

r.LiNK Video-inserter

CI-RL2-CONCERT

**Compatible with Audi vehicles with
Symphony3-or Concert Radio3 system
and 6.5inch touch-monitor**



example

**Video-inserter for one rear-view camera
and two additional video inputs**

Product features

- Video-inserter for factory-infotainment systems
- 2 CVBS video-inputs for after-market devices (e.g. DVD-Player, DVB-T tuner)
- 1 CVBS Rear-view camera video-input
- Automatic switching to rear-view camera input on engagement of the reverse gear
- Activatable parking guide lines for rear-view camera (not available on all vehicles)
- Video-in-motion in drive mode (ONLY for connected video-sources)
- Video inputs NTSC and PAL compatible

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Legal Information

By law, watching moving pictures while driving is prohibited, the driver must not be distracted. We do not accept any liability for material damage or personal injury resulting, directly or indirectly, from installation or operation of this product. This product should only be used while standing or to display fixed menus or rear-view-camera video when the vehicle is moving, for example the MP3 menu for DVD upgrades.

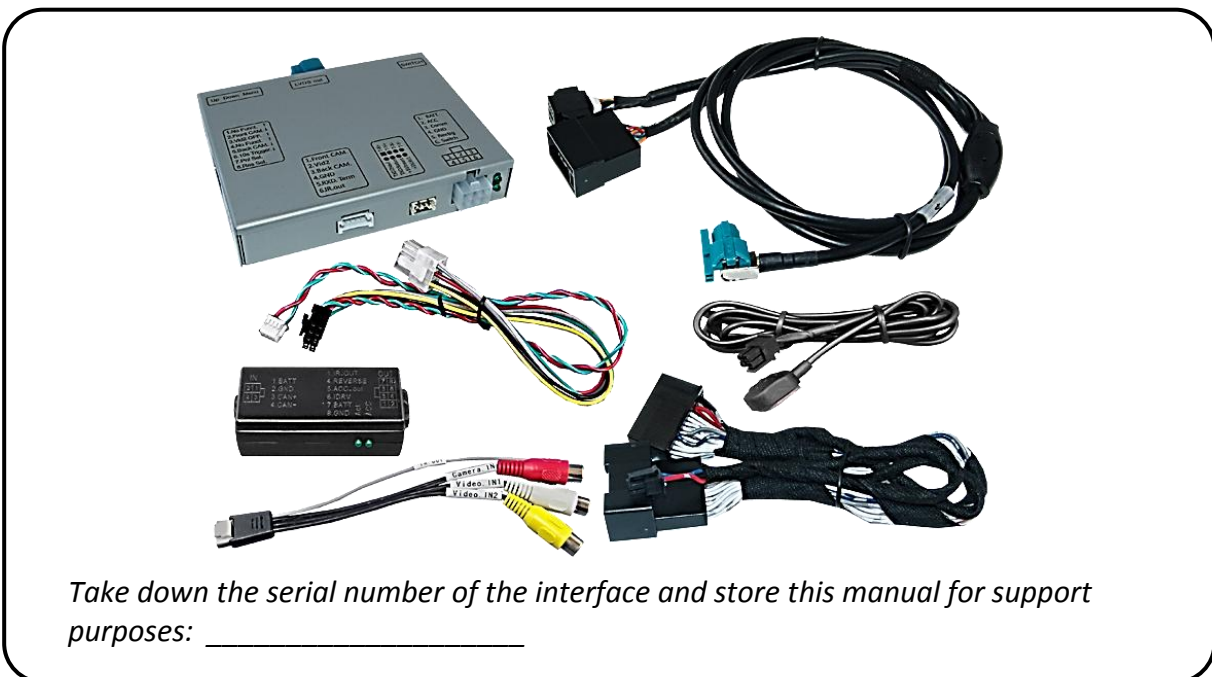
Changes/updates of the vehicle's software can cause malfunctions of the interface. We offer free software-updates for our interfaces for one year after purchase. To receive a free update, the interface must be sent in at own cost. Labor cost for and other expenses involved with the software-updates will not be refunded.

1. Prior to installation

Read the manual prior to installation.

Technical knowledge is necessary for installation. The place of installation must be free of moisture and away from heat sources.

1.1. Delivery contents

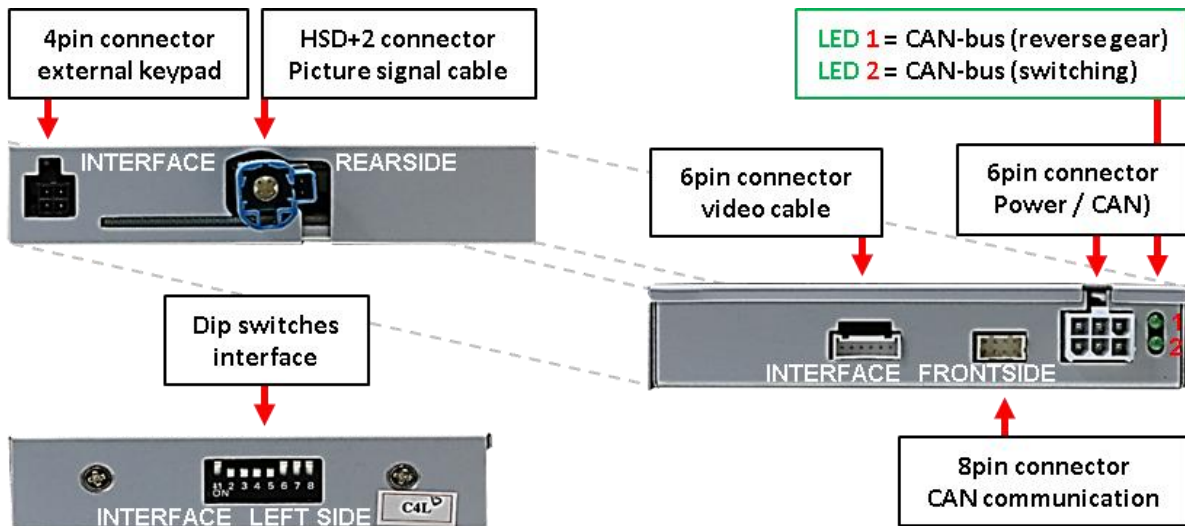


1.2. Verification – interface compatibility to vehicle and accessories

Compatibility		
Brand	Compatible vehicles	infotainment systems
Audi	A4 (8K) from 09/2007 til 08/2015 A5 (8T) from 06/2007 til 06/2016 Q5 (8R) from 11/2008 til 2017	Symphony3- or Concert3-radio systems with 6.5" monitor
Limitations		
<i>Video only</i>	The interface inserts ONLY video signals into the infotainment. For inserting Audio signals either the possibly existing factory audio-AUX-input or a FM-modulator can be used. If 2 audio sources shall be connected to the infotainment, an additional electronic is necessary to switch them.	
<i>Factory rear-view camera</i>	Automatically switching-back from inserted video to factory rear-view camera is only possible while the reverse gear is engaged. To delay the switch-back an additional electronic part is required.	
<i>Guide lines and PDC</i>	Displayed guidelines and PDC are not available in all vehicles.	

1.3. Connectors – video interface

The video-interface converts the video signals of connected after-market sources in a factory monitor compatible picture signal which is inserted in the factory monitor, by using separate trigger options. Further it reads the vehicle’s digital signals out of the vehicle’s CAN-bus and converts them for the video interface.



1.4. Dip-switch settings – video interface

Some settings must be selected by the dip-switches on the video-interface. Dip position down is ON and position up is OFF.



Dip	Function	ON (down)	OFF (up)
1	No function		set OFF
2	CVBS AV1-input	enabled	disabled
3	CVBS AV2-input	enabled	disabled
4	No function		set OFF
5	Rear-view cam type	after-market	factory or none
6		-	set OFF
7	No function	-	set OFF
8		-	set OFF

After each Dip-switch-change a power-reset of the Can-box has to be performed!

See following chapters for detailed information.

1.4.1. Enabling the interface's video inputs (dip 2-3)

Only the enabled video inputs can be accessed when switching through the interface's video sources. It is recommended to enable only the required inputs, disabled inputs will be skipped when switching through the video-interfaces inputs.

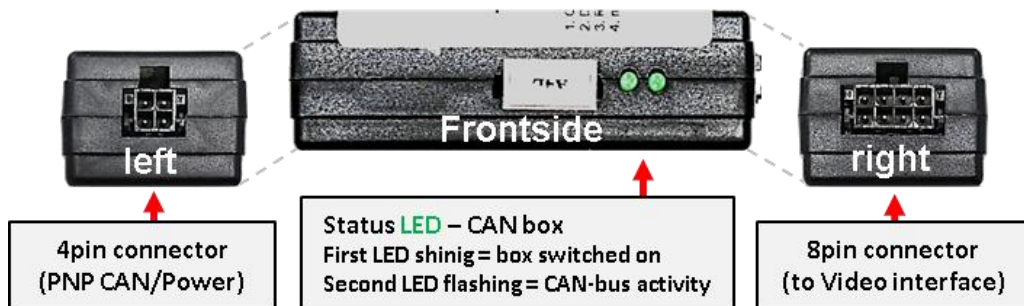
1.4.2. Rear-view camera setting (dip 5)

If set to OFF, the interface switches to factory picture while the reverse gear is engaged to display factory rear-view camera.

If set to ON, the interface switches to its rear-view camera input „Camera-IN“ while the reverse gear is engaged.

Note: Dip 1, 4, 6, 7 und 8 are out of function and have to be set to **OFF**.

1.5. Connectors – CAN box



2. Installation

To install the interface, first switch off the ignition and disconnect the vehicle's battery. Please read the owner's manual of the car, regarding the battery's disconnection! If required, enable the car's Sleep-mode (hibernation mode)

In case the sleep-mode does not succeed, the disconnection of the battery can be done with a resistor lead.

If the necessary stabilized power supply for the interface is not taken directly from the battery, the chosen connection has to be checked for being constantly stable.

The interface needs a permanent 12V source!

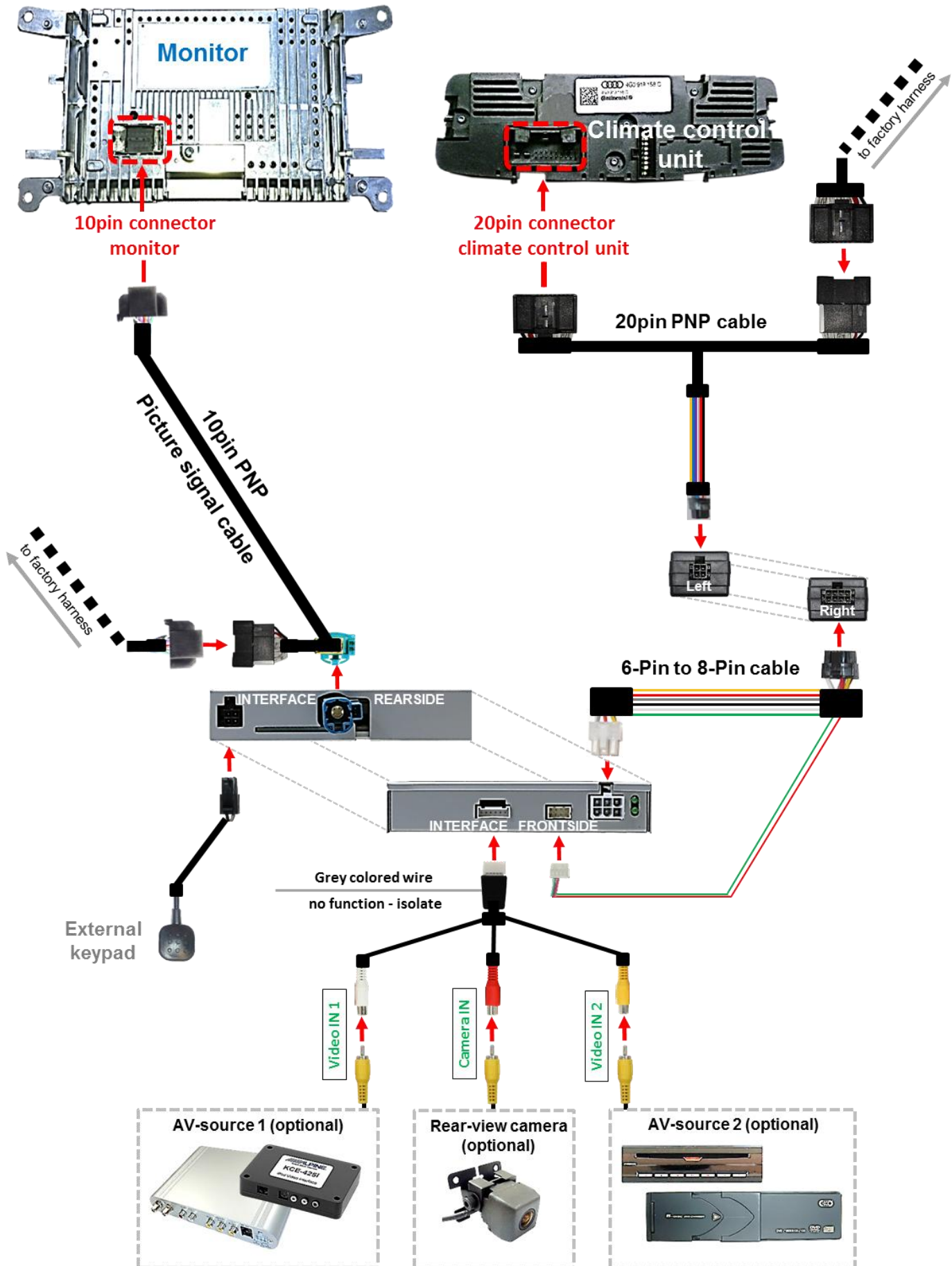
Note: Before a final installation, we recommend a test-run to ensure the compatibility of the vehicle and the interface.

Due to changes in the production of the vehicle manufacturer there's always a possibility of incompatibility.

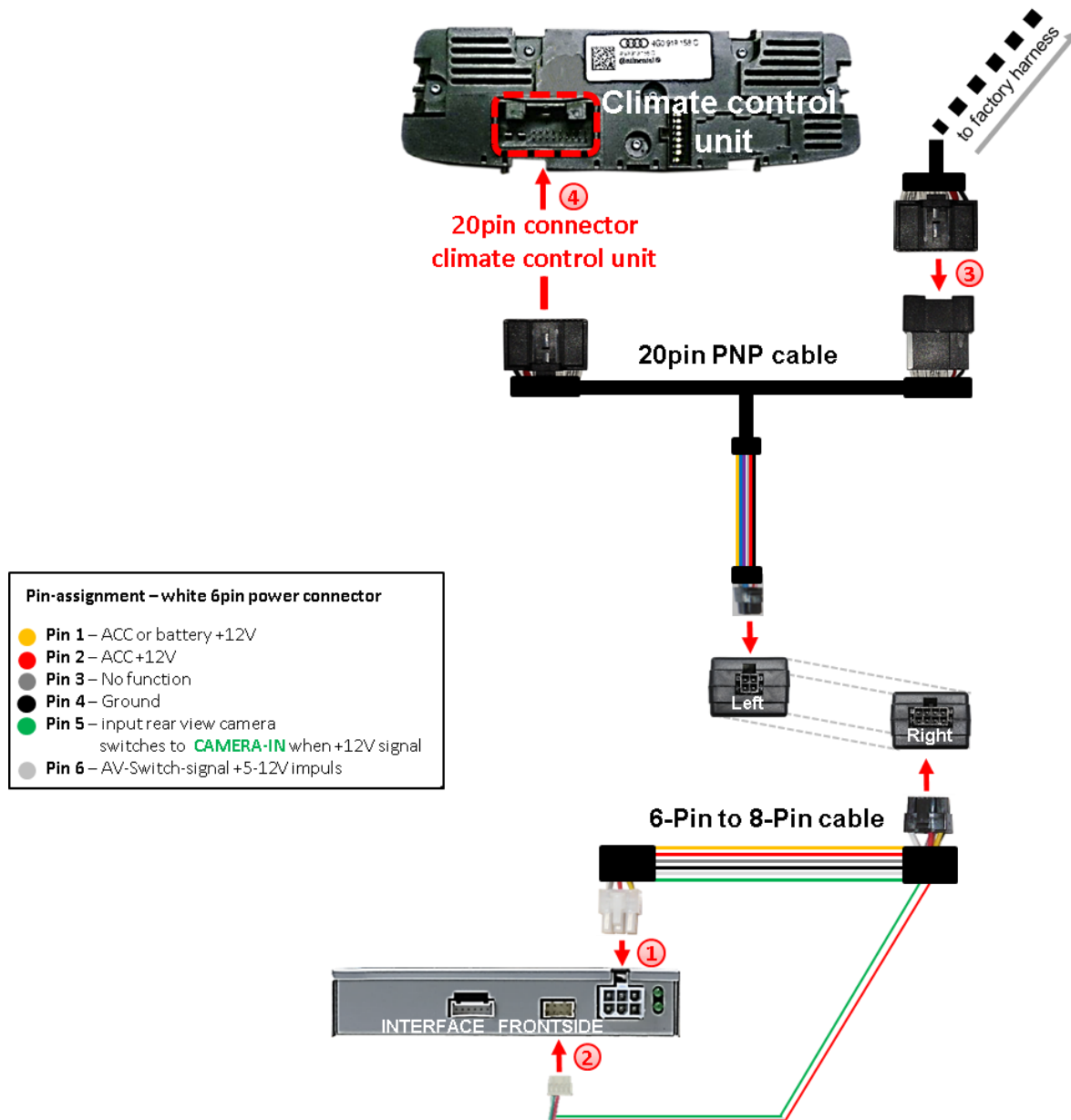
2.1. Genuine components to be connected

The connections for the video interface have to be performed at the factory climate control unit and the factory monitor.

2.2. Connection schema



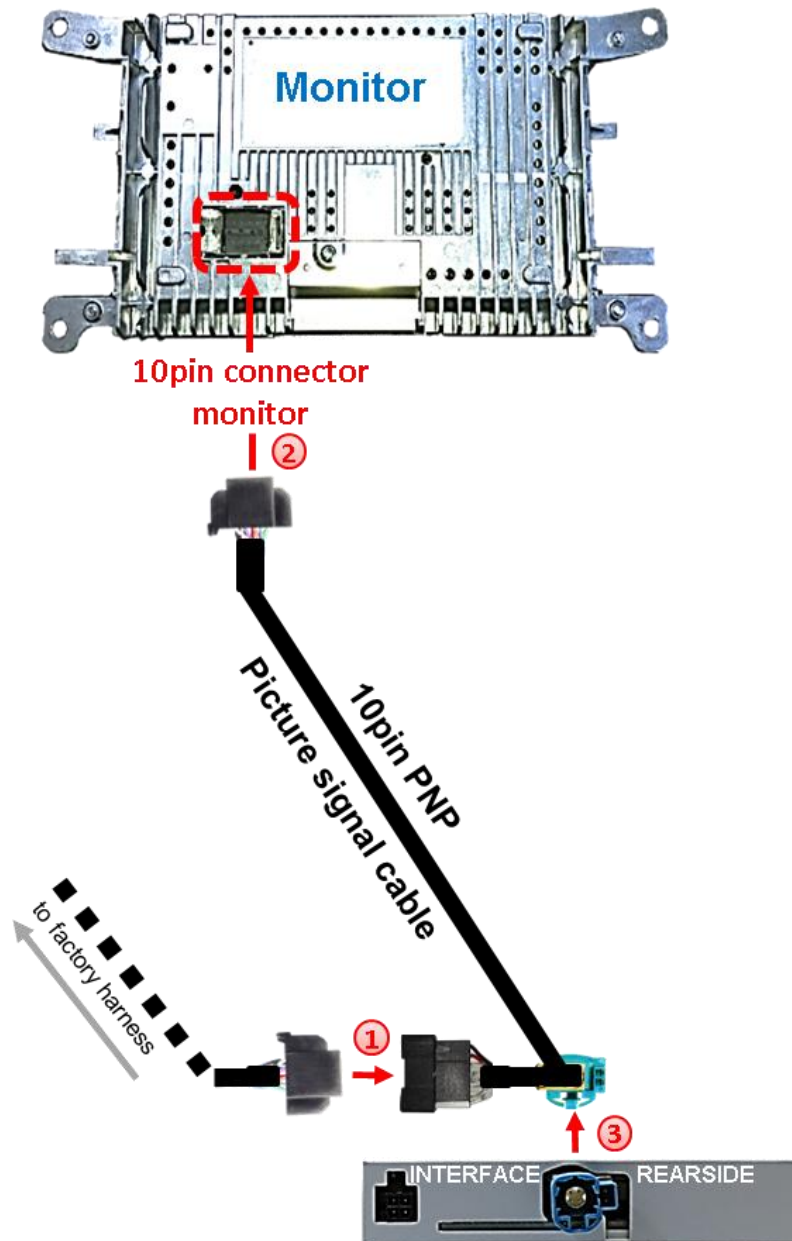
2.3. Connection - 20pin PNP cable



- ① Connect the female 6pin connector of the 6 to 8pin cable to the 6pin connector of the video interface.
- ② Connect the female 8pin connector of the communication cable to the 8pin connector of the video interface.
- ③ Disconnect the female 20pin connector of the factory harness at the rear-side of the climate control unit and connect it to the male 20pin connector of the 20pin PNP cable.
- ④ Connect the opposite female 20pin connector of the 20pin PNP cable to the previously become free male 20pin connector at the rear-side of the climate control unit.

Note: Check the LEDs on CAN-box after reconnecting the battery, two must be on. Not all vehicles are kompatible. If the CAN-box does not deliver ACC to pin2 of the video-interface or blocks the thevehicle’s CAN, it is possible to install the video interface without the CAN-box. For connection see 6pin assignment above.

2.4. Connection – picture signal cable

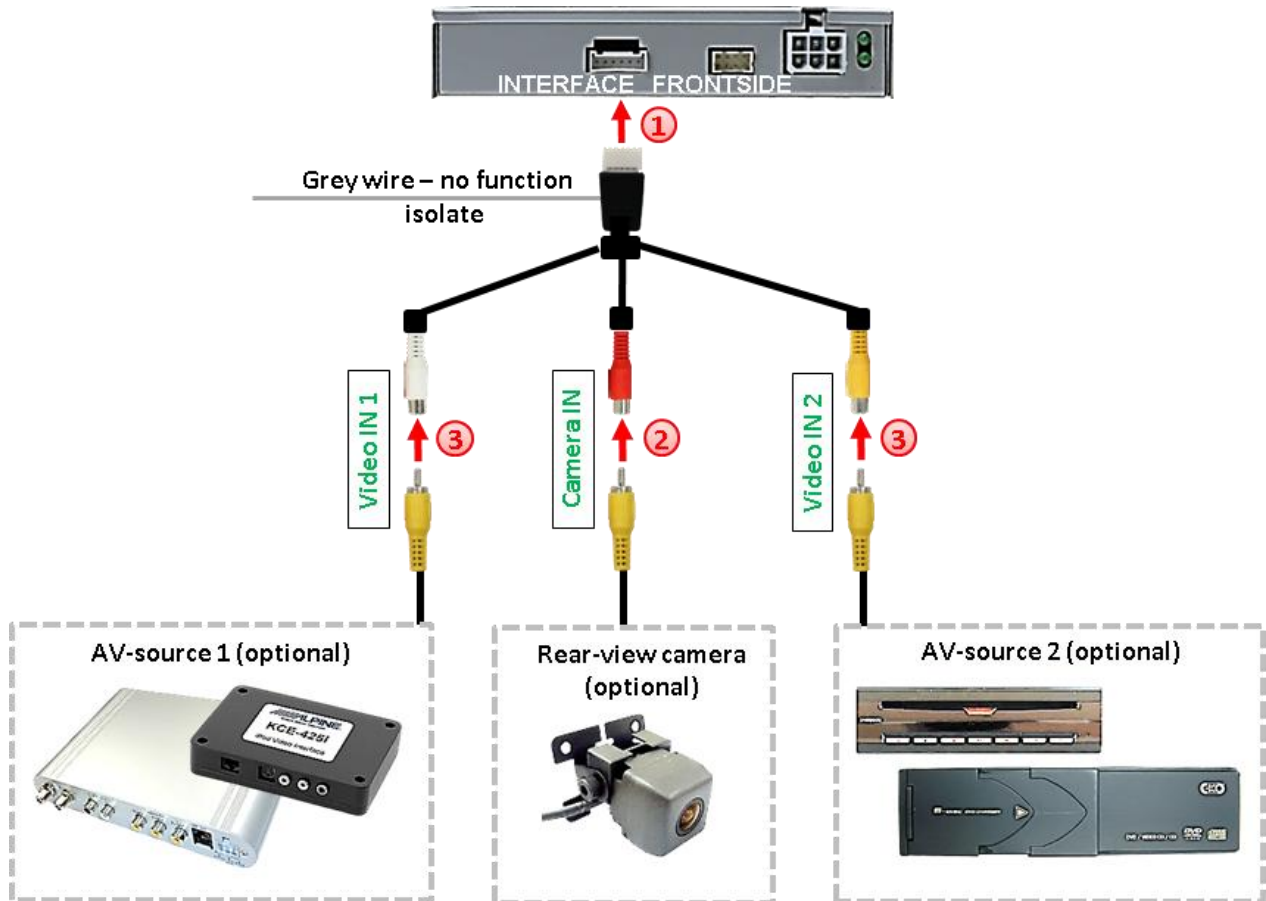


- 1 Remove the female 10pin connector from the rear side of the monitor and connect it to the male 10pin connector of the picture signal cable.
- 2 Connect the female 10pin connector of the picture signal cable to the previously become free male 10pin connector at the rear side of the monitor.
- 3 Connect the picture signal cable's female waterblue colored HSD+2 connector to the HSD+2 connector of the video interface.

2.5. Connection - video sources

It is possible to connect one after-market rear-view camera and two more video sources to the video-interface.

Note: Before the final installation, we recommend a test-run to ensure the compatibility of the vehicle and the interface. Due to changes in the production of the vehicle manufacturer there's always a possibility of incompatibility.



- 1 Connect the female 6pin connector of the video cable to the male 6pin connector of the video-interface.
- 2 Connect the video RCA connector of the rear-view camera to the female RCA connector **“Camera-IN”** of the video cable.
- 3 Connect the video RCA connectors of additional AV sources to the female RCA connectors **„Video IN 1”** und **“Video IN 2”**.

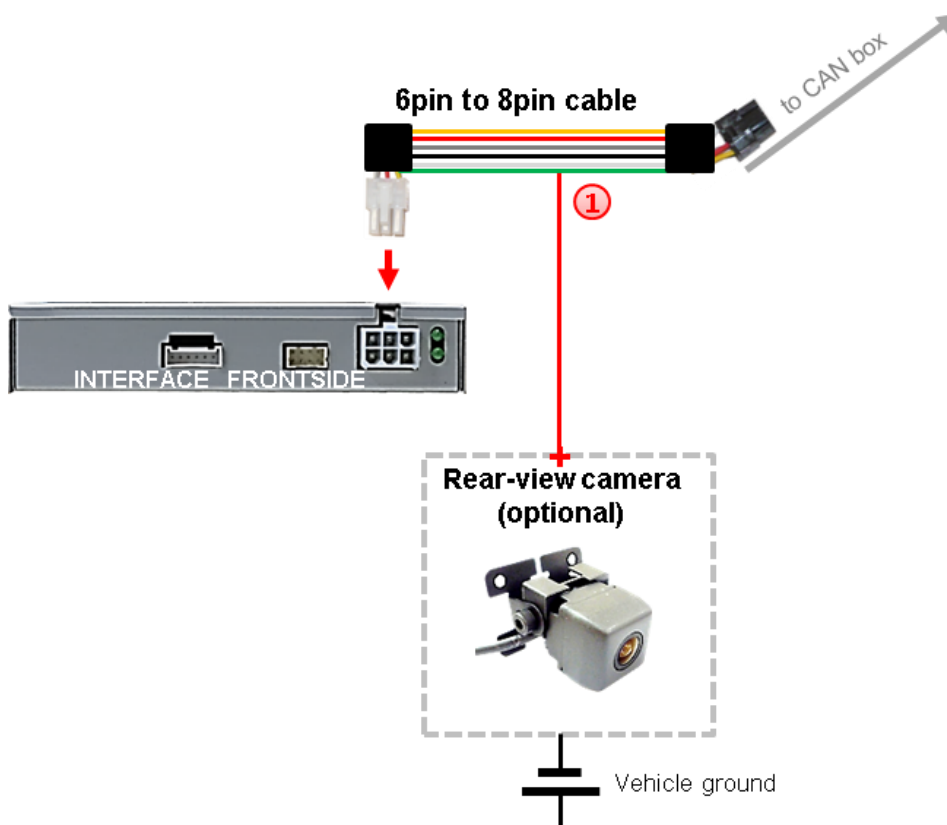
2.5.1. After-market rear-view camera

Some vehicles have a different reverse gear code on the CAN-bus which the included CAN-box is not compatible with. In this case there are two different ways of installation. If the CAN-box is able to detect an enabled vehicle's reverse gear, the green wire of the 6pin to 12pin cable should carry +12V while the reverse gear is engaged.

Note: Do not forget to set dip5 of video-interface to ON before testing.

2.5.1.1. Case 1: CAN-box receives the reverse gear signal

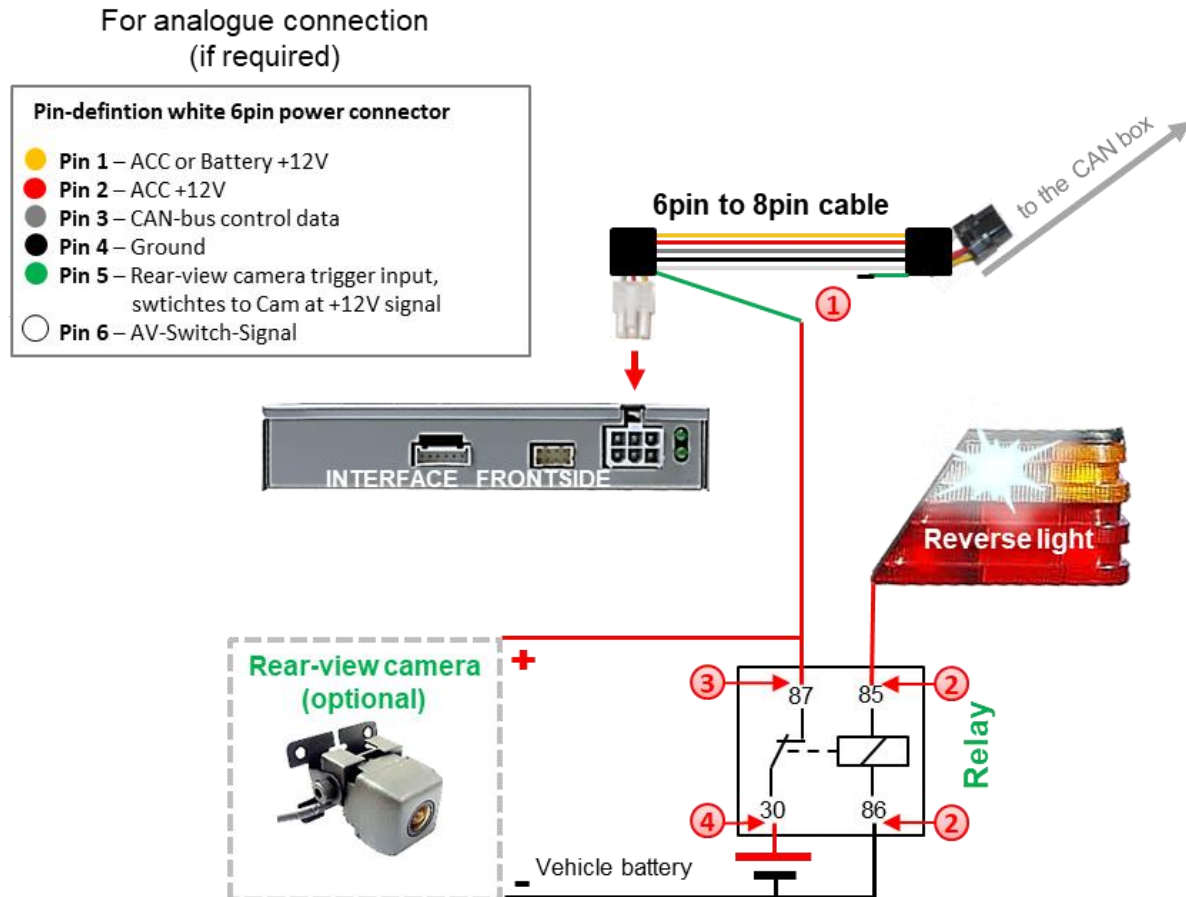
If the CAN-bus box delivers +12V on the green wire of the 6pin to 8pin cable while reverse gear is engaged, the video interface will automatically switch to the rear-view camera input **"CAMERA-IN"** while the reverse gear is engaged.



- ① Additionally, the +12V (max. 500mA) power supply for the rear-view camera can be taken from the green wire of the 6pin to 8pin cable.

2.5.1.2. Case 2: CAN-box does not receive the reverse gear signal

If the CAN-bus interface does not deliver +12V on the green wire of the 6pin to 8pin cable when reverse gear is engaged (not all vehicles are compatible) an external switching signal from the reverse gear light is required. As the reverse gear light signal contains electronic interference, a traditional open relay (e.g AC-RW-1230 with wiring AC-RS5) or filter (e.g. AC-PNF-RVC) is required. Below schema shows the use of a relay (normally open).



- ❶ Cut the green cable of the 6pin to 8pin cable close to the black 8pin connector and isolate the shorter end of the green cable near to the 8pin connector (CAN-box side).
- ❷ Connect the reverse gear light signal/power to coil terminal (85) and vehicle's ground to coil terminal (86) of relay.
- ❸ Connect the rear-view camera power wire and the green wire (video interface side) of the 6pin to 8pin cable both to output terminal (87) of the relay.
- ❹ Connect permanent battery power to input terminal (30) of relay.

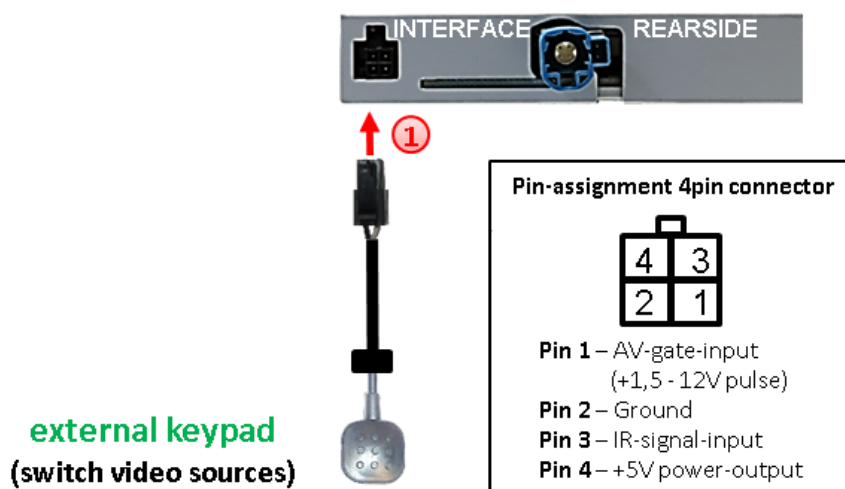
Note: If, due to a missing CAN communication, the 6pin to 8pin cable has been connected the analogue way instead of the Can box, the green wire's connection has also to be done as shown in the picture above.

Note: Don't forget to set the Dip 5 to ON.

2.5.2. Audio Insertion

This interface can only insert video signals into the factory infotainment. If an AV-source is connected, audio insertion must be done by factory audio AUX input or FM-modulator. The inserted video-signal can be activated simultaneously to each audio-mode of the factory infotainment. If 2 AV sources shall be connected to the infotainment, additional electronic is necessary to switch the audio signals.

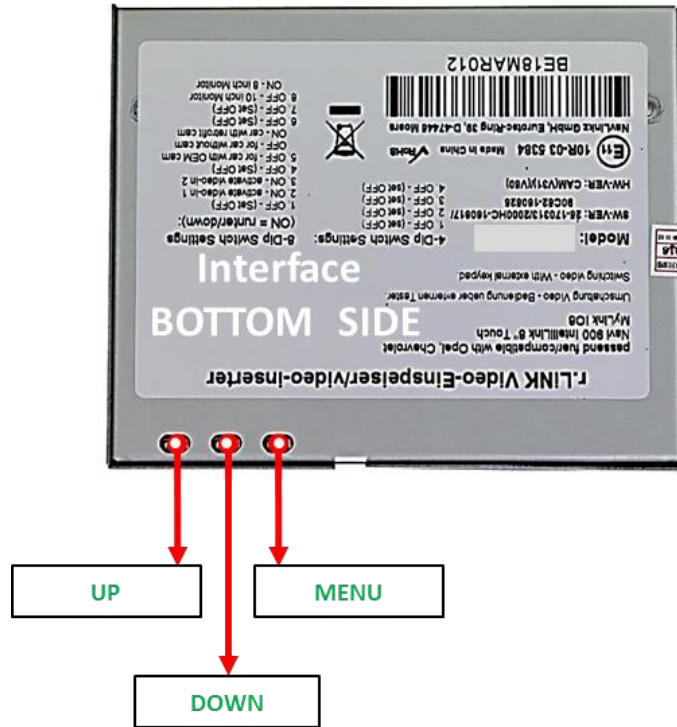
2.6. Connection - Video Interface and external keypad



- 1 Connect the 4pin female connector of the external keypad to the male 4pin connector of the video interface.

Note: Regardless if it'll be used or not, the external keypad should always be connected! In case of non-using, it should be invisibly hidden together with the video interface.

2.7. Picture settings, guide lines and PDC



The picture settings are adjusted by the 3 buttons on the video-interface. Press the MENU button to open the OSD settings menu or to switch to the next menu item. Press UP and DOWN changes the selected value. The buttons are embedded in the housing to avoid accidental changes during or after the installation. Picture settings have to be done separately for AV1, AV2 and CAMERA-IN while the corresponding input is selected and visible on the monitor.

Note: The OSD menu can only be shown when a working video source is connected to the selected video-input of the interface.

The following settings are available:

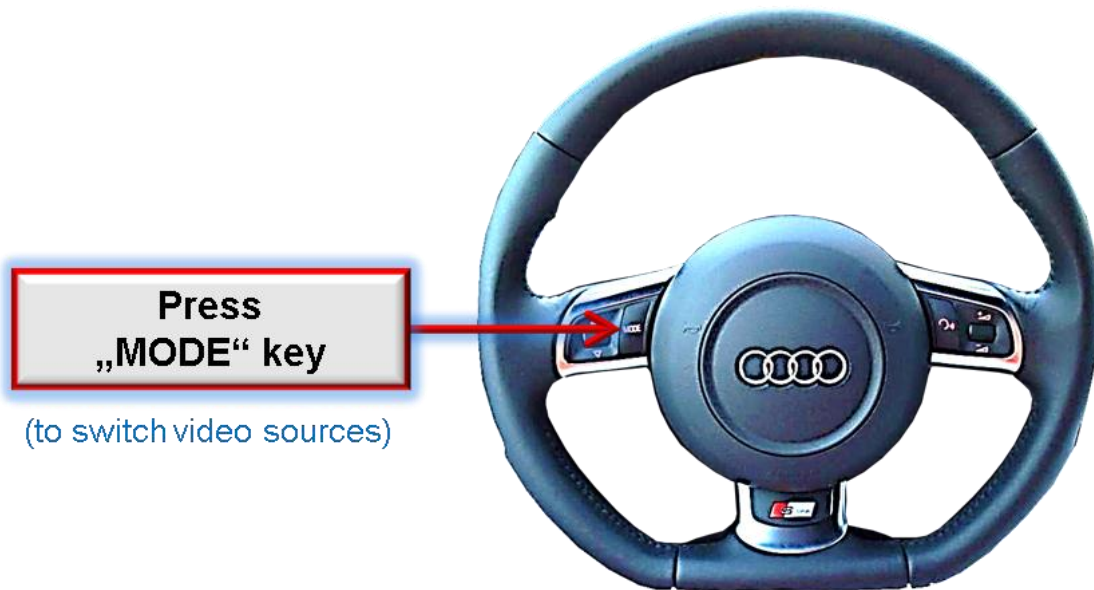
- Contrast
- Brightness
- Saturation
- Position H (horizontal)
- Position V (vertical)
- IR-AV1/2 (no function)
- Guide L/R (no function)
- Guide-CNTRL (ON/OFF)
- PDC-CNTRL (ON/OFF) = PDC Graphik
- CAR-TYPE = CAR/SUV



Note: To adjust the reverse picture, engage the reverse gear.
 To adjust the guide lines, move the steering wheel to see the changes.
 If there is no communication between interface and the vehicle's CAN-bus (several vehicles aren't compatible), the reverse gear guide-lines and the PDC car can't be shown during the vehicle's operation, even if they once appear after having switched the system to powerless!

3. Switching the video sources

3.1. By infotainment button



Switching the video sources can be done by pressing the vehicle's „MODE“ button at the steering wheel. Each press will switch to the next enabled input. If all inputs are enabled the order is:

Factory video → video IN1 → video IN2 → factory video →...

Disabled inputs will automatically be skipped.

Switchover by vehicle buttons isn't possible in all vehicles. In some vehicles the external keypad has to be used.

Note: Alternatively to infotainment buttons and external keypad, the white wire of the 6pin to 8pin cable can be used with a +5-12V pulse to switch the video-sources.

3.2. By external keypad

The interface's **keypad** can be used to execute interface functions.

A 2-3 seconds press of the keypad switches the video-source.

Each long press will switch to the next enabled input. Inputs which are not enabled are skipped.

Note: Alternatively or additionally, the white wire of the 6pin cable can be used with a +5-12V pulse to switch the video-sources alternatively.

4. Specifications

BATT/ACC range	7V - 25V
Stand-by power drain	45mA
Power consumption	220mA
Video input	0.7V - 1V
Video input formats	NTSC / PAL
Temperature range	-40°C to +85°C
Dimensions video-box	113 x 22 x 115 mm (W x H x D)
Dimensions CAN-box	73 x 23 x 30 mm (W x H x D)

5. FAQ – Trouble shooting Interface functions

For any troubles which may occur, check the following table for a solution before requesting support from your vendor.

Symptom	Reason	Possible solution
No picture/black picture (factory picture).	Not all connectors have been reconnected to factory head-unit or monitor after installation.	Connect missing connectors.
	No power on CAN-bus box (all LED CAN-bus box are off).	Check power supply of CAN-bus box. Check CAN-bus connection of CAN-bus box.
	CAN-bus box connected to CAN-bus in wrong place.	Refer to the manual where to connected to the CAN-bus. If not mentioned, try another place to connect to the CAN-bus.
	No power on video-interface (all LED video-interface are off).	Check whether CAN-bus box delivers +12V ACC on red wire output of 8pin to 6pin cable. If not cut wire and supply ACC +12V directly to video-interface.
No picture/black picture/white picture (inserted picture) but factory picture is OK.	No picture from video source.	Check on other monitor whether video source is OK.
	No video-source connected to the selected interface input.	Check settings dips 1 to 3 of video interface which inputs are activated and switch to corresponding input(s).
	LVDS cables plugged in wrong place.	Double-check whether order of LVDS cables is exactly connected according to manual. Plugging into head-unit does not work when the manual says to plug into monitor and vice versa.
Inserted picture totally wrong size or position.	Wrong monitor settings of video-interface.	Try different combinations of dips 7 and 8 of video-interface. Unplug 6pin power after each change.
Inserted picture double or 4 times on monitor.		
Inserted picture distorted, flickering or running vertically.	Video sources output set to AUTO or MULTI which causes a conflict with the interfaces auto detection.	Set video source output fixed to PAL or NTSC. It is best to set all video sources to the same standard.
	If error occurs only after source switching: Connected sources are not set to the same TV standard.	Set all video sources to the same standard.
	Some interfaces can only handle NTSC input.	Check manual whether there is a limitation to NTSC mentioned. If yes, set source fixed to NTSC output.
Inserted picture b/w.	Picture settings have not been adjusted.	Use the 3 buttons and the interface's OSD to adjust the picture settings for the corresponding video input.
Inserted picture qual. bad.		
Inserted picture size slightly wrong.		
Inserted picture position wrong.		
Camera input picture flickers.	Camera is being tested under fluorescent light which shines directly into the camera.	Test camera under natural light outside the garage.
Camera input picture is bluish.	Protection sticker not removed from camera lens.	Remove protection sticker from lens.

Symptom	Reason	Possible solution
Camera input picture black.	Camera power taken directly from reverse gear lamp.	Use relay or electronics to "clean" reverse gear lamp power. Alternatively, if CAN-bus box is compatible with the vehicle, camera power can be taken from green wire of 6pin to 8pin cable.
Camera input picture has distortion.		
Camera input picture settings cannot be adjusted.	Camera input picture settings can only be adjusted in AV2 mode.	Set dip 3 of video-interface to ON (if not input AV2 is not already activated) and connect the camera to AV2. Switch to AV2 and adjust settings. Reconnect camera to camera input and deactivate AV2 if not used for other source.
Graphics of a car in camera input picture.	Function PDC is ON in the interface OSD.	In compatible vehicles, the graphics will display the factory PDC distance. If not working or not wanted, set interface OSD menu item UI-CNTRL to ALLOFF.
Chinese signs in camera input picture	Function RET or ALL is ON (function for Asian market) in the interface OSD.	Set interface OSD menu item UI-CNTRL to ALLOFF or PDCON.
Not possible to switch video sources by OEM button.	CAN-bus interface does not support this function for vehicle.	Use external keypad or cut white wire of 6pin to 8pin cable and apply +12V impulses for AV-switching.
Not possible to switch video sources by external keypad.	Pressed too short.	For video source switching a longer press of about 2.5 seconds is required.
	SW-version of interface does not support external keypad.	Use OEM-button or cut white wire of 6pin to 8pin cable and apply +12V impulses for AV-switching.
Interface does not switch to camera input when reverse gear is engaged.	CAN-bus interface does not support this function for the vehicles.	Cut the green wire of the 6pin to 8pin cable and apply +12V constant from reverse gear-lamp signal. Use relay to "clean" R-gear lamp power.
Interface switches video-sources by itself.	CAN-bus interface compatibility to vehicle is limited.	Cut the grey wire of 6pin to 8pin and isolate both ends. If problem still occurs, additionally cut the white wire of 6pin to 8pin cable and isolate both ends.



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