

## OBD II Frequently Asked Questions

### Q. What is OBD II?

**A.** OBD stands for On Board Diagnostics. The "II" signifies the version of the OBD specification being used. OBD's roots go all the way back to early 1970's. In order to combat smog problems in LA, the EPA started requiring car manufacturers to provide emission control systems on the vehicles they manufactured. In 1988 a set of standards was developed by the SAE (Society of Automotive Engineers) including a standard connector plug and set of diagnostic test signals. This was OBDI.

OBD II is a more sophisticated standard that was introduced in the mid-'90s. It monitors parts of the chassis, body and accessory devices, as well as the diagnostic control network of the car. On-Board Diagnostic systems are in all 1996 and newer cars and light trucks.

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### Q. What is the difference between "generic" and "enhanced" parameters?

**A.** The OBDII specification requires manufacturers to provide data that reports the vehicle's emissions. Generic parameters indicate the status of devices that monitor the vehicle's oxygen sensors, fuel system, heated catalyst, and evaporative system. Additionally, sensors report on engine speed, vehicle speed, mass air flow, and long and short term fuel trim.

When domestic manufacturers were required to make the generic parameters available through the OBDII system, they decided to make hundreds of other sensor reading available, too. These enhanced parameter readings report sensor data useful to repairing and tuning the vehicle. When viewing enhanced parameters, you'll see all of the available generic parameters as well as information on cylinder injectors, knock retard, delivered torque, EGR, throttle position, and several different temperature reading. There are hundreds more, but each manufacturer and vehicle type is different. Remember, not all enhanced parameters are available on every vehicle.

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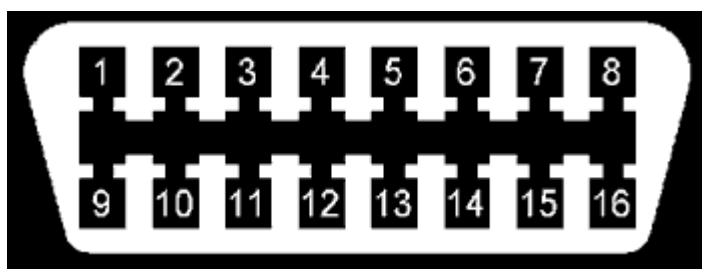
### Q. Does My Car Have OBD II?

**A.** All cars and light trucks built and sold in the United States after January 1, 1996 were required to be OBD II equipped. In general, this means all 1996 model year cars and light trucks are compliant, even if built in late 1995.

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### Q. How do I know if the connector under my dash is for OBD II?

**A.** Your vehicle must have an OBD II connector that looks like this:



and has pin combinations representing one of the four OBD II protocols:

**J1850 VPW** – The connector will have metallic contacts in pins **2, 4, 5, and 16**, but not **10**.  
**ISO 9141-2** – The connector will have metallic contacts in pins **4, 5, 7, 15, and 16**.  
**J1850 PWM** – The connector will have metallic contacts in pins **2, 4, 5, 10, and 16**.  
**KWP2000 (ISO142300)** – The connector will have metallic contacts in pins **4, 5, 7, 15, and 16**.

The pins are used in the following way:

Pin 2 - J1850 Bus+  
Pin 4 - Chassis Ground  
Pin 5 - Signal Ground  
Pin 6 - CAN High (J-2284)  
Pin 7 - ISO 9141-2 K Line and ISO/DIS 14230-4  
Pin 10 - J1850 Bus  
Pin 14 - CAN Low (J-2284)  
Pin 15 - ISO 9141-2 L Line and ISO/DIS 14230-4  
Pin 16 - Battery Power

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**Q. Why are there different protocols for OBD II?**

**A.** While the parameters, or readings, required by OBD II regulations are uniform, the auto manufacturers had some latitude in the communications protocol they used to transmit those readings to scanners. Naturally, each felt they had the one true way, so we have three different OBD II communications protocols in use.

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**Q. What Communications Protocol does my vehicle use?**

**A.** As a rule of thumb, GM cars and light trucks use SAE J1850 VPW (Variable Pulse Width Modulation). Chrysler products and all European and most Asian imports use ISO 9141 circuitry. Fords use SAE J1850 PWM (Pulse Width Modulation) communication patterns. KWP2000, like ISO9141 is found on some 2002 and newer VW, Audi, BMW, Daewoo Leganzas and Nubiras. It's also found on all 1999 and newer Hyundais, and 2001 and newer Kia Optimas.

On 1996 and later vehicles, you can tell which protocol is used by examining the OBD II connector:

If your vehicle has the connector described above, but doesn't have the pins populated, you probably have a pre-OBD II vehicle. To add some confusion, even having the connector with the contacts shown above is not a guarantee of OBD II compliance. This style connector has been seen on some pre-1996 vehicles that were not OBD II compliant.