



GL1000 Logger Family Manual

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Imprint

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1 Introduction

In this chapter you find the following information:

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1.1 About this User Manual

Conventions

In the two following charts you will find the conventions used in the user manual regarding utilized spellings and symbols.

Style	Utilization
bold	Blocks, surface elements, window and dialog names of the software. Accentuation of warnings and advices. [OK] Push buttons in brackets File Save Notation for menus and menu entries
Source Code	File name and source code.
Hyperlink	Hyperlinks and references.
<CTRL>+<S>	Notation for shortcuts.

Symbol	Utilization
	This symbol calls your attention to warnings.
	Here you can obtain supplemental information.
	Here you can find additional information.
	Here is an example that has been prepared for you.
	Step-by-step instructions provide assistance at these points.
	Instructions on editing files are found at these points.
	This symbol warns you not to edit the specified file.

1.1.1 Warranty

Restriction of warranty

We reserve the right to change the contents of the documentation and the software without notice. Vector Informatik GmbH assumes no liability for correct contents or damages which are resulted from the usage of the documentation. We are grateful for references to mistakes or for suggestions for improvement to be able to offer you even more efficient products in the future.

1.1.2 Registered Trademarks

Registered trademarks

All trademarks mentioned in this documentation and if necessary third party registered are absolutely subject to the conditions of each valid label right and the rights of particular registered proprietor. All trademarks, trade names or company names are or can be trademarks or registered trademarks of their particular proprietors. All rights which are not expressly allowed are reserved. If an explicit label of trademarks, which are used in this documentation, fails, should not mean that a name is free of third party rights.

- ▶ Windows, Windows 7, Windows 8.1, Windows 10, Windows 11 are trademarks of the Microsoft Corporation.

1.2 Important Notes

1.2.1 Safety Instructions and Hazard Warnings

**WARNING!**

In order to avoid personal injuries and damage to property, you have to read and understand the following safety instructions and hazard warnings prior to installation and use of the loggers. Keep this documentation (manual) always near the logger.

1.2.1.1 Proper Use and Intended Purpose

**WARNING!**

The loggers are measuring devices which are used in the automotive and commercial vehicles industries. The loggers are designed for gathering and recording data of the bus communication, for analyzing and possibly controlling electronic control units. This includes, inter alia, bus systems like CAN, LIN, MOST and FlexRay.

The loggers may only be operated in a closed state. In particular, printed circuits must not be visible. The loggers may only be operated according to the instructions and descriptions of this manual. Only suitable accessories should be used, such as the original Vector accessories or accessories approved by Vector.

The loggers are exclusively designed for use by skilled personnel as its operation may result in serious personal injuries and damage to property. Therefore, only those persons may operate the loggers who (i) have understood the possible effects of the actions which may be caused by the loggers; (ii) are specifically trained in the handling with the loggers, bus systems and the system intended to be influenced; and (iii) have sufficient experience in using the loggers safely.

The logger specific information can be acquired via the specific manuals as well as from the Vector KnowledgeBase at www.vector.com. Please consult the Vector KnowledgeBase for updated information prior to the operation of the loggers. The knowledge necessary for the bus systems used, can be acquired in workshops and internal or external seminars offered by Vector.

1.2.1.2 Hazards

**WARNING!**

The loggers may control and/or otherwise influence the behavior of electronic control units. Serious hazards for life, body and property may arise, in particular, without limitation, by interventions in safety relevant systems (e.g. by deactivating or otherwise manipulating the engine management, steering, airbag and/or braking system) and/or if the loggers are operated in public areas (e.g. public traffic). Therefore, you must always ensure that the loggers are used in a safe manner. This includes, inter alia, the ability to put the system in which the loggers are used into a safe state at any time (e.g. by „emergency shutdown“), in particular, without limitation, in the event of errors or hazards.

Comply with all safety standards and public regulations which are relevant for the operation of the system. Before you operate the system in public areas, it should be tested on a site which is not accessible to the public and specifically prepared for performing test drives in order to reduce hazards.

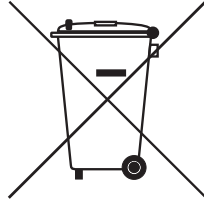
1.2.2 Disclaimer

**WARNING!**

Claims based on defects and liability claims against Vector are excluded to the extent damages or errors are caused by improper use of the loggers or use not according to its intended purpose. The same applies to damages or errors arising from insufficient training or lack of experience of personnel using the loggers.

1.2.3 Disposal of Vector Hardware

Please handle old devices responsibly and observe the environmental laws applicable in your country. Please dispose of the Vector hardware only at the designated places and not with the household waste.



Within the European Community, the Directive on Waste Electrical and Electronic Equipment (WEEE Directive) and the Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS Directive) apply.

For Germany and other EU countries, we offer free take-back of old Vector hardware.

Please carefully check the Vector hardware to be disposed of before shipping. Please remove all items that are not part of the original scope of delivery, e.g. storage media. The Vector hardware must also be free of licenses and must no longer contain any personal data. Vector does not perform any checks in this regard. Once the hardware has been shipped, it cannot be returned to you. By shipping the hardware to us, you have relinquished your rights to the hardware. Before shipping, please register your old device via:

<https://www.vector.com/int/en/support-downloads/return-registration-for-the-disposal-of-vector-hardware/>

2 GL1000 Logger

In this chapter you find the following information:

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2.1 General Information

2.1.1 Scope of delivery

Included

- ▶ 1x GL logger (depending on the order)
- ▶ 1x 2 GB SD memory card
- ▶ USB cable
- ▶ Connection cable (open ends)
- ▶ Mounting brackets (GL1000 only)
- ▶ Optional: CCP/XCP license for CAN

2.1.2 Optional Accessories

Optional hardware

- ▶ CANgps/CANgps 5 Hz for recording the vehicle position via GPS
- ▶ LINprobe as LIN channel extension
- ▶ LOGview for displaying signal and status information



Reference

Information on available accessories can be found in the appendix in section **Accessories** on page 33.

2.2 Overview

General capabilities

The devices of the GL1000 family are data loggers with USB interface which processes CAN messages with either 11-bit or 29-bit identifiers and LIN messages. Furthermore, received messages and analog values can be logged on an inserted SD/SDHC card. The configuration of the logger can be done with the **Vector Logger Suite** (see section [Vector Logger Suite](#) on page 29).



Figure 1: GL1000 family

Logger differences

The following table shows the main differences between the logger variants:

Feature	GL1000	GL1010
2x CAN channel	X	X
2x LIN channel	X	X
4x Analog input	X	X
2x Digital input/output	X	X
Watertight (IP65)	-	X
Location storage media	outside	inside



WARNING!

Please note that the housing of the GL1010 must not be opened under any circumstances, since otherwise the IP65 protection class of the data logger is no longer guaranteed. The SD/SDHC card, the piggybacks, and the battery may only be replaced by Vector Informatik GmbH. For more information, please contact the Vector Support.

Due to the openings in the housing for the LED, leak tightness may not be guaranteed if the label is damaged.

The loggers from serial number 5000 (GL1000) respectively 102000 (GL1010) contain a hardware revision. Firmware versions V1.49 or higher are required for operation (included in the Vector Logger Configurator version 2.5 SP5 or higher).

The loggers from serial number 6400 (GL1000) respectively 103400 (GL1010) contain the newest hardware revision. Firmware versions V2.04 or higher are required for operation (included in the Vector Logger Configurator version 2.8 or higher).

Configurations (COD files) generated with older versions have to be recompiled with the newer Vector Logger Suite. The recompiled configuration is compatible to all GL1000/GL1010.

2.3 Operating Modes

Overview

The loggers support two operating modes, which are switched by using the USB connection and power supply respectively.

Mode	USB	External Power Supply
Configuration mode	connected to computer	optional
Logging mode	not connected	yes

Configuration mode

In the configuration mode, the logger can be configured with the configuration program. The configuration can be written to the logger. Logging data from the SD card can be written to the computer.

Logging mode

The Logging mode enables the computer independent usage of the logger and allows the logging of CAN, LIN and analog values. For this case, the logger must be unplugged from the USB connector of the computer. The voltage supply is done externally by the D-SUB25 connector.

2.4 Data Transfer

Downloading

The logged data can be downloaded from the SD/SDHC card inside the GL1000/GL1010 or inside an SD/SDHC card reader. In both cases, for download and conversion the configuration program is required. It is not possible to access the logged data on the memory card directly through the Windows Explorer because of the logger's own file system.



Note

Laptops with an integrated SD card reader cannot recognize SD cards with a logger-specific file system in rare cases.



WARNING!

A formatted SD/SDHC card has to be empty before inserting it in the logger! The configured logger will delete all files if a formatted memory card is not empty!

The logger deletes the Windows files and the file system on the memory card on start of logging mode if they exist. The logger uses its own file system that cannot be seen in the Windows Explorer. It is required to use a configuration program to download a configuration and upload logging files.

2.5 Back Side (USB)

2.5.1 GL1000

▶ **USB (Type-B)**

Data transfer between computer and logger.

▶ **Slot for removable SD/SDHC card**

The logger has a push-and-pull card holder for inserting and removing the SD card. To insert the memory card, push it in until the locking mechanism engages securely. To remove the memory card, push it slightly into the card holder until it unlocks.

Do not pull the SD card from the card holder forcefully, since this could cause mechanical damage!



WARNING!

The logger sets up an own file system and will delete any existing content on the inserted card. The file system will not be recognized by Windows.



WARNING!

Do not remove the SD card, while the logger is still in logging mode! This may cause data loss!

For data transfer from the SD/SDHC card, the Vector Logger Suite is required. The data can be read while the SD/SDHC card is inserted in the logger (logger needs to be connected to the computer via USB) or while the SD/SDHC card is inserted in an external card reader.

2.5.2 GL1010

The GL1010 is a special version of the GL1000 and watertight according to IP65 and has an internal storage.

► **USB**

Data transfer between computer and logger. It is recommended to protect the USB connector with a cap if no USB cable is connected.

► **Diaphragm**

Diaphragm for pressure compensation. Do not lift the cap under any circumstances!

► **Internal SD/SDHC card**

The logger has an internal SD/SDHC card.



WARNING!

The logger sets up an own file system and will delete any existing content on the inserted card. The file system will not be recognized by Windows.

For data transfer from the SD/SDHC card, the Vector Logger Suite is required. The data can be read while the SD/SDHC card is inserted in the logger (logger needs to be connected to the computer via USB).

2.6 Front Side (D-SUB25)

► D-SUB25 connector (male)

Use the included evaluation cable Vehicle to connect the logger. The colors refer to the included cable. If the open wires are not used, it is recommended to terminate them to prevent short circuits and to improve the EMC properties.



Note

The connecting cable is not conform to IP65.

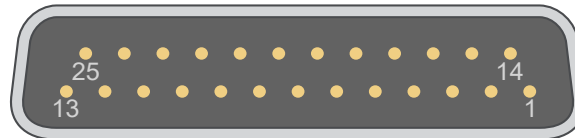


Figure 2: D-SUB25

CAN

Pin	Assignment	Cable Color	Pin	Assignment	Cable Color
15	CAN1 High	yellow	16	CAN1 Low	green
19	CAN2 High	gray	21	CAN2 Low	pink

Transceivers with wake-up capability are supplied directly from the supply voltage of the logger. During logger start, for the TJA1041 and TJA1054 transceivers the supply voltage must not exceed 27 V in order to not damage the transceivers. After start and during operation for these transceivers a supply voltage of maximum 30 V can be applied. For a supply voltage of 27 V up to 30 V CAN we recommend for CAN high-speed the transceiver TJA1043.

LIN

Pin	Assignment	Cable Color	Pin	Assignment	Cable Color
23	LIN 1	lilac	24	LIN 2	red

The LIN transceivers TJA1020/TJA1021 are already mounted on the main board of the GL1000/GL1010. Therefore LIN piggybacks are not needed.

The LIN transceivers are supplied from the supply voltage. On this way reference voltage for the LIN levels and supply voltage have the same value. For example if the logger is supplied with 24 V, the reference voltage for LIN is also 24 V.

Analog input

Pin	Assignment	Cable Color	Pin	Assignment	Cable Color
9	Analog In 1	gray/pink	10	Analog In 2	red/blue
11	Analog In 3	blue	12	Analog In 4	brown/green

The logger has four independent analog channels which can be configured separately. It is possible to average the measured analog inputs over a defined sampling period between 1 Hz and 1 kHz. E. g. for a 1 Hz sampling frequency, the measured values are averaged over the last second. The internal sampling rate is 1 kHz for each channel.

Digital input/output

Pin	Assignment	Cable Color	Pin	Assignment	Cable Color
6	Input/output 1	white/yellow	8	Input/output 2	brown/yellow

The pins can be used either as digital inputs or digital outputs.

A digital input can be used e. g. as external trigger. In unconnected state the digital inputs are set to High (TRUE). After connecting the input with GND the status is set to Low (FALSE).

When used as a digital output, the pin is connected to GND when the output is switched on (so called “low side switch”). To switch a load, it is necessary to connect it between the pin of the digital output and the battery.

UART

Pin	Assignment	Cable Color	Pin	Assignment	Cable Color
2	RS232 Rx	white/green	3	RS232 Tx	N.C.

The serial interface is a logging interface only. The baudrate of the interface can be configured. Received data can be stored on the SD card as CAN messages.

**Note**

The serial interface cannot be used to download a configuration or upload logging data.

Battery

Pin	Assignment	Cable Color	Pin	Assignment	Cable Color
1	Battery (VCC)	white	-	-	-

GND

Pin	Assignment	Cable Color	Pin	Assignment	Cable Color
4	GND	brown	7	GND	brown or brown/red
22	GND	brown or brown/blue	-	-	-

The three GND pins are connected together internally and have the same potential as the power supply ground.

**WARNING!**

It is recommended to connect the logger to the same voltage supply (e. g. battery of the vehicle) as the vehicle or test equipment, respectively.

If two different voltage supplies are used for the logger and the test equipment, the ground pins (GND) of the two voltage supplies must be connected.

Wake

Pin	Assignment	Cable Color	Pin	Assignment	Cable Color
20	Wake	black	-	-	-

2.7 LEDs

► USB

This LED indicates the USB connection to the computer.

Color	Description
Green	► On: the logger is connected to the computer via USB. Note: the LED remains lit even if no SD card is inserted. ► Flashing fast: data transfer. ► Flashing slow: fault due to missing SD card
Off	All other cases.

► LED1...4

These LEDs are freely programmable. They can be used to display different states.

LED	Color
1	Green
2	Yellow
3	Red
4	Red

In the following cases the LEDs are overwritten:

Status	LED 1...4
No SD card inserted	Flashing slow: fault due to missing or defective SD card.
No configuration available	Flashing fast: fault due to incompatible configuration on the SD card. Please recompile the configuration with the latest Vector Logger Suite.

2.8 Replacing Piggybacks

**WARNING!**

The housing has to be opened to replace the piggybacks. This must be done very cautiously and carefully, in order to not damage the sensitive lines in the unit.

When performing this operation be sure not to touch the top or bottom of the boards (logger board or piggybacks) to avoid damages due to electrical discharges.

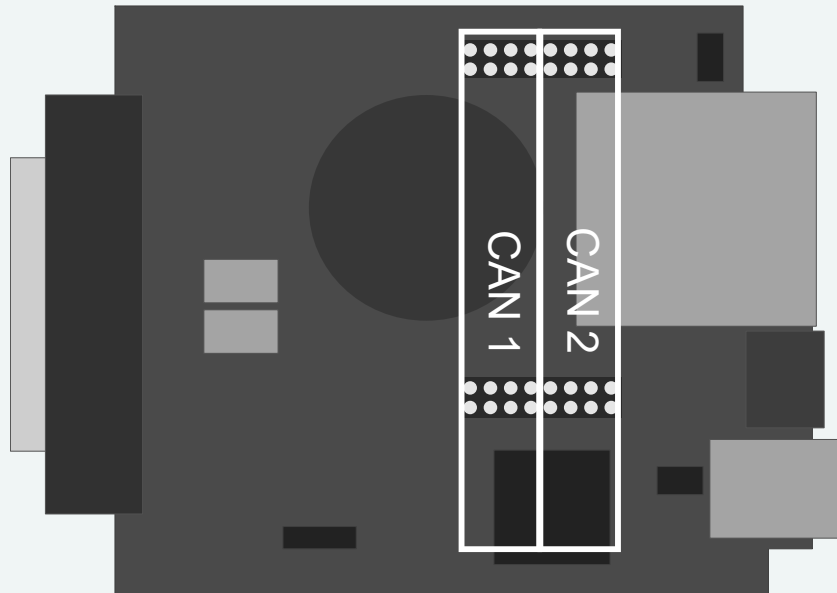
**WARNING!**

Please note that the housing of the GL1010 must not be opened under any circumstances, since otherwise the IP65 protection class of the data logger is no longer guaranteed. Piggybacks of the GL1010 may only be replaced by Vector Informatik GmbH. For more information, please contact the Vector Support.

**Step by Step Procedure**

The piggybacks of the GL1000 can be exchanged as follows:

1. First, loosen the logger housing screws on the front side with the D-SUB connector. This requires removing the black decorative caps.
2. Carefully remove the cover (D-SUB side) together with the main board completely from the housing.
3. You will find the mounting location for CAN 1 close to the center of the main circuit board and the mounting location for CAN 2 close to the edge of the main circuit board.



4. Remove the piggybacks carefully from the mounting location.
5. Insert the replacement piggyback. When doing this please make sure that the single and dual-row connectors are not laterally shifted.

6. Place the GL1000 main board back in the housing verifying that it is inserted properly. This operation involves placing the housing on a table with its bottom side (side with the bar code) facing up. Then the main board is inserted into the lowest guide rail with the piggyback facing up.
7. Now slide the main board completely into the housing. It should be possible to slide the main board in the housing up to a few millimeters from the end without forcing it in. Close the housing by applying light pressure, and then secure it with the appropriate screw fasteners. The screws should be secure but not excessively tight.
8. Please also attach the black decorative caps.

2.9 Battery for Real-Time Clock

2.9.1 General Information

General information

The loggers have an internal real-time clock, which is battery supplied, and thus continues running even if the logger is disconnected from power supply. The real-time clock inside the logger is required to store the date and time together with the logged data. The configuration of the clock is done with the Vector Logger Suite (SD card must be inserted). After setting the real-time clock, the logger is switched off.

It is recommended to set the real-time clock before first logging.

Durability

The internal battery supplies the real-time clock only. The Lithium battery has a typical durability of approximately 5...10 years under the following conditions:

- ▶ T = +40 °C ... +80 °C for at most 40 hours per week
- ▶ T = -40 °C ... +40 °C in the rest of the time

Older logger under Windows 7, Windows 8 and Windows 10

When the real-time clock of older GL1000/GL1010 is set under Windows 7 / Windows 8 / Windows 10, the concluding ejection of the logger must be performed manually for hardware reasons. This pertains to the following serial numbers:

- ▶ GL1000 up to and including serial number 028069-001339
- ▶ GL1010 up to and including serial number 028081-100105

The affected loggers must be connected to the USB and be supplied with power via the DSUB25 connector before the time is set. After the time is set with the configuration program, the USB connection must be disconnected immediately so that the time will be applied.

2.9.2 Replacing the Battery



WARNING!

Please note that the housing of the GL1010 must not be opened under any circumstances, since otherwise the IP65 protection class of the data logger is no longer guaranteed. The battery of the GL1010 may only be replaced by Vector Informatik GmbH. For more information, please contact the Vector Support.



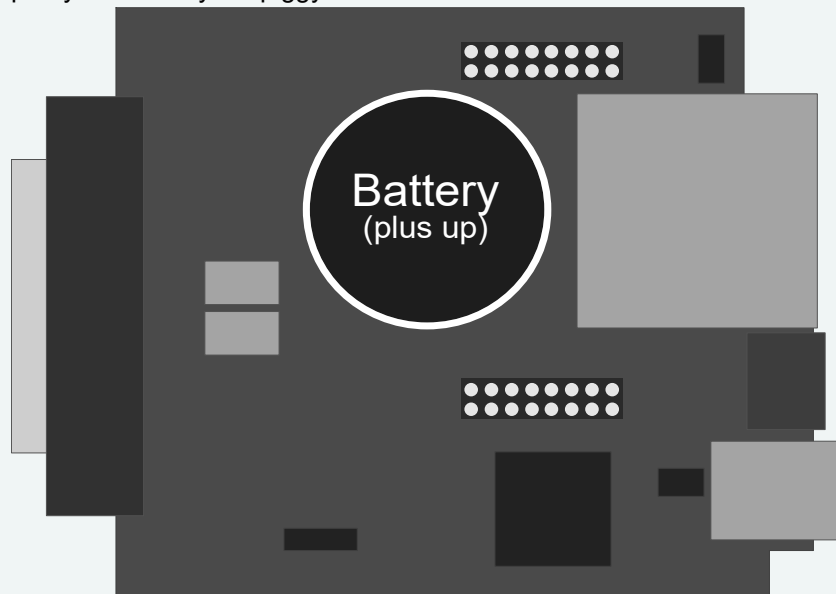
WARNING!

The housing has to be opened to replace the battery. This must be done very cautiously and carefully, in order to not damage the sensitive lines in the unit. When performing this operation be sure not to touch the top or bottom of the boards to avoid damages due to electrical discharges.

**Step by Step Procedure**

The battery of the GL1000 can be exchanged after life cycle end.

1. First, loosen the logger housing screws on the front side with the D-SUB connector. This requires removing the black decorative caps.
2. Carefully remove the cover (D-SUB side) together with the main board completely from the housing.
3. You will find mounting location almost at the center of the main circuit board, partly covered by the piggybacks.



4. Remove the piggybacks for easier access to the battery.
5. Remove the battery carefully from the mounting location.
6. Insert the new battery and ensure correct polarity when doing so. Plus must be on top. Please handle the contact spring with care. Do not bend it too much and make sure the spring has contact to the new battery after replacement.
7. Place the GL1000 main board back in the housing verifying that it is inserted properly. This operation involves placing the housing on a table with its bottom side (side with the bar code) facing up. Then the main board is inserted into the lowest guide rail with the piggyback facing up.
8. Now slide the main board completely into the housing. It should be possible to slide the main board in the housing up to a few millimeters from the end without forcing it in. Close the housing by applying light pressure, and then secure it with the appropriate screw fasteners. The screws should be secure but not excessively tight.
9. Please also attach the black decorative caps.
10. Dispose of the removed battery according to the applicable laws (e. g. the Battery Law in Germany).

2.10 Technical Data

CAN channels	Max. 2 via Piggybacks
LIN channels	2x transceiver: TJA1021
Analog inputs	4x (single-ended) - Voltage range: 0 V ... 16 V - Resolution: 10 bit - Precision: 1 % - Sampling rate: max. 1 kHz - Input resistance: 155.6 kOhm - Reverse-polarity protection: -50 V... +50 V
Digital inputs	2x - Voltage range: 0 V ... 36 V - Pull-up resistor: 10 kOhm - Threshold Low -> High: 1.9 V - Threshold High -> Low: 0.5 V - Sampling rate: 1 kHz - State of unconnected input: High (TRUE)
Digital outputs	- Current when switched on: max. 500 mA per output - Nominal output current (all channels on): max. 500 mA per output (depends on external circuit) - Amount of all digital outputs: max. 1000 mA (depends on external circuit) - Internal resistance (on resistance): 1 Ohm - Circuit time: typ. 1 ms
USB	2.0
Start-up time	Typ. 150 ms with delivered 2 GB Xmore SD card, time varies with capacity and type of the SD/SDHC card. Data is recorded after the given start-up time if the GL1000/GL1010 already contains a configuration. Updating the configuration or using a new SD card increases this start-up time.
Battery	Lithium primary cell, type BR2032
Power supply	5 V...30 V, typ. 12 V
Shutdown voltage	4.5 V
Current consumption	Operation: typ. 65 mA at 12 V DC Sleep mode: typ. 160 µA (2x CAN and 2x LIN)
Power consumption	Typ. 780 mW, max. 1220 mW

Temperature range	GL1000: -40 °C...+85 °C depending on SD card GL1010: -20 °C...+80 °C (because of connector) USB interface: 0 °C...+70 °C
Dimensions (LxWxH)	GL1000: approx. 107 x 85 x 35 mm GL1010: approx. 130 x 85 x 35 mm
Housing	Aluminium housing: Alubos 800
Operating system requirements	Windows 10 (64 bit) Windows 11 (64 bit)

2.11 Miscellaneous Features

2.11.1 Wake-up / Sleep

A logger wakes up in sleep mode:

- ▶ after reception of a CAN message
- ▶ after reception of a LIN message
- ▶ positive edge on the wake-up line (clamp 15)
- ▶ wake-up timer via real-time clock

The logger can be configured in Vector Logger Suite to go to sleep mode if no CAN and LIN messages are received for a defined time. This time can be configured (max. 18,000 s = 5 hours). The sleep mode needs a very low current consumption of typ. 160 μ A.

The logger has to be equipped with CAN transceivers with wake-up capability to support the wake-up functionality on CAN (see section [Accessories](#) on page 33).

The wake-up line endures the full board voltage. If the GL1000 is supplied from clamp 30, the wake-up line can be connected with clamp 15. Thereby the GL1000 will be woken up immediately at switching on the ignition even if no activity is on the wake-up compatible busses or the busses are not connected.

2.11.2 Beep

GL1000
GL1010

The logger has a speaker that acoustically alerts the user e. g. in case of a trigger. Triggers and beep can be defined using the configuration program.

Restrictions

The signal tone from the GL1010 is only audible to a limited extent due to the eliminated speaker opening.

2.11.3 Serial Number

The serial number is stored in the logger and copied to the SD card after downloading the configuration and starting in logging mode.

The configuration program reads out the serial number of the logger in configuration mode. The serial number is displayed correctly if an SD card is inserted and the logger was in logging mode with this SD card at least one time. If this SD card is inserted in another logger and the logger is not started in logging mode afterwards, the serial number of the first logger will be displayed in the configuration program.

3 First Steps

In this chapter you find the following information:

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3.1 Vector Logger Suite

3.1.1 General Information

Overview

Vector Logger Suite enables the configuration of all loggers of the GL Logger family and offers a wide range of settings. You may set baud rates for CAN and LIN, define triggers and filters, set LEDs and manage logging files on the storage media. Furthermore for the CAN bus diagnostics and CCP/XCP can be configured. For CCP/XCP the logger needs an installed license. For Seed & Key CANape is required. Vector Logger Suite also supports trigger and filter by symbolic names defined in CAN and LIN databases.

Main features are:

- ▶ Customizable filters for CAN and LIN messages
- ▶ Customizable triggers
- ▶ Support of CAN databases (DBC) and LIN databases (LDF)
- ▶ Support of AUTOSAR description files (ARXML)
- ▶ Diagnostic support
- ▶ File management
- ▶ CCP/XCP (optional)

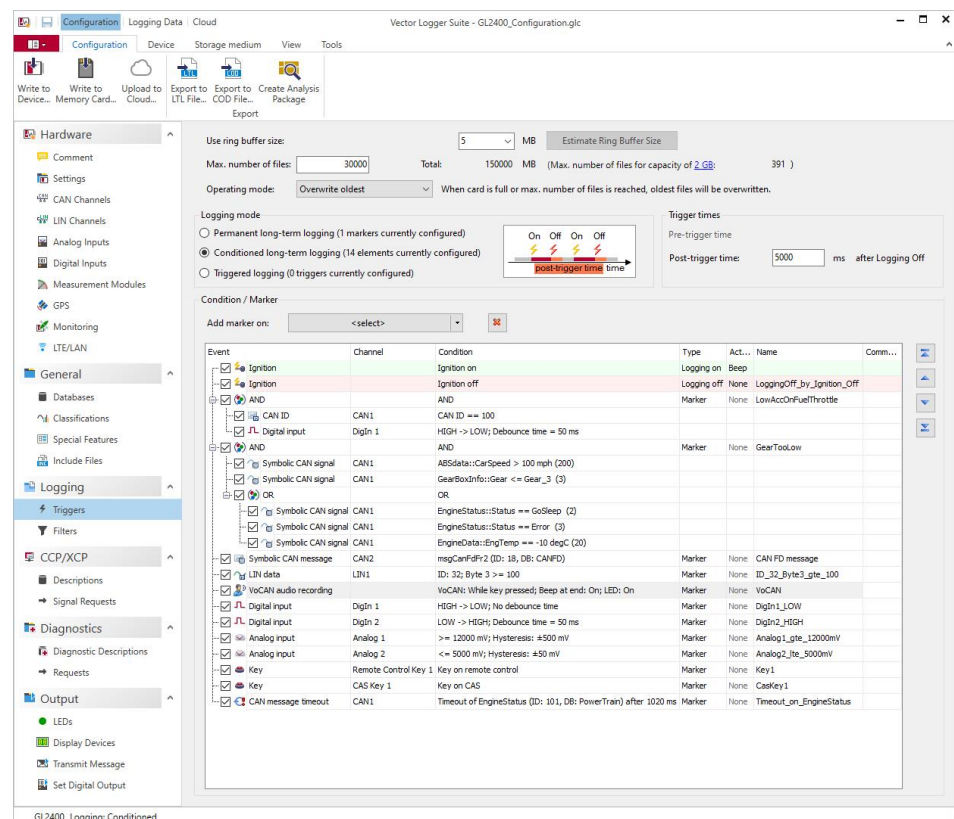


Figure 3: Vector Logger Suite

Requirements

The following software requirements must be fulfilled to run the Vector Logger Suite: Windows 10 (64 bit) or Windows 11 (64 bit)

**Reference**

The Vector Logger Suite is described in detail in the user manual of this configuration program. The user manual is available as PDF and can be opened in the Vector Logger Suite via **Backstage | Documentation**.

3.1.2 Quick Start

3.1.2.1 Installation

**Step by Step Procedure**

The Vector Logger Suite can be installed as a 64-bit program. Due to the larger address space, the 64 bit variant can process very extensive databases. The 64 bit version can only be installed on 64 bit operating systems.

The Vector Logger Suite is installed as follows:

1. Execute the setup which is found on the installation DVD:
`.\VLSuite\Setup_VLSuite_64Bit.exe.`
2. Please, follow the instructions in the setup program to complete the installation.
3. After successful installation, the Vector Logger Suite can be found in the start menu (if selected during installation).

3.1.2.2 Initial Operation / New Memory Card

The GL1000/GL1010 writes raw data to the SD card without using a file system. To prepare a new or formatted memory card, it must be operated once in logging mode for a few seconds to remove the file system from the SD card and write logger information to the SD card.

**Step by Step Procedure**

Follow the instructions below to set up a new logger or a new SD card for the first time.

1. Make sure that there is no important data on the memory card that you are planning to use. All data will be irretrievably deleted from the SD card in the following steps.
2. Insert the SD card into the GL1000 (the GL1010 already has an SD card inserted).
3. Connect the D-SUB25 connection cable.
4. Supply the logger with power. The logger is now in **logging mode** and automatically prepares the SD card. Leave the power supply connected to the logger for at least 10 seconds.
5. Start the Vector Logger Suite.
6. In the title bar, switch to the **Export** module.
7. Connect the logger to the computer using a USB cable. The logger should now be automatically recognized and displayed by the Vector Logger Suite. Otherwise click on **Backstage**  and select the logger from the **Attached Hardware** list.

8. Click **Logger Information** to view the complete list of information, including the serial number, firmware version, and hardware configuration.

**Note**

Windows may ask you to format the memory card when you connect the GL1000/GL1010. Never comply with this request! Formatting would cause the SD card preparation previously carried out in the logger to be lost again. Any recorded logging data would also be irretrievably lost!

3.1.2.3 Configuring the Logger

**Step by Step Procedure**

Follow the instructions below to configure the logger for simple long-term logging.

1. Start the Vector Logger Suite.
2. Create a new project via **Backstage | New Project....** Select the logger type **GL1000 series** in the dialog box that appears.
3. Select suitable baud rates for CAN and LIN on the **Hardware | CAN Channels / Hardware | LIN Channels** page.
4. Check the setting on the **Logging | Triggers** page. **Use permanent logging** is already preset here by default. All data is recorded from the time the logger is switched on until it is switched off.
5. Save the configuration to your computer via **Backstage**  and **Project | Save**.
6. Connect the logger to the computer via a USB cable.
7. Write the configuration to the logger via **Configuration | Write to Device....** If the button is not available, the logger may not have been recognized automatically when it was connected. Press **<F5>** to refresh the display of connected logger devices.
8. Set the real-time clock via **Device | Set Real-Time Clock...** (recommended before first logging).
9. Disconnect the logger from the computer.
10. Connect the logger to your test system (CAN bus). Power on via connecting cable D-SUB25.
11. Logging starts. LED1 flashes permanently (standard setting for new configurations, can be configured).
12. Stop logging by switching off CAN. Wait until the logger goes to sleep mode (CAN transceiver with wake-up capability necessary) i. e. LED1 must be off.

3.1.2.4 Reading Out the Logging Data

**Step by Step Procedure**

Follow the instructions below to read out the previously recorded logging data.

1. Open the module **Export**.
2. Connect the logger to the computer via a USB cable.
3. The data from the logger is automatically displayed. Otherwise click on **Back-**

stage  and select the logger from the **Attached Hardware** list.

4. Click on **Destination Format** and select the file format (e. g. BLF logging file) and further settings.
5. Click on **File Storage** and select the target directory and further settings.
6. Click on **Export** to initiate the readout of the logging data and the automatic conversion to the selected file format. The files will be stored in a new sub-folder (Destination Subdirectory) of the target directory.
7. Eject the logger via **Export | Source | Eject logger**.
8. Disconnect the logger from USB.

4 Accessories

In this chapter you find the following information:

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4.1 Connection Cables

4.1.1 GL1000/GL2000

Connection cable

Description	This cable (not IP65) is included with the GL1000/GL1010. It replaces the GL1000 connector cable.
Length	approx. 50 cm
Connectors	1x D-SUB25 female 3x D-SUB9 female 2x banana plug (stackable) 1x banana plug 14x open end

Pin	Assignment	Color	Pin	Assignment	Color
1	VCC	white	14	N/A	white/blue
2	RS232 Rx	white/green	15	CAN1 High	yellow
3	RS232 Tx	brown/pink	16	CAN1 Low	green
4	GND	brown	17	N/A	white/gray
5	VCC	white/black	18	N/A	white/pink
6	I/O 1	white/yellow	19	CAN2 High	gray
7	GND	brown/red	20	Wake/KL15	black
8	I/O 3	brown/yellow	21	CAN2 Low	pink
9	Analog In 1	gray/pink	22	GND	brown/blue
10	Analog In 2	red/blue	23	LIN1	lilac
11	Analog In 3	blue	24	LIN2	red
12	Analog In 4	brown/green	25	N/A	brown/gray
13	N/A	white/red			

N/A: not applicable, do not connect!

Plug types

Type	Plug
CAN1	Black D-SUB9
CAN2	Red D-SUB9
LIN1	Yellow D-SUB9
Battery (VCC)	Red banana plug (stackable)
GND	Black banana plug (stackable)
Wake/KL15	Red banana plug

4.1.2 GL1000

Connection cable

Description	This connector cable (not IP65) was included with the GL1000/GL1010 and is now replaced by the GL1000/GL2000 connector cable.
Length	approx. 50 cm
Connectors	1x D-SUB25 female All wires with open end

Pin	Assignment	Color	Pin	Assignment	Color
1	VCC	white	14	N.C.	-
2	RS232 Rx	white/green	15	CAN1 High	yellow
3	RS232 Tx	-	16	CAN1 Low	green
4	GND	brown	17	N.C.	-
5	N.C.	-	18	N.C.	-
6	I/O 1	white/yellow	19	CAN2 High	gray
7	GND	brown	20	Wake/KL15	black
8	I/O 3	brown/yellow	21	CAN2 Low	pink
9	Analog In 1	gray/pink	22	GND	brown
10	Analog In 2	red/blue	23	LIN1	lilac
11	Analog In 3	blue	24	LIN2	red
12	Analog In 4	brown/green	25	N.C.	-
13	N.C.	-			

N.C.: not connected

4.1.3 GL1010 IP65 Connections

Compatibility

The following IP65 hood is compatible with the GL1010:

- ▶ **D-SUB connector**
 - Conec IP65 D-SUB Plastic Hood and Accessories:
Water resistant hood

4.2 Piggybacks

A piggyback is a plug-in board which implements the interconnection of the logger to a specific CAN bus by the use of various transceivers. The piggybacks are also used in other loggers. See section [Replacing Piggybacks](#) on page 21 on how to replace piggybacks on the logger. Find the available piggybacks in the following tables.

GL1000
GL1010

Piggyback	Transceiver	Description	Wake-up	Electr. Isolation
1043	TJA1043	CAN High-Speed	X	-
1042	TJA1042	CAN High-Speed	-	-
1050	TJA1050	CAN High-Speed	-	-
1055	TJA1055	CAN Low-Speed	X	-
Single Wire	TLE6255G	CAN Single Wire	X	-
Truck Trailer	WABCO	Truck & Trailer	X	-



Note

Transceivers with wake-up capability are supplied directly from the supply voltage of the logger.

4.3 LOGview Control

Overview

The GL1000/GL1010 supports the connection of a LOGview display.

The connection is made via CAN 2, thus this channel cannot longer be used unlimited. CAN 2 can be used additionally for the logging of CAN messages of a CAN network, if the CAN network will not be disturbed by CAN messages (standard IDs 0x400...0x43F) that are transmitted between logger and display. Precondition therefor is that the network uses the required LOGview baud rate of 500 Kbit/s. The required bus terminating resistor of 120 Ohm is installed internally within the LOGview.

The CAN data traffic between GL1000/GL1010 and LOGview will not be logged and it will not influence the sleep behavior of the logger. The data traffic is also “hidden” for the LTL configuration.

Electrical connection

For the electrical connection of the LOGview to the logger, a 5-pin Binder connector must be wired with the D-SUB25 connector of the logger. Therefor two variants are possible that can be selected depending on the use case.

4.3.1 Variant 1

The display is on if the ignition (clamp 15) is on.

LOGview Pin	Color	Description	GL1000 D-SUB25 Pin
1	gray	On/Off	N.C.
2	brown	GND, together with vehicle ground	4 (GND)
3	yellow	CAN High	19 (CAN2 High)
4	green	CAN Low	21 (CAN2 Low)
5	white	Vbatt, together with clamp 15 of the vehicle	20 (Wake)

Additionally, the logger must be supplied at least via pin 1 (battery) of the D-SUB25 connector from the vehicle.

4.3.2 Variant 2

The display is on if the logger is awake.

LOGview Pin	Color	Description	GL1000 D-SUB25 Pin
1	gray	On/Off	6 (I/O 1)
2	brown	GND, together with vehicle ground	4 (GND)
3	yellow	CAN High	19 (CAN2 High)
4	green	CAN Low	21 (CAN2 Low)
5	white	Vbatt, together with clamp 30 of the vehicle	1 (battery)

This variant requires an additional resistor of 33 kOhm between pin 4 and 6 of the D-SUB25 connector. Without this resistor, the LOGview is permanently on, which can be identified by the active background illumination.

Additionally, with this variant the LOGview can be switched on and off via LTL programming (see LTL user manual).

4.4 Storage Media

GL1000
GL1010

The GL1000/GL1010 supports industrial grade SD/SDHC cards up to 32 GB*. For the proper use, only the industrial grade cards released by Vector may be used. Support cases with problems related to non-released storage media cannot be handled by our support team.

* Devices with a serial number below 220 only support SD cards of up to 2 GB.



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