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Non-interactive vehicle diagnosis

Vehicle diagnosis is not allowed to disrupt the train control and monitoring system and the vehicle controller under any circumstances. As a result, the diagnostic CPU is simply decoupled on the transmitter side. As a result, proof of "non-interactivity" in the diagnostic system is quickly provided.

The requirements for efficient vehicle diagnosis are becoming more and more demanding. Subsystems such as doors or air conditioners have their own, local subsystem diagnosis, for example. Error codes or status messages are recorded there and transferred to a central diagnostic CPU via the train control and monitoring system. This is where data is stored, pre-processed and if necessary sent via a GSM modem or WLAN connection to a maintenance station. There are some technical challenges within this complex data path. One of these is referred to a "non-interactivity". Diagnostic data as well as the recording and processing of this data are not allowed under any circumstances to interfere with the control devices of the subsystems that are networked via the train control and monitoring system, or even the vehicle control unit itself. This means the diagnosis has got to function "non-interactively". This is precisely what must be demonstrated in a vehicle certification process carried out by safety experts.



Diagnostic CPU with three non-interactive CAN interfaces on the communication module

This is where Selectron offers an impressively simple solution. The CAN 831-T/S01 module contains three CANopen interfaces that operate independently from one another. They are configured so they can only receive but not send. This means the connected diagnostic function only operated as a data sniffer; it is physically impossible to influence the train control and monitoring system. The safety expert responsible for certification can detect straight away that noninteractivity is provided here. The result is that vehicle certification is simplified in this regard.

Subject to technical changes and amendments to technical specifications at any time.



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