ASPION ■ G-Log

ASPION ■ G-Log

ASPION ■ G-Log 2

Monitoring shocks and climate during transport

Wireless. Inexpensive. Long lasting.

User manual

for the ASPION G-Log product family

Find updates, FAQs and more useful information online in our ASPION customer portal at www.aspion.de

Software Bundesverband IT-Mittelstand Made in Germany 100% Service Qualität Zukunft

MM MaschinenMarkt PRODUKTE DES JAHRES 2016 TOP 15 PRODUKTE

ASPION

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Contents

ASPION G-Log shock sensors

0. General description

With the ASPION G-Log shock sensor, you can record shocks, vibrations and climate data. It offers a 3-axes accelerometer and, depending on the product variant, an integrated temperature and humidity sensor. The following table shows you the available software versions and variants. You can reuse the sensor a number of times and for different transports.

Using the ASPION G-Log Manager computer software, you can define thresholds and operate the sensor. When reading out data from the sensor, the software displays the measured values. Data is transferred wirelessly to and from the sensor using Near Field Communication (NFC) technology and a card reader which is connected via a USB interface to the computer. To easily read out a sensor, you can use the additional ASPION G-Log Apps for smartphones free of charge; ASPION G-Log 2 can additionally be read out via Bluetooth (BLE). Data is easily sent from the App via e-mail or automatically (ASPION G-Log Premium). The ASPION G-Log Manager computer software then quickly analyses and further processes your data.

Each sensor has a unique ID which can be found on the label and in the QR code or in the barcode.

The solution contains the following components:

ASPION G-Log shock sensor
in different variants

USB card reader

ASPION G-Log Manager
PC software on USB stick

PC software ASPION G-Log Manager for Windows 7 and later

App for Android and iOS smartphones

1. Variants

The following table lists the available variants of ASPION G-Log sensors. It lists the essential characteristics and differences. The ASPION G-Log Manager computer software as well as the apps can be used for all sensor variants.

Characteristic	ASPION G-Log	ASPION G-Log Waterproof*	ASPION G-Log 2
			
Accelerometer	☑	☑	☑
Temperature sensor	☑	☑	☑
Humidity sensor (rel. humidity)	–	–	☑
Circular buffer for events (shock, climate data)	286	286	950
Shock events with details (9 shocks)	☑	☑	☑
Wireless data transfer via NFC (Near Field Communication)	☑	☑	☑
Wireless data transfer with BLE (Bluetooth Low Energy)	–	–	☑
ABS housing with protection	IP 50	IP 65/67	IP 50
Battery	Replaceable by manufacturer	Not replaceable	Replaceable by user

* ASPION G-Log Waterproof is the waterproof variant of ASPION G-Log.

The following descriptions apply to all ASPION G-Log sensors. Important differences or sections referring to the ASPION G-Log 2 variant are explicitly described and marked in blue font.

2. Export information

The following export information applies to all ASPION G-Log sensors and variants.

Export information	Product tariff code	▪ 9031 8080
	Country of origin	▪ DE (EU)
	Data regarding legal control	▪ AI = no, ECCN = no

3. Technical specifications

3.1 ASPION G-Log and ASPION G-Log Waterproof

	Description	Details
Accelerometer	3 axes: x, y and z up to ±24 g per axis Measuring frequency	▪ Up to ±16 g, 2.5% accuracy Extendable up to ±24 g with 3.5% accuracy, verified by a testing facility ▪ 0.2 g resolution ▪ Adjustable threshold from 2 g to 12 g ▪ Between 25 Hz and 1,600 Hz
Temperature sensor	Calibrated internally, by manufacturer	▪ -30°C ... +60°C with accuracy of ± 2°C ▪ 1°C resolution ▪ Lower and upper threshold freely definable
Memory/logging	Non-volatile memory Event triggered	▪ Capacity: 286 events in circular buffers ▪ Saves first and 8 highest peak events with details permanently
Data transfer and analysis	Wireless via NFC with PC software and App	▪ Data is transferred to sensor via NFC and can then be analyzed ▪ Configuration and analysis with PC software and NFC-enabled reading devices
Near Field Communication (NFC)	NFC Tag (Type 4)	▪ ISO/IEC 14443B compatible ▪ 13.56 MHz RF interface
Battery	CR2032 3V Lithium 225 mAh replaceable by manufacturer (does not apply to Waterproof version)	▪ Battery life depends on data rate; up to 1.5 years; e.g. 1 year for 100 Hz; battery life may be shorter for lower temperatures ▪ Battery power level at delivery: full ▪ Battery consumption when not active: 5% per year for indicated storage conditions ▪ No declaration required
Operating conditions	Temperature range Storage	▪ -30°C ... +60°C ▪ 5°C … +40°C, humidity: max. 85%
Housing and mounting	ABS housing; Screw mounting M3 ISO 7380 FL; optional: fixing with industrial adhesive tape	▪ Dimensions: 88 mm x 45 mm x 16 mm ▪ Distance of mounting holes: 80 mm ▪ Maximum tightening torque: 0.4 - 0.5 Nm
Variants	Standard, IP 50 protection Waterproof, IP 65/67 protection	▪ Weight: approx. 35 g ▪ Penetration of fluids is to be prevented (Corrosion damage/short circuit) ▪ Weight: approx. 50 g, dustproof and waterproof
Approvals/Standards	EC - Declaration of Conformity (CE marking)	▪ RED Directive 2014/53/EU ▪ ROHS Directive 2011/65/EU and WEEE

3.2 ASPION G-Log 2

	Description	Details
Accelerometer	3 axes: x, y and z up to ±24 g per axis Measuring frequency	▪ Up to ±16 g, 2.5% accuracy Extendable up to ±24 g with 3.5% accuracy, verified by a testing facility ▪ 0.2 g resolution ▪ Adjustable threshold from 2 g to 12 g ▪ Between 25 Hz and 1,600 Hz
Temperature sensor	Calibrated by manufacturer	▪ -40°C to +85°C, with 0.2°C accuracy ▪ 1°C resolution ▪ Lower and upper threshold freely definable
Humidity sensor	Calibrated by manufacturer	▪ 0% rH … 100% rH, non-condensing ▪ 3% rH accuracy; 0.1% rH resolution ▪ Definable threshold
Memory/logging	Non-volatile memory Event and interval triggered	▪ Capacity: 950 events in circular buffers ▪ Shock details, permanently recorded with first and 8 highest peak events
Data transfer and analysis	Wireless via NFC with PC software and App	▪ Data transfer via NFC ▪ Configuration and analysis with PC software and NFC-enabled reading devices
Near Field Communication (NFC)	NFC Tag (Type 4)	▪ ISO/IEC 14443B compatible ▪ 13.56 MHz RF interface
BLE for data transfer	Bluetooth Low Energy to read out data via the App	▪ Max. 10 meter range (in line-of-sight) ▪ Min. Bluetooth 4.0 specification ▪ Bluetooth Declaration ID: D047584
Battery	CR2032 3V Lithium 225 mAh replaceable, recommended manufacturer: Panasonic	▪ Battery life depends on data rate, up to 1.5 years, e.g. 1 year for 100 Hz; battery life may be shorter for lower temperatures ▪ Battery power level at delivery: full ▪ Battery consumption when not active: 5% per year for indicated storage conditions ▪ No declaration required
Operating conditions	Temperature range Storage temperature range Humidity range	▪ -30°C ... +60°C ▪ 5°C … +40°C ▪ 0% rH … 100% rH, non-condensing
Housing and mounting	ABS housing; screw mounting M3 ISO 7380 FL; or industrial adhesive tape	▪ Dimensions: 88 mm x 45 mm x 16 mm ▪ Distance of mounting holes: 80 mm ▪ Maximum tightening torque: 0.4 - 0.5 Nm
Version	IP 50 protection	▪ Sensor protection through membrane ▪ Weight: approx. 35 g ▪ Penetration of fluids is to be prevented (Corrosion damage/short circuit)

Approvals/Standards	EC Declaration of Conformity (CE marking)	▪ RED Directive 2014/53/EU ▪ ROHS Directive 2011/65/EU and WEEE ▪ REACH Directive 2009/1907/EU
	FCC Applicable Standard	▪ FCC CFR Title 47 Part 15 Subpart B ▪ Contains FCC ID: SQGBL652
	IC (Canada)	▪ ICES-003 Contains IC: 3147A-BL652
	SRRC (China)	▪ CMIIT ID: 2019DJ6772

4. Conformity declarations

Please go to our customer portal to download the conformity declarations for the ASPION shock sensors: www.aspion.de. Please find more explanations according to the regulations in the following paragraphs.

FCC / ISED Regulatory Statements:

This chapter contains the required regulatory notices.

This product contains:

FCC ID: SQGBL652.	This ID is printed on the front label of the product.
IC ID: 3147A-BL652.	This ID is printed on the front label of the product.

FCC / ISED compliance statement

This device complies with Part 15 of the FCC Rules and Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

FCC / ISED Caution Statement for Modifications:

Aspion has not approved any changes or modifications to this device by the user. Any changes or modifications could void the user's authority to operate the equipment.

Aspion n'approuve aucune modification apportée à l'appareil par l'utilisateur, quelle qu'en soit la nature. Tout changement ou modification peuvent annuler le droit d'utilisation de l'appareil par l'utilisateur.

FCC / ISED Wireless notice

This device complies with FCC/ISED radiation exposure limits set forth for an uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines and RSS-102 of the ISED radio frequency (RF) Exposure rules. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Le présent appareil est conforme à l'exposition aux radiations FCC / ISED définies pour un environnement non contrôlé et répond aux directives d'exposition de la fréquence de la FCC radiofréquence (RF) et RSS-102 de la fréquence radio (RF) ISED règles d'exposition. L'émetteur ne doit pas être colocalisé ni fonctionner conjointement avec à autre antenne ou autre émetteur.

FCC Information for a Class A (industrial use) digital device

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

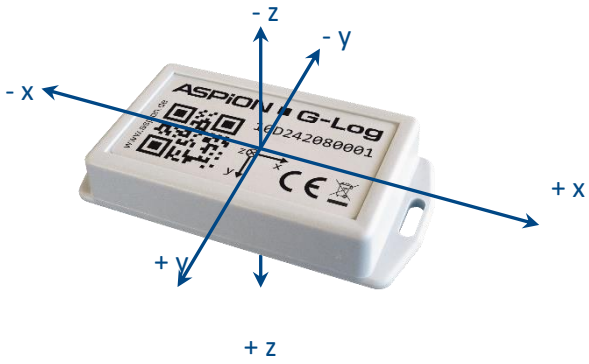
Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

FCC Mobile Device RF Exposure Statement

This device is only authorized for use in a mobile application. At least 20 cm of separation distance between the (Product Name) device and the user's body must be maintained at all times.

5. Mounting

5.1 Mounting orientation



To correctly assign the axes in case of shock events, the mounting orientation is critical.

Recommended mounting

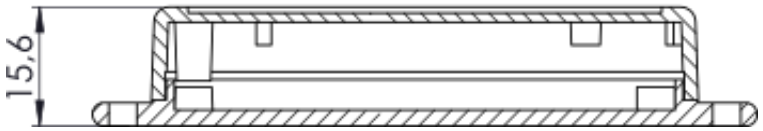
- On steel: M3 ISO 7380 FL
- On wood/sheet metal: flathead screws with a maximum thread diameter of 3.5 mm (e.g. DIN 7981)
- Maximum tightening torque: 0.4 - 0.5 Nm

Alternatively, you can use industrial adhesive tape (e.g. 3M) for fixing.

When mounting the ASPION G-Log 2, make sure that you do not damage the lateral membrane used to protect the humidity sensor from splashing water.

5.2 Housing dimensions and mounting template

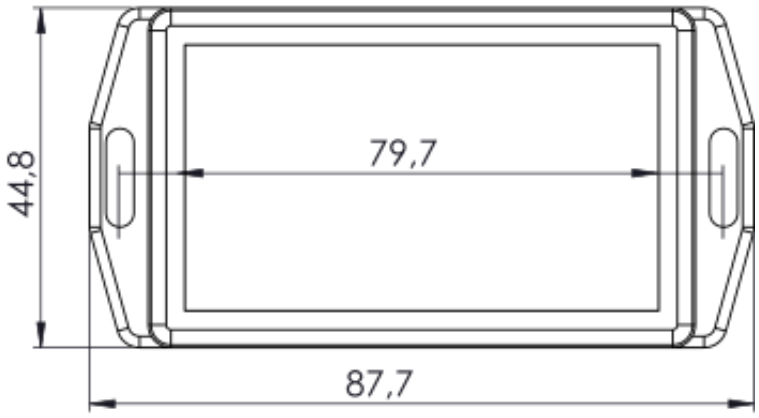
Housing cross section



Dimensions in millimeters

Housing dimensions

To easily mount the sensor, copy this mounting template (scale: 1:1).



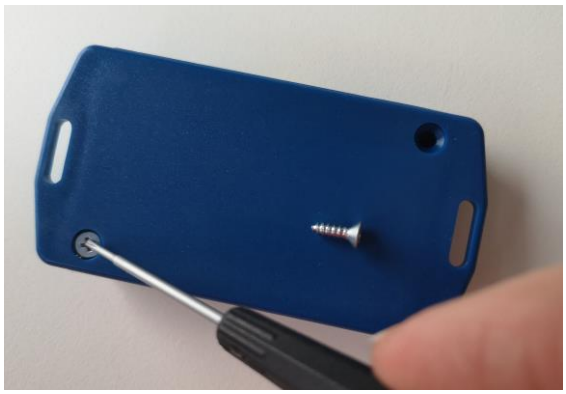
Dimensions in millimeters

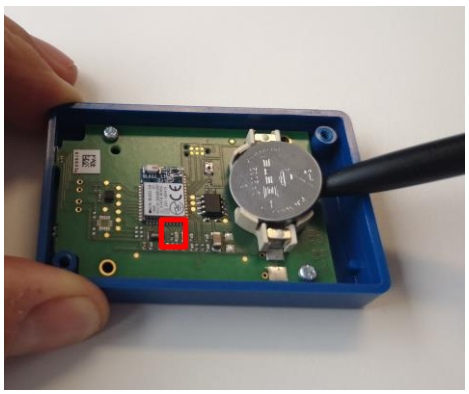
6. Battery replacement for ASPION G-Log 2

As soon as the battery of the ASPION G-Log 2 is exhausted, the sensor can no longer be read out. But all recorded data is stored in memory. To read the data and use the sensor again, replace the battery. Replace the battery only on a clean, dry and non-conductive work surface. How to:

1. Open the housing by unscrewing the two screws on the bottom of the housing with a screwdriver.
2. Remove the battery using a blunt, non-metallic object (e.g. a pencil or plastic pen) from the holder on the side of the housing edge. Avoid contact with electronic devices.
3. Place a new battery of type CR2032, 3V / 220 mAh in the holder, we recommend the manufacturer Panasonic. Please note the polarity: the + side of the battery (label) is on top. When inserting the battery, the two LEDs marked in the picture light up briefly. Screw down the housing again.
4. Wait 10 seconds before reading the sensor and check the battery capacity.

Please note: The sensor keeps its previously set state during the battery exchange and adopts this state after the battery has been replaced. As soon as the battery is empty, the internal timer also stops.





Short flashing of LEDs when inserting the battery

Tips for battery replacement

Replace weak battery while sensor is active.
If you replace a low battery of a sensor in an activated, running state, proceed quickly to avoid an excessive time delay. The internal timer stops if no battery is inserted and continues to run from the time the new battery is inserted.

Restoring the current time
As soon as the battery of a sensor is exhausted, the internal clock stops. You can reset the time after battery replacement by reactivating it. If you do not immediately reinsert the sensor afterwards, we recommend to stop the sensor. This significantly reduces battery consumption compared to a sensor in the activated state.

7. Disposal

To comply with the European WEEE directive, no ASPION G-Log shock sensor must be disposed of together with domestic waste. Please take the sensor to a municipal e-waste recycling center or send it back to your supplier.

8. Card reader (NFC)

To operate the ASPION G-Log shock sensor, you require an Identiv uTrust 3700 F card reader with NFC technology. You find a description on how to install this card reader in this user manual.

9. Security notes

- The ASPION G-Log shock sensors are not designed for safety-relevant applications.
- A sensor which is visibly damaged must not be operated. Please return sensors which do not operate correctly or are damaged to your provider.
- Prevent fluids from penetrating the device, as they may cause corrosion damage or short circuit. The ASPION G-Log 2 is protected by a membrane at the lateral opening.
- You must not open or modify the ASPION G-Log, or replace the battery itself of the ASPION G-Log. The battery can be replaced by the manufacturer (this does not apply to the Waterproof variant). The battery of the ASPION G-Log 2 can be replaced by the user. When replacing the battery, be careful not to cause short circuits and follow the instructions.
- Never use a sensor with leaking battery. Do avoid touching this sensor with your bare hands. If you had contact to leaking fluids, thoroughly wash your hands. Make sure to remove the remaining electrolyte using a damp cloth. Wash contaminated clothing that has come into contact with the electrolyte.
- The manufacturer does not assume any liability for damages which were caused due to inappropriate use or wrong operation.
- All sensors fulfill the safety requirements of IEC 62368-1:2014.

ASPION G-Log Manager – PC software

1. System requirements

Please note the following system requirements for your PC system:

- Windows operating system Version 7, 8.x or 10
- Monitor with at least 1600 pixels horizontal resolution
- .NET Framework V4.8 or later
- USB connectivity for Identiv uTrust 3700 F card reader

2. Installation

The required files and programs to set up the software are stored on the ASPION USB stick. Connect it to your USB slot. For the latest software versions and updates, additional product information and FAQs, please go to our **internal ASPION customer portal, at www.aspion.de**

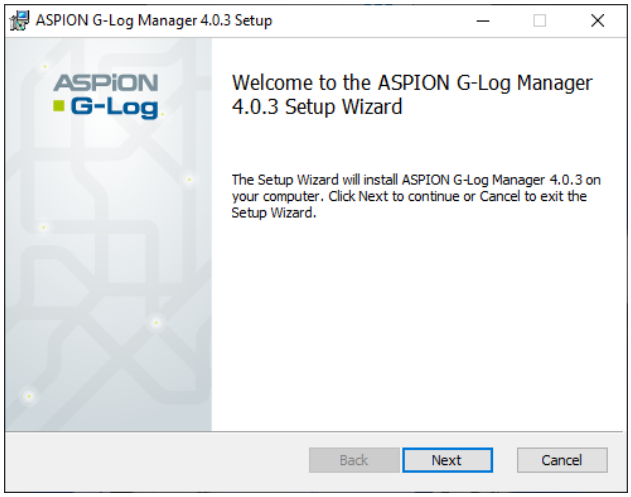
Please note: You require administrator rights to install the software. Please contact your IT if necessary.

2.1 Getting ready for installation: .NET framework and card reader

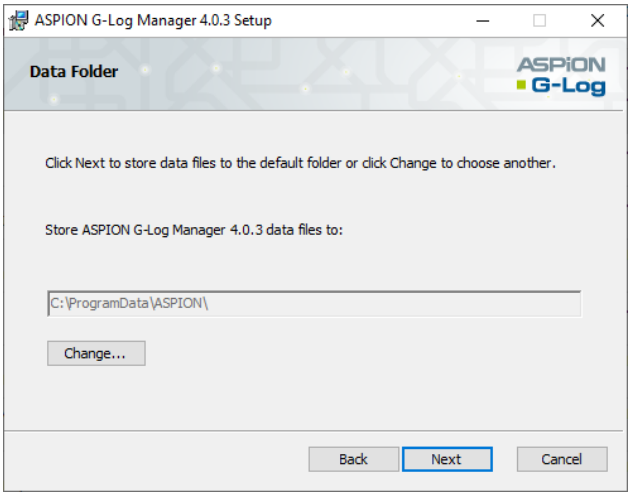
- If the .NET framework is not set up on your computer, you must first install it:
  Double-click the dotNET Framework\ndp48-x86-x64-allos-enu.exe file to execute it
- Install the driver for the Identiv uTrust 3700 F card reader:
  Double click the Smart Card Reader\Identiv uTrust V1.19.exe file to execute it. Connect then the card reader to the USB interface. Attention: Do not place the card reader on a metallic surface (e.g. PC).

2.2 Installing the ASPION G-Log Manager PC software

- Installing ASPION G-Log Manager:
  Double click the ASPION_G-Log_Manager_Installer.msi file to execute it.
- Depending on the operating system language, the program is automatically installed in English, German or Chinese. You can make language changes via the configuration program
  (→ see Configuration program).
- The Setup Wizard opens. Please follow the steps of the wizard.



Starting the setup wizard.



Select a local data directory to which you have write rights.

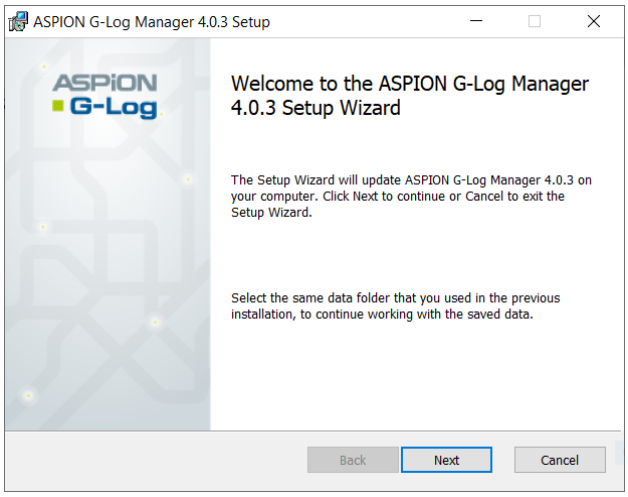
Please note: To enable shared access for several users to profile and usage data, and also analyses, you use one shared network drive for program data (→ see Configuration program).

After you have successfully installed the software, ASPION G-Log Manager is displayed as link on your desktop. Start the program with a double click. The program automatically starts with the **Write sensor** function.

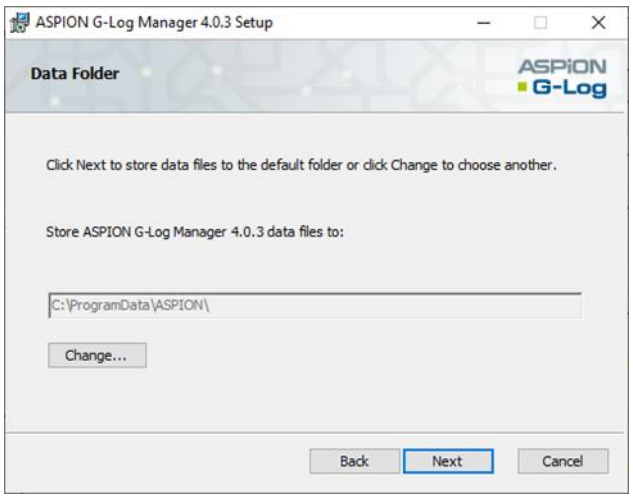
2.3 Installing updates

To install an update, follow the same steps as when installing the software for the first time, see ASPION G-Log Manager – PC software, chapter 2.2, “Installing the ASPION G-Log Manager PC software“. The update software automatically recognizes previously installed versions.

You can still work with data you have saved before, for example, saved profiles or analyses. Just select the same storage location for your data that you have used before. You can also change the storage location via the configuration tool, see Configuration program, chapter 2, "Installation in the network". In that way, you can access all previously created data after an update has been made.



Starting the setup wizard for updates.



During update, select the same directory to store data. In this way, all previously stored data will be available to you.

2.4 Deinstalling the software

You can deinstall the software following the instructions of your operating system. Data, however, is not deleted, so it is still available if you install the program again. To permanently delete data, you must delete the respective data folder, see ASPION G-Log Manager – PC software, chapter 2.2, “Installing the ASPION G-Log Manager PC software“.

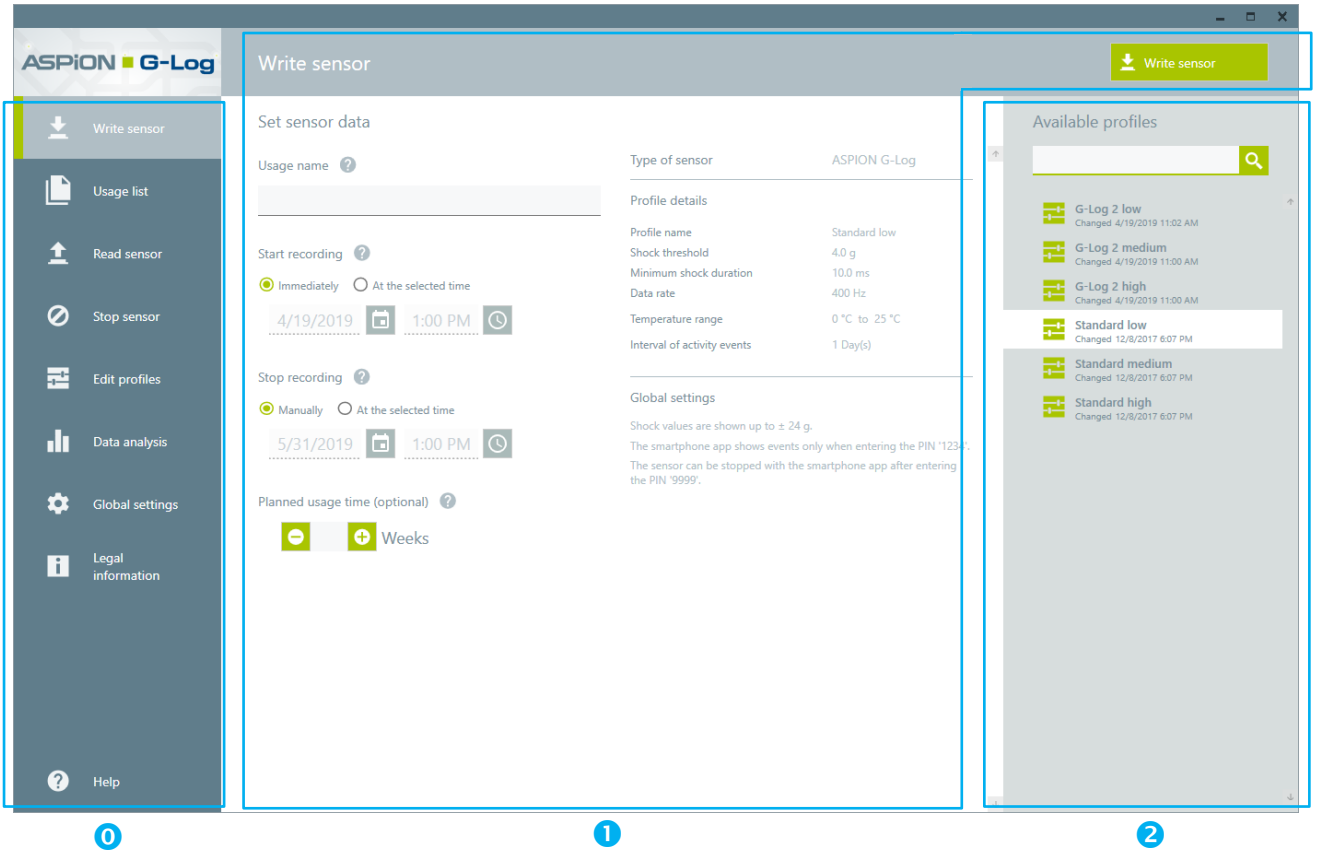
2.5 Information about product version

To find out which software version of the ASPION G-Log Manager you are currently deploying, please click on **Legal information** in the left pane.

3. Before getting started

3.1 General overview of the user interface

The ASPION G-Log Manager always starts with the **Write sensor** function. The software user interface is organized in three areas:



Functions | Content area and associated function buttons | List area

- Depending on the function you have selected, the content area and the list area change. This especially applies to the selected sensor types.
- When calling a function, the corresponding first entry of the list area is automatically marked.
- The entries in the list area are sorted by date: the entry with the latest date (e.g. created on, changed on, read on) appears at the top.

3.2 Important: Setting the sensor types

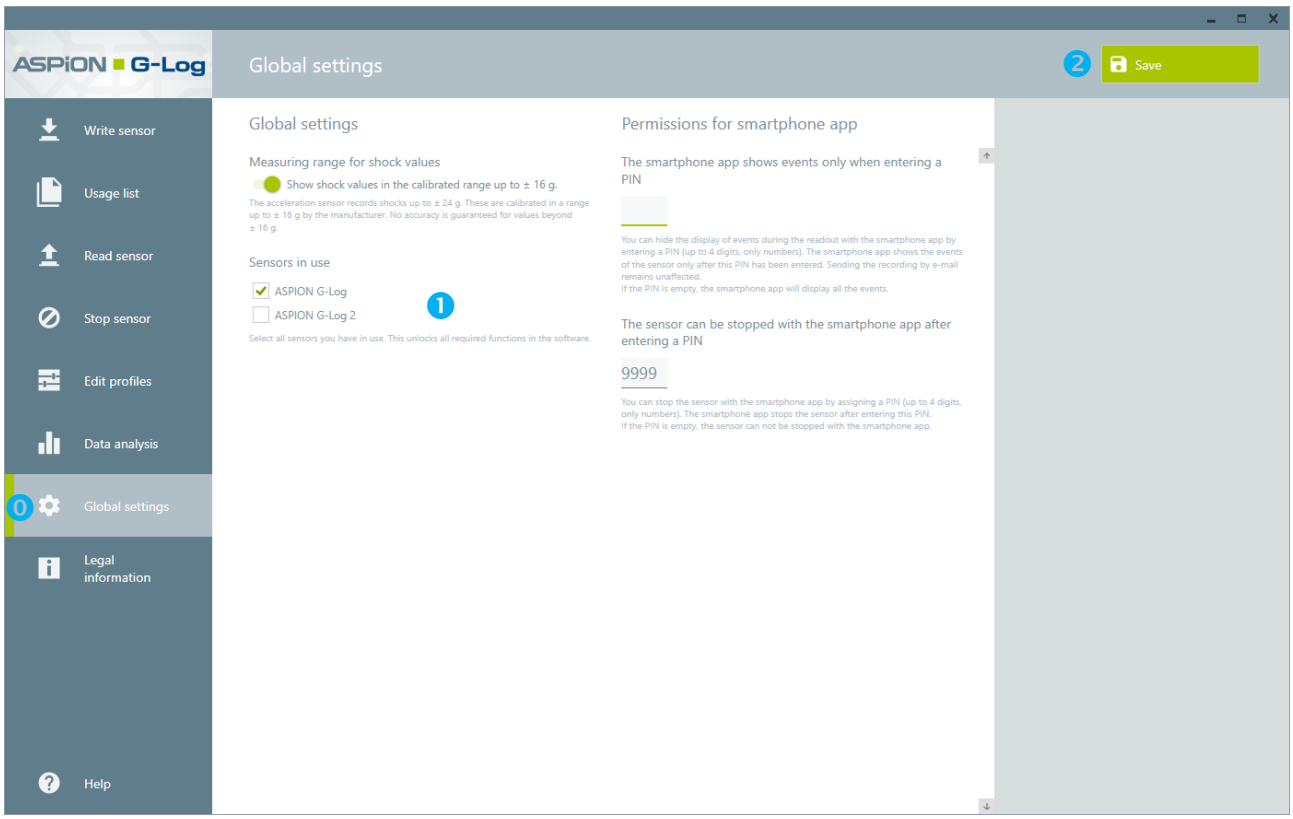
The ASPION G-Log Manager is used to operate all ASPION G-Log sensors. Therefore, first set the sensor type(s) that you are using: ASPION G-Log (incl. Waterproof) and/or ASPION G-Log 2. The important differences are described in section 1, see ASPION G-Log shock sensor, chapter 1, Variants. Both sensor types are selected after the installation.

The program will support you with exactly the functions you need to operate the respective sensor type. The matching information is shown in the respective views and functions.

Please note: You can select the sensor type or operate both sensor types together at any time. The ASPION G-Log Manager immediately applies the selected setting.

You set the sensor type or both sensor types as follows:

0 Select **Global settings** in the left area.



1 Select the sensor type(s) you use:
ASPION G-Log and Waterproof = light-gray housing ASPION G-Log 2 = blue housing

2 Save your selection by clicking **Save**.

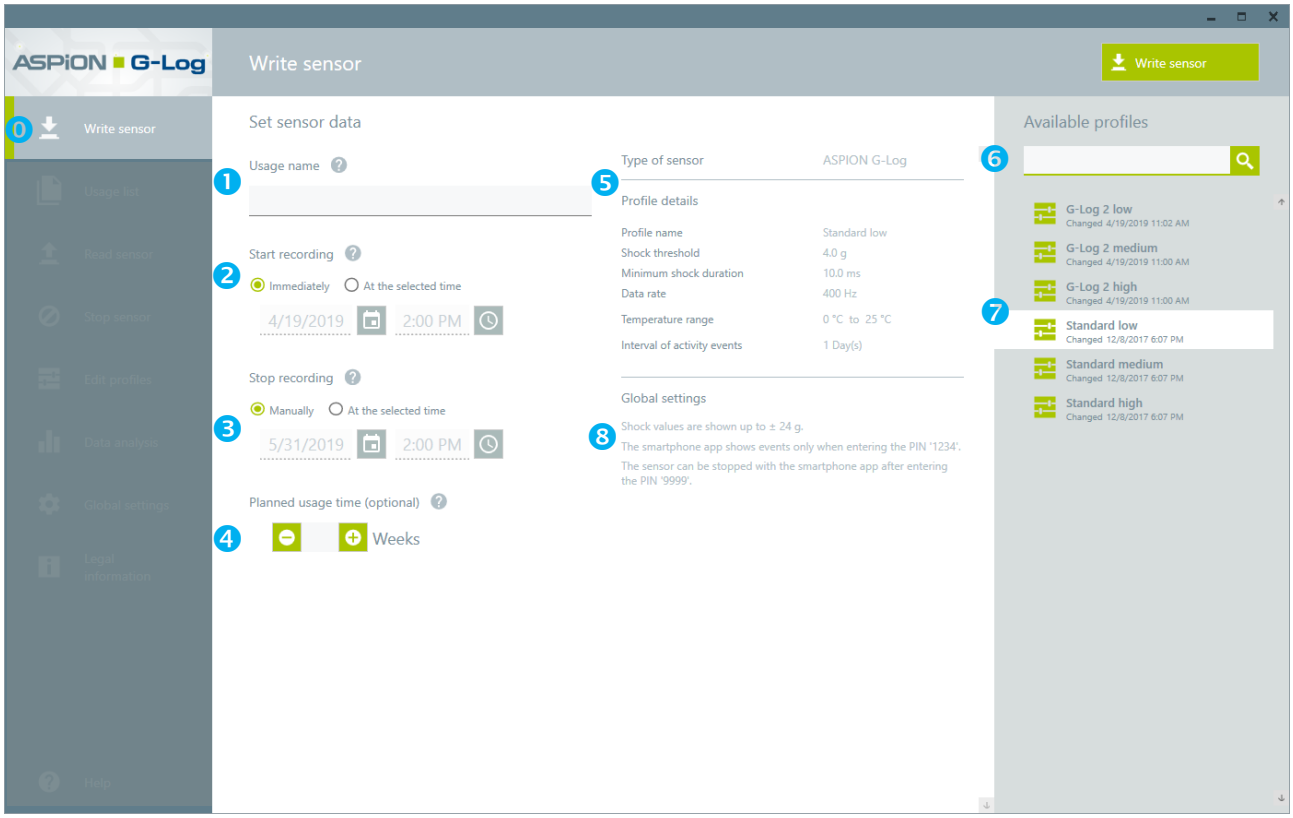
Tip: Select only the sensor type which you are planning to use productively. This returns a better overview of the necessary information and functions.

4. Operating the sensor

4.1 Defining the settings

You define the sensor details for your shipment with the **Write sensor** function.

0 Select the **Write sensor** function in the left area



Define the following settings:

1 Enter any name for your shipment. This name is uniquely assigned to the shipment and the sensor and displayed, for example, for analyses. If this field is not filled in, a sensor ID will automatically be assigned.

2 Define a time when the sensor starts logging data: immediately or at a specific date/time in the future, at the earliest after the next full hour.

Please note: the sensor consumes 5% of its battery capacity per year in delivery condition. If it was used once and then deactivated, the battery consumption in a non-active state is increased to 25% per year.

3 Define a time when the sensor stops logging data: manually via the **Stop sensor** function or automatically at a specific date/time in the future. The sensor can also be stopped using the smartphone App (Android), see ASPION G-Log App for smartphones.

4 By entering the planned usage time (weeks/optional), the program checks whether the battery life of the sensor will be sufficient for the planned transportation time. If the capacity is insufficient, you will receive a corresponding message.

5. You enter a predefined profile for each shipment. This profile contains the sensor type, threshold values, information on the battery life, and so on. You select the profile from the list area on the right.

6. The list view shows you all available profiles. If you have to select from a large number of available profiles, you will quickly find the required profile using the search function.

7. Select the desired profile here. The profile details will immediately be displayed in the content area. Only the profiles of the set sensor type will be listed, see ASPION G-Log Manager – PC software, chapter 3.2 “Important: Setting the sensor types”.

   Please note: you change a profile with the **Edit profiles** function, see ASPION G-Log Manager – PC software, chapter 6, "Creating and editing profiles".

8. Here, you will receive information about your global settings. If no information is displayed, the default setting applies: shock values up to ± 16g are displayed; the ASPION G-Log App for smartphones displays all events directly. A PIN to stop the sensor with the smartphone App is not entered.

   With the **Global settings** function you define whether you display shock events up to ± 16 g (= calibrated area) or up to ± 24 g (recommended setting). You can also define that events are displayed hidden when reading out data with the ASPION G-Log App and that they are only displayed for the smartphone user when entering a PIN. Additionally, you can enter a PIN to stop the sensor with the smartphone App.

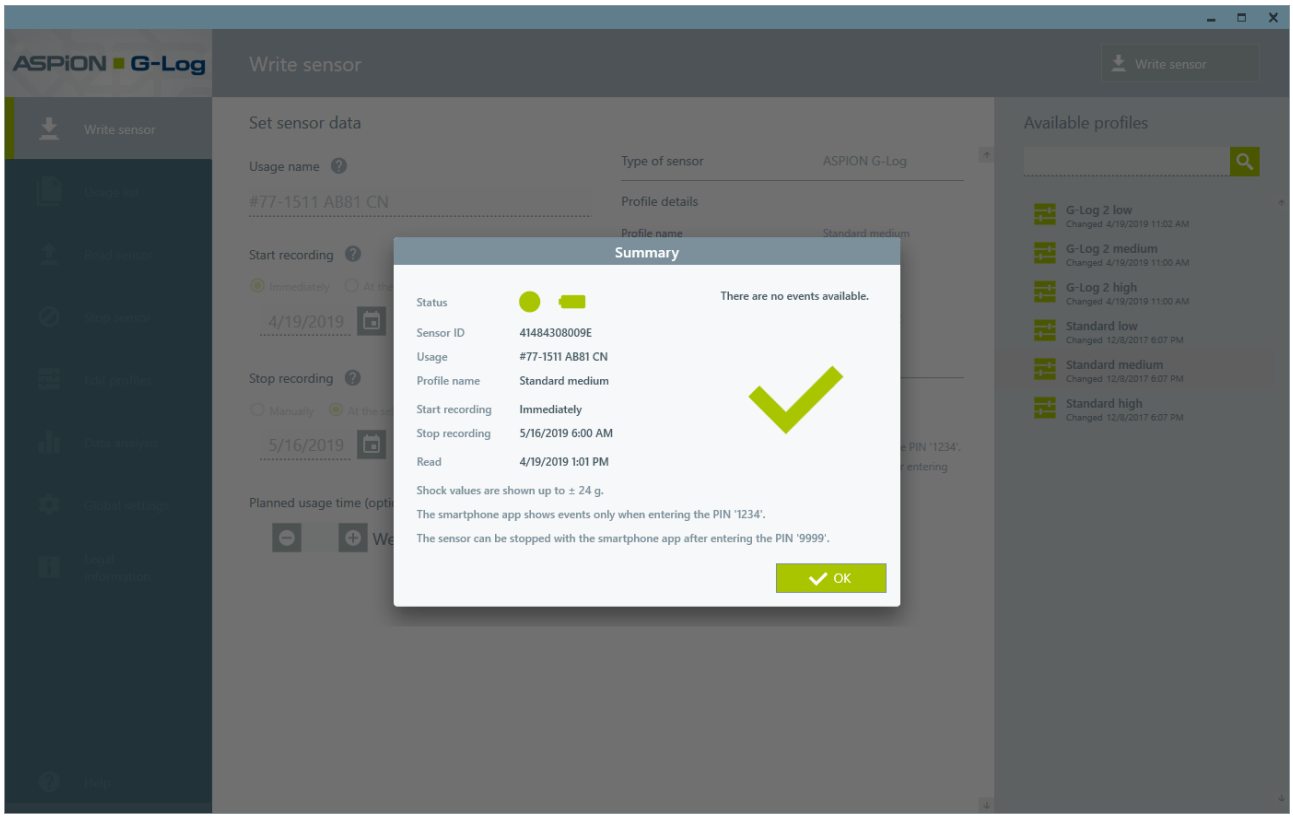
Please note: You make changes to the global settings with the **Global settings** function, see ASPION G-Log Manager – PC software, chapter 7, "Global settings".

4.2 Transferring data to sensor

Write sensor

You transfer the selected settings by clicking the **Write sensor** button. Follow the instructions of the program. Place the sensor you want to use with the label facing upwards (label visible) on the card reader. If you use different sensor types, make sure you select the correct sensor type, otherwise you receive an error message. After successful writing, the sensor is read out and its current data is displayed in the summary window.

Tip: Place the ASPION G-Log 2 sensor as illustrated in the picture to the right.
You will then receive the best results when exchanging data with the card reader.



The sensor is now ready to be mounted.

Please note: you find explanations on how to mount the sensor and a mounting template in ASPION G-Log shock sensors, chapter 5, “Mounting“.

States

Sensor is activated and records events

Sensor is not activated and does not record any events

Current battery life in percent; display at mouse over

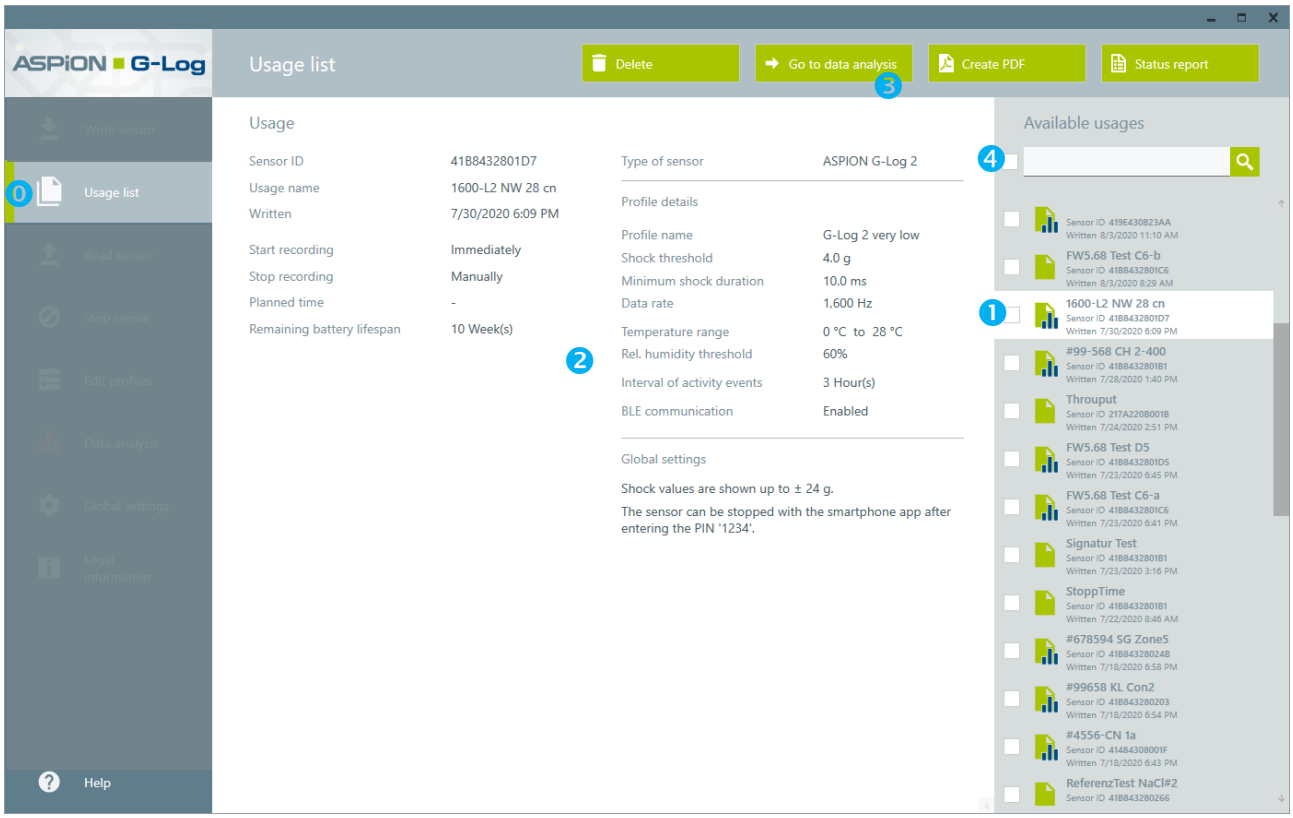
Errors and problem solving

For possible error messages, causes and hints for problem solving,
see ASPION G-Log Manager – PC software, chapter 11, “Errors and problem solving”.

5. Usage list

The usage list shows all sensors that you have used with the **Write sensor** function including the defined settings. Additionally, all sensors from which analyses were already made are marked. This helps you to keep track of your activated sensors including all details at any time.

0 In the left area, select **Usage list**.



1 Select an entry from the list. If an analysis is available for a usage, the program indicates it with the sym 

2 All details of the selected usage are displayed.

3 To delete a usage, select an entry from the list and click **Delete**. You can select a number of usages analyses at once by ticking the checkbox next to each usage. If available, you can directly go to an analysis with the **Go to data analysis** button. You export usage data as PDF file with the **Create PDF** button, for example, to send this information via e-mail. You can always export the currently selected usage. By clicking the **Status report** button, you receive an Excel list with all usages including the available analyses. Report example:

	A	B	C	D
1	Name of the usage	Sensor ID	Sensor written on	Record read out on
2	F5.68C6-b	41B8432801C6	8/3/2020 8:29:50 tt	
3	1600-L2 NW 28 cn	41B8432801D7	7/30/2020 18:09:36 tt	8/20/2020 8:48:30 tt
4	#99-568 CH 2-400	41B8432801B4	7/28/2020 13:40:25 tt	8/16/2020 19:53:53 tt
5	#488 SN-DE/L	217A220B001B	7/24/2020 14:51:49 tt	
6	F5.68D5	41B8432801D5	7/23/2020 18:45:54 tt	8/6/2020 19:06:10 tt
7	F5.68C8-a	41B8432801C8	7/23/2020 18:41:48 tt	8/3/2020 8:24:40 tt
8	#488 SN-DE/R	41B8432801B1	7/23/2020 15:16:17 tt	
9	#678594 SG Zone5	41B84328024B	7/22/2020 8:46:09 tt	
10	#99658 KL Con2	41B843280203	7/18/2020 18:58:20 tt	7/28/2020 13:34:55 tt
11	#4556 CN 1a	41484308001F	7/18/2020 18:54:04 tt	8/13/2020 20:34:10 tt

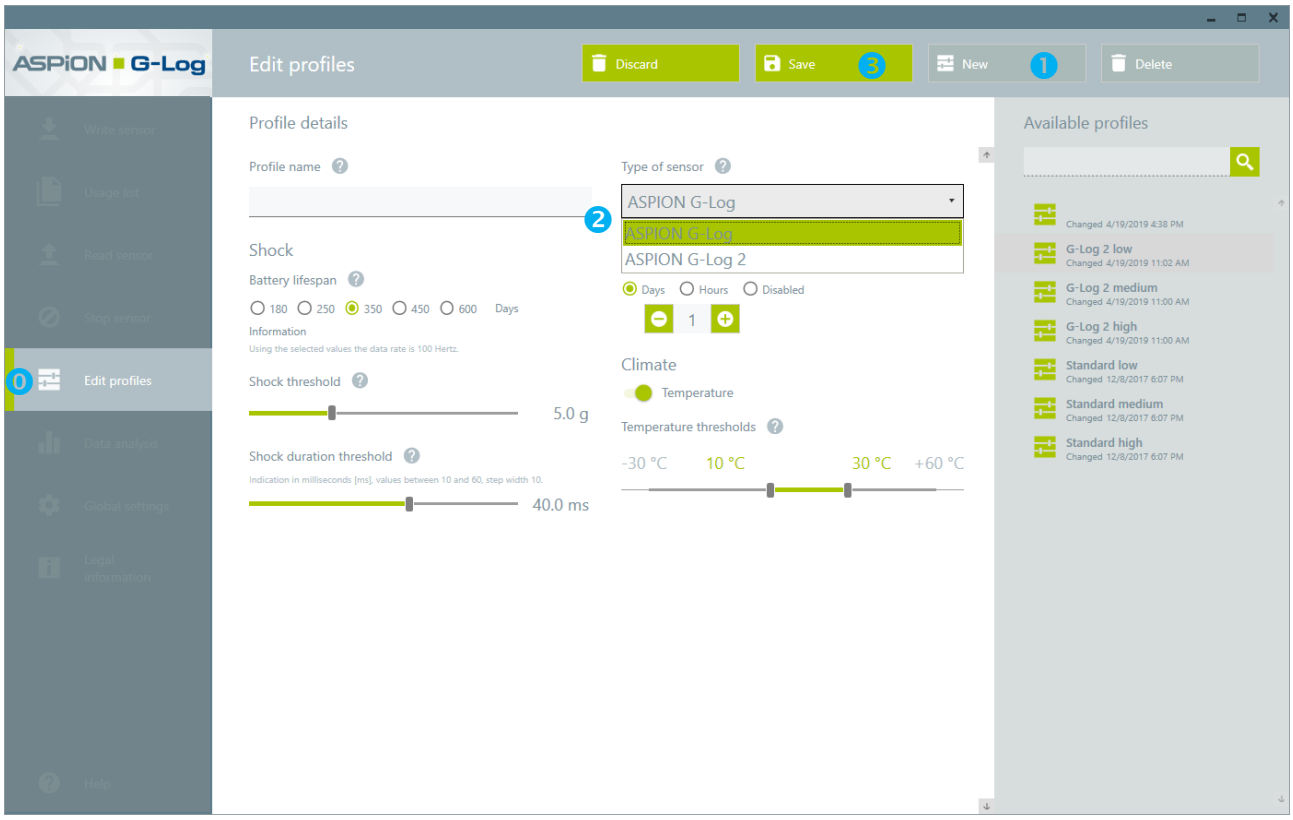
Please note: The usage list shows all usages that you create with the **Write sensor** function. If you, for example, notice that you have written data incorrectly to the sensor and you re-write the sensor, the system creates a separate entry in the usage list. You can easily delete the usage you no longer require.

4. The list view shows you all available usages and the corresponding analyses. If the list contains a lot of usages, the search functions helps you to find the required usage quickly. You can enter the sensor ID and/or the name of the usage in the search field.

6. Creating and editing profiles

Depending on your transported goods, you can create, edit and manage different profiles. Since the setting options between ASPION G-Log (incl. Waterproof) and ASPION G-Log 2 are very different, they are described separately in the following chapters.

0 Select the **Edit profiles** function in the left area. The first entry in the list area is automatically selected and displayed.



1 Click **New** to create a new profile.

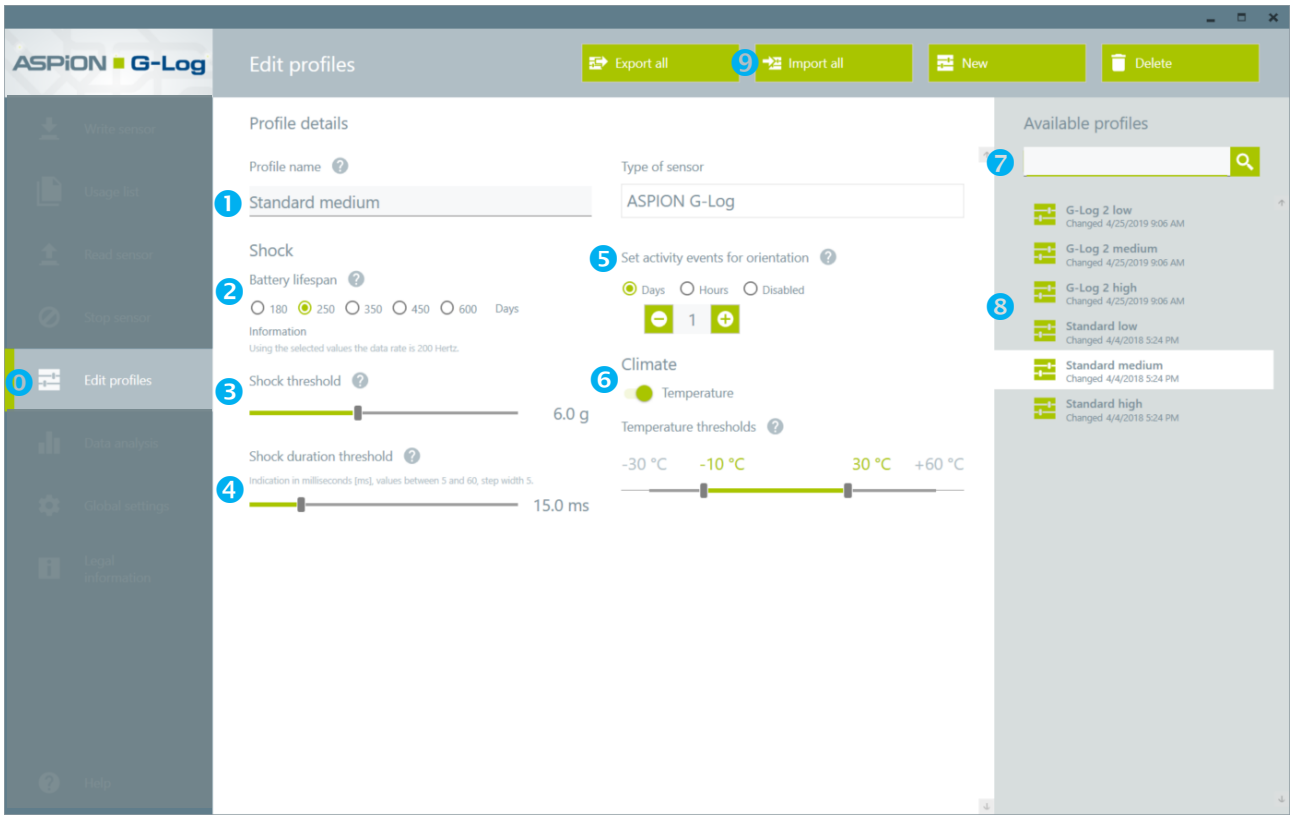
2 Option: If you work with both sensor types and have saved this setting in the global settings (→ see ASPION G-Log Manager, chapter 3, "Important: Set sensor types"), select the sensor type via the selection menu. The content changes depending on the selected sensor type.

3 Make the appropriate settings as described below and save the profile by clicking the **Save** button.

6.1 Profile settings for ASPION G-Log

You will receive three default profiles with the ASPION G-Log (incl. Waterproof) to make orientation easier: "Standard low", "Standard medium" and "Standard high". With the settings, you can define the battery lifespan and threshold values for which an event is recorded if the values are above or below this defined threshold.

0 Select the **Edit profiles** function from the left area.



Settings for ASPION G-Log (incl. Waterproof):

1 Enter a profile name.

2 The battery lifespan affects the maximum recording time of the sensor. The data rate is automatically calculated from the entries that were defined for the battery lifespan. The data rate is reduced for longer durations.
Shortest battery life = 60 days, longest battery life = 600 days
Highest data rate = 1600 Hz, lowest data rate = 25 Hz.

Please note: the data rate is the higher, the shorter you define the lifespan of the battery. A high data rate is useful especially for the recording of short shocks.

3 Define the threshold value for one shock event for all 3 axes for both directions ±. If this defined value is exceeded for at least one of the 3 axes with the corresponding duration (see 4), the sensor records this event.

Please note: the sensor saves 286 events (shock/temperature/activities). If the non-volatile memory is full, events of an earlier date are overwritten. This excludes the first shock value and the 8 peak shock values, see ASPION G-Log shock sensors, chapter 3.1., "Technical data ASPION G-Log".

Important: with some combinations of selected threshold and shock duration, you may not receive relevant and useful recordings. Please refer to the already included default profiles and talk to your technicians or contact your supplier/support to be able to define the right settings.

4 The threshold value for the shock duration is entered in milliseconds.

Please note: the shorter the duration, the earlier a shock event is recorded.

5. To monitor sensor activity, a shock event is triggered automatically in regular intervals. This event is called activity event and is also used to visualize the orientation, see ASPION G-Log Manager – PC software, chapter 10, "Data analysis". Here you can define the time of the interval in days or hours or deactivate this function. The time when the activity event is triggered is defined as follows:
- for days: at the next full hour after the start date
- for hours: time-triggered by the number of hours starting with the start date and time (at the full hour)

Example:
Start = 25.05.20 at 06:30
>> when selecting 3 hours, the first recording is made on 25.05.20, at 10:00
>> when selecting 1 day, the first recording is made on 26.05.20, at 06:00

Please note: the sensor saves 286 events in total. Activity events are also included in that number. Earlier events are overwritten in the circular buffer, but the first shock value as well as the 8 peak shock values are permanently stored with details, see ASPION G-Log shock sensors, chapter 3.1., "Technical data ASPION G-Log".

Calculation table for memory capacity as orientation aid for the setting of activity events.

Set Interval	**Memory capacity duration of approximately**
hourly	12 days
every 3 hours	36 days
4 x day (every 6 hours)	10 weeks
3 x day (every 8 hours)	13 weeks
2 x day	20 weeks
1 x day	40 weeks
Every 2 days	80 weeks

When calculating, please keep in mind that no recording of further shock or temperature events in the memory is taken into account for the capacities calculated. This might reduce the duration accordingly.

Tip: If your transport is only a few days on the road and you also want to measure the position of the goods to be transported, select a shorter interval, for example every 3 hours. For longer transports of several weeks, select a larger interval, for example, every 2 days.

6. Set the temperature range for allowed temperature values. If values are outside this range, a temperature event is created and recorded. The value must be above or below the threshold for at least 10 minutes. By using the On/Off button, you can deactivate the recording of temperature events.

An example for the scheme of recording temperature events:

Settings: Allowed temperature range: 0 to 25°C

The temperature drops to -5°C for at least 10 minutes and then raises again to +1°C:
-> The sensor records a temperature event as soon as the temperature has risen to 1°C again. The date and time at the point at which the sensor returns to the allowed temperature range are logged.

The temperature drops to -5°C and remains in this range during the next 48 hours:
-> The sensor records a temperature event approx. every 10 hours; the date and time are then recorded each time after 10 hours have been expired.

For each temperature event, the average temperature and one peak value are recorded.

7 The list view shows you all available profiles. If you have to select from a large number of available profiles, you will quickly find the required profile using the search function.

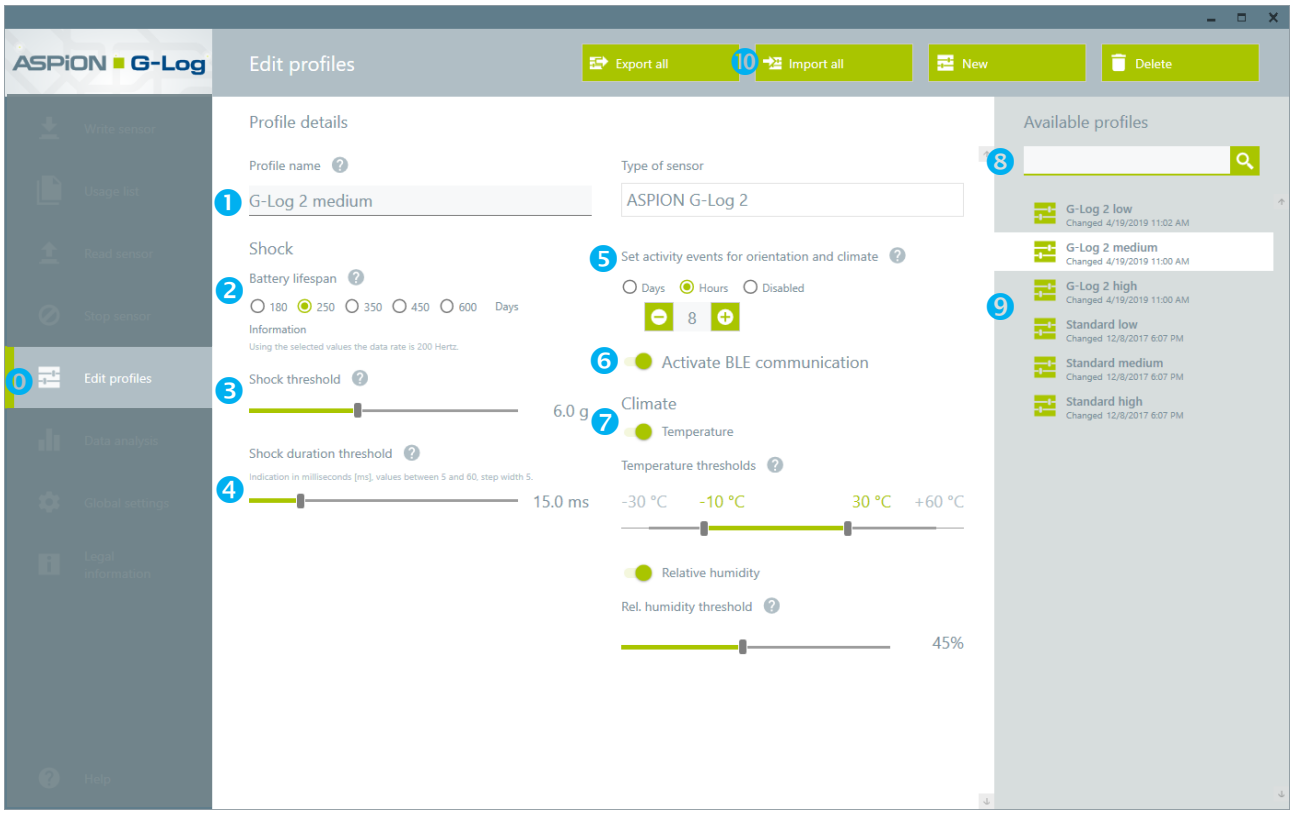
8 Select an existing profile here. The profile details will immediately be displayed in the content area. Now you can make changes, overwrite the profile or undo changes. You create a new profile with the **New** button. If you want to delete a profile, you select the corresponding profile from the list and click **Delete**.

9 You can exchange created profiles with the export/import function of other ASPION G-Log Manager installations. How to:
Export your profiles with the **Export all** button and save the file (YYYY-MM-TT_Profiles.ZIP) locally. Transfer this file to the computer of the other user on which the ASPION G-Log Manager is also installed. Import the profiles with **Import all**. The existing exported profiles are added to the existing installation.

6.2 Profile settings for ASPION G-Log 2

You will receive three default profiles with the ASPION G-Log 2 to make orientation easier: "G-Log 2 low", "G-Log 2 medium" and "G-Log 2 high". Using the settings, you can define the battery lifespan and threshold values for which an event is recorded if the values are above or below this defined threshold.

0 Select the **Edit profiles** function from the left area.



Settings for the ASPION G-Log 2 profile:

1 Enter a profile name.

2 The battery lifespan affects the maximum recording time of the sensor. The data rate is automatically calculated from the entries that were defined for the battery lifespan.

The data rate is reduced for longer durations.
Shortest battery life = 60 days, longest battery life = 600 days
Highest data rate = 1600 Hz, lowest data rate = 25 Hz.

Please note: the data rate is the higher, the shorter you define the lifespan of the battery. A high data rate is useful especially for the recording of short shocks.

3. Define the threshold value for one shock event for all 3 axes for both directions ±. If this defined value is exceeded for at least one of the 3 axes with the corresponding duration (see 4), the sensor records this event.

Please note: the sensor saves 950 events (shock/temperature/humidity/activities). If the non-volatile memory is full, events of an earlier date are overwritten. This excludes the first shock value and the 8 peak shock values, see ASPION G-Log shock sensors, chapter 3.2., "Technical data ASPION G-Log 2"

Important: with some combinations of selected threshold and shock duration, you may not receive relevant and useful recordings. Please refer to the already included default profiles and talk to your technicians or contact your supplier/support to be able to define the right settings.

4. The threshold value for the shock duration is entered in milliseconds.

Please note: the shorter the duration, the earlier a shock event is recorded.

5. To monitor sensor activity and to permanently record climate data at the same time, a shock and a climate event are triggered at regular intervals. It is called activity event for orientation and climate. The shock events are used to visualize the orientation, see ASPION G-Log Manager – PC software, chapter 10.4, "Orientation". The climate events record climate data for the selected interval independently of the set threshold values, which are displayed in the analyses together with other climate data if the values are above or below the set threshold.
Here you can define the time of the interval in days or hours or deactivate this function. The time when the activity event is triggered is defined as follows:
- for days: each time at midnight at 00:00:00
- for hours: each time at the full hour for the defined interval, starting during the selected interval following an internally defined algorithm

Example:
Start = 25.05.20 at 06:30
>> when selecting 1 day, the first recording is made on 26.05.20, at 00:00
>> when selecting 3 hours, the first recording is made on 25.05.20, at 9:00

Please note: The sensor saves 950 events in total. This count also includes activity events, each measurement containing a shock and climate event. Earlier events are overwritten in the circular buffer, but the first shock value as well as the 8 peak shock values are permanently stored with details, see ASPION G-Log shock sensors, chapter 3.2., "Technical data ASPION G-Log 2".

Calculation table for memory capacity as orientation aid for the setting of activity events.

Set Interval	**Memory capacity duration of approximately**
hourly	20 days

every 3 hours	59 days
4 x day (every 6 hours)	17 weeks
3 x day (every 8 hours)	22 weeks
2 x day	34 weeks
1 x day	67 weeks

Please keep in mind that no further recording of shock or climate events in the memory is taken into account for the capacities calculated. This might reduce the duration accordingly.

Tip: If your transport is only a few days on the road and you also want to measure the position of the goods to be transported and the climate data permanently, select a shorter interval, for example every 2 hours. For longer transports of several weeks, select a longer interval, for example, 4 times a day.

6. Define whether the sensor can be read out using Bluetooth Low Energy (BLE) with a BLE-enabled smartphone or deactivate this function. The ability to read out data via NFC is not changed.

Please note: BLE is an active radio technology. The use for air freight transport is still permitted. Please contact your transport service provider if other rules or regulations apply.

7. Specify the range for allowed climate values. A climate value always consists of the value pair temperature and relative humidity, and is stored as a climate event. Climate values are measured in an interval of 5 minutes and climate events are recorded according to the following rules:
Rule 1: If the last climate value was within the permitted range and the current climate value is within the permitted range, no climate event is stored.
Rule 2: If the last climate value was within the permitted range and if the current climate value is outside the permitted range, a climate event with the current values is recorded.
Rule 3: If the last climate value was outside the permitted range and if the current value is also outside the permitted range, a climate event is recorded if the current value deviates from the last climate event by 0.6°C or 4% relative humidity.
Rule 4: If the last climate value was outside the permitted range and the current value is within the permitted range again, a climate event is generated with the last climate value outside the permitted range.

   Applying these rules, you will receive a climate event as soon as it exceeds or falls below the specified threshold value, as well as the further course outside the permitted range. By using the On/Off buttons for temperature and humidity, you can deactivate the recording of events.

Examples for the recording pattern of climate events:
Permitted temperature range: 0°C to 25°C

Example 1: The temperature drops to -5°C for at least 15 minutes and then raises again to +1°C:
→ The sensor records a climate event applying rule 2 as soon as the values were outside the permitted range. Another climate event with date and time is recorded as soon as the deviation of the last value recorded is another 0.6°C. If the sensor returns to the permitted temperature range, the last climate value pair that has fallen below the specified threshold is logged as a climate event applying rule 4.

Example 2: The temperature drops to -5°C and remains in this range during the next 48 hours:
→ The sensor records a climate event every 5 minutes if the deviation of the last climate event differs at least 0.6°C; the date and time at which the deviation from the previous value occurred are then recorded.

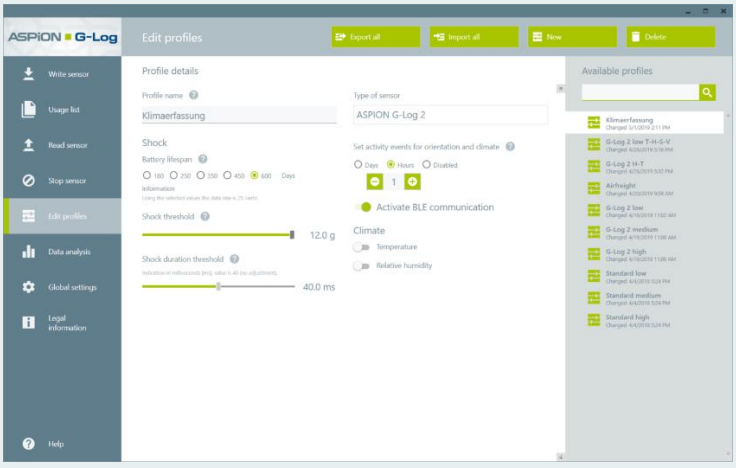
The temperature and relative humidity are recorded with one decimal place (e.g. 8.5°C) with date and time for each climate event.

⑧ The list view shows you all available profiles. If you have to select from a large number of available profiles, you will quickly find the required profile using the search function.

⑨ Select an existing profile here. The profile details will immediately be displayed in the content area. Now you can make changes, overwrite the profile or undo changes. Click **New** to create a new profile. To delete a profile, select an entry from the list and click **Delete**.

⑩ You can exchange created profiles with the export/import function of other ASPION G-Log Manager installations. How to:
Export your profiles with the **Export all** button and save the file (YYYY-MM-TT_Profiles.ZIP) locally. Transfer this file to the computer of the other user on which the ASPION G-Log Manager is also installed. Import the profiles with **Import all**. The existing exported profiles are added to the existing installation.

Tip: Profile for recording climate data independent of threshold values
To exclusively record climate data, select the following profile settings:
Battery life 600 days, shock 12 g, shock duration 40 ms, activity event 1 hour (or longer), deactivate temperature and relative humidity thresholds.

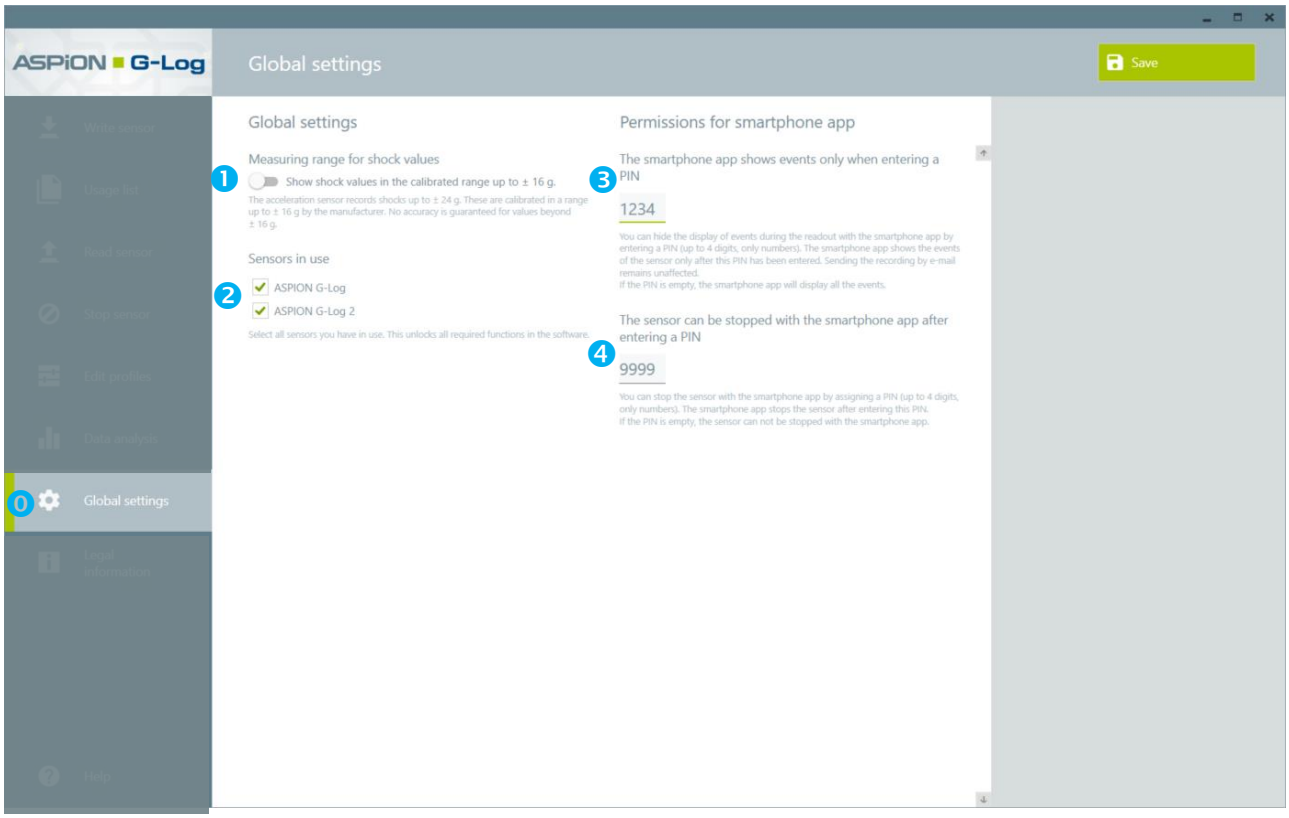


Applying this profile setting, the sensor records a climate event with temperature and relative humidity every full hour. With this setting, you will have sufficient memory space for 20 days.

7. Global settings

With the **Global settings** function, you make global settings which apply during operation. Furthermore, you define the sensor type(s) you use. Click on the **Save** button to change your entries.

0 Select **Global settings** in the left area.



1 Define here the value range for shock values. The "Show shock values in the calibrated range up to ± 16 g“ option is activated as default setting. By switching to the Off button, you extend the range up to ± 24 g per axe.

Explanations for the measuring range

The accelerator sensor is calibrated up to ± 16 g by the manufacturer and records shock values up to ± 24 g. You can define yourself whether you want to restrict the display of recorded values to this calibrated range of up to ± 16 g or whether you want to display values up to ± 24 g.

Please note: We do not guarantee the accuracy of values above ± 16 g as the deviation can be approx. 3.5%.

2 Select the sensor type(s) you use:

ASPION G-Log and Waterproof = light-gray housing

ASPION G-Log 2 = blue housing

Tip: Select only the sensor type which you are planning to use productively. This returns a better overview of the necessary information and functions.

With the rights to the smartphone App, you control the behavior of the ASPION G-Log App:

3. Display of app contents: no PIN is assigned per default, the ASPION G-Log App does not display any events.

   Enter a PIN (up to 4 digits, only numbers). Now, the events that were recorded are hidden for the user when reading out the sensor with the ASPION G-Log App. Only if the user enters the PIN, the ASPION G-Log App displays all events, see ASPION G-Log App for smartphones. All other functions of the ASPION G-Log App are not affected.

4. Stopping the sensor with a PIN: Per default, no PIN is entered and the ASPION G-Log App cannot stop the sensor.

Please note: This function is available for smartphones running on Android, but **not for smartphones running on iOS**.

Enter a PIN (up to 4 digits, only numbers). Now, you can stop the recording of a sensor with the smartphone app by entering this PIN, see ASPION G-Log App for Smartphones. You cannot continue the recording. You can newly re-start a stopped sensor, see ASPION G-Log Manager - PC software, chapter 9, "Stopping the sensor".

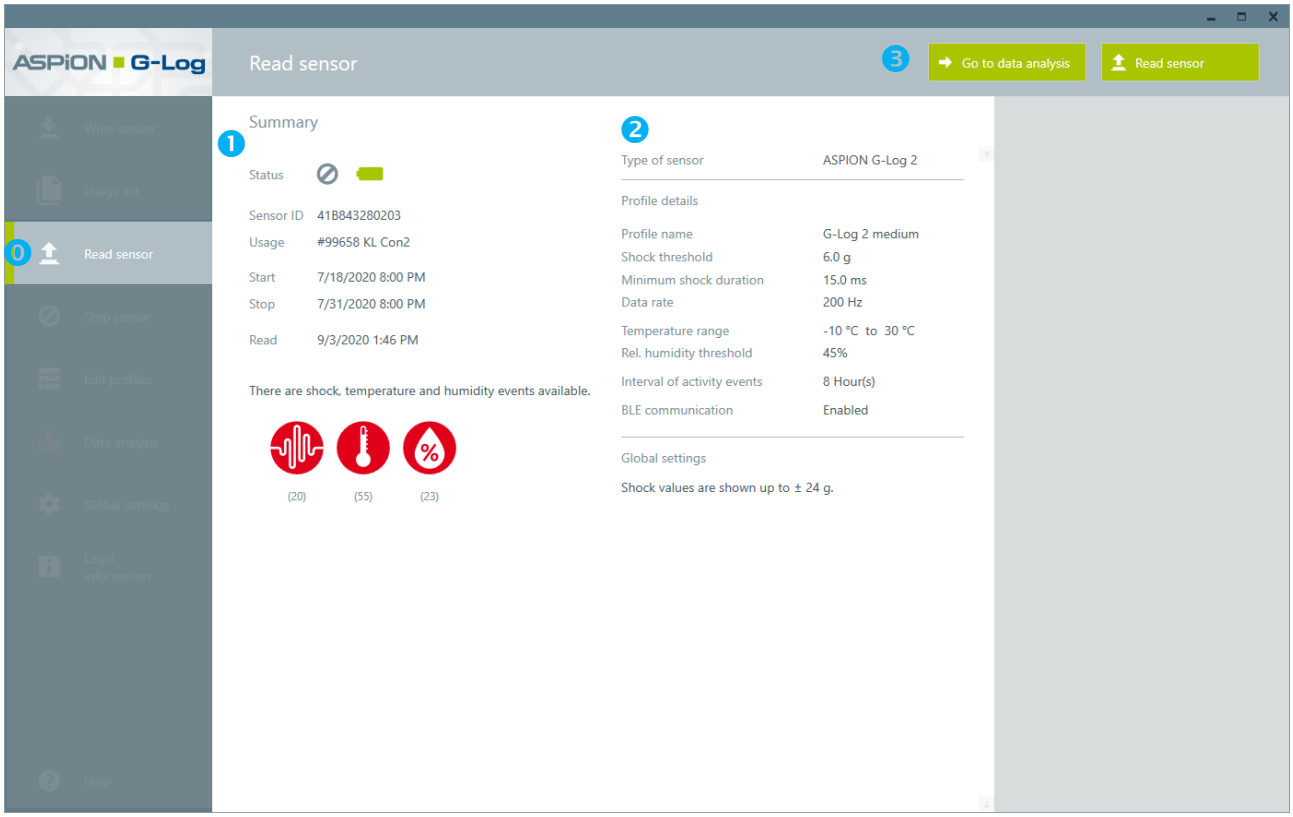
8. Reading the sensor

You receive analyzed data by clicking the **Read sensor** function in the left area. Click the **Read sensor** button. Follow the instructions of the program. Place the sensor to be read out with the label facing upwards (label visible) on the card reader.

Tip: Place the ASPION G-Log 2 sensor as illustrated in the picture to the right. You will then receive the best results when exchanging data with the card reader.

You can also read out the sensor with the smartphone app and import the analyzed data, see ASPION G-Log App for smartphones, chapter 1.1, "Reading out data via App".

0 Select the **Read sensor** function in the left area.



1 The overview presents all important information recorded on the sensor at a glance. The following symbols indicate whether and what kind of events occurred:

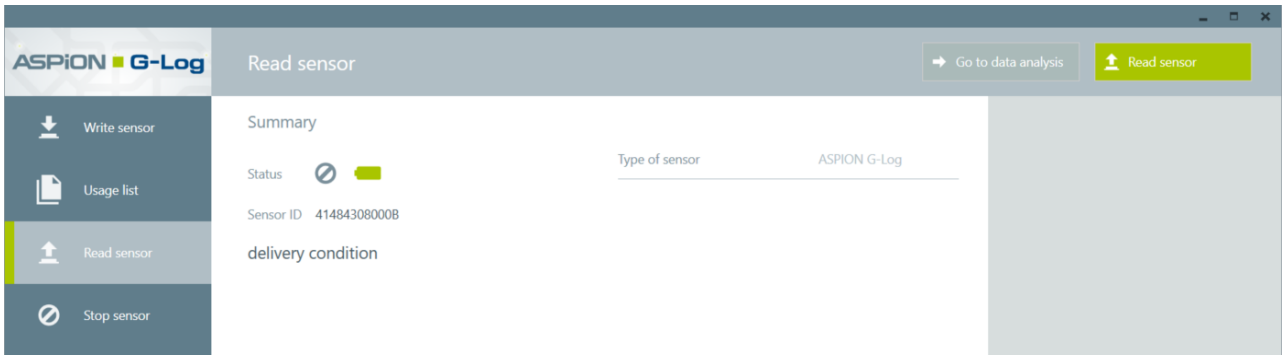
	Existing shock events, number in brackets.
	Existing temperature events, number in brackets.
	Existing humidity events, number in brackets.
	No existing events.

2 Overview of the currently used profile and all sensor settings.

3 With the **Go to data analysis** button or the **Data analysis** function, you go to the events, see ASPION G-Log Manager – PC software, chapter 10, “Data analysis“.

Further results after the data has been read out

- A sensor is activated, but no events are recorded.
- A sensor is activated and has recorded events.
- A sensor is not activated in delivered condition and no events are recorded.



Errors and problem solving

Possible error messages, causes and hints for problem solving:
Please refer to ASPION G-Log Manager – PC software, chapter 11, "Errors and problem solving".

9. Stopping the sensor

To stop the recording of events on a sensor, select the **Stop sensor** function in the left area. Click on the **Stop sensor** button. Follow the instructions of the program. Place the sensor you want to stop with the label facing upwards (label visible) on the card reader.

Please note: Recorded events will remain on the sensor after it was stopped. You can read out a stopped sensor at any time. With the **Write sensor** function, you can newly operate a stopped sensor again. The memory of the sensor will then be reset.

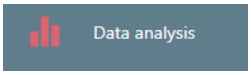
10. Data analysis

By going to Data analysis in the left area, you receive all information of a read-out sensor. Since the setting options between ASPION G-Log (incl. Waterproof) and ASPION G-Log 2 are different for only the recording of temperature and climate events, they are described in separate chapters (10.6 Temperature for ASPION G-Log and 10.7 Climate for ASPION G-Log 2). The analysis of shock events, shock details, orientation and map view are identical.

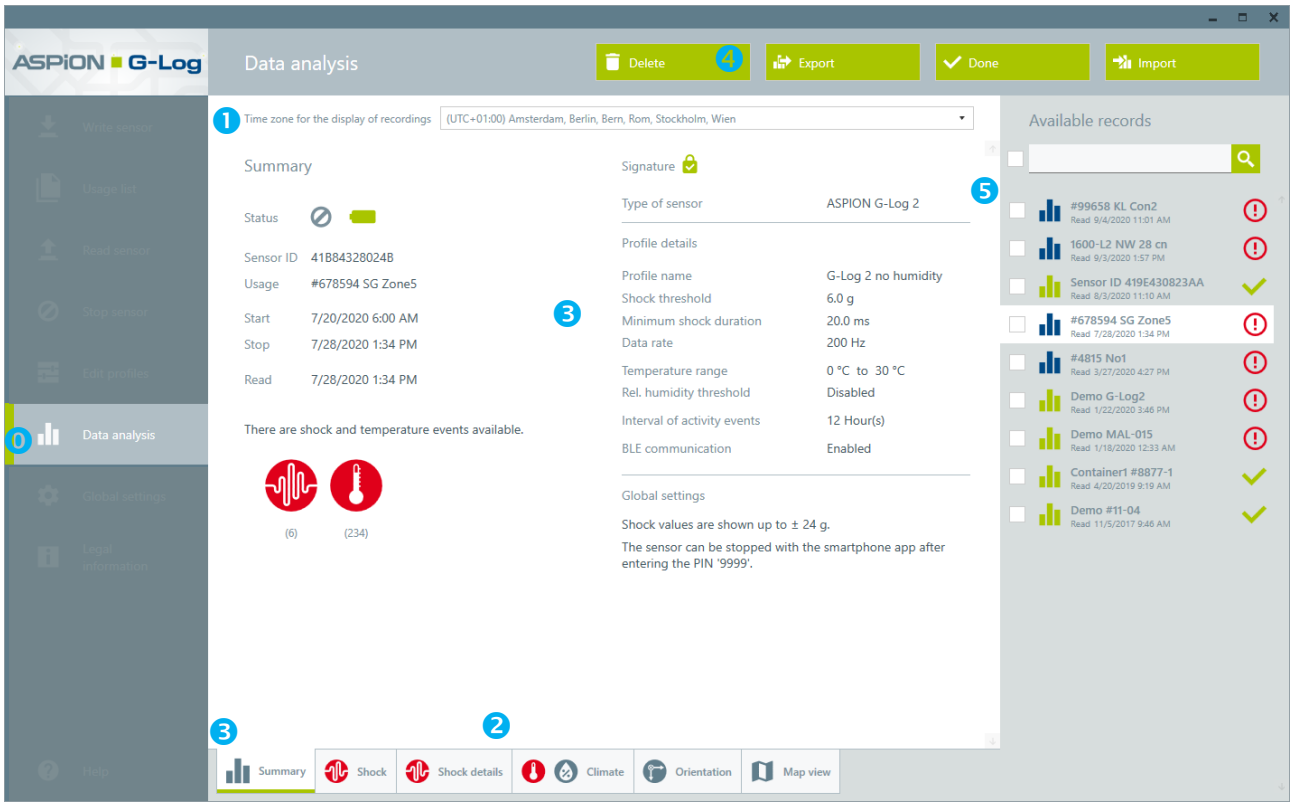
10.1 Content, overview and functions

0 Select **Data analysis** in the left area. The program automatically selects the first entry from the list view on the right.

Alert upon new data analyses of events: if new events are available, the **Data analysis** button signals red.



Automatic aggregation of events: If the sensor is read out several times, for example, with the App or the PC software and if the data is stored in the same directory (program data), the analyzed information is merged. By doing so, events can be recorded endlessly (maximum number of events between two readout times for G-Log: 286 and for G-Log 2: 950).



A data analysis includes the following information:

1 Select the time zone in which you want to display the sensor information and recordings. The time zones also include summer and winter times. The time zone bar remains unchanged for all analyses views.

2 Selecting the tab: Depending on the selected tab in the lower bar, the content area (see 3) displays the corresponding information. Use the tabs to select which events you want to display. If you cannot click on a tab, no recorded events or data information exist(s).

3 The **Summary** tab displays all details for the sensor, the shipment, the current status and profile details. This tab is automatically selected when calling an analysis. The numbers in brackets inform you about the number of recorded events. Each analysis (starting with Version 4) is protected against manipulation with a signature: Analyses with the symbol are original analyses, manipulated analyses are indicated with the symbol. Manipulated analyses cannot be read out.

4 You delete the currently active analysis with the **Delete** button.

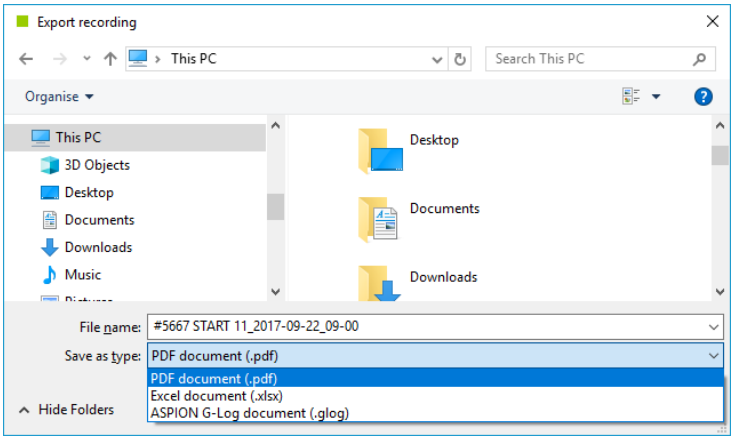
With the **Export** button, you export the currently active analysis:

- as PDF report with the complete analysis information and graphic files; you can also directly view the PDF file if required.
- as Excel file with all analyzed content in several Excel sheets

Please note: All date content both in the PDF and in the Excel file relate to the currently defined time zone.

- as proprietary G-Log file format

Select the desired format before saving the file.



If the archive function is also activated, these analyses are also stored as ZIP file in the defined directory, (→ see configuration program, chapter 3, "Export").

With the **Import** button, you can import analyses saved in the proprietary G-Log format.

Example for the usage of the proprietary G-Log format:
A service technician reads out a sensor with an ASPION G-Log Manager once the transported good has arrived and exports the analyzed data in the proprietary G-Log format. Now he or she sends the file to a colleague in the main office via e-mail. This colleague imports the analysis in his or her ASPION G-Log Manager version. By doing so, he or she will see the same analysis view as the service technician on site. He or she can then also create a PDF report, for example, to forward it to a service provider.

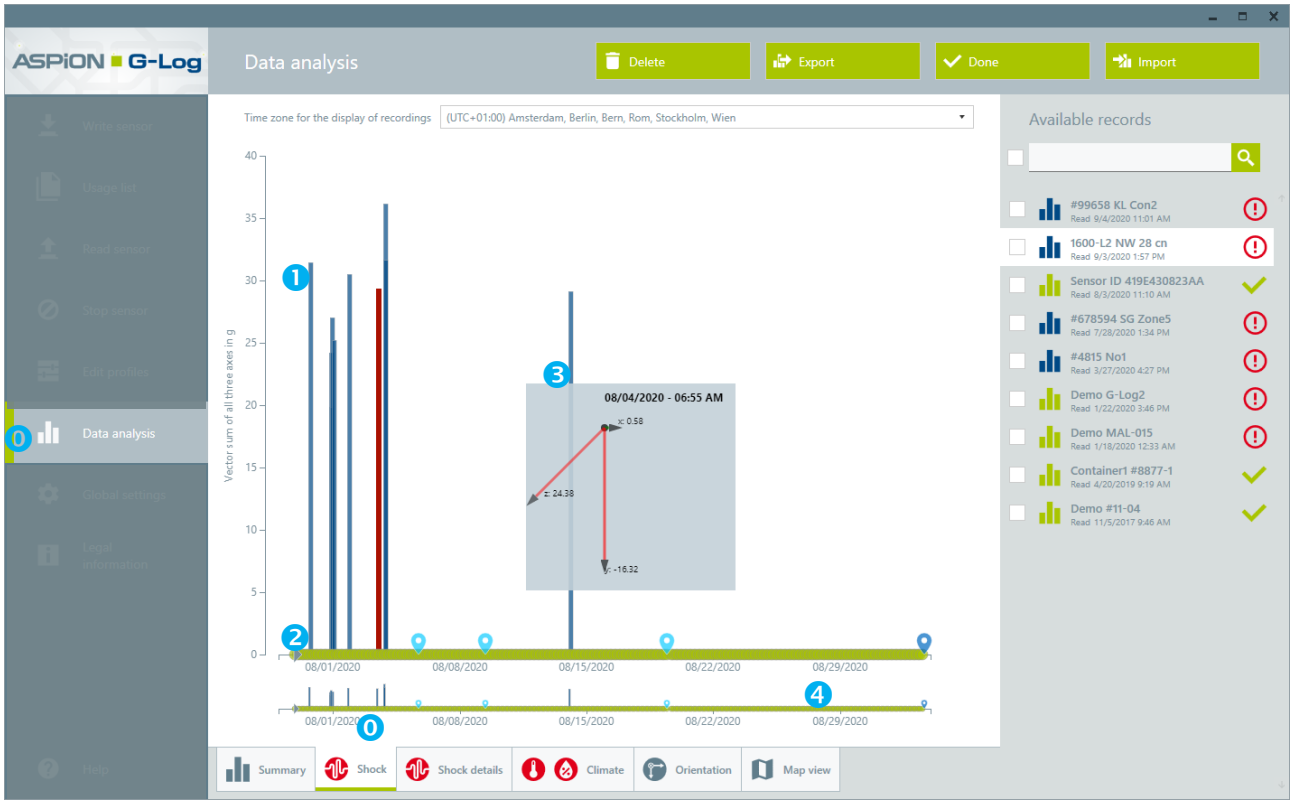
New analyses are marked blue. By clicking the **Done** button you can remove the blue mark in a data analysis.

5 The list view displays all available recordings of analyzed data. The symbol indicates whether events are available. All data analyses which are highlighted blue in the list contain new events. If you have many events, you will quickly receive a result by searching the analysis via the search field.

You can select a number of analyses at once by ticking the checkbox next to each analysis. You delete all selected analyses with the **Delete** button. With the **Export** button, you export all selected analyses in the desired format. With the **Done** button, you undo the blue mark for the selected analyses.

10.2 Shock events

0 Select the **Data analysis** function in the left area. Select the desired analysis from the list area to the right. Click on the **Stop sensor** tab.



The content area includes the following information:

1 Display range of shock events represented by a blue bar. The height of a single shock event displayed as bar chart is calculated from the amount of the vector sum of all axes.

2 Display area of the activity events on the timeline to be able to check if the sensor is active and for orientation visualization, represented by a green circle. Each shock location recorded by the App or PC software is marked as pin and includes date, time and the following description:

- Location and country (country code)
- No location: it was not possible to identify the location
- G-Log Manager: the sensor has been read out with PC software and card reader

The map view shows you the location information, if available, in a smart overview.

3 Using the mouse-over function, you receive the details of a single shock event or activity event. The arrows of the axis displayed in red show an overlap of the threshold in the respective axe direction. The maximum values can vary depending on the measuring range you have defined (± 16 g or ± 24 g), see ASPION G-Log shock sensor, chapter 7, "Global settings".

Please note: If shock events are recorded at the same second, the bars may overlap. They may then partly not be displayed in red when using the mouse-over function. The bar with the lowest cumulative value is displayed at the front, followed by higher bars in the back. To retrieve more details, use the zoom function (see 4) or the export functions (see previous chapter 10.1).

4 Zoom function: if you want to have more details of a certain time period, select a time period with a pressed-down left mouse key. This period will then be displayed in the upper content area. By double-clicking the left mouse button in this area, you go back to the general overview. The gray shading marks the selected time period. The start time of the recording is marked by a gray triangle, the end (Stop) of the recording – if available – is marked accordingly at the end of the timeline.

10.3 Shock details

The detailed data of a shock event is essential for evaluations and interpretation in the event of damage. The sensor records the temporal course of a shock of all three axes in milliseconds: This particular subset of data with a total of 19 values is used for the exact analysis of the course, allows you to draw conclusions about the effects and can make a significant contribution to the assessment in the event of damage or during packaging inspection tests. The sensor permanently stores the very first and the other eight peak shock events in this granularity.

0 Select the **Data analysis** function in the left area. Select the desired analysis from the list area to the right. Click on the **Shock details** tab.

The content area includes the following information:

1. List with a selected shock detail: The first recorded shock and 8 more peak shock events are permanently saved with all shock details, also if the memory is full.

   Please note: the peak shock events are calculated via an internal shock value index, e.g. "shock value 1481". It includes the strength and the duration of the shock.

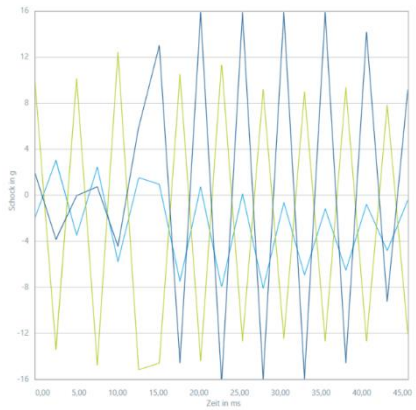
2. Display area of a single shock detail of each axis showing the course in milliseconds. This helps you to better follow the duration of a shock.

3. Legend for axis allocation.

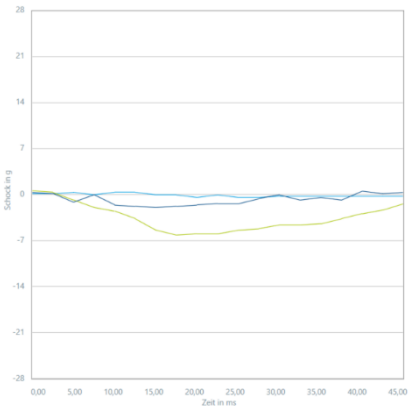
Explanations and examples to interpret shock details

Whether a transported good is actually damaged by a shock cannot be answered generally and depends in particular on the transported good and the environmental circumstances. However, the longer a shock lasts and the more shocks occur within a short time (e.g. in the same minute), the more likely it is to be damaged. An assessment can only be made for each case individually and must take all circumstances into account.

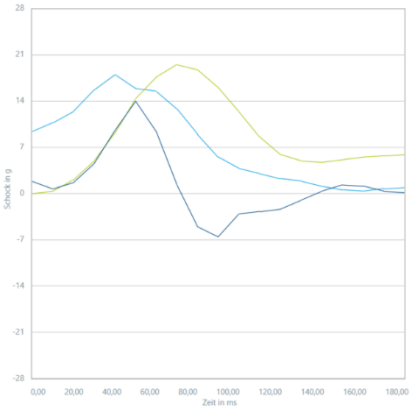
The following recordings of shock details and their interpretation support you to better classify your own curves of shock details.



Vibration curves:
Short pulses of short duration



Typical curve
for air freight



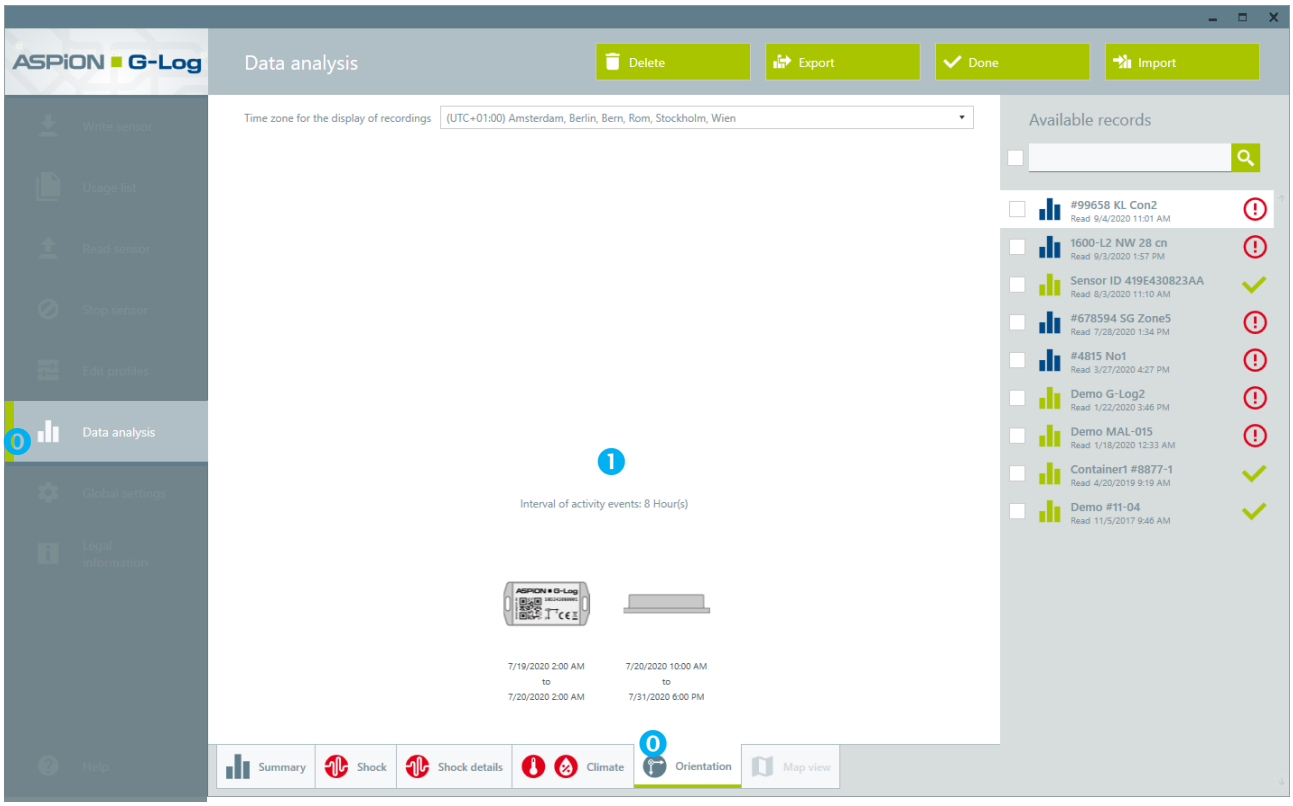
Curve display for
longer shocks, eventually critical

We will be happy to help you with the interpretation of your analyses at any time: Simply contact our support team, which can be contacted by e-mail at support@aspion.de.

10.4 Orientation

Whether the orientation of the sensor – and thus that of your transported goods – has changed permanently can be seen from the simple orientation visualization: the sensor records the current values of the acceleration sensor according to the set interval for the activity events. From these data, the main direction of gravity of approx. 1 g is determined. This determines the orientation of the sensor at this point in time.

0 Select the **Data analysis** function in the left area. Select the desired analysis from the list area to the right. Click on the **Orientation** tab.



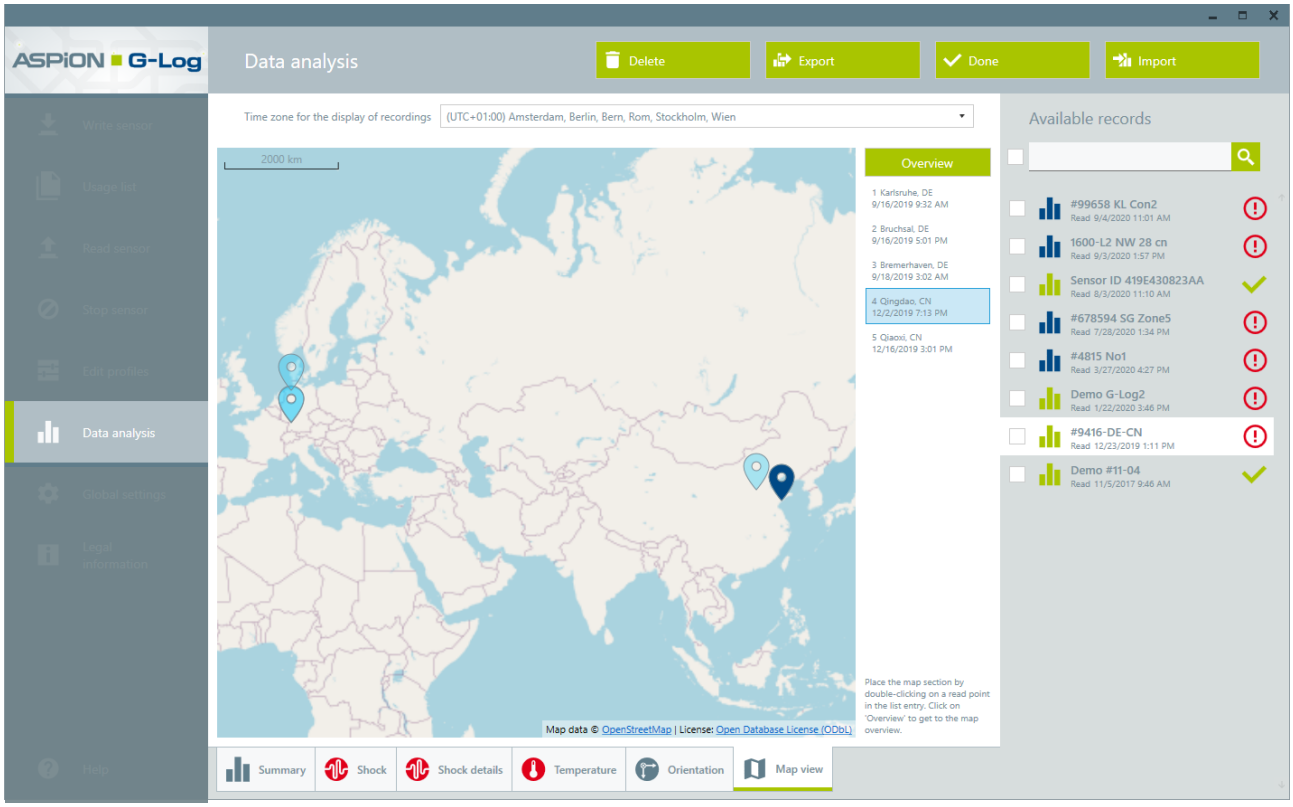
The content area includes the following information:

1 The activity events visualize the approximate orientation towards the 6 main directions. If the orientation changes, it will be displayed the next time an activity event is recorded.

10.5 Map view

When a sensor is read out with the Smartphone App, it determines the location at the readout time, if the access to the location information is permitted and the location can be determined. The location identification is also available when reading out with the ASPION G-Log Manager, if the requirements for accessing the location information are also met. The readout locations are displayed in a digital map.

0 Select the **Data analysis** function in the left area. Click the **Map view** tab.



The readout locations are displayed in a digital map. The list selects the corresponding entry and displays the readout location with date and time. You can set the map section by double-clicking on the readout location in the list entry. By clicking on the overview, you can go back to the map view. If no coordinate could be detected, it is not displayed in the map view.

10.6 Temperature events with ASPION G-Log

0 Select the **Data analysis** function in the left area. Select the desired analysis from the list area to the right. Click on the **Temperature** tab.

The content area includes the following information:

1 Display area of temperature events represented by a blue bar. The permitted temperature range is marked by a red and blue line.

Scheme of recording temperature events:
The temperature is measured every 5 minutes with the internal and factory-calibrated temperature sensor and recorded as follows:
Case 1: If the temperature remains within the prohibited range for at least 10 minutes and then returns to the permitted range, a temperature event is created.
Case 2: If the temperature remains permanently outside the permitted range, a temperature event is stored approx. every 10 hours at the end of the recording.
Please also refer to ASPION G-Log Manager – PC software, chapter 6.1, "Profile settings for ASPION G-Log".

2 Using the mouse-over function, you receive the details of a single temperature event. For each temperature event, the average temperature and one maximum/minimum value are recorded.

Please note: In the case of temperature events that are recorded shortly after each other - due to a varying value around the set threshold value - the bars can be close together. For further details, use the zoom function (see 4) or the export functions (see previous chapter 10.1).

3 You can select different views for temperature events: all values or only values above the upper threshold value or only values below the lower threshold value.

4 Zoom function: To receive more details about a period, press and hold the left mouse button to select a period that is displayed in the upper content area. Double-click on the left mouse button in this area to return to the general overview. The gray shading marks the selected period. The start time of the recording is marked by a gray triangle, the end (Stop) of the recording – if available – is marked accordingly at the end of the timeline.

10.7 Climate events with ASPION G-Log 2

You have many analysis options for climate recording with ASPION G-Log 2. In the following, the analysis is described in general and various configurations and their application are explained in further examples (We make no claim to completeness).

0 Select the **Data analysis** function in the left area. Select the desired analysis from the list area to the right. Click on the **Climate** tab.

The content area includes the following information:

1 Display area of the climate events represented in a course. If threshold values are set, these are displayed as lines. The left axis shows temperature values, the right axis shows relative humidity values in %.

Temperature

The permitted temperature range is marked by a red and blue line. The temperature curve is displayed in gray. Values above the permitted range are marked red, values below the permitted range are marked blue.

Relative humidity: The relative humidity threshold is indicated by a green line. Values that are above the threshold value are highlighted in green.

Scheme of recording climate events:

Temperature and relative humidity are measured every 5 minutes with the factory-calibrated temperature/humidity sensor and are recorded as follows:

If the temperature and/or relative humidity remains within the prohibited range for at least 5 minutes, a climate event is created. If the temperature and/or relative humidity in the further course deviates by 0.6 °C or 4% from the previous value or returns to the permitted range, another climate event is recorded.

Please also refer to ASPION G-Log Manager – PC software, chapter 6.2, "Profile settings for ASPION G-Log 2".

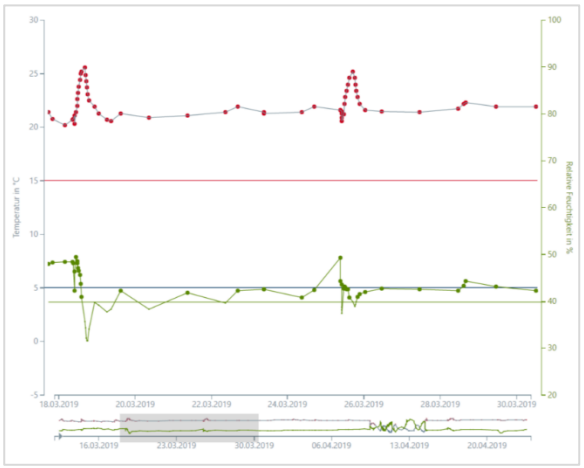
If activity events are activated, a climate event is stored according to the set interval and displayed during the course of the event, independent of the selected threshold values.

❷ Using the mouse-over function, you receive the details of a single climate event.

Please note: For climate events which occur in very short intervals, use the zoom function (see ❸) or the export functions (see 10.1).

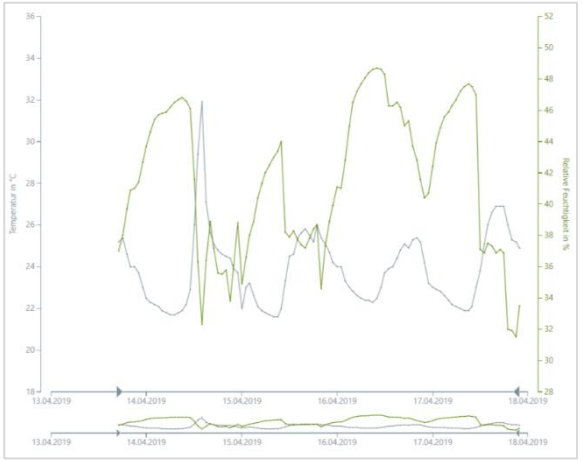
❸ Zoom function: To receive more details about a period, press and hold the left mouse button to select a period that is displayed in the upper content area. By double-clicking on this area, you go back to the general overview. The gray shading marks the selected period. The start time of the recording is marked by a gray triangle, the end (Stop) of the recording – if available – is marked accordingly at the end of the timeline.

The following analyses explain and clarify the recording method.



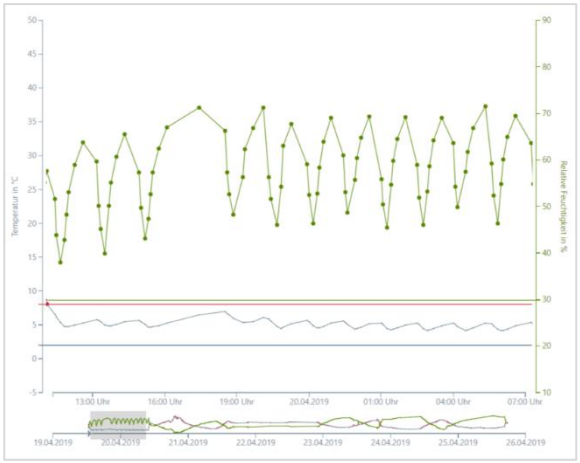
Automatic data recording:

If there is little change, only a few values are logged at longer intervals. [fuzzy]If the values change by more than 0.6 °C oder 4% relative humidity, the following value is recorded at a shorter interval. This gives you detailed information on when changes exactly occurred.



Data recording function for activity events:

The figure to the left does not include any threshold values. The recording of temperature and humidity values which exceed the thresholds is deactivated. The recorded climate data is generated by activating the activity events in the specified interval. The orientation is also recorded together with the activity events.



Typical climate profile in low-temperature environments:

Temperature values: 2 … 8 °C
Humidity changes: between 40% ... 70% rH

A temperature value is recorded for each humidity value and displayed in the permitted range. Environmental changes such as a door which stands open for a longer time can be easily detected.

11. Help, errors and problem solving

In the lower left-hand corner, you find the **Help** button. When clicking this button, you open the manual as PDF in your PDF reader. You can navigate in the contents to directly go to the required chapter. The following table helps you with errors that may occur and explains you the possible steps to solve the problem.

Error/Problem	Estimated cause	Probable solution
Sensor cannot be written or read.	Card reader does not recognize the sensor.	Remove the sensor from the card reader. Wait a moment and then repeat the process.
Sensor can no longer be read out, is not recognized by the card reader.	Empty battery or no contact with battery.	To read out the sensor, you can send the sensor to the manufacturer or replace the battery of ASPION G-Log 2. If you do no longer need the sensor, please dispose of it correctly, see ASPION G-Log shock sensor, chapter 7, “Disposal”.
The entered card reader name was not recognized.	Card reader is not connected correctly.	Check whether the USB connector of the card reader is connected correctly.
Data could not be transferred. The request was cancelled.	Card reader does not recognize the sensor.	Remove the sensor from the card reader. Wait a moment and then repeat the process.
Data could not be transferred. A Smartcard is required for the process.	The sensor is not completely connected to the card reader.	Place the sensor completely on the card reader and repeat the process.
Data could not be transferred. The data is invalid.	The sensor’s firmware is not compatible to the PC software.	Contact your technical support.
No sensor could be recognized.	Empty battery or no contact with battery.	ASPION G-Log: Please contact your technical support. ASPION G-Log 2: Replace the battery (→ see ASPION G-Log shock sensor/ 6. Battery replacement)
Data cannot be written (wrong sensor type).	When writing data to the sensor, a wrong sensor type (ASPION G-Log/ASPION G-Log 2) was selected.	Select a profile that matches the sensor type and try again.

11.1 Problems with the NFC card reader and Windows 7

The following error occurs with the Identiv uTrust 3700 F card reader and Windows 7: the “Smartcard PnP” function tries to install a new driver for each newly connected sensor. You can deactivate this service with the following steps (the description is provided by the producer of the card reader):

1. Click Start, enter “gpedit.msc” in the [Programs/Browse Files] field and click ENTER
2. At [Guidelines for local computer], go to [Computer Configuration] > [Administrative Templates]
3. Via [Windows Components] > [Smart Card], you go to [Turn on Smart Card Plug and Play service] and open the service with a double click
4. Select [Disable] and close the window with [OK]
5. Close the [Local Group Policy Editor] and restart the computer
6. Now the driver prompt for Smartcards should no longer appear.

If “gpedit” cannot be found on your computer, you must manually change the entries in the registry (Start > Enter “regedit” in the search field). Depending on the exact version of the operating system, one (x86) or two (x64) entries must be edited or added in the registry:

x86:
[HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\ScPnP]
"EnableScPnP"=dword:00000000

x64:
[HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\ScPnP]
"EnableScPnP"=dword:00000000
[HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Policies\Microsoft\Windows\ScPnP]
"EnableScPnP"=dword:00000000

If you enter „dword:00000001“ instead of „dword:00000000“ as a value for "EnableScPnP“ the service is enabled again.

11.2 Support Infotool

To quickly and easily analyze possible errors, our support team uses the Infotool. To use the tool, please follow the steps below:

1. Search „ASPION“ in the Windows start menu.
2. Select the „ASPION Support Info Tool“ app and execute it.
3. The „LogFiles.ZIP“ is created and saved on your Desktop.
4. Send this file together with the error description to support@aspion.de.

ASPION Support Info Tool
App

For FAQs and more helpful information, please go to our ASPION customer portal at www.aspion.de.

ASPION G-Log App for smartphones

1. Description and installation

Using the ASPION G-Log Apps, you can read out a sensor directly and, if required, stop it. At the same time, the current location is identified via the smartphone, displayed in the list view and saved in the data record. The smartphone must be NFC capable for ASPION G-Log, ASPION G-Log 2 can also optionally be read out via Bluetooth (BLE). The table in chapter 2 explains the requirements and functions. You can download the ASPION G-Log App for installation on you smartphone from the respective store using the following links:

Android: https://play.google.com/store/apps/details?id=com.aspion.glog

iOS: https://itunes.apple.com/de/app/aspion-g-log/id1305876678?mt=8

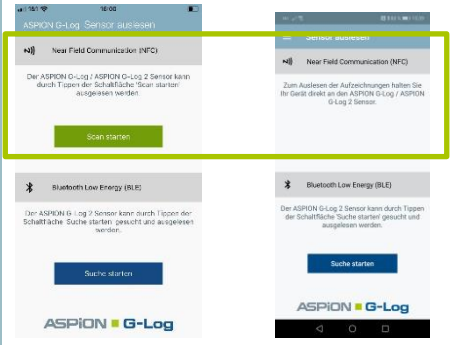
You also have the option to scan the QR code with your smartphone. Depending on the language of your operating system, the ASPION G-Log App is executed in German or English.

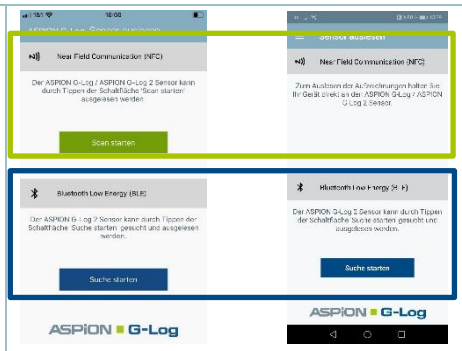
Tip: You can go to our YouTube channel to watch helpful video tutorials on how to best use our apps: **https://www.youtube.com/channel/UCyPrXy8bNbXMKcp_MQEor3w/**

1.1 Reading out data via App

The sensor types have different wireless communication options: You can read out all sensors via NFC. To do so, hold your smartphone directly and up close to the sensor.

You can also read out ASPION G-Log 2 via BLE (if it has not been deactivated via PC software). When compared to NFC, the range of BLE for data transmission is several meters, depending on the environmental conditions.

Sensor type	Reading sensor	Notes	App operation
ASPION G-Log 2 ASPION G-Log Waterproof 	via NFC	To read out the sensor, hold the smartphone directly to the sensor. For iOS, click **Start scan**. For Android, directly hold the sensor to the smartphone and data is read out automatically.	 iOS App Android App

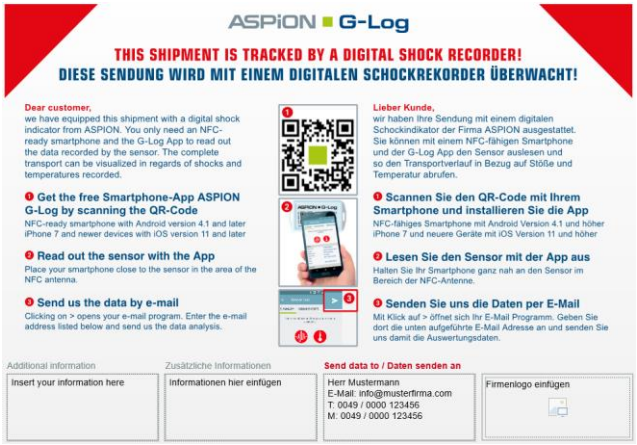
ASPION G-Log 2 	via NFC or via BLE (if active)	Description see above Read out data via BLE by clicking **Start search.** Click on detected sensor, data is transferred and displayed.	 iOS App Android App

1.2 Short descriptions for customers

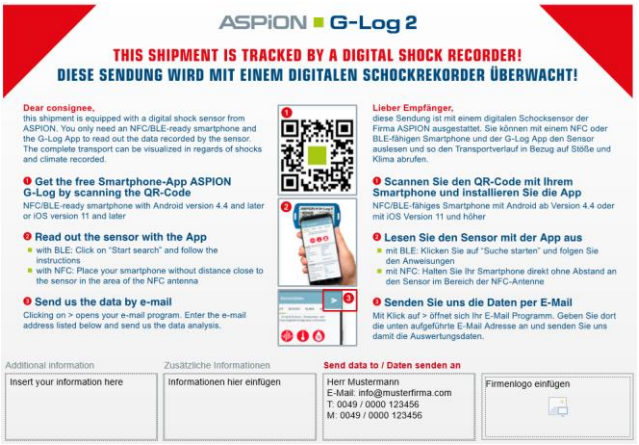
To support your customers or colleagues when using the sensors, we provide practical short descriptions for ASPION G-Log and ASPION G-Log 2.

Tip: a short description of the App for your customers is included in the delivered product on the USB stick or you can download it from our ASPION customer portal on our website. You can complete the template with your individual data.

Preview of the short description for your customers and colleagues.



Short descriptions: ASPION G-Log



ASPION G-Log 2

2. App functions

The following table shows the smartphone requirements and App functions. The following chapters will include descriptions for specific functions, the standard functions are self explanatory and will not need further explanations.

	Android	iOS
Operating system	Version 4.4 and later	Version 11 or later
Hardware	Smartphones with NFC	NFC: iPhone 7 and later BLE: iPhone 5 and later
	for ASPION G-Log 2: NFC and/or BLE (Bluetooth)	
Reading the sensor	☑	☑
Wireless data transfer via NFC	☑	☑
	for ASPION G-Log 2: additionally with BLE (Bluetooth)	
Activating sensor, also time-triggered	Not possible via the App, made via computer software	
Stopping sensor via App (see 2.1)	☑	Not possible 1
Display state and battery	☑	☑
Display shock events and climate data	☑	☑
Display events protected by PIN (see 2.2)	☑	☑
	to enter PIN double-click on display	
Activity events with orientation respecting gravity	☑	☑
Traffic light indicator after reading data and in list	☑	☑
Transferring data analysis	via e-mail in G-Log format, e-mail addresses can be saved, automatic transfer via Cloud upload[2]	
Tracing location	☑	☑
Automatic transfer to Cloud storage	☑[2]	☑[2]

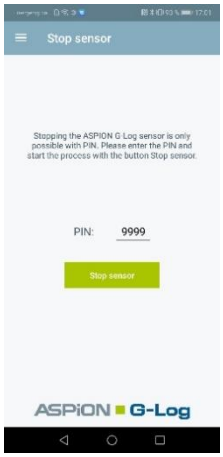
[1] The iOS operating system currently does not permit writing via NFC

[2] only available in Premium, automatically activated

2.1 Stopping the sensor via the App – available only for Android

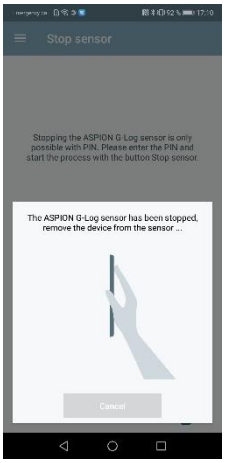
If a PIN to stop the recording was entered in **Global settings** (see ASPION G-Log Manager – PC software, chapter 7, "Global settings"), you can stop the sensor with the Smartphone App. If no PIN was entered, then this function is not executed. This function is not available for iOS smartphones.

Views for stopping the sensor (the function is called via the menu):



Enter PIN, click **Stopping the sensor**

Hold smartphone to sensor and wait until



the sensor has been stopped; then remove smartphone

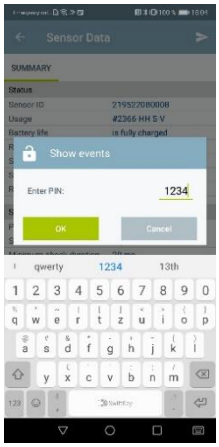
2.2 Display of events is protected by PIN

If a PIN to display the events was entered in the **Global settings** (see ASPION G-Log Manager – PC software, chapter 7, "Global settings"), the smartphone app only displays general information but no possibly recorded shock or temperature events, or activity events. All other functions are not affected.

You enter the PIN to display the events as follows: Double-click the display and you will see a field in which you enter the PIN. After you have correctly entered the PIN and confirmed with OK, all event details will be displayed.

Views for PIN protection:

Display for analysis with PIN protection



After double-tap: Enter the assigned PIN

Display of analysis after the PIN has been entered

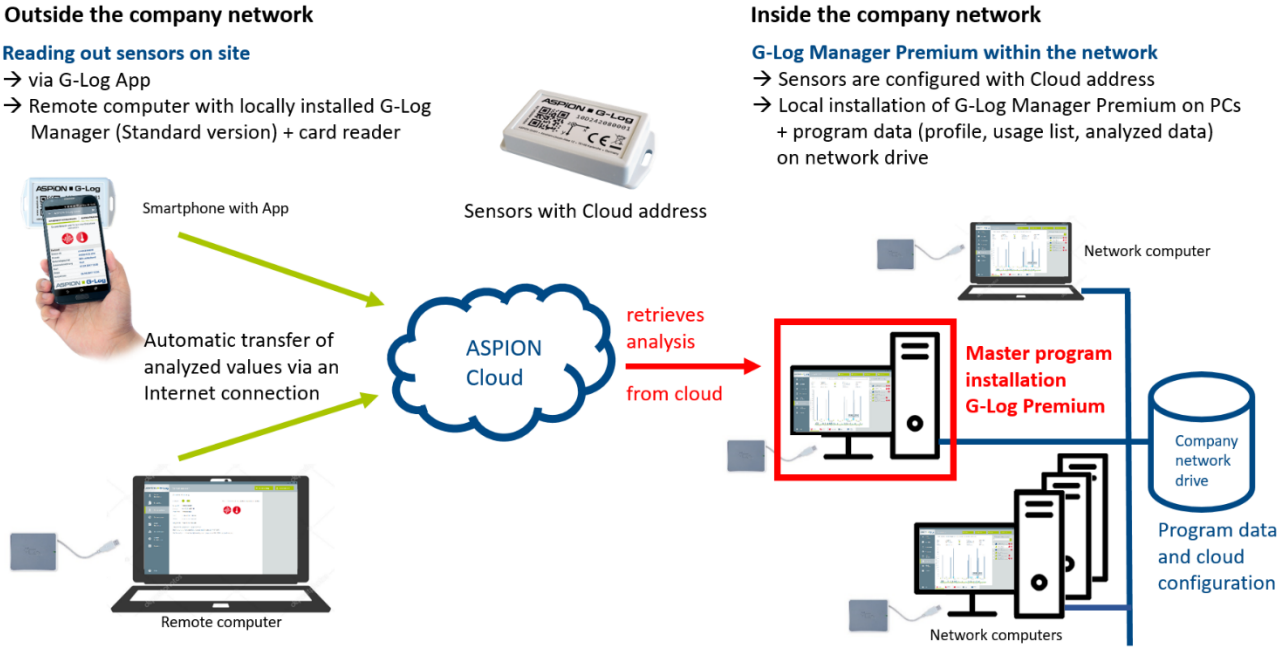
Configuration program

1. Introduction

With the configuration program for the network and ASPION G-Log Premium, administrators can optimize the operation and data accessibility in the organization as follows:

- Network installation enables the shared data management and data use for all users
- Export to archive data
- **ASPION G-Log Premium** extends the solution by a software-based Cloud service with
  - a Cloud storage which is hosted and operated in a German data center, TÜV certified (German Technical Inspection Association)
  - an automatic transfer of analyses, read out via the smartphone App
  - an automatic transfer of analyses, read out with the ASPION G-Log Manager PC software and the NFC card reader which are not connected to the network (Remote PC).

The following overview shows the interplay, the structure and the architecture.



Architecture and components in the network and ASPION G-Log Premium.

2. Installation in the network

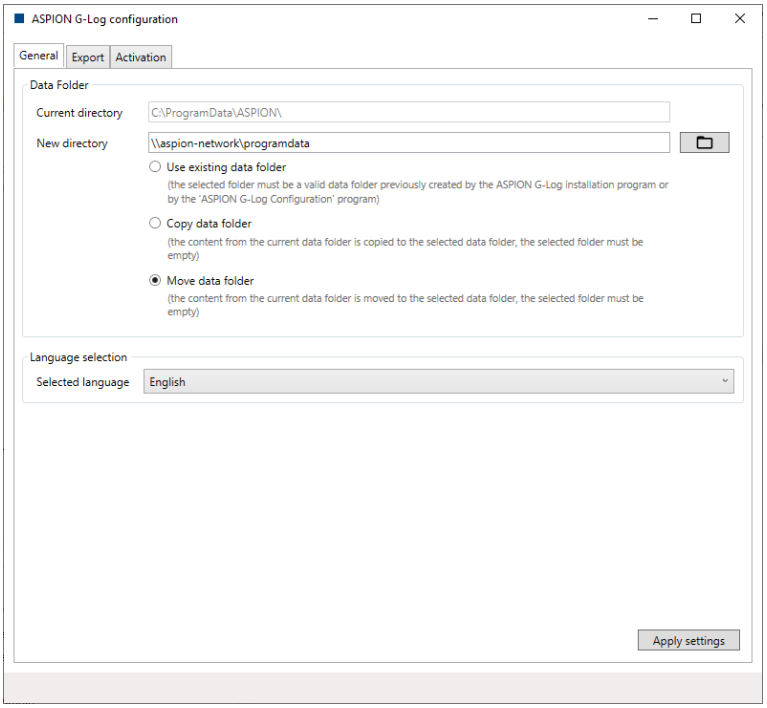
The installation in the network with several users and shared data access is done by specifying the shared network drive to enter the program data. It is specified upon installation, see ASPION G-Log Manager – PC software, chapter 2, "Installation". You can also set up a shared network drive with the configuration program.

Start the configuration program „G-LogConfig.exe“ file via the context menu (right click) with „Run as administrator“:

The "G-LogConfig.exe“ configuration program is stored in the same directory as the ASPION G-Log Manager. Example: C:\Program Files (x86)\ASPION.

The configuration program starts with the general settings.

For shared data access, select a network directory as data folder. All data is stored in this directory.



Use existing data folder:
Default for new installations.

Copy data folder

Move data folder

If you already have data such as profiles and analyses from a local installation, you can use the "Copy data folder" and "Move data folder" functions to copy or move existing data to a shared network folder. In doing so, you enable all users to access all program data in the network.

If you want to change the language of this installation, use the drop-down menu.

With the **Apply settings** button, you save all entries made in the currently active area.

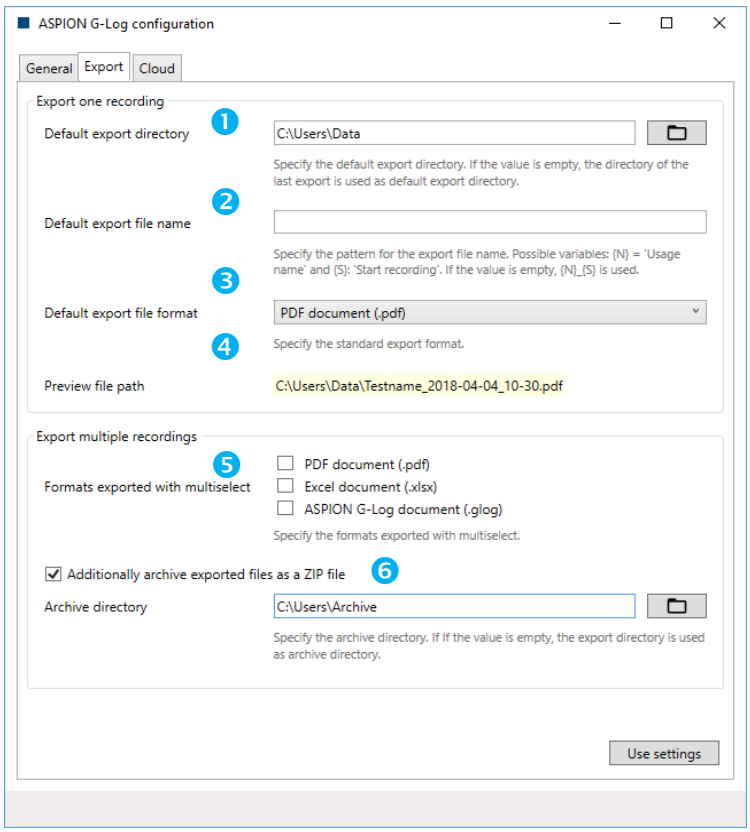
Program data in the network

All program data, such as the usage list, profiles and data analyses are updated automatically for all users when operating in the network, for example:

- If a user deletes an entry within the usage list, this entry is also deleted for all other users.
- If a user adds a new profile, this profile is also available immediately for all other users.
- If analyses are imported, they are visible for all users.
- If you read a sensor with the ASPION G-Log Manager and card reader, the analysis is directly stored in the network for shared access.

3. Export

The ASPION G-Log configuration program offers the following settings to export data analyses:



a) Exporting a recording

❶ **Default export directory:** here you define the directory which is automatically suggested as export directory when exporting a data analysis from ASPION G-Log Manager Premium. If you do not enter a value, the directory of the last export is used.

❷ **Default export file format**: here you define the file name which is automatically suggested as file name when exporting a data analysis from ASPION G-Log Manager Premium. The following variables are supported:

{N}: Usage name
{S}: Time when the recording was started (JJJJ-MM-TT_HH-MM)

You can combine a prefix and suffix with variables. If you do not enter any values, the program automatically enters "{N}_{S}“ as file name. Please make sure not to use empty spaces, umlauts or special characters in the variables.

Example<t0/>:
Data analysis_Shipment123_2018-02-29_10-30_Service

Prefix	Data analysis_	
Variables:	{N} = Shipment123	Name of usage when writing the sensor
	{S} = 2018-02-29_10-30	Date and time when recording was started
Suffix	_Service	

❸ **Default export file format**: here you define the file format which is automatically suggested as default format when exporting a data analysis from ASPION G-Log Manager Premium. Select from

- PDF document (.pdf)
- Excel document (.xlsx)
- ASPION G-Log document (.glog)

❹ **Preview file path** shows you an example of your selected settings including prefix and suffix.

b) Exporting multiple recordings and archiving

❺ **Formats exported with multiselect**: here you define the file formats which are automatically created when exporting multiple recordings from ASPION G-Log Manager Premium. If you make no specifications here, users select the desired export from multiselect themselves.

❻ **Additionally archive exported files as ZIP file**: if you export mulitple data analyses, you can define that these data analyses are automatically archived. Activate the "Additionally archive exported files as ZIP file“ option and enter the archive directory. The data analyses are then stored as ZIP-compressed files with the desired export formats in the specified archive directory.

With the **Use settings** button, you save all entries made in the currently active area.

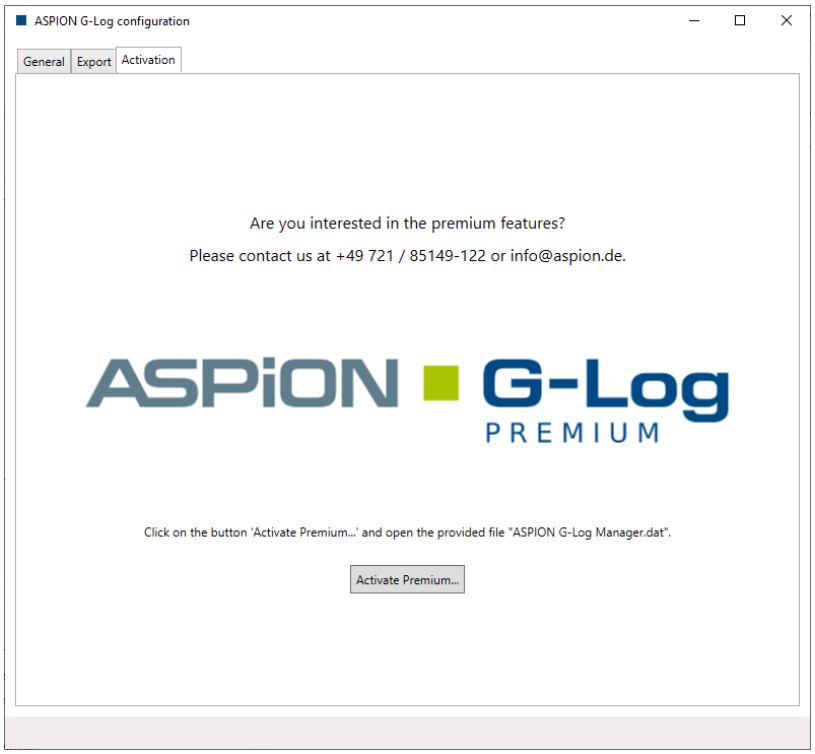
4. Installation ASPION G-Log Premium

You set up ASPION G-Log Premium with Cloud storage in two steps:

1. Via **the master program installation and settings** including Cloud storage and access control
2. Via the **program installation for additional users** with access to shared program data

The master program installation is also the standard program version for a user.
The program installation for additional users is executed locally on each computer. Program data is stored in the network for one shared access.

Please note: We recommend to install the master program on a computer which is regularly used. Data is only transferred from the Cloud to the network, if the ASPION G-Log Manager Premium software is started on this computer. Then all users will be able to see all new data analyses.



To set up the Cloud storage, go to the **Activation** tab and then click **Activate Premium**. Select the provided „ASPION G-Log Manager.dat“ file.

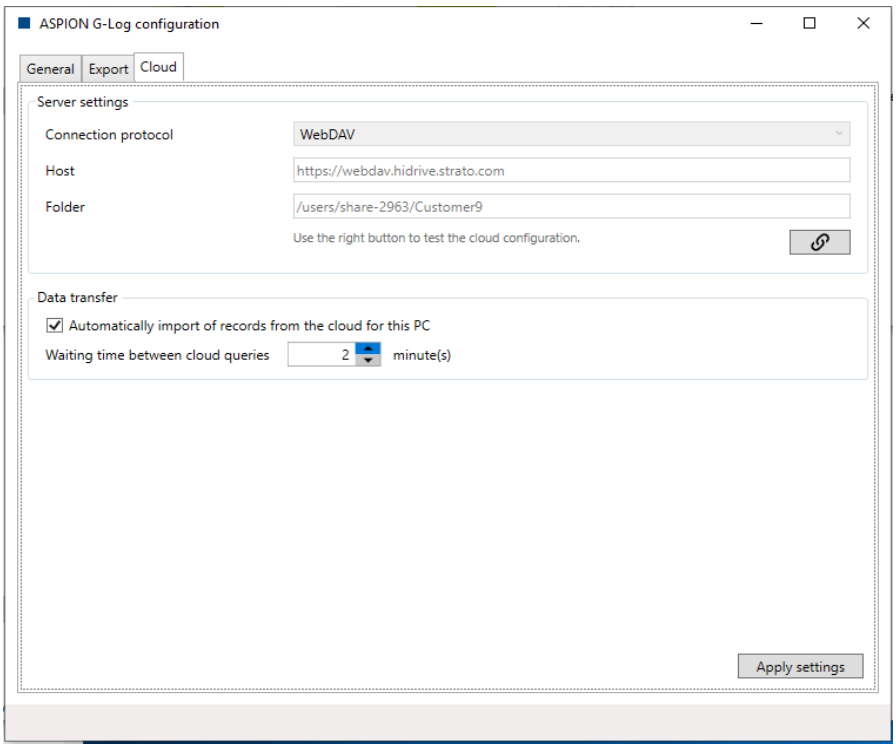
4.1 Cloud storage setting and access control

The setting for the Cloud storage defines the transfer of the Cloud address when writing the sensor, the automatic transfer of analyses to the Cloud storage and the forwarding of this data to the master program installation.

Data analyses which are read out with the ASPION G-Log Smartphone App are transferred to this Cloud storage via WLAN/mobile telephony by the App. The same applies to the transfer of analyses that are read out from a remote computer with ASPION G-Log Manager and card reader, for example, by service employees in the field. The locally installed master program reads in the data analyses newly transferred from the Cloud storage and makes them available to all users in their locally installed ASPION G-Log Manager Premium version through the shared network access.

Please note: You activate the data transfer within the master program installation by activating the **"Automatic import of records from the Cloud for this PC"** option. You can only activate this option for the respective computer on which the master program has been installed. An activation on several computers creates incorrect data analyses!

Test the Cloud configuration by clicking  .
Define the interval (minutes) in which you want to query the Cloud.



With the **Use settings** button, you save all entries made in the currently active area. The next time the ASPION G-Log Manager Premium version is started, the settings you have defined in the configuration program are applied and are visible to the users.

You have successfully finished the setup of the cloud access in the master program installation.

4.2 Program installation for additional users

When installing the ASPION G-Log Manager for additional users, a distinction is made between computers with direct access to the company network and remote computers which cannot directly access data in the network.

PCs with network access

To install the program for additional users that access shared data in the network, please follow the instructions as described in section 2, “Installation in the network”. Close the installation by clicking the **Use settings** button. When starting the ASPION G-Log Manager Premium version, the settings you have defined in the configuration program are applied and are visible to the users.

The installation of the program on the users' computer is finished. Repeat the installation steps for setting up the program on other computers within the network for additional users.

Remote PCs without network access

Installing the software for users without network access follows the steps of the standard installation, see ASPION G-Log Manager – PC software, chapter 2.2, "Installation". Select a local directory to store the program data.

4.3 Working with the sensors

The operation of the sensors in the ASPION G-Log Premium version is the same as in the Standard version, see ASPION G-Log Manager – PC software, chapter 4-10. Users will not notice any differences when using the sensors.

A sensor operated with the ASPION G-Log Premium version contains the Cloud address. When reading out the sensor with the G-Log Smartphone App or with the ASPION G-Log Manager computer software and card reader, the data analysis is immediately transferred to the Cloud storage – if an Internet connection exists. With that, users can access and evaluate the data analyses read out within minutes on their computer program, no matter where the sensor is located worldwide.

4.4 Automatic transfer of analyses

Users of the Smartphone App as well as users of the ASPION G-Log Manager on a remote computer benefit from the automatic transfer of data without further action. As soon as an Internet connection is available, the analyzed data is automatically transferred to the Cloud. Users can easily control the transfer process. The following symbols are used in the display:

Waiting for Cloud upload

Cloud upload successfully executed

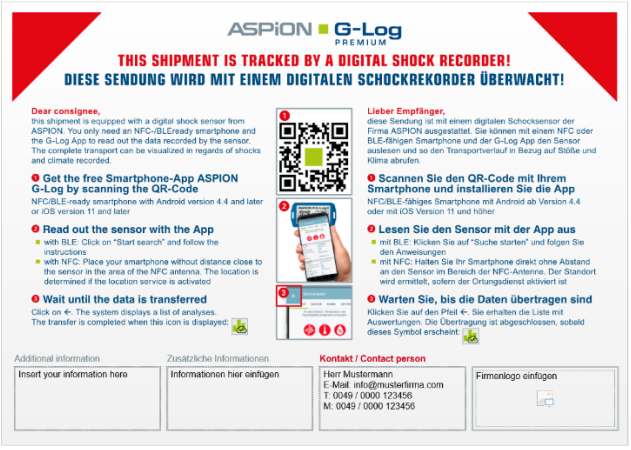
Successful transfer with the Smartphone App

The application of the Smartphone App is identical to the Standard version, see ASPION G-Log App for Smartphones. But App users benefit from the automatic transfer of data analyses which do not have to be sent by e-mail. As soon as a mobile connection is established, the analyzed data is transferred to the Cloud automatically. The App can also be run in the background for the data transfer. The successful data transfer is indicated in the menu via the **Readout data** function by the following symbol: 

Tip: You can download a short description about the ASPION G-Log Premium App for your customers in our ASPION customer portal on our website. You can complete the template with your individual data.

Preview of the short description for your customers, available in the ASPION customer portal.

Short descriptions: ASPION G-Log



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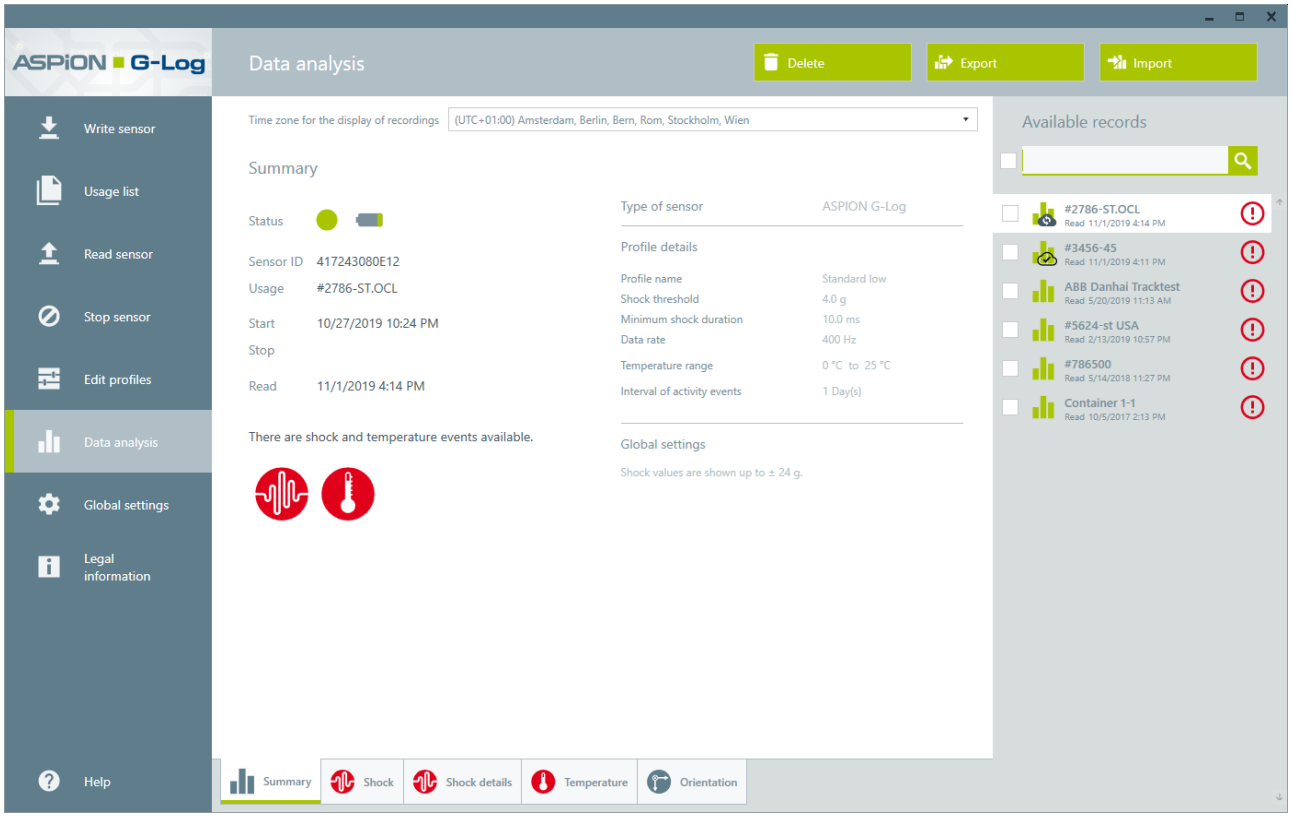
Successful data transfer with the remote PC

Reading out the sensors follows the same steps as with the Standard version, see ASPION G-Log Manager – PC software, chapter 8, "Reading the sensor". But App users benefit from the automatic transfer of data analyses to the Cloud if an Internet connection is established. To check whether the transfer has been successful, switch to the **Data analysis** function.



Analyses with  have successfully been transferred to the Cloud.

Analyses with  have not yet been transferred to the Cloud. As soon as an Internet connection has been established, the missing analyses are automatically transferred to the Cloud and marked accordingly.

Contact and support

Manufacturer

If you have any questions or problems, please contact:

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Support hotline: +49 (0)721 / 8 51 49-128
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For FAQs and more helpful information, please go to our ASPION customer portal at www.aspion.de.