

Video-inserter

Art. 300 071

**for Mercedes Benz vehicles
generations NTG3, NTG4 or NTG4.5-212 with
Comand APS, Audio50 APS or Audio 20
with 10pin HSD LVDS connector on the monitor**

Video-inserter with 2 video + RGB + rear-view camera input and CAN control

Product features

- **Video-inserter for factory-infotainment monitors**
- **2 video-inputs for after-market devices (e.g. DVD-Player, DVB-T tuner, ...)**
- **Built-in audio-switch (no audio-insertion)**
- **Rear-view camera video-input**
- **Automatic switching to rear-view camera input on engagement of reverse gear**
- **RGB-input for after-market navigation**
- **Video-in-motion (ONLY for connected video-sources)**
- **Compatible with factory rear-view camera**
- **AV-inputs PAL/NTSC compatible**

Contents

1. Prior to installation

- 1.1. Delivery contents
- 1.2. Checking the compatibility of vehicle and accessories
- 1.3. Dip-switch settings
 - 1.3.1. Vehicle selection (Dip 7-8)
 - 1.3.2. Video signal selection after-market navigation (Dip 4)
 - 1.3.3. Enabling the interface's video inputs (Dip 1-3)
 - 1.3.4. Rear-view camera settings (dip 5)

2. Installation

- 2.1. Place of installation
- 2.2. Connections
- 2.3. Installation procedure – function check
- 2.4. Picture settings
- 2.5. Audio insertion
- 2.6. Connecting 2 AV sources

3. Interface operation

- 3.1. ByComand-buttons
- 3.2. By keypad

4. Specifications

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. Checking the compatibility of vehicle and accessories

Requirements

Vehicle

Vehicles generations NTG3, NTG4 or NTG4.5-212

Head-unit/monitor

Comand APS, Audio50 APS or Audio20 with 10pin HSD LVDS connector on the monitor

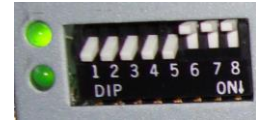
Limitations

Video only

The interface inserts ONLY video signals into the infotainment. For sound use the possibly existing factory-audio-AUX-input or a FM-modulator.

1.3. Dip-switch settings

With the video interface boxes dip-switches it is possible to select vehicle/navigation the interface is to be installed in (dip 7 and 8), to select the video signal of an optional connected after-market navigation (Dip 4), to dis- or enable the interfaces inputs (dip 1 to 3) and to preselect the type of camera which is (to be) installed (dip 5).



Dip position down is ON and position up is OFF.

1.3.1. Vehicle selection (dip 7-8)

Choose the vehicle/navigation/monitor the interface is to be installed to and set dip 7 through 8 according to the below table.

Vehicle/ Navigation	Dip 7	Dip 8
7"-monitor with resolution 800x480	OFF	OFF
5.8"- monitor with resolution 480x240	OFF	ON
5"- monitor with resolution 280x100	ON	OFF

1.3.2. Video signal selection after-market navigation(Dip 4)

To the video interface's RGB-input it is possible to connect a RGB- or a VGA-video source. Set dip 4 according to table. Recommended resolution for VGA is 800x600 @ 60Hz.

After-Market Navigation	Dip 4
VGA (RGB-Input Pin 4 H-Sync, Pin 8 V-Sync)	ON
RGB NTSC	OFF

Note: VGA-mode is only possible on the 7"-monitor.

1.3.3. Enabling the interface's video inputs (dip 1-3)

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

Dip	Video-input	ON (down)	OFF (up)
Dip 1	RGB	enabled	disabled
Dip 2	Video IN1	enabled	disabled
Dip 3	Video IN2	enabled	disabled

1.3.4. Rear-view camera settings (dip 5)

Depending on whether no camera, after-market camera or factory camera shall be used, dip 5 must use different settings. If set to OFF, the interface switches to factory LVDS picture when the reverse gear is engaged to display factory rear-view camera or factory PDC picture.

Rear-view camera type	Dip 5
None	OFF
Factory	OFF
After-market	ON

Note: If the Can-bus does not work while connecting an after-market rear-view camera, cut the green cable of the 6pin to 8pin cable at the black 8pin connector and connect it to the reverse gear light (+12V). For this use a relay because the reverse gear light of the vehicle is clocked (relay AC-RW1230 and AC-RS5 optional available).

2. Installation

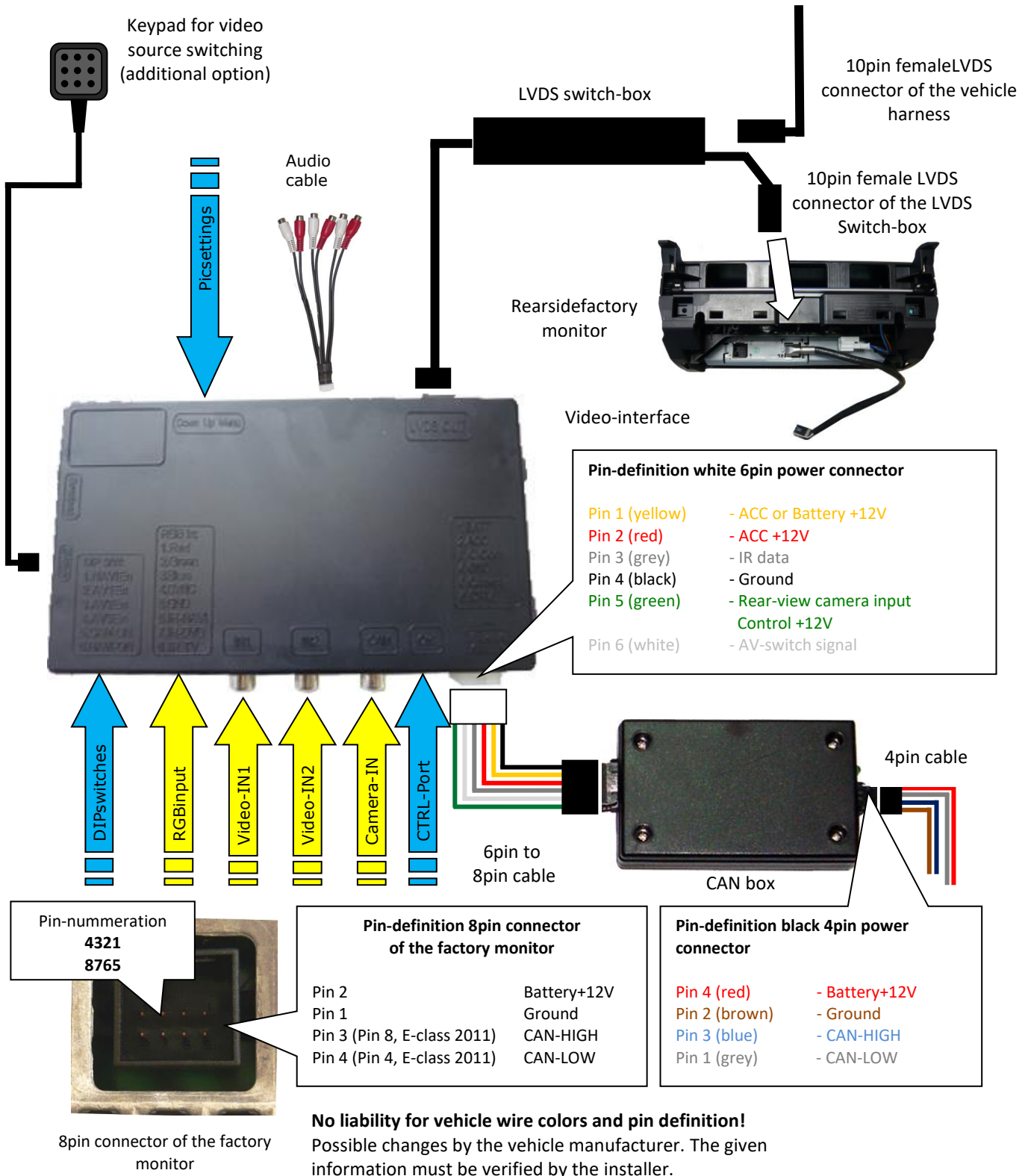
Switch off ignition and disconnect the vehicle's battery! The interface needs a permanent 12V source. If according to factory rules disconnecting the battery is to be avoided, it is usually sufficient to put the vehicle in sleep-mode. In case the sleep-mode does not show success, disconnect the battery with a resistor lead.

If power source is not taken directly from the battery, the connection has to be checked for being start-up proven and permanent.

2.1. Place of installation

The interface is installed on the backside of the vehicle's monitor.

2.2. Connections



2.3. Installation procedure – function check

Follow the below procedure using the “Connections” scheme from chapter 2.2. as reference. Before the installation of the sources and the interface we recommend a first quick connection of the interface and test run to ensure that vehicle and product are compatible. Due to changes in production of the vehicle manufacturer there is always the possibility of incompatibility.

- Switch off ignition and disconnect vehicle’s battery
- Remove vehicle monitor
- Connect 4pin cable of CAN-box to the 8pin power connector of the factory monitor as shown in chapter 2.2.
- Plug 4pin harness into CAN box
- Plug 8pin female connector of 6pin to 8pin cable into CAN box
- Transfer vehicle harness’ 10pin LVDS connector from factory monitor to male 10pin connector port of the LVDS switch-box
- Connect female 10pin LVDS connector to 10pin LVDS connector port of the factory monitor
- Connect LVDS Switch box to the video interface
- Plug 6pin female connector of “6pin to 8pin cable” into video interface
- Plug keypad into “Switch” connector. Even if the keypad shall not be used, its installation (e.g. in a hidden spot) is recommended for support reasons
- If audio insertion shall be used, connect it according to chapter 2.5.
- If audio switch SW-A2X1 shall be used, connect it according to chapter 2.6.
- Reconnect battery and turn on ignition
- Check LEDs on CAN box and video interface, one on each must be on
- Try to activate video sources by Comand-buttons (see chapter 3.1.) and by keypad (see chapter 3.2.), using a test picture source
- If camera is (to be) connected try to engage reverse gear with test picture source connected
- If audio switch SW-A2X1 shall be used, connect the audio wires and check the audio function
- **ONLY after positive function check proceed with final installation of the video sources!**
- After installation and connection of the real video source(s), adjust picture settings (see chapter 2.4.)

2.4. Picture settings

After installing the sources the picture settings can be changed using a pen on the buttons of the video interface. Press the MENU button to open settings menu on the OSD and to switch to the next setting. UP and DOWN change the corresponding values. The buttons are embedded in the housing to avoid accidental changes during or after installation.

2.5. Audio insertion

This interface can only insert video into the factory infotainment. The video can be activated to any audio mode of the factory infotainment. If an AV-source is to be connected, the source's video out is connected to the video IN1 of the video interface and the source's audio out to the audio insertion. Audio insertion is possible by factory audio AUX input or FM-modulator. The factory audio AUX can be coded by the dealership.

2.6. Connecting 2 AV-sources

If two AV-sources shall be connected, connect the included audio cable to audio-switch-port of the video interface. When switching the video interface from video-IN1 to video-IN2, the audio will also automatically be switched.

Audio pins	Definition
1/2	Audio input signal R/L of source IN2
3/4	Audio input signal R/L of source IN1
5/6	Audio output signal L/R of factory audio AUX or FM-modulator
7	Ground
8	No function



3. Interface operation

3.1. By Comand-buttons

Some of the Comand-buttons can be used to execute interface functions.

Long pull back (3 sec.) **knob** in centre console to switch the video source. Each repetition will switch to the next enabled input. If all inputs are enabled the order is:

Factory video → RGB-in → video IN1 → video IN2 → factory video →...



Inputs which are not enabled are skipped. If the audio cable is connected, when switching from video IN1 to video IN2, also the sound will be switched.


When the interfaces video is activated, longpress of button “C” switches directly to the interfaces RGB-input.

3.2. By keypad

Alternatively or additionally to the factory infotainment buttons the interface’s keypad can be used to switch the enabled inputs.

4. Specifications

BATT/ACC range	7V~25V
Stand-by power drain	<5mA
Power	0.3A @12V
Power consumption	2.4W
Video input	0.7V~1V
RGB-Video amplitude	0.7V with 75 Ohm impedance
Temperaturr range	-40°C to +85°C
Video input formats	PAL/NTSC
Weight	195g
Dimensions (box only) B x H x T	182 x 24 x 100 mm

CE  12V DC