

ASPiON ■ L-Track

Multisensor data logger with live tracking

Transport monitoring in all dimensions

Live. Worldwide. Sustainable.



User manual

ASPiON L-Track and ASPiON Cloud

FAQs, updates and useful
information can be found at
www.aspion.de/en/aspion-l-track-faq-support

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ASPiON L-Track IoT transport data logger

1. General description - overview

The ASPiON L-Track records sensor data such as shocks, vibrations and climate data and sends them in real time via cellular transmission to the ASPiON Cloud IoT platform. The IoT device has many different sensors such as a 3-axis accelerometer for shock detection, temperature, humidity, pressure, tilt and light sensors, etc. and can collect a variety of measurements. These are logged on an interval and/or event basis with a time stamp, depending on the setting and requirement, and temporarily stored in a buffer memory until transmission on the battery-powered device. The device can trigger a transmission with self-defined threshold values or event triggers in order to inform the user immediately in the event of critical events.

The worldwide transmission of data in more than 150 countries is wireless via mobile radio using LTE-M and 2G as fallback. If the device is unable to establish a radio connection, the buffer memory provides sufficient capacity for intermediate storage of the measured values and events. The location information is usually determined cellularly with a deviation of a few kilometres. Localisation to the nearest metre can also be carried out via satellite positioning (GPS). The current location and tracking history is displayed in the ASPiON Cloud.

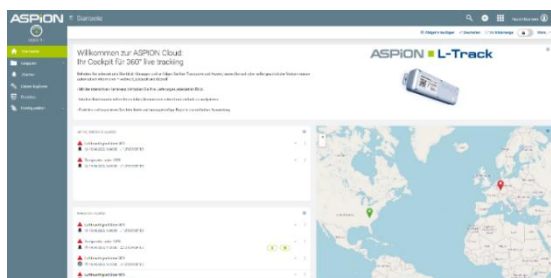
Thanks to the energy-optimized, finely tuned components and the sophisticated design, the ASPiON L-Track can be used autonomously for several years with one set of batteries. With the robust, flame-proof, UV-resistant and waterproof housing and the easy battery change by the user, a permanent use is also given for many different transport monitoring applications and up to 10 years.

The ASPiON Cloud is used to visualize the sensor data as well as location information. The sensor data is visible immediately after transmission, processed further and continuously supplemented with new data automatically. Via the ASPiON Cloud, the user sets threshold values, sets up alarms, receives data analyses and creates reports. The ASPiON L-Track can be easily activated independently and directly, regardless of location and without cloud access.

Each device has a unique ID that is on the label and stored as a barcode. The ASPiON L-Track can be screwed on with the help of the mounting straps, alternatively fixed with adhesive tape or flexibly attached with already mounted magnets.



ASPiON L-Track IoT data logger
for attachment to the transported goods.



ASPiON Cloud: IoT platform for 360° Grad live monitoring
for location, sensor data, alarms, and reports.

2. Technical data ASPION L-Track

The following table contains all the information on the sensors available in the device.

It also contains information on functions that have not yet been implemented but are planned for further development soon.

	Description	Details
Accelerometer	3 axes: x, y and z up to ± 24 g per axis Resolution Measuring range Sampling rate DIN EN IEC 60721-3-2	- Calibrated by the manufacturer up to ± 16 g with 2.5 % accuracy; up to ± 24 g with 3.5 % accuracy, verified by a testing lab - Adjustable threshold from 0.4 g to 12 g - Depending on measuring range 0.03 g to 0.2 g - Adjustable between 4 g and 24 g - Adjustable between 25 Hz and 1,600 Hz 2M4 / 2M5 / 2M6 (planned)
Temperature sensor	Calibrated by manufacturer Adjusted during production	-40 °C ... +125 °C 0.2 °C typical accuracy (at 5 - 60 °C) 0.1 °C resolution - Lower and upper threshold selectable
Humidity sensor	Calibrated by manufacturer Adjusted during production	0 % rH ... 100 % rH, non-condensing 2 % rH typical accuracy (at 20–80 % RH) 2 % rH accuracy; 0.1% rH resolution - Adjustable threshold
Pressure sensor		10 to 2000 mbar, 0,13 mbar accuracy 0,1 mbar resolution - Threshold adjustable
Light sensor	For initial activation, opening detection or lighting	0 to 7550 lux, accuracy 0,12 lux - Due to the use of an optical fiber, the light values deviate from the actual values
Tilt detection		- Tilt range 0-180° - Accuracy 1°; accuracy can decrease below 10°
Memory/logging	Non-volatile ring memory	Deliveries from July 2025: With standard settings approx. 24 months intermediate storage without data transmission -> corresponds to 20,000 measurements
BLE	Bluetooth Low Energy	- Max. 10 m range (line of sight) - Min. Bluetooth 5.0 spec., can be disabled - Bluetooth declaration ID: D060231
Mobile radio	LTE-M (2G) GSM	- LTE Bands: B1/2/3/4/5/8/12/13/18/19/20/25/26/27/28/66/85 850/900/1800/1900 MHz - Worldwide use, 159 countries supported
Localization	Cell localization	Via mobile phone cell, accuracy is up to several kilometers

	GNSS with passive antenna	GPS, GLONASS, Beidou, accuracy a few meters (in exceptional cases up to approx. one hundred meters)
Battery	4x AA 1,5V Alkali 2Ah Battery replaceable by user	- Battery power level at delivery: full - No labeling requirement for alkaline batteries for transport; DGR compliant - Lithium batteries possible, but not approved for air transport
Battery life	Long battery lifetime depending on environmental conditions	- Example: With a transmission interval of 8 hours approx. 2 years (without GPS & shock) - Shorter battery life at low temperatures or with poor network coverage
Battery replacement	Housing opening via Torx screws (T10)	Tightening torque 0.5 Nm
Measuring interval	Temperature, humidity, pressure, light	- Standard: Every hour - Configurable: 15 minutes ... 1 day
Transmission interval	Mobile connection and data transmission	- Standard: Every 8 hours - Configurable: Every hour ... 2 days
GPS tracking interval	Two independent configurable intervals	- Periodically: Every hour ... 16 days - When moving: Every 15 minutes ... 2 days
Operating and storage conditions	Operating temperature range Temperature for data transmission Storage temperature range Humidity range	-30°C ... +60°C -10°C ... +60°C 5°C ... +40°C, avoid direct sunlight during storage 0 % rH ... 100 % rH, non-condensing
Housing and mounting	ABS housing; Screw mounting M4 ISO 7380 FL; optional: industrial adhesive tape, cable ties, magnetic mounting available	- Dimensions: 188 mm x 55 mm x 31,5 mm - Distance of mounting holes: 174 mm - Tightening torque: 0.5 Nm
Version	IP 65/67 protection	- Sensor protected by membrane - Dustproof / waterproof - Impact resistance rating: IK08 - Flame retardant and UV resistant - Weight approx. 250 g incl. batteries
Approvals/Standards	Declarations of conformity and directives	- CE / ROHS / REACH / WEEE - RED (EU) - FCC (USA) - IC (Canada) - WPC (India) - SRRC (China, in preparation) - DO160 (IATA)

3. Export data

Export information	Product tariff code	■ 9031 8080
	Country of origin	■ DE (EU)
	Markings	■ AI = no, ECCN = no
		■ Standard AA batteries not subject to labeling on delivery

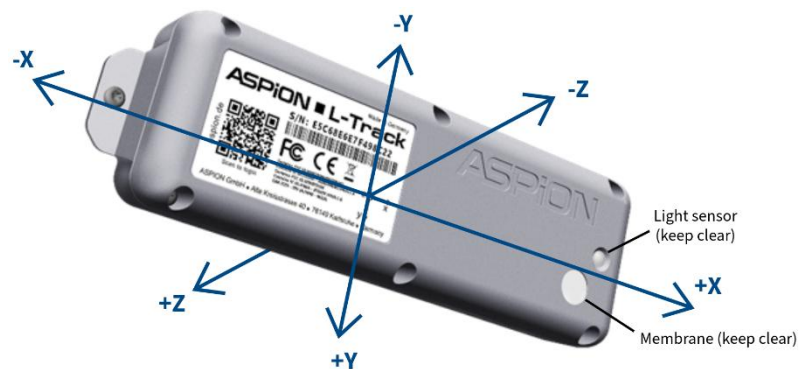
4. Mounting

4.1. Mounting direction

The mounting direction is decisive for the assignment of the axes in the event of shock events. It is best to mount the data logger directly on the transported goods in a sensitive location, preferably in the upper third.

Recommended Mounting

- Tightening torque 0.5 Nm
- on steel: M4 ISO 7380 FL
- on wood / sheet metal: Flat-head screws with max. 3.9 mm thread diameter (e.g. DIN 7981)
- Alternatives: Industrial adhesive tape (e.g. from 3M), cable ties or magnets (available as assembled magnet set; holding force 5 kg/magnet with 4 magnets)



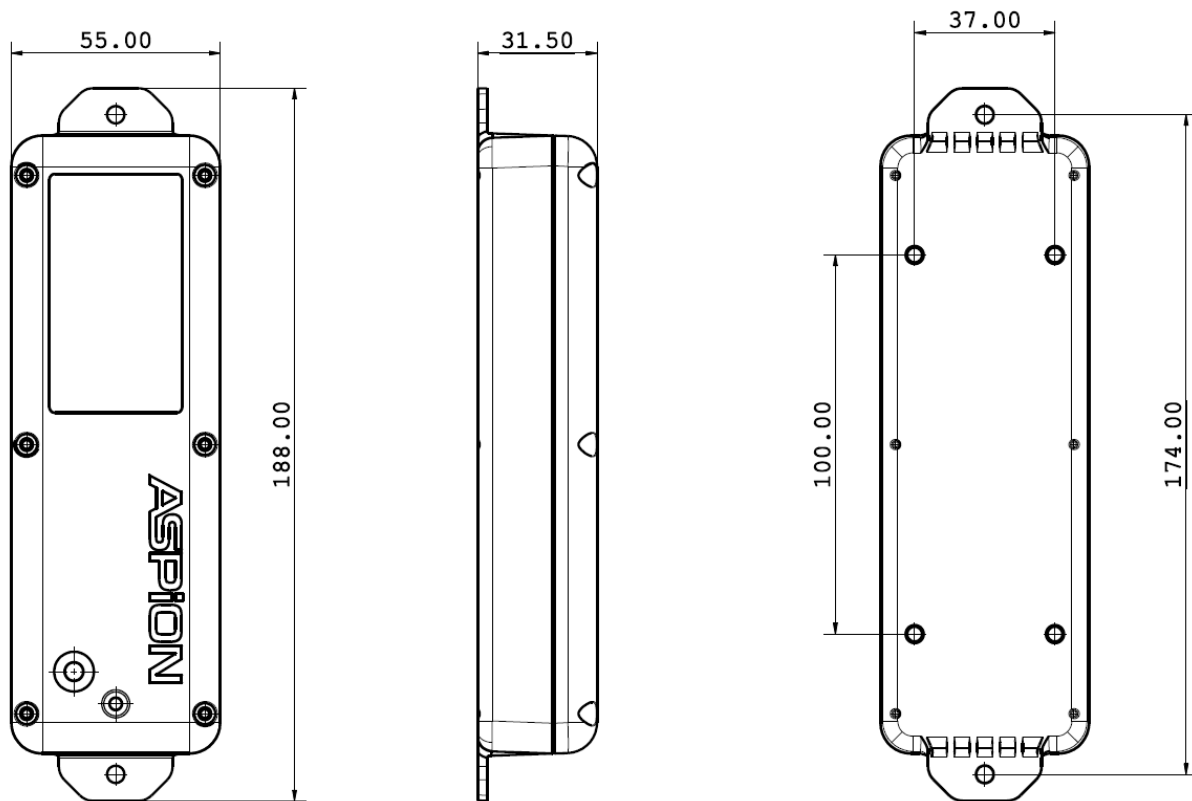
4.2. Packaging instructions (restrictions on mobile radio transmission)

- To record temperature and humidity, make sure that the white membrane (red border) on the top of the ASPION L-Track is not covered when packing the device. If lux values are to be recorded via the light sensor, keep the adjacent light sensor uncovered.
- If you use corrosion protection packaging made of shielding material (such as aluminum composite foil), this creates a Faraday cage, which prevents mobile phone transmission. You can prevent this by excluding a small area, ideally close to the device, from the shielding, for example by installing a viewing/inspection window (e.g. Hermann window). This is the only way to **ensure mobile radio transmission when using corrosion protection packaging**.

4.3. Housing dimensions and cross-section

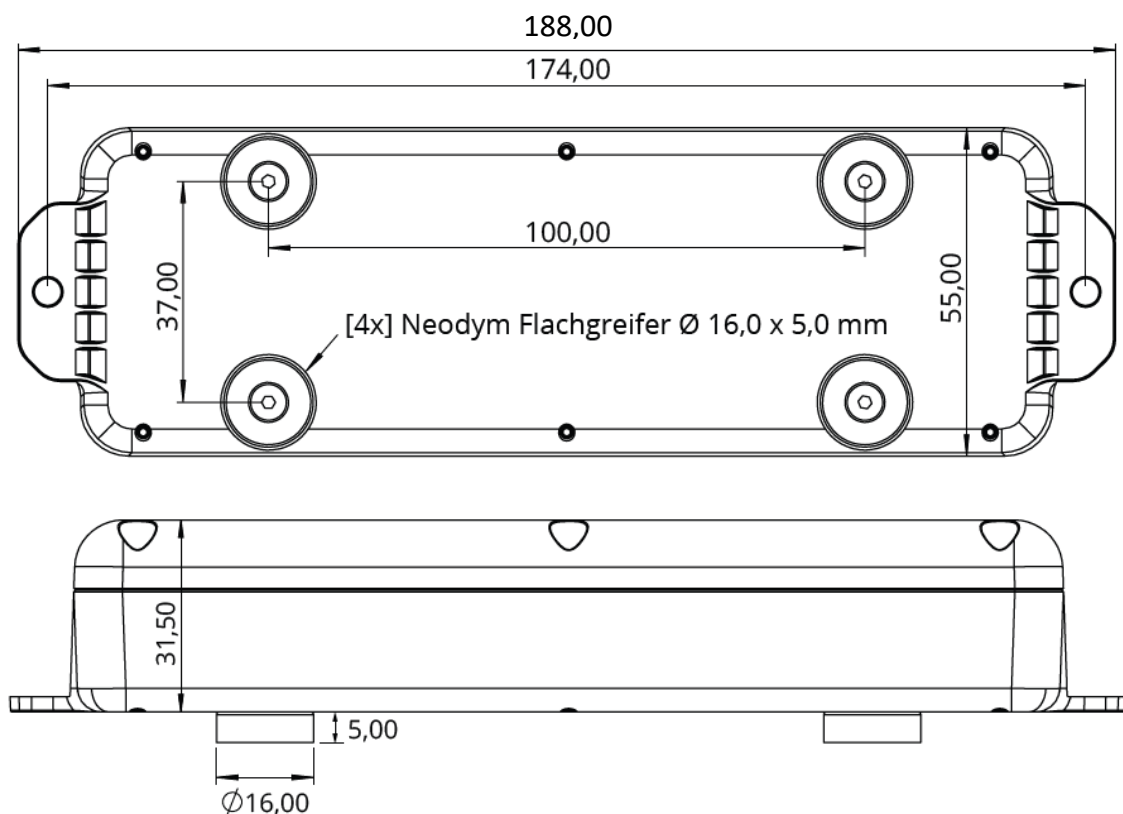
Housing without magnets

Dimensions in millimeters - not to scale



Housing with magnets

Dimensions in millimeters - not to scale



5. Battery replacement

The ASPION L-Track uses four AA 1.5V alkaline batteries. These can be replaced by the user. Alternatively, lithium AA 1.5V batteries can be used (hazardous goods guidelines must be observed, not approved for air transport). Change the batteries as follows:

1. Open the housing on the top: To do this, loosen the screws with a Torx T10 screwdriver.
2. Remove the batteries from the holder using a blunt non-metallic object (e.g. plastic ballpoint pen) from the holder. Avoid contact with electronics.
3. Insert four new AA 1.5V batteries (alkaline or lithium) into the holders. Observe the correct polarity.
4. Screw the housing tight with a maximum tightening torque of 0.5 Nm. Improper handling will invalidate the warranty; in addition, the housing may start to leak and water ingress may destroy the device.

6. Firmware updates

The ASPION L-Track firmware is updated automatically "over the air". A manual update process is not necessary. If the ASPION L-Track is connected to the mobile network, all available firmware updates are automatically downloaded to the device and installed.

7. Commissioning

When an ASPION L-Track is delivered, it is in the delivery state with low power consumption. Activate a device by pulling off the red "Remove Label".

Note: Make sure that sufficient light falls on the light sensor so that the device is activated. In poor lighting conditions, shine a flashlight on the light sensor for a few seconds.

The initial synchronization of the device with the ASPION Cloud takes a few minutes. After that, a measurement is taken at every full hour and the first data transfer to the ASPION Cloud takes place after 8 hours.

Then, you can view the measured values via the ASPION Cloud and configure the device. Please note that a device must be activated within 3 months of delivery. Otherwise the billing period begins automatically.

8. Disposal



In accordance with the Waste Electrical and Electronic Equipment Directive, the ASPION L-Track must not be discarded with normal household waste, but only taken to the appropriate disposal sites. You can therefore return devices that are no longer required to the manufacturer free of charge at any time to the following address:

ASPION GmbH
Old Appliances Acceptance
Ohiostraße 11
76149 Karlsruhe, Germany

9. Safety instructions

- The ASPION L-Track IoT data loggers are not designed for safety-relevant applications.

- An obviously damaged device must not be put into operation. Devices that do not function properly or are damaged should be returned to your source of supply.
- Make sure that no liquids penetrate the device, as this can cause corrosion damage or short circuits.
- The ASPiON L-Track is suitable for battery replacement by the user. When changing the battery, take care not to cause any short circuits and follow the instructions.
- Never use a device with a leaking battery. If possible, do not touch this device with your bare hands. If you have come into contact with the leaking components, wash your hands thoroughly. Wipe up the electrolyte residue with a damp cloth. Wash any clothing that has come into contact with the electrolyte.
- The manufacturer is not liable for damage caused by improper use or incorrect operation.
- The devices comply with the safety standard *EN IEC 62368-1:2020+A11:2020*.

10. FCC / ISED Warnings

- Contains FCC ID: XMR202004BG600LM3 ; Contains IC: 10224A-20BG600LM3.
- Contains FCC ID: X8WBT840 ; Contains IC: 4100A-BT840
- Class A - Industrial use
- This equipment has been tested and was 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.

Interference 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.

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.

11. RED Declaration of Conformity

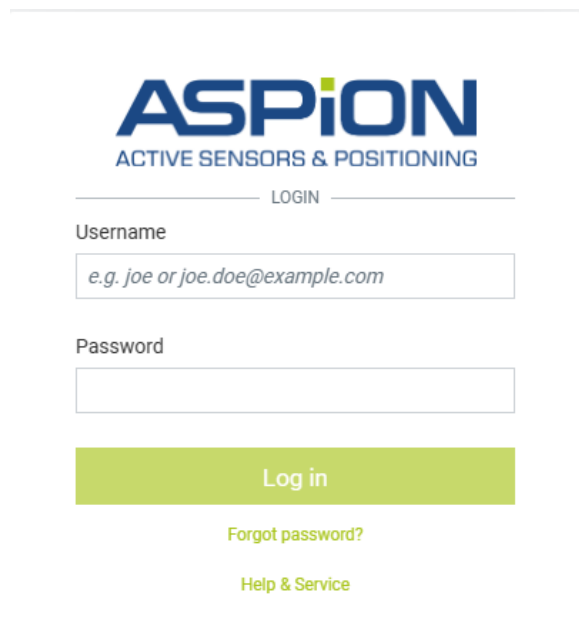
- ASPiON GmbH confirms that the L-Track complies with the essential requirements and other relevant provisions of Directive 2014/53/EU. This product can be used in all EU member states.

ASPION Cloud

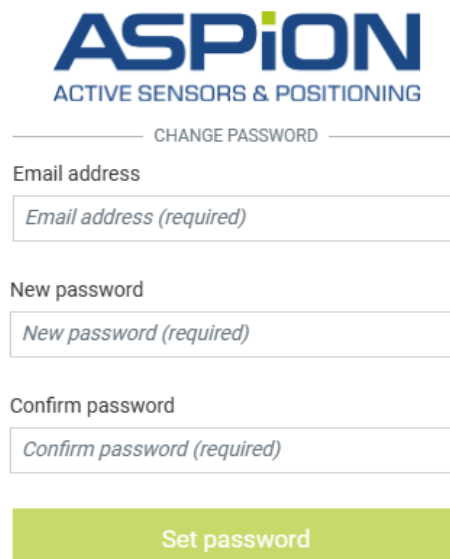
The ASPION Cloud is used to visualize the sensor data and location information. The sensor data is visible immediately after transmission, processed and constantly updated with new data automatically. You can use the ASPION Cloud to set threshold values, set up alarms and evaluate the data.

12. User login

To log in to the ASPION Cloud for the first time, click on the link you received by email from the ASPION Cloud. Enter your own password for your login there. Also check your spam folder if you have not received an e-mail. The link in the e-mail is only valid for 24 hours. If it has already expired, click on "Forgot your password?" in the ASPION portal and follow the instructions in the email.



The login form features the ASPION logo at the top, followed by the text "ACTIVE SENSORS & POSITIONING". Below this is a horizontal line with the word "LOGIN" in the center. The form contains two input fields: "Username" with a placeholder example "e.g. joe or joe.doe@example.com" and "Password". A green "Log in" button is positioned below the password field. At the bottom, there are two links: "Forgot password?" and "Help & Service".



The change password form features the ASPION logo at the top, followed by the text "ACTIVE SENSORS & POSITIONING". Below this is a horizontal line with the text "CHANGE PASSWORD" in the center. The form contains three input fields: "Email address" with a placeholder "Email address (required)", "New password" with a placeholder "New password (required)", and "Confirm password" with a placeholder "Confirm password (required)". A green "Set password" button is positioned below the confirm password field.

Then enter the access data you received by e-mail in the login form. **Please note that the username and email address may differ.** You will receive the username in the confirmation email during the registration process after you have entered your password.

Please also note that it is case-sensitive. If you forget your access data, you can reset your password at any time using the "Forgot your password?" function.

13. SPION Cockpit – Home page

After logging in, you will be redirected to the "SPION Cockpit" on the home page.

- ① The **main navigation bar** is located on the left-hand side. Here you will find the shipments you have created, the device management, profiles for the device configuration and the exported files.
- ② The **top menu bar** shows which area of the cockpit you are currently in (here: "Home"). You will find the following functions on the right-hand side:
 - **Suche:** Click on the magnifying glass to search for devices or groups. The entry in the search bar is checked for an exact match by default. Alternatively, you can click on one of the green buttons to search for a partial match only. Pay attention to upper and lower case.
 - **Application switcher:** Use the application switcher (tiled symbol)  to switch between the "Cockpit" and "Administration" areas. Note: The Administration area is only shown if you have the rights to do so.
 - **User:** After clicking on the user icon or your user name, you can log out of the SPION Cloud or edit your user data (e.g. e-mail address, login data, password).

- ③ In the center of the screen you will find the most important information at a glance. In the upper half, if set up, you will find an overview of all currently active alarms for all devices and all active Shipment. Below is a map with the last position of all currently active devices. Devices with active alarms are marked in red. Devices without active alarms are shown with a blue border.

14. Device management

In the ASPiON Cloud, you can use groups - similar to folder structures in a file system - to manage your devices easily and clearly, e.g., to assign multiple devices to a location. The groups allow you to limit user rights and set up alarms for all devices in a group using smart rules. Groups can also be nested so that complex structures can be mapped. Each group has a tab for "Groups and Devices." All subordinate groups and devices are displayed here.

① Navigate to the **Devices** entry in the left-hand main navigation bar to display device management. This will bring up the second level of the main navigation. At the top is the **Overview (all devices)** area, where you will find a complete list of your purchased devices with active terms. Below this area, groups are represented by a folder icon and devices by a circle with two arrows.

② The tabs differ depending on whether a group or the **Overview (all devices)** area is selected. The **Overview (all devices)** area has the following tabs:

- **Devices:** List of all devices that have an active term.
- **Groups:** List of all groups at the top navigation level. Subordinate groups are not displayed additionally.
- **Map:** The last location of all devices is displayed as on the start page.
- **Alarms:** All alarms are displayed divided into active, confirmed, and canceled [16.1].
- **Smart Rules:** Use Smart Rules to create thresholds for alarms and email notifications [16].

For groups, the first two tabs are combined into **Groups & Devices**. The **Map** and **Alarms** tabs only show the locations and alarms of the devices in this group. The **Smart Rules** tab does not contain any templates.

③ Create a new group using the **Add group** button. This group will be subordinate to the current group. In the **Overview (all devices)** area, a group is created at the top navigation level [14.1]. For groups, a second **Add devices** button also appears. This can be used to assign new devices to a group at any time.

④ The device list shows a table with all selected attributes of the devices. By clicking on the arrow on the right side of each attribute, you can sort it in ascending or descending order. Always select only one attribute for sorting. By default, sorting is done by name. Note: Always select only one attribute to sort by. If you have activated the sort function for multiple attributes, it will only work for the first attribute listed in the table. The sort function is activated when an arrow is visible. It is not possible to sort by all attributes. The device list includes the following attributes, among others:

- Name: Name you have chosen for the device (can be customized using the pencil icon)
- Serial number: Unique number for assigning the device
- End of term: Date until which the device is active
- Configuration: Shows the status of the configuration and whether shock and GPS tracking are enabled [15]. Example: "Standard, Shock, GPS" -> Both shock and GPS are enabled. A blue clock indicates that the configuration has not yet been applied to the device. 
- Measurement interval: Regular interval at which the environmental parameters are recorded.
- Transmission interval: Regular interval at which the L-Track measurement data is transmitted to the ASPION Cloud.
- Remaining battery life: Estimated remaining runtime and date until the last transmission with current batteries. The estimate of the remaining battery life is based on Panasonic alkaline batteries. Other manufacturers and, in particular, lithium batteries change the actual battery capacity and the remaining battery life.
Note: If the GPS location is active when the device is in motion, it is assumed that the device is in motion 50% of the time. More frequent movement reduces battery life.
- Last transmission: Time of the last data transmission of the device data to the ASPION Cloud.
- Alarms: Number of active alarms on the device.

⑤ The attributes displayed and their order can be edited using the **Configure columns** button. The order of the columns can be adjusted using drag and drop.

⑥ Use the pencil icon to edit the names of groups and devices. The name must be between 3 and 40 characters long and may contain any special characters.

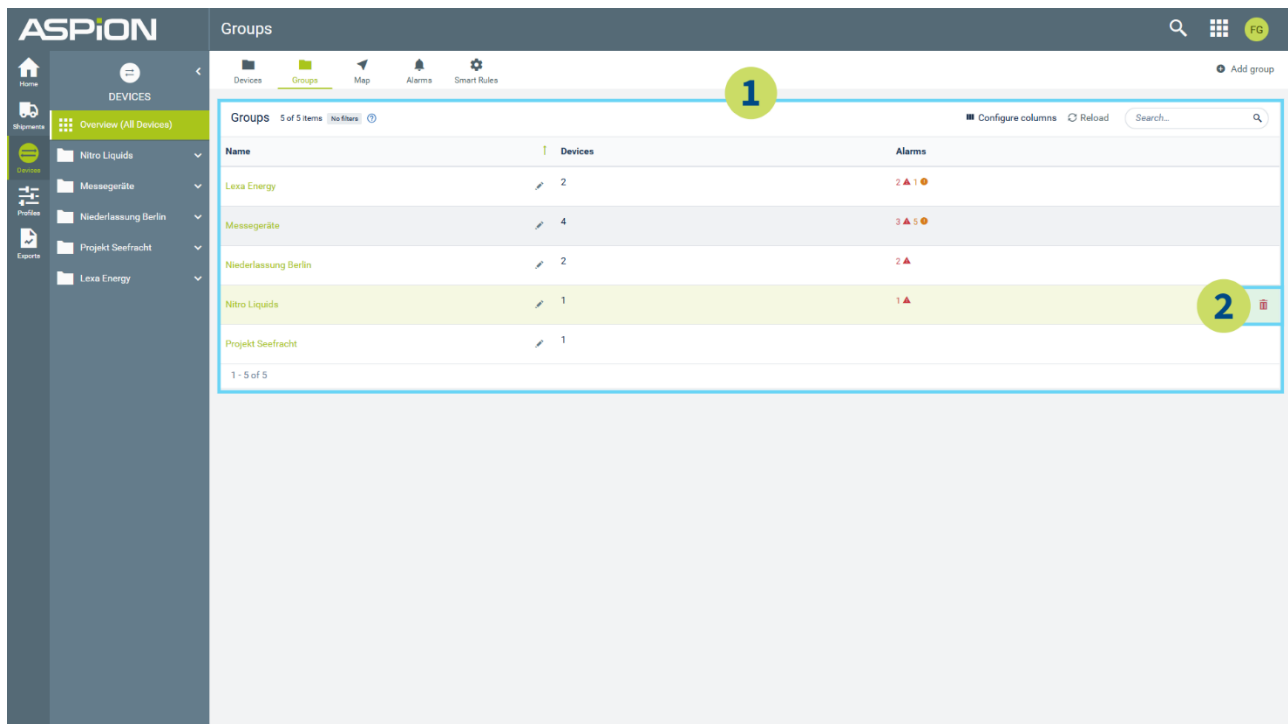
⑦ On the right-hand side of each line, you will find various buttons, depending on the device status:

- **Configure:** Opens device configuration, including alarm thresholds.
- **Activate manually:** Activates the device from the next transmission onwards, even without removing the red remove label [7]. Before activation, the transmission interval is always 24 hours.
- **Create export:** Creates a data export [19]
- **Delete and export:** Deletes the device from the ASPION Cloud before the end of the term and automatically creates a data export for the term of the device. This action cannot be undone.
- **Remove assignment:** Removes the device from this group; only displayed in groups

⑧ Displays a list of active alarms for each subgroup and device. By clicking on the alarm icon in the device list, you can jump to the alarm overview of the selected device.

⑨ The second level of the main navigation bar can be hidden and shown again using the left arrow. If you can no longer see the second level of navigation, you can open it again by clicking on the white right arrow button. 

Groups are managed via the Groups tab in the **Overview (all devices)** section:



① The group table shows all groups created at the top navigation level.

② On the right-hand side, you will find red buttons for deleting groups when you move your mouse over the row. Deleting a group is irreversible!

14.1. Create a new group

To create a new group, use the **main navigation bar** on the left-hand side to navigate to the group under which the new group is to be created. Now use the tabs at the top to switch to the "Groups and devices" view. Here you can see all subordinate groups and devices of the currently selected group. At the top right, you can use the **Add group** button to create a new group and assign devices to the currently displayed group.

When adding a group, you will be asked to enter the name and optionally a description. Click on the **Next** button to assign devices to this group.

1
New group
2
Assign devices

New group

Name

e.g. First floor (required)

Description

e.g. first floor devices

Cancel

Next

2
Assign devices

Select target devices

No filters

Configure columns

Reload

Status	Name	Model	Serial number	Group	Registration date	System ID	IMEI	Alarms
☐	9DC3174D9EDF94E9	L-Track	9DC3174D9EDF94E9	Messe Stuttgart	24 Jan 2024, 17:53:59	4396		3 ▲
☐	GM Eur [FE8A]	L-Track	189ED2993605FE8A	Lexa Tooling, Lfg.: Glob...	26 Feb 2024, 12:26:51	9364		3 ▲
☐	NL SA [5F91]	L-Track	192674B291A85F91	Lexa Tooling, Lfg.: Nitro...	26 Feb 2024, 12:26:51	5815		1 ▲

Cancel

Back

Create

Select the devices by clicking in the selection box on the left. You can also assign individual devices to several groups. You can change the assignment of a device to a group at any time in the list view in the **Groups and devices** tab using the **Assign devices** button. Complete the creation of the group by clicking on the **Create** button.

15. Device configuration

In the device configuration, you set what and how the device records and how often the data is transmitted. You can also specify threshold values for creating an alarm for each sensor. Templates can be created in the **Profiles** area so that the device configuration can be used quickly for many devices.

15.1. Device profile

Navigate to the Profiles section in the main navigation bar on the left to manage them.

The screenshot displays the 'Device profiles' section of the ASPION L-Track interface. The main content area features a table titled 'Available device profiles' with 7 items. The table columns are Name, Description, Sensors, Created on, and Battery runtime. The table lists various profiles such as 'Energiesparmodus', 'Leichtes Transportgut (0,3-1 t)', 'Mittelschweres Transportgut (1-8 t)', 'Schweres Transportgut (8-15 t)', 'Sehr schweres Transportgut (>15 t)', 'Standortmonitoring', and 'Umgebungsbedingungen'. Each row includes an edit pencil icon in the rightmost column. A sidebar on the left contains navigation icons for Home, Reports, Devices, Profiles, and Exports. The top bar includes a search icon, a grid icon, and a 'Create new profile' button. Three numbered callouts are present: 1 points to the table header, 2 points to an edit pencil icon in the table, and 3 points to the 'Create new profile' button.

Name	Description	Sensors	Created on	Battery runtime
Energiesparmodus	Tägliche Übertragung; Erfassung von Umgeb...	4	28.10.2025	24 h
Leichtes Transportgut (0,3-1 t)	Schockerfassung für Gütergewicht zwischen ...	1	28.10.2025	8 h
Mittelschweres Transportgut (1-8 t)	Schockerfassung für Gütergewicht zwischen ...	1	28.10.2025	8 h
Schweres Transportgut (8-15 t)	Schockerfassung für Gütergewicht zwischen ...	1	28.10.2025	8 h
Sehr schweres Transportgut (>15 t)	Schockerfassung für Gütergewicht über 15 T...	2	28.10.2025	8 h
Standortmonitoring	GPS alle 8 Stunden und bei Bewegung alle 15...	1	28.10.2025	8 h
Umgebungsbedingungen	Sensoren zur Erfassung von Umgebungsbedi...	0	28.10.2025	8 h

- ① The **Available device profiles** table already contains a selection of profiles as standard. For each profile, the table shows the basic configuration and the estimated battery life for a device with a full battery.
- ② Click on the edit pencil to customize the profile.
- ③ Click on the **Create new profile** button to create a new profile.

① Assign a descriptive name for the profile and optionally a description.

② Select the configuration [15.2].

③ The estimated battery runtime based on the selected configuration for a device with a full battery.
Note: The specified battery runtime is only an estimate and may vary strongly in reality.

Click on the **Save** button to create the profile. All created profiles appear in the overview in the Profiles area and can be applied via the device configuration [15.2].

15.2. Apply configuration

You can access the configuration via the device list in a higher-level group or directly at device level in the device details area. For example, in the **Overview (All devices)** area in the Devices tab, the **Configure** button [14, point 7] appears in the device list on the right. Click to open the device configuration view.



The screenshot displays the 'Configure device' interface for device ID 58F19F870F75DF1F. It is divided into two main sections: 'Sensor settings' on the left and 'General settings' on the right. At the top right, there is a button 'Apply device profile' (callout 1) and a status bar showing 'Estimated battery life: ca. 258 days | 01.11.26' (callout 5). The 'Sensor settings' section includes 'Shock' settings (callout 2) with a dropdown menu, a 'Datarate' selector (1600, 400, 200, 100, 50, 25 Hz), a 'Threshold for shock' slider (0.4 to 12.0 g), a 'Threshold for shock duration' slider (5.0 to 60.0 ms), an 'Alarm on threshold exceedance' checkbox, an 'Expertmode Shock' checkbox, a 'Remove lower limit for shock threshold' checkbox, and a 'Measuring range shock' selector (24, 16, 8, 4 g). Below this is the 'Tilt' section (callout 3) with a 'Starting position' selector (Previous configuration, At selected time), an 'Alarm threshold for tilt' checkbox, a 'Tilt threshold' slider (0 to 40 degrees), an 'Expertmode Tilt' checkbox, an 'Advanced settings for tilt threshold' checkbox, and a 'Reaction speed' selector (Very sensitive, Sensitive, Balanced, Sluggish, Very sluggish). The 'General settings' section (callout 4) includes a 'Transmission interval (with cell location)' dropdown (8 hours), a 'Measurement interval' dropdown (1 hour), a 'GPS tracking (GNSS)' checkbox, a 'Periodic location every' dropdown (8 hours), and an 'Additional location when moving every' dropdown (Disabled). At the bottom of the 'Sensor settings' section are 'Cancel' and 'Save' buttons.

① Apply device profile: The **Apply device profile** button can be used to select a profile that has been created as a template in the Profiles area [15.1]. A list of all available device profiles appears. Click on a profile to apply it. Possible conflicts with the current device are marked with an orange triangle. The profile can still be selected, but changes must be made before saving the configuration.

The device configuration is divided into two areas. The left-hand side contains the sensor-specific configuration options, while the right-hand side can be used to select general higher-level settings for the device.

② Shock: Shock detection is deactivated by default. To activate it, select a profile from the drop-down menu or make your own settings. Recommendation: Start with one of the predefined profiles and gradually adapt it to your own needs. The following three standard profiles are available to choose from:

- 0.3 t to 1 t: Profil high → 8 g at 20 milliseconds shock duration
- 1 t to 8 t: Profil medium → 6 g at 15 milliseconds shock duration
- 8 t to 15 t: Profil low → 4 g at 10 milliseconds shock duration

Generally, the heavier the transported goods, the lower the threshold values. For lighter or heavier goods, select correspondingly higher or lower values.

Data rate: The data rate is used to determine the measuring frequency of the accelerometer. A high data rate has a negative effect on battery life. At the top right, the remaining battery life is updated when a change is made.

Threshold value for shock and shock duration: Set the threshold values (g-force and duration in ms) for shock detection. Note: Use the standard profiles as a guide to avoid recording a large number of events.

Alarm on threshold exceedance: Activate this option to create an additional alarm when a shock is recorded. Further information can be found in chapter [16.1.1].

③ Tilt: Tilt detection is deactivated by default. Activate tilt detection to obtain tilt values in the measurement interval. If the threshold value is exceeded, a further tilt value is also recorded. As long as the threshold is exceeded, further tilt values are recorded for every change of approx. 1.5 degrees. In addition, an

alarm is generated in the ASPION Cloud if the threshold value is exceeded [16.1.1]. Note: The direction of the tilt is not taken into account.

Expert mode tilt: Activate the expert mode tilt to be able to make advanced tilt settings:

- **Remove lower limit for tilt threshold:** If the threshold value for tilt is to be set to below 30°, activate this checkbox.
- **Reaction speed:** Specify how sensitively the device reacts to changes in tilt. A higher sensitivity provides significantly more measured values, a lower sensitivity ensures smoother curves.

④ **Transmission interval (with cell location):** Select the interval at which the device transmits data and determines rough location information when there is a cellular connection. The transmission interval is a multiple of the measurement interval and can be between one hour and 2 days.

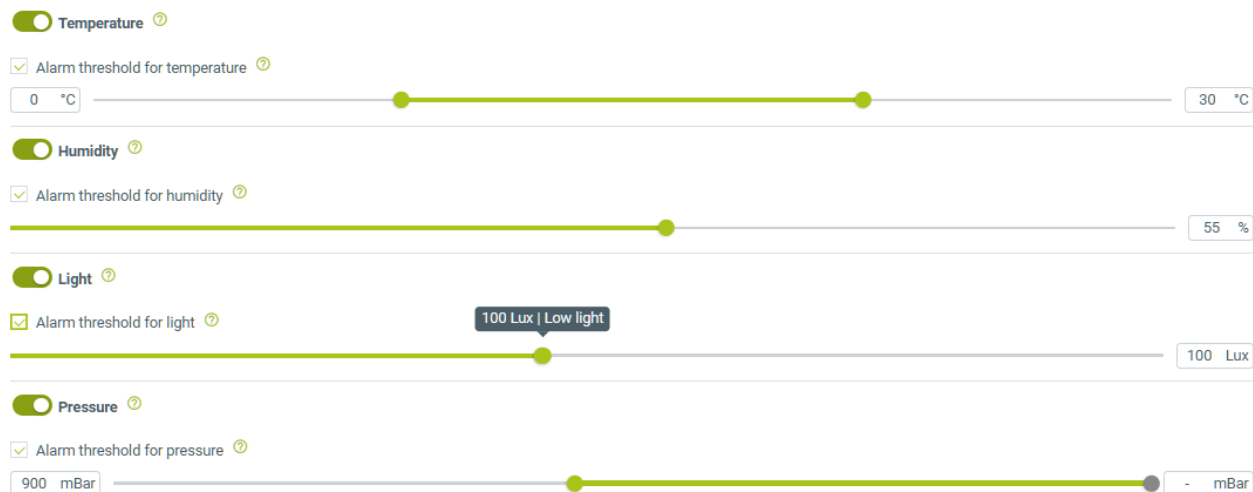
Measurement interval: Select the interval at which the device regularly saves the measurement data. The measurement data includes tilt, temperature, humidity, light, pressure, battery capacity and battery voltage. The measurement interval can be set between 15 minutes and 1 day.

GPS tracking (GNSS): GPS tracking is deactivated by default. By clicking on the switch, you can activate GPS tracking and obtain a more precise location than just by locating the mobile phone masts for each data transmission. GPS tracking can be set with two different intervals:

- The **periodic** GPS location is a regular interval that determines a precise location via GPS at the selected interval. This interval is particularly suitable for permanent, precise monitoring of the device location. The periodic GPS location is a multiple of the transmission interval and is between one hour and 16 days.
- The additional GPS location **when moving** determines the GPS location (if activated) when the device is moving at the selected interval.
 Example: GPS location when moving is activated hourly -> No GPS location is determined based on this setting until the device moves. As soon as the device moves, a GPS location is determined every hour until the device is at rest again. The GPS location at standstill also regularly determines a GPS location regardless of movement (if activated).
 This makes the GPS interval when moving suitable for transport monitoring where precise location tracking is required. This interval leads to additional data transmission if the GPS interval is smaller than the transmission interval.

⑤ **Remaining battery life:** The remaining battery life is directly adapted to the selected device configuration and applies to the selected device, taking into account past battery consumption. This information is only an estimate and may vary considerably, particularly depending on the reception strength and ambient temperature.

Further sensor settings: Below the tilt configuration, activate the detection of the corresponding sensor via the respective switch button:



The screenshot displays the configuration interface for four sensors: Temperature, Humidity, Light, and Pressure. Each sensor section includes a toggle switch to enable the sensor, a checkbox to enable an alarm threshold, and a slider to set the threshold value. The current settings are as follows:

- Temperature:** Toggle is on. Alarm threshold is checked and set to 0 °C.
- Humidity:** Toggle is on. Alarm threshold is checked and set to 55 %.
- Light:** Toggle is on. Alarm threshold is checked and set to 100 Lux. A tooltip indicates '100 Lux | Low light'.
- Pressure:** Toggle is on. Alarm threshold is checked and set to 900 mBar.

Each of these sensors is logged in the measuring interval. In addition, an alarm threshold value can be activated and set for each sensor. Depending on the sensor, only an upper or also a lower alarm threshold value can be selected. If a two-sided slider is dragged to the edge, one of the two threshold values is deactivated [16.1.1].

Alarm threshold values: If an alarm threshold is exceeded, an alarm is created in the ASPION Cloud. This is visible in the Alarms tab and in the tracking map. Email notifications can also be set up in the Smart Rules area [16].

Click on the **Save** button to update the configuration status in the device list [14, point 4]. In the Configuration column, a blue clock ⌚ indicates that the new configuration will be adopted with the next data transfer. As soon as the blue symbol disappears, the configuration is active on the device. Note: The settings are synchronized with the device during the next transfer. Until then, the old device configuration remains on the device.

A red cloud ☁ indicates that the device configuration has failed. In this case, repeat the process.

16. Alarms, Smart Rules & notifications

Alarms enable the automatic monitoring of your device data in order to detect and visualize critical states. If a defined threshold value is exceeded or a corresponding event is detected, an alarm is generated and displayed in the ASPiON Cloud. Optionally, additional e-mail notifications can be sent if immediate action is required.

16.1. Create & display alarms

Alarms can be created in two ways:

- Via the **device configuration** [15.2, 16.1.1]: Suitable for all types of threshold exceedances for sensors
- Via **Smart Rules** [16.1.2]: Suitable for geofence and battery alarms as well as for extended escalation levels

Newly created/activated alarm rules only monitor future measurements from the next transmission. No retroactive alarms are generated for measurements that have already been recorded.

16.1.1 Create alarms via device configuration

Alarm thresholds can be set for all measured values via the device configuration. The configuration of a device is described in chapter [15]. An alarm threshold can be set for the following measured values via the device configuration:

- **Shock:** If the alarm is activated when the threshold value is exceeded, a shock is recorded each time the two threshold values are exceeded and an alarm is generated at the same time. Several events occurring during a transmission interval are transmitted as a combined alarm during the next data transmission.
- **Tilt:** As soon as tilt detection is activated, an alarm is triggered if the threshold value is exceeded and an extraordinary data transmission is carried out a maximum of once a day. If the threshold value is exceeded, additional measurements controlled by hysteresis are also recorded outside the regular measurement interval.
- **Temperature and pressure:** An upper and a lower threshold value can be defined for each of these measured values. Optionally, one of the two limit values can be deactivated by moving the corresponding slider control to the edge.
- **Humidity and light:** An alarm is triggered if the defined threshold value is exceeded.

Note: The changes in the device configuration are only taken into account after the next data transmission of the device.

16.1.2 Create alarms via Smart Rules

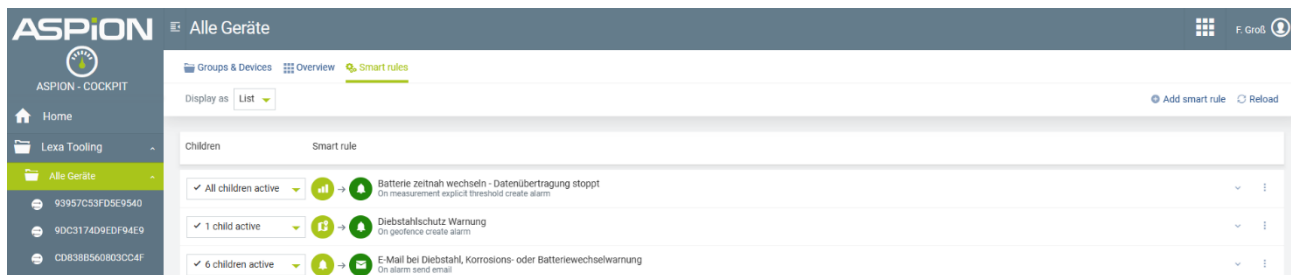
Smart Rules are still used for special alarm types that are not part of the device configuration. These include in particular:

- Geofence alarms when leaving or entering an area
- Low battery alarm
- Extended escalation logic for all measured values

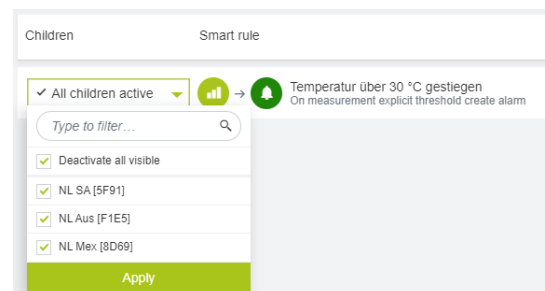
Smart rules are only created at group level (not available in the shipment area) and can then be assigned to individual devices. To create a smart rule for a device, navigate to a group that contains the device or create it directly in the **Overview (All devices)** area.

Note: If new devices are added to the group, the existing Smart Rules do not automatically apply to new devices and must be added manually.

To make it easier to create Smart Rules, there is a selection of templates in the **Overview (All devices)** area on the **Smart Rules** tab, which you can adapt to your requirements and activate for individual devices. You can edit or delete the templates using the three dots on the right.



To activate Smart Rules for individual devices, click on the drop-down menu in the "Children" column. A list of all devices subordinate to the group will appear. Select all devices to which the rule should apply and confirm your selection by clicking on the **Apply** button. When the Smart Rule is created, it initially applies to all devices in the group. Devices that are added to the group after the Smart Rule has been created are NOT automatically assigned to the Smart Rules, but must be added manually if required.



If no Smart Rules exist, create a new Smart Rule using the **Add Smart Rule** button. If there are already any, add a Smart Rule using the button of the same name at the top right-hand edge. The ASPION Cloud offers the following three types of smart rules:

- **On geofence create alarm:** Monitors a self-selected geographical area. An alarm is generated when entering or leaving the geographical area.
- **On measurement explicit threshold create alarm:** Allows you to set self-selected threshold values for any measured values. Suitable for setting up low battery alarms or further escalation levels.
- **On alarm send email [16.2]:** Sends emails in the event of an alarm occurring that was triggered due to one of the two Smart Rules described above.

Add global smart rule Pick your smart rule



On alarm send email
When alarm is received then email is sent



On geofence create alarm
On geofence create alarm



On measurement explicit threshold create alarm
Create alarm when measurement reaches explicit thresholds

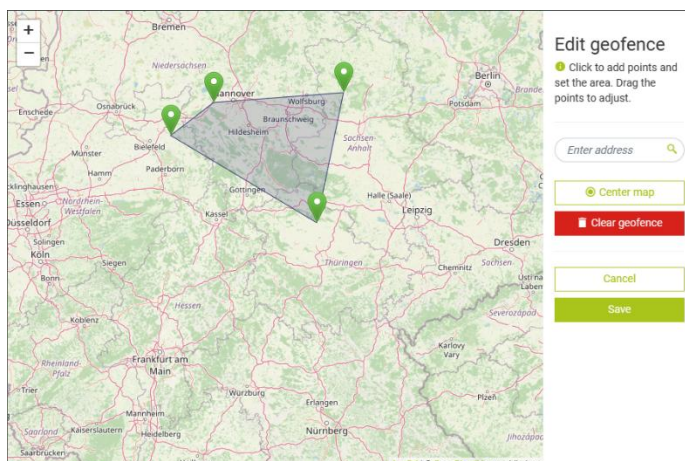
On geofence create alarm:

Create this smart rule to check whether a device has entered or left a certain area. This type of Smart Rule contains the following elements:

At the top is the button for activating or deactivating the Smart Rule with the text "Switched on". The newly created Smart Rule can initially be deactivated here by clicking on the button. This can be adjusted later at any time in the Smart Rules overview.

1 Rule name: Here you assign a name for the smart rule that is as descriptive and easy to understand as possible, e.g. "Enter geofence area"

2 On geofence violation: The **Edit geofence** button below the map opens a new view for defining the geofence.



3 Create alarm: In the first drop-down menu, select whether the alarm is triggered when entering, leaving or both scenarios.

Trigger on

On entering

On leaving

On entering and leaving

Alarm type: The second line of the "Created alarms" area is the alarm type. It is primarily relevant for a possible e-mail dispatch. Optionally, it is possible to assign the same alarm type to different Smart Rules and thus group the alarms (example description: "Theft warning" -> An email notification can be set up for all alarms with this alarm type)

Important: The alarm type is required for e-mail notification.

The severity of the alarm provides you with a better overview of the importance of the alarms.

New global smart rule



On geofence create alarm
Fields marked * are required.

Enabled

1 Rule name

On geofence create alarm

2 On geofence violation:



You can use the search function on the right to navigate to a desired address and then add points by clicking on the map. Frame the desired area with the points you have set. Use the buttons in the top left-hand corner to zoom in and out. You can move the map by clicking and holding. Click on the **Save** button to create the geofence.

3 Create alarm:

On leaving

c8y_GeofenceAlarm

MAJOR

Geofence violation

Alarm name: The name of this alarm should show which threshold value has been exceeded or fallen below and is displayed in the alarm overview as the title of the alarm. You should therefore use unique names and no duplications (example: "Warehouse left Karlsruhe").

Click on the "Create" button to activate the Smart Rule. The Smart Rule automatically applies to all devices in the folder in which the Smart Rule was created.

On measurement explicit threshold create alarm:

This type of Smart Rule can be used to set up a low battery alarm and includes the following elements:

At the top is the button for activating or deactivating the Smart Rule with the text "Switched on". The newly created Smart Rule can initially be deactivated here by clicking on the button. This can be adjusted later at any time in the Smart Rules overview.

① **Rule name:** Here you assign a name for the smart rule that is as descriptive and easy to understand as possible, e.g. "Battery alarm below 15 %"

② **On threshold:** Select from the drop-down menu which value of a device is to be checked (e.g. "Used capacity (mAh) - battery"). The *Fragment* and *Series* fields are filled in automatically and **should not be edited**.

In the two fields displayed below, you determine the threshold values. The first field defines the **lower** limit value, the field below it the **maximum value**. Alarms are generated if the measured values lie between the **two threshold values**.

Example: Used capacity, 1.445 and 9.999 -> Alarm for used battery capacity above 1.445 mAh; corresponds to a battery alarm from 15 % remaining battery life

Note: The "Used capacity (mAh) - battery" property is best suited for a low battery alarm. Based on the battery capacity already used, conclusions can be drawn about the battery runtime. 1.700 mAh is the available capacity for alkaline batteries. 1.445 therefore corresponds to 85 % used battery capacity.

③ **Create alarm:** This is where you define the information displayed for the alarm to be generated. The first field is the alarm type, the second is the name of the alarm.

Alarm type: The alarm type is primarily relevant for a possible e-mail dispatch. Optionally, it is possible to assign the same alarm type to different Smart Rules and thus group the alarms.

Important: The alarm type is required for email notification.

Alarm name: The name of this alarm should indicate which threshold value has been exceeded or fallen below and is displayed in the alarm overview as the title of the alarm. You should therefore use clear descriptions and no duplications (example: " Battery < 15 %").

New global smart rule

On measurement explicit threshold create alarm
Fields marked * are required.

Enabled

1 Rule name

Create alarm when measurement reaches explicit thresholds

2 On threshold:

Select data point to prefill inputs below

Fragment (required)

90
Default: 90

100
Default: 100

Cancel Create

3 Create alarm:

c8y_ThresholdAlarm

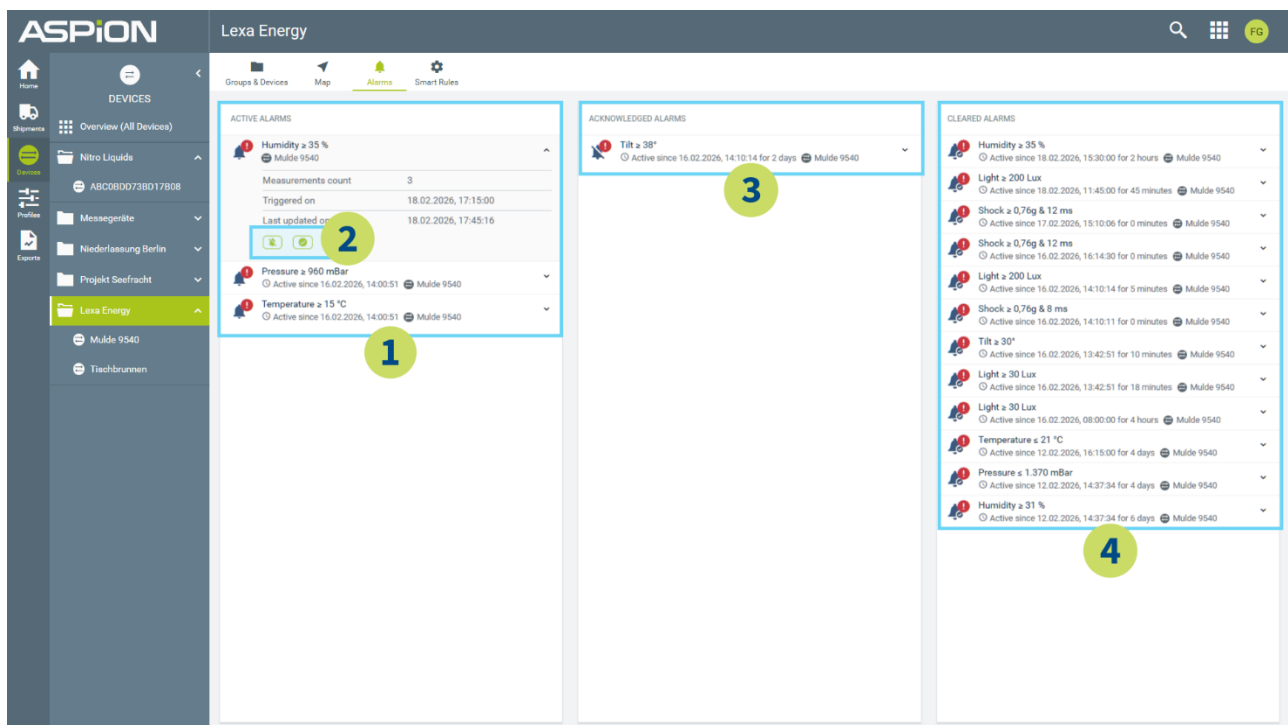
Threshold exceeded

Click on the "Create" button to activate the Smart Rule. The Smart Rule automatically applies to all devices in the folder in which the Smart Rule was created.

16.1.3 Display alarms

Alarms that have occurred are displayed in the **Shipments** area and in the **Devices** area in the **Alarms** tab. In grouped views (shipments or groups), all alarms of the subordinate devices are displayed together.

Note: Alarms that continue for a longer period of time without interruption are combined into one alarm. Alarms are only canceled when a measured value is below the threshold. As shock alarms never stop, they are always canceled as soon as they are created.



The detailed alarm overview at device level consists of 3 areas:

- ① **Active Alarms:** All alarms that are still within the range defined (in the Smart Rules) at the time of the last data transmission are listed here. These alarms require an action on your part ②. For each alarm, you can see the name of the device and the alarm, the time it occurred and the type of alarm.
- ② Use the three dots on the right-hand side of the alarm to move the alarm to another area. Clicking on the **Acknowledge** button moves the alarms to the "Confirmed alarms" area ③, while the **Clear** button moves the alarm directly to the "Alarm history" area and ends it ④.
- ③ **Confirmed alarms:** All alarms that have been confirmed by a user and are still active are displayed here. The alarms have been acknowledged and recognized but are still relevant as the values were still within the threshold values at the time of the last transmission. It is not yet moved to the alarm history.
- ④ **Alarm history:** All alarms that have either been canceled by the user or are outside the threshold values again due to changing environmental parameters are listed here. It is therefore possible for an alarm to appear directly in the alarm history.

Example: A smart rule for monitoring a temperature exceeding 30 °C has been set up for the device. The L-Track carries out the following measured values and data transmissions:

- 8:00 a.m.: Last data transmission
- 2:00 p.m.: 29,5 °C
- 3:00 p.m.: 30,3 °C
- 4:00 p.m.: 29,8 °C
- 4:01 p.m.: Next data transmission

In this case, the alarm that was active at 3:00 p.m. is added directly to the alarm history with the data transmission at 4:01 p.m. and does not appear in the active alarms. This is because the temperature is already below the defined threshold value at the time of data transmission.

16.2. Email notifications

Email notifications are set up via Smart Rules and enable automatic notification when alarms occur. The prerequisite for this is that an alarm threshold value or a geofence has been created either in the device configuration or a Smart Rule.

At the top is the button for activating or deactivating the Smart Rule with the text "Enabled". The newly created Smart Rule can initially be deactivated here by clicking on the button. This can be adjusted later at any time in the Smart Rules overview.

① Rule name: Here you assign a name for the Smart Rule that is as descriptive and easy to understand as possible, e.g. "Email when temperature is exceeded"

② On alarm matching: Here you select the alarm type for which the email is to be sent. You have selected the alarm type for alarms via the Smart Rules yourself in the corresponding Smart Rule. The following types are available for alarms via the device configuration:

- „sho“ -> For shock alarms
- „til“ -> For tilt alarms
- „tem“ -> For temperature alarms
- „hum“ -> For humidity alarms
- „pre“ -> For pressure alarms
- „lig“ -> For light alarms

Attention: The email dispatch only works if the type is entered correctly. Differences in upper and lower case letters must be taken into account.

Several types can be entered simultaneously using the "Add alarm type" button, and individual types can be removed again using the minus sign on the right.

New global smart rule

On alarm send email
Fields marked * are required.

Enabled

1 Rule name

When alarm is received then email is sent

2 On alarm matching:

Alarm type (required)

+ Add alarm type

3 Send email: In this area, you set the details of the email to be sent. For "Send to", "CC to" and "BCC to", several email addresses can be entered separated by commas. Under "Reply to", you can specify to whom e-mails created in response to the alarm e-mail should be addressed.

This is followed by the subject line and the content of the email. Here you can use specific keywords in the format „#{keyword}“ to insert certain data of the underlying alarm into the texts. Next to the character sequence
 for a paragraph the following keywords are available:

Status of the alarm: **#{status}**

- **ACTIVE:** Alarm is still active at the time of data transmission
- **ACKNOWLEDGED:** Alarm has already been confirmed in the ASPION Cloud
- **CLEARED:** Alarm has either been manually cleared or is no longer active

Severity of the alarm: **#{severity}**

- **CRITICAL:** Alarm with critical severity. Is the default value for Smart Rules with an explicit threshold value.
- **MAJOR:** Alarm with important severity
- **MINOR:** Alarm with less important severity
- **WARNING:** Alarm with warning as severity level

Alarm name: **#{text}**

- Individually definable alarm name when creating the Smart Rule in section 3 of the Smart Rule (example: "Temperature > 30°C" or "Exit Karlsruhe warehouse").

Time of the alarm: **#{time}**

- Date and time of the alarm UTC in the following format: Year-Month-Day Hour:Minute:Second

Device name: **#{source.name}**

- Device name (can be changed in the device list)

Click on the "Create" button to activate the Smart Rule. The Smart Rule automatically applies to all devices in the folder in which the Smart Rule was created.

3 Send email:

Send to

1 Enter one or more valid email addresses, separated with a comma.

Send CC to

1 Enter one or more valid email addresses, separated with a comma.

Send BCC to

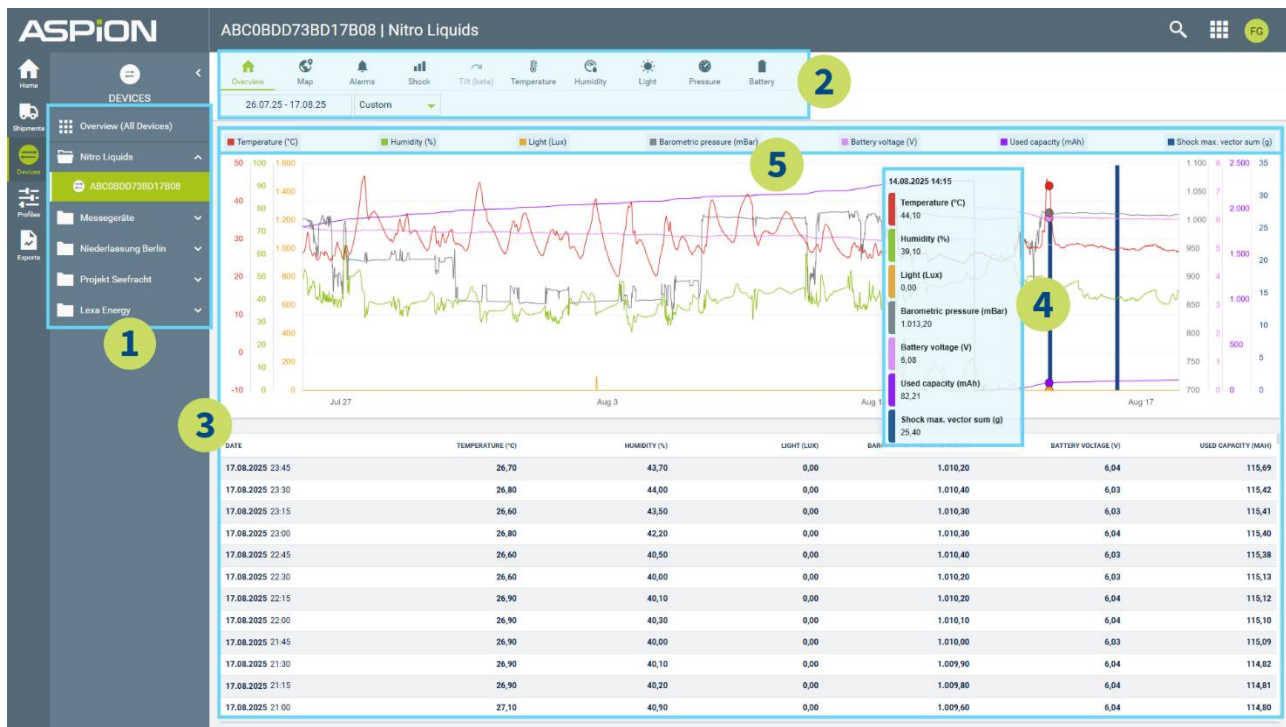
1 Enter one or more valid email addresses, separated with a comma.

Reply to

New #{severity} alarm from #{source.name}

New #{severity} alarm has been received from #{source.name}.
Alarm text is: " #{text} ".

17. Device data & analysis



Clicking on a device takes you to the **Overview** page for that device.

- The main navigation is located on the left-hand side. The selected device is highlighted in green if it is assigned to a group (in the device view) or a shipment (in the shipment view).
- The top menu bar shows the name of the selected device and the various dashboards, divided into tabs, in which all the measured data and information of the device are displayed:
 - Overview:** Shows an overview of all measured values recorded by the device in a diagram and table.
 - Map:** All the location information recorded for the device in the selected time period is visualized on a map [17.2].
 - Alarms:** Active and confirmed alarms and alarm history [16.2]
 - Shock:** Visualizes all shocks that lie above the configured threshold level [17.1]
 - Tilt/Temperature/Humidity/Light/Pressure/Battery:** Shows the respective measured values in the individual view
 - Details:** Shows the term of the device, the current configuration and further device information.

Below the menu bar, the period for which data is displayed can be adjusted. The period applies to the entire tab and by default the last month is selected.

- Device overview:** All selected measured values are displayed in a diagram for the selected time period. Shock events are visualized below the diagram as a blue rectangle. The table below shows all data points for the selected period.

- If the cursor is moved over the diagram, the details of the selected time appear.

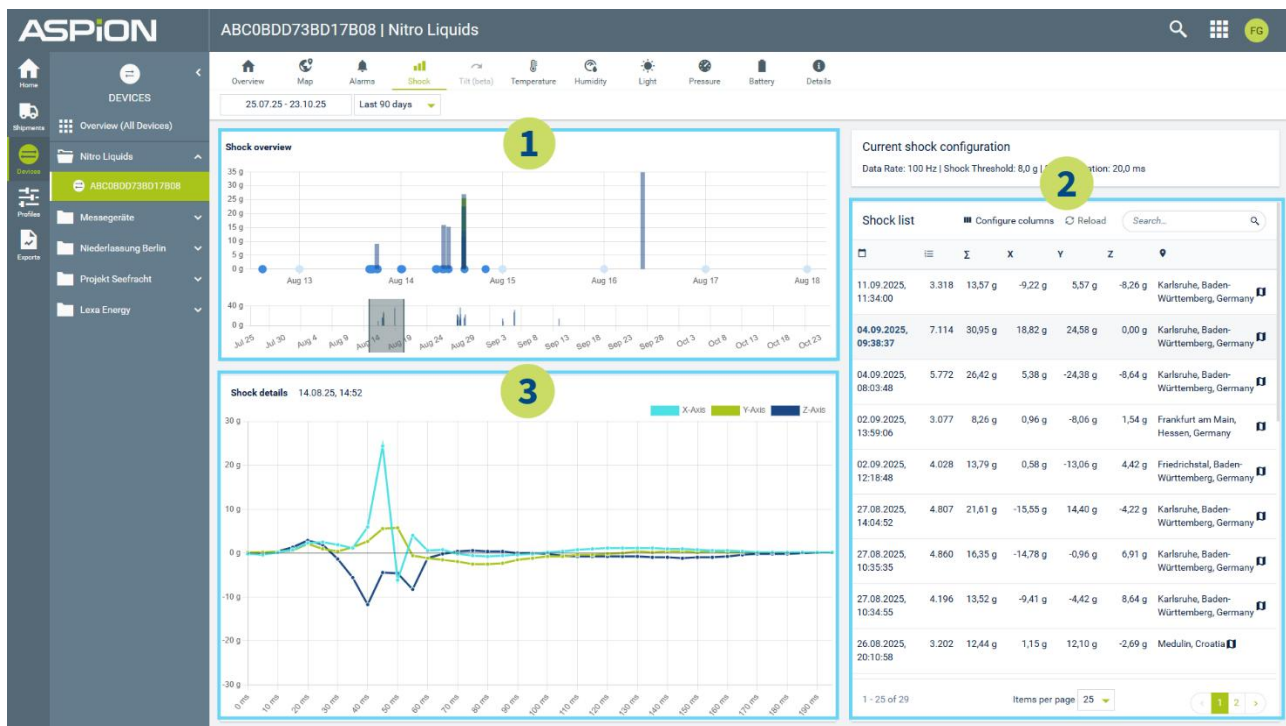
- You can determine which data is displayed in the data overview using the selection list at the top. The axes with the units for all selected measured values are located to the left and right of the graph.

Navigate in the Data Overview:

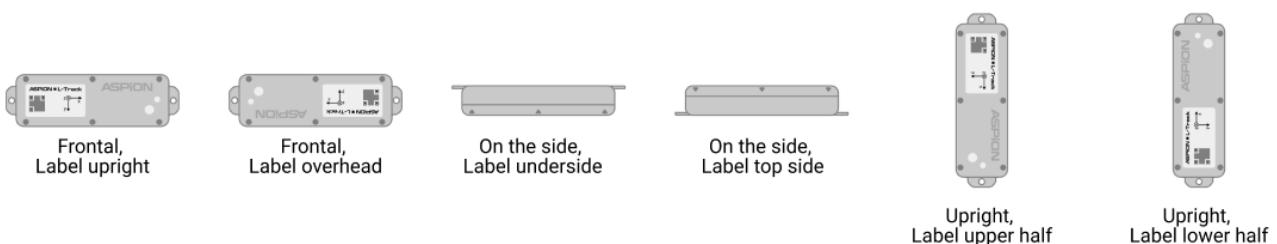
- Set the period: You can use the date field below the menu bar to adjust the period displayed.
- Reduce the time period: In the diagram of the data overview, left-click on the start point of the time period and hold the mouse button until the end point of the desired time period. The selected range is then displayed.
- Enlarge period: Double-click in the diagram of the data overview to display the last 30 days as a time period

17.1. Shock, shock details and evaluation

Clicking on the **Shock** tab displays a diagram with data on all shocks and an extended list with the associated shock details. These are important for the evaluation of a shock event, taking the location into account.



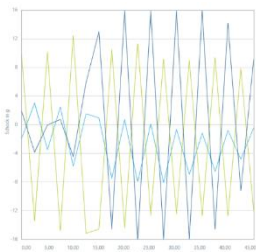
1 Shock overview: Visualizes all shocks in a bar chart over time. The height of the bar shows the vector sum of all axes in g. A mouse-over provides further details on the time, height and direction of the axes. The orientation of the device becomes visible when you move the mouse over the blue circles. The dark blue circles indicate a change in the basic orientation. There are 6 basic orientations and the orientation that best corresponds to reality is always displayed. The rotation parallel to the acceleration due to gravity is not noted.



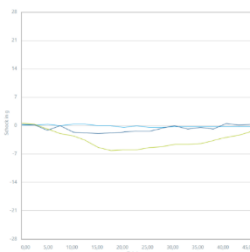
② **Shock list:** The table on the right provides further details on each shock event and shows the columns from left to right:

- The exact time of the shock with date and time.
- The shock intensity: A meaningful indicator of the severity of the shock. Rule of thumb: The higher the value in comparison to the other shocks, the more intense.
- The maximum acceleration/force effect per axis in g.
- The recorded location closest in time to the recorded shock event with further details on the time of the recorded location on mouse-over.

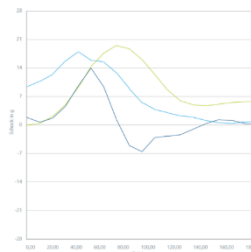
③ **Shock details:** Selecting a shock in the bar chart or on the right-hand side of the table opens the respective shock details. These show the course of all three axes in milliseconds. They are decisive for the shock evaluation. Example:



Progression of a vibration



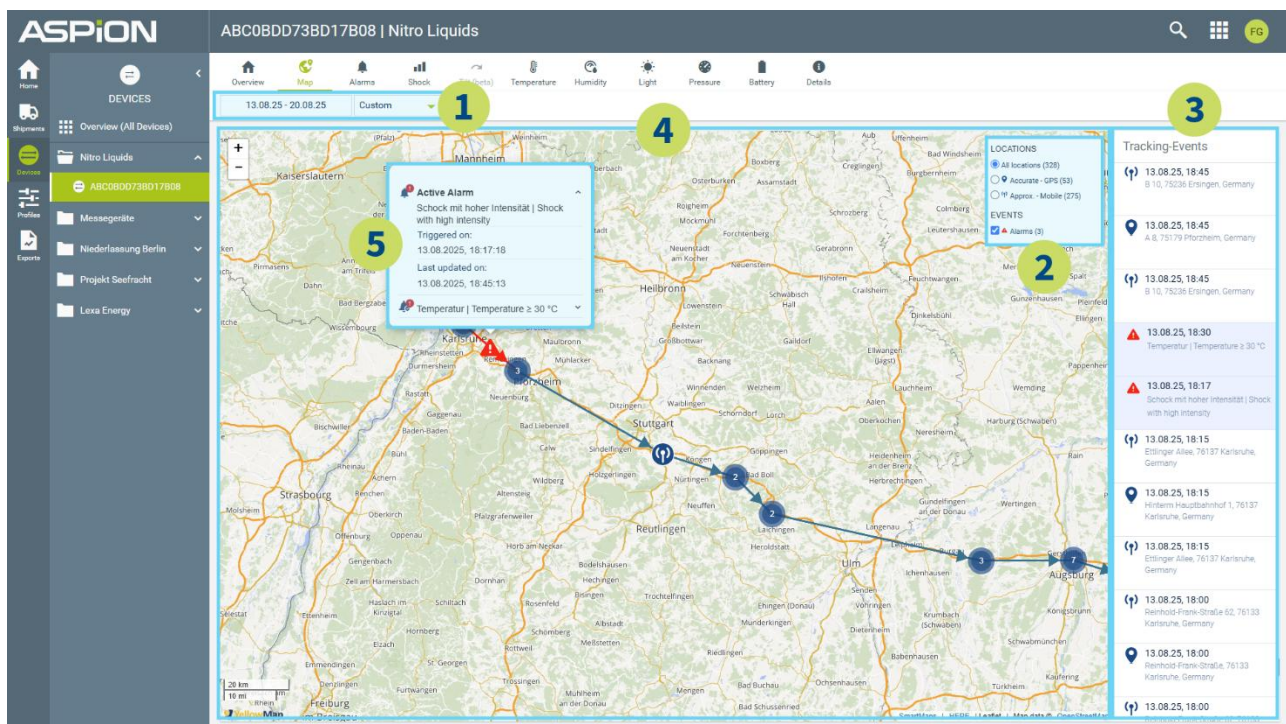
Air freight transport



prolonged shock

17.2. Tracking with map

Click on the **Tracking** tab to display a map view with the location history.



- ① In the top bar on the left, set the time period to be displayed on the map. To do this, either select a freely selectable period on the left or a time span on the right starting from today's date (e.g. last 90 days). The last 30 days are selected by default.
- ② Filter the tracking events displayed in the top right-hand corner. By default, both location types (precise with GPS and approximate with mobile radio) and the alarms are displayed. By deselecting one type of tracking event, these are hidden. Example: Select "Precise - GPS" to only display locations that were recorded via GPS. The selection also affects the list on the right ③.
- ③ **Tracking events:** Tracking events: The list shows all tracking events depending on the selected time period and filter. The entries in the list contain the type of tracking event, the time and the location with address. The most recent event is always displayed at the top of the list. You can select an event by clicking on it and it will be displayed on the map with its location. The locations on the map have different symbols for the different types of events:
 - Recorded location via GPS (high accuracy) 
 - Recorded location via mobile phone cell (low accuracy) 
 - Alarm: Displayed between the locations after and before 
- ④ The transport history for the selected period is visualized on the map. The map section can be enlarged or reduced using the mouse wheel or the +/- buttons in the top left-hand corner of the map. Clicking on a tracking event opens a pop-up with the location of the event. You can open the location directly in Google Maps via a link. If several locations are close together, they are summarized in a circle with a number. This describes how many tracking events are grouped together.
- ⑤ Clicking on a tracking event opens a pop-up with the location of the event. The selected event is highlighted in blue in the list on the right. Click on the **Open in Google Maps** button to display the location directly in Google Maps.

18. Shipments

Assign devices to a shipment or a shipment section for a limited period of time in order to only receive device data limited to the shipment period.

The screenshot shows the ASPION L-Track web application interface for managing shipments. The left sidebar (1) contains navigation options. The top bar (2) shows the 'Active Shipments' tab selected. The 'Add Shipment' button (3) is in the top right. The main table (4) lists 8 shipments with columns for Name, Description, Start, and Finish. Each row includes icons for 'Finish shipment' and 'Delete shipment' (5).

Name	Description	Start	Finish
SIEZE15354786		09.10.25, 10:00	
USA shipment		01.10.25, 11:00	
Kroatien		13.08.25, 06:00	
Neues Projekt		17.07.25, 15:00	
Messe München		24.06.25, 09:00	
USA #49834769		27.03.25, 13:00	
Frankfurt 4586SF6	Turbine mit B-&C-Teilen	24.02.25, 13:00	
Henne -> Belgrad -> Henne		20.01.25, 08:00	

① Use the main navigation bar on the left to navigate to the **Shipments** area. A secondary navigation bar appears, similar to the **Devices** area. At the top is the **Shipments overview**. All currently active or planned shipments are displayed below it.

② In the **Active shipments** tab, you will find a list of all shipments whose end date is not set or is still in the future. The **Completed shipments** tab contains the shipment history.

③ Create a new shipment using the **Add shipment** button [18.1].

④ The shipment list shows a table with all selected attributes of the shipments. By clicking on the arrow on the right-hand side of each attribute, you can sort it in ascending or descending order. Only ever select one attribute for sorting. By default, sorting is based on the start of shipment. If you have activated the sort function for several attributes, it only works for the attribute listed first in the table. The sort function is activated when an arrow is visible.

⑤ On the right-hand side of each line you will find the **Finish shipment** and **Delete shipment** buttons..

- **Finish shipment:** Use this function to set an end of shipment date to complete the shipment. The end of shipment can be set both retroactively and in the future.
- **Delete shipment:** Deletes the shipment irrevocably.

18.1. Create a new Shipment

To create a new shipment, navigate via the main navigation bar in the shipments area to the **Shipments overview**. A pop-up for creating the shipment appears via the button on the right **Add shipment**. Enter a name for the shipment, an optional description and the planned start of the shipment. The end of the shipment can either be entered directly when creating the shipment or set later as described in [18]. Click on the **Next** button to proceed to the second step, in which one or more devices are assigned to the shipment.

Create Shipment

1 Select shipment det... 2 Assign devices

Select shipment details

Name
e.g. My shipment (required)

Description
e.g. my description

Start of the shipment
26.02.26 16 : 00

End of the shipment ⓘ
Select a date... HH : MM

Cancel Next

Create Shipment

1 Select shipment det... 2 Assign devices

Assign devices

Items 3 of 3 items No filters ⓘ

Configure columns Reload Search...

☐	Name	Model	Serial number	Group	Last Shipment
☐	60DF60CAE52BBDA9	L-Track	60DF60CAE52BBDA9		
☐	A979DD4BB20ACE89	L-Track	A979DD4BB20ACE89		
☐	C0DADE879A5A17E9	L-Track	C0DADE879A5A17E9		

1 - 3 of 3

Back Create

Select the devices by clicking in the checkbox on the left. Complete the creation of the shipment by clicking on the **Create** button. At least one device must be selected.

Note: Only the devices that are available in the selected shipment period are displayed. If devices are assigned to a shipment without an end of shipment date, these devices will not be displayed.

18.2. Shipment details

By clicking on a shipment, the individual view appears.

The screenshot displays the ASPION L-Track web application. The top navigation bar shows 'Shipments overview > Montreal 104529'. The left sidebar contains a 'SHIPMENTS' section with a list of locations: Ciudad de México, São Paulo, Frankfurt 786113, and Montreal 104529 (selected). The main content area has three tabs: 'Devices' (selected), 'Alarms', and 'Locations'. The 'Devices' tab shows a shipment summary for 'Montreal 104529' with start and finish times. Below this is a table of assigned devices with columns: Name, Description, Serial number, Alarms, End of subscrip..., Configuration, Last Location, Battery, Remaining Battery Life, and Last Transmissi... Two devices are listed. On the right side of each device row, there are icons for 'Remove device from shipment' and 'Create export'.

① In the **Devices** tab, you will find the shipment information and the list of assigned devices. The **Alarms** tab lists all alarms caused by threshold value violations that were active during the shipment period. The **Locations** tab shows the last recorded positions of the assigned devices.

② You can use the **Assign devices** button to subsequently assign additional devices to the shipment.

③ List of assigned devices. Click on the device name to obtain the device data in the shipment period.

④ On the right-hand side of each line you will find the buttons **Remove device from shipment** and **Create export**.

- **Remove device from shipment:** This function cancels the assignment of the device to the shipment. This option is only possible if several devices are assigned to the shipment.
- **Create export:** Creates an export for the shipment period.

By clicking on a device in the shipment view (both in the navigation on the left and via the device name in the device table), the device view appears. This view differs in some respects from the device view in the Devices area.



① The main navigation is located on the left-hand side. The selected device is highlighted in green if it is assigned to an active or planned shipment (in the shipment view).

② The displayed period of the device data is set to the shipment period by default, but can also be reduced. Data outside the shipment cannot be displayed in this view.

19. Data Export

You can create data exports in the **Devices** area of each device table. For example, in the **Overview** area (**All devices**) in the **Devices** tab.

Create Export

When creating the export an Excel file for the device "Mulde 9540" will be generated under the navigation node "Exports".

Start
23.09.25 14:06

End
23.10.25 14:06

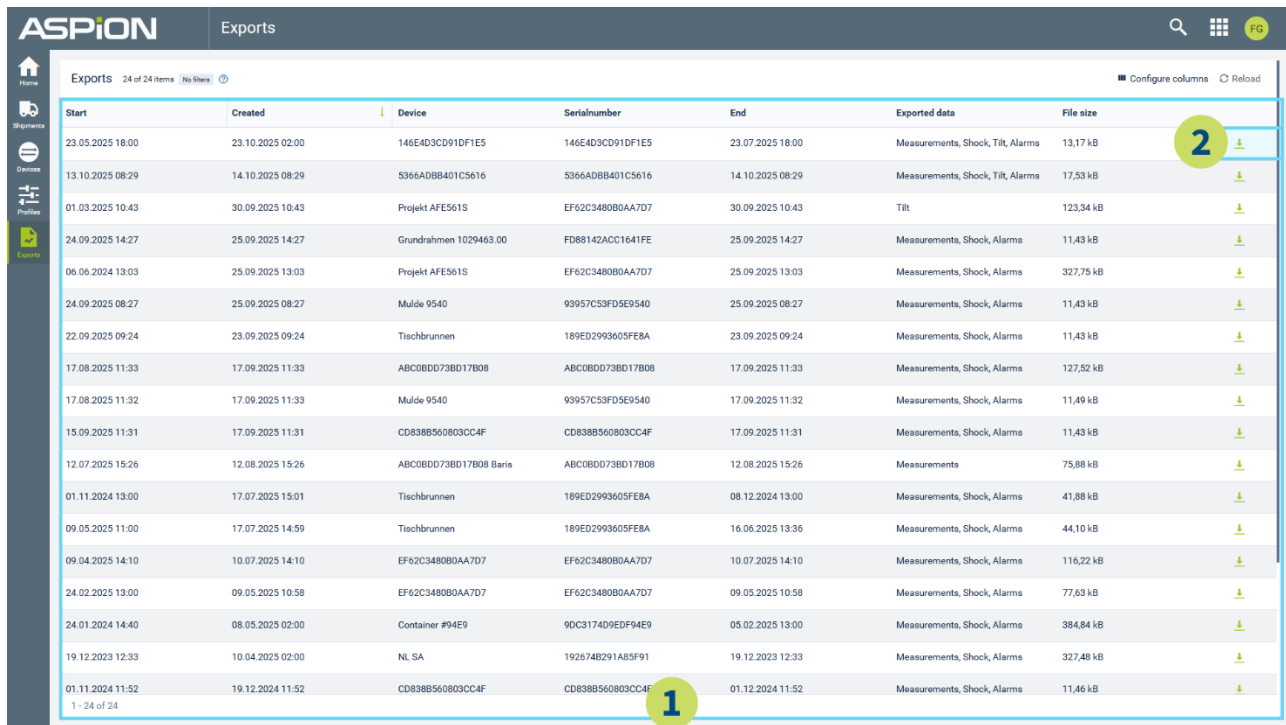
Exported data

- ☒ Measurements
- ☒ Shocks
- ☒ Tilt
- ☒ Alarms

Cancel Create Export

Name	Serial number	End of subscri...	Configuration	Package	Last Location	Battery	Remaining Battery Life	Last Transmis...	
Mulde 9540	93957C53FD5E9540	15 min	1 h	05.03.26	Standard, Shock, GPS	L	Karlsruhe, Baden-Württemberg, Germany	93,7% ca. 25 days 16.11.25	21.07.2022 10.00.30
Tischbrunnen	189ED2993605FE8A	1 h	8 h	14.03.26	Standard, Shock, GPS	L	Karlsruhe, Baden-Württemberg, Germany	68,8% ca. 322 days 10.09.26	26.06.2025, 10.00.36

- ① As described in chapter [14], there is an **Add export** button in each device table. Clicking on it opens a pop-up.
- ② Select the export period and the type of exported data and click on the **Add export** button. After a few seconds, the export created will be available for download as an Excel file in the **Exports** area.



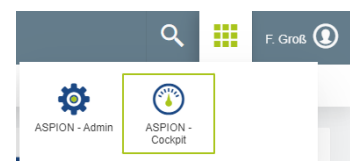
Start	Created	Device	Serialnumber	End	Exported data	File size
23.05.2025 18:00	23.10.2025 02:00	146E4D3CD91DF1E5	146E4D3CD91DF1E5	23.07.2025 18:00	Measurements, Shock, Tilt, Alarms	13,17 kB
13.10.2025 08:29	14.10.2025 08:29	S366AD8B401C5616	S366AD8B401C5616	14.10.2025 08:29	Measurements, Shock, Tilt, Alarms	17,53 kB
01.03.2025 10:43	30.09.2025 10:43	Projekt AFE561S	EF62C3480B0AA7D7	30.09.2025 10:43	Tilt	123,34 kB
24.09.2025 14:27	25.09.2025 14:27	Grundrahmen 1029463.00	FD88142ACC1641FE	25.09.2025 14:27	Measurements, Shock, Alarms	11,43 kB
06.06.2024 13:03	25.09.2025 13:03	Projekt AFE561S	EF62C3480B0AA7D7	25.09.2025 13:03	Measurements, Shock, Alarms	327,75 kB
24.09.2025 08:27	25.09.2025 08:27	Mulde 9540	93957C53FD5E9540	25.09.2025 08:27	Measurements, Shock, Alarms	11,43 kB
22.09.2025 09:24	23.09.2025 09:24	Tischbrunnen	189ED2993605FE8A	23.09.2025 09:24	Measurements, Shock, Alarms	11,43 kB
17.08.2025 11:33	17.09.2025 11:33	ABC0BD073BD17B08	ABC0BD073BD17B08	17.09.2025 11:33	Measurements, Shock, Alarms	127,52 kB
17.08.2025 11:32	17.09.2025 11:33	Mulde 9540	93957C53FD5E9540	17.09.2025 11:32	Measurements, Shock, Alarms	11,49 kB
15.09.2025 11:31	17.09.2025 11:31	CD838B560803CC4F	CD838B560803CC4F	17.09.2025 11:31	Measurements, Shock, Alarms	11,43 kB
12.07.2025 15:26	12.08.2025 15:26	ABC0BD073BD17B08 Baris	ABC0BD073BD17B08	12.08.2025 15:26	Measurements	75,88 kB
01.11.2024 13:00	17.07.2025 15:01	Tischbrunnen	189ED2993605FE8A	08.12.2024 13:00	Measurements, Shock, Alarms	41,88 kB
09.05.2025 11:00	17.07.2025 14:59	Tischbrunnen	189ED2993605FE8A	16.06.2025 13:36	Measurements, Shock, Alarms	44,10 kB
09.04.2025 14:10	10.07.2025 14:10	EF62C3480B0AA7D7	EF62C3480B0AA7D7	10.07.2025 14:10	Measurements, Shock, Alarms	116,22 kB
24.02.2025 13:00	09.05.2025 10:58	EF62C3480B0AA7D7	EF62C3480B0AA7D7	09.05.2025 10:58	Measurements, Shock, Alarms	77,63 kB
24.01.2024 14:40	08.05.2025 02:00	Container #94E9	9DC3174D9EDF94E9	05.02.2025 13:00	Measurements, Shock, Alarms	384,84 kB
19.12.2023 12:33	10.04.2025 02:00	NL SA	192674B291A85F91	19.12.2023 12:33	Measurements, Shock, Alarms	327,48 kB
01.11.2024 11:52	19.12.2024 11:52	CD838B560803CC4F	CD838B560803CC4F	01.12.2024 11:52	Measurements, Shock, Alarms	11,46 kB

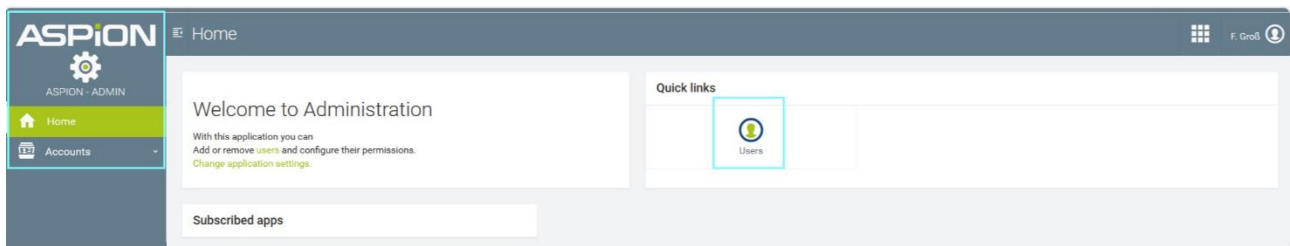
- ① The **Exports** section lists all exports created for which the user has at least read rights..
- ② Click on the **Download** button to save the file on your device. This will be stored in your download folder.

20. Administration

At the start of using the ASPION Cloud, there is only one administrator for each company. His or her email is provided to the manufacturer in advance. The initial login link for the ASPION Cloud is sent to this email. As an administrator, you can set your own password for the ASPION Cloud in this step. Check the spam folder if you have not received an email. The administrator remains the superordinate administrator for the entire period of use and cannot be deleted or edited by other users. As an administrator, you can create further subordinate administrators with the same rights.

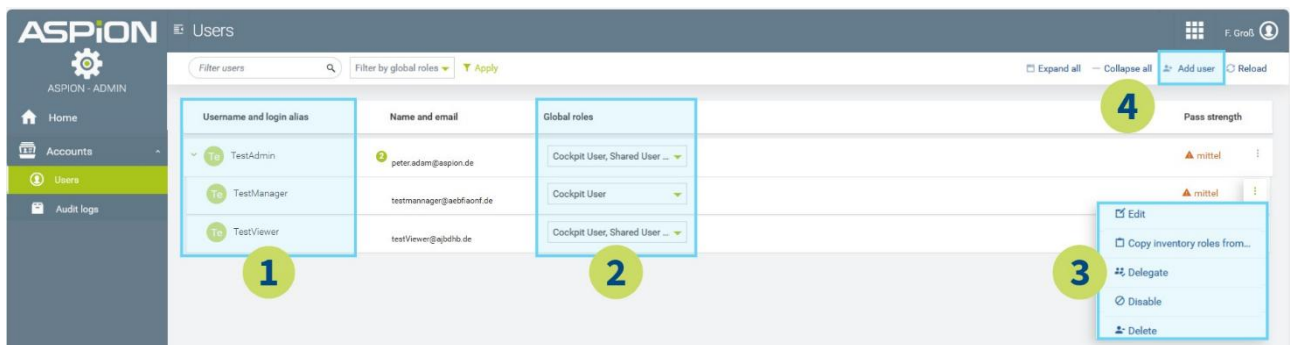
To create and manage users in the administration, switch to the **ASPION Admin** area via the **application switcher** (tiled symbol) in the top right-hand corner. The admin app is only displayed to users with the rights of the user manager.





On the start page of the admin area, call up the user administration via the **Users** button on the right-hand side or via the left-hand navigation bar under Accounts and Users.

20.1. Manage users



The user administration shows your own user in the top entry. Click on the ">" arrow to the left of the username to display all subordinate users.

- ① Similar to the groups in the main navigation, you can see the structure of the subordinate users here. You can create new subordinate users [18.2], edit them [18.3] and delete them at any time. Superordinate or equivalent users are not displayed.
- ② The Global roles column shows the user's basic authorizations. The second point in section [18.2] describes how authorizations can be changed.
- ③ By clicking on the 3 dots on the right-hand side of a subordinate user, you can edit this user with the following options:
 - **Edit:** Edit and change user rights and data [18.3].
 - **Disable:** User is temporarily disabled
 - **Delete:** User is permanently deleted
- ④ Use the **Add user** button to create a new user.

Note: You cannot delete, deactivate or change the authorizations of your own user.

20.2. Add new user & assign permissions

You can create new users via the **Add user** button in the user administration [18.1]. In the view that opens, enter at least the username and email address in the user properties on the left-hand side. On the right, assign the appropriate authorizations for the user.

You can create new subordinate users via the user administration [18.1].

① Email and Username: Both are required. The email address is required to activate the account and to reset the password. Note: Pay attention to the spelling, otherwise the new user will not receive an invitation email and will not have access to the ASPION Cloud.

The username cannot be changed once the user has been created. The username cannot contain spaces or certain special characters (/ + : \$). The username is requested when logging into the ASPION Cloud. Note: For the automatically created administrator, the username is assigned automatically and consists of a combination of numbers. If a different username is required, create a new user.

② Cockpit user: All created groups to which the logged-in user has access are displayed hierarchically in the left-hand area. Initially, only the top two levels of groups are listed. By clicking on a group with subordinate groups, these are also displayed in expanded form.

In the Cockpit user area, you select which groups and devices are displayed to the user and to which they have access. You can assign permissions for each group individually. However, the permissions of a superordinate group are always transferred directly to the subordinate groups. If the permissions of a subordinate group differ from those of a superordinate group, this is indicated by a blue dot.

You can choose between the following three permissions for each group:

- **No Permissions:** If this permission is selected for a group, this group and all devices assigned to it are not displayed to the user. **Important: If a user has not selected any rights for all groups, no groups and devices will be displayed in the ASPION Cloud.**
- **Reader:** With this permission, the group and all assigned devices are displayed to the user. The user can access the views of the group and all devices in this group. However, no changes can be made, such as creating or confirming alarms, creating groups, assigning devices to groups or configuring devices.
- **Administrator:** This permission allows the user further functions in addition to reading permissions. For example, confirming or canceling alarms, creating new groups, assigning devices to groups or creating and editing smart rules.

③ **User manager:** Users with the user manager permission have access to the ASPION Admin view and can create new users. A user can only assign permissions to new users that they themselves have. The email address, password and authorizations for subordinate users can also be edited. The user can also deactivate or delete subordinate users.

Profile Manager: With this authorization, the user can create new device profiles, edit and delete existing profiles. Without this authorization, the profiles are only visible and can be used without customization.

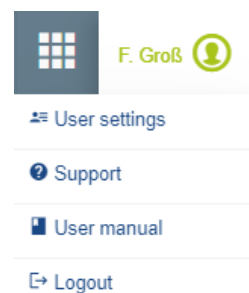
By clicking on the **Save** button, the user is created and automatically receives an email to the email address provided. The email contains an invitation link and instructions for assigning the password.

20.3. Edit users

Every user with the permission of the user manager [18.2] can edit subordinate users. Equal or higher-level users are not displayed and cannot be edited. All users are visible with the initial administrator account.

You can edit your own user via the user symbol in the top right corner. Click on the **User settings** button to edit the email, language or password. You can also assign or change a login alias. This replaces the user name when logging in.

You can edit other user via the user administration. To do this, either click on the user or navigate to the **Edit** button via the 3-dot menu on the right-hand side.



The screenshot shows the 'User Properties' form in the ASPION Admin interface. The form is for editing the user 'max.mustermann@aspion.de'. It includes fields for 'E-Mail', 'Username (e.g. e-mail address)', 'Firstname', and 'Lastname'. A 'Status' toggle switch is set to 'Enabled' and is highlighted with a blue box and a circled '1'. Below the status field, there is a 'Change Password' section with 'Change Password' and 'Confirm Password' fields, and a 'Cancel' button. This section is highlighted with a blue box and a circled '2'. To the right of the form is a 'Permissions' section with a table of permissions for various folders and devices, including 'Lexa Tooling', 'Alle Geräte', 'Ltg.: Globex Milling', 'Ltg.: Nitro Liquids SE', and 'Messe Stuttgart'. At the bottom of the form are 'Cancel' and 'Save' buttons.

The view contains the same elements as the add user view [18.2]. In addition, there are two further setting options.

① **Status:** The user can be set to inactive via the status. Inactive users are temporarily deactivated and can no longer log in.

② **Password:** If you want to set or change the password for a user manually (not recommended), click on the **Change password** button at the bottom left. Enter the password in both text fields. The password must

contain a minimum of 8 and a maximum of 32 characters. The user is not automatically informed of the password change.

20.4. Audit logs

Users with the user manager permission also have access to the audit logs. Here you can see all permanent changes that other users have made. For example, the creation and editing of alarms, users and Smart Rules. Users only see the changes in areas to which they have access. For example, if an administrator edits a user, the subordinate user cannot see these changes.



ASPION

ASPION - ADMIN

Home

Accounts

Users

Audit logs

Audit logs

All types

Date from

Date to

Who

Apply

Time	Event	Description
11 Apr 2024, 15:30:17	Alarm created Source BY service_apama-ctrl-starter DEVICE TIME 11 Apr 2024, 14:40:00	Device name: "GM Eur [FE8A]", alarm text: "Feuchtigkeitsüberschreitung 40%"
11 Apr 2024, 10:00:17	Alarm created Source BY service_apama-ctrl-starter DEVICE TIME 11 Apr 2024, 03:00:00	Device name: "9DC3174D9EDF94E9", alarm text: "Feuchtigkeitsüberschreitung 40%"
11 Apr 2024, 14:44:46	Alarm updated Source BY 2024011501 DEVICE TIME 10 Apr 2024, 22:20:00	Device name: "GM Eur [FE8A]", alarm text: "Feuchtigkeitsüberschreitung 40%" Status: ACKNOWLEDGED > CLEARED
11 Apr 2024, 14:44:37	Alarm updated Source BY 2024011501 DEVICE TIME 10 Apr 2024, 22:20:00	Device name: "GM Eur [FE8A]", alarm text: "Feuchtigkeitsüberschreitung 40%" Status: ACTIVE > ACKNOWLEDGED
10 Apr 2024, 22:30:22	Alarm created Source BY service_apama-ctrl-starter DEVICE TIME 10 Apr 2024, 22:20:00	Device name: "GM Eur [FE8A]", alarm text: "Feuchtigkeitsüberschreitung 40%"

21. Contact and support

If you have any questions or problems, please contact:

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