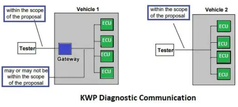
KWP-2000 Protocol

The KWP-2000 Protocol, commonly named as KWP2000, is a diagnostic Communication protocol for On-Board vehicle Diagnostics applied for OEM. There are two primary International Standardized documents such as ISO 9141, ISO 14230 covered for performing the OBD Communications on K-line between Tester and vehicle.ISO 14230 specifies common requirements of diagnostic services which allow a tester to control diagnostic functions in an on-vehicle Electronic Control Unit.

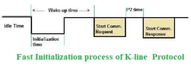


KWP Diagnostic Communication

KWP Diagnostic Communication

The ISO 9141 is a bidirectional serial communication detail which specifies K-line is used for communication and initialization; the L-line (optional) is used for initialization only. The Special cases are node-to-node-connection, this means there is only one ECU on the line which also can be a bus converter. ISO 14230-2 specifies the Data link layer and ISO 14230-3 includes all the definitions which are necessary to implement the Diagnostics services as per KWP-2000 Protocol.

The Keyword Protocol physical layer may be used as a multi-user bus system, it is necessary to maintain or manage arbitration and bus management system. In below figure described the Vehicle Diagnostics architecture of KWP-2000 Protocol which specifies communication among Tester and ECU network with Gateway or Without Gateway access.



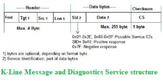
KWP Communication Timing Diagram

In KWP-2000 Protocol there is no continuous communication must be initialized without being first requested by the tester which means that Wake-Up at 5 baud per second. The 5 Baud address byte is transferred from the Tester on K-line and on L-line. After sending the 5 baud address byte the tester will maintain L-Line on the High level. After the Wake-up procedure, all ECU's are initialized shall use a baud rate of 10,400 Baud for initialization and Communication.

At first, the tester transmits a Wakeup pattern on K-line and L-line synchronously in KWP-2000 Protocol. The pattern has begins after an idle time on K-line with a low time of initialization value. The Tester transmits the first bit of the start communication service after a time of wake-up time following the first falling edge, as shown in the below figure.

KWP Communication

KWP-2000 Protocol Message Format



KWP Protocol Message Format

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