CATALOG 2023

English

Intelligente Datenlogger

Contents

G.i.N. GmbH was founded by Wolfgang Bassenauer and Andreas Schoenberg in 1991. The company's headquarter with development, production, service and support is located in Griesheim. Besides data loggers, we offer far-reaching application and engineering services on site at our customers as well as education and training in the handling of our data loggers. Today about 95 employees are working at G.i.N. GmbH. In all our actions we place special emphasis on healthy and sustainable growth.

Since the beginning of the company, industrial networks and field bus systems are core capabilities. Quickly, this paved the way for today's core business: A vast range of data loggers for many applications in the automotive industry and on test rigs of any kind.

ntelligent data loggers record CAN, CAN FD, LIN, FlexRay, Ethernet, USB, RS232, K-Line, GPS, digital and analogue values, voice, pictures and image sequences, they function as a gateway, rest-bus simulation and control, allow online data reduction down to the essential, trigger mechanisms, online calculations and classifications. In addition to this, G.i.N. offers far-reaching application and engineering services on site, together with the client, as well as training on all data logger related areas.

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G.i.N. GmbH
Raiffeisenstr. 15
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Intelligente Datenlogger

Our customers use G.i.N. products and services successfully:

Europe, Asia or America – our high-performance products and solutions are successfully used for a wide range of applications in the automotive industry and on test stands:

- testing as part of the development process
- quality assurance
- analysis of Control Unit Behaviour
- in validation of connected systems
- to track down stochastically occurring malfunctions in communication, and wake up of development and end customer vehicles
- as gateways between different bus systems
- for manipulation of bus messages and signals
- for rest bus simulation
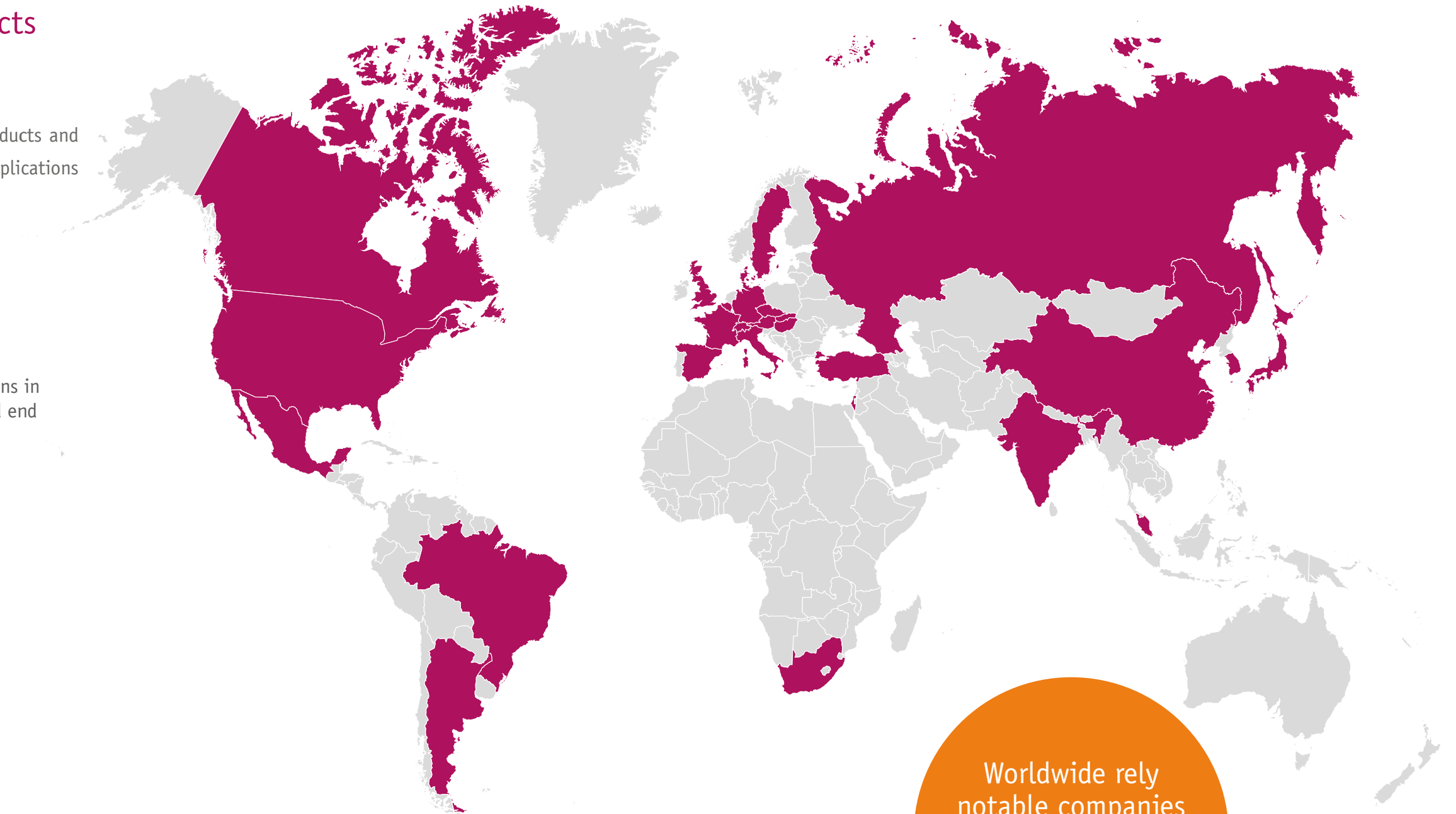
Worldwide rely notable companies on our innovative products and services.

The success of our products fulfils our customers requirement for ensuring that the networking of their high-efficiency bus systems is as near as possible to fault free. Thus, you can find our products in the automotive industry, construction and agriculture vehicles, transport sector via land or sea, in medical technology and much more.

The suitable product with individual configuration
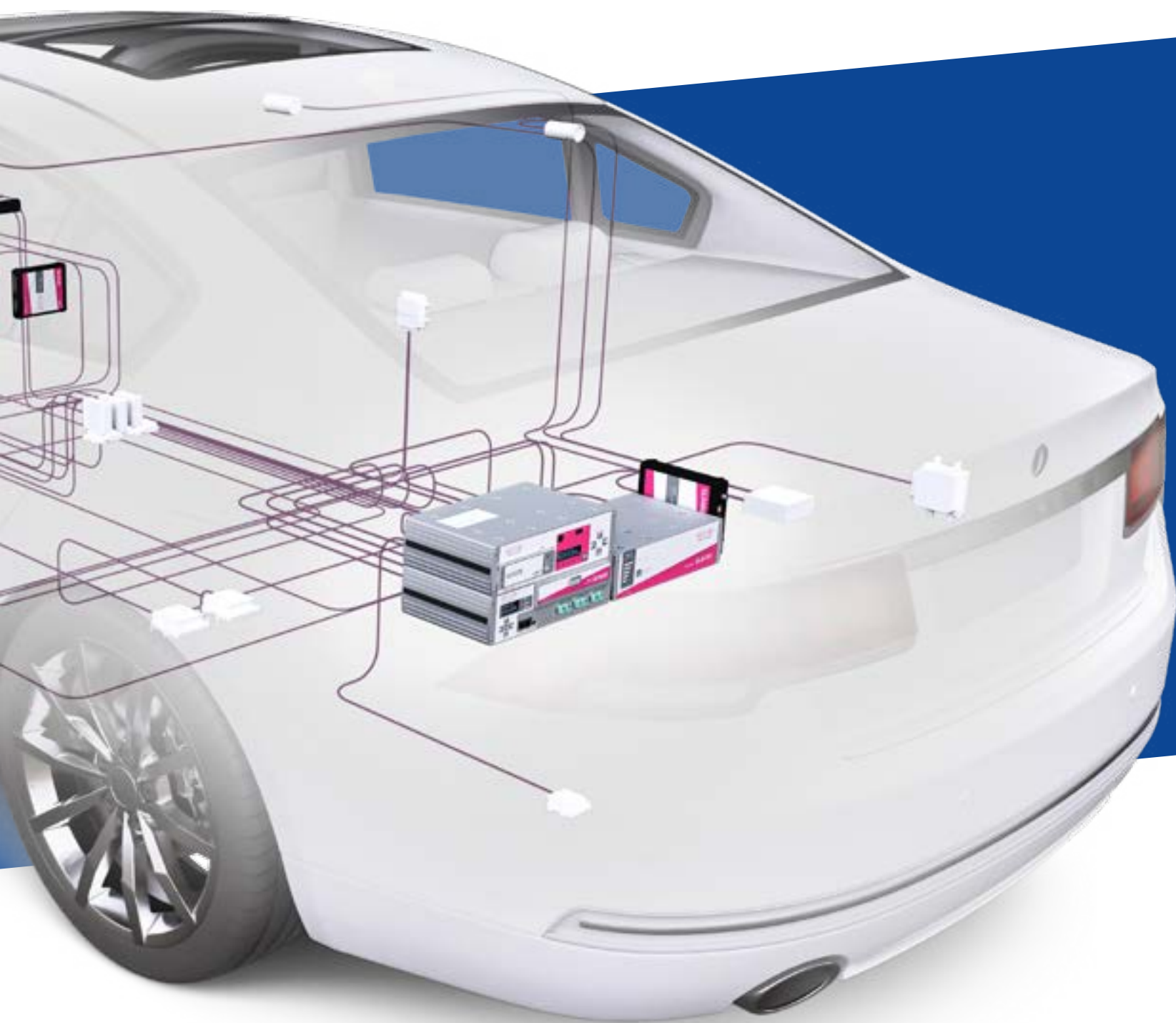
Data logger

intelligently record and readout, store and process

Discover our products online!

	GL1000/ GL1010°	GL2000/ GL2010°	GL2400	GL3000/GL3100/ GL3200 GL4000/GL4200	GL3400	GL5350 / GL5370	GL5450	CANlog3	CANlog4
FlexRay	-	-	-	2*	-	2	-	-	-
LIN	2...16*¹	2...16*¹	2...16*¹	2...16*¹*²	2...21*¹*²	2...36*¹*²*³	-	0...16*¹	0...16*¹
CAN	2	5	1	9...21*²	1...13*²	17...29*² (GL5350) 13...25*² (GL5370)	-	4	5
CAN FD	-	-	4	-	8...12*⁴	4...24*⁴(GL5350) 12...36*⁴ (GL5370)	-	-	-
Ethernet	-	-	-	1	5	5	-	-	-
100Base-T1	-	-	-	-	-	-	20	-	-
1000Base-T1	-	-	-	-	-	-	6	-	-
Analog Input	4	4	4	4...12	4...12	4...12	-	0...8	0...8
Digital Input	2	4	4	8	4	4	-	2...6	3...7
Digital Output	2	4	4	8	4	4	-	2...6	3...7
Internal memory	-	-	-	GL3000 series: 2x120 MB RAM GL4000 series: 2x240 MB RAM	2x200 MB	2x400 MB	2 GB	2 MB, optional internal flash up to 128 MB	2 MB
External memory	SD/ SDHC card	SD/ SDHC card	SD/ SDHC card	CF card SSD	SSD	SSD	2 x SSD	-	Flash card with up to 64 MB
Communication	USB	USB LAN Mobile radio	USB LAN Mobile radio	USB LAN/WiFi Mobile radio RS-232	USB LAN/WiFi Mobile radio RS-232	USB LAN/WiFi Mobile radio RS-232	USB LAN	RS-232	RS-232 USB
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*   Only at GL4000 series
*¹   Expandable with LINprobe
*²   Expandable with GLX427
*³   Expandable with GLX415
*⁴   Expandable with GLX504
°   With IP65 protection class

The GL1000 is our smallest data logger, which is characterized by its high storage capacity, easy handling as well as the extensive configuration options.

The GL1000 and its IP-65 protected sibling GL1010 are predestined for use in harsh environment. Both data loggers have a low power requirement and their technical data make both products very suitable for mobile use – especially for concealed installation.

CCP/XCP on CAN

Sending any, freely configurable messages

Selective recording (far reaching trigger and filter conditions programmable)

Storage medium SD/SDHC card

CAN, LIN, Digital I/O, Analog Inputs, RS-232, USB

Full trace recording

GL1000/GL1010

Interfaces	
CAN	2 x via Baby Boards
LIN	2 (TJA1021)
RS-232	1 (freely programmable)
Digital I/O	2 x Digital In/Out (configurable)
Analog Inputs	4 (0 V ... 16 V, 10 Bit)
USB	1 (for configuration and data access, USB 2.0)
Storage medium	1 slot for SD/SDHC card

Technical data	
Operating voltage	+5 V ... +30 V
Power consumption:	Typ. 780 mW, max. 1.22W
Current consumption:	Dependant on the operating voltage
• U = 5 V	Typ. 155 mA
• U = 12 V	Typ. 65 mA
• U = 27 V	Typ. 35 mA
Operating temperature range	
• GL1000	-40 °C ... +85 °C
• GL1010	-20 °C ... +80 °C

Housing		
Material	Extruded sheath:	
		Al Mg Si 0,5 powder-coated
	Die-casting cover:	
		GD Al Si 12 powder-coated
Dimensions (LxWxH)	107 x 85 x 35 mm (GL1000)	
	130 x 85 x 35 mm (GL1010)	
Weight	~ 230 g (GL1000)	
	~ 300 g (GL1010)	

Connectivity

LOGview
External Display

LINprobe
+2 LIN

CANgps
GPS receiver on CAN

CA8DL/ CA4T4DL
Triggeing and Monitoring

Discover our products online!

⋊G⋉i⋊N⋉
Intelligente Datenlogger

CCP/XCP on CAN

Sending any, freely configurable messages

Selective recording (far reaching trigger and filter conditions programmable)

Fast readout of the data

GPS receiver, serial

Storage medium SD/SDHC card

CAN, LIN, Digital I/O, USB
Analog Inputs , RS-232, Ethernet

Full trace recording

Remote data transmission

The GL2000 series, with its 4 CAN and 2 LIN buses, closes the gap between the GL1000 series and the G.i.N. high-end data logger.

Because of its still compact and robust design, the GL2000 and GL2010 are still able to be built into the vehicle in a safe and unobtrusive manner.

The provided software package is compatible with the complete G.i.N. data logger family and offers the mighty LTL functionality regarding filtering, triggering and real time data processing.

The GL2000 and its IP-65 protected sibling GL2010 are predestined for use in harsh environment.

Interfaces	
CAN	5 (2 x TJA1043, 2 x via baby boards, 1 x AUX-CAN with TJA1042)
LIN	2 (TJA1021)
RS-232	2 (1 x freely programmable, 1 x GPS recording)
Digital I/O	4 x Digital In 4 x Digital Out
Analog Inputs	4 (0 V … 18 V, 10 Bit)
USB	1 (Typ B, USB 2.0)
Ethernet	1 (10/100 MBit/s)
AUX	1 (to connect optional accessories such as LOGview or hand trigger)
EVENT	1 (to connect the event switch E2T2L)
Storage medium	1 Slot for SD/SDHC card

Housing	

Material	Extruded sheath:
	  Al Mg Si 0,5 powder-coated
	Die-casting cover:
	  GD Al Si 12 powder-coated

Dimensions (LxWxH)	175 x 137 x 35 mm
Weight	~ 580 g

Technical data	
Operating voltage	+6 V … +30 V
Power consumption:	Typ. 2 W at 12 V (without sending on CAN)
Current consumption:	
• in Sleep mode with 4 CAN	Typ. < 1 mA
• in half-sleep mode	at U_{Bat} = 6 V and 4 x CAN: typ. 110 mA U_{Bat} = 12V and 4 x CAN: typ. 60 mA U_{Bat} = 12V and 3 x CAN: typ. 55 mA U_{Bat} = 12V and 2 x CAN: typ. 50 mA U_{Bat} = 30V and 4 x CAN: typ. 30 mA
• in operation mode with SD card	at U_{Bat} = 6 V and 4 x CAN: typ. 300 m U_{Bat} = 12 V and 4 x CAN: typ. 170 mA U_{Bat} = 12 V and 3 x CAN: typ. 160 mA
Operating temperature range	-40 °C … +80 °C

Connectivity

LOGview
External Display

LINprobe
+2 LIN

CANgps/ GPS Receiver serial
GPS receiver on CAN/ serial

LTE Router
Mobile data transfer

VoCAN/ CASM2T3L
Audio recording/replay
Triggering

CA8DL/ CA4T4DL/ CAS1T3L
Triggering/Monitoring
and Signaling

Discover our products online!

Up to 4 CAN FD

Supports ISO & Non-ISO (Bosch) standard

Sending any, freely configurable messages

Selective recording (far reaching trigger and filter conditions programmable)

GPS receiver, serial

CCP/XCP on CAN
XCP on CAN **FD**

Full trace recording

Fast readout of the data

Mobile data transfer

The data logger GL2400 encompasses all the benefits of the GL2000 series , in addition to supporting CAN FD.

This means that it can record signals of the CAN FD bus system. It supports both the ISO and non-ISO (Bosch) standard.

Because of its compact and robust design, the GL2400 can be installed into any vehicle in a safe and unobtrusive manner. The provided software package is compatible with the complete G.i.N. datalogger family and offers the mighty LTL functionality regarding fi ltering, triggering and real time data processing.

GL2400 — CAN FD

User LED 1 2 3 4 USB Power

GiN — Intelligente Datenlogger

CAN FD Data Logger

Interfaces	
CAN	5 (4 x CAN FD TJA1043TK via GLT baby boards, 1 x AUX-CAN with TJA1042)
LIN	2 (TJA1021)
RS-232	2 (1 x freely programmable, 1 x GPS recording)
Digital I/O	4 x Digital In 4 x Digital Out
Analog Inputs	4 (0 V … 18 V, 10 Bit)
USB	1 (Typ B, USB 2.0)
Ethernet	1 (10/100 MBit/s)
AUX	1 (to connect optional accessories such as LOGview or hand trigger)
EVENT	1 (to connect the event switch E2T2L))
Storage medium	1 Slot for SD/SDHC card

Housing	
Material	Extruded sheath: Al Mg Si 0,5 powder-coated Die-casting cover: GD Al Si 12 powder-coated
Dimensions (LxWxH)	175 x 137 x 35 mm
Weight	~ 580 g

Technical data	
Operating voltage	+6 V … +30 V
Power consumption (bei 12 V):	Typ. 2 W
Current consumption:	
• in sleep mode with 4 CAN	Typ. < 1 mA
• in operation mode	at U_{Bat} = 6 V and 4 x CAN: typ. 342 mA U_{Bat} = 12 V and 4 x CAN: typ. 182 mA U_{Bat} = 12 V and 3 x CAN: typ. 177 mA U_{Bat} = 12 V and 2 x CAN: typ. 172 mA
Operating temperature range	-40 °C … +80 °C

Connectivity

LOGview
External Display

LINprobe
2 x LIN

CANgps/ GPS receiver serial
GPS receiver on CAN/ serial

LTE Router
Mobile data transfer

VoCAN/ CASM2T3L
Audio recording/replay
Triggering

CA8DL/ CA4T4DL/CAS1T3L
Triggering/Monitoring
and Signaling

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Intelligente Datenlogger

CCP/XCP on CAN
XCP on Ethernet

Sending any, freely configurable messages

Selective recording (far reaching trigger and filter conditions programmable)

Full trace recording

Control and regulation

Rest bus simulation

Remote data transfer

Classification

Gateway

The GL3000 series stands for performance, flexibility, reliability and toughness. On top of that it can evaluate and save the most important automotive bus systems (CAN, LIN, K-Line, RS-232), synchronous and in real time. This high performance establishes new opportunities regarding quality control, error search and system monitoring.

The WiFi and mobile radio options enable a fast and automated data transfer. Fleet tests benefit from this with fast access to the logged data. Thanks to its large storage (CF card with GL3100, SSD drive with GL3200) the GL3000 series is ideal for long-term recording and worldwide fleet tests.

Connectivity

LINprobe
2 x LIN

LOGview
External Display

GLX427
12 CAN- & up to
15 Serial Interfaces

LTE Router
Mobile data transfer

HostCAM
Recording images or
image sequences

CANgps
GPS receiver on CAN

VoCAN/ CASM2T3L
Audio recording/replay
Triggering

CA8DL/ CA4T4DL/ CAS1T3L
Triggering/Monitoring
and Signaling

Interfaces	
CAN	9 (4 x TJA1043, 4 x via baby boards, 1 x AUX-CAN with TJA1042)
LIN	2 (TJA1021)
K-Line	1
RS-232	2
Digital I/O	8 x Digital In, 8 x Digital Out
Analog Inputs	4 (0 V … 18 V, 10 Bit)
USB	3 (2 x type A, 1 x type B, USB 2.0)
Ethernet	3 (2 x Linux, 1 x Logger)
WiFi	1 optional (using WiFi extension board)
AUX	2 (to connect optional accessories such as LOGview or hand trigger)
EVENT	1 (to connect the event switch E2T2L)
Storage medium	1 CF card slot (GL3000/GL3100) or SSD slot (GL3200)

Optional internal add-Ons		Page
Internal Analog Inputs	A8I extension board built-in	49
WiFi	WiFi board built-in	50

Housing	
Material	Extruded sheath: Al Mg Si 0,5 powder-coated Die-casting cover: GD Al Si 12 powder-coated
Dimensions (LxWxH)	235 x 213 x 78 mm
Weight	~ 1950 g

Technical data	
Operating voltage	+6 V … +36 V
Power consumption at 12 V:	
• GL3000/GL3100 (CF card)	Typ. 8.5 W
• GL3200 (SSD)	Typ. 10 W
Current consumption at 12 V:	
• in sleep mode	1 mA
• in half sleep mode	Typ. 300 mA
• GL3000/GL3100 in operation mode with CF card	Typ. 700 mA
• GL3200/GL3100 in operation mode with SSD	Typ. 800 mA
Operating temperature range	-40 °C … +70 °C

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GL3400

Up to 8 CAN FD

CCP/XCP on CAN
    XCP on CAN **FD**
    XCP on Ethernet

Standalone tool for time-syn-chronous recording of the bus systems in modern vehicles

Short start-up time and low power consumption

Data transfer via mobile radio/LAN/WLAN

Offers a wide range of configuration options

Fast access to measurement data via various readout options

Sleep mode with active wake-up

The data logger GL3400 encompasses all benefits of the GL3000 series and additionally supports CAN FD. This means that signals of the bus system can be recorded from up to 12 CAN FD channels. Both ISO and NON-ISO (Bosch) standard is supported. Additionally, both the processor and interfaces (compared to previous models) are upgraded with stronger and faster data processing capabilities.

Alongside the CAN-/CAN FD-/LIN and Ethernet measuring data, measurement data from digital and analogue inputs as well as CCP/XCP and diagnosis protocols can be saved time synchronous. This means that test drives and individual test tasks concerning the vehicle electronics can be accomplished successfully.

The device is also equipped with five Ethernet interfaces with integrated switch. It offers Ethernet-Raw-Logging, alongside TCP-/UDP-Logging, as well as the possibility to connect up to 4 cameras and other G.i.N. extension devices like a GLX504 for additional 4 CAN FD interfaces.

Connectivity

Mounting plate

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GLA710
USV

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GLA618
AUX+ Switch

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LOGview
External Display

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GLX504
4 CAN FD Interfaces

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GLX427
12 CAN- & up to
15 Serial Interfaces

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LINprobe
2 x LIN

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HostCAM
Recording images or
image sequences

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HostCAMF44
Recording images or
image sequences

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LTE Router
Mobile data transfer

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VoCAN/ CASM2T3L
Audio recording/replay
Triggering

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CA8DL/ CA4T4DL/ CAS1T3L
Triggering/Monitoring and
Signaling

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CANgps/ GPS receiver serial
GPS receiver on CAN/ serial

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Interfaces	
CAN	9 (8 x CAN FD TJA1043TK, 1 x AUX CAN with TJA1042)
LIN	Up to 6
UART	2
RS-232	1
Digital I/O	4 x Digital In, 4 x Digital Out
Analog Inputs	4 (0 V ... 32 V, 10 Bit)
USB	2 (1 x type A, 1 x type B, USB 2.0)
Ethernet	5 (integrated switch)
WiFi	1 (optional using WiFi extension board)
AUX	2 (to connect optional accessories such as LOGview or hand trigger)
AUX+	2 (to connect and supply optional accessories such as GLX427 or GLX504)
EVENT	1 (to connect the event switch E2T2L)
Storage medium	1 SSD slot

Housing	
Material	Side profile: Al Mg3 Cover: EN AW-6060 (AlMgSi0,5) T66 Trim strip: ABS
Dimensions (LxWxH)	212 x 290 x 80 mm
Weight	~ 3500 g

Technical data	
Operating voltage	+7 V ... +50 V
Power consumption bei 12 V:	Typ. 10.3 W
Current consumption at 12 V:	
• in sleep mode	< 2 mA
• in half sleep mode	Typ. 180 mA
• in operation mode	Typ. 860 mA
Operating temperature range	-40 °C ... +70 °C

Optional internal add-Ons		Page
Internal Analog Inputs	A8I extension board built-in	49
WiFi	WiFi board built-in	51

G i N
Intelligente Datenlogger

CCP/XCP on CAN
XCP on FlexRay
XCP on Ethernet

Sending any, freely configurable messages

Selective recording (far reaching trigger and filter conditions programmable)

Full trace recording

Control and regulation

Rest bus simulation

Remote data transfer

Classification

Gateway

The GL4000 and GL4200 are the high-end data loggers in the G.i.N. portfolio. In line with the GL3000 series, the GL4000 and GL4200 offer access to the most important bus systems (CAN, LIN, K-Line, RS-232). Furthermore, the GL4000 series is additionally equipped with FlexRay and extended memory.

With the help of the GL4000 series, a multitude of applications concerning vehicle development, validation, endurance tests, quality control and service on the end customer, can be realized. World-wide fl eet tests are no problem with this range of functions; they can be easily installed and carried out.

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Intelligente Datenlogger

Connectivity

LINprobe
2 x LIN

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HostCAM
Recording images or
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CANgps
GPS receiver on CAN

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Audio recording/replay
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CA8DL/ CA4T4DL/ CAS1T3L
Triggering/Monitoring
and Signaling

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Interfaces	
CAN	9 (4 x TJA1043, 4 x via baby boards, 1 x AUX-CAN with TJA1042)
LIN	2 (TJA1021)
K-Line	1
RS-232	2
FlexRay	2 (A and B)
Digital I/O	8 x Digital In 8 x Digital Out
Analog Inputs	4 (0 V … 18 V, 10 Bit)
USB	3 (2 x type A, 1 x type B, USB 2.0)
Ethernet	3 (1 x Linux, 1 x Logger, 1 x reserved)
WiFi	1 (optional using WiFi extension board)
AUX	2 (to connect optional accessories such as LOGview or hand trigger)
EVENT	1 (to connect the event switch E2T2L)
Storage medium	1 CF card slot (GL4000) or SSD slot (GL4200)

Optional internal add-Ons		Page
Internal Analog Inputs	A8I extension board built-in	49
WiFi	WiFi board built-in	50

Housing		
Material	Extruded sheath:	Al Mg Si 0,5 powder-coated Die-casting cover: GD Al Si 12 powder-coated
Dimensions (LxWxH)	235 x 213 x 78 mm	
Weight	~ 1950 g	

Technical data	
Operating voltage	+6 V … +36 V
Power consumption at 12 V:	
• GL4000 (CF card)	Typ. 8.5 W
• GL4200 (SSD)	Typ. 10 W
Current consumption at 12 V:	
• in sleep mode	1 mA
• in half sleep mode	Typ. 300 mA
• GL4000 in operation mode with CF card	Typ. 700 mA
• GL4200 in operation mode with SSD	Typ. 800 mA
Operating temperature range	-40 °C … +70 °C
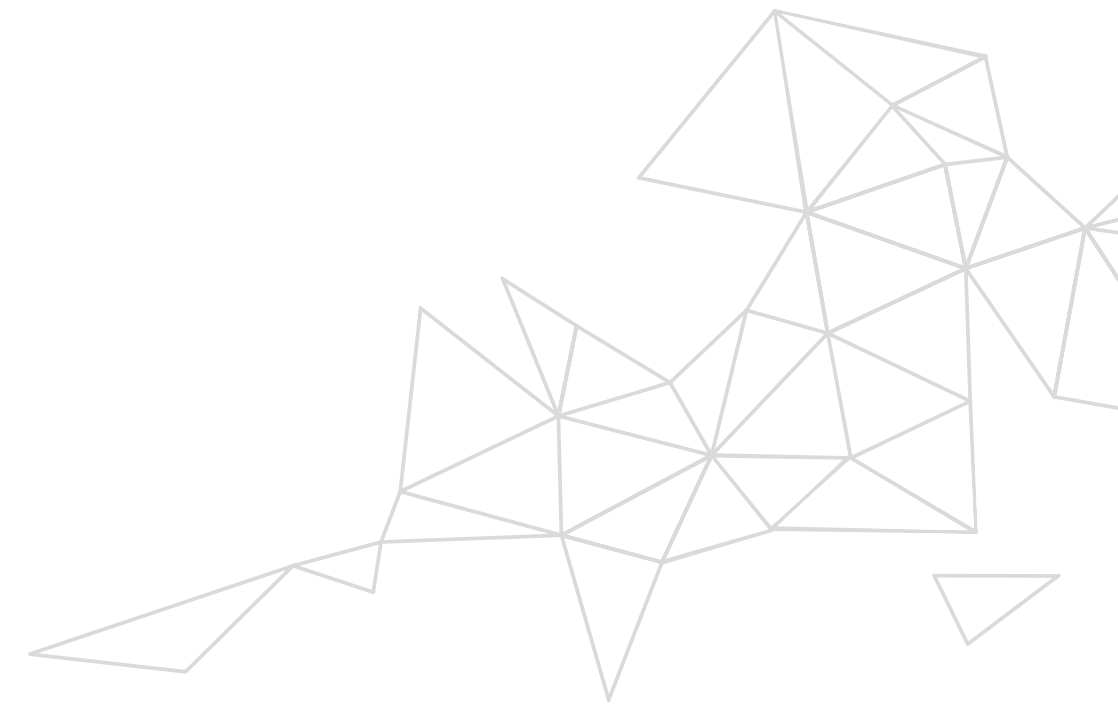
CCP/XCP on CAN
XCP on CAN FD
XCP on Flexray
XCP on Ethernet

Sending any, freely
configurable messages

Selective recording
(far reaching trigger and filter
conditions programmable)

Operation via menu control

Data transfer via
mobile radio/LAN/WLAN

Rest bus simulation

Classification

Gateway

Upcoming car generations will be equipped with a growing number with intelligent driver assistance systems, complex multimedia components and systems for autonomous driving.

In order to reduce the duration and the amount of test runs but at the same time acomplish all the test requirements of all departments, the benefits of an intelligent and powerful data logger like the GL5300 series come into effect. These data logger series cover the synchronous recording of CAN/LIN bus systems, from FlexRay networks to CAN FD busses (up to 4x CAN FD on the GL5350 and up to 12x CAN FD on the GL5370) and Ethernet networks.

Connectivity

Mounting plate

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USV

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AUX+ Switch

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LOGview
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Up to 4 CAN FD

GL5350

GLX504
4 CAN FD Interfaces

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GLX427
12 CAN & up to
15 Serial Interfaces

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GLX415
For further
15 LIN Interfaces

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LINprobe
2 x LIN

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Up to 12 CAN FD

GL5370

HostCAM
Recording images or
image sequences

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HostCAMf44
Recording images or
image sequences

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GPS receiver on CAN

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VoCAN/ CASM2T3L
Audio recording/
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CA8DL/ CA4T4DL/ CAS1T3L
Triggering/Monitoring and
Signaling

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The following table describes the assembly of several exemplary customer specific configurations:

GL5300 configuration	CAN Interfaces		LIN Interfaces	RS-232 Interfaces	WiFi	Analog Inputs	
	CAN 2.0	CAN FD				10 bit	12 bit
GL5350-8H-3R1L-A8I	16	4	3	7		4	8
GL5350-8H-4L-W	16	4	6	4	√	4	0
GL5370-12H-1R3L	12	12	5	5		4	0
GL5370-12H-4R-W	12	12	2	8	√	4	0

Interfaces

GL5350 (4x CAN FD)	21 (12 x TJA1043, 8 x via GLT baby boards, 1 x AUX-CAN with TJA1042)
GL5370 (12x CAN FD)	25 (12 x TJA1043, 12 x via GLT baby boards, 1 x AUX-CAN with TJA1042)
LIN	Up to 6 (2 x TJA1021, 4 x via GLT baby boards)
RS-232	Up to 8 (4 x fixed, 4 x via GLT baby boards)
FlexRay	2 (A and B)
Digital I/O	4 x Digital In, 4 x Digital Out
Analog Inputs	4 (0 V ... 32 V, 10 Bit)
USB	4 (3 x type A, 1 x type B, USB 2.0)
Ethernet	5 (integrated switch)
WiFi	1 (optional using WiFi extension board)
AUX	2 (to connect optional accessories such as LOGview or hand trigger)
AUX+	2 (to connect and supply optional accessories such as GLX427 or GLX504)
EVENT	1 (to connect the event switch E2T2L)
Storage medium	1 SSD slot

Optional internal add-Ons

		Page
Internal Analog Inputs	A8I extension board built-in	49
WiFi	WiFi board built-in	51

Housing

Material	Side profile: Al Mg3 Cover: EN AW-6060 (AlMgSi0,5) T66 Trim strip: ABS
Dimensions (LxWxH)	212 x 290 x 80 mm
Weight	~ 3500 g

Technical data

Operating voltage	+7 V ... +50 V
Power consumption at 12 V:	Typ. 10.3 W
Current consumption at 12 V:	
• in sleep mode	< 2 mA
• in half sleep mode	Typ. 180 mA
• in operation mode	Typ. 860 mA
Operating temperature range	-40 °C ... +70 °C

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Synchronous data recording to GL5350/GL5370

Controllable and configurable via GL5350/GL5370

Intelligent filter function for reducing the data volume

Operation via menu control

Configuration of system relevant/critical connections (critical ports)

Supports 100/1000Base-T1

TCP/UDP/DLT Ethernet logging with and without VLAN

Free master/slave configuration and VLAN support

Driver assistance systems and system for autonomous driving use high resolution radar and camera sensors. These systems generate a lot of information and data which needs to be processed synchronous and in real time, in order to depict a model of reality and make the vehicle react accordingly. The safety of all road users is the top priority. This means that all those systems undergo extensive testing and driving trials during their development. For this reason data loggers are needed that are capable of processing and storing the large amount of data in a safe, precise and efficient manner.

Our new Ethernet data logger GL5450 helps to master this challenge and expands our range of solutions for logging performant automotive Ethernet interfaces.

The GL5450 can log data from up to 20 x 100 and 6 x 1000Base-T1 interfaces with a very precise time stamp resolution of 64 ns. The intelligent filter function in the GL5450 allows to block unwanted (irrelevant) or unauthorized data (telephone, GPS data ...) completely from the recording. This fulfils the requirements of the GDPR also and only the necessary data are recorded.

The GL5450 is controlled and configured via the GL5350/GL5370. The sync line is used to record the data of both devices time synchronous.

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Ethernet data logger GL5450

With GL5300 series

Technical data

Ethernet Interfaces	5 x PHY-Board slots with Ports each for up to 20 x ndependent 100BASE-T1 (OPEN Alliance BroadR-Reach) Ethernet ports or 10 x Network taps
	3 x PHY-Board slots with 2 ports each for up to 6 x independent 1000BASE-T1 (OPEN Alliance BroadR-Reach) Ethernet ports or 3 x Network taps
	2 x 1Gigabit Ethernet interfaces
AUX$^+$	1 x AUX+ In In for connecting GL5350/GL5370 with 1 high speed CAN interface
	1 x AUX$^+$Out for connecting GLX427/GLX415/GLX504
USB	1 x Mini USB connector
Time stamping resolution	64 ns
Internal memory	2 GB RAM
External memory	Up to 2 x SSDs (changeable)
Write rate	Up to 2 Gbit/s
Operating voltage	+8 V … +55 V
Current consumption at 12V: • in operation mode • In sleep mode	Typ. 2 A + 0.4 per SSD Typ. 2 mA
Power consumption bei 12 V	Typ. 33,6 W (with 2 SSDs)
Operating temperature range	-40 °C … +70 °C

Housing

Material	Side profile: Al Mg3 Cover: EN AW-6060 (AlMgSi0,5) T66 Trim strip: ABS
Dimensions (LxWxH)	212 x 290 x 80 mm
Weight	~ 3500 g

Supports CCP and XCP on CAN

Sending any, freely configurable messages

Selective recording (far reaching trigger and filter conditions programmable)

Full trace recording

Control and regulation

Rest bus simulation

Classification

Gateway

The CANlog3 provides 4 CAN buses and an AUX-CAN to connect additional peripherals such as remote control, LOGview or CANgps. CANlog3 is perfect for tasks where the measurements are not to be infl uenced from the outside (for example, the driver).

Interfaces	
CAN	4 via baby boards
RS-232	1 (for configuration and data access)
Digital I/O	2 TTL Digital I/O
LEDs	2 status LEDs 4 programmable LEDs
Optional extension boards:	• 4 DigIn, 4 DigOut • 4 DigIn, 4 DigOut, 1 LIN • 6 Analog Inputs , 1 LIN • 8 Analog Inputs , 1 DigIn/DigOut • 8 Analog Inputs , 1 LIN
Storage medium	Internal 2 MByte RAM, optional up to 128 MByte

Housing	
Material	Extruded sheath: Al Mg Si 0,5 powder-coated Die-casting cover: GD Al Si 12 powder-coated
Dimensions (LxWxH)	134 x 84 x 35 mm
Weight	~ 320 g

Technical data	
Operating voltage	+5 V … +45 V
Power consumption at 12 V	Typ. 2,6 W, max. 3,2 W
Current consumption	
• in operation mode	Dependant on the operating voltage: 75 mA (at 40 V) … 440 mA (at 6 V)
• In sleep mode with 1 WakeUp-Transceiver with 2 WakeUp-Transceiver with 3 WakeUp-Transceiver with 4 WakeUp-Transceiver	 10 … 130 µA (typ. 34 µA) 15 … 255 µA (typ. 67 µA) 20 … 380 µA (typ. 100 µA) 25 … 500 µA (typ. 135 µA)
Operating temperature range	-40 °C … +70 °C

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Additionally to the functions of the CANlog3, the CANlog4 is equipped with a storage medium exchangeable from the outside. The external flash card is available with a maximum size of 64 Mbyte and easily swappable. This means that a considerable higher readout speed is achieved, compared to CANlog3.

Supports CCP and XCP on CAN

Sending any, freely configurable messages

Selective recording (far reaching trigger and filter conditions programmable)

Full trace recording

Control and regulation

Rest bus simulation

Classification

Gateway

| Interfaces	
CAN	4 via baby boards 1 AUX-CAN for additional peripherals like remote control, Display, GPS
RS-232	1 (or configuration and data access)
Digital I/O	3 x TTL Digital I/O
USB	1 USB 1.1 (for configuration and data access), max. 12 MBit/s
LEDs	2 status LEDs 4 programmable LEDs
Optional extension boards:	• 4 DigIn, 4 DigOut • 4 DigIn, 4 DigOut, 1 LIN • 6 Analog Inputs , 1 LIN • 8 Analog Inputs , 1 DigIn/DigOut • 8 Analog Inputs , 1 LIN
Storage medium	Intern 2 MByte RAM Extern optional bis zu 64 MByte Flashcard

Housing		
Material		Extruded sheath: Al Mg Si 0,5 powder-coated Die-casting cover: GD Al Si 12 powder-coated
Dimensions (LxWxH)		150 x 140 x 35 mm
Weight		~ 500 g

Technical data	
Operating voltage	+5 V ... +45 V
Power consumption at 12 V	Typ. 3.0 W, max. 3.6 W
Current consumption	
• in operation mode	Dependant on the operating voltage: 80 mA (at 40 V) ... 520 mA (at 6 V)
• In sleep mode with 1 WakeUp-Transceiver with 2 WakeUp-Transceiver with 3 WakeUp-Transceiver with 4 WakeUp-Transceiver with 5 WakeUp-Transceiver	10 ... 130 µA (typ. 34 µA) 15 ... 255 µA (typ. 67 µA) 20 ... 380 µA (typ. 100 µA) 25 ... 500 µA (typ. 135 µA) 30 ... 620 µA (typ. 170 µA)
Operating temperature range	-40 °C ... +70 °C

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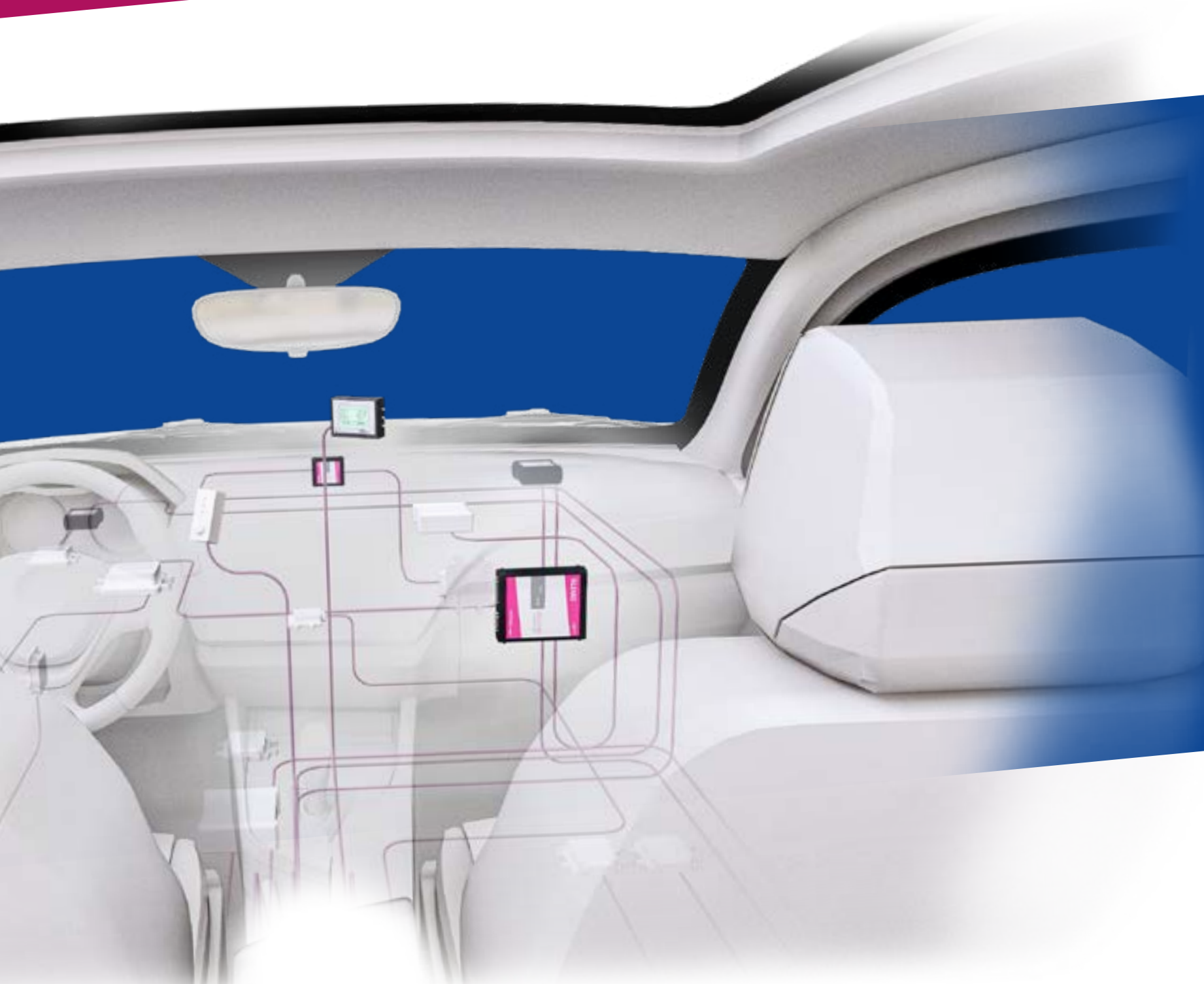
Accessories & Extensions

Powerful accessories
and expansion devices for
our GiN data loggers

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Mounting plate

GLA710

GLA618

1x DiscReader

LINprobe

GLX504

CAN-Rx-Repeater

GLX415

GLX427

LOGview

HostCAMF44

HostCAM

CANgps + GPS receiver serial

LTE Router + GLA600

CAS1T3L / CASM2T3L

VoCAN

CA4TDL / CA8DL

CANextender

WiFi card

Analog-Board A8I

Extension boards CANlog3/4

Product	Description	Page
Mounting plate	For attaching the GiN products equipped with the new GiN case system	29
GLA710	As an UPS (uninterruptible power supply) for data logger	31
GLA618	AUX+ distributor for simultaneous connection of multiple extension devices	32
1x DiscReader	Readout station for G.i.N. 2.5-inch data logger SSDs	33
LOGview	Freely configurable, operable display via the CAN bus with page switch and event triggering	34
GLX504	4 x CAN FD SIC extender	35
CAN-Rx-Repeater	4 x CAN FD receive repeater	36
GLX415	For 15 additional LIN interfaces	37
GLX427	For 12 additional CAN interfaces and up to 15 serial interfaces (RS-232 and LIN)	38
LINprobe	2 x LIN to CAN converter	39
Network camera (Host-CAM)	Recording of images and image sequences for data loggers of the GL3000/GL4000/GL5300 series and GL3400	40
Network camera (Host-CAMF44)	Recording of images and image sequences for data loggers of the GL5300 series and GL3400	41
CANgps	GPS receiver on CAN	42
GPS receiver serial	Serial GPS mouse for data loggers of the GL2000 series, GL2400 and GL3400	43
Sierra Wireless® LTE Router with GLA600	LTE router RV50X for mobile data transfer for data loggers GL2000/GL3000/GL4000/GL5300 series, GL2400 and GL3400	44
CAS1T3L	Compact monitor for the digital display of conditions via 3 LEDs as well as triggering of events via 1 button. Additional sound output	45
CASM2T3L	Triggering of events via 2 buttons. Additional sound output and a microphone for voice recording	45
VoCAN	Compact handheld device for voice recording and play back for data loggers of the GL2000/GL3000/GL4000/GL5300 series, GL2400 and GL3400	46
CA8DL	Compact monitor for the digital display of conditions via 8 LEDs	47
CA4T4DL	Compact monitor for the digital display of conditions via 4 LEDs as well as triggering of events via 4 buttons	47
CANextender	Freely configurable input/output device for CAN systems, for measuring and controlling	48
Analog board A8I	Extension board with 8 differential Analog Inputs	49
WiFi card	Extension board for WiFi connection for GL3000-/GL4000-/GL5300-Serie and GL3400	50-51
Extension boards CANlog3/4	Extension boards for CANlog3 and CANlog4	52

Housing feet of GiN devices are easy to engage and disengage

Seat belts can be inserted in any of the two middle elongated holes

Multiple attachment solutions

The mounting plate is suitable for attaching the GiN products GL53xx/GL5450/GL3400 (all products equipped with the new GiN case system).

You can easily attach a device to the mounting plate by locking the housing feet into place. Thanks to identical latching holes on the upper side of each device, multiple devices can also be stacked.

Fixing the plate to the vehicle can be accomplished in many ways: clamping bolts, ratchet straps, double-sided tape, touch fastener, seat belts or the attachment system Isofi x. This means that you can store your device in many different positions without problems.

Plate	
Material	Aluminium alloy
Dimensions (LxWxH)	255 x 360,8 x 6 mm
Weight	~ 1500 g

The mounting plate can be used in the cabin and in the trunk

Tie-down or ratchet straps can be used

Use case example with the GL5370

Important note:
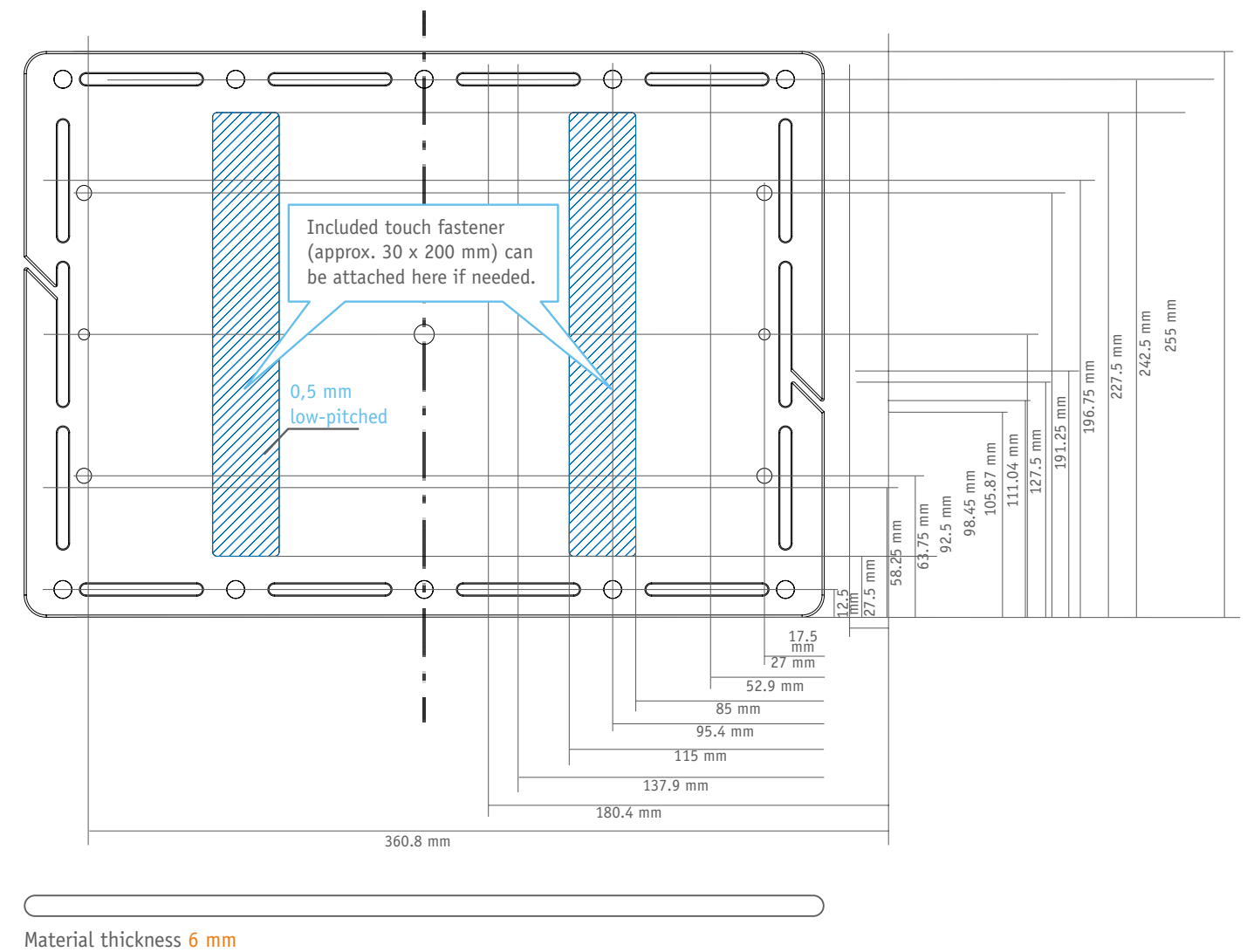The mounting plate has drill, latching and elongated holes to use as fixtures. These are specified on the drawing and can be used as orientation for potential attachment solutions. The user is responsible for using these mounting possibilities in a correct manner and to adhere to all specifications related to the application, as well as to any applicable standards.

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Mounting plate

Bottom view

10 x ø8 through-hole

2 x M6 through-hole thread

4 x M8 through-hole thread

Arrow shows correct orientation of the plate*.

Countersink for M8 M8

30.5 mm

43.5 mm

317.3 mm

2 x elongated hole 65 mm length/ 5 mm width

12 x elongated hole 55 mm length / 5 mm width

2 x 5 mm depth M4 threaded hole

Top view

Included touch fastener (approx. 30 x 200 mm) can be attached here if needed.

0,5 mm low-pitched

255 mm
242.5 mm
227.5 mm
196.75 mm
191.25 mm
127.5 mm
111.04 mm
105.87 mm
98.45 mm
92.5 mm
63.75 mm
58.25 mm
27.5 mm
12.5 mm
17.5 mm
27 mm
52.9 mm
85 mm
95.4 mm
115 mm
137.9 mm
180.4 mm
360.8 mm

Material thickness 6 mm

(*) Please note the direction of the mounting plate during the installation. The arrow shows the driving direction of the vehicle and the direction of the lock-in process of the housing feet of the attached device. An incorrect installation can lead to devices releasing from the mounting plate.

Protection of up to two data loggers

Timely protection of the ring buffer content in a power fail

High reliability

The power supply of data loggers often fails when least expected. The quality of the power supply can also fluctuate heavily. Without using a UPS, this leads to the data logger not being able to shutdown properly. Which in turn leads to loss of critical and sensitive measuring data in the ring buffer of the data logger.

GLA710, as an UPS (uninterruptible power supply), offers energy supply for G.i.N data loggers, independent from the vehicle battery, to ensure continued supply of power, saving of all recorded data and a proper shutdown of the data logger system (data logger and connected accessories) in case of a failure in the power supply system.

Not only failures but also a momentary undervoltage can be compensated with GLA710 to ensure seamless data recording.

Backup time up to 3 minutes

Tracks the data logger's sleep after 3 seconds

User friendly

Technical data	
Interfaces	1 x input for power supply
	2 x output for connecting up to two data loggers
	1 x USB connector for firmware update
Operating voltage	+6 V ... +55 V
Current consumption in standby mode	500 µA
Maximum output current	8 A
Energy content (End-Of-Life)	2300 Joule
Operating temperature range	-40 °C ... +70 °C

Housing	
Material	Side profile: Al Mg3 Cover: EN AW-6060 (AlMgSi0,5) T66 Trim strip: ABS
Dimensions (LxWxH)	212 x 290 x 80 mm
Weight	~ 2900 g

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The GLA618 is an active AUX+ distributor with 8 AUX+Out ports for simultaneous connection of multiple extension devices (e.g. GLX504 and GLX427) to one data logger (e.g. GL53xx).

AUX+Outs are secured separately for every additional device

Wakeup via extension device is transmitted by the LA618 to the data logger

Technical data	
Interfaces	8 x AUX+Out for connecting up to 8 G.i.N. extension devices
	1 x AUX+In for connecting data logger
	1 x Mini USB for updating and configuration
	1 x Relay with fuse with a maximum threshold of 10 A (at 20 V)
Operating voltage	+7 V ... +55 V
Power consumption at 12 V	Typ. 1.4 W
Current consumption at 12 V	
• in sleep mode	< 1 mA
• in operation mode	115 mA
Operating temperature range	-40 °C ... +80 °C

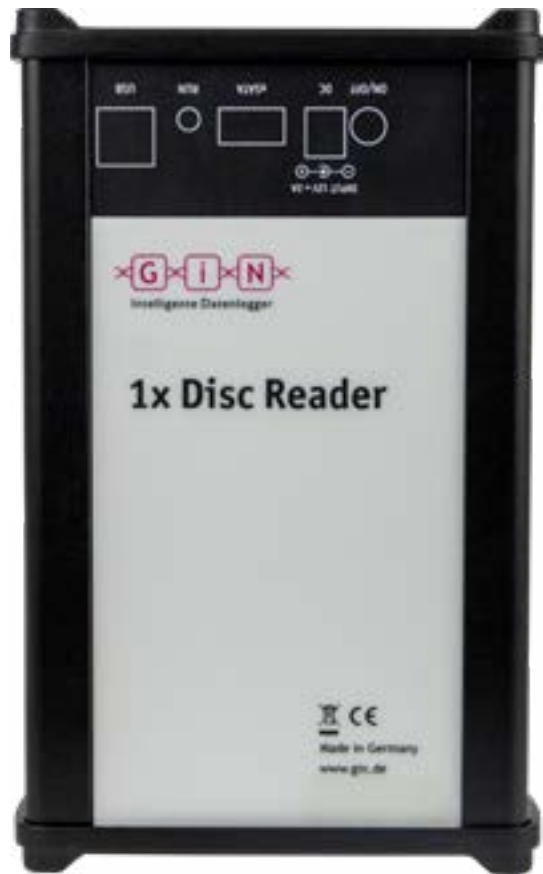| Housing	
Material	Side profile: Al Mg3 Cover: EN AW-6060 (AlMgSi0,5) T66 Trim strip: ABS
Dimensions (LxWxH)	212 x 290 x 43.7 mm
Weight	~ 2100 g

Separate Status LEDs for all AUX+Outs

Multiple extension devices can be connected offset from the data logger via the GLA618

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1x DiscReader

"1 x DiscReader" is a readout station for the G.i.N. 2.5-inch data logger SSDs. It allows a fast and convenient readout of the G.i.N. data logger SSDs with a PC/laptop via the USB 3.0 and eSATA interfaces.

USB 3.0 and eSATA interfaces enable fast data transfer

Easy and fast plug&play installation

Technical data	
Data transfer rate USB 3.0	Up to 5 Gbits/s
Data transfer rate eSATA	Up to zu 3 Gbits/s
Supply voltage	12 V ... 40 V (power supply included in delivery)
Current consumption at 12 V	Max. 2.0 A
Power consumption at 12 V	Max. 24 Watt
Operating temperature range	0 °C ... +40 °C

Housing	
Material	Casting profile: DIN EN 573 EN AW-AlMgSi Casting cover: DIN EN 1706 EN AC-AlSi 12 (Fe)
Dimensions (LxWxH)	201 x 126 x 53 mm
Weight	~ 965 g

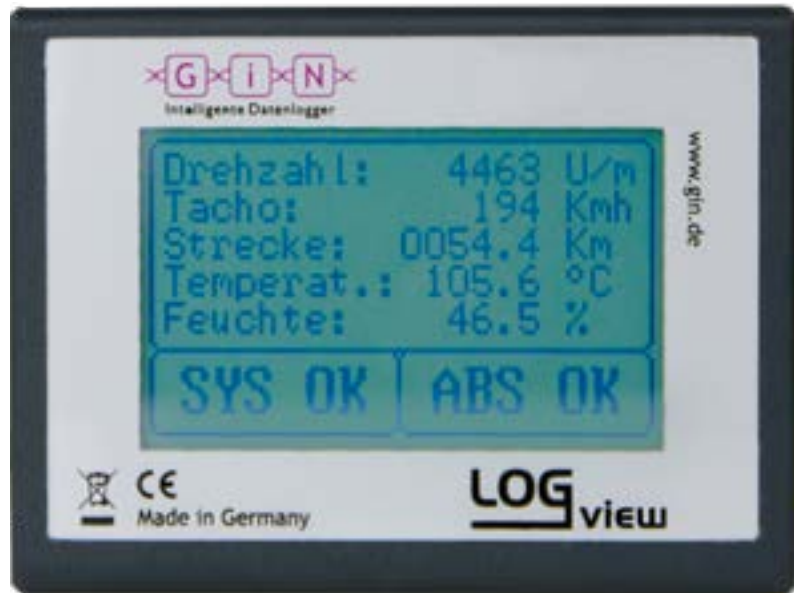| Interfaces |
|---|
| 1x USB 3.0 (compatible to USB 2.0 & 1.1) |
| 1x eSATA |
| Power supply |

Supports Windows, Mac OS X and Linux

On-off switch

Status LED

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Online data visualization during driving operation

Page switch or trigger via push buttons

Up to 16 freely programmable pages

LOGview is an intelligent display with a high-speed CAN interface. It connects to the AUX-CAN interface of the G.i.N. data loggers and powers automatically up and down, together with the logger. The LC display allows the depiction of text, alphanumerical values and simple graphics. The three push buttons allow triggering any event (page switch, manual trigger...).

LC display with 128 x 64 pixels

LED background lighting

Excellent contrast and large viewing angle

Technical data	
Display	LC Display with 128 x 64 pixels
Visible area	59 mm x 38 mm
Operation	3 freely programmable push buttons
Number of pages	16 independent, freely programmable display pages with fl ashing function
Alphanumeric functions:	2 font sizes (6 x 8 dots and 8 x 16 dots)
	Zoom function in X- and Y-direction
	Conversion of raw values into physical values (factor and offset)
Grafic functions:	Drawing lines
	Drawing rectangles (also with rounded corners)
	Drawing fi lled rectangles (also with rounded corners)
Control functionc:	Switching pages
	Flashing function on/off per page
	Deleting and filling whole pages
Operating voltage	+7 V ... +40 V (power supply via AUX-connector of the data logger)
Current consumption at 12 V	Typ. 94 mA
Operating temperature range	-30 °C ... +70 °C

Housing	
Material	Plastic housing
Dimensions (LxWxH)	89 x 66 x 28 mm
Weight	~ 120 g

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Long tap lines on a CAN FD bus can lead to interferences. The GLX504 is the solution to avoid such problems and guarantee an optimized and troublefree connection of a GL5350/GL5370 and GL3400 to an already existing CAN FD bus.

This enables you to connect the data logger offset from the CAN bus, and without any disadvantageous extension of the existing CAN FD.

Receive and send via 4 x CAN FD channels

Time-synchronous data recording to the data logger

Wakeable via CAN messages or via GL5350/GL5370/GL3400

4x CAN FD
Signal Improvement

XCP on CAN FD

Follows the sleep mode of the data logger

Configurable via GL5350/GL5370/GL3400

Technical data	
4x CAN FD channels to vehicle buses	
1x Ethernet to data logger	
1x AUX$^+$ to connect to the data logger for supply and sychronisation	
Operating voltage	+7 V … +60 V
Current consumption at 12 V	Typ. 150 mA
Sleep mode	<1 mA
Operating temperature range	-40 °C … +80 °C
Startup time	Tbd ms

Housing	
Material	Extruded sheath: Al Mg Si 0,5 powder-coated Casting cover: GD Al Si 12 powder-coated
Dimensions (LxWxH)	90 x 85 x 35 mm
Weight	~ 200 g

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CAN-Rx-Repeater

The CAN-Rx-Repeater is an accessory for data logger of GL5300 series with CAN FD and GL3400. It is used to extend the CAN FD bus from the entry point in the front of the vehicle (installation point of the CAN-Rx-Repeater) e.g. to the boot (installation point of the data logger).

This enables you to connect the data logger offset from the CAN bus, and without any disadvantageous extension of the existing CAN.

Receive data via
4 x CAN FD channels

Sleep mode with minimal current consumption

Wakeable via messages or power on

Small and robust

Needs no configuration

Technical data	
4 x CAN FD channels to data logger	
4 x CAN FD channels to vehicle buses	
Operating voltage	+7 V ... +30 V
Current consumption at 12 V	Typ. 30 mA
Sleep mode	<1 mA
Operating temperature range	-40 °C ... +70 °C
Startup time	5 ms

Housing	
Material	Extruded sheath: Al Mg Si 0,5 powder-coated Casting cover: GD Al Si 12 powder-coated
Dimensions (LxWxH)	85.3 x 80 x 25 mm
Weight	~ 130 g

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The GLX415 is an extension to the data logger series GL5300. Data can be send from up to 15 LIN interfaces to the data logger via the Ethernet connection. Those are recorded time synchronous to the logger data.

Time synchronous recording to the logger data

Follows the sleep mode of the data logger

Device can be connected offset from the data logger via the Ethernet connection

Baud rate adjustable on all channels

Technical data	
Interfaces	15 (6 fix with TJA1021 transceiver 9 x optionally fitted) 1 x Ethernet interface for connecting to the data logger Sub-D25 (female) for the 15 LIN interfaces 5-pin LEMO connector for power supply and synchronization
Operating voltage	5 V ... 30 V
Power consumption at 12 V	2.8 W
Current consumption at 12 V • in sleep mode • in operation mode	< 1mA 230 mA
Operating temperature range	-40 °C ... +70 °C

Housing	
Material	Extruded sheath: Al Mg Si 0,5 powder-coated Casting cover: GD Al Si 12 powder-coated
Dimensions (LxWxH)	181 x 137 x 35 mm
Weight	~600 g

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The GLX427 is an extension to the data loggers GL3000/GL4000/GL5300 series and GL3400. Data can be send from up to 12 CAN channels and up to 15 serial interfaces (RS-232, LIN) to the data logger via the Ethernet connection. Those are recorded time synchronous to the logger data.

CCP/XCP on CAN

Time synchronous recording to the logger data

Time synchronous recording of diagnostic data

Baud rate adjustable on all channels

Sending of messages on all CAN channels

Sending of diagnostic requests via CAN

Technical data	
Interfaces	12 x CAN interfaces with TJA1043 (high speed) CAN transceivers
	6 x LIN interfaces with TJA1021 LIN transceivers
	1 x Ethernet interface for connecting to the data logger
	9 x optional serial interfaces (can be fitted with RS-232 or LIN)
	Sub-D25 (female) for the 12 CAN interfaces
	Sub-D25 (female) for the 15 serial interfaces
	5-pin LEMO connector for power supply and synchronization
Operating voltage	+5 V ... +30 V
Power consumption at 12 V	Typ. 3.2 W
Current consumption at 2 V	
• in sleep mode	< 1 mA
• in operation mode	270 mA
Operating temperature range	-40 °C ... +70 °C

Housing	
Material	Extruded sheath: Al Mg Si 0,5 powder-coated Casting cover: GD Al Si 12 powder-coated
Dimensions (LxWxH)	181 x 137 x 35 mm
Weight	~ 620 g

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LINprobe is usable as an extension device for G.i.N. data loggers or as a gateway. It translates received LIN messages to the CAN bus, so they can be logged. More than one LINprobe can be connected to a data logger. Two LIN channels can be logged per LINprobe.

LINprobe G: acts as a stand-alone gateway between CAN and LIN

LINprobe R: can only receive LIN messages

LINprobe X: sending and receiving of LIN messages (acts, when sending, as master or slave)

1 high-speed CAN bus (10 kBit/s to 1 MBit/s)

2 independent freely adjustable LIN channels

Technical data	
Hardware versions:	
• LINprobe R	Only receives LIN messages
• LINprobe X	Transmits and receives LIN messages (can be either Master or Slave
• LINprobe G	Transmits and receives LIN messages and supports gateway functionality
LIN channels	2 x freely configurable
CAN channels	1 x High speed CAN (10 kBit/s ... 1 MBit/s)
RS-232	For configuration and firmware download
WakeUp	Supports WakeUp via CAN and LIN
Operating voltage	+8 V ... +40 V
Current consumption at 12 V	
• in operation mode	Typ. 42 mA
• in sleep mode	Typ. 0.1 mA
Operating temperature range	-40 °C ... +80 °C

Housing		
Material	Extruded sheath: Al Mg Si 0,5 powder-coated Casting cover: GD Al Si 12 powder-coated	
Dimensions (LxWxH)	85 x 70 x 25 mm	
Weight	~ 120 g	

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Network camera (HostCAM)

Mini-HDTV color camera with Ethernet output

Up to 25 fps with a resolution of 1280 x 720 pixels

Via web browser adjustable picture rate, resolution, compression, brightness, sharpness, backlight compensation, color, ...

The G.i.N. data loggers of the GL3000/GL4000/GL5300 series and GL3400 support a Mini-HDTV camera from AXIS® for connection to an Ethernet port.
The network camera (HostCAM) excels in its functional and very unobtrusive design with an offset sensor unit.

Technical data	
Camera model	AXIS® P1214-E: HDTV 720p, IP66 compliant
Sensor	1/4" progressive scan RGB CMOS
Lens	2.8 mm: 81° viewing angle
Photosensitivity	1.0 – 10000 Lux
Shutter speed	1/24500 s to 1/6 s
Resolutions	Configurable from 1280 x 720 to 320 x 180
Frame rate	Configurable, max. 25 fps
Image buffer	25 MB
Memory	256 MB RAM, 128 MB Flash
Interfaces	1 x RJ-45 for 10BASE-T/100BASE-TX PoE
	1 x RJ-12 for the camera sensor unit
	2 x terminal for power supply, 1 alarm input and 1 alarm output
Operating voltage	Power over Ethernet IEEE 802.3af Class 2 (max. 6.49 W)
	8 to 28 VDC, max. 4,7 W
Humidity	10 % ... 85 % relative, non-condensing
Operating temperature range	-20 °C ... +50 °C

Housing		
Material	Camera unit:	Full metal housing (aluminum)
	IP66 control unit:	Polycarbonate enclosure
Dimensions (LxWxH)	Camera unit: Ø 20 mm x 52 mm	
	Control unit: 104 x 76 x 35 mm	
Weight	Camera unit: ~ 250 g	
	Control unit: ~ 109 g	

Easy and flexible installation of the camera head even in places difficult to access

Offset sensor unit (camera head) withIP66 protection class

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Network camera (HostCAMF44)

Up to 25 fps per sensor unit with a resolution of 1280 x 720 Pixel

In combination with a sensor unit, the control unit offers wide dynamic range (WDR*)

Up to 4 offset sensor units

With the new Network Camera HostCAMF44 from AXIS®, the G.i.N. data logger of the GL5300 series and GL3400 now support synchronized image data recording. The robust HostCAMF44 supports up to four lens/sensor units. The control unit, together with the data logger, can be installed up to 12m away from the sensor units. Also, the small sensor units can be positioned in very cramped spaces in the vehicle.

Easy and fl exible installation of the sensor units even in places difficult to access

Via web browser adjustable frame rate, resolution, brightness, sharpness, backlight compensation, colour, ...

Technical data: control unit	
Camera modell	AXIS® F44 Dual Audio Input
Shutter speed	1/24500 s to 1/6 s
Resolutions	Configurable
	from 1920x1080 (1080p) to 480x270
	from 1280x720 to 480x270
Frame rate	Configurable, max. 25 fps
Image buffer	120 MB for all 4 sensor units
Memory	1024 MB RAM, 256 MB Flash
Interfaces	1 x RJ-45 for 10BASE-T/100BASE-TX PoE
	4 x RJ-12 for the camera sensor units
	2-pin connection block for power supply
Operating voltage	Power over Ethernet (PoE) IEEE 802.3af Type2, Class 3 (max. 12.95 W)
	8 to 28 VDC, max. 13.33 W
Humidity	10 % ... 85 % relative (non-condensing
Operating temperature range	-20 °C ... +60 °C

Housing	
Material	Metal housing (aluminium)
Dimensions	Control unit:
	121 x 121 x 51 mm (LxWxH)
	Sensor unit:
	(AXIS F1005-E): ~ 62mm ø 30mm
	Sensor unit:
	(AXIS F1035-E): ~ 69mm ø 30mm
Weight	Control unit: ~ 542 g
	Sensor unit:
	(AXIS F1005-E) ~ 366 g*
	(AXIS F1035-E) ~ 370 g*
	(*including 12 m Ethernet cable)

Technical data: sensor unit AXIS® F1005-E/AXIS® F1035-E	
Objectiv / AXIS® F1005-E	IP66 conform
	Horizontal field of view: 73°... 113°
	Vertical field of view: 41°... 62°
	Operating temperature range: -30 °C ... +55 °C
Objectiv / AXIS® F1035-E	IP66 conform
	Horizontal field of view: 112° ... 194°
	Vertical field of view: 66° ... 113°v
	Operating temperature range: -30 °C ... +55 °C

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* WDR= DThis feature is especially useful for scenes with very bright or dark spaces

It is often necessary, in addition to measuring data of vehicle buses, to determine and save the positional data of a vehicle. CANgps analyses the data of the 12 channel GPS receiver (Position in longitude and latitude, speed, date and time, altitude, direction, accuracy and other additional information) and implements it in CAN.

Translation of the GPS data to the CAN bus

12 channel GPS receiver with 1 Hz or 5 Hz repeating rate

Automatic CANdb generation

Positional data, speed, direction, azimuth, elevation angle, ...

Automotive compatible operating temperature range and protection class

Technical data	
Hardware versions:	
• CANgps 1 Hz	With a 1 Hz GPS receiver
• CANgps 5 Hz	With a 5 Hz GPS receiver
GPS	12 channel GPS receiver by Garmin®
Data	Longitude, latitude, velocity, direction, number of visible satellites, accuracy (spatial, horizontal, vertical), date and time, altitude, azimuth, ...
CAN	1 x high-speed CAN corresponding ISO/DIS 11898 up to 1 MBit/s
RS-232	For configuration and firmware download, as well as data transmission ii NMEA0183 format (38400 Bit/s)
Operating voltage	+7 V ... +42 V
Current consumption at 12 V	Typ. 80 mA
Operating temperature range	-30 °C ... +70 °C

Housing	
Material	
• Receiver	Plastic, protection class IP67
• Control unit	Plastic, protection class IP42
Dimensions	
• Receiver	Ø 61 mm
• Control unit (LxWxH)	96 x 51 x 18 mm
Weight (total)	~ 170 g

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GPS receiver serial

The serial 48 channel GPS receiver for the GL2000 series, GL2400 and GL3400 enables the additional recording of the position in longitude and latitude, speed, date and time, height, direction, accuracy and more additional information synchronous to the bus data.

Serial GPS mouse for data loggers of the GL2000 series, GL2400 and GL3400

High GPS accuracy

NMEA data standard

Easy magnet mounting

Receiver is a waterproof design

Technical data	
GPS	48 channel GPS receiver SiRF STAR IV GSD4e chipset frequency L1, 1575,42 MHz
Data format	NMEA 0183 MEA0183 V3.0
Connector	PS2, Baudrate 4800
Repeating rate	1 Hz (after settling)
Operating voltage	+4.5 V ... +6.5 V
Current consumption	Typ. 60 mA
Operating temperature range	-40 °C ... +85 °C

Housing	
Material	PVC with magnetic base
Dimensions (ØxH)	53 mm, 19.2 mm
Weight	~ 61 g

LTE router RV50X + GLA600

⊠G⊠i⊠N⊠

Intelligente Datenlogger

The compact and robust Sierra Wireless® LTE router RV50X enables, in combination with the GLA600, remote data transmission for data loggers of the GL2000/GL3000/GL4000/GL5300 series and GL3400. This means that measuring data can be transferred to a server, or new measuring configurations and firmware can be transferred to the data logger.

The RV50X is available in the variants NA&EMEA and Asia-Pacific.

Robust LTE router for the application in rough environments

Power Management controllable via GLA600

Supports up to 5 VPN tunnels

MIL-STD-810 compliant regarding temperature, mechanical shock and humidity

Ideal for use in the automotive industry

Energy-saving mode

Technical data

Frequencies variants NA&EMEA	4G LTE: 2100(B1), 1900(B2), 1800(B3), AWS(B4), 850(B5), 2600(B7), 900(B8), 700(B12), 700(B13), 800(B20), 1900(B25), 850(B26), 700(B29), TDD B41 3G HSPA/HSPA+: 2100(B1), 1900(B2), 1800(B3), AWS(B4), 850(B5), 900(B8)
Frequencies variants Asia-Pacific	4G LTE: 2100(B1), 1800(B3), 850(B5), 2600(B7), 900(B8), 850(B18), 850(B19), 1500(B21), 700(B28), TDD 38, TDD 39, TDD 40, TDD 41 3G HSPA/HSPA+: 2100(B1), 850(B5), 800(B6), 900(B8), 1700(B9), 850(B19) 3G TD-SCDMA: B39
Security	Filtering of inbound and outbound trusted IP addresses Filtering of MAC address
Operating voltage	+7 V … +36 V, combined with GLA600 max. 28 V
Current consumption during idling (at 12 V)	Typ. 75 mA
Operating temperature range	-40 °C … +70 °C

Housing

Material	Metall
Dimensions (LxWxH)	119 x 34 x 85 mm
Weight	~ 320 g
Protection	IP64 rated

Certifications

Regulations (NA&EMEA) Regulations (Asia-Pacific)	FCC, IC, PTCRB, R&TTE, GCF, CE RCM, JRF/JPA
Security	IECEE Certification Bodies Scheme (CB Scheme) UL 60950, SAE J1455 (Shock & Vibration)
Vehicle Usage	E-Mark (2009/19/EC), ISO7637-2
Environmental	RoHS, REACH, WEEE

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CAS1T3L / CASM2T3L

CAS1T3L and CASM2T3L are compact monitors for displaying digital signals and conditions via the programmable LEDs and events can be triggered by just pressing push buttons.

Additionally, the CASM2T3L can be used to document observations in audio form during the recording, which can be later matched with the events. The round design enables an installation in a cup holder.

CASM2T3L: Voice recording with date and time, and an additional programmable button

Ideal design to house it in the cup holder of a vehicle

Programmable push button

3 programmable LEDs

Acoustic signal (beeper)

Technical data	
CAS1T3L	3 programmable LEDs, red, green and yellow
	1 event push button (red)
	1 controllable acoustic signal (beeper)
CASM2T3L	3 programmable LEDs, red, green and yellow
	1 event push button (red)
	1 controllable acoustic signal (beeper)
	1 push button for audio recording
	1 microphone
Interface	1 High speed CAN
Operating voltage	+5 V (via the AUX interface of the data logger)
Current consumption	
• CAS1T3L	Typ. 120 mA
• CASM2T3L	Typ. 115 mA
Operating temperature range	-30 °C ... +60 °C

Housing	
Material	PVC
Dimensions (ØxH)	63 mm, 39 mm
Weight	~ 267 g

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The VoCAN is used to document observations in audio form, fully synchronous to the recording of bus data with the data logger. Later, it can be used to compare it with other measuring data (e.g. CAN data).

Additionally, already stored voice fi les can be played back over the speaker to freely configurable events.

High-speed CAN interface

Voice recording as a *.WAV file with timestamp synchronous to the measuring data

Play back of stored voice files

Technical data	
Operation elements	4 programmable LEDs
	1 event push button (red)
	1 microphone
	1 speaker
Interface	1 high-speed CAN bus (TJA1041, 500 kBit/s)
Operating voltage	Power supply via AUX interface of the data logger
Power consumption	Typ. 3.3 W
Operating temperature range	-20 °C ... +70 °C

Housing	
Material	PVC
Dimensions (LxWxH)	140 x 60 x 30 mm
Weight	~ 295 g

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Programmable push button

Programmable LEDs

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CA8DL and CA4T4DL are compact monitors for displaying digital signals and conditions via the programmable LEDs.

Additional functions and events can be triggered comfortably with CA4T4DL by just pressing push buttons. The high-speed CAN interface guarantees a reliable and fast communication with the data logger.

Configurable day and night modes

Configurable CAN baud rate and basis identifier

Programmable LEDs for status display

Three-colored LED indication (green/red/orange), dimmable

Triggering events via push buttons (CA4T4DL)

Technical data	
CA8DL	8 programmable, three-colored LEDs (red, green, orange), dimmable
CA4T4DL	1 event push button (red)
	3 miniature push buttons
	4 freely controllable, three-colored LEDs (red, green, orange), dimmable
Interface	1 high speed CAN bus
Terminal resistor	120 Ohm, on/off switchable via jumper
Operating voltage	+5 V … +30 V
Current consumption at 12 V	
• CA8DL	Typ. 11 mA (all LEDs off) Typ. 55 mA (all LEDs green, 100 %) Typ. 55 mA (all LEDs red, 100 %) Typ. 99 mA (all LEDs orange, 100 %)
• CA4T4DL	Typ. 10 mA (all LEDs off) Typ. 34 mA (all LEDs green, 100 %) Typ. 34 mA (all LEDs red, 100 %) Typ. 58 mA (all LEDs orange, 100 %)
Operating temperature range	-40 °C … +80 °C

Housing	
Material	ABS (acrylonitrile-butadiene-styrene)
Dimensions (LxWxH)	80 x 40 x 20 mm
Weight	~ 50 g

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Freely configurable input/output device for CAN systems

Programmed transmission of CAN messages

Usage of simple up to to complex conditions

Integration of CAN data bases (DBC)

Configuration and software update via RS232

The CANextender is a freely configurable input/output device for CAN systems to measure and control and can be used wherever analog or digital measurements are taken and needed to be transferred via CAN messages to the CAN bus.

Additionally, eight programmable switching outputs are available. The CANextender is able to auto boot and can therefore emulate control units.

Technical data	
Hardware variants:	
• CANextender AA	8 x Dig I/O 8 x differential analog inputs 8 x programmable LEDs 4 x analog outputs
• CANextender AT	8 x Dig I/O 8 x differential analog inputs 8 x programmable LEDs 2 x temperature sensor inputs for thermocouples type K (NiCr-Ni)
Interfaces	1 x high speed CAN interface (5 kBit/s ... 1 MBit/s)
	1 x serial interface (PC, up to 115.2 kBaud)
Digital inputs	0 V ... 36 V (same ground terminal like the digital outputs)
Digital outputs	Digital switching outputs: 36 V / 0.5 A (low side) Update rate 1 ... 1.5 kHz
Analog inputs	-16 V ... +16 V, resolution 12 bit (8 mV steps), accuracy ±0.1 %
Analog outputs	0 V ... +5 V, resolution 12 bit (8 mV steps), accuracy ±0.1 %, output rate 1 ... 1.5 kHz
Temperature inputs	2 thermocouples type K inputs, measurement range -200 °C ... +1220 °C, accuracy ±3 °C
Operating voltage	+8.5 V ... +18 V
Temperature coefficient of analog inputs (max. values)	Inputs (max. values) Input resistors 15 ppm/°C Amplifier offset error 3 µV/°C Amplifier gain error 10 ppm/°C ADC offset error 0 V ADC gain error 0.8 ppm/°C Reference voltage error 20 ppm/°C
Current consumption at 12 V:	Typ. 250 mA
Operating temperature range	-40 °C ... +70 °C

Housing	
Material	Extruded sheath: Al Mg Si 0,5 powder-coated Casting cover: GD Al Si 12 powder-coated
Dimensions (LxWxH)	185 x 105 x 35 mm
Weight	~ 400 g

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Plug-in board for
GL3000/GL4000/
GL5300 series and GL3400

8 differential analog inputs

Sampling rate: 1 kHz/channel

Calibration data is already stored
on the expansion board

Measuring range 0 V-18 V

The A8I is an expansion board with eight additional analog inputs for the GL3000/GL4000/GL5300 data logger series and GL3400. The board is built into the data logger, the input signals are already on the analog connector.

Technical data	
A8I plug-in board	Adds 8 differential, unipolar voltage inputs to GL3000/GL4000/GL5300 data loggers series and GL3400
Measurement range	0 V-18 V
Resolution	12 Bit
Accuracy	0.2 %
Sampling rate	1 kHz per channel
Reverse polarity protection	-50 V ... +50 V
Differential input impedance	231.8 kOhm
Input impedance to GND	115.9 kOhm
Delay after power-on to first valid value	Approx. 100 ms
Current consumption	Typ. 10 mA
Operating temperature range	-40 °C ... +70 °C

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The WiFi option for the data loggers of the GL3000/GL4000 series consists of a plug-in board and the antenna connection on the data logger housing. It meets the WiFi standards IEEE 802.11b/g/n.

Data transfer rate of
up to 65 Mbit/s

Also available as a WiFi upgrade
for the GL3000/GL4000 series

2.4 GHz frequency band

IEEE 802.11b/g/n

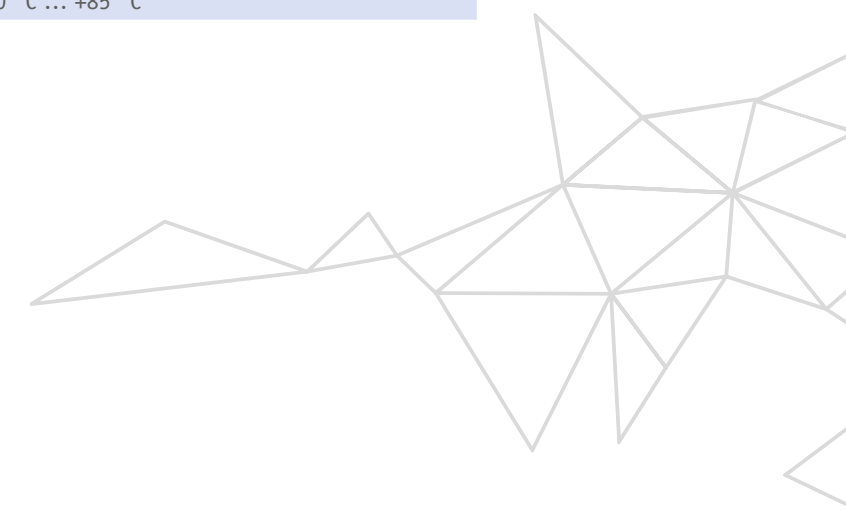Expanded temperature range
from -40 °C to +85 °C

Technical data	
WiFi plug-in board	For GL3000/GL4000 series
• Standards	IEEE 802.11b/g/n
• Frequency	2.4 GHz
Transmitting power	
• IEEE802.11b	Typ. +20 dBm
• IEEE802.11g	Typ. +14.5 dBm
• IEEE802.11n	Typ. +12.5 dBm
Sensitivity	
• IEEE802.11b	@ 1 MBit/s typ. -97 dBm @11 MBit/s typ. -89 dBm
• IEEE802.11g	@ 9 MBit/s typ. -90 dBm @54 MBit/s typ. -76 dBm
• IEEE802.11n	@6.5 MBit/s typ. -91 dBm @65 MBit/s typ. -73 dBm
Data transfer rate	1 ... 65 MBit/s
• IEEE802.11b	1 ... 11 MBit/s
• IEEE802.11g	9 ... 54 MBit/s
• IEEE802.11n	6.5 ... 65 MBit/s
Security	WEP 64/128 Bit-Key, WPA (TKIP, AES), WPA2
Current consumption	Typ. 300 mA
Operating temperature range	-40 °C ... +85 °C

The WiFi option for the data loggers of the GL5300 series and GL3400 consists of a plug-in board and the reverse SMA antenna connection on the data logger housing. It meets the WiFi standards IEEE 802.11a/b/g/n/ac.

Data transfer rate of
up to 175,5 Mbit/s

Also available as a WiFi upgrade
for the GL5300 series and GL3400

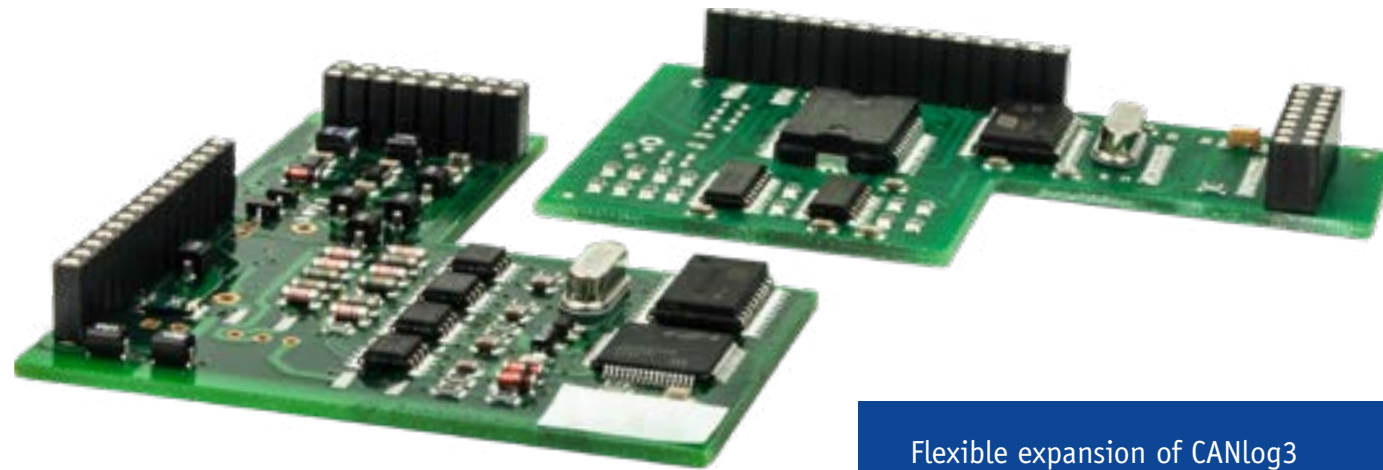2.4 / 5.5 GHz frequency band

IEEE 802.11a/b/g/n/ac

Expanded temperature range
from -40 °C to +85 °C

Technical data	
WiFi plug-in board	For GL5300 series and GL3400
• Standards	IEEE 802.11a/b/g/n/ac
• Frequency	2.4 / 5.5 GHz
Transmitting power	
• IEEE802.11b	+16 dBm, 11 Mbps, CCK (b)
• IEEE802.11g	+13 dBm, 54 Mbps, OFDM (g)
• IEEE802.11n	+11 dBm, HT20 MCS7 (n)
Receive sensitivity	
	-87 dBm, 8% PER,11 Mbps (b)
	-73 dBm, 10% PER, 54 Mbps (g)
	-71 dBm, 10% PER, MCS7 (n)
Data transfer rate	1 ... 175.5 MBit/s
• IEEE802.11a	6 ... 54 MBit/s
• IEEE802.11b	1 ... 11 MBit/s
• IEEE802.11g	6 ... 54 MBit/s
• IEEE802.11n	6.5 ... 65 MBit/s (2.4 GHz)
• IEEE802.11n	180/234 ... 180/390 MBit/s (5 GHz)
• IEEE802.11a/c	6.5 ... 81/175.5 MBit/s
Security	WEP, WPA, WPA2, WMM, WMM-PS (U-APSD), WMM-SA, WAPI, AES, TKIP, CKIP
Current consumption	Typ. 350 mA
Operating temperature range	-40 °C ... +85 °C

As extensions for the CANlog3 and CANlog4 G.i.N. offers various expansion boards as an installation solution. These boards can be retroactively installed or replaced to adapt the data logger to its various applications.

Flexible expansion of CANlog3 and CANlog4

K-Line

LIN bus

Digital inputs

Digital outputs

Analog inputs

| Extension boards for CANlog 3 and CANlog4		
Type	Description	Technical data
D4I4O	4 digital inputs 4 digital outputs (power switching outputs)	Digital inputs: • Voltage range: 0 V … 45 V • Impedance: 68 kOhm … 136 kOhm • Treshold low -> high: 3.6 V • Treshold high -> low: 3.1 V Power switching outputs (low-side): • Voltage range: 5 V … 45 V • Current: 0.5 A
A8ID1	8 analog inputs (2 x differential, 6 x single-ended) 1 TTL digital I/0	Measurement range: 0 V … 18 V Resolution: 12 Bit Accuracy: 0.2 % +/-1 Bit Sample rate: total sampling rate 2 kHz
A6I	6 analog inputs: • 2 x differential unipolar • 2 x differential bipolar • 2 x single-ended	Measurement range: 0 V … 18 V / -18 V … +18 V Resolution: 12 Bit Accuracy: 0.2 % +/-1 Bit Sample rate: total sampling rate 2 kHz
K-Line adapter	Optionally, the expansion boards D4I4O, A8ID1 and A6I can be provided with an additional K-Line interface	D4I4OK A8ID1K A6IK
LIN adapter	Optionally, the expansion boards D4I4O, A8ID1 and A6I can be provided with an additional LIN interface	D4I4OL A8ID1L A6IL

PC-Tools

Intelligently and comfortable configure, readout and manage data

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GiNconf

The G.i.N. configuration program (GiNconf) is a user interface for configuring and reading out of all G.i.N. data loggers.

The program offers extensive setting options thanks to LTL (Log Task Language). You can solve complex tasks with the help of custom configurations. This user friendly as well as powerful tool allows the user to plan any individual requirements and comfortably realise your data logger measuring projects.

GiNconf allows you to keep an eye on everything. You can readout your successfully recorded measuring data and convert it to a format of your choice for further analysis.
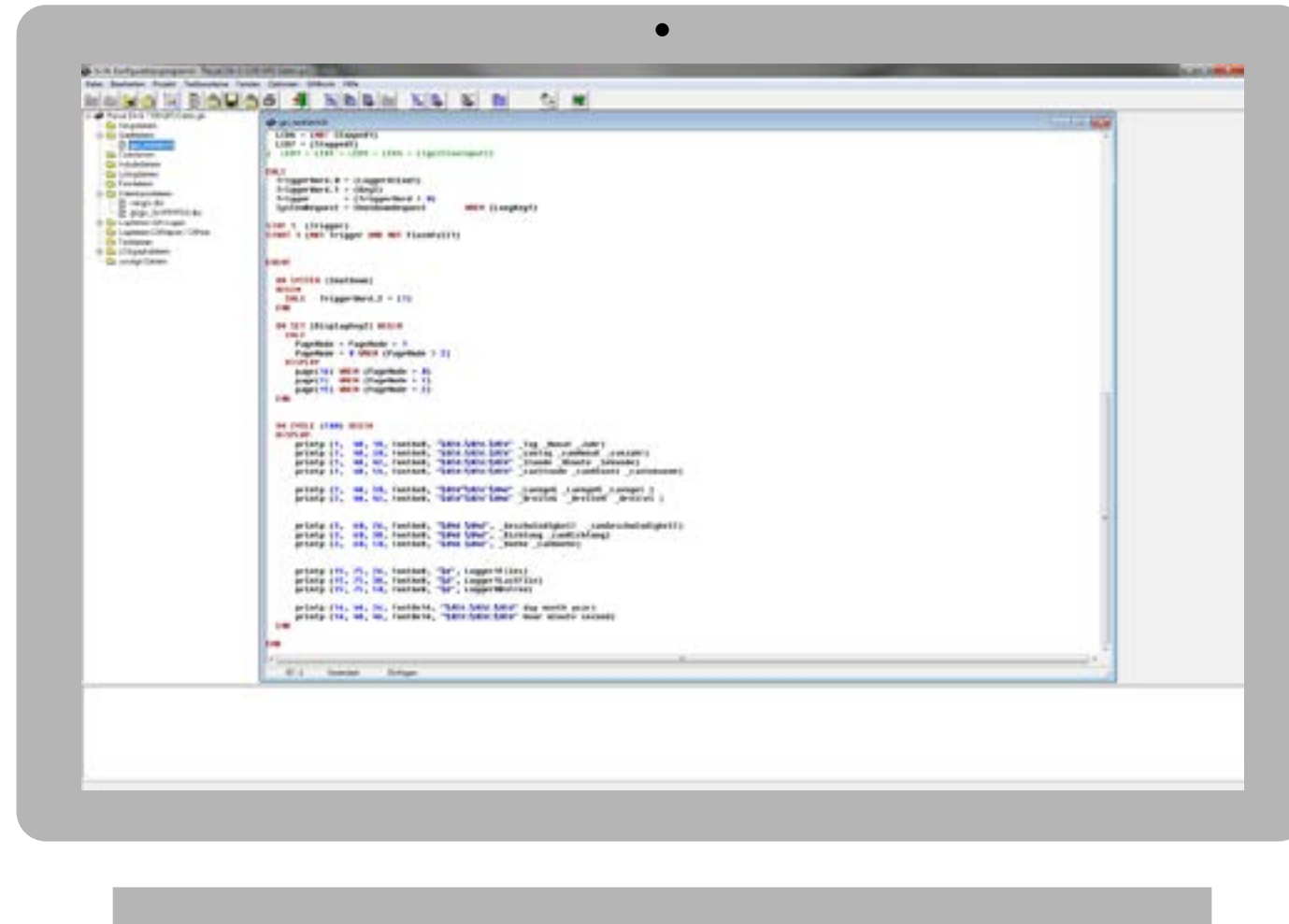
Read-out of configurations, measuring values and classifications from the devices, as well as data conversion in standard measurement data formats

Editing of configurations, as well as include and setup files

Project and file management

Conversion of database files

Compiling of configurations

Downloading of the operating program and the COD file into the device

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Visual LTL

Visual LTL (VLTL) is a graphical development environment to easily and comfortably configure the data loggers.

This environment contains a set of graphical objects which are connected by lines, to show their relation to each other, and are used for developing and creating new objects. Standard objects as well as new ones can be saved in libraries and protected by passwords. This environment additionally offers effortless reusability of already created objects and libraries in new configurations.

One click is all that is needed to compile the configuration to the G.i.N. data logger programming language LTL and transfer it to the data logger.
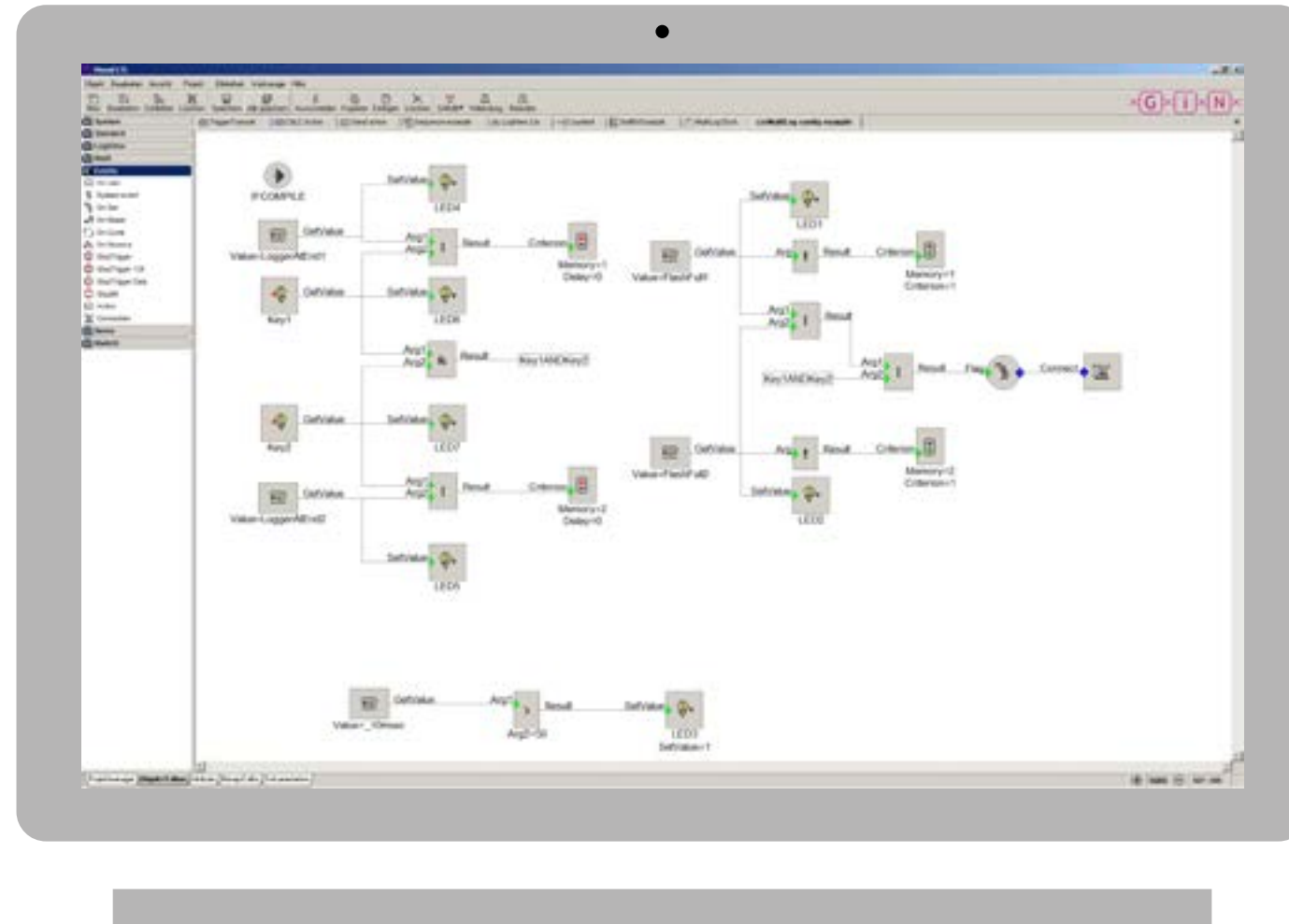
Project manager to create and edit device specific system settings

Menu and tool bar to create and edit libraries and objects

Schema editor for the structure of user objects

Editor for the adjustment of object properties

Document editor for the documentation of objects

Browser for access to the libraries and objects

Bitmap editor to freely create icons for every objects

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MLtools is included with the GL2000-/ GL3000-/GL4000-/GL5300 series and with GL3400 and GL5450. It enables you to read out data from the connected data logger via USB, card reader, SSD readout station or server, as well as save it in a data logger directory structure.

MLtools makes it possible to provide a new measuring configuration in the respective data logger directory for the next read out process and automatically transfer it to the data logger.

Optionally, the software package MLcenter (vehicle management software) is also available which offers an already integrated MLmonitor and a synchronisation service.

Generate and manage vehicles

Defining of the vehicle specific data post processing (data conversion)

Integration of additional data processing programs

Configuration of network settings as well as long-distance data transmission

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LogGraph

LogGraph is a convenient utility for displaying, organising and efficiently assessing recorded measurement data. This tool makes it easy to correlate measurement data, signals, positions and audio-visual descriptions. It is typically used to evaluate signals for vehicle speed, engine speed, and the vehicle electrical system voltage.
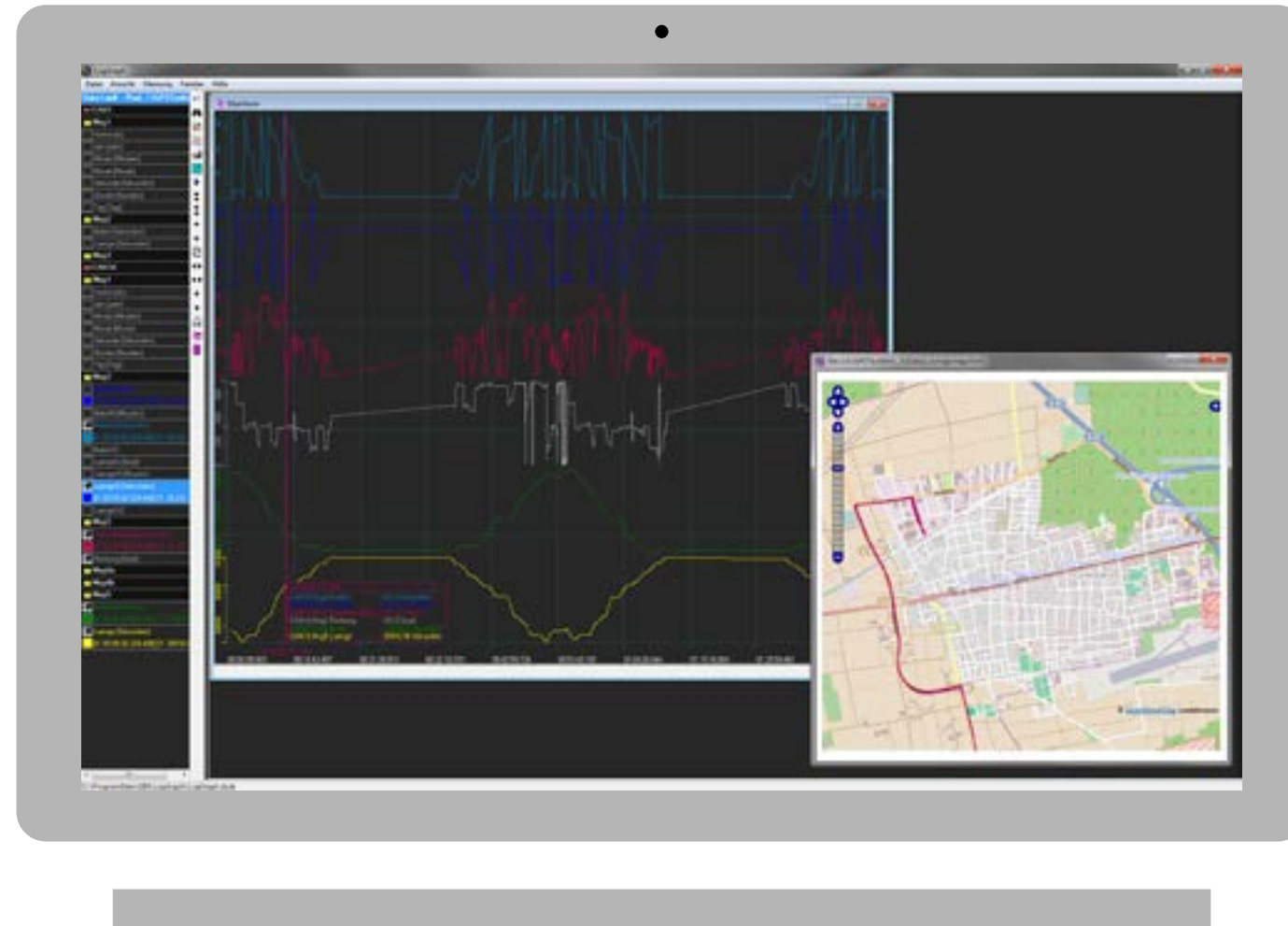
Display of arbitrary signals as graph (e.g. speed)

Adjustment of the graphical style of the data display

Setting of the scales of time and values for each signal

Measuring of the value and the time at a specific point

Creation of a report on the basis of the log file and the printing of the report

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