

## Camera interface

### RL-PCM3-2-TF

**Rear and front camera input  
incl. video-in-motion  
compatible with Porsche vehicles with  
PCM 3 and PCM 3.1 navigation systems**

#### **Product features**

- Plug and play interface
- Integrated into the vehicle infotainment
- Rear-view camera input (+ coding)
- Front camera input
- Rear-view and front camera power (+12V max. 1A)
- Video-in-motion
- Automatic switching to rear-view camera input
- Optionally coding of ParkAssist to retrofit factory PDC

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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

Take down the SW-version and HW-version of the interface boxes, and store this manual for support purposes.

Interface-box  
RLC-M40-2  
HW \_\_\_\_\_ SW \_\_\_\_\_



Harness  
RLC-POR03-2

### 1.2. Check compatibility of vehicle and accessories

#### Requirements

*Vehicle* Porsche Cayenne, Panamera, 911, Boxster, Cayman, Macan

*Navigation* PCM 3 (only Cayenne version) , PCM 3.1 (911, Boxster and Cayman only from software version 4.xx)

#### Limitations

*Video-in-motion* Internal DVD video cannot be watched!

### 1.3. Setting the DIP switches of the interface-box RLC-M40-2

Vehicle/ navigation	DIP 1	DIP 2	DIP 3	DIP 4	DIP 5	DIP 6
PCM 3 with video-in-motion activated	ON	ON	OFF	OFF	OFF	OFF
PCM 3 with video-in-motion deactivated	OFF	ON	OFF	OFF	OFF	OFF
PCM 3.1 with video-in-motion activated	ON	ON	OFF	OFF	OFF	ON
PCM 3.1 with video-in-motion deactivated	OFF	ON	OFF	OFF	OFF	ON

**Note:** DIP switch functions of the interface-box RLC-M40-2

DIP 1 – Activation video in motion

DIP 2 – OEM- or aftermarket- rear view camera existing

DIP 3 – Coding rear-view camera in conjunction with DIP 5

DIP 4 – Coding ParkAssist in conjunction with DIP 5 (only PCM3.1, PCM3 no function)

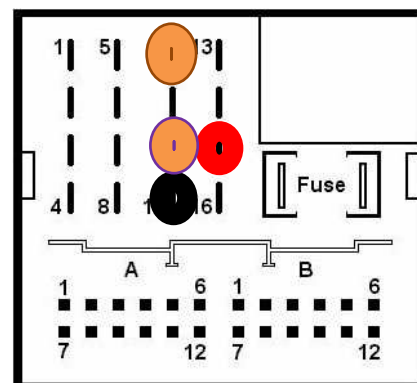
DIP 5 – Camera / ParkAssist coding (DIP switch for 5 sec. in ON position)

DIP 6 – CAN-bus termination

### 1.4. Pin-assignments

#### Pin-assignment factory connector

Cable colour	Assignment	Pin No.
● Red	+12V battery	Pin 15
● Black	Ground	Pin 12
● Orange/brown	CAN-low	Pin 9
● Orange/purple	CAN-high	Pin 11

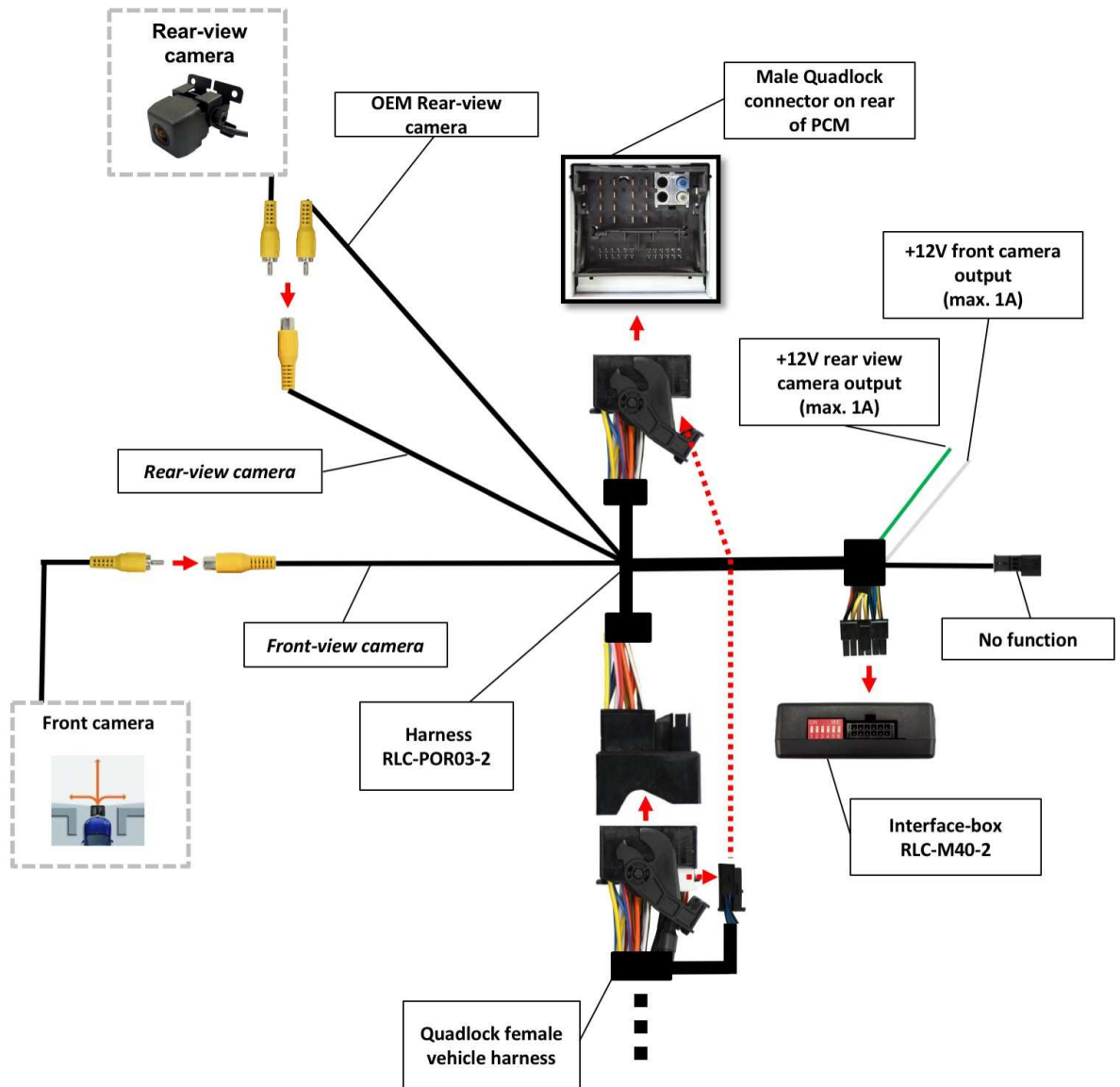


**No liability for vehicle wire colors and pin definition!**  
**Possible changes by the vehicle manufacturer. The given information must be verified by the installer.**

#### Pin-assignment of the interface-box RLC-M40-2 (Molex 12pin)

Cable colour	Pin-No.	Assignment
● Yellow	Pin 6	CAN-HIGH – connection to the head-unit
● Blue	Pin 5	CAN-LOW – connection to the head-unit
● Yellow/Black	Pin 12	CAN-HIGH – connection to the vehicle
● Blue/Black	Pin 11	CAN-LOW – connection to the vehicle
● Red	Pin 1	+12V permanent
● Black	Pin 7	Ground
● Green	Pin 2	+12V rear view camera output (max. 1A)
● White	Pin 3	+12V front camera output (max. 1A)
● Blue	Pin 4	No function
● Yellow	Pin 8	Rear view camera video signal input
● Yellow	Pin 10	Front camera video signal input
● Transparent	Pin 9	Camera video signal output

## 2. Connection schema

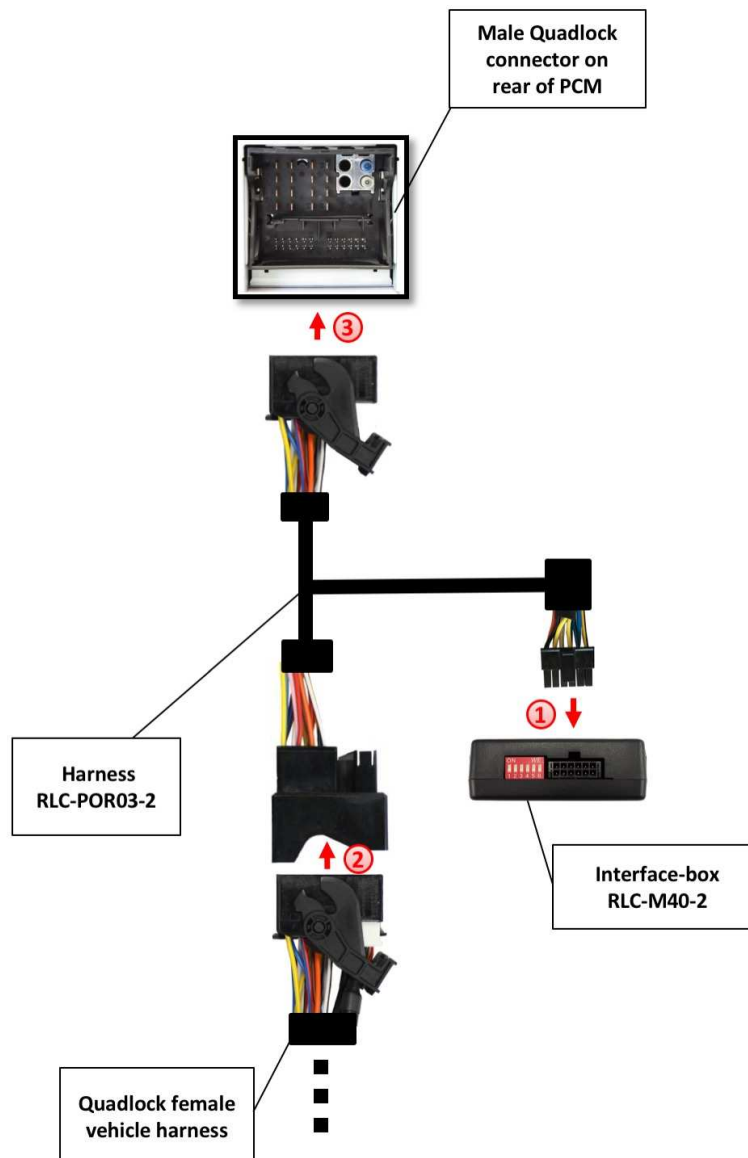


## 3. Installation

**Switch off ignition and disconnect the vehicle's battery! If according to factory rules disconnecting the battery has 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.**

Place of installation is on rear of the head unit.

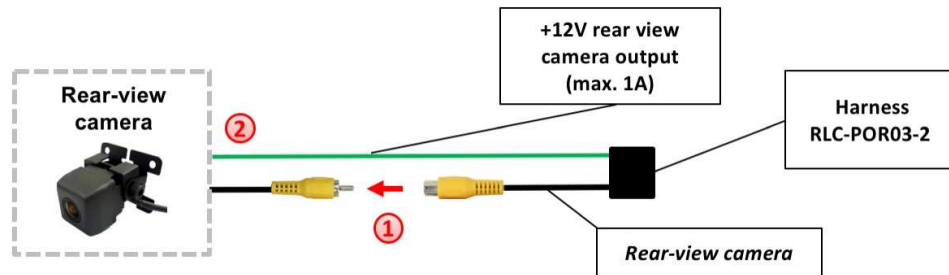
### 3.1. Interconnecting interface-Box, harness and factory head unit



- 1 Connect female 12pin Molex connector of harness RLC-POR03-2 to male 12pin Molex connector of CAN-box RLC-M40-2.
- 2 Remove the female Quadlock connector of the vehicle harness from the rear of the head unit and connect it to the male Quadlock connector of harness RLC-POR03-2.

- 3 Connect female Quadlock connector of harness RLC-POR03-2 to the male Quadlock connector of the head unit.

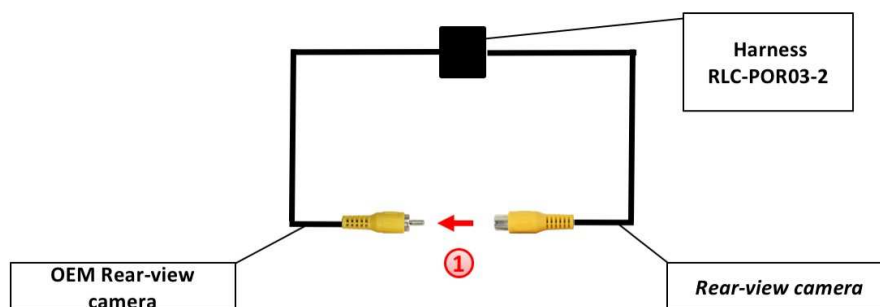
### 3.2. Connections to after market rear-view camera



- 1 Connect the video RCA of the rear-view camera to the female RCA connector with the label „Rear-view camera“ of RLC-POR03-2 harness.
- 2 Connect the green cable of harness RLC-POR03 to the camera power supply (+12V max 1A). The green cable is high when reverse gear is engaged (if ignition is off, too). The power will be deactivated from a speed of 20 km/h.

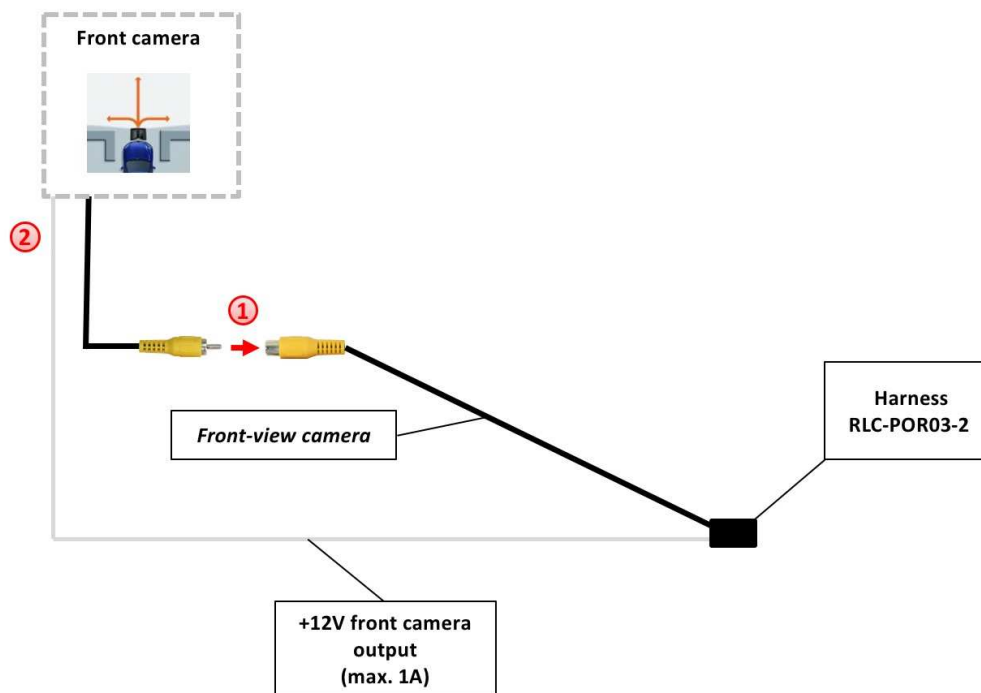
**Note:** Only compatible with NTSC-cameras.

### 3.3. Connections to OEM rear-view camera



- 1 Connect the male RCA plug to the female RCA connector with the label „Rear-view camera“ from RLC-POR03-2 harness.

## 3.4. Connections to front camera



- 1 Connect the video RCA of the front camera to the female RCA connector with the label „Front-view camera“ of RLC-POR03-2 harness.
- 2 Connect the white cable of harness RLC-POR03-2 to the camera power supply (+12V max 1A). The white cable is high when reverse gear is engaged (if ignition is off, too). The power will be deactivated from a speed of 20 km/h.

**Note:** Only compatible with NTSC-cameras.

## 4. Coding of the camera function

### 4.1. Coding of the rear-view camera (only PCM3.1)



Steering-wheel buttons left



Steering-wheel buttons right

It is necessary to code the rear-view camera input of the PCM 3.1 to use it for an after-market rear-view camera.

1. Turn on ignition
2. Wait until the head-unit has booted
3. Press and hold steering-wheel button HASH KEY/MODE
4. Press and hold steering-wheel button ACCEPT (**observe the sequence!**)
5. Hold both buttons. During configuration the red and blue LED are blinking short inside the CAN-box (visible at the male 8pin Molex connector). The PCM makes a reset after 5-10 sec.
6. Disengage both steering-wheel buttons
7. The red and the blue LED inside the CAN-Box are glowing and the menu „Rear-view camera“ appears in the menu OPTION after a successful coding



**Attention: No camera function when the parking brake is activated**

#### 4.1.1. Decoding of the rear-view camera (only PCM3.1)

It is possible to decode the coding of the rear-view camera input as follows:

1. Turn on ignition
2. Wait until the head-unit has booted
3. Press and hold steering-wheel button HASH KEY/MODE
4. Press and hold steering-wheel button HANG UP (**observe the sequence!**)
5. Hold both buttons. During configuration the red and blue LED are blinking inside the CAN-box (visible at the male 8pin Molex connector). The PCM makes a reset after 5-10 sec.
6. Disengage both steering-wheel buttons
7. The red and the blue LED inside the CAN-Box are glowing and the menu „Rear-view camera“ disappears in the menu OPTION after a successful decoding

## 4.2. Optionally coding of ParkAssist to retrofit factory PDC (only PCM3.1)



Steering-wheel buttons left



Steering-wheel buttons right

It is necessary to code the ParkAssist of the PCM 3.1 to retrofit factory PDC.

1. Turn on ignition
2. Wait until the head-unit has booted
3. Press and hold steering-wheel button BACK
4. Press and hold steering-wheel button ACCEPT (**observe the sequence!**)
5. Hold both buttons. During configuration the red and blue LED are blinking inside the CAN-box (visible at the male 8pin Molex connector). The PCM makes a reset after 5-10 sec.
6. Disengage both steering-wheel buttons
7. The red and the blue LED inside the CAN-Box are glowing and the menu „ParkAssist“ appears in the menu OPTION after a successful coding



### 4.2.1. Decoding of the ParkAssist (only PCM3.1)

It is possible to decode the ParkAssist as follows:

1. Turn on ignition
2. Wait until the head-unit has booted
3. Press and hold steering-wheel button BACK
4. Press and hold steering-wheel button HANG UP (**observe the sequence!**)
5. Hold both buttons. During configuration the red and blue LED are blinking inside the CAN-box (visible at the male 8pin Molex connector). The PCM makes a reset after 5-10 sec.
6. Disengage both steering-wheel buttons
7. The red and the blue LED inside the CAN-Box are glowing and the menu „ParkAssist“ disappears in the menu OPTION after a successful decoding

### 4.3. Alternatively coding and decoding of rear-view camera and ParkAssist (e.g. if steering-wheel buttons not existing, only PCM3.1)

Alternatively to coding by steering-wheel buttons the coding and decoding of rear-view camera and ParkAssist can be done by DIP 5 in conjunction with DIP 3 and 4 of interface-box RLC-M40-2.

DIP	Function	ON	OFF
DIP 3	Rear-view camera	Coding	Decoding
DIP 4	ParkAssist	Coding	Decoding
DIP 5	Activation of the coding/decoding process	5 sec. = start	Default setting

1. Set DIP switch "5" to OFF position
2. Turn on ignition
3. Wait until the head-unit has booted
4. Set DIP "3" and DIP "4" of CAN-box (depending on the desired coding/decoding)
5. Set DIP switch "5" for 5 sec. to ON position
6. During configuration the red and blue LED are blinking short inside the CAN-box (visible at the male 8pin Molex connector). The PCM makes a reset after 5-10 sec.
7. The red and the blue LED inside the CAN-Box are glowing and the menu „Rear-view camera“ respectively “ParkAssist” appears in the menu OPTION after a successful coding (or disappears after successful decoding)



**Note:** After a coding or decoding another coding isn't possible within the next 60 seconds!

**If there are factory-PDC existing in the car you have to set DIP 4 to ON while coding. If not the factory PDC will be decoded!**

## 4.4. Coding and decoding of rear-view camera (only Porsche Cayenne with PCM3)

The rear-view camera coding and decoding can be done by DIP 5 in conjunction with DIP 3 of interface-box RLC-M40-2.

DIP	Function	ON	OFF
DIP 3	Rear-view camera	Coding	Decoding
DIP 5	Activation of the coding/decoding process	5 sec. = start	Default setting

1. Set DIP switch "5" to OFF position
2. Turn on ignition
3. Wait until the head-unit has booted
4. Set DIP "3" of CAN-box (depending on the desired coding/decoding)
5. Set DIP switch "5" for 5 sec. to ON position
6. During configuration the red and blue LED are blinking short inside the CAN-box (visible at the male 8pin Molex connector). The PCM makes a reset after 5-10 sec.
7. The red and the blue LED inside the CAN-Box are glowing and the menu „Rear-view camera“ appears in the menu OPTION after a successful coding (or disappears after successful decoding)



**Note:** After a coding or decoding another coding isn't possible within the next 60 seconds!

**Attention:** No camera function when the parking brake is activated

## 4.5. LED information

LED	Status	Explication
Blue	Lights	CAN bus communication OK
	Flashes	CAN bus search
Red	Lights	- Interface active - Rear-view camera/ParkAssist successfully coded / decoded
	Off	- Interface sleep - Error in the Rear-view camera/ParkAssist coding process

## 5. Manually front camera activation

Press the HANG UP button on the steering wheel for 3 sec. for manually front camera activation / deactivation.



## 6. Specifications

Operation voltage	10.5 – 14.8V
Stand-by power drain	<2mA
Operation power drain	~60mA
Power consumption	~0,08W
Temperature range	-30°C to +80°C
Weight	44g
Measurements (box only) W x H x D	70 x 20 x 47 mm/ 76 x 27 x 54 mm

## 7. Technical support

**CAS GmbH**  
***manufacturer/distribution***  
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