AIM Infotech

Porsche 991-981 OBDII and Porsche 991-911 ECU

Release 1.06

This tutorial explains how to connect Porsche cars to AiM devices. The connection can be made through the OBDII plug or using the car Gateway connector. These two connections implies different protocols to be selected and different sampled channels.

1 Car models and years

Supported car models and years are:

• Porsche 911 (991 MK1)	all models	2012 - 2016
• Porsche 911 (991 MK2)	all models	2017 - 2018
• Porsche Boxster (981 MK1)	all models	2013 - 2015
• Porsche Cayman (981 MK1)	all models	2013 - 2015

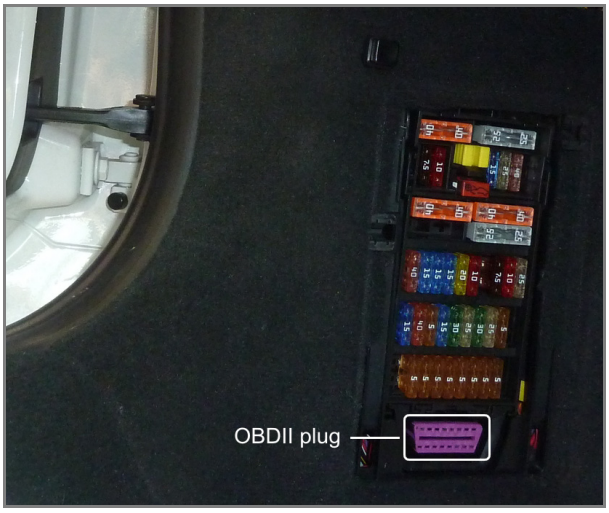
2 Available connections

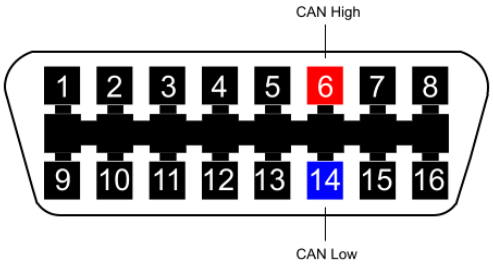
These Porsche cars can communicate with AiM devices using the diagnostic CAN bus on the OBDII plug or using the engine CAN bus on the car ECU. As already said, these connections implies different communication protocols to be selected when setting up AiM devices and also the available channels changes.

2.1
OBDII connection

These Porsche cars feature a bus communication protocol based on CAN for diagnostic purposes on the OBDII plug placed on the car driver side, bottom left of the driver, in the fuse box near to the pedal area as shown here below. This connection is faster and easier though sampled channels are less.

Please note: this kind of connection works only on cars that feature automatic transmission or PDK.



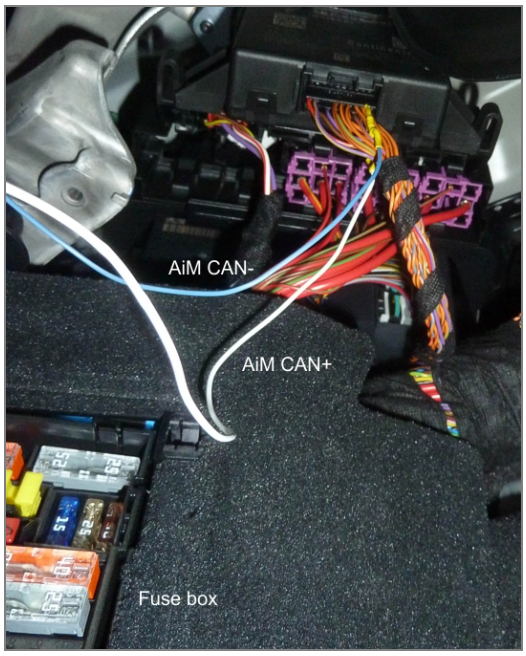


Connector pinout as well as connection table are shown here below

OBDII connector pin	Pin function	AiM cable
6	CAN High	CAN+
14	CAN Low	CAN-

2.2
Connection through the Gateway connector

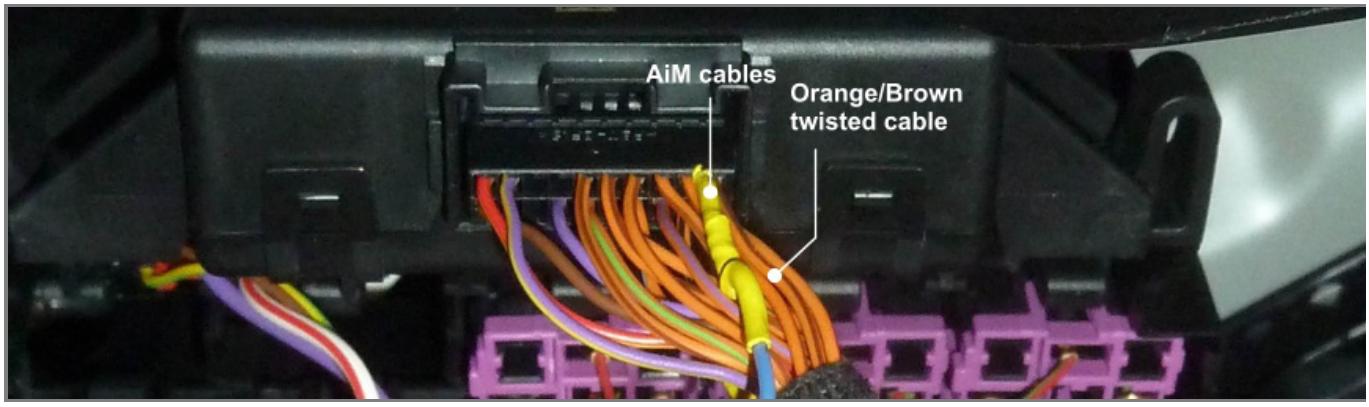
The second possible connection is through the Gateway connector. This connection is more difficult but allows you to sample more channels. Gateway connector is placed on the driver side of the car under the steering column but over the fuse box. Images below show: on the left the fuse box and on the right the position of the Gateway connector. In this second image AiM device is already connected to the car. AiM cables are: light blue for CAN– and white for CAN+.



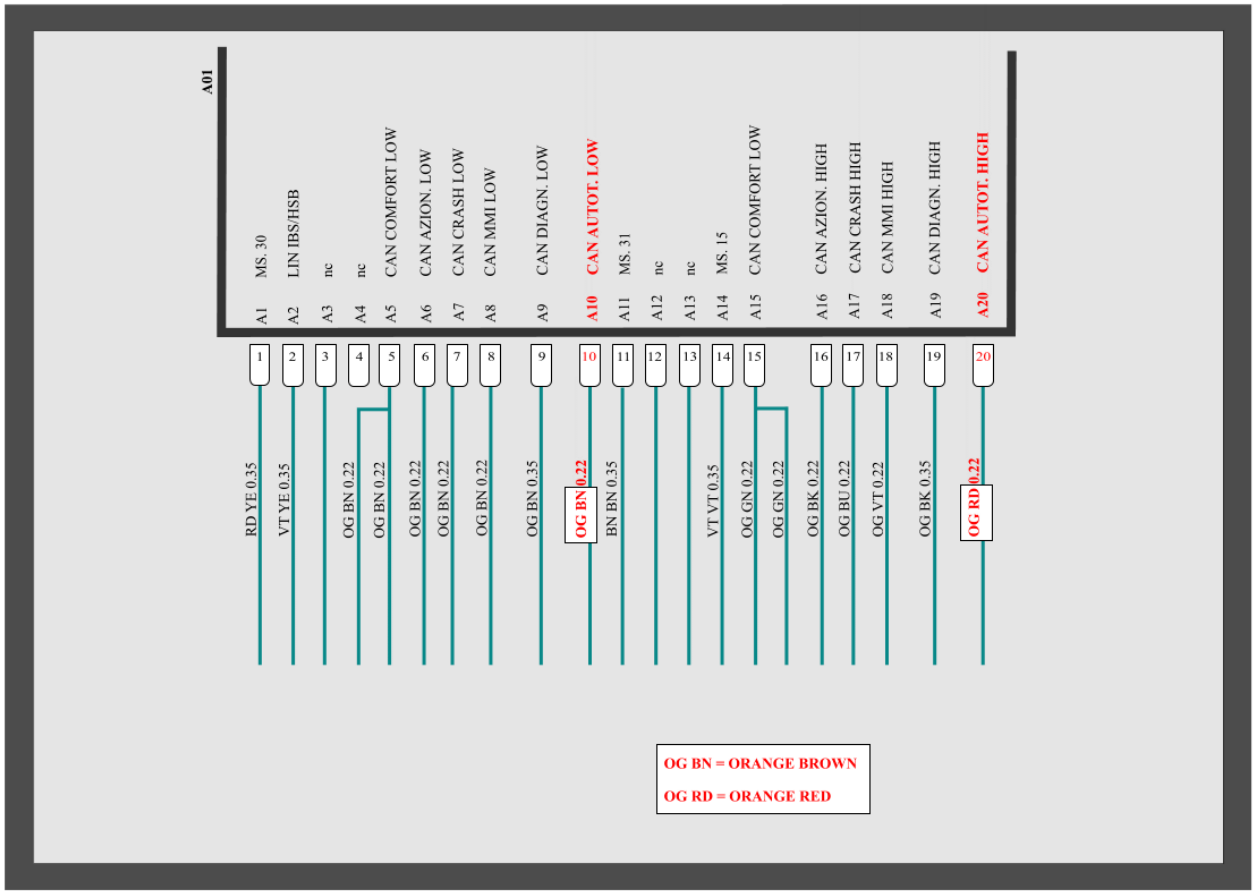
Here below is connection table.

ECU connector pin	Cable colour	Pin function	AiM cable	Cable colour
A20	Orange/red twisted	CAN High	CAN+	White
A10	Orange/brown twisted	CAN Low	CAN-	Light blue

Please note: as you can see in the image here below, the car harness features more than one orange/brown cable connected to the Gateway connector. In the image orange/brown cable as well as AiM cables are highlighted.



Gateway connector pinout is here below



3
AiM device configuration

Before connecting the ECU to AiM device set this up using AiM Race Studio software. The parameters to select in the device configuration are:

- ECU manufacturer “Porsche”
- ECU Model
    - “991_981_OBDII” if you are using the OBDII plug
    - "991_911" if you are connecting through the Gateway connector;

4
Available channels

Channels received by AIM loggers connected to Porsche cars changes according to the protocol you have selected.

4.1
"Porsche" "991_981_OBDII" protocol

Channels received by AiM devices connected to "Porsche" "991_981_OBDII" protocol are:

CHANNEL NAME	FUNCTION
RPM	RPM
WHEEL SP FL	Front left wheel speed
WHEEL SP FR	Front right wheel speed
WHEEL SP RL	Rear left wheel speed
WHEEL SP RR	Rear right wheel speed
THROTTLE POS	Throttle position sensor
ACCEL POS	Acceleration position
COOLANT TEMP	Engine coolant temperature
INTK AIR TEMP	Intake air temperature
MANIFOLD PRESS	Manifold air pressure
FUEL LEVEL	Fuel level
STEER ANGLE	Steering angle
BRAKE PRESS	Brake pressure

Technical note: not all data channels outlined in the ECU template are validated for each manufacturer model or variant; some of the outlined channels are model and year specific, and therefore may not be applicable.

4.2
"Porsche" "991_911" protocol

Channels received by AiM devices connected to "Porsche" "991_911" protocol are:

CHANNEL NAME	FUNCTION
TRQ WO EXT	Torque less external interval
TRQ WO MEC	Torque less mechanical looses
TRQ LOSS	Torque loss
TRQ MAX	Max torque value
TRQ FILT	Filtered torque
TRQ FOR IGN	Torque for ignition
TRQ REQ	Torque request
TRQ APPLY	Applied torque
STEER POS	Steering position
STEER SPD	Steering speed
VEH SPD	Vehicle speed
ACC LAT	Lateral acceleration
GEAR INFO	Active gear
WHEEL FL	Front left wheel speed
WHEEL FR	Front right wheel speed
WHEEL RL	Rear left wheel speed
WHEEL RR	Rear right wheel speed
RPM	RPM
PEDAL POS	Throttle position
BRK SW	Brake switch
BRK PRESS	Brake pressure
MAP	Manifold air pressure
BRK PRESS1	Brake pressure 1
BRK PRESS2	Brake pressure 2
BRK PRESS3	Brake pressure 3

BRK PRESS4	Brake pressure 4
GEAR	Active gear
SUSP SW	Suspension switch
MODE SEL	Engine mode
GEAR TEMP	Gearbox temperature
ECT	Engine coolant temperature
OIL TEMP	Oil temperature
IAT	Intake air temperature
ENG PWR	Engine power
FUEL LEV	Fuel level

Technical note: not all data channels outlined in the ECU template are validated for each manufacturer model or variant; some of the outlined channels are model and year specific, and therefore may not be applicable.