

## **CAN-bus Interface** **Steering wheel control**

**Interface-box**  
**CX-301**

**Harnesses vehicle-specific**  
**CX-0xx**

**Harnesses device-specific (optional)**  
**ARC-1xx**

### **Product features**

- Conversion of digital CAN-bus signals into analogue signals  
ACC, speed, lights, reverse gear
- Adaptation of vehicle-specific radio ports to female ISO-connectors  
(for some vehicles only a universal harness with open ends available)
- Support/Starting of factory sound systems  
(not at all vehicles)
- Steering wheel control for after-market devices (optional)  
Alpine, Blaupunkt, Clarion, Digitaldynamic, JVC, Kenwood, Pioneer, Zenec

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## Information

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.

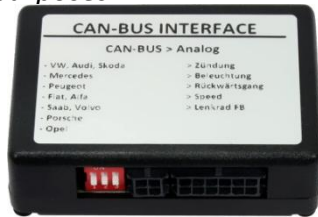
## 1. Prior to installation

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.

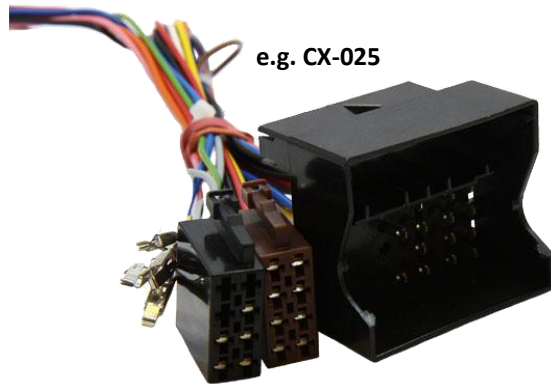
### 1.1. Delivery contents

*Take down the SW-version and HW-version of the CAN-box, and store this manual for support purposes.*

**CAN-box**  
**CX-301**  
HW \_\_\_\_\_  
SW \_\_\_\_\_



**There is always a universal or vehicle-specific cable set CX-0xx needed.**



**Harness for steering wheel control (optional)**  
**ARC-1xx**



### 1.2. Check compatibility of vehicle

The CX-301 provides depending on the vehicle ACC (Z), speed signal (S), reverse gear (R), lights (L) as an analogue signal, it powers up an existing factory sound-system (SS) and supports the control of after-market devices by steering wheel (MFL).

The below table shows which harness CX-0xx can be used for which vehicles and which functions will be supported for this vehicle.

Brand/ make	Compatible vehicles	functions	harness
Alfa Romeo	<b>159, Brera</b>	Z,L,R,S,MFL	<b>CX-034</b>
	<b>147, 156</b> (only MFL), <b>GT</b>	Z,L,R,S	<b>CX-034</b>
Audi	<b>A2</b> and <b>A3</b> from year 07/01 till 12/06, <b>A4</b> from year 01/00 till 10/06, <b>A6</b> from year 07/01 till 01/05, <b>TT</b> from year 07/01 till 07/06	Z,L,R,S,MFL	<b>CX-023</b>
	<b>A1, A3</b> from year 01/07, <b>A4</b> from year 11/06 till 11/07, <b>TT</b> from year 08/06	Z,L,R,S,MFL	<b>CX-025</b>
	<b>A4</b> (8K), <b>A6</b> (4F), <b>A8</b> (4E), <b>Q7</b> (4L)	Z,L,R,S,MFL	<b>CX-010</b>
BMW	<b>1series</b> (E81/82/87/88), <b>3series</b> (E90/91/92/92)	Z,L,R,S,MFL	<b>CX-028</b>
	<b>5series</b> (E60/61), <b>5series</b> (F07/F10), <b>6series</b> (E63/64), <b>7series</b> (E65/66), <b>7series</b> (F01/02), <b>X5</b> (E70), <b>X6</b> (E71)	Z,L,R,S	<b>CX-010</b>
Citroen	<b>C3, C4, C5</b> from year 10/04, <b>Jumper</b> from year 09/06 (only S)	Z,L,R,S,MFL	<b>CX-030</b>
Chevrolet	<b>HHR</b>	Z,L,R,S	<b>CX-010</b>
Chrysler	<b>C300</b>	Z,L,R,S,MFL,SS	<b>CX-010</b>
Fiat	<b>Stilo, Grande Punto</b>	Z,L,R,S,MFL	<b>CX-034</b>
	<b>Sudo</b>	Z,L,R,S,MFL	<b>CX-030</b>
Ford	<b>Focus, C-Max, Mondeo, S-Max, Galaxy</b> - with Quadlock	Z,L,R,S	<b>CX-035</b>
Jeep	<b>Grand Cherokee, Overland</b>	Z,L,R,S,MFL,SS	<b>CX-010</b>
Lancia	<b>Ypsilon</b> from year 11/03	Z,L,R,S	<b>CX-034</b>
Land Rover	<b>Sport, Vogue, Freelander, Discovery 3</b> – from year 05	Z,L,R,S	<b>CX-010</b>
Lexus	<b>GS</b>	S	<b>CX-010</b>
Maserati	<b>Quattroporte</b>	Z,L,R,S,MFL	<b>CX-025</b>
Mazda	<b>3series</b>	S	<b>CX-010</b>
Mercedes Benz	All with radiopreparation , <b>A-Class</b> (W169), <b>B-Class</b> (W245) with Audio5	Z,L,R,S,MFL	<b>CX-026</b>
	<b>C-Class</b> (W203) till year 03/04, <b>E-Class</b> (W210), <b>CLK-Class</b> (W208), <b>CLK-Class</b> (W209) till year 03/04, <b>SL-Class</b> (R230) till year 07/04, <b>Viano</b> (W639), <b>Sprinter</b> (W906) - with 10pin ISO	Z,L,R,S,MFL	<b>CX-027</b>
	<b>A-Class</b> (W169), <b>B-Class</b> (W245) with Audio20, <b>R-Class</b> (W251), <b>C-Class</b> (W203) from year 04/05, <b>CLK-Class</b> (W209) from year 04/04, <b>M-Class</b> (W164), <b>C-Class</b> (W204), <b>SLK</b> (R171) from year 06/08, <b>E-Class</b> (W211) from year 06/08, <b>E-Class</b> (W212), <b>E-Coupe</b> (W207), <b>CLS-Class</b> (W219) from year 06/08, <b>Viano</b> (W639), <b>Sprinter</b> (W906) – with Quadlock	Z,L,R,S,MFL	<b>CX-028</b>
	<b>E-Class</b> (W211) till 03/03	Z,L,R,S,MFL	<b>CX-010</b>
	<b>E-Class</b> (W211) from year 04/03, <b>CLS-Class</b> (W219) till 06/08, <b>SLK -Class</b> (R171) till 06/08	Z,L,R,S,MFL	<b>CX-029</b>
Opel	<b>Vectra C</b> till year 07/04	Z,L,R,S	<b>CX-010</b>
	<b>Astra H,Corsa C/D,Vectra C</b> from year08/04, <b>Meriva,Tigra Twin Top,Vivaro,Antara</b>	Z,L,R,S,MFL	<b>CX-021</b>
Peugeot	<b>207, 307, 407, 4007</b> (without LB) - with Quadlock	Z,L,R,S,MFL	<b>CX-030</b>
Porsche	<b>Cayenne, Boxster, Cayman, 911</b> - with Quadlock	Z,L,R,S,MFL	<b>CX-028</b>
	<b>Cayenne, Boxster, 997</b> with ISO	Z,L,R,S,MFL	<b>CX-024</b>
	<b>Panamera</b>	Z,L,R,S	<b>CX-010</b>
Renault	<b>Megane III</b>	Z,L,R,S,MFL	<b>CX-036</b>
Saab	<b>9-3, 9-5</b> from year 07/98	Z,L,R,S,MFL	<b>CX-031</b>
	<b>9-3</b> with Quadlock	Z,L,R,S,MFL	<b>CX-032</b>
Smart	<b>ForTwo</b>	Z,L,R,S	<b>CX-010</b>
	<b>ForFour</b> with ISO	Z,L,R,S,MFL	<b>CX-026</b>
	<b>ForFour</b> with Quadlock	Z,L,R,S,MFL	<b>CX-028</b>
Seat	<b>Altea, Leon</b>	Z,L,R,S,MFL	<b>CX-025</b>
Skoda	<b>Octavia I, Superb</b> with indoor CAN-bus	Z,L,R,S,MFL	<b>CX-022</b>
	<b>Octavia II, Superb (3T), Fabia (5J)</b>	Z,L,R,S,MFL,SS	<b>CX-025</b>
VW	<b>Caddy,Golf 4/5/6/Plus,Passat 3B/3C,Polo 6N/9N, Phaeton D1, Tiguan 5N, T5,Touran,Touareg</b> - Quadlock	Z,L,R,S,MFL,SS	<b>CX-025</b>
Volvo	<b>S60, V70</b>	Z,L,R,S,MFL	<b>CX-033</b>
	<b>XC90</b>	Z,L,R,S,MFL	<b>CX-010</b>

## 1.3. Setting the dip switches

To use the steering wheel control is dependent on the manufacturer of the after-market device a device-specific IR control cable ARC-1xx needed. The dip switches of the CAN-box CX-301 have to be set on the manufacturer/ port.



The following table shows the IR control cable and the dip switch settings for the supported manufacturers.

Harness	Description	Dip1	Dip2	Dip3
ARC-103	Control cable set for Blaupunkt	on	off	off
ARC-104	Control cable set for Alpine	off	off	off
	Control cable set for Clarion	on	on	off
	Control cable set for JVC	on	off	on
ARC-105	Control cable set for Kenwood, with open ends	on	on	on
ARC-106	Control cable set for Kenwood, with DIN-connection	on	on	on
ARC-107	Control cable set for Pioneer and Sony	off	on	on
ARC-108	Control cable set for Zenec and Digitaldynamic	off	off	on

## 2. 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.**

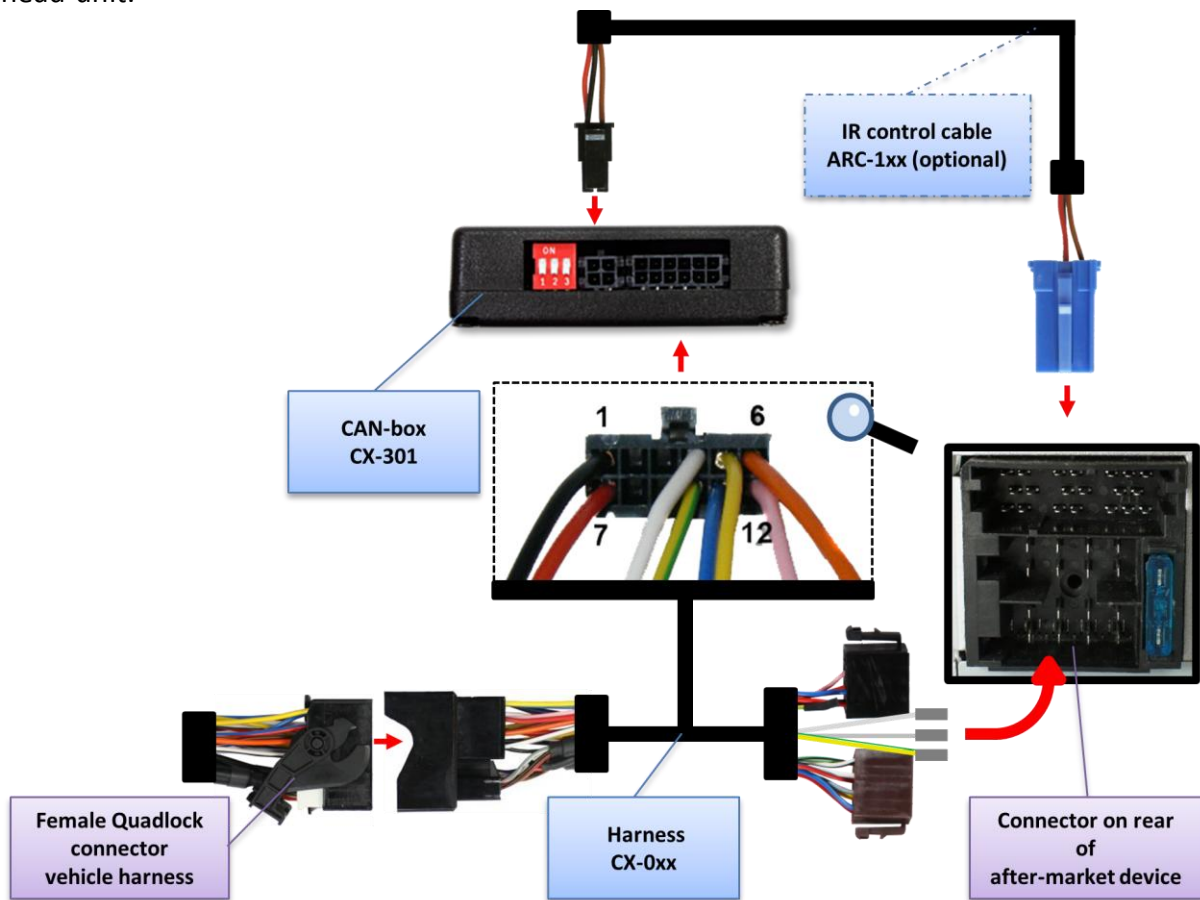
Place of installation of the CX-301 is usually in the radio slot on the vehicle's radio port.

### 2.1. Assignment of the 12-pin Molex on CX-301

Cable colour	Assignment
Pin 1 ● black	Ground
Pin 4 ● white	Reverse gear (Output) max. 0.1A
Pin 5 ● yellow	CAN-HI (Input)
Pin 6 ● orange	Lights (Output) max. 0.1A
Pin 7 ● red	+12V Permanent (Input)
Pin 10 ● yellow/green	Tachometer signal (Output)
Pin 11 ● blue	CAN-LOW (Input)
Pin 12 ● pink	+12V ACC (Output) max.2A

## 2.1. Connection example

Example of vehicle-specific harness CX-025 and IR control cable ARC-102 to a Blaupunkt head-unit.



## 2.2. Installation with vehicle-specific harness CX-0xx

- Persistent current, Ground, ACC signal (Z) and lights signal (L) are pinned in the female ISO-connector of the CX-0xx. If supported by the CX-301 connect speed signal (S) and reverse gear signal (R) to the corresponding pins of the after-market device.
- Depending on equipment/vehicle the grey cable is occupied with the analogue phone mute signal. Connect to the corresponding pins of the after-market device.
- Connect vehicle's female radio connector(s) to the corresponding male connector(s) of harness CX-0xx.
- Connect harness CX-0xx to CAN-Box CX-301 via 12pin Molex.
- Connect female ISO-connectors of harness CX-0xx to the ISO-connector of the after-market device.
- Optional: Connect IR-control input of the after-market device to the 4pin Molex IR-control output of CAN-box CX-301 via the optional control cable ARC-1xx.

**Note for CX-035 (Ford):** ACC and illumination are not analogue but digital signals on some vehicles. In this case connect ACC (Quadlock, chamber A, pin 16; pink wire) and illumination (Quadlock, chamber A, pin 13; orange wire) between female 12pin MicroFit connector and female ISO connectors, using the plugs of the harness.

## 2.3. Installation with universal harness CX-010

- Connect universal harness CX-010 according to **assignment of 12pin Molex on CX-301** to harness of the after-market device and to vehicle harness.
- Optional: Connect IR-control input of the after-market device to the 4pin Molex IR-control output of CAN-box CX-301 via the optional control cable ARC-1xx.

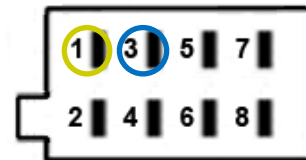
## 3. Vehicle-specific assignments - CAN-bus

As additional support the following pages give information about some vehicle-specific CAN-bus pin definitions. This **information** is **subject to change** and must be verified by the installer.

### ALFA ROMEO

#### 147

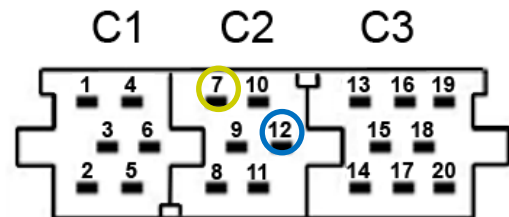
Female 8-Pin ISO connector in radio slot  
 CAN High – Pin 1  
 CAN Low – Pin 3



### AUDI

#### A2, A3, A4, A6 till 01/05

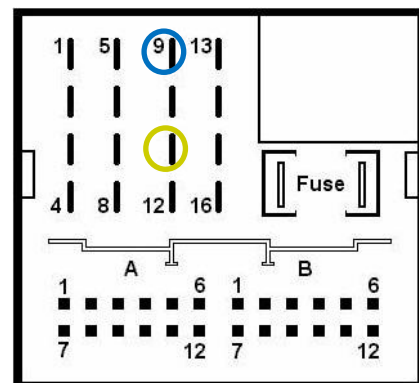
Female Mini-ISO connector in radio slot  
 CAN High – Pin 7  
 CAN Low – Pin 12



### BMW

#### 1series E81, 3series E90, 5series E60

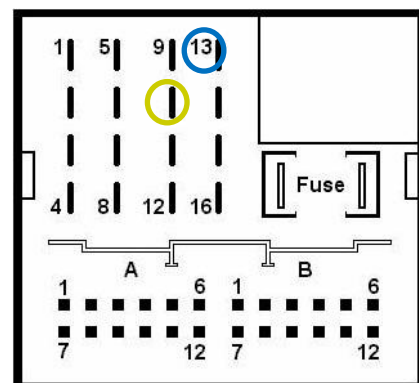
Female Quadlock-connector in radio slot  
 CAN High – Pin 11  
 CAN Low – Pin 9



### CITROËN

#### C4, C5 from 10/04

Female Quadlock-connector in radio slot  
 CAN High – Pin 10  
 CAN Low – Pin 13



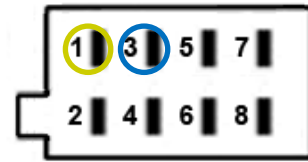
## FIAT

### Stilo

Female 8pin ISO connector in radio slot

CAN High – Pin 1

CAN Low – Pin 3



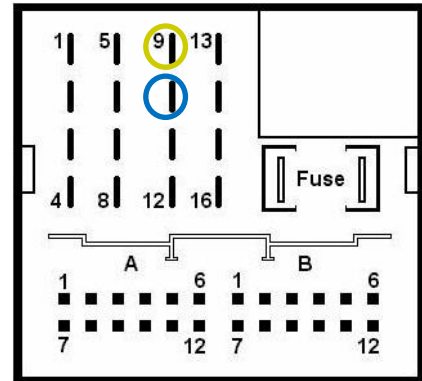
## FORD

### Focus, Focus C-MAX, S-MAX, Mondeo

Female Quadlock connector in radio slot

CAN High – Pin 9

CAN Low – Pin 10



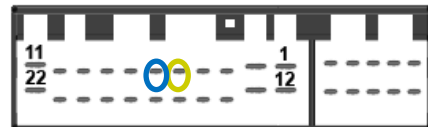
## JEEP/CHRYSLER

### Grand Cherokee, 300C

Female 22-pin connector in radio slot

CAN High – Pin 5 (white / red)

CAN Low – Pin 6 (white)



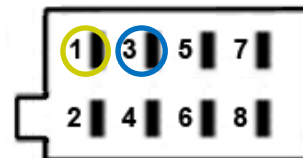
## LANCIA

### Ypsilon from 11/03

Female 8-pin ISO connector in radio slot

CAN High – Pin 1

CAN Low – Pin 3



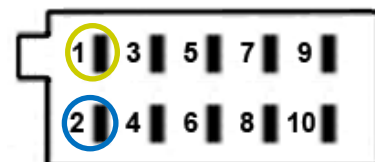
## MERCEDES BENZ

### CLK W208 after facelift, CLK W209 till 03/04, E-Class W210 from 09/99, Viano, SL W230 from 07/04

Female 10pin ISO-connector in radio slot

CAN High – Pin 1

CAN Low – Pin 2



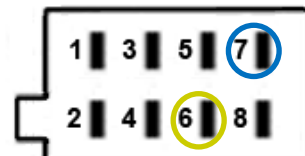
### A-Class W169 and B-Class W245 with Audio5,

all MERCEDES with indoor CAN-bus

Female 8pin ISO connector in radio slot

CAN High – Pin 6

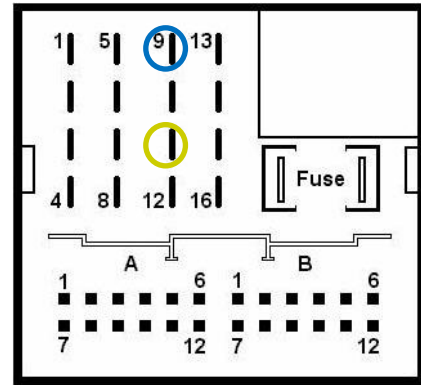
CAN Low – Pin 7





**A-Class W169 and B-Class W245** with Audio20,  
**C-Class W203 and CLK W209** from 04/04,  
**Viano W693**

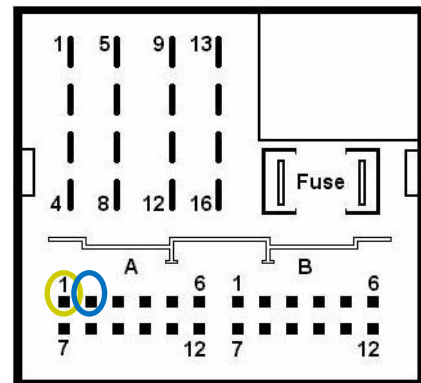
Female Quadlock-connector in radio slot  
 CAN High – Pin 11  
 CAN Low – Pin 9



## MERCEDES BENZ

**E-Class W211** from 04/03, **CLS W219, SLK R171**

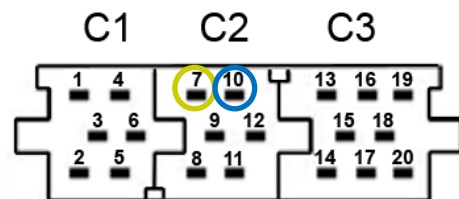
Female Quadlock-connector in radio slot  
 CAN High – Pin 1 (Kammer A)  
 CAN Low – Pin 2 (Kammer A)



## OPEL

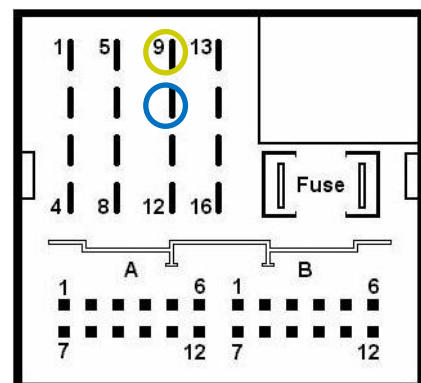
**Vectra C** till 07/04

Female Mini-ISO connector in radio slot  
 CAN High – Pin 7  
 CAN Low – Pin 10



**Astra H , Corsa C, Meriva, Tigra Twin Top, Vectra C** from 08/04

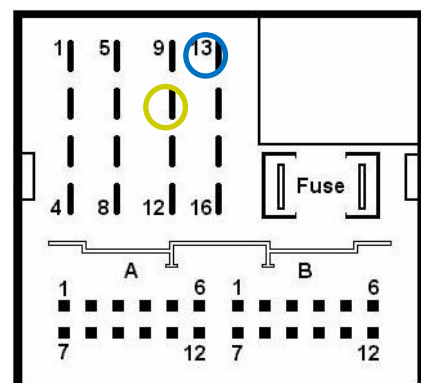
Female Quadlock-connector in radio slot  
 CAN High – Pin 9  
 CAN Low – Pin 10



## PEUGEOT

**307, 407**

Female Quadlock-connector in radio slot  
 CAN High – Pin 10  
 CAN Low – Pin 13



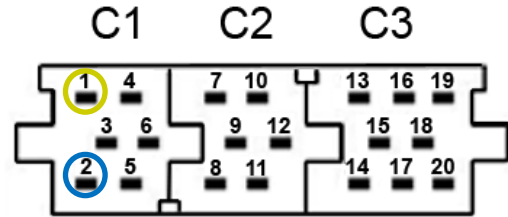
## PORSCHE

### Cayenne, Boxster, 997

Female Mini-ISO connector in radio slot

CAN High – Pin 1

CAN Low – Pin 2



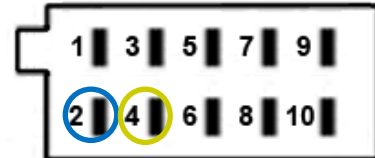
## SAAB

### 9-3, 9-5

Female 10pin ISO-connector in radio slot

CAN High – Pin 4

CAN Low – Pin 2

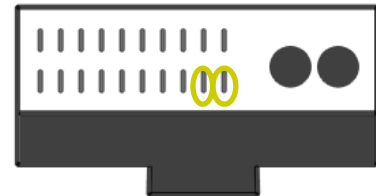


### 9-3 after facelift

20pin control unit connector,

CAN High – Pin 1 or Pin 2

CAN Low – not connected



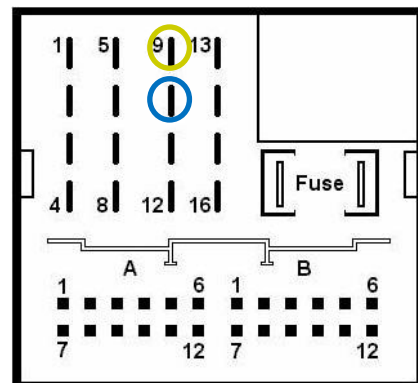
## SEAT

### Altea

Female Quadlock-connector in radio slot

CAN High – Pin 9

CAN Low – Pin 10



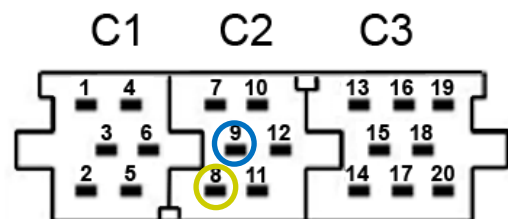
## ŠKODA

### Superb, Octavia I

Female Mini-ISO connector in radio slot

CAN High – Pin 8

CAN Low – Pin 9

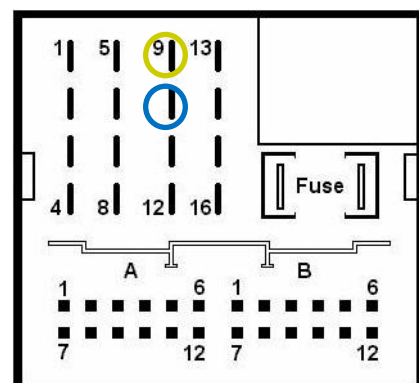


### Octavia II

Female Quadlock-connector in radio slot

CAN High – Pin 9

CAN Low – Pin 10



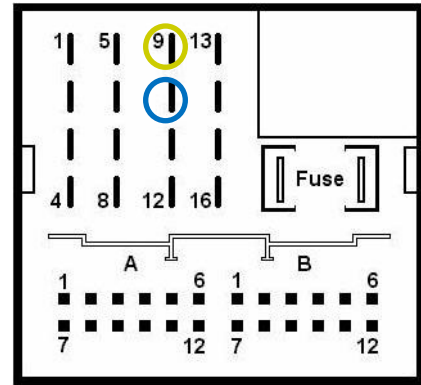
## VOLKSWAGEN

**Golf 4, Golf 5, Passat 3B, Caddy, Touran, Touareg, T5**

Female Quadlock-connector in radio slot

CAN High – Pin 9

CAN Low – Pin 10



## VOLVO

**S60, V70**

Female 12pin connector in radio slot

CAN High – Pin 7 (white)

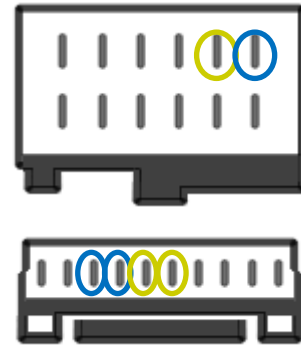
CAN Low – Pin 8 (green)

**XC90**

Female 10-Pin connector in radio slot

CAN High – white cable (double occupied)

CAN Low – green cable (double occupied)

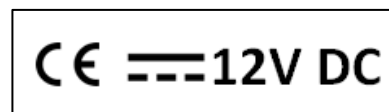


## 4. Steering wheel control (optional)

The control options by the steering wheel buttons vary depending on the available steering wheel buttons. In general, they include volume control and track jumps.

## 5. Specifications

Operation voltage	10.5 – 14.8V
Stand-by power drain	<1mA
Operation power drain	~45mA
Power consumption	1-27W
Temperature range	-30°C till +80°C
Weight	41g
Measurements (box only) B x H x T	70 x 22 x 50 mm



## 6. Technical Support

**Caraudio-Systems Vertriebs GmbH**  
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