

Digital optical transmission system DOtech Type CAN-HS for CAN diagnosis according to ISO 11898

Operating instructions



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Principle of transmission

The transmission system consists of two identical transceiver circuits. The supply is done by an internal battery U_{bat} . The system serves for the bi-directional optical transmission of digital CAN signals (according to ISO 11898) in harsh electromagnetic environments and for bus simulations during emission tests.

Operating instructions

Connecting the fiber optic cables

The transceiver circuits are interconnected to each other via two optical fibres. The **RX** input of transceiver 1 is connected to the **TX** output of transceiver 2 and the **RX** input of transceiver 2 is connected to the **TX** output of transceiver 1. The optical fibres have to be connected carefully to the sensitive FSMA connectors of **RX** input and **TX** output and may not exceed a length of 20 m.

Connecting the CAN signals

The two CAN signals CAN-High and CAN-Low must be connected to the corresponding **CAN-H** and **CAN-L** outlets.

As a rule, the **GND** socket is not connected. This outlet is used to connect to the housing ground, if necessary. Please ensure that the housing with such connections is not shortened to the GND plane of the measuring setup, as this can influence the measurement results.

Battery charge indicator and battery charge

The battery charge status of the internal battery is indicated by 3 red LEDs.

3 LEDs: fully charged

2 LEDs

1 LED: only some minutes operation time left or "off"

When the battery is discharged, data transmission is switched off.

The battery is charged via the two outlets **Charge+** and **Charge-** using the charger supplied. The use of other chargers can damage the system and is not recommended.

Measurement

The system can be operated in 3 modes:

- a) **60 Ω** operation: In the event that the CAN line is not terminated by any resistors (simulation of 2 terminating resistors of 120 Ω each)
- b) **120 Ω** operation: This makes the satellite behave like a regular BUS node with a connection resistance of 120 Ω
- c) Operation “high-impedance *oo*”: Operation of the system as a “listener” of a CAN bus which is already properly terminated by its BUS participants.

Please make sure that the correct mode (**60 Ω / *oo* / 120 Ω**) is selected on the switch.

Please ensure that the satellite is not charged via the charger during the measurement, as this can lead to falsification of the measurement results.

Also ensure that, if the **GND** socket is used, there is no direct connection to the ground plane - this can also lead to incorrect measurement results.

After switching on the satellite using the **On/Off** switch, the **RX** and **TX** LEDs indicate when data is being transmitted.

Measurement applications

The transmission system DOtech Type CAN-HS is designed for measurements according to:

- a) Immunity tests according to ISO 11452-x,
- b) ESD according to DIN EN-61000-4-2, ISO 10605
- c) Emission tests according CISPR 25, 22

The system is not designed or approved for any other measurement application. Please contact us in case of doubt.