

Hako modular concept

CAN bus error and malfunction



Module not recognized, no connection

(4121, 4321, 4322, 4323, 4324, 4521, 4522, 4523, 4524)

This error occurs during the system start phase only since the modules connected via CAN are recognized at that point of time only. Followed by an availability test of all required modules for the set machine and options. If a module is not available, an error message is output.

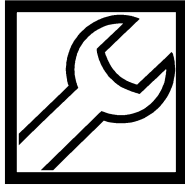
Test order is ascending i.e. if for example module 1 and module 3b are not available, error 4322 (= module 3b not recognized) will be displayed first since it is the last error occurring in the test sequence.

Unavailable module will be marked '*faulty*' in the displayed module list of the diagnosis device.

In contrast to its function in case of transmission error (see below), a module does not initiate restart of the system if a CAN connection is still established after error message (e.g. in case of intermittent contact).

Possible causes:

- CAN termination defective or missing
- No CAN connection with module (connector, wire)
- Module without service voltage
- Incorrect module setting (DIP switches)
- Defective module



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Transmission error (Time out)

(4131, 4331, 4332, 4333, 4334, 4531, 4532, 4532, 4533, 4534)

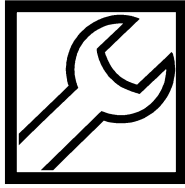
This error occurs during operation. All modules recognized during the start phase are cyclically addressed. If the module does not respond within 200ms an error message is output.

With intermittent contact, a module may respond still after error message. In that case the system will be restarted (reset via CAN). With intermittent contacts of all, the error message *Module not recognized* is displayed after reset. Such consecutive errors can easily be followed up and recognized by the error history of the diagnosis device.

In the diagnosis device, the modules with transmission error are marked with the *faulty* state in the module list.

Causes:

- Intermittent contact between CAN bus and module (connectors, wires)
- Service voltage problems (voltage drop, intermittent contact)



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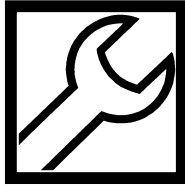
Several modules not recognized, no connection (4621)

This error occurs during the system start phase of the system only. If no CAN module is recognized in this phase an error message is output. For machines with one CAN module only (as e.g. B910, B750R) this error corresponds to a 4121 message (module 1 not recognized).

In the diagnosis device all modules of the list will be marked with the *,faulty‘* state.

Possible causes:

- Defective or missing CAN termination
- No CAN connection to controller or module (connector, wire)
- Module without service voltage
- Defective controller or module



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General transmission error (4631)

This error occurs during operation only and indicates a CAN problem. This error is output if transmission of too many CAN messages is faulty.

Possible causes:

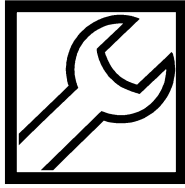
- Defective or missing CAN termination
- Faulty CAN line (intermittent contact, broken wire, cable abrasion)
- EMC problems
- Defective module

Too many signals (overrun) (4632)

This error occurs during operation if CAN bus is overloaded i.e. if quantity of transferred messages is higher than the number of messages the controller can process. This error is generally caused by the module and its inputs since the module outputs a message upon each status change of an input. If status changes at high frequency, the number of sent messages is as high.

Possible causes:

- Intermittent contact at input of a CAN module
- Malfunction at input of a CAN module
- EMC problems
- Defective module



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Module overrun, number of modules exceeds demand (4653)

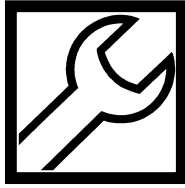
If, in the start phase, a module is recognized which is not required according to the set machine and option, this error is output.

The diagnosis device displays such modules in the list marked with the status *'not required'*.

Possible causes:

- Wrong machine type setting
- Wrong option setting
- Incorrect module setting (DIP switch)
- Defective module

Note: Appearance of the *'CAN lift element'* in the overview of the diagnosis device indicates a defective module (defective CAN module). The respective module is displayed with the status *'faulty'*.



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CAN bus error and low LDS error



LDS - Remarks on error 3211 in the modular concept and for the B650/B655

The controller receives data from the LDS module in serial form. Duration of telegram transmission of is about one second. The error 3211 is signalled if two telegrams of the same contents are not received within 5 seconds i.e. even if no transmission has taken place.

Apart from a defect of the LDS, the following causes may result in an error message:

- No supply voltage for LDS
(MK controller: X2, B650 controller: X3)
- LDS in self test mode:
Battery setting DIP to off-off-off or on-off-off (1-2-3)

Even after occurrence of the 3211 error, functioning of data transmission can be recognized by means of the light-emitting diodes of the LDS. It applies: the LDS bar lights as soon as two telegrams with the same contents have been received. In any other case the LDS bar remains extinguished.