

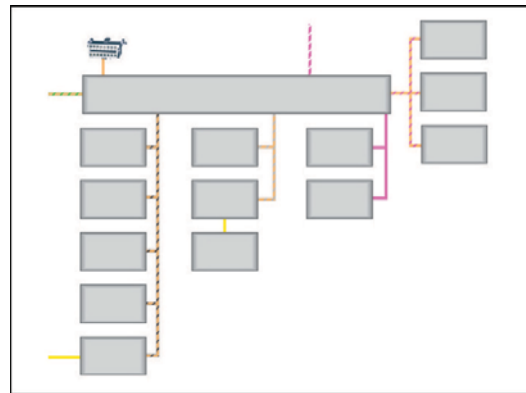


Audi A5 - Networking

Self-Study Programme 395

Innovations in the electrical system and electronics on the Audi A5

The number of control units in motor vehicles continues to increase, and the Audi A5 is no exception. Many functions would not be possible without this multiplicity of control units. Ongoing advance professional training is needed in order to abreast with the rapid rate of development within this sector. This self-study programme gives you the opportunity to familiarise yourself with the networking topology of the control units on the Audi A5. In addition, you will learn about the installation locations of the various control units.



395_029

Familiar components such as the data bus diagnostic interface, the alternator, the onboard power supply control unit and the light switches have now been updated. This self-study programme contains information about the new aspects of these components, as well as service-related information about the outside lights on the new Audi A5.



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The self-study programme teaches the design and function of new vehicle models, new automotive parts or new technologies.

The self-study programme is not a repair manual!

All values given are intended as a guideline only and refer to the software version valid at the time of preparation of the SSP.

For maintenance and repair work, always refer to the current technical literature.

Reference



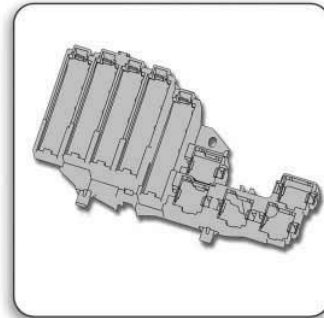
Note



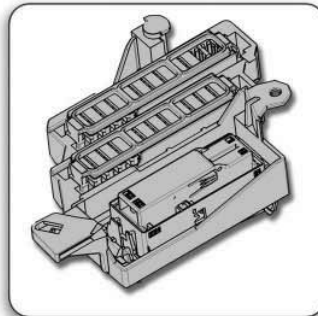
Overview

Fuses and relays

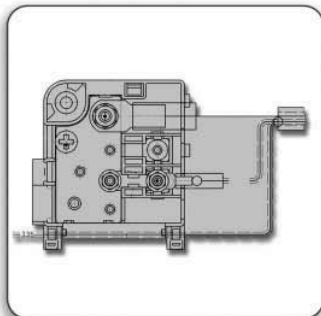
Relay carrier and fuse panel in luggage compartment on right



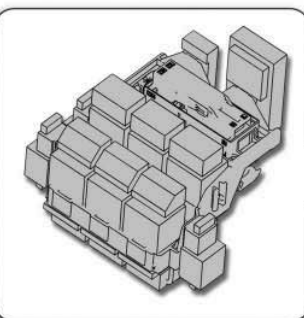
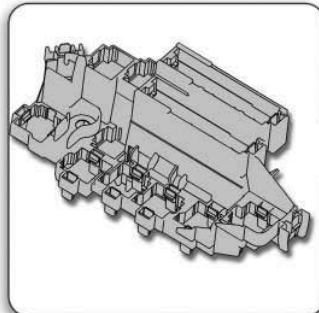
Fuse panel in dash panel on right and CAN node connectors



Fuse panel and external starter connection in plenum chamber

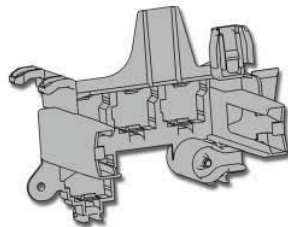
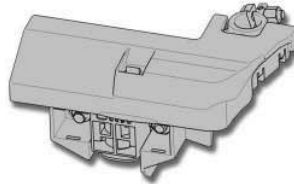


Relay carrier and fuse panel in electronics box

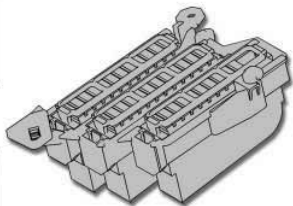


Connector station and CAN node connector on left A-post

**Fuse panel and battery disconnecting
element at battery positive pole**



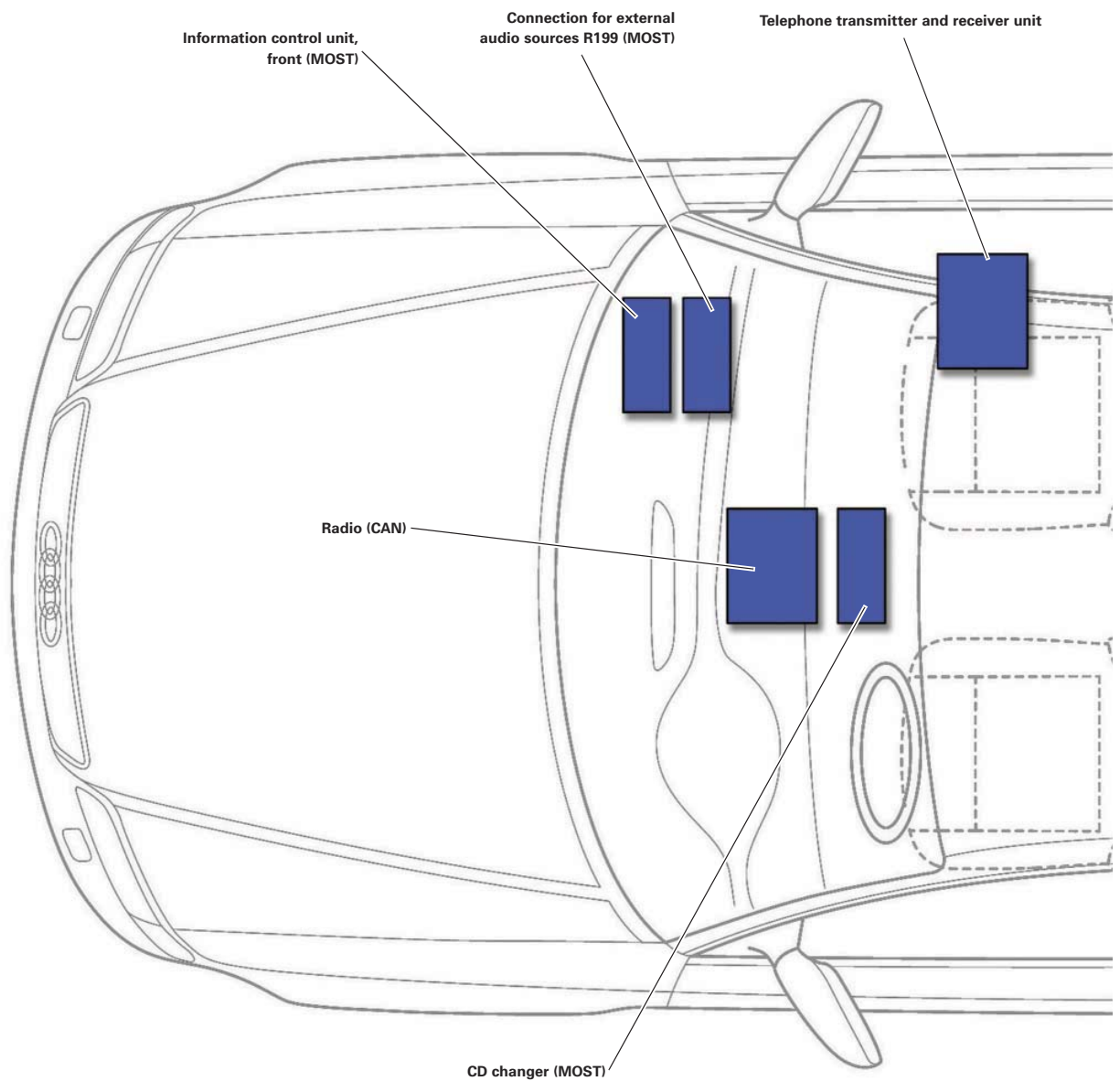
**Relay carrier and mounting bracket for onboard
power supply control unit in driver-side footwell**

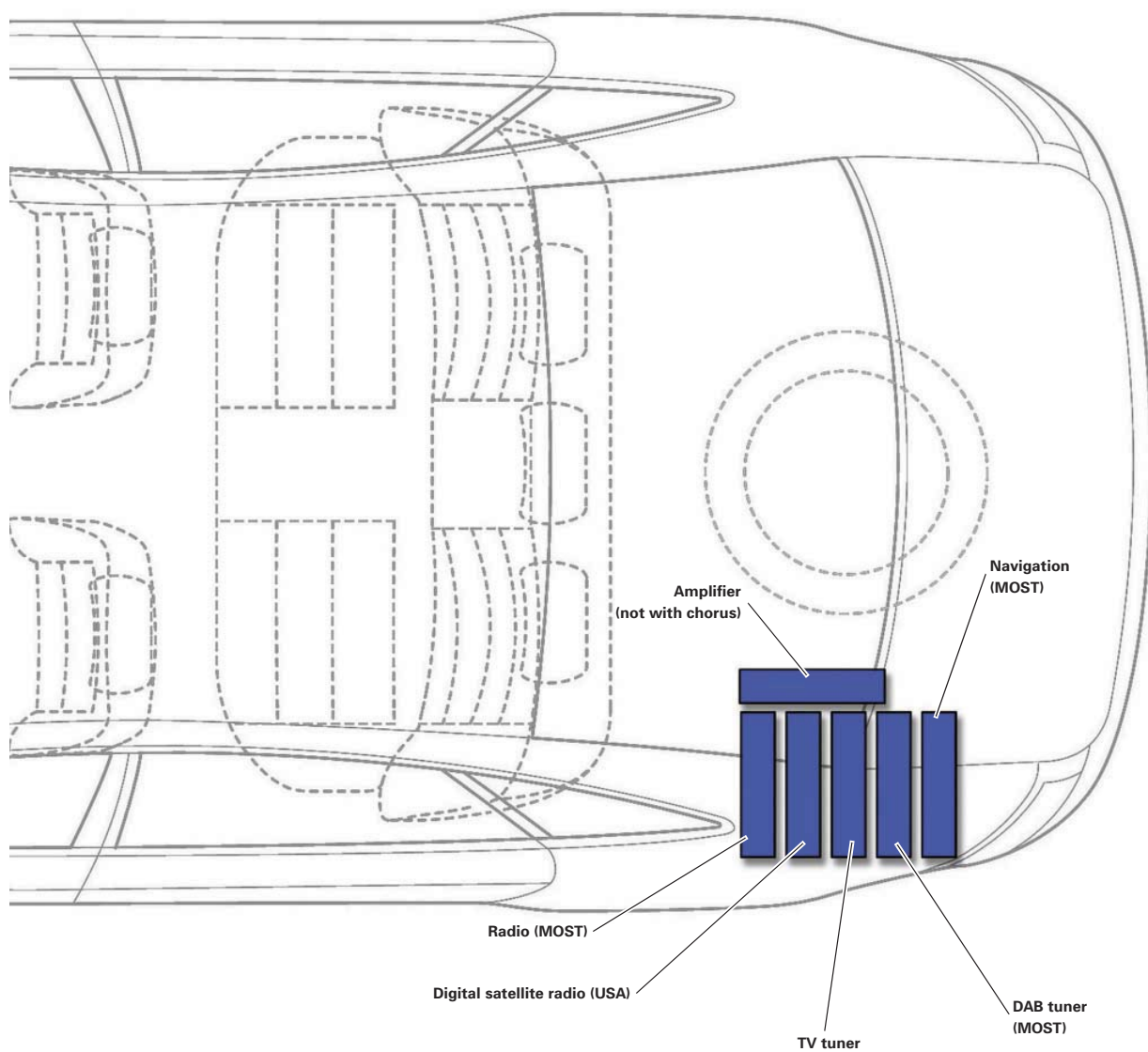


Fuse panel in dash panel on left

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Installation locations of Infotainment components

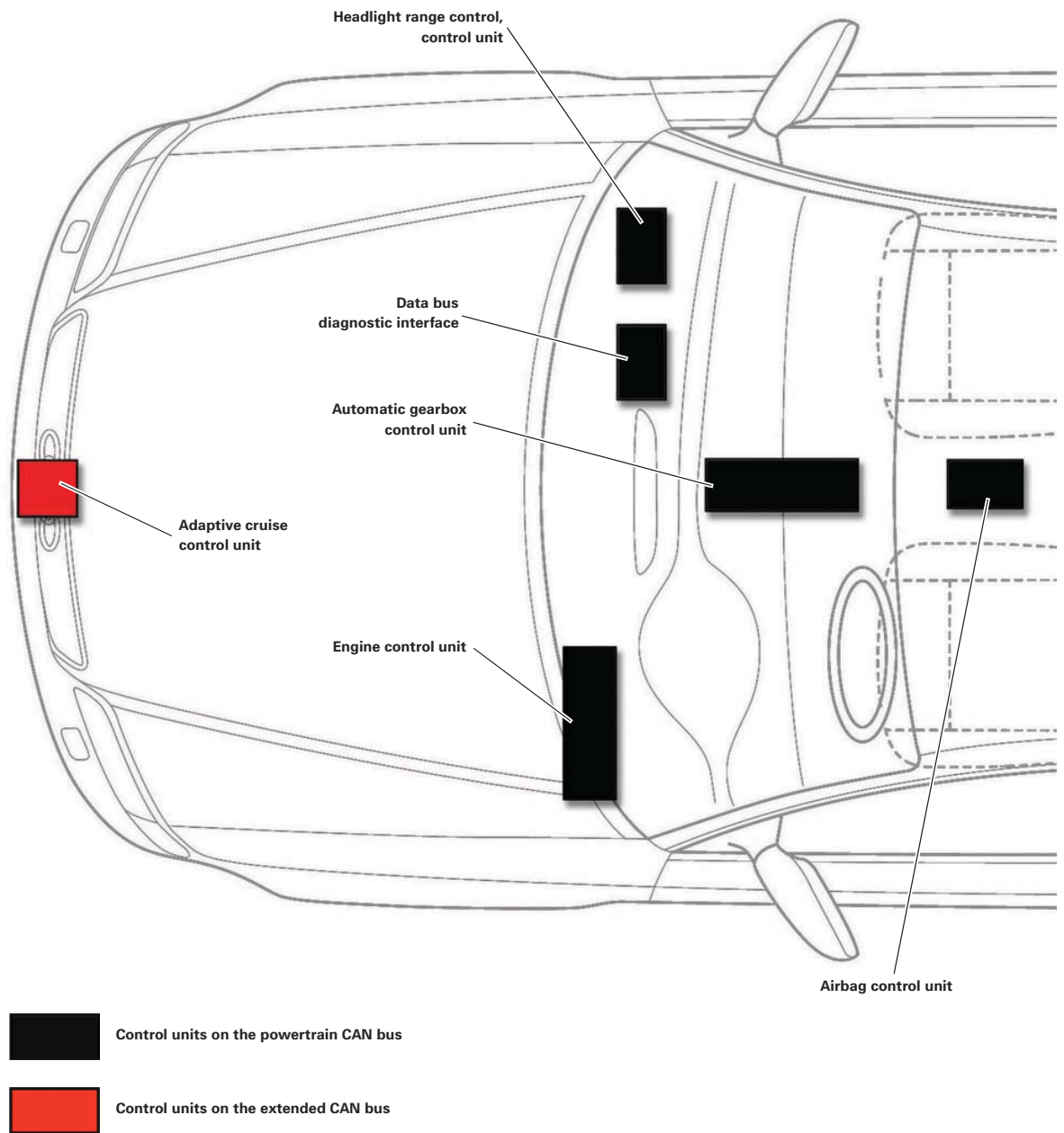


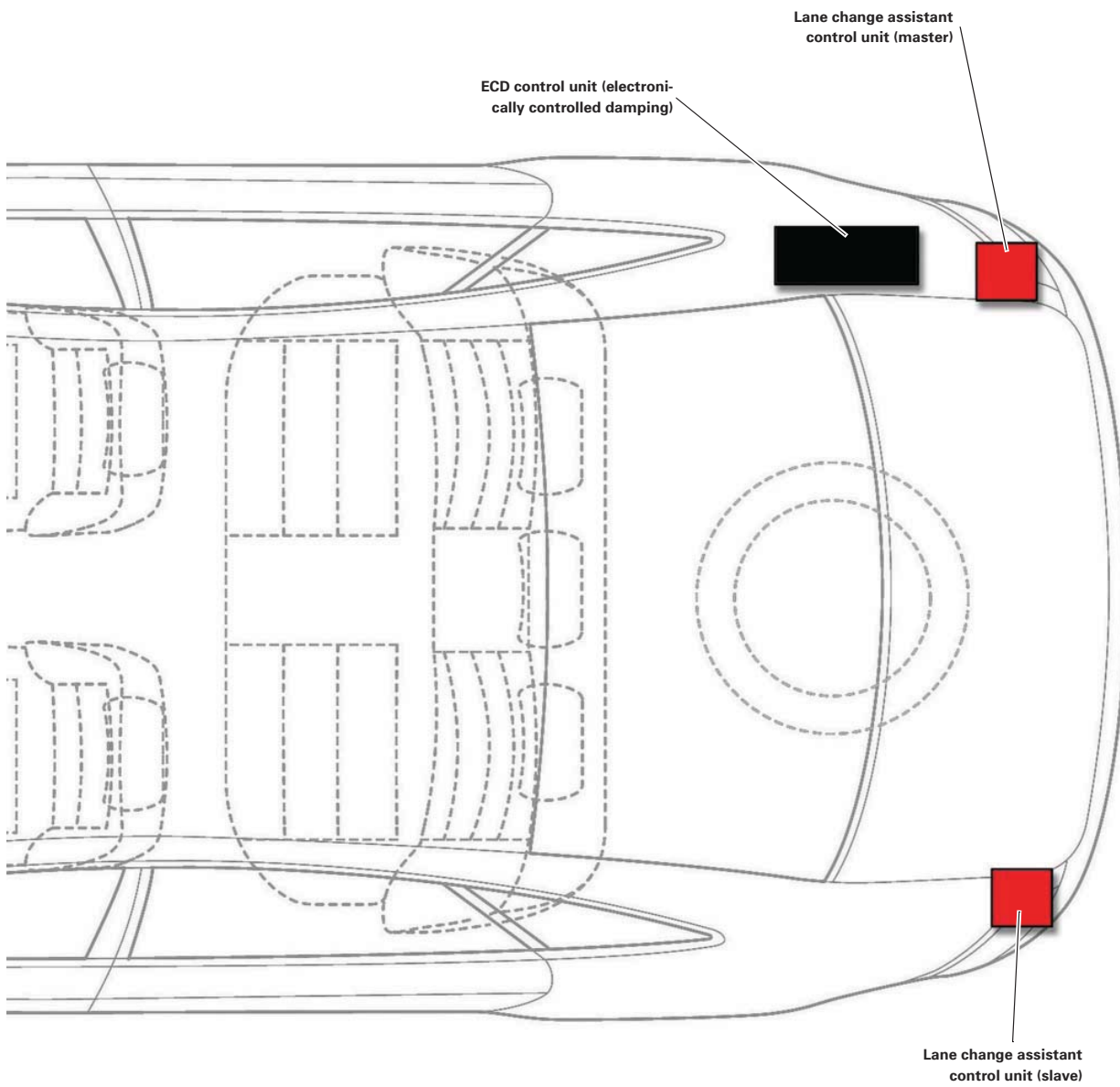


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Overview

Installation locations of control units on the powertrain CAN bus and extended CAN bus

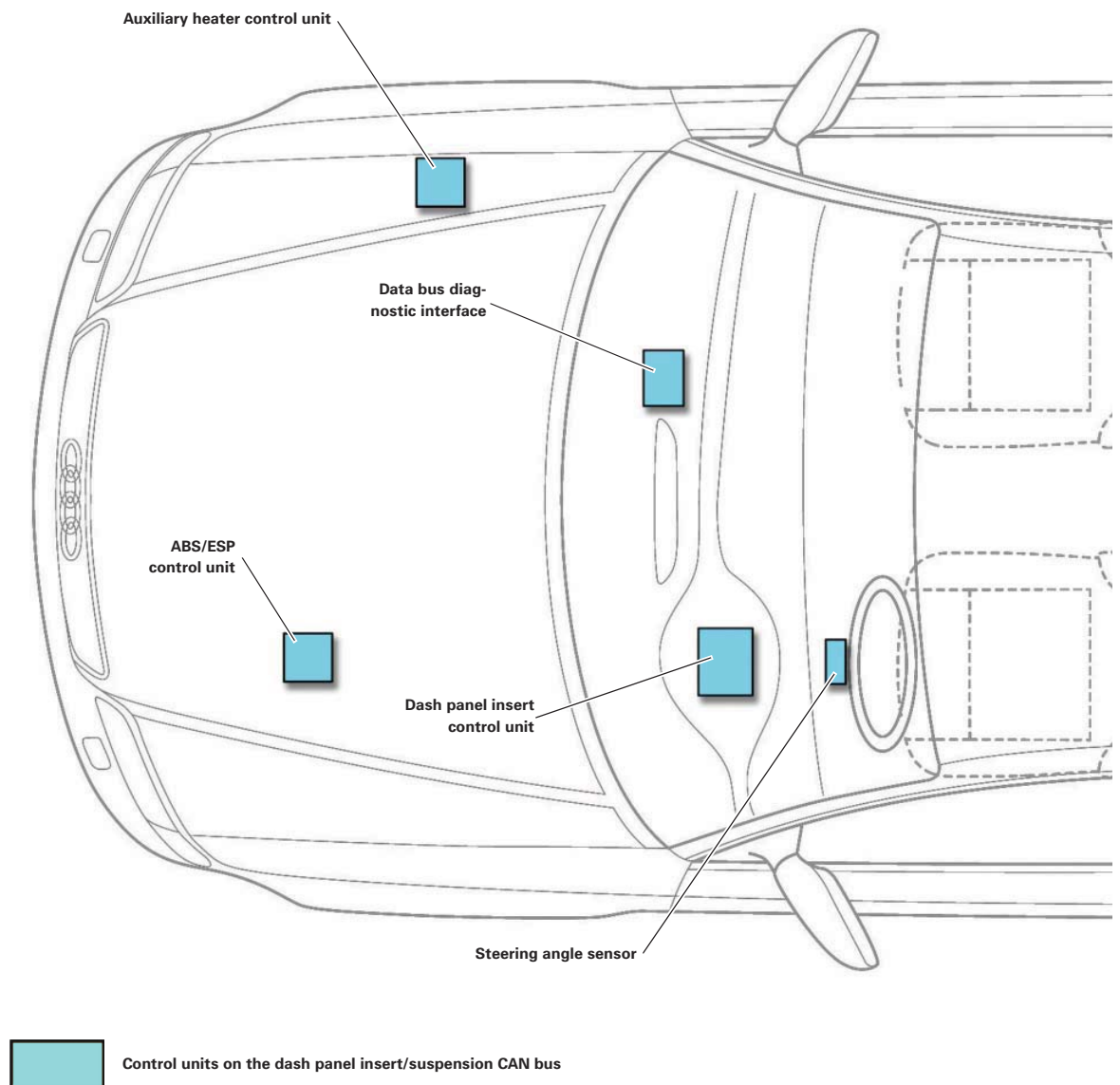


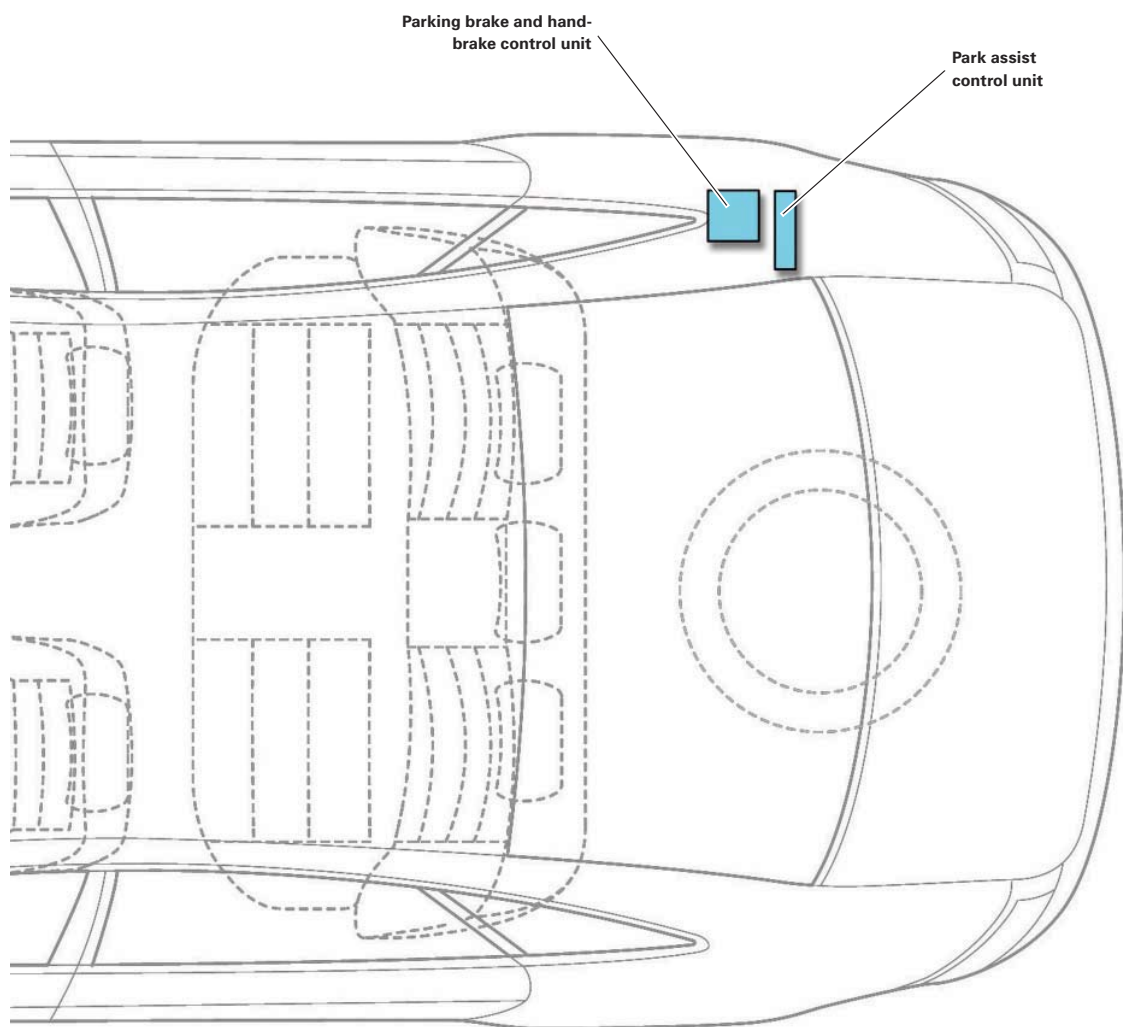


395_002

Overview

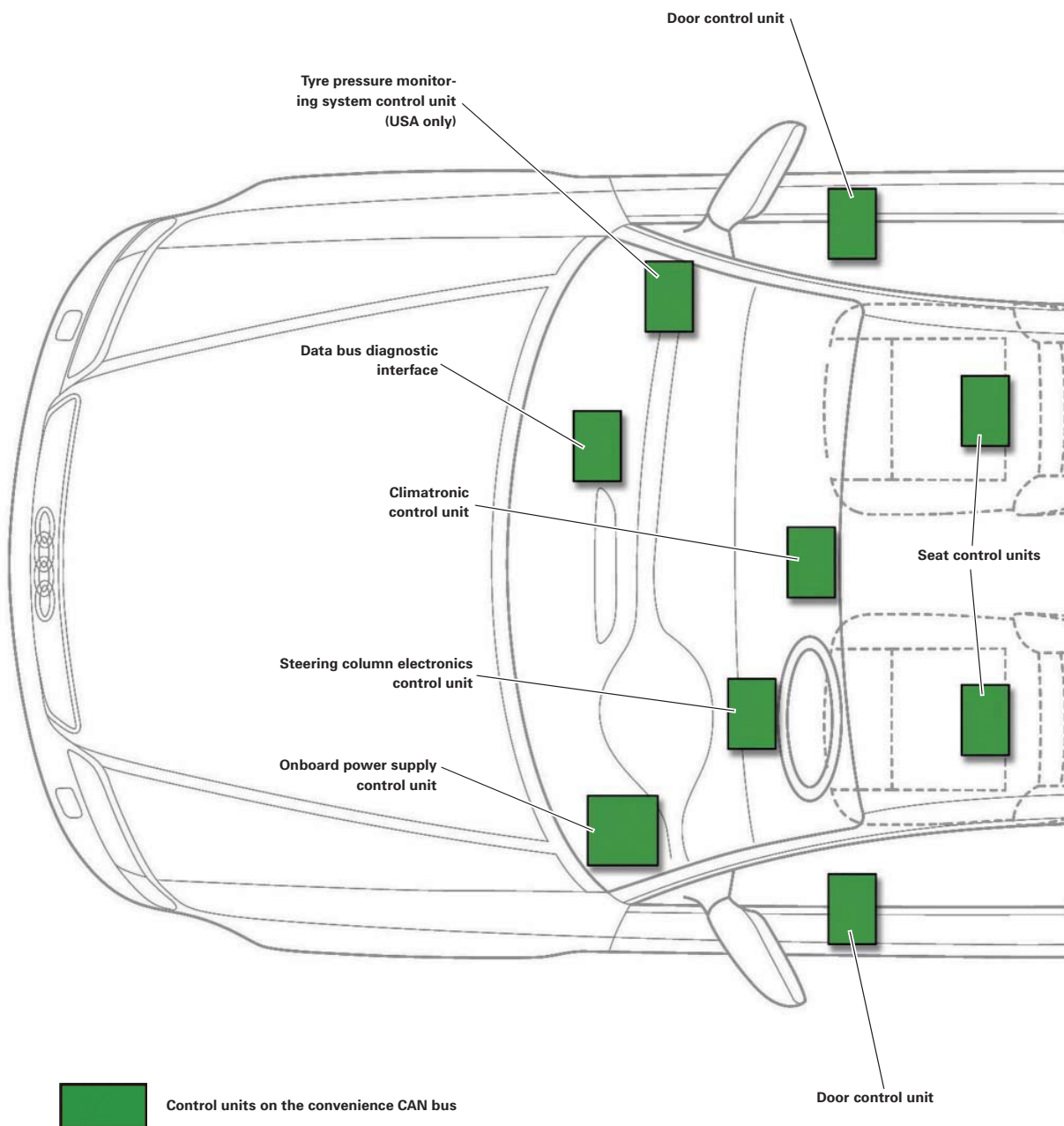
Installation locations of control units on the dash panel insert / suspension CAN bus

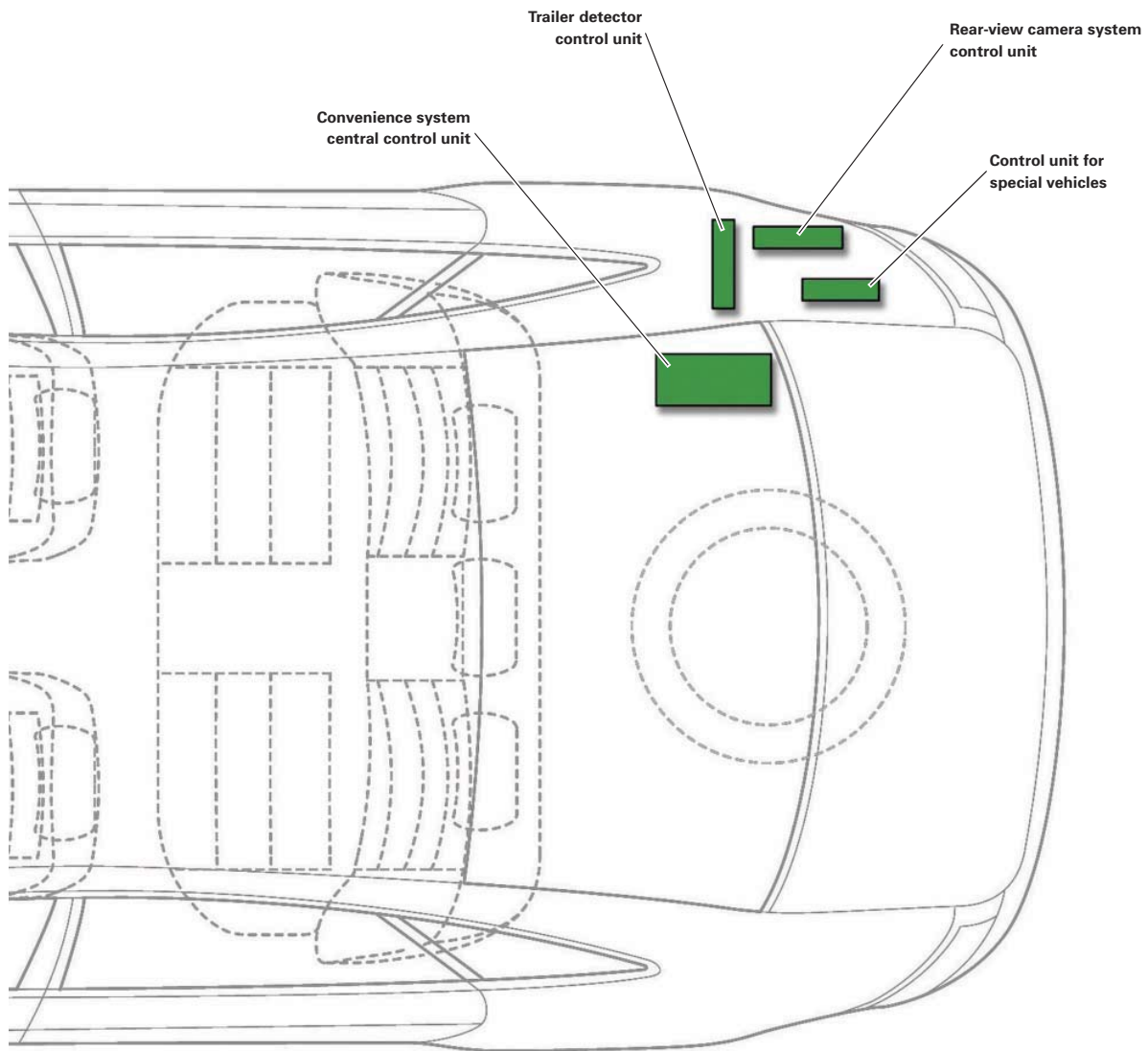




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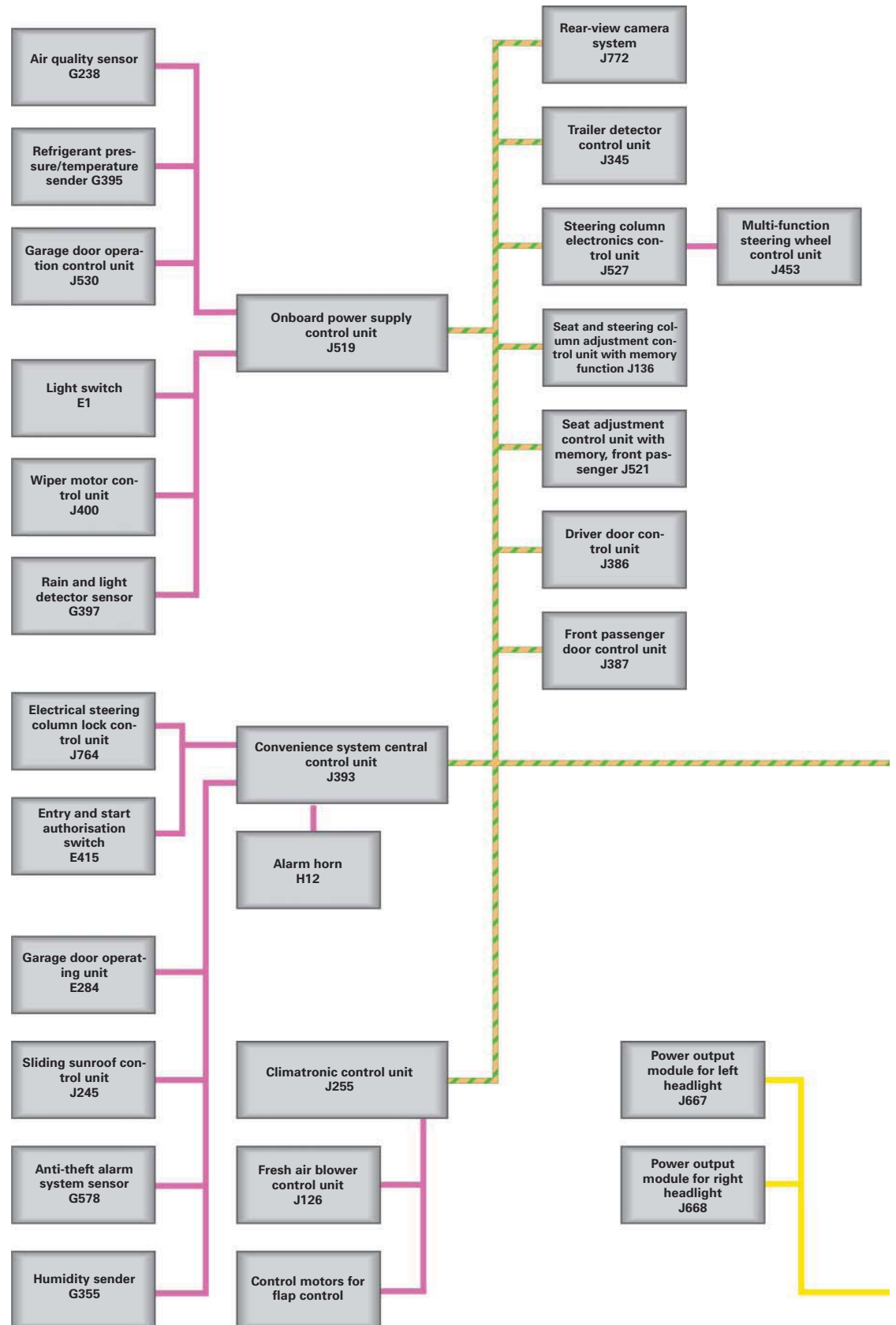
Installation locations of control units on the convenience CAN bus

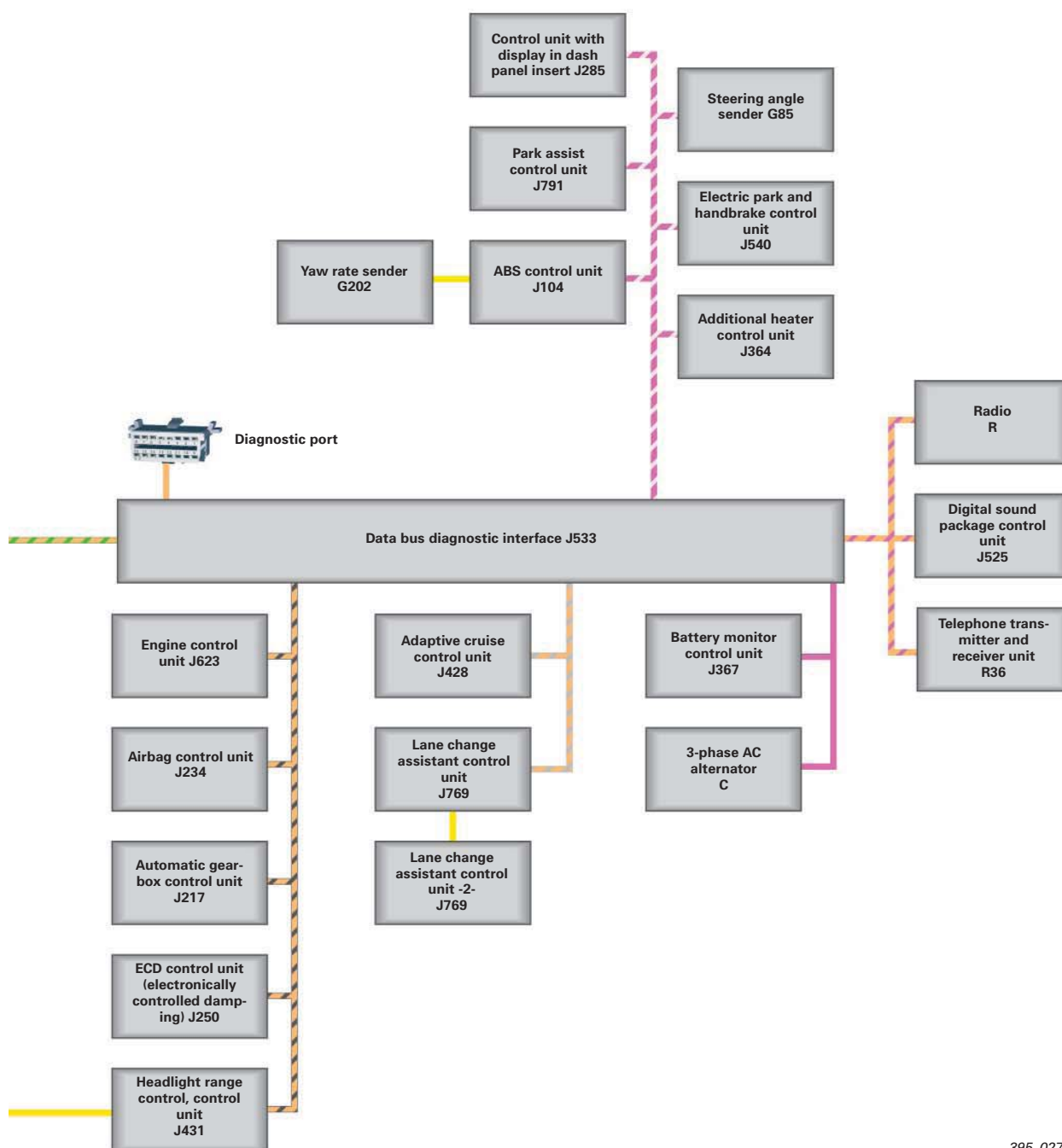




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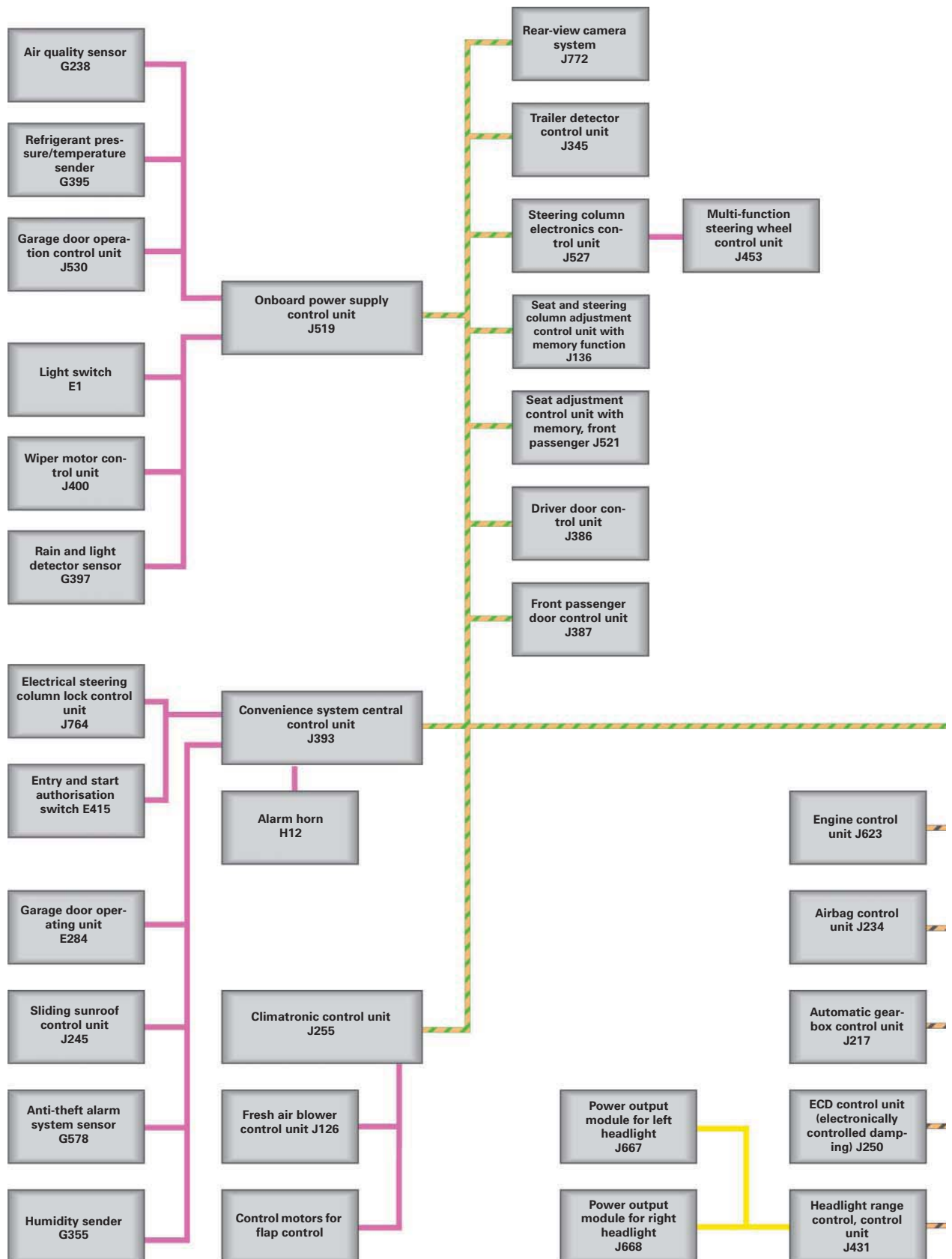
Networking / vehicles with infotainment CAN bus

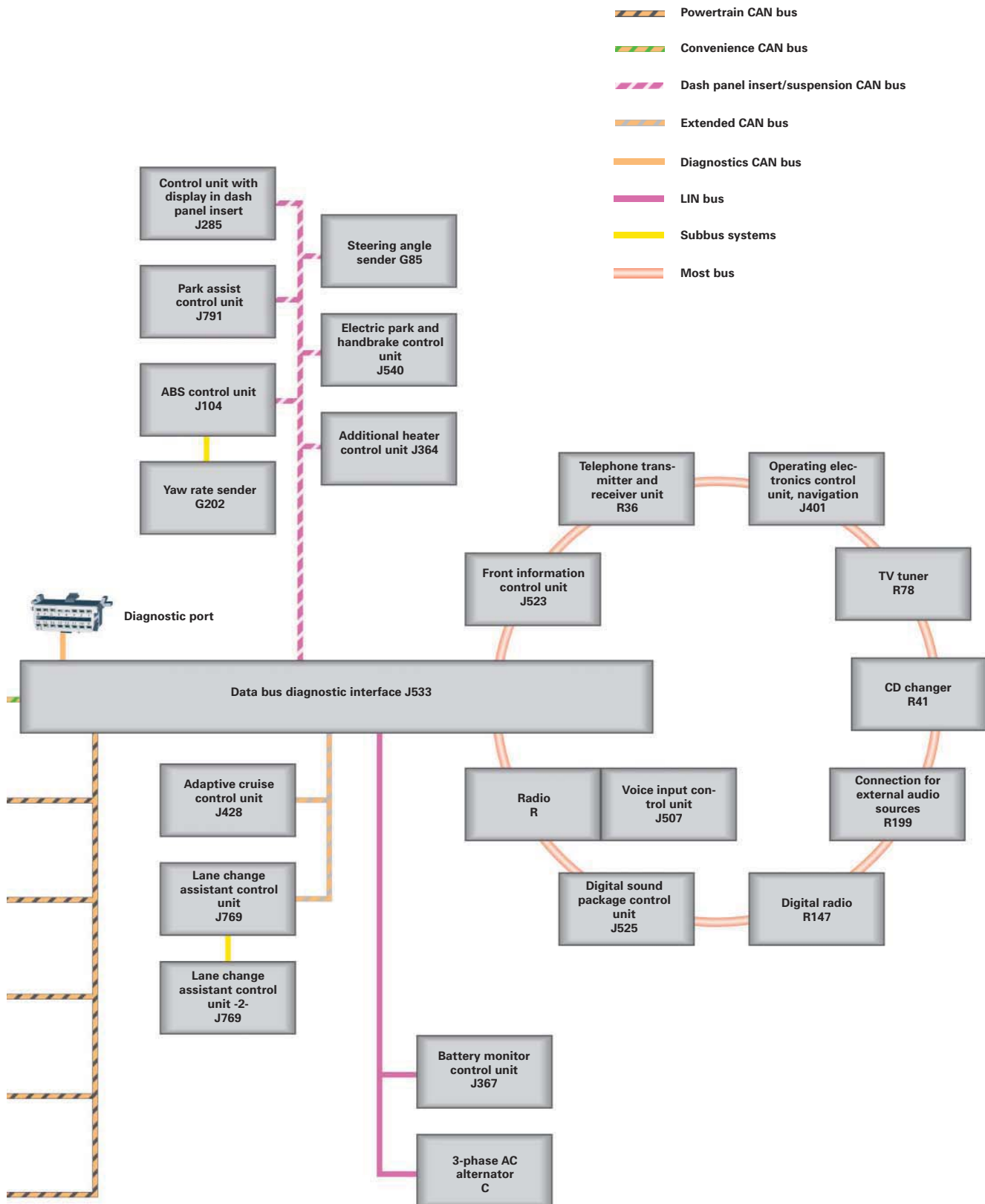




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Networking / vehicles with MOST bus



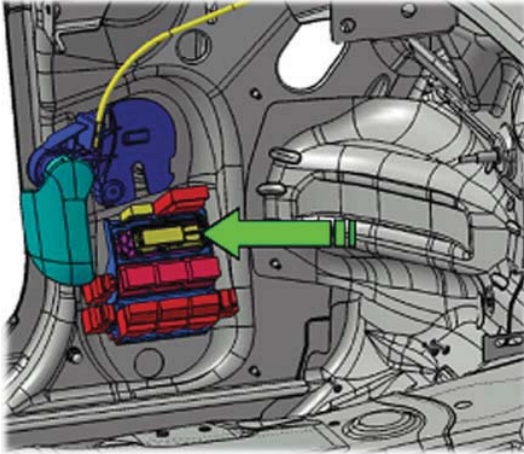


CAN node connectors

Installation location

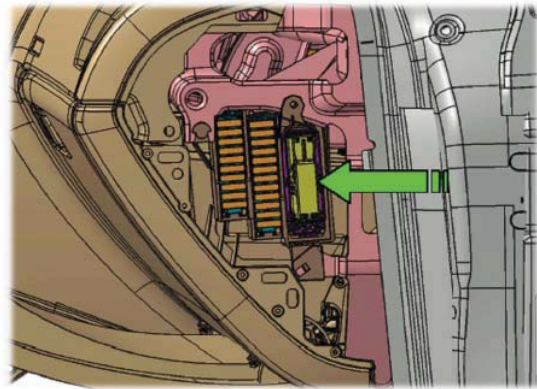
The CAN node connectors are located on the relay carrier on the left and on the fuse holder in the dash panel on the right.

Relay carrier, left



395_007

Fuse holder in dash panel on right

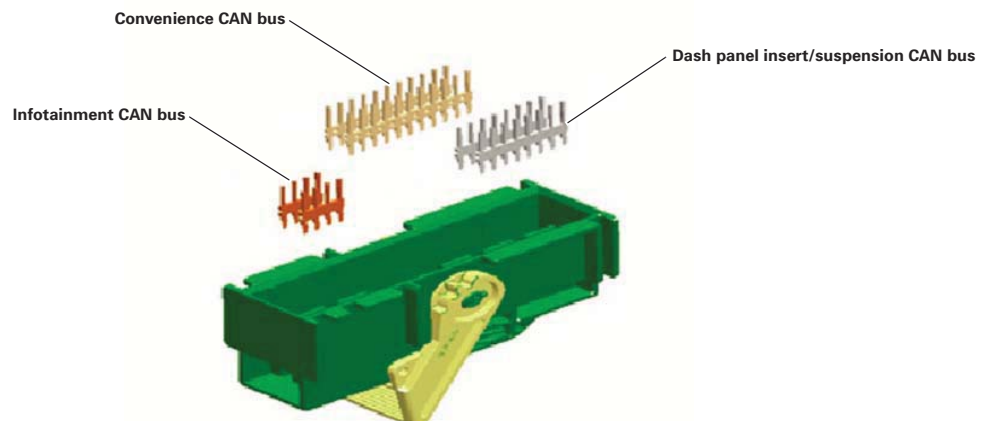


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Assignments

The infotainment CAN bus, the convenience CAN bus and the dash panel insert / suspension CAN bus control units are connected to both CAN node connectors. The familiar CAN isolating adaptor V.A.G 1598/38 can be used for fault-finding. In this way, it is possible to access the data lines of the control units without removing trim parts or opening the wiring harness.

This reduces fault-finding time. The powertrain CAN and extended CAN bus systems are not connected to the node connectors. They are connected to the wiring harness by crimp connectors.



395_006

Diagnostics

To perform diagnostics on the Audi A5, the VAS testers require the basic CD 11.XX and the relevant branded CD by Audi.

This is because the data protocol (language) which several control units and the VAS tester use to interchange data has changed.

The tester must therefore be capable of processing both the "old" data protocol, Key Word 2000, and the "new" data protocol, UDS with ASAM/ODX.

The change of data protocol does not affect service personnel.

The Guided Fault Finding and Guided Functions programs can be used as before.

Again, data is exchanged between the vehicle and the tester via the diagnostics CAN bus.

The voltage level and the transmission speed on this CAN data bus have not changed.

For the first time, it is only possible to encode the control units on the Audi A5 with a tester connected online.

Encoding can no longer be performed without an active online connection.



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395_026

UDS

Unified **D**iagnostic **S**ervices Protocol

ODX

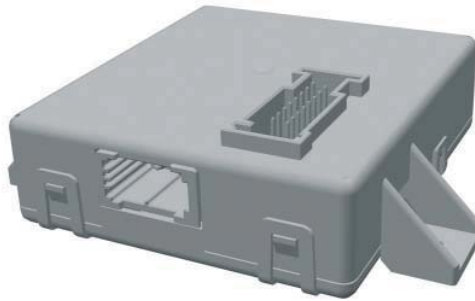
Open Diagnostic **D**ate Exchange

ASAM

Association for **S**tandardization of **A**utomation and **M**easurement Systems

ASAM has been a registered German association since 1998.

J533 Data bus diagnostic interface (gateway)

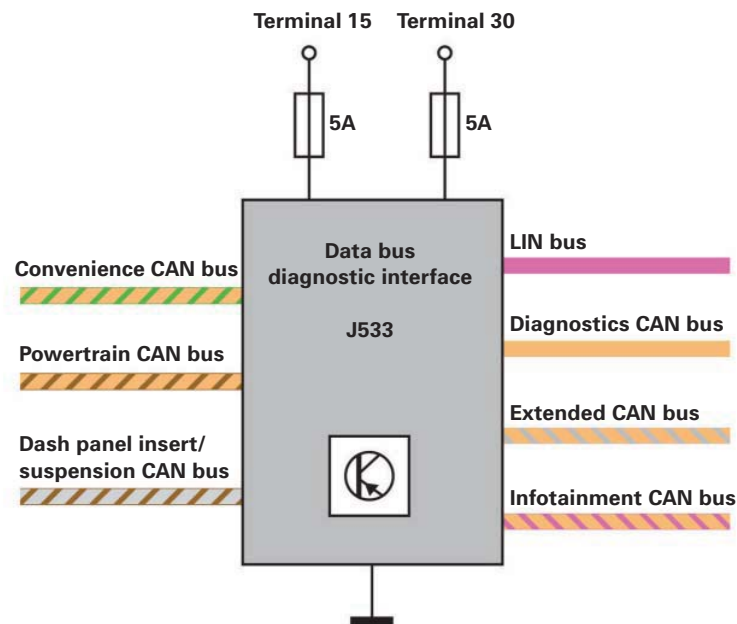


395_031

Introduction

The new Audi A5 has an independent data bus diagnostic interface J533. The diagnostic interface represents the link between the various CAN bus systems. Depending on specification, the vehicle has between 4 and 6 different onboard CAN bus systems:

- | | |
|------------------------------------|---|
| ▶ Diagnostics CAN bus | - all Audi A5 models have one |
| ▶ Powertrain CAN bus | - all Audi A5 models have one |
| ▶ Dash panel insert/suspension CAN | - all Audi A5 models have one |
| ▶ Convenience CAN bus | - all Audi A5 models have one |
| ▶ Infotainment CAN bus | - an Audi A5 has either an infotainment CAN bus or the MOST optical bus system (depending on specification) |
| ▶ Extended CAN bus | - if the vehicle has one of the following optional extras: <ul style="list-style-type: none">- ACC- lane change assist |



395_016