

2003-08 ACCESSORIES AND EQUIPMENT

Gateway - 9pa_Cayenne

GATEWAY

INTRODUCTION

NOTE: *The following troubleshooting diagnosis has been geared only towards left-hand drive vehicles and describes only these types of vehicles. In some cases, specified plugs and sockets may be assigned differently in right-hand drive vehicles, which can lead to incorrect interpretations during troubleshooting and to unforeseen accidents. Therefore, no work should be performed on right-hand drive vehicles without the correct wiring diagram and troubleshooting diagnosis description.*

Gateway

Diagnosis software number for gateway: 0101

Cayenne model year 2003

General instructions/safety instructions

The following points must be observed during vehicle diagnosis:

- After the battery is connected, volatile memories must be reprogrammed. In the case of radio coding and tuning, the customer must be informed of decoding and the deleted tuner memory.
- After troubleshooting or repairs, erase the fault memory with the Porsche System Tester II No. 9588 and carry out a test drive.
- After the test drive, read out the fault memory again with the Porsche System Tester II No. 9588.

WARNING: *Danger of injury through triggering of driver's airbag*

- *Never hang the Porsche System Tester II No. 9588 over the steering wheel.*

WARNING: *Danger of injury and damage due to unusual vehicle handling when plugs or components are disconnected!*

- *Never disconnect plugs when the vehicle is in motion or drive the vehicle with plugs disconnected.*
- *Drive only with all parts fully installed and connected.*

CAUTION: *Danger of damage due to improper handling of batteries and control*

module plug connections!

- ***Never disconnect battery with engine running.***
- ***Never start engine if battery terminal clamps are not connected securely.***
- ***Never pull off or push on plug connections for the control modules or other electronic components when the ignition is switched on.***
- ***Always disconnect the negative terminal of the battery and pull off all plug connections to the vehicle electrical system control module when carrying out welding work on the vehicle.***

NOTE: ***The instrument cluster described in this 'Technical Manual, Diagnosis' is a system that actually comprises two components since the instrument cluster includes a so-called gateway, which 'mirrors' the CAN messages from various CAN bus systems (CAN comfort, CAN drive, CAN Infotainment) onto the required CAN. It is, so to speak, a galvanically separated interface between the CAN bus systems.***

Fault code setting conditions

Fault codes can be set in various circumstances, e.g.:

- battery disconnected
- plug connections disconnected
- faulty coding
- power failure
- etc.

In these circumstances, no fault is present in the system and the fault memory must be erased.

Troubleshooting procedure

Troubleshooting can only be performed when the fault is present. In other words, specific troubleshooting can only be performed in accordance with instructions (given under Diagnosis/troubleshooting for each fault code) if the entry has the status 'present' in the fault memory.

If the fault is currently 'not present', please check the following:

- Diagnosis conditions are met; if necessary perform a short test or test drive
- All plug connections and ground points of the affected current path are OK
- Set all wiring harnesses of the affected current path to a state that corresponds to driving by pulling and shaking them (loose contact)

Diagnostic conditions

IMPORTANT: Always connect a suitable battery charging device to the vehicle electrical system battery or to the designated jump-start terminal before starting diagnosis. All unnecessary loads must also be switched off.

NOTE: *The fault can only be identified if the requirements listed under 'Diagnostic conditions' are met. For this reason, the specified procedure must be observed after a fault is repaired:*

1. Erase fault memory.
2. Satisfy the requirements listed under 'Diagnostic conditions'.
3. Read out fault memory again.

Possible causes of fault

NOTE: *The 'possible causes of fault' that are responsible for the fault are listed here. Please note that in certain circumstances further faults can be stored in the fault memory after troubleshooting (e.g. if plugs are disconnected). After carrying out repairs, read out the fault memory of all control modules and erase any faults.*

Diagnosis/troubleshooting

NOTE: *The fault memory Info key [F8] on Porsche System Tester II No. 9588 can be used to access the 'extended fault memory'. The following information can be displayed:*

Fault type

The following fault types are possible:

- no display
- upper limit value exceeded
- lower limit value not reached
- mechanical fault
- no signal/communication
- no or incorrect basic setting/adaptation
- short circuit to B+
- short circuit to ground
- implausible signal
- open circuit/short circuit to ground
- open circuit/short circuit to B+
- open circuit

2004 Porsche Cayenne

2003-08 ACCESSORIES AND EQUIPMENT Gateway - 9pa_Cayenne

- electrical fault in electric circuit
- please read out fault memory
- faulty
- cannot be checked now

Fault status

The following status types are possible:

- present
- not present

This information should be saved using the Save key [F4] and printed out.

NOTE: *Visual inspection: During troubleshooting, please check first that the affected pins on the instrument cluster plug connection are neither damaged nor corroded. The wiring and plugs of the affected components must also be checked for external damage and correct contacts. Repair damaged or corroded pins if possible, otherwise replace affected pins. Repair or replace damaged wires.*

NOTE: *Battery voltage and signals: A battery voltage of between 11.4 and 14.5 V is required for troubleshooting. This must be checked and provided if necessary. Both signals and voltages to components or fuses (input side) must be guaranteed on the vehicle electrical system.*

NOTE: *Specified resistance values are based on an ambient temperature of 20°C.*

TOOLS

WARNING: *Danger of injury while working with special tools*

- *Never hang the Porsche System Tester II No. 9588 over the steering wheel*

NOTE: *Plug contacts are optimally designed to suit the plug system. Operations on pins can cause contact problems. Always use suitable measurement tools, adapter plugs and test cables.*

Required special tools, test and measuring equipment, plus auxiliary equipment

- ...!!!Commercially available battery charging device!!!...

PORSCHE SYSTEM TESTER II NO. 9588

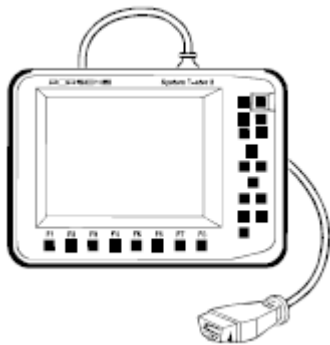


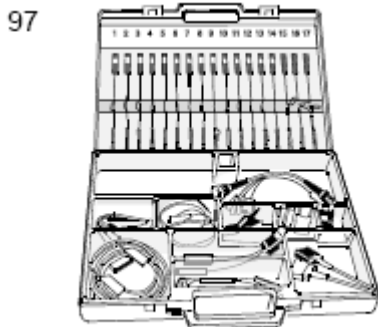
Fig. 1: Identifying Porsche System Tester II No. 9588
Courtesy of PORSCHE OF NORTH AMERICA, INC.

COMMERCIALLY AVAILABLE DIGITAL MULTIMETER



Fig. 2: Identifying Commercially Available Digital Multimeter
Courtesy of PORSCHE OF NORTH AMERICA, INC.

MEASUREMENT TOOL SET NO. 9684



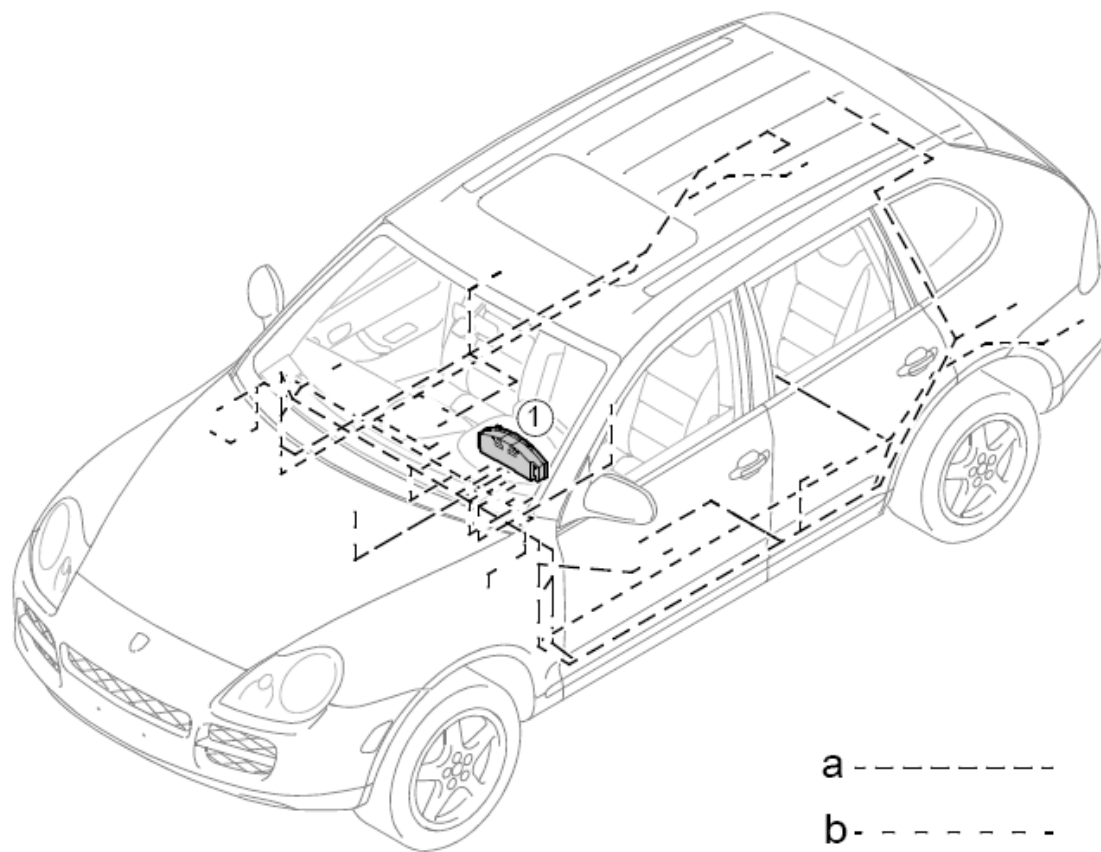
9684 000 721 968 40

Fig. 3: Identifying Measurement Tool Set No. 9684
Courtesy of PORSCHE OF NORTH AMERICA, INC.

COMPONENT ARRANGEMENT

2004 Porsche Cayenne

2003-08 ACCESSORIES AND EQUIPMENT Gateway - 9pa_Cayenne



a - - - - -

b - - - - -

c - - - - -

A - CAN comfort

B - CAN drive

C - CAN Infotainment

1 - Instrument cluster (integrated gateway)

Fig. 4: Identifying Gateway Component Arrangement

Courtesy of PORSCHE OF NORTH AMERICA, INC.

CONNECTOR ASSIGNMENT

2004 Porsche Cayenne

2003-08 ACCESSORIES AND EQUIPMENT Gateway - 9pa_Cayenne

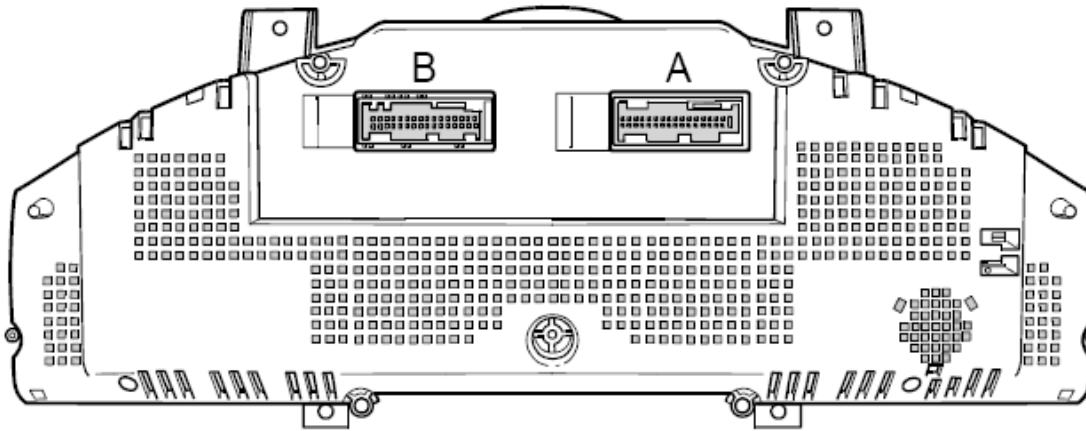


Fig. 5: Identifying Gateway Connector Assignment
 Courtesy of PORSCHE OF NORTH AMERICA, INC.

WIRING HARNESS PLUG A, 32-PIN INSTRUMENT CLUSTER/GATEWAY

Wiring harness plug A, 32-pin instrument cluster/gateway

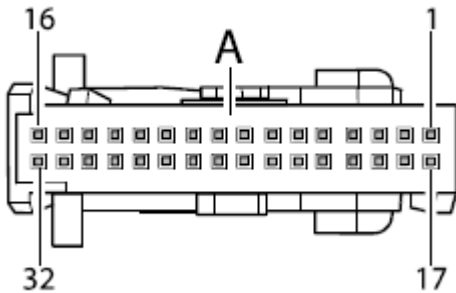


Fig. 6: Identifying Connector Pins For Wiring Harness Plug A (Instrument Cluster/Gateway)
 Courtesy of PORSCHE OF NORTH AMERICA, INC.

CONNECTOR PINS REFERENCE

Pin	Designation	Pin	Designation
1	Terminal 15SV	2	Terminal 15SV
3	Speedometer output	4	Fuel level sensor 2
5	Fuel level sensor 1	6	Washer fluid level
7	Sensor ground for outside temperature/coolant temperature/washer fluid level	8	Terminal 30
9	Terminal 31	10	Oil pressure
11	Outside temperature	12	Terminal 61
13 to 21	Not used	22	Coolant level
23	Terminal 30	24	Terminal 31

2004 Porsche Cayenne

2003-08 ACCESSORIES AND EQUIPMENT Gateway - 9pa_Cayenne

25	K lead	26 to 28	Not used
29	Brake fluid 'signal'	30	PSM OFF switch
31	Not used	32	Not used

WIRING HARNESS PLUG B, 32-PIN INSTRUMENT CLUSTER/GATEWAY

Wiring harness plug B, 32-pin instrument cluster/gateway

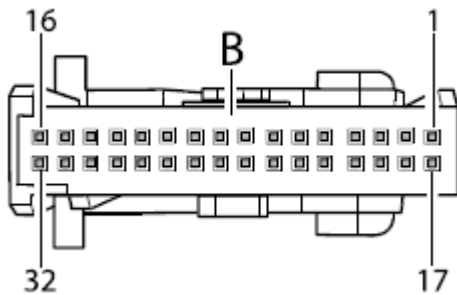


Fig. 7: Identifying Connector Pins For Wiring Harness Plug B (Instrument Cluster/Gateway)
 Courtesy of PORSCHE OF NORTH AMERICA, INC.

CONNECTOR PINS REFERENCE

Pin	Designation	Pin	Designation
1 to 6	Not used	7	Brake pad wear indicator (BVA)
8	CAN drive (high), External via diagnostic box	9	CAN drive (low), External via diagnostic box
10 to 12	Not used	13	Parking brake
14 to 17	Not used	18	Oil level sensor Senses both oil level and oil temperature
19	CAN drive (high)	20	CAN drive (low)
21 to 26	Not used	27	CAN comfort (high)
28	CAN comfort (low)	29 to 30	Not used
31	CAN Infotainment (high)	32	CAN Infotainment (low)

FAULT OVERVIEW

GATEWAY

GATEWAY FAULT OVERVIEW

Fault code	Fault text	Fault effect
0455	KESY control module (CAN comfort)	<ul style="list-style-type: none"> Limited functionality or no functions

2004 Porsche Cayenne

2003-08 ACCESSORIES AND EQUIPMENT Gateway - 9pa_Cayenne

<u>0456</u>	KESSY control module (CAN drive)	<ul style="list-style-type: none">• Limited functionality or no functions
<u>0457</u>	Vehicle electrical system control module (CAN comfort)	<ul style="list-style-type: none">• Limited functionality or no functions
<u>0459</u>	PCM 2	<ul style="list-style-type: none">• Limited functionality or no functions
<u>0461</u>	Memory seat adjustment control module, passenger's	<ul style="list-style-type: none">• Limited functionality or no functions
<u>0466</u>	Steering column switch (with electronic unit)	<ul style="list-style-type: none">• Limited functionality or no functions
<u>0469</u>	CAN Infotainment in single-wire operation	<ul style="list-style-type: none">• Limited functionality or no functions
<u>0470</u>	CAN comfort in single-wire operation	<ul style="list-style-type: none">• Limited functionality or no functions
<u>0478</u>	Air-conditioning system regulator control module, rear	<ul style="list-style-type: none">• Limited functionality or no functions
<u>0484</u>	Magnetic field sensor (compass control module)	<ul style="list-style-type: none">• Limited functionality or no functions
<u>0778</u>	Steering-angle sensor	<ul style="list-style-type: none">• Limited functionality or no functions
<u>0908</u>	Wiper motor (with control module)	<ul style="list-style-type: none">• Limited functionality or no functions
<u>1044</u>	Control module coded incorrectly	<ul style="list-style-type: none">• Limited functionality or no functions
<u>1207</u>	Additional heating control module	<ul style="list-style-type: none">• Limited functionality or no functions
<u>1305</u>	CAN Infotainment	<ul style="list-style-type: none">• Limited functionality or no functions
<u>1310</u>	Level control module	<ul style="list-style-type: none">• Limited functionality or no functions
<u>1312</u>	CAN drive	<ul style="list-style-type: none">• Limited functionality or no functions
<u>1314</u>	DME control module	<ul style="list-style-type: none">• Limited functionality or no functions
<u>1315</u>	Tiptronic control module	<ul style="list-style-type: none">• Limited functionality or no functions
<u>1316</u>	PSM control module	<ul style="list-style-type: none">• Limited functionality or no functions
<u>1320</u>	Air-conditioning system regulator	<ul style="list-style-type: none">• Limited functionality or no functions

2004 Porsche Cayenne

2003-08 ACCESSORIES AND EQUIPMENT Gateway - 9pa_Cayenne

	control module	functions
<u>1321</u>	Airbag triggering unit	<ul style="list-style-type: none">• Limited functionality or no functions
<u>1325</u>	RDK control module (tyre pressure control system)	<ul style="list-style-type: none">• Limited functionality or no functions
<u>1327</u>	ParkAssist control module	<ul style="list-style-type: none">• Limited functionality or no functions
<u>1330</u>	Rear convenience system control module	<ul style="list-style-type: none">• Limited functionality or no functions
<u>1331</u>	Door control module, driver's	<ul style="list-style-type: none">• Limited functionality or no functions
<u>1332</u>	Door control module, passenger's	<ul style="list-style-type: none">• Limited functionality or no functions
<u>1333</u>	Door control module, rear left	<ul style="list-style-type: none">• Limited functionality or no functions
<u>1334</u>	Door control module, rear right	<ul style="list-style-type: none">• Limited functionality or no functions
<u>1335</u>	Memory seat adjustment control module, driver's	<ul style="list-style-type: none">• Limited functionality or no functions
<u>1336</u>	CAN comfort OFF	<ul style="list-style-type: none">• Limited functionality or no functions
<u>1517</u>	Trailer hitch control module	<ul style="list-style-type: none">• Limited functionality or no functions
<u>2053</u>	Transfer box control module	<ul style="list-style-type: none">• Limited functionality or no functions

FAULT CODE 0003

CONTROL MODULE FAULTY

Diagnostic conditions

- Ignition on
- Internal gateway function test

Possible cause of fault

- Gateway faulty

Affected pins

2004 Porsche Cayenne

2003-08 ACCESSORIES AND EQUIPMENT Gateway - 9pa_Cayenne

DIAGNOSIS/TROUBLESHOOTING

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1	• Replace gateway	--> End

FAULT CODE 0455

KESY CONTROL MODULE (CAN COMFORT)

Diagnostic conditions

- Ignition on
- Internal function test on instrument cluster and gateway

Possible cause of fault

- No signal/communication (no signal from KESY control module on CAN comfort)

Affected pins

Instrument cluster, plug B:

- Pin 27 'CAN comfort (high)'
- Pin 28 'CAN comfort (low)'

DIAGNOSIS/TROUBLESHOOTING

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1	Continue troubleshooting, refer to <u>CHECKING INSTRUCTIONS/CAN DATA BUS</u> .	--> End

FAULT CODE 0456

KESY CONTROL MODULE (CAN DRIVE)

Diagnostic conditions

- Ignition on
- Internal gateway function test

Possible causes of fault

2004 Porsche Cayenne

2003-08 ACCESSORIES AND EQUIPMENT Gateway - 9pa_Cayenne

- No signal/communication (no signal from KESSY control module on CAN drive)

Affected pins

Instrument cluster, plug B:

- Pin 19 'CAN drive (high)'
- Pin 20 'CAN drive (low)'

DIAGNOSIS/TROUBLESHOOTING

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1	Continue troubleshooting, refer to <u>CHECKING INSTRUCTIONS/CAN DATA BUS</u>	--> End

FAULT CODE 0457

VEHICLE ELECTRICAL SYSTEM CONTROL MODULE (CAN COMFORT)

Diagnostic conditions

- Ignition on
- Internal function test on instrument cluster and gateway

Possible cause of fault

- No signal/communication (no signal from vehicle electrical system control module on CAN comfort)

Affected pins

Instrument cluster, plug B:

- Pin 27 'CAN comfort (high)'
- Pin 28 'CAN comfort (low)'

DIAGNOSIS/TROUBLESHOOTING

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1	Continue troubleshooting, refer to <u>CHECKING INSTRUCTIONS/CAN</u>	--> End

2004 Porsche Cayenne

2003-08 ACCESSORIES AND EQUIPMENT Gateway - 9pa_Cayenne

DATA BUS .

FAULT CODE 0459

PCM 2 (PORSCHE COMMUNICATION MANAGEMENT 2)

Diagnostic conditions

- Ignition on
- Internal function test on instrument cluster and gateway

Possible cause of fault

- No signal/communication (no signal from PCM II control module on CAN Infotainment)

Affected pins

Instrument cluster, plug B:

- Pin 31 'CAN Infotainment (high)'
- Pin 32 'CAN Infotainment (low)'

DIAGNOSIS/TROUBLESHOOTING

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1	Continue troubleshooting, refer to <u>CHECKING INSTRUCTIONS/CAN DATA BUS .</u>	--> End

FAULT CODE 0461

MEMORY SEAT ADJUSTMENT CONTROL MODULE, PASSENGER'S

Diagnostic conditions

- Ignition on
- Internal gateway function test

Possible causes of fault

- No signal/communication (no signal from passenger's memory seat adjustment control module on CAN comfort)

2004 Porsche Cayenne

2003-08 ACCESSORIES AND EQUIPMENT Gateway - 9pa_Cayenne

Affected pins

Instrument cluster, plug B:

- Pin 27 'CAN comfort (high)'
- Pin 28 'CAN comfort (low)'

DIAGNOSIS/TROUBLESHOOTING

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1	Continue troubleshooting, refer to CHECKING INSTRUCTIONS/CAN DATA BUS .	--> End

FAULT CODE 0463

CAN INFOTAINMENT FAULT, DSP

Diagnostic conditions

- Ignition on
- Internal gateway function test

Possible causes of fault

- No signal/communication (no signal from DSP control module on CAN Infotainment)

Affected pins

Instrument cluster, plug B:

- Pin 31 'CAN Infotainment (high)'
- Pin 32 'CAN Infotainment (low)'

DIAGNOSIS/TROUBLESHOOTING

NOTE: *If there is no incoming signal via CAN Infotainment using several control modules, CAN Infotainment must be checked for open or short circuits. Refer to 'CHECKING INSTRUCTIONS/CAN DATA BUS' .*

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1	Continue troubleshooting,	--> End

2004 Porsche Cayenne

2003-08 ACCESSORIES AND EQUIPMENT Gateway - 9pa_Cayenne

refer to **CHECKING
INSTRUCTIONS/CAN
DATA BUS** .

FAULT CODE 0465

CAN TIMEOUT, TELEPHONE/TELEMATICS

Diagnostic conditions

- Ignition on
- Internal gateway function test

Possible causes of fault

- No signal/communication (no signal from telephone/telematics control module on CAN Infotainment)

Affected pins

Instrument cluster, plug B:

- Pin 31 'CAN Infotainment (high)'
- Pin 32 'CAN Infotainment (low)'

DIAGNOSIS/TROUBLESHOOTING

NOTE: *If there is no incoming signal via CAN Infotainment using several control modules, CAN Infotainment must be checked for open or short circuits. Refer to **'CHECKING INSTRUCTIONS/CAN DATA BUS'** .*

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1	Continue troubleshooting, refer to <u>CHECKING INSTRUCTIONS/CAN DATA BUS</u> .	--> End

FAULT CODE 0466

STEERING COLUMN SWITCH (WITH ELECTRONIC UNIT)

Diagnostic conditions

- Ignition on
- Internal function test on instrument cluster and gateway

2004 Porsche Cayenne

2003-08 ACCESSORIES AND EQUIPMENT Gateway - 9pa_Cayenne

Possible cause of fault

- No signal/communication (no signal from steering column switch on CAN comfort)

Affected pins

Instrument cluster, plug B:

- Pin 27 'CAN comfort (high)'
- Pin 28 'CAN comfort (low)'

DIAGNOSIS/TROUBLESHOOTING

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1	--> End	
Continue troubleshooting, refer to <u>CHECKING INSTRUCTIONS/CAN DATA BUS</u> .		

FAULT CODE 0467

CAN TIMEOUT, TV TUNER

Diagnostic conditions

- Ignition on
- Internal gateway function test

Possible causes of fault

- No signal/communication (no signal from TV tuner control module on CAN Infotainment)

Affected pins

Instrument cluster, plug B:

- Pin 31 'CAN Infotainment (high)'
- Pin 32 'CAN Infotainment (low)'

DIAGNOSIS/TROUBLESHOOTING

NOTE: *If there is no incoming signal via CAN Infotainment using several control modules, CAN Infotainment must be checked for open or short circuits. Refer to **'CHECKING INSTRUCTIONS/CAN DATA BUS'**.*

2004 Porsche Cayenne

2003-08 ACCESSORIES AND EQUIPMENT Gateway - 9pa_Cayenne

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1 Continue troubleshooting, refer to <u>CHECKING INSTRUCTIONS/CAN DATA BUS</u> .	--> End	

FAULT CODE 0469

CAN INFOTAINMENT IN SINGLE-WIRE OPERATION

Diagnostic conditions

- Ignition on
- Internal function test on instrument cluster and gateway

Possible cause of fault

- Open circuit in CAN Infotainment (high)
- Open circuit in CAN Infotainment (low)
- Electrical fault on CAN Infotainment

Affected pins

Instrument cluster, plug B:

- Pin 31 'CAN Infotainment (high)'
- Pin 32 'CAN Infotainment (low)'

DIAGNOSIS/TROUBLESHOOTING

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1 Check fault memory in instrument cluster and gateway for further faults	Further faults present => Correct faults	Go to Step 2
2 Continue troubleshooting, refer to <u>CHECKING INSTRUCTIONS/CAN DATA BUS</u> .	--> End	

FAULT CODE 0470

CAN COMFORT IN SINGLE-WIRE OPERATION

2004 Porsche Cayenne

2003-08 ACCESSORIES AND EQUIPMENT Gateway - 9pa_Cayenne

Diagnostic conditions

- Ignition on
- Internal function test on instrument cluster and gateway

Possible cause of fault

- Open circuit in CAN comfort (high)
- Open circuit in CAN comfort (low)
- Electrical fault on CAN comfort

Affected pins

Instrument cluster, plug B:

- Pin 27 'CAN comfort (high)'
- Pin 28 'CAN comfort (low)'

DIAGNOSIS/TROUBLESHOOTING

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK	
1	Check fault memory in instrument cluster and gateway for further faults	Further faults present => Correct faults	Go to Step 2
2	Continue troubleshooting, refer to <u>CHECKING INSTRUCTIONS/CAN DATA BUS</u> .	--> End	

FAULT CODE 0478

AIR-CONDITIONING SYSTEM REGULATOR CONTROL MODULE, REAR

Diagnostic conditions

- Ignition on
- Internal gateway function test

Possible causes of fault

- No signal/communication (no signal from rear air-conditioning system regulator control module on CAN comfort)

Affected pins

2004 Porsche Cayenne

2003-08 ACCESSORIES AND EQUIPMENT Gateway - 9pa_Cayenne

Instrument cluster, plug B:

- Pin 27 'CAN comfort (high)'
- Pin 28 'CAN comfort (low)'

DIAGNOSIS/TROUBLESHOOTING

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1	Continue troubleshooting, refer to <u>CHECKING INSTRUCTIONS/CAN DATA BUS</u> .	--> End

FAULT CODE 0484

MAGNETIC FIELD SENSOR (COMPASS CONTROL MODULE)

Diagnostic conditions

- Ignition on
- Internal gateway function test

Possible causes of fault

- No signal/communication (no signal from magnetic field sensor on CAN Infotainment)

Affected pins

Instrument cluster, plug B:

- Pin 31 'CAN Infotainment (high)'
- Pin 32 'CAN Infotainment (low)'

DIAGNOSIS/TROUBLESHOOTING

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1	Continue troubleshooting, refer to <u>CHECKING INSTRUCTIONS/CAN DATA BUS</u> .	--> End

FAULT CODE 0778

STEERING-ANGLE SENSOR

NOTE: *Whenever the battery terminal is disconnected, the steering-angle sensor must always be initialized 'control lamp in instrument cluster lights up'.*

Diagnostic conditions

- Ignition on
- Internal function test on instrument cluster and gateway

Possible cause of fault

- No signal/communication (no signal from steering-angle sensor on CAN drive)
- Steering-angle sensor not initialized
- Steering-angle sensor faulty

Affected pins

Instrument cluster, plug B:

- Pin 19 'CAN drive (high)'
- Pin 20 'CAN drive (low)'

FAULT CODE 0908

WIPER MOTOR (WITH CONTROL MODULE)

Diagnostic conditions

- Ignition on
- Internal gateway function test

Possible causes of fault

- No signal/communication (no signal from wiper motor on CAN Infotainment)

Affected pins

Instrument cluster, plug B:

- Pin 31 'CAN Infotainment (high)'
- Pin 32 'CAN Infotainment (low)'

DIAGNOSIS/TROUBLESHOOTING

2004 Porsche Cayenne

2003-08 ACCESSORIES AND EQUIPMENT Gateway - 9pa_Cayenne

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1 Continue troubleshooting, refer to <u>CHECKING INSTRUCTIONS/CAN DATA BUS</u> .	--> End	

FAULT CODE 1044

CONTROL MODULE (INSTRUMENT CLUSTER/GATEWAY) CODED INCORRECTLY

Diagnostic conditions

- Ignition on
- Internal function test on instrument cluster and gateway

Possible cause of fault

- Instrument cluster/gateway was replaced, but was not coded
- Instrument cluster/gateway was not coded correctly
- Incorrect parameter coding

Affected pins

DIAGNOSIS/TROUBLESHOOTING

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1 Code instrument cluster/gateway correctly	--> End	

FAULT CODE 1207

ADDITIONAL HEATING CONTROL MODULE

Diagnostic conditions

- Ignition on
- Internal gateway function test

Possible causes of fault

- No signal/communication (no signal from additional heating control module on CAN Infotainment)

Affected pins

2004 Porsche Cayenne

2003-08 ACCESSORIES AND EQUIPMENT Gateway - 9pa_Cayenne

Instrument cluster, plug B:

- Pin 31 'CAN Infotainment (high)'
- Pin 32 'CAN Infotainment (low)'

DIAGNOSIS/TROUBLESHOOTING

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1	Continue troubleshooting, refer to <u>CHECKING INSTRUCTIONS/CAN DATA BUS</u> .	--> End

FAULT CODE 1300

CAN INFOTAINMENT FAULT, PCM II

Diagnostic conditions

- Ignition on
- Internal gateway function test

Possible causes of fault

- No signal/communication (no signal from PCM II control module on CAN Infotainment)

Affected pins

Instrument cluster, plug B:

- Pin 31 'CAN Infotainment (high)'
- Pin 32 'CAN Infotainment (low)'

DIAGNOSIS/TROUBLESHOOTING

NOTE: *If there is no incoming signal via CAN Infotainment using several control modules, CAN Infotainment must be checked for open or short circuits. Refer to **'CHECKING INSTRUCTIONS/CAN DATA BUS'** .*

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1	Continue troubleshooting, refer to <u>CHECKING INSTRUCTIONS/CAN</u>	--> End

DATA BUS .

FAULT CODE 1302

TELEMATICS CONTROL MODULE

Diagnostic conditions

- Ignition on
- Internal gateway function test

Possible causes of fault

- No signal/communication (no signal from telematics control module on CAN Infotainment)

Affected pins

Instrument cluster, plug B:

- Pin 31 'CAN Infotainment (high)'
- Pin 32 'CAN Infotainment (low)'

DIAGNOSIS/TROUBLESHOOTING

NOTE: *If there is no incoming signal via CAN Infotainment using several control modules, CAN Infotainment must be checked for open or short circuits. Refer to 'CHECKING INSTRUCTIONS/CAN DATA BUS '.*

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1	Continue troubleshooting, refer to <u>CHECKING INSTRUCTIONS/CAN DATA BUS .</u>	--> End

FAULT CODE 1303

TELEPHONE TRANSMITTER AND RECEIVER

Diagnostic conditions

- Ignition on
- Internal gateway function test

Possible causes of fault

2004 Porsche Cayenne

2003-08 ACCESSORIES AND EQUIPMENT Gateway - 9pa_Cayenne

- No signal/communication (no signal from telephone transmitter and receiver on CAN Infotainment)

Affected pins

Instrument cluster, plug B:

- Pin 31 'CAN Infotainment (high)'
- Pin 32 'CAN Infotainment (low)'

DIAGNOSIS/TROUBLESHOOTING

NOTE: *If there is no incoming signal via CAN Infotainment using several control modules, CAN Infotainment must be checked for open or short circuits. Refer to 'CHECKING INSTRUCTIONS/CAN DATA BUS'.*

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1	--> End	
Continue troubleshooting, refer to <u>CHECKING INSTRUCTIONS/CAN DATA BUS</u> .		

FAULT CODE 1304

RADIO

Diagnostic conditions

- Ignition on
- Internal gateway function test

Possible causes of fault

- No signal/communication (no signal from radio on CAN Infotainment)

Affected pins

Instrument cluster, plug B:

- Pin 31 'CAN Infotainment (high)'
- Pin 32 'CAN Infotainment (low)'

DIAGNOSIS/TROUBLESHOOTING

NOTE: *If there is no incoming signal via CAN Infotainment using several control*

2004 Porsche Cayenne

2003-08 ACCESSORIES AND EQUIPMENT Gateway - 9pa_Cayenne

modules, CAN Infotainment must be checked for open or short circuits. Refer to 'CHECKING INSTRUCTIONS/CAN DATA BUS'.

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1 Continue troubleshooting, refer to <u>CHECKING INSTRUCTIONS/CAN DATA BUS</u> .	--> End	

FAULT CODE 1305

CAN INFOTAINMENT

Diagnostic conditions

- Ignition on
- Internal function test on instrument cluster and gateway

Possible causes of fault

- No signal/communication (no signals on CAN Infotainment)
- Faulty (CAN Infotainment wire faulty)

Affected pins

Instrument cluster, plug B:

- Pin 31 'CAN Infotainment (high)'
- Pin 32 'CAN Infotainment (low)'

DIAGNOSIS/TROUBLESHOOTING

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1 Continue troubleshooting, refer to <u>CHECKING INSTRUCTIONS/CAN DATA BUS</u> .	--> End	

FAULT CODE 1310

LEVEL CONTROL MODULE

Diagnostic conditions

2004 Porsche Cayenne

2003-08 ACCESSORIES AND EQUIPMENT Gateway - 9pa_Cayenne

- Ignition on
- Internal function test on instrument cluster and gateway

Possible causes of fault

- No signal/communication (no signal from level control module on CAN drive)

Affected pins

Instrument cluster, plug B:

- Pin 19 'drive (high)'
- Pin 20 'CAN drive (low)'

DIAGNOSIS/TROUBLESHOOTING

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1	--> End	
Continue troubleshooting, refer to CHECKING INSTRUCTIONS/CAN DATA BUS .		

FAULT CODE 1311

CAN INFOTAINMENT

Diagnostic conditions

- Ignition on
- Internal function test on instrument cluster/gateway

Possible causes of fault

- No signal/communication (no signal on CAN Infotainment)

Affected pins

Instrument cluster, plug B:

- Pin 31 'CAN Infotainment (high)'
- Pin 32 'CAN Infotainment (low)'

DIAGNOSIS/TROUBLESHOOTING

2004 Porsche Cayenne

2003-08 ACCESSORIES AND EQUIPMENT Gateway - 9pa_Cayenne

NOTE: *If there is no incoming signal via CAN Infotainment using several control modules, CAN Infotainment must be checked for open or short circuits. Refer to 'CHECKING INSTRUCTIONS/CAN DATA BUS'.*

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1 Continue troubleshooting, refer to <u>CHECKING INSTRUCTIONS/CAN DATA BUS</u> .	--> End	

FAULT CODE 1312

CAN DRIVE

Diagnostic conditions

- Ignition on
- Internal function test on instrument cluster and gateway

Possible causes of fault

- Faulty (CAN drive wire faulty)

Affected pins

Instrument cluster, plug B:

- Pin 19 'CAN drive (high)'
- Pin 20 'CAN drive (low)'

DIAGNOSIS/TROUBLESHOOTING

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1 Continue troubleshooting, refer to <u>CHECKING INSTRUCTIONS/CAN DATA BUS</u> .	--> End	

FAULT CODE 1314

DME CONTROL MODULE

Diagnostic conditions

2004 Porsche Cayenne

2003-08 ACCESSORIES AND EQUIPMENT Gateway - 9pa_Cayenne

- Ignition on
- Internal function test on instrument cluster and gateway

Possible causes of fault

- No signal/communication (no signal from DME control module on CAN drive)

Affected pins

Instrument cluster, plug B:

- Pin 19 'CAN drive (high)'
- Pin 20 'CAN drive (low)'

DIAGNOSIS/TROUBLESHOOTING

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1	Continue troubleshooting, refer to CHECKING INSTRUCTIONS/CAN DATA BUS .	--> End

FAULT CODE 1315

TIPTRONIC CONTROL MODULE

Diagnostic conditions

- Ignition on
- Internal function test on instrument cluster and gateway

Possible causes of fault

- No signal/communication (no signal from Tiptronic control module on CAN drive)

Affected pins

Instrument cluster, plug B:

- Pin 19 'CAN drive (high)'
- Pin 20 'CAN drive (low)'

DIAGNOSIS/TROUBLESHOOTING

2004 Porsche Cayenne

2003-08 ACCESSORIES AND EQUIPMENT Gateway - 9pa_Cayenne

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1	Continue troubleshooting, refer to <u>CHECKING INSTRUCTIONS/CAN DATA BUS</u> .	--> End

FAULT CODE 1316

PSM CONTROL MODULE

Diagnostic conditions

- Ignition on
- Internal function test on instrument cluster and gateway

Possible causes of fault

- No signal/communication (no signal from PSM control module on CAN drive)

Affected pins

Instrument cluster, plug B:

- Pin 19 'CAN drive (high)'
- Pin 20 'CAN drive (low)'

DIAGNOSIS/TROUBLESHOOTING

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1	Continue troubleshooting, refer to <u>CHECKING INSTRUCTIONS/CAN DATA BUS</u> .	--> End

FAULT CODE 1320

AIR-CONDITIONING SYSTEM REGULATOR CONTROL MODULE

Diagnostic conditions

- Ignition on
- Internal gateway function test

2004 Porsche Cayenne

2003-08 ACCESSORIES AND EQUIPMENT Gateway - 9pa_Cayenne

Possible causes of fault

- No signal/communication (no signal from air-conditioning system regulator control module on CAN comfort)

Affected pins

Instrument cluster, plug B:

- Pin 27 'CAN comfort (high)'
- Pin 28 'CAN comfort (low)'

DIAGNOSIS/TROUBLESHOOTING

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1	--> End	
Continue troubleshooting, refer to CHECKING INSTRUCTIONS/CAN DATA BUS .		

FAULT CODE 1321

AIRBAG TRIGGERING UNIT

Diagnostic conditions

- Ignition on
- Internal function test on instrument cluster and gateway

Possible causes of fault

- No signal/communication (no signal from airbag triggering unit on CAN drive)

Affected pins

Instrument cluster, plug B:

- Pin 19 'CAN drive (high)'
- Pin 20 'CAN drive (low)'

DIAGNOSIS/TROUBLESHOOTING

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK

2004 Porsche Cayenne

2003-08 ACCESSORIES AND EQUIPMENT Gateway - 9pa_Cayenne

1	Continue troubleshooting, refer to <u>CHECKING INSTRUCTIONS/CAN DATA BUS</u> .	--> End
---	---	---------

FAULT CODE 1325

RDK CONTROL MODULE (TIRE PRESSURE CONTROL SYSTEM)

Diagnostic conditions

- Ignition on
- Internal function test on instrument cluster and gateway

Possible causes of fault

- No signal/communication (no signal from RDK control module on CAN comfort)

Affected pins

Instrument cluster, plug B:

- Pin 27 'CAN comfort (high)'
- Pin 28 'CAN comfort (low)'

DIAGNOSIS/TROUBLESHOOTING

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1	Continue troubleshooting, refer to <u>CHECKING INSTRUCTIONS/CAN DATA BUS</u> .	--> End

FAULT CODE 1327

PARKASSIST CONTROL MODULE

Diagnostic conditions

- Ignition on
- Internal gateway function test

Possible causes of fault

2004 Porsche Cayenne

2003-08 ACCESSORIES AND EQUIPMENT Gateway - 9pa_Cayenne

- No signal/communication (no signal from ParkAssist control module on CAN comfort)

Affected pins

Instrument cluster, plug B:

- Pin 27 'CAN comfort (high)'
- Pin 28 'CAN comfort (low)'

DIAGNOSIS/TROUBLESHOOTING

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1	Continue troubleshooting, refer to <u>CHECKING INSTRUCTIONS/CAN DATA BUS</u>	--> End

FAULT CODE 1330

REAR CONVENIENCE SYSTEM CONTROL MODULE

Diagnostic conditions

- Ignition on
- Internal function test on instrument cluster and gateway

Possible causes of fault

- No signal/communication (no signal from rear convenience system control module on CAN comfort)

Affected pins

Instrument cluster, plug B:

- Pin 27 'CAN comfort (high)'
- Pin 28 'CAN comfort (low)'

DIAGNOSIS/TROUBLESHOOTING

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1	Continue troubleshooting, refer to <u>CHECKING INSTRUCTIONS/CAN DATA BUS</u>	--> End

DATA BUS .

FAULT CODE 1331

DOOR CONTROL MODULE, DRIVER'S

Diagnostic conditions

- Ignition on
- Internal function test on instrument cluster and gateway

Possible causes of fault

- No signal/communication (no signal from driver's door control module on CAN comfort)

Affected pins

Instrument cluster, plug B:

- Pin 27 'CAN comfort (high)'
- Pin 28 'CAN comfort (low)'

DIAGNOSIS/TROUBLESHOOTING

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1	Continue troubleshooting, refer to <u>CHECKING INSTRUCTIONS/CAN DATA BUS .</u>	--> End

FAULT CODE 1332

DOOR CONTROL MODULE, PASSENGER'S

Diagnostic conditions

- Ignition on
- Internal function test on instrument cluster and gateway

Possible causes of fault

- No signal/communication (no signal from passenger's door control module on CAN comfort)

Affected pins

2004 Porsche Cayenne

2003-08 ACCESSORIES AND EQUIPMENT Gateway - 9pa_Cayenne

Instrument cluster, plug B:

- Pin 27 'CAN comfort (high)'
- Pin 28 'CAN comfort (low)'

DIAGNOSIS/TROUBLESHOOTING

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1	Continue troubleshooting, refer to <u>CHECKING INSTRUCTIONS/CAN DATA BUS</u> .	--> End

FAULT CODE 1333

DOOR CONTROL MODULE, REAR LEFT

Diagnostic conditions

- Ignition on
- Internal function test on instrument cluster and gateway

Possible causes of fault

- No signal/communication (no signal from rear left door control module on CAN comfort)

Affected pins

Instrument cluster, plug B:

- Pin 27 'CAN comfort (high)'
- Pin 28 'CAN comfort (low)'

DIAGNOSIS/TROUBLESHOOTING

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1	Continue troubleshooting, refer to <u>CHECKING INSTRUCTIONS/CAN DATA BUS</u> .	--> End

FAULT CODE 1334

2004 Porsche Cayenne

2003-08 ACCESSORIES AND EQUIPMENT Gateway - 9pa_Cayenne

DOOR CONTROL MODULE, REAR RIGHT

Diagnostic conditions

- Ignition on
- Internal function test on instrument cluster and gateway

Possible causes of fault

- No signal/communication (no signal from rear right door control module on CAN comfort)

Affected pins

Instrument cluster, plug B:

- Pin 27 'CAN comfort (high)'
- Pin 28 'CAN comfort (low)'

DIAGNOSIS/TROUBLESHOOTING

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1	--> End	

FAULT CODE 1335

MEMORY SEAT ADJUSTMENT CONTROL MODULE, DRIVER'S

Diagnostic conditions

- Ignition on
- Internal gateway function test

Possible causes of fault

- No signal/communication (no signal from driver's memory seat adjustment control module on CAN comfort)

Affected pins

Instrument cluster, plug B:

- Pin 27 'CAN comfort (high)'

2004 Porsche Cayenne

2003-08 ACCESSORIES AND EQUIPMENT Gateway - 9pa_Cayenne

- Pin 28 'CAN comfort (low)'

DIAGNOSIS/TROUBLESHOOTING

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1	--> End	

FAULT CODE 1336

CAN COMFORT OFF

Diagnostic conditions

- Ignition on
- Internal function test on instrument cluster and gateway

Possible causes of fault

- No signal/communication (no signals on CAN comfort)
- Faulty (CAN comfort wire faulty)

Affected pins

Instrument cluster, plug B:

- Pin 27 'CAN comfort (high)'
- Pin 28 'CAN comfort (low)'

DIAGNOSIS/TROUBLESHOOTING

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1	--> End	

FAULT CODE 1517

TRAILER HITCH CONTROL MODULE

2004 Porsche Cayenne

2003-08 ACCESSORIES AND EQUIPMENT Gateway - 9pa_Cayenne

Diagnostic conditions

- Ignition on
- Internal function test on instrument cluster and gateway

Possible causes of fault

- No signal/communication (no signal from trailer hitch control module on CAN comfort)

Affected pins

Instrument cluster, plug B:

- Pin 27 'CAN comfort (high)'
- Pin 28 'CAN comfort (low)'

DIAGNOSIS/TROUBLESHOOTING

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1	Continue troubleshooting, refer to <u>CHECKING INSTRUCTIONS/CAN DATA BUS</u> .	--> End

FAULT CODE 2053

TRANSFER BOX CONTROL MODULE

Diagnostic conditions

- Ignition on
- Internal function test on instrument cluster and gateway

Possible causes of fault

- No signal/communication (no signal from transfer box control module on CAN drive)

Affected pins

Instrument cluster, plug B:

- Pin 19 'CAN drive (high)'
- Pin 20 'CAN drive (low)'

DIAGNOSIS/TROUBLESHOOTING

2004 Porsche Cayenne

2003-08 ACCESSORIES AND EQUIPMENT Gateway - 9pa_Cayenne

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1	Continue troubleshooting, refer to <u>CHECKING INSTRUCTIONS/CAN DATA BUS</u> .	--> End

FAULT CODE 2054

TRANSVERSE LOCK CONTROL MODULE

Diagnostic conditions

- Ignition on
- Internal gateway function test

Possible causes of fault

- No signal/communication (no signal from transverse lock control module on CAN drive)

Affected pins

Instrument cluster, plug B:

- Pin 19 'CAN drive (high)'
- Pin 20 'CAN drive (low)'

DIAGNOSIS/TROUBLESHOOTING

NOTE: *If there is no incoming signal via the CAN drive using several control modules, the CAN drive must be checked for open or short circuits. Refer to '**CHECKING INSTRUCTIONS/CAN DATA BUS**' .*

DIAGNOSIS/TROUBLESHOOTING PROCEDURE

Work instruction	Display OK	If not OK
1	Continue troubleshooting, refer to <u>CHECKING INSTRUCTIONS/CAN DATA BUS</u> .	--> End