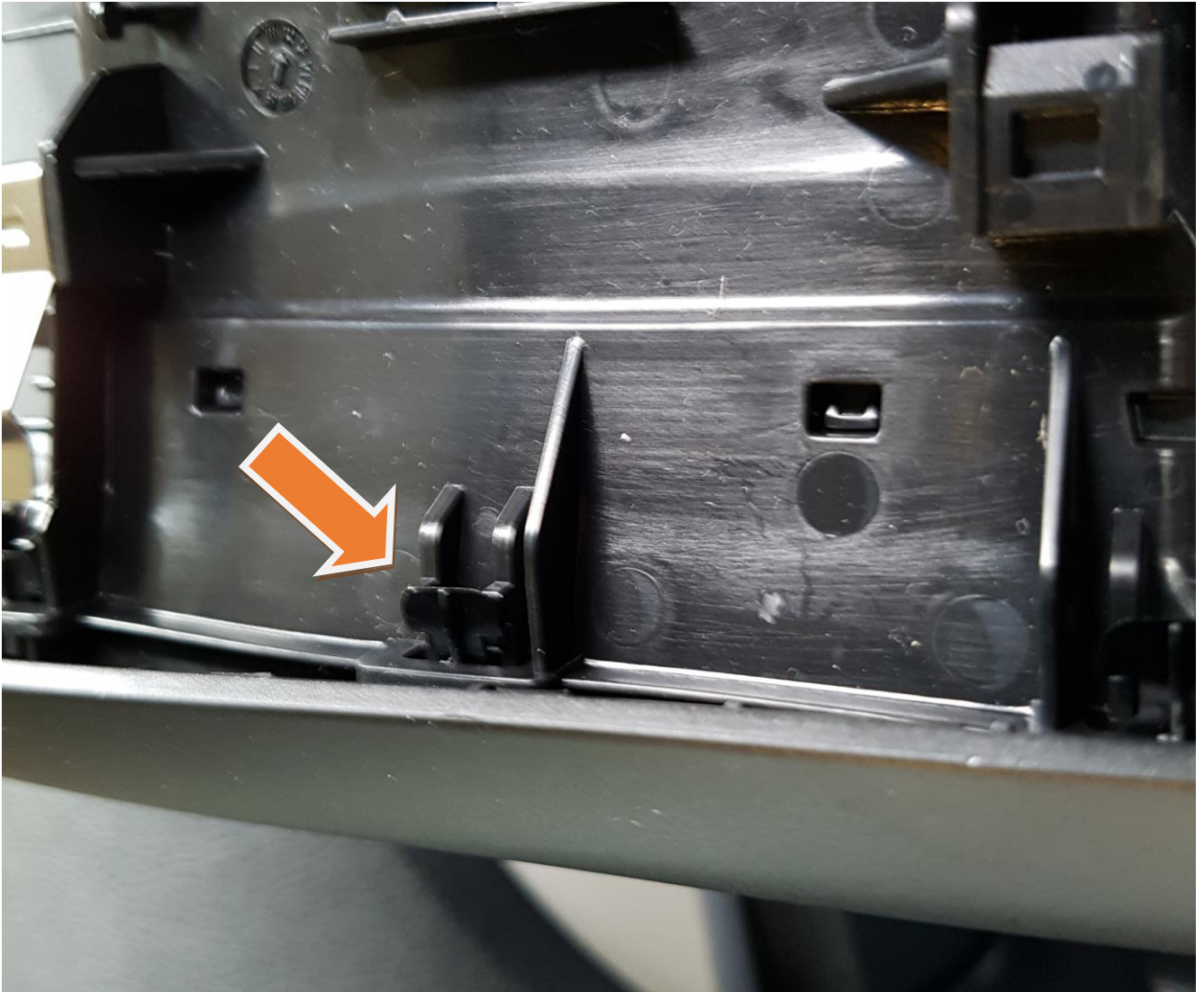


Now lay the supplied display cable from the top to the bottom on the right-hand side at the opening you have just created.



Remove the panel of the fresh air grill.

Beginning on one side, gently push the holders upwards all the way around until they can slide over the locking lugs. Carefully push the panel away from the rest of the grill:



At the end remove the panel.



Carefully remove the first part of the grill on the left side.

If necessary, pry it out with a screwdriver. When the left side is free, pull left away.



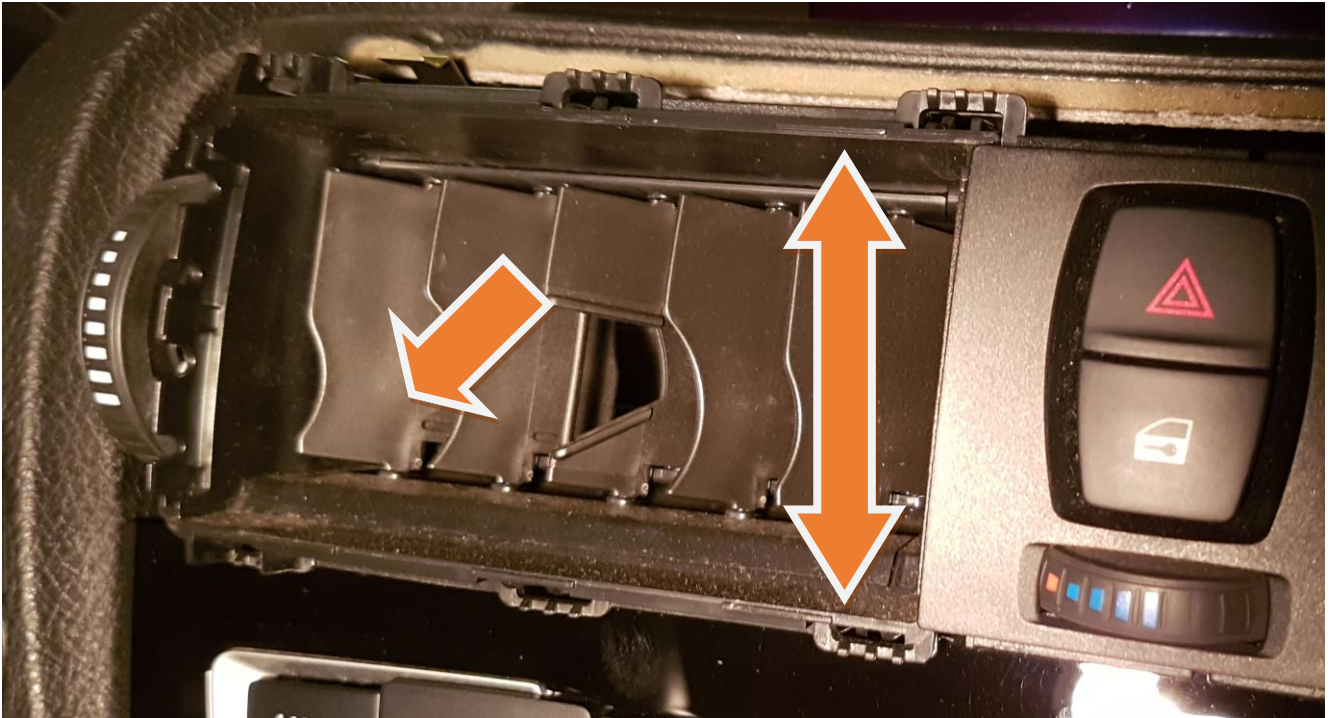
Keep the following parts in a safe place so that retrofitting is possible at any time:



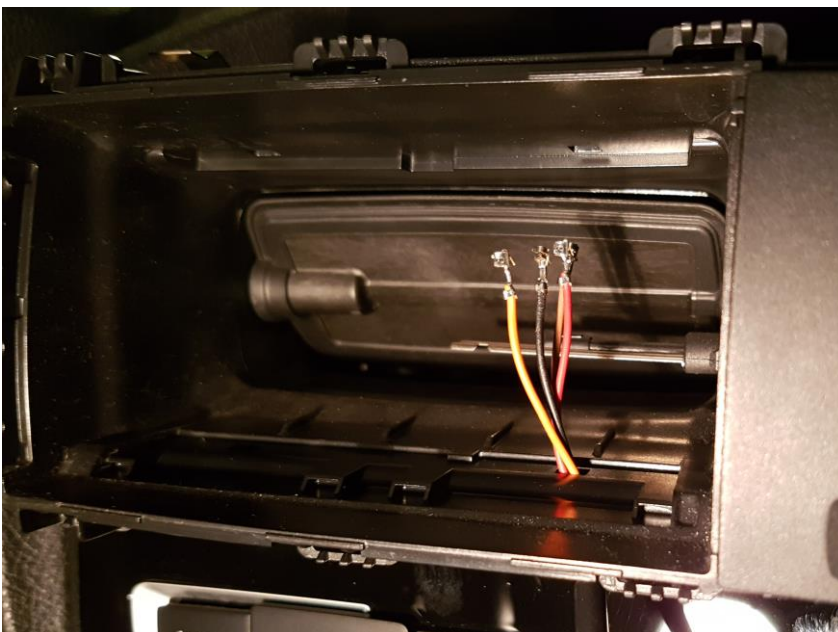
Disconnect any connector still attached to the air ducts and place it on the left side of the display frame:



The second part of the grill can be easily removed by pulling apart the fresh air grill a bit:



Through the opening below, the display cable (one cable after another) is now out. Attention, make the plugging on the right side (direction hazard warning switch)!

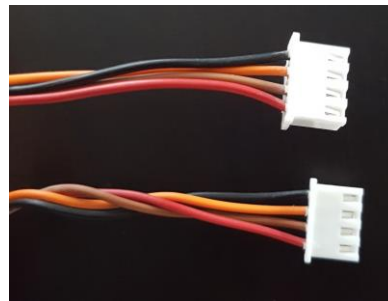
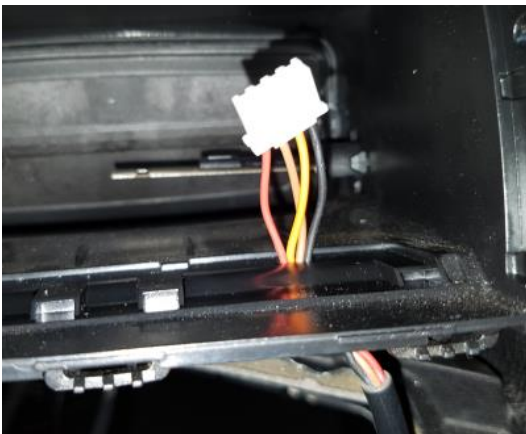


The open cables are now plugged into the supplied display plug.

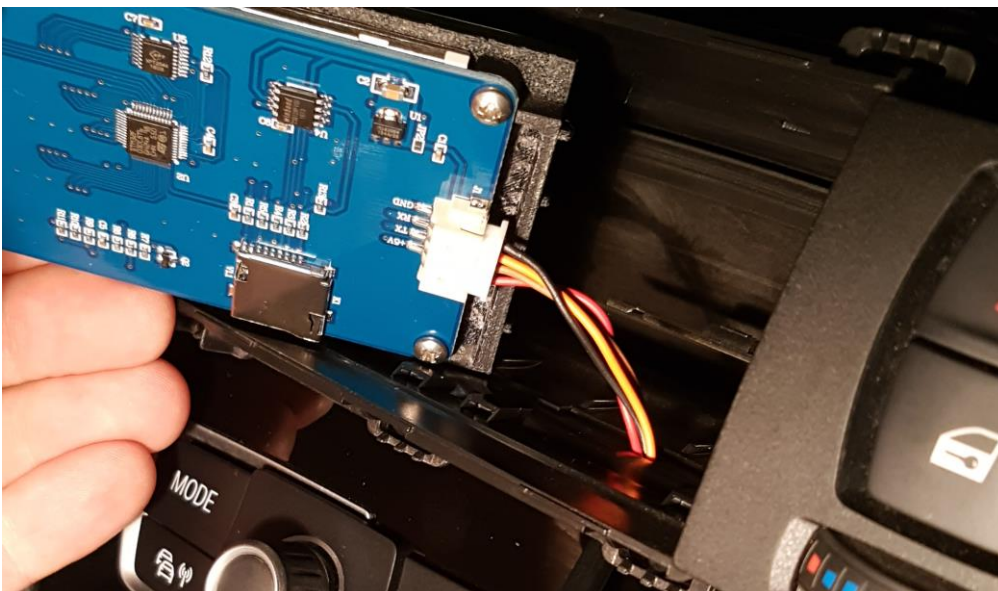
Make sure that the barbs are bent slightly upwards if they are compressed when plugging in the cables.

The cable is 1: 1 occupied, the plugging must be done exactly like the other side!

The barbs must show when plugged in to the opening in which they snap into place.



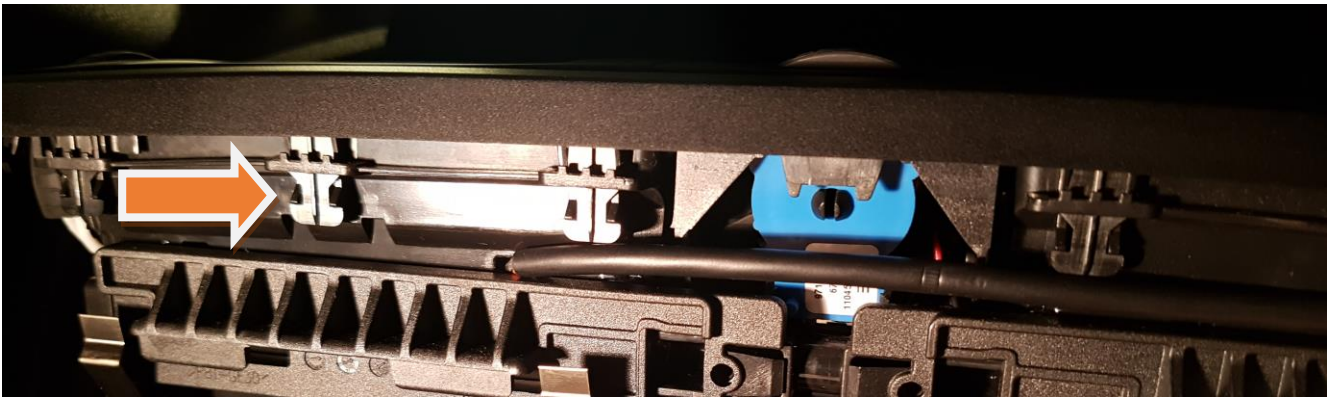
Now the display can be connected:



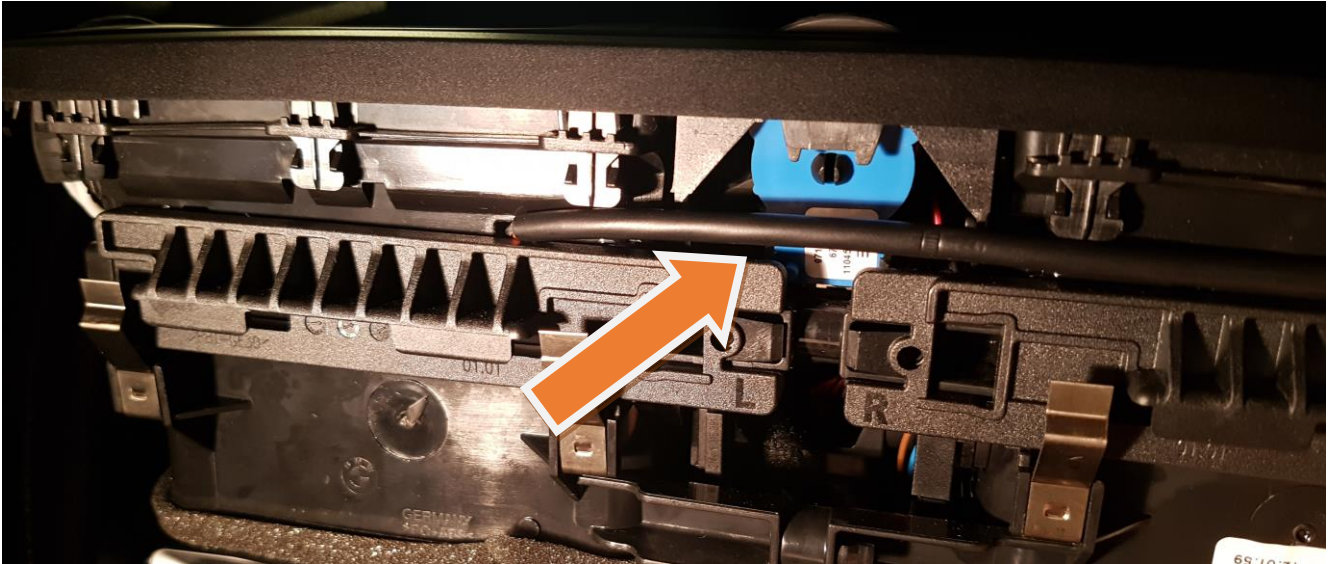
Now insert the display into the right guide on the right and then press it into the recess on the left in which the frame was already sitting.



Now carefully put on the panel again until all noses are hooked.



The cable can be laid as seen in this picture and the whole fresh air grill can be pushed back to its actual position:



3.4.2 Installation LCI (Facelift)

Pull out the trim strip with the fresh air grill.

Start on one side. Best on the driver's side, possibly plastic wedge to help.



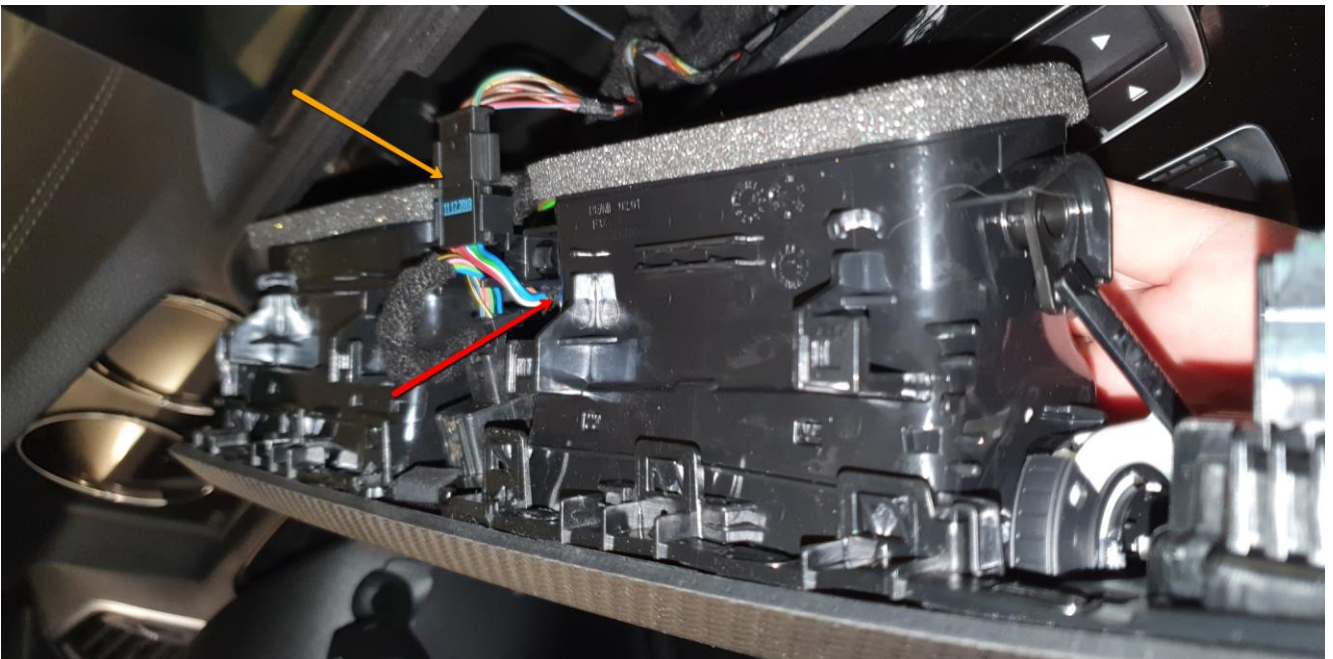
Carefully pull the strip out further (attention, there are still cables on the fresh air grill!)

If the trim strip is very tight, use a tool (plastic wedge or similar) to pry it.

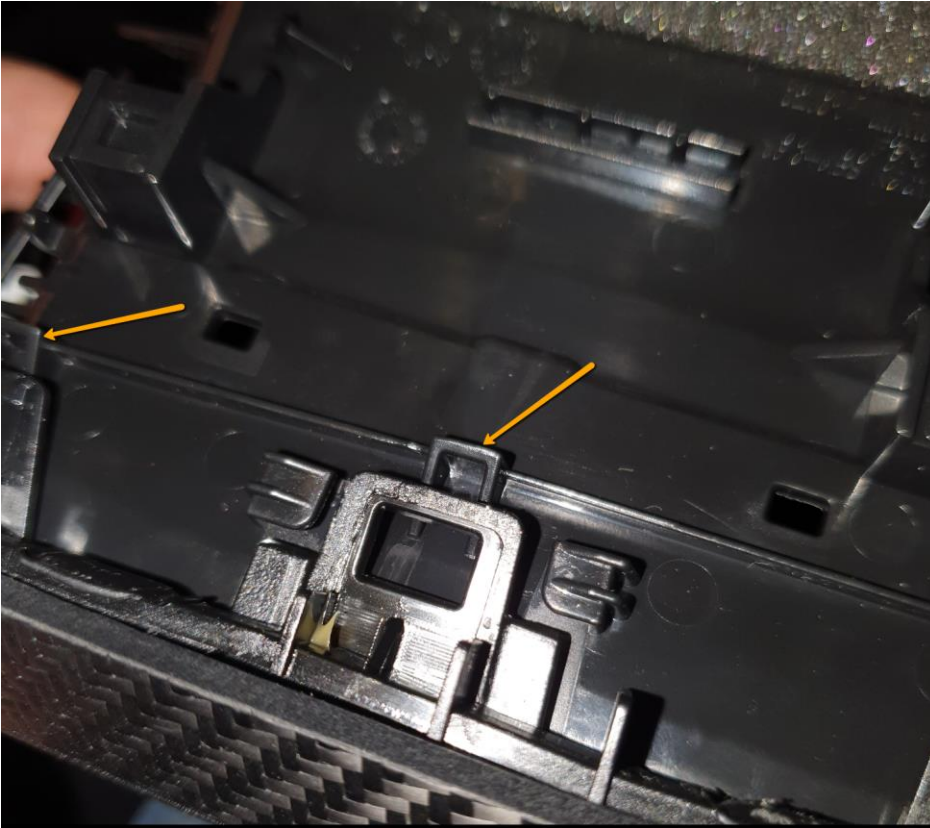


Disconnect the two connectors on the fresh air grill.

Orange Arrow is just pulled apart, Red Arrow has a retaining nose on the bottom that needs to be pressed.



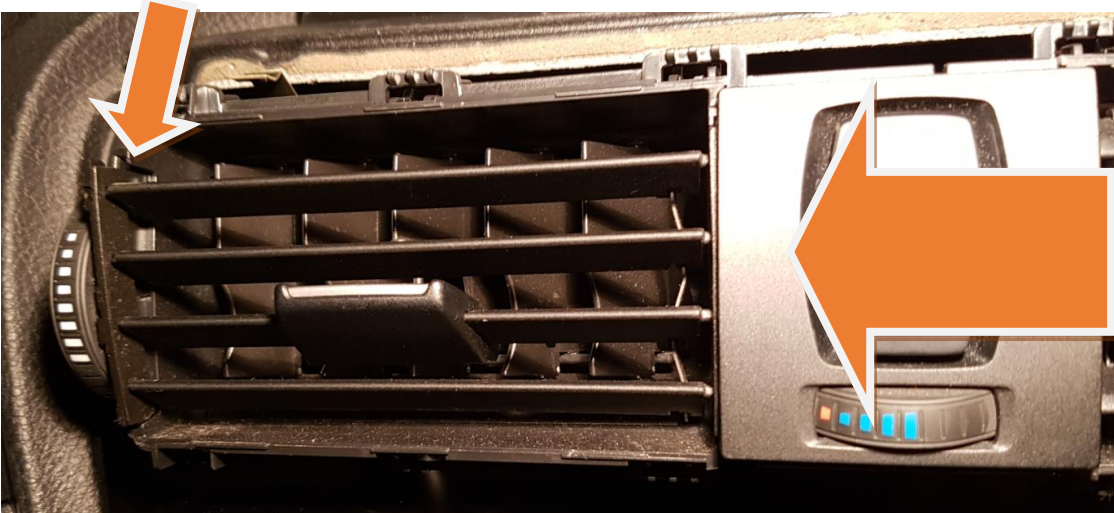
On one side, starting from the top, pull up the retaining clips while pulling the fresh air grill away from the trim strip.



Fold away the fresh air grill and remove.

Carefully remove the first part of the grill on the left side.

If necessary, pry it out with a screwdriver. When the left side is free, pull left away.



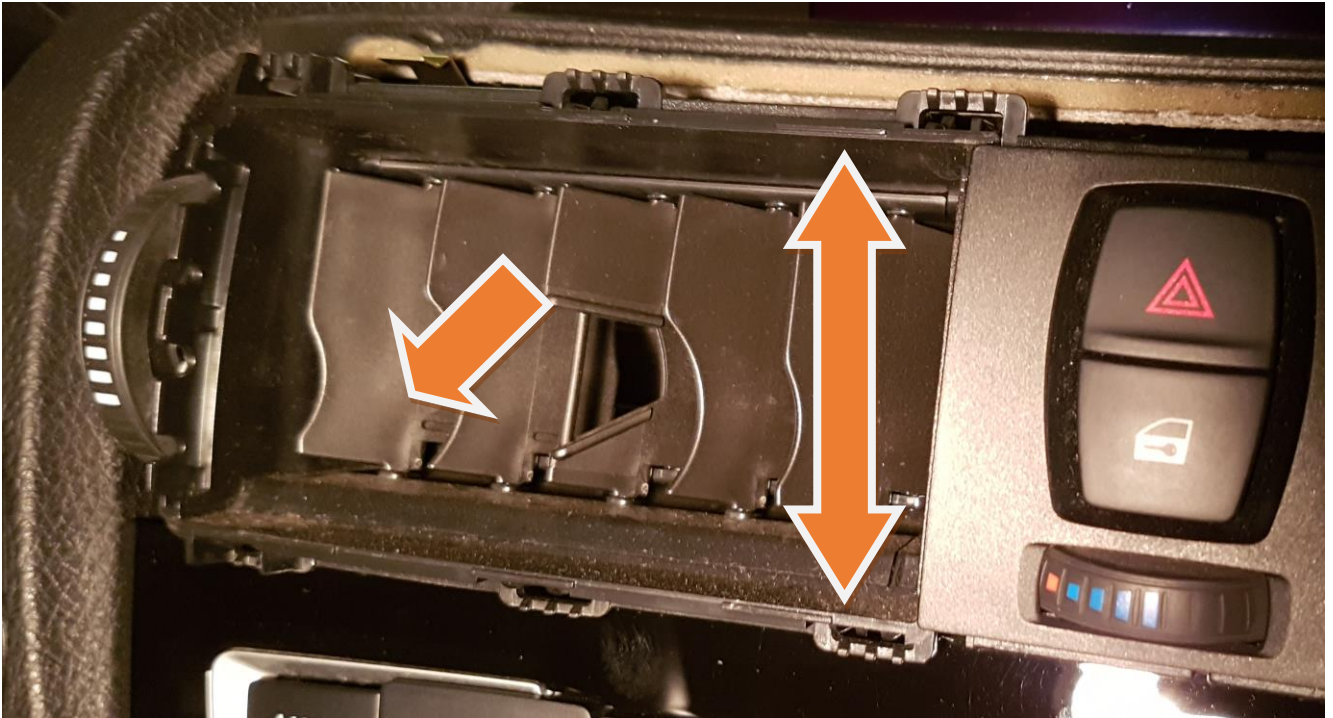
Keep the following parts in a safe place so that retrofitting is possible at any time:



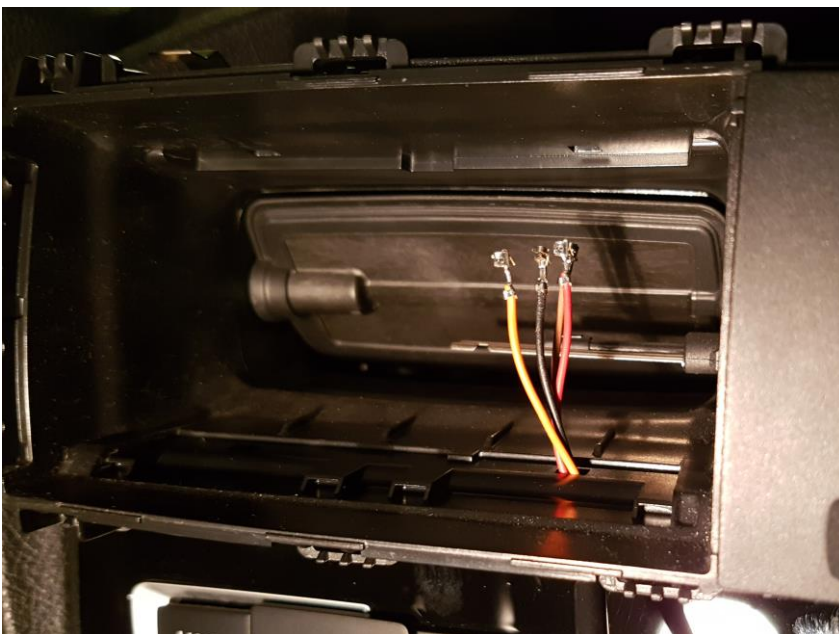
Disconnect any connector still attached to the air ducts and place it on the left side of the display frame:



The second part of the grill can be easily removed by pulling apart the fresh air grill a bit:



Through the opening below, the display cable (one cable after another) is now out. Attention, make the plugging on the right side (direction hazard warning switch)!

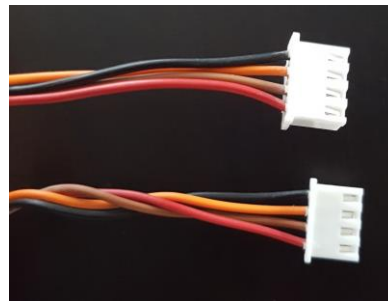
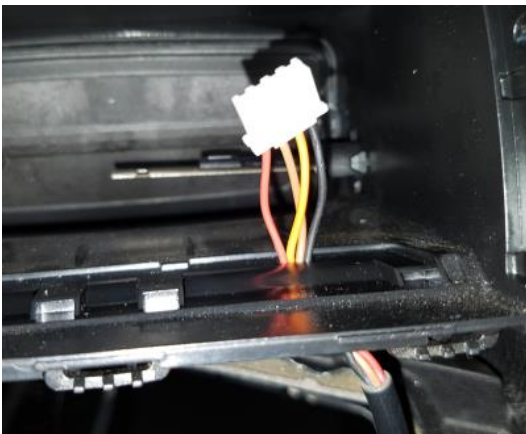


The open cables are now plugged into the supplied display plug.

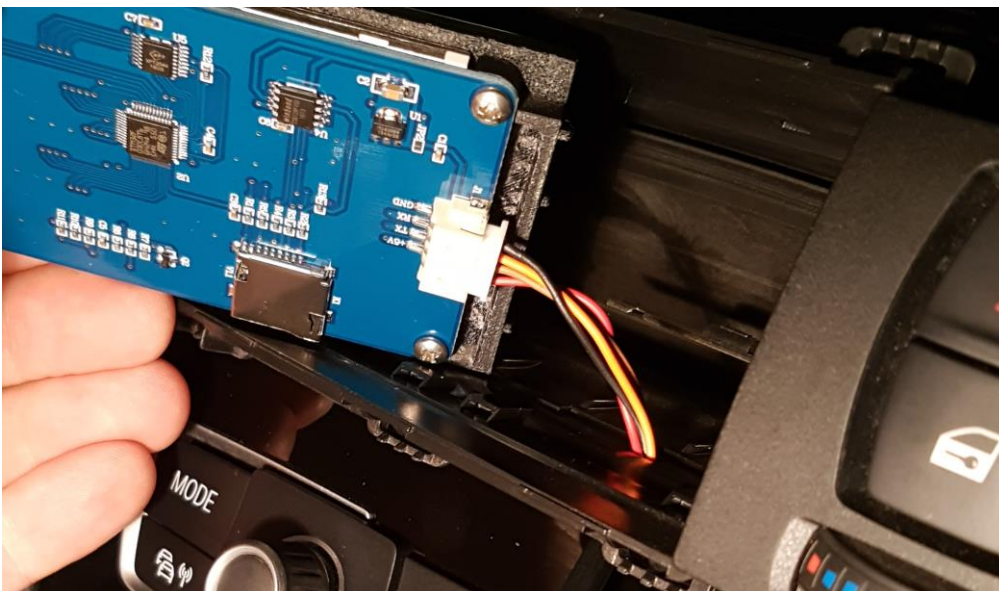
Make sure that the barbs are bent slightly upwards if they are compressed when plugging in the cables.

The cable is 1: 1 occupied, the plugging must be done exactly like the other side!

The barbs must show when plugged in to the opening in which they snap into place.



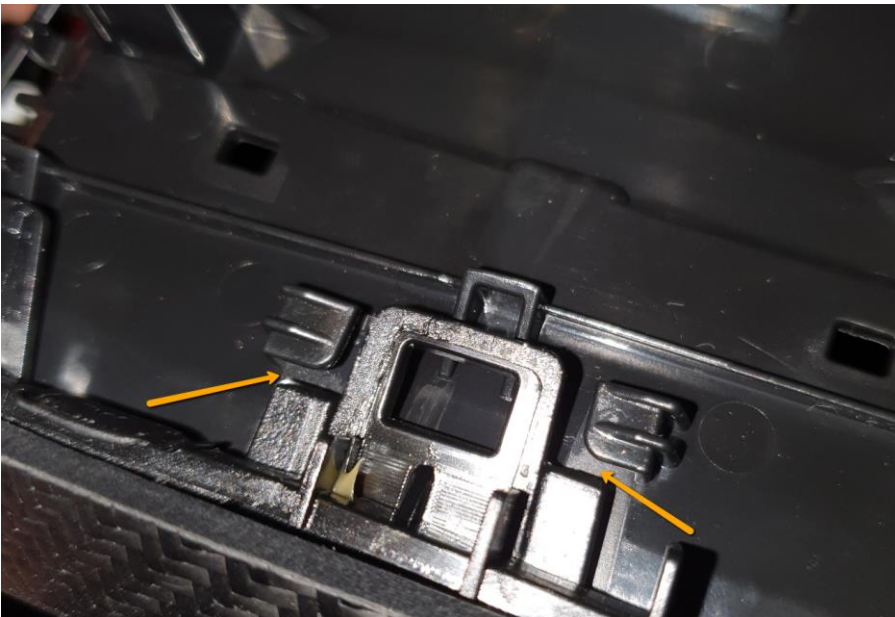
Now the display can be connected:



Now insert the display into the right guide on the right and then press it into the recess on the left in which the frame was already sitting.



Put the fresh air grill including the display back on the trim strip.
To do this, place the fresh air grill at the bottom and fold it upwards.
Dararu ensure that at each nozzle a strap fits into the provided guides.

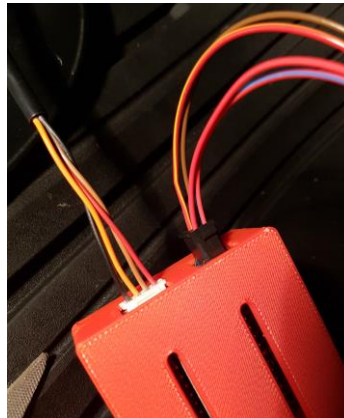
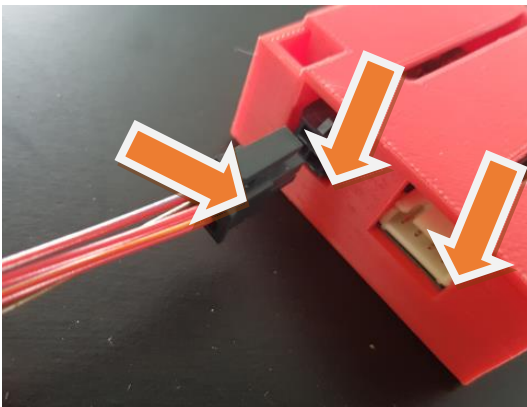


Reconnect the two cables and plug the trim strip to the dashboard.

Now the controller can be connected:

(Pictures show an old controller generation, the procedure has remained the same)

The retaining clip on the harness connector must face up, just like the guides on the display cable connector.



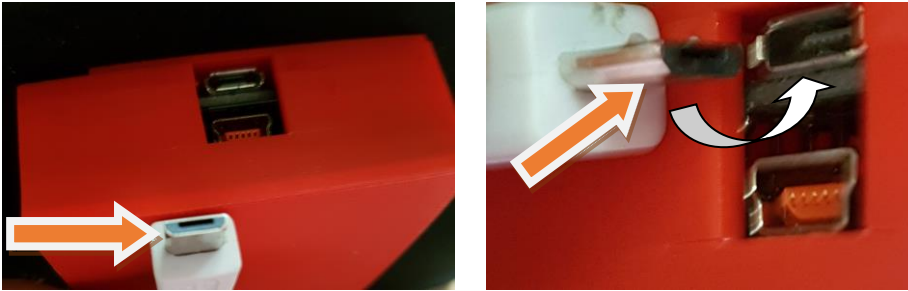
The supplied USB cable still needs to be connected to the controller for future updates. **The USB connection is soldered to the controller and can break off if the load is too high! Connect or disconnect the USB cable with CAUTION! The connections are all tested and there is no warranty if the USB port breaks!**



ATTENTION: The USB cable only fits one way into the controller.

When trying to plug it in the wrong way, the USB socket can break off!

The bevelled corners of the plug must face down. Marked in the picture:



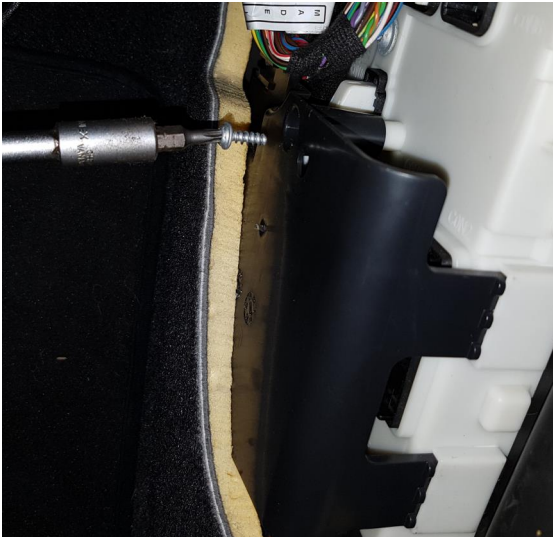
It makes sense to put the USB cable through the glove box to the controller.



For LCI2 models, the small cover is omitted, the USB cable can alternatively be guided under the rubber mat through the opening.

The connection is now ready and everything can be reassembled.

Install the cover of the FEM and secure with the Torx screw.



Insert the cover with the 3 plastic pins over the FEM and press firmly.

The rubber lip towards the door belongs over this cover.

To easily re-install the door sill, there is a simple trick.

Turn the bar from the inside to the outside over the plastic clip and then press it directly onto the clip.

One after the other.



3.5 If the crimp contacts do not fit

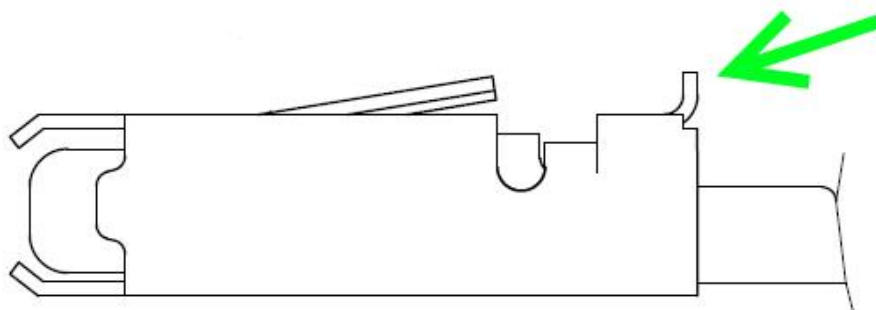
On some models (build date before 03/213) it may be that the crimp contacts of the power supply do not fit.

This was changed for a short time by BMW.

Why does not anyone know that exactly.

The difference:

Pins that do not fit have no lateral but a guide in the middle:



This guide must be removed, otherwise the contacts will not fit into the supplied socket housings.
The matching contacts, on the other hand, have a side guide as shown here:



These contacts fit directly, nothing has to be edited.

According to experience, the 2 contacts for the power supply to vehicles before 03/2013 must be processed so that the rear middle guide is no longer in the way.

This does not affect the contact in any way, it is just a guide!

Vehicles from 03/2013 should have the right contacts again.



Installation Manual

DataDisplay F2X

Dokument Referenz #: 101836

Version: 1.40

Zuletzt geändert: August 12, 2019

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

If you have any questions, please contact our support forum at any time:

<http://www.ak-motion.de/forum>

We hope you have fun



Installation Manual

DataDisplay F2X

Dokument Referenz #: 101836

Version:1.40

Zuletzt geändert: August 12, 2019

Technical specifications

- Working voltage 7V - 36V
- Quiescent current <100mA (0mA without ignition)
- Max. current consumption 1.0A@12V
- Power consumption 12W
- Display output: 5V
- Temperature range -40 ° C to + 85 ° C
- Weight approx. 100g
- Dimensions 52 x 52 x 25 mm (W x H x D)