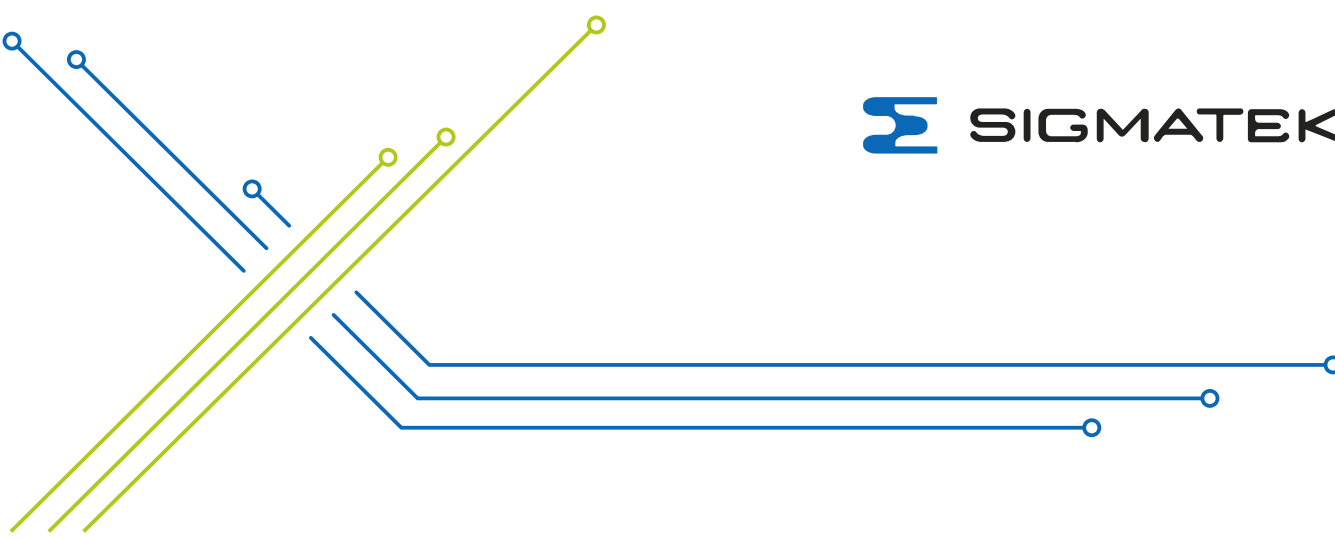


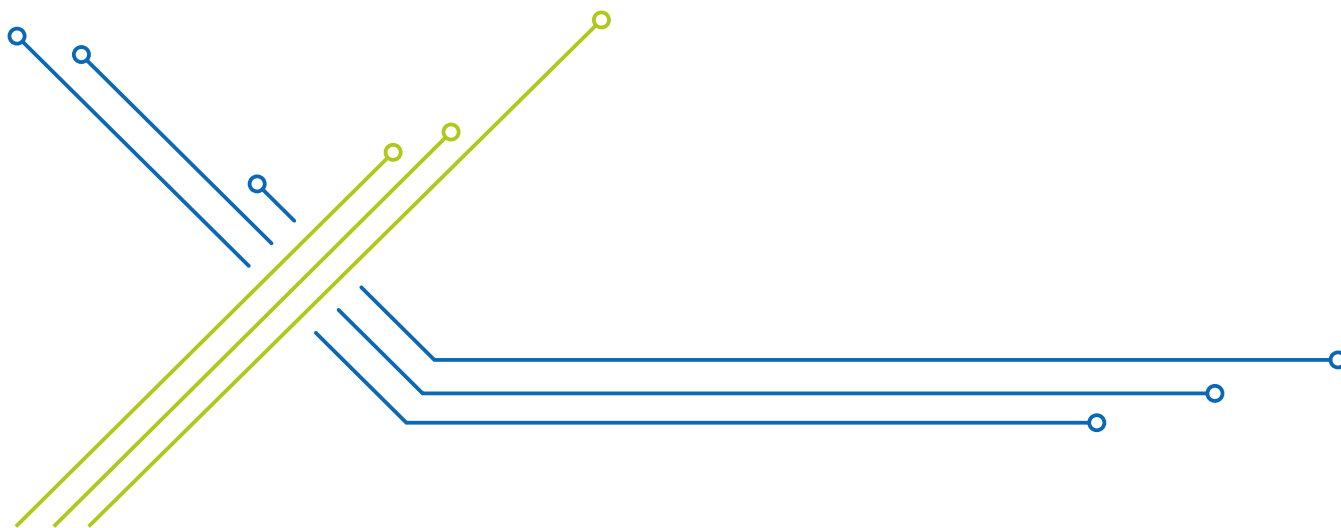


HGW 1033-01

Wireless Handheld Operating Panel

INSTRUCTION MANUAL

Article number:	12-246-1033-01-E
Date of creation:	16.08.2019
Version date:	15.07.2026



Publisher:

SIGMATEK GmbH & Co KG
A-5112 Lamprechtshausen
Tel.: +43/6274/4321
Fax: +43/6274/4321-18

Email: office@sigmatek.at
www.sigmathek-automation.com

All rights reserved. No part of this work may be reproduced, edited using an electronic system, duplicated or distributed in any form (print, photocopy, microfilm or in any other process) without express permission.

We reserve the right to make changes in the content without notice. SIGMATEK GmbH & Co KG is not responsible for technical or printing errors in this handbook and assumes no responsibility for damages that occur through its use.

Wireless Handheld Operating Panel

HGW 1033-01

In combination with a BWH base station and a PLC, the HGW 1033-01 is a wireless, intelligent handheld operating unit that enables the programming, visualization and diagnosis of processes and systems control.

Process data, procedures and parameters are comfortably presented on the 10.1" display and can be entered or changed via the touch screen.

The HGW 1033-01 can be coupled with machines via base stations, which allows the flexible application of the operating unit.

The interfaces can be used to configure the terminal. The integrated battery pack allows 2 hours of operation at full capacity.



Table of Contents

1 Introduction	6
1.1 Target Group/Purpose of this Operating Manual	6
1.2 Important Reference Documentation	6
1.3 Contents of Delivery	6
2 Basic Safety Directives	7
2.1 Symbols Used	7
2.2 Disclaimer	8
2.3 General Safety Directives	8
2.4 Software/Training	9
3 Standards and Directives	10
3.1 Directives	10
3.1.1 EU Declaration of Conformity	10
3.2 Wireless System Operation	10
4 Type Plate	11
5 Technical Data	12
5.1 Performance Data	12
5.2 Electrical Requirements	13
5.3 Display	14
5.4 Control Unit	15
5.5 Input	15
5.6 Environmental Conditions	16
5.7 Wireless	17
5.7.1 WLAN 2.4 GHz	17
5.7.2 WLAN 5 GHz	17
5.7.3 Antennae	18
5.8 Miscellaneous	18
6 Interfaces	19
6.1 Connections Bottom	19
6.1.1 X1: USB 2.0 (Type A)	19
6.1.2 X2: USB 2.0 DualRole (Type C)	20
6.2 Rear Connectors	20

6.2.1 X15: Power/Data	21
6.3 Display	22
6.3.1 Underside	22
6.3.2 Front	22
6.3.2.1 Status LEDs	22
6.4 WLAN	23
6.5 Acoustics	24
6.6 On/Off Button (illuminated)	25
7 Mechanical Dimensions	26
7.1 HGW	26
7.2 HGW with BWH	27
8 Assembly/Installation	28
8.1 Check Contents of Delivery	28
8.2 Preparing the Hardware	28
9 Status and Error Messages	29
10 Battery	37
10.1 Introduction	37
10.2 Charge Status and Aging	37
10.2.1 BatteryLevelAbsolute	37
10.2.2 BatteryLevel	37
10.2.3 BatteryStateofHealth	37
10.3 Versions	38
10.4 Battery Transport/Storage	39
10.5 Commissioning and Charging Options	39
10.5.1 Monitoring of the Charging Source	40
10.6 Battery Operating Ranges	41
10.7 Hardware Class	42
10.8 Exchanging the Battery	42
10.8.1 Deep Discharged Battery	42
10.8.2 Recommendation	43
10.9 DeepSleepMode	43
10.9.1 Conditions	44

10.10 Transport Mode	44
10.10.1 Activating the Transport Mode	44
10.10.1.1 Conditions	44
10.10.1.2 Note	45
10.10.2 Ending the Transport Mode	45
10.11 Log Data	45
11 Operation/Start-up	47
11.1 Note	47
11.2 WLAN Channels and Settings	47
11.3 Configuration	48
11.3.1 Example	48
11.4 Testing the Operating Area	48
11.5 Operation	49
11.5.1 General	49
11.5.2 Turning On	50
11.5.3 Non-Safety Mode	50
11.5.4 Turning Off	50
12 Help with Disruptions/Troubleshooting	51
13 Transport/Storage	52
14 Storage	53
15 Maintenance	54
15.1 Cleaning and Disinfecting the Touch Screen	54
15.2 Service	54
15.2.1 Calibrating the Touch Screen	55
15.3 Repair	55
16 Display „Burn-In“ Effect	56
17 Disposal	57
18 Accessories	58
18.1 Antennae	58
18.2 Touch Pen	58
18.3 Edge Protection	58
19 Application Information	59

19.1 Visualization59

 19.1.1 Example Application59

19.2 Updates59

1 Introduction

1.1 Target Group/Purpose of this Operating Manual

This operating manual contains all information required for the operation of the product.

This operating manual is intended for:

- Project planners
- Technicians
- Commissioning engineers
- Machine operators
- Maintenance/test technicians

General knowledge of automation technology is required.

Further help and training information, as well as the appropriate accessories can be found on our website www.sigmatek-automation.com.

Our support team is happily available to answer your questions or assist you in case of any issues. Please see our website for our hotline number and business hours.

1.2 Important Reference Documentation

- HGW 1033-X_Maintenance Manual
- HGW_BWH_Configuration Manual
- HW IP Address Settings

This and additional documents can be downloaded from our website or obtained through support.

1.3 Contents of Delivery

1x HGW 1033-01

2 Basic Safety Directives

2.1 Symbols Used

The following symbols are used in the operator documentation for warning and danger messages, as well as informational notes.



DANGER

Danger indicates that death or serious injury **will occur**, if the specified measures are not taken.

→ To avoid death or serious injuries, observe all guidelines.

Danger indique une situation dangereuse qui, faute de prendre les mesures adéquates, **entraînera** des blessures graves, voire mortelles.

→ Respectez toutes les consignes pour éviter des blessures graves, voire mortelles.



WARNING

Warning indicates that death or serious injury **can** occur, if the specified measures are not taken.

→ To avoid death or serious injuries, observe all guidelines.

Avertissement d'une situation dangereuse qui, faute de prendre les mesures adéquates, **entraînera** des blessures graves, voire mortelles.

→ Respectez toutes les consignes pour éviter des blessures graves, voire mortelles.



CAUTION

Caution indicates that moderate to slight injury **can** occur, if the specified measures are not taken.

→ To avoid moderate to slight injuries, observe all guidelines.

Attention indique une situation dangereuse qui, faute de prendre les mesures adéquates, **peut** entraîner des blessures assez graves ou légères.

→ Respectez toutes les consignes pour éviter des blessures graves, voire mortelles.



DANGER

Danger for persons with pacemakers, implanted defibrillators or other active implants.

Danger pour les personnes portant un stimulateur cardiaque, un défibrillateur implanté ou d'autres implants actifs.



WARNING

Magnetic field warning

Alerte au champ magnétique

CAUTION

Non-ionizing radiation

Rayonnement non ionisant

INFORMATION**INFORMATION**

- Provides important information on the product, handling or relevant sections of the documentation, which require particular attention.

2.2 Disclaimer

The contents of this operating manual were prepared with the greatest care. However, deviations cannot be ruled out. This operating manual is regularly checked and required corrections are included in the subsequent versions. The machine manufacturer is responsible for the proper assembly, as well as device configuration. The machine operator is responsible for safe handling, as well as proper operation.

The current operating manual can be found on our website. If necessary, contact our support.

Subject to technical changes, which improve the performance of the devices. The following operating manual is purely a product description. It does not guarantee properties under the warranty.

Please thoroughly read the corresponding documents and this operating manual before handling a product.

SIGMATEK GmbH & Co KG is not liable for damages caused through, non-compliance with these instructions or applicable regulations.

2.3 General Safety Directives

The Safety Directives in the other sections of this operating manual must be observed. These instructions are visually emphasized by symbols.

According to EU Directives, the operating manual is a component of a product. This operating manual must therefore be accessible in the vicinity of the machine since it contains important instructions. This operating manual should be included in the sale, rental or transfer of the product, or its online availability indicated.

Regarding the requirements for Safety and health connected to the use of machines, the manufacturer must perform a risk assessment in accordance with machine directives 2006/42/EG before introducing a machine to the market.

INFORMATION

Operate the unit with devices and accessories approved by SIGMATEK only.

This device contains a Li-Ion battery. For this reason, we refer you to the manufacturer's specification (battery safety data sheet). This can be found on our website.

CAUTION



Handle the device with care and do not drop or let fall.
Prevent foreign bodies and fluids from entering the device.
The device must not be opened!

Manipulez l'appareil avec précaution et ne le laissez pas tomber.
Empêchez les corps étrangers et les liquides de pénétrer dans l'appareil.
L'appareil ne doit pas être ouvert!

If the device does not function as intended or has damage that could pose a danger, it must be replaced!

En cas de fonctionnement non conforme ou de dommages pouvant entraîner des risques, l'appareil doit être remplacé !

Regularly check the housing for mechanical damage.

Vérifier régulièrement l'absence de dommages mécaniques sur le boîtier.

The handheld operating panel may only be used within the visible area for the application to control. The system integrator must perform a risk assessment.

Le pupitre de commande manuel ne doit être utilisé que dans la zone visible pour l'application à commander. Une évaluation des risques doit être effectuée par l'intégrateur du système.

For your own safety and that of others, compliance with the environmental conditions is essential.

Pour votre propre sécurité et celle des autres, le respect des conditions environnementales est essentiel.

INFORMATION



Hardware and software features (application-specific data) can be found in chapter 19 Application Information.

2.4 Software/Training

The application is created with the software LASAL CLASS 2 and LASAL SCREEN Editor.

Training for the LASAL development environment, with which the product can be configured, is provided. Information on our training schedule can be found on our website.

3 Standards and Directives

3.1 Directives

The product was constructed in compliance with the following European Union directives and tested for conformity.

3.1.1 EU Declaration of Conformity



EU Declaration of Conformity

The product HGW 1033-01 conforms to the following European directives:

- 2006/42/EG Machine Directive
- 2014/30/EU Electromagnetic Compatibility (EMC Directive)
- 2014/53/EU Wireless Device Directive
- 2011/65/EU "Restricted use of certain hazardous substances in electrical and electronic equipment" (RoHS Directive)

The EU Conformity Declarations are provided on the SIGMATEK website. They can be found in the download area of the respective product.

3.2 Wireless System Operation

INFORMATION



Technical changes to the device (such as different antennae), as well as improper use can lead to the loss of the FCC license and generate interference, which can affect the function of nearby devices.

Les changements techniques apportés à l'appareil (comme les différentes antennes), ainsi qu'une utilisation incorrecte peuvent entraîner la perte de la licence FCC et générer des interférences, ce qui peut affecter le fonctionnement des appareils voisins.

Please note the national regulations and standards when operating the wireless device!

Veuillez respecter les prescriptions et normes nationales lors de l'utilisation de l'appareil radio !

4 Type Plate

The type plate provides information about the product's features. The type plate shown here is only an example.

QR-Code

HW: X.XX SW: XX.XX.XXX

Safety Version: SXX.XX.XX

Serial No.

SIGMATEK GMBH & CO KG

Sigmathekstrasse 1 A-5112 LAMPRECHTSHAUSEN

Article Number

Product Name

Short Name

HW: Hardware version
FS: Safety version number
FW: Firmware version
LD: Logic device version
QR-Code: Serial number

5 Technical Data

5.1 Performance Data

Processor	EDGE2 Technology
Processor cores	2 ¹⁾
Internal cache	32-kbyte L1 Instruction Cache 32-kbyte L1 Data Cache 512-kbyte L2 Cache
Internal program and data memory	2048 Mbytes (DDR3 RAM)
Internal remnant data memory	512-kbyte MRAM
Internal storage device	4-Gbyte microSD card (3D-TLC pSLC technology), expandable ²⁾³⁾
Internal I/O	no
Battery	Capacity: 4170 mAh Lithium-Ion at 10.8 V Runtime: > 2 h continuous operation with new battery Chart/Status display via On/Off button
Charging time	< 3 h via USB-C as well as base station at 25 °C with a rising temperature and active use of the device, the charge time may increase
Interfaces	1x USB 2.0 Type-A (Host) 1x USB 2.0 Type-C (Dual Role Port, Charging: USB-PD Profile 4: 20 V, 3 A, 60 W) 1x WLAN Dual-Band (2.4 GHz, 5 GHz simultaneous)
Internal interface connections and devices	1x TFT color display 1x USB (touch connection)
Control Elements	on/off button (illuminated, with application interface)
Display Resolution	10.1" TFT LCD color display WXGA 1280 x 800 pixels
Operating field	Touch screen (multi-touch, projective capacitive)
Status LEDs	2x front (controllable via application) 1x back (boot status/controllable via application) 1x power switch (shows power and charge status)
Signal generator	yes (at least 83 dB at 30 cm)
Real-time clock	yes (circa 3 days buffered with 100 % charge, ca. 1 day in RTC buffer)
Temperature sensors	4 (2x LP, 1x CPU, 1x battery)
Cooling	passive (fanless)
Input voltage measurement	yes

¹⁾ Attention: When programming (with LASAL) on multicore CPUs, particular focus must be placed on thread security!

²⁾ For safety reasons, the device may only be extended by trained personnel.

³⁾ The 4 Gbyte microSD card is formatted to 1 Gbyte in order to achieve the lifetime of a standard SLC card. A format change to the full 4 Gbyte is not allowed and will result in a massive reduction of the microSD card's lifetime.

5.2 Electrical Requirements

Charging voltage	typically +19 V DC	
	minimum +15 V DC	maximum +24 V
Protection class	III	
Charging current	up to 2.5 A at 15.5 V	
USB Host current load	maximum 0.5 A	

INFORMATION



The specified charging time applies to the charging process when the panel is not simultaneously in use. If the device is in use while charging, the charging time can increase.

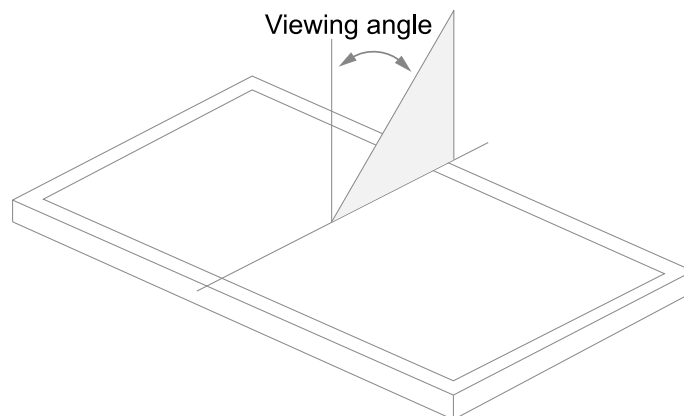
To protect the battery, the intelligent charging circuit monitors the ambient temperature. For this reason, the charging time can be extended at high ambient temperatures.

The specified current consumption applies to the status without connected peripherals (USB stick ...).

5.3 Display

Type	10.1" TFT LCD color display
Resolution	WXGA 1280 x 800 pixels
Color depth	18-bit RGB (16.7 million colors)
LCD mode	normally black ¹⁾
LCD Polarizer	transmissive ²⁾
Pixel size	0.1695 x 0.1695 mm
Active range	135.6 (V) x 216.96 (H) mm
Backlighting	LED, adjustable
Contrast ratio	typically 800:1
Brightness	typically 300 cd/m ²
Angle CR ≥ 10	85° from all sides ³⁾
Life span	By compliance with the ambient conditions, the brightness of the display sinks after 15,000 operating hours to 50 % of the original brightness.

Due to the manufacturing process, individual pixel errors cannot be excluded to 100 % and therefore do not constitute a reduction in quality.



¹⁾ If there is no display data, the display remains black when the backlighting is on.

²⁾ Display technology, with which display backlighting is used.

³⁾ The viewing angle is measured from the normal to the display surface.

5.4 Control Unit

Operating field	Touch screen (multi-touch, projective capacitive)
Maximum number of fingers	10
The operation with thin gloves	yes
SIGMATEK Touch pen (passive)	yes
Handwriting recognition	no
Ball of the thumb recognition	no
Water spray recognition ¹⁾	yes
Water detection ²⁾	no
Cleaning	see chapter 15.1 Cleaning and Disinfecting the Touch Screen

INFORMATION



The touch function may still have to be individually adapted to the respective environmental conditions.

5.5 Input

Input	Multi-touch screen (PCAP)
On/off button	1

¹⁾ Detects individual water droplets on the touch screen and remains operable.

²⁾ Detects a large amount of water on the touch screen and deactivates it.

5.6 Environmental Conditions

Storage temperature	-5 ... +50 °C (in transport mode)	
Environmental temperature, discharging	0 ... +50 °C	
Environmental temperature charging	0 ... +40 °C	
Humidity	10-95 %, non-condensing	
Installation altitude above sea level	0-2000 m without derating > 2000 m up to a maximum of 5000 m with derating of the maximum environmental temperature by 0.5 °C per 100 m	
Operating conditions	pollution degree 2	
Noise emissions	≤ 70 dB	
EMC resistance	EN 61000-6-2 (industrial area) (increased requirements according to EN IEC 62061)	
EMC noise generation	EN 61000-6-4 (industrial area)	
Vibration resistance	EN 60068-2-6	3.5 mm from 5-8.4 Hz 1 g from 8.4-150 Hz
Shock resistance	EN 60068-2-27	15 g (147.15 m/s ²)
Protection type	EN 60529	IP54 (only with all protective caps fitted)
Free fall (with rough handling)	DIN EN 60068-2-31	1000 mm
Free fall (with packaging)	IEC 60068-2-32	1000 mm

INFORMATION



The HGW 1033-01 has an intelligent charging circuit, which ensures optimal charging of the integrated battery pack. For this reason, the HGW 1033-01 can remain docked to the base station.

The HGW 1033-01 is delivered with a partially charged battery and should be completely charged by the customer before use.

With a 30 % charge, the device can be stored in transport mode for 6 months at 25 °C. After 6 months, the battery must be recharged to avoid damage to the battery.

5.7 Wireless

INFORMATION



The devices can only be used in the country designated or configured for this purpose, as the maximum permitted transmission power, as well as approved channels can greatly differ.

Please note that DFS/TPC is inactive on our devices and we therefore do not recommend the corresponding channels!

Non-compliance with these specifications can result in legal consequences, for which SIGMATEK accepts no liability!

Already during the planning stage, caution must be taken to ensure that the radio channels are configured so that interference with other products is prevented.

The document "HGW-BWH Configuration" must be used for the configuration. All channels currently supported by the software and hardware are described there.

CAUTION



The device transmits WLAN signals in the frequency range of 2.4 and 5 GHz.

L'appareil émet des signaux WLAN dans la gamme de fréquences de 2,4 et 5 GHz.

5.7.1 WLAN 2.4 GHz

Frequency range	2399.5-2484.5 MHz
Transmission power max.	20 dBm (100 mW) EIRP
Channels	1-13 (2412-2472 MHz)
Standards	IEEE 802.11 b/g/n

5.7.2 WLAN 5 GHz

Frequency range	5150-5350 MHz 5470-5725 MHz
Transmission power max.	23 dBm (200 mW) EIRP
Channels	36-48 (5180-5240 MHz) 149-165 (5745-5825 MHz)
Standards	IEEE 802.11 a/n/ac

5.7.3 Antennae

Number	2
Frequency range	2.4/5 GHz (Dual-Band)
Transmission power max.	25 W
Antenna gain	2,4 GHz-4 dBi Peak Gain 5 GHz-5,2 dBi Peak Gain
Impedance	50 Ω
Transmission angle/characteristic	transmission characteristic: omnidirectional polarization: linear

INFORMATION



Only antennae approved by SIGMATEK can be used.
See chapter 18.1 Antennae.

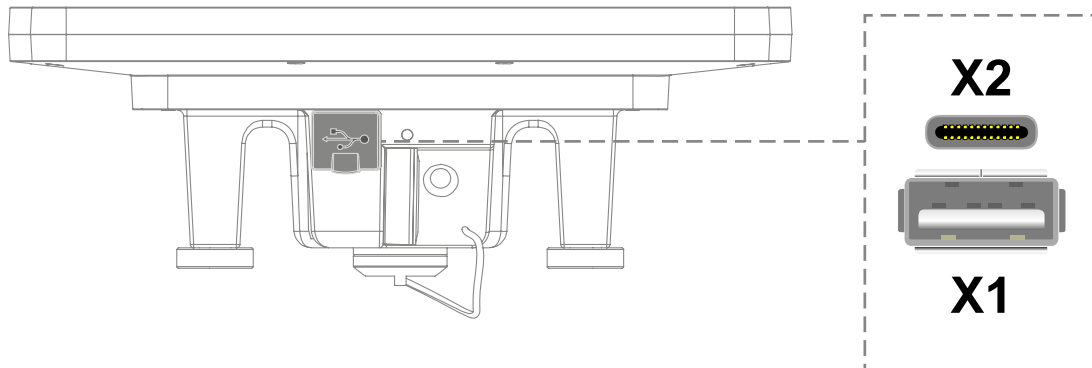
Regularly check the screw fitting for the antennae. If necessary, manually tighten them or use a torque wrench (1 Nm) for RP-SMA sockets.

5.8 Miscellaneous

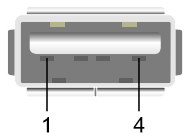
Article number	12-246-1033-01	
Operating system	Salamander	
Default IP address	see chapter Configuration	
Printed circuit board coating	no	
Approvals	CE	yes
	UL	designed according to UL
	Functional Safety	no
	UKCA	no

6 Interfaces

6.1 Connections Bottom



6.1.1 X1: USB 2.0 (Type A)



Pin	Function
1	+5 V, $I_{out,max} = 500 \text{ mA}$
2	D-
3	D+
4	GND

The Type-A interface can be used for various USB devices (keyboard, mouse, storage media, hubs, ...).

This interface can be used with a boot stick.

CAUTION



Do not use the HGW 1033-01 to charge mobile phones or other devices. The close proximity of these devices to the HGW 1033-01 can disrupt the wireless connection, as well as the function of the handheld operating panel.

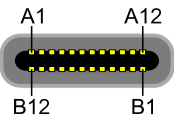
N'utilisez pas la HGW 1033-01 pour charger des téléphones portables ou d'autres appareils. La proximité de ces appareils par rapport au HGW 1033-01 peut perturber la connexion sans fil ainsi que le fonctionnement du panneau de commande portable.

INFORMATION



Connected external devices (USB sticks or similar devices) can reduce the battery life.

6.1.2 X2: USB 2.0 DualRole (Type C)



Pin	Function
A1, B1	GND
A2, B2	SSTx+
A3, B3	SSTx-
A4, B4	VBUS
A5, B5	CC1, CC2
A6, B6	USB2.0 D+
A7, B7	USB2.0 D-
A8, B8	SBU1, SBU2
A9, B9	VBUS
A10, B10	SSRx-
A11, B11	SSRx+
A12, B12	GND

The USB Type C interface can be used to charge or configure (via LASAL) the panel. Thus, interface can also be used for USB memory.

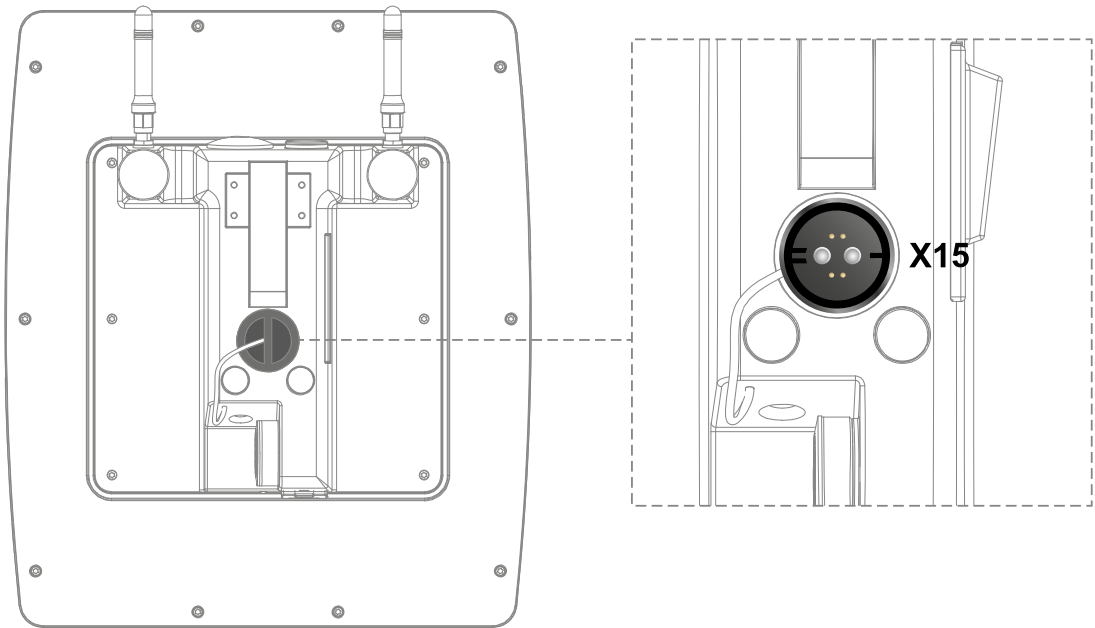
This interface can be used with a boot stick.

INFORMATION



It should be noted that many of the USB devices on the market do not comply with USB specifications; this can lead to device malfunctions. This may cause the device to malfunction. It is also possible that these devices will not be detected at the USB port or function correctly. It is therefore recommended that every USB stick or USB supply be tested before actual use.

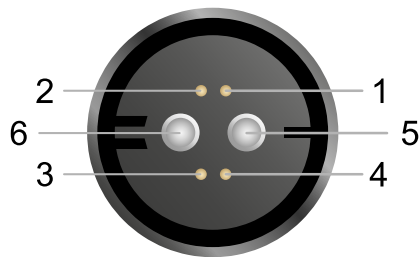
6.2 Rear Connectors



6.2.1 X15: Power/Data

Installed connector: Rosenberger M4S102-16C003A5-Y

Mating connector: Rosenberger M4K105-16C003B5-Y



Pin	Function
1	HGW COM H
2	HGW COM L
3	Plugin detection
4	n.c
5	Charging voltage
6	GND

CAUTION



Ensure that the X15 connector and its pins are always clean, since contamination (e.g. in environments with iron dust) can lead to leakage current while charging. This would result in short circuits and unexpected heating of the connector.

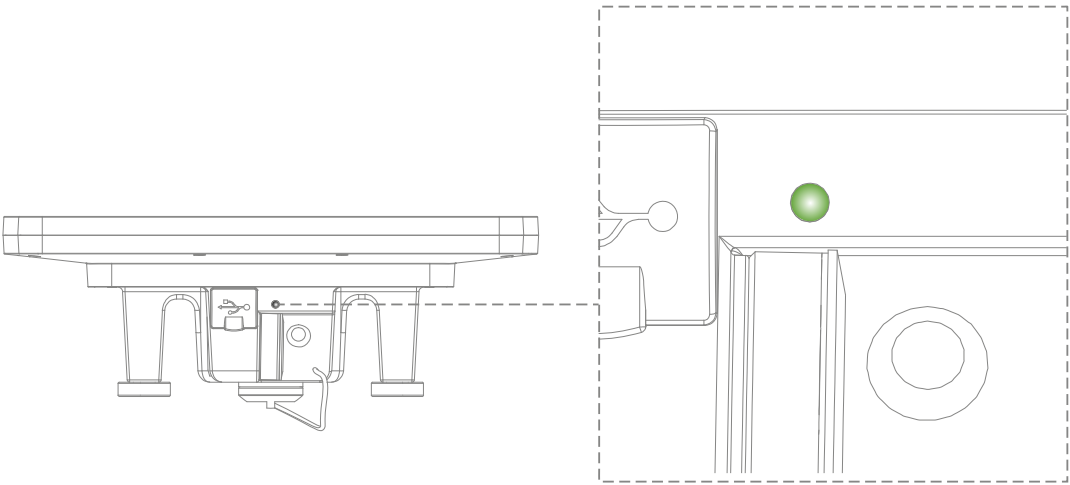
Veillez à ce que le X15 et ses broches soient toujours propres, car la contamination (par ex. dans des environnements avec de la poussière de fer) peut entraîner une fuite de courant pendant la charge. Cela provoquerait des courts-circuits et un échauffement inattendu du connecteur.

To avoid damaging the device, use the cover provided during wireless operation!

Pour éviter d'endommager l'appareil, utilisez le capot fourni lors du fonctionnement sans fil!

6.3 Display

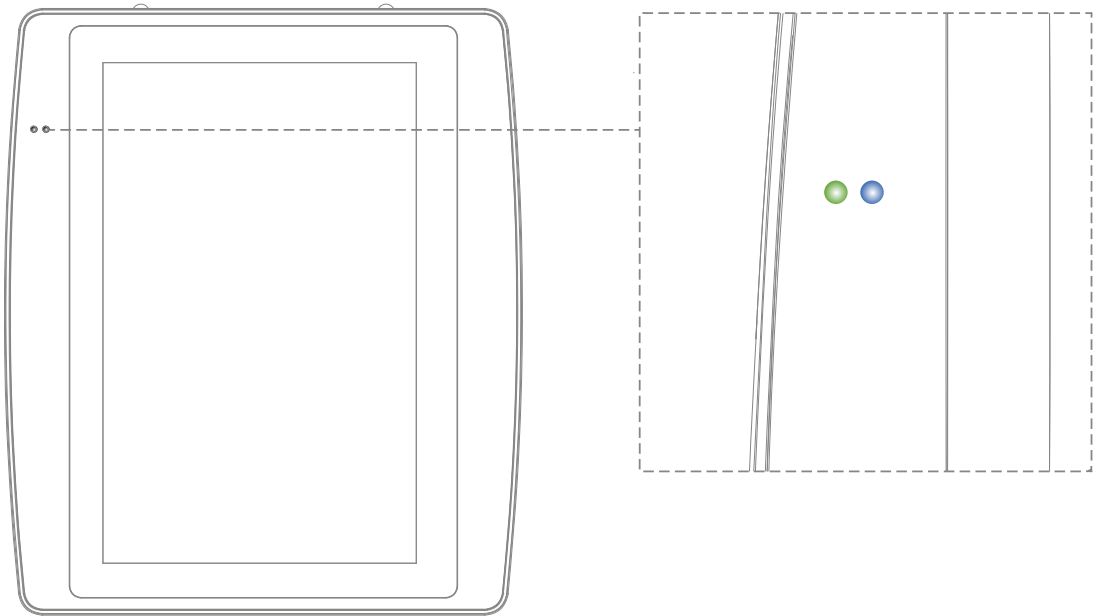
6.3.1 Underside



LED Status	Definition
LED off	Panel is off or LED was disabled via the application
LED lights green	Device in RUN mode, freely configurable via application

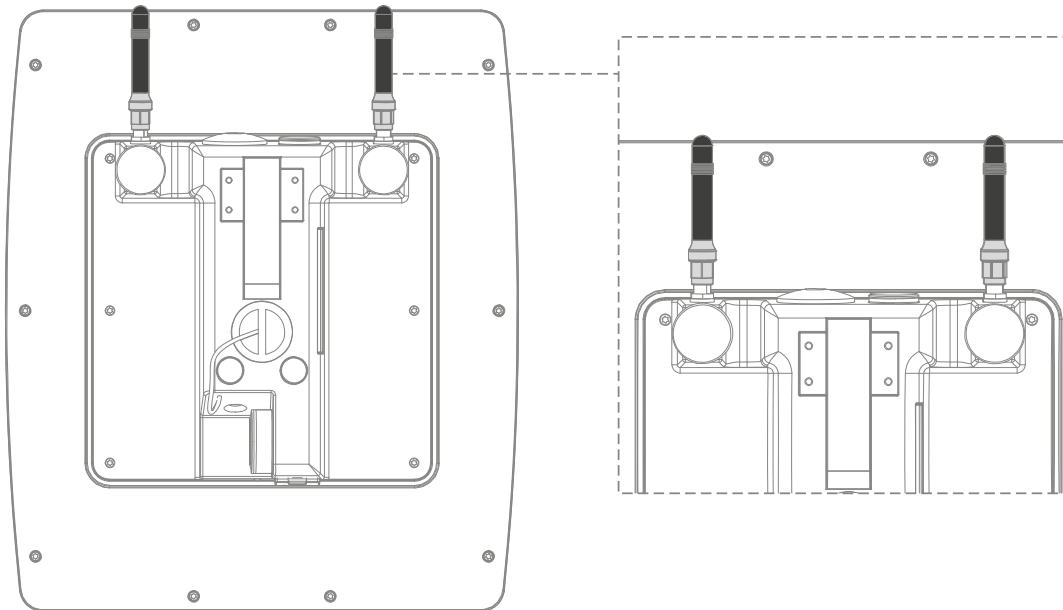
6.3.2 Front

6.3.2.1 Status LEDs



LED	Position	Color	Definition
User LED	left	green red	configurable, for example: battery warning
User LED	center	blue	configurable, for example: WLAN connection

6.4 WLAN



CAUTION



This device has sensitive antennae. These must be handled carefully and kept free from sources of interference (metal, hand). Otherwise, the error free function of the WLAN connection cannot be guaranteed.

Cet appareil est équipé des antennes sensibles. Elles doivent être manipulées avec précaution et maintenues à l'abri de toute source d'interférence (métal, main). Dans le cas contraire, la fonction sans erreur de la connexion WLAN ne peut pas être garantie.

DANGER



This device contains wireless technologies, which can pose a danger to people with implants such as pacemakers! These individuals must comply with their implant's specifications.

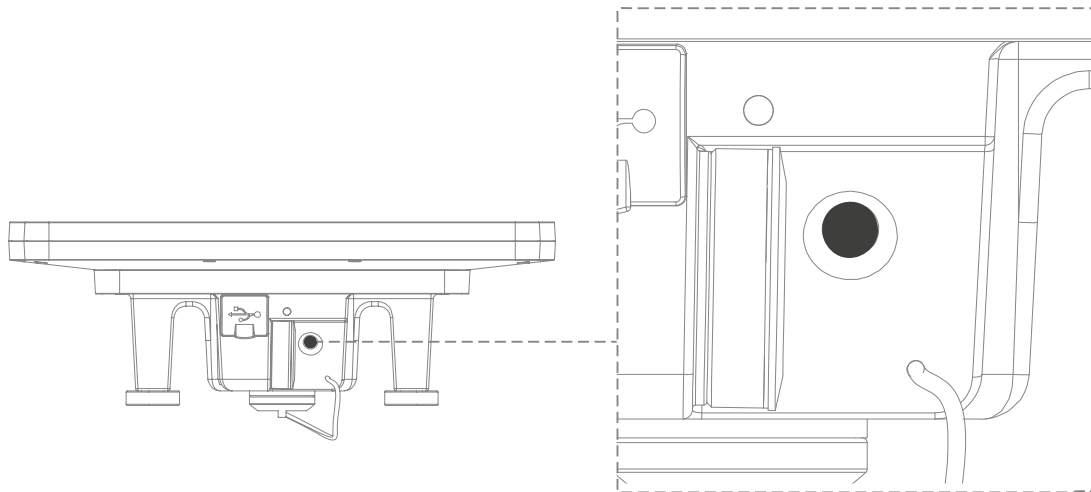
Cet appareil est doté de technologies sans fil, ce qui peut présenter le danger pour les personnes portant un stimulateur cardiaque! Ces personnes doivent se conformer aux spécifications du stimulateur cardiaque.

INFORMATION



Only antennae approved by SIGMATEK can be used. Other antennae can damage the device, as well as invalidate the radio permits.

6.5 Acoustics

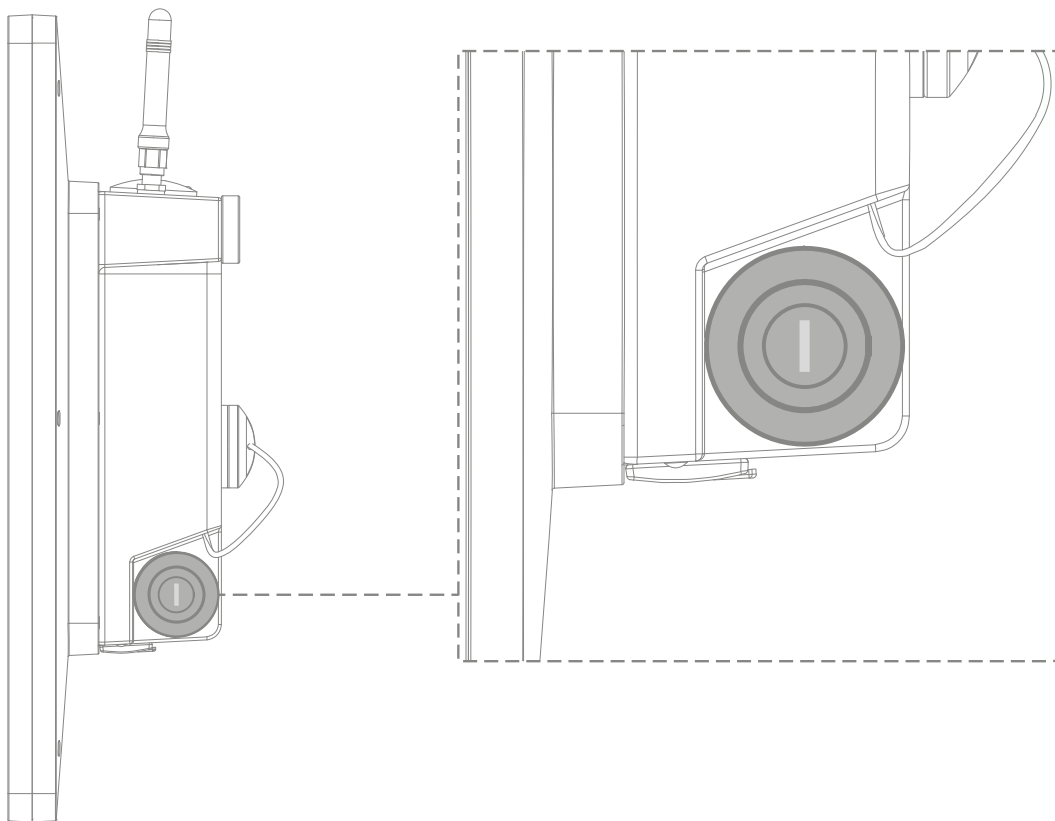


The operating panel is equipped with an alarm signal (Piezzo). To avoid minimizing the specified volume, the sound outlet must be kept free of obstacles (finger...).

6.6 On/Off Button (illuminated)

In addition to switching the device on and off, the On/Off button is also used for user-defined functions. These can be individually configured with LASAL CLASS 2.

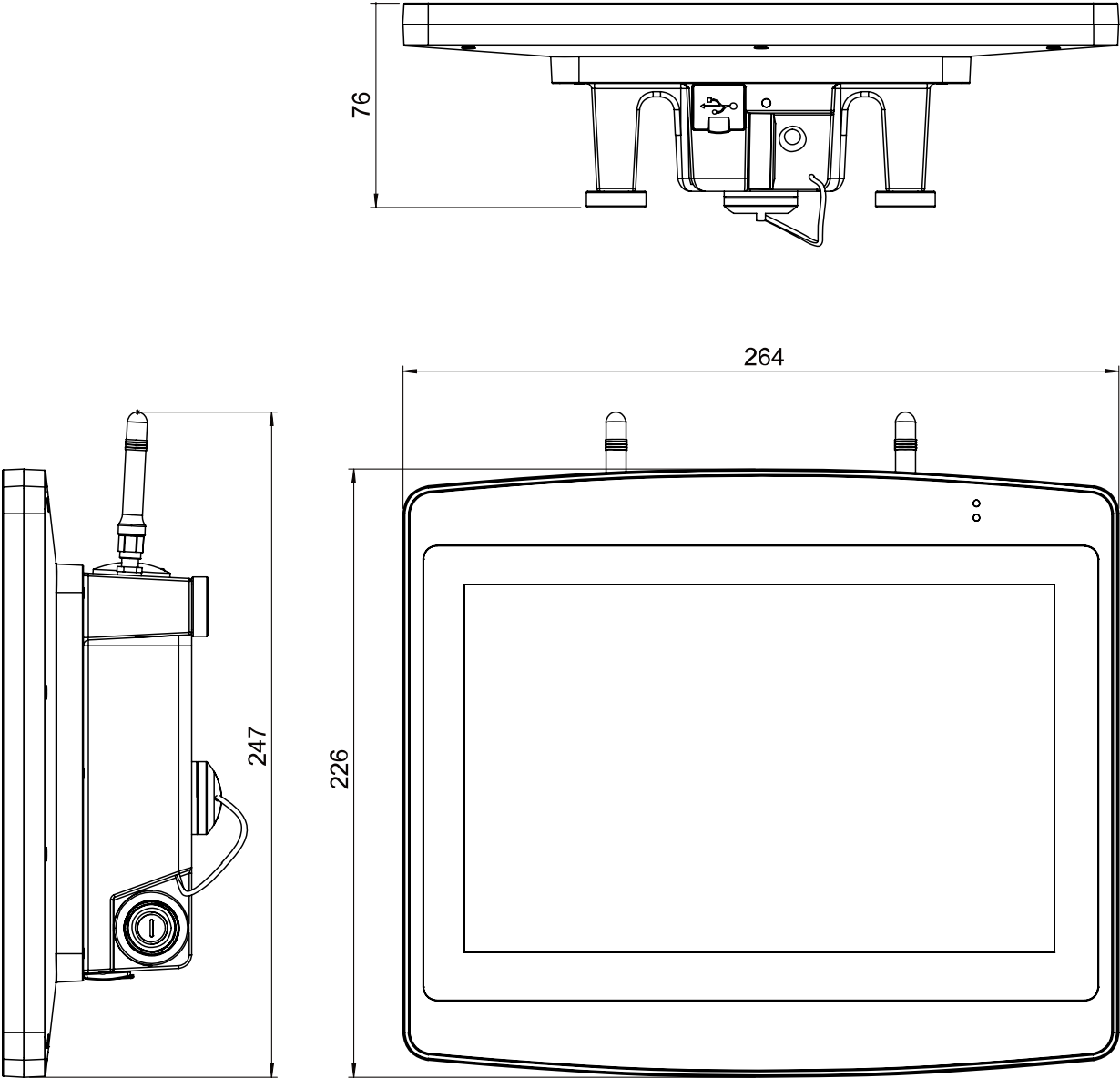
Pressing the on/off button for longer than 3 seconds while on shuts the device down immediately (Hard-OFF).



On/Off Button	Definition
Continuous light	Device active
Fast blinking	Supply/battery error, e.g. battery level too low
5x fast blinking	Battery level too low => Charge the device to at least 25 %
Long ON with short OFF phases	Charging mode and device off
Long OFF with short ON phases	Device in standby
Long ON / 3x short blinking	Device is charging; battery level is too low to start

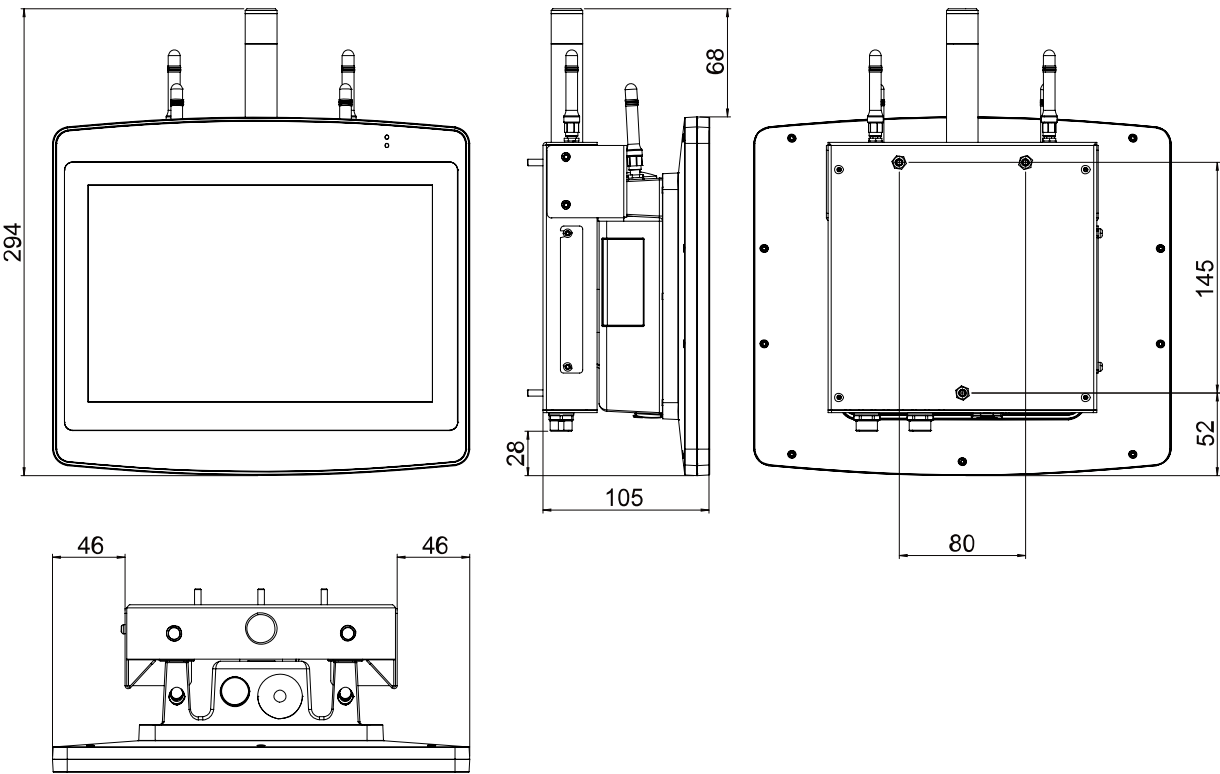
7 Mechanical Dimensions

7.1 HGW



Dimensions	264 x 247 x 76 mm (W x H x D)
Material	Housing: PC/ASA Color: RAL7024 Front: glass 1.1 mm
Weight	1.27 kg

7.2 HWG with BWH



Dimensions	264 x 294 x 105 mm (W x H x D)
Weight	2.77 kg

8 Assembly/Installation

8.1 Check Contents of Delivery

Ensure that the contents of the delivery are complete and intact. See chapter 1.3 Contents of Delivery.

INFORMATION



On receipt and before initial use, check the device for damage. If the device is damaged, contact our customer service and do not install the device in your system.

Damaged components can disrupt or damage the system.

8.2 Preparing the Hardware

Before the HGW and BWH can be started, the following factors must be ensured:

- ☐ The BWH is securely mounted.
- ☐ The BWH and the machine are connected with the proper cables and the connection was checked.

9 Status and Error Messages

Status and error messages are shown in the status test of the LASAL CLASS software. POINTER or CHKSUM messages can also be shown on the screen.

Number	Message	Definition	Cause/Solution
00	RUN RAM	The user program is currently running in RAM. The display is not affected.	Info
01	RUN ROM	The user program stored in the program memory module was loaded into the RAM and is currently running. The display is not affected.	Info
02	RUNTIME	The total time for all cyclic objects exceeds the maximum time; the time can be configured using 2 system variables: - Runtime: Remaining time - SWRuntime: Preset value for runtime counter	Optimize the application's cyclic task. Use higher capacity CPU. Configure preset value
03	POINTER	Incorrect program pointers were detected before running the user program	Possible Causes: - The program memory module is missing, not programmed or defective. - The program in the user program memory (RAM) is not executable. - The buffer battery has failed. - The user program has overwritten a software error. Solution: - Reprogram the memory module, if the error reoccurs exchange the module. - Exchange the buffering battery - Correct programming error
04	CHKSUM	An invalid checksum was detected before running the user program.	Cause/Solution: s. POINTER

Number	Message	Definition	Cause/Solution
05	WATCHDOG	The program was interrupted via the watchdog logic.	Possible Causes: ■ User program interrupts blocked over a longer period of time (STI command forgotten). ■ Programming error in a hardware interrupt. ■ INB, OUTB, INW, OUTW instructions used incorrectly. ■ The processor is defective. Solution: ■ Correct programming error. ■ Exchange CPU
06	GENERAL ERROR	General error An error has occurred while stopping the application via the online interface.	This error occurs only during the development of the operating system.
07	PROM DEFECT	An error has occurred while programming the memory module.	Causes: ■ The program memory module is defective. ■ The user program is too large. ■ The program memory module is missing. Solution: ■ Exchange the program memory module
08	RESET	The CPU has received the reset signal and is waiting for further instructions. The user program is not processed.	Info
09	WD DEFECT	The hardware monitoring circuit (watchdog logic) is defective. After power-up, the CPU checks the watchdog logic function. If an error occurs during this test, the CPU deliberately enters an infinite loop from which no further instructions are accepted.	Solution: ■ Exchange CPU
10	STOP	The program was stopped by the programming system.	
11	PROG BUSY	Reserved	
12	PROGRAM LENGTH	Reserved	
13	PROG END	A memory module was successfully programmed.	Info
14	PROG MEMO	The CPU is currently programming the memory module.	Info

Number	Message	Definition	Cause/Solution
15	STOP BRKPT	The CPU was stopped by a breakpoint in the program.	Info
16	CPU STOP	The CPU was stopped by the programming software.	Info
17	INT ERROR	The CPU has triggered a false interrupt and stopped the user program or has encountered an unknown instruction while running the program.	Causes: ■ A nonexistent operating system was used. ■ Stack error (uneven number of PUSH and POP instructions). ■ The user program was interrupted by a software error. Solution: ■ Correct programming error.
18	SINGLE STEP	The CPU is in single step mode and is waiting for further instructions.	Info
19	READY :	A module or project has been sent to the CPU and it is ready to run the program.	Info
20	LOAD	The program is stopped and the CPU is currently receiving a new module or project.	Info
21	INVALID MODULE	The CPU has received a module that does not belong to the project.	Solution: ■ Recompile and download the entire project
22	MEMORY FULL	The operating system memory (heap) is too small. No memory could be reserved while calling an internal function or an interface function is called from the application.	Causes: ■ Memory is only allocated but not released. Solution: ■ Clear memory
23	NOT LINKED	When starting the CPU, a missing module or a module that does not belong to the project was detected.	Solution: ■ Recompile and download the entire project
24	DIV BY 0	A division error has occurred.	Possible Causes: ■ Division by 0. ■ The result of a division does not fit in the result register. Solution: ■ Correct programming error.
25	DIV BY 0	A division error has occurred.	Possible Causes: ■ Division by 0. ■ The result of a division does not fit in the result register. Solution: Correct programming error.

Number	Message	Definition	Cause/Solution
25	DIAS ERROR	While accessing a DIAS module, an error has occurred.	Hardware problem
26	WAIT	The CPU is busy.	Info
27	OP PROG	The operating system is currently being reprogrammed.	Info
28	OP INSTALLED	The operating system has been reinstalled.	Info
29	OS TOO LONG	The operating system cannot be loaded; too little memory.	Restart, report error to SIGMATEK.
30	NO OPERATING SYSTEM	Boot loader message, no operating system found in RAM.	Restart, report error to SIGMATEK.
31	SEARCH FOR OS	The boot loader is searching for the operating system in RAM.	Restart, report error to SIGMATEK.
32	NO DEVICE	Reserved	
33	UNUSED CODE	Reserved	
34	MEM ERROR	The operating system loaded does not match the hardware configuration.	Solution: ■ Use the correct operating system version
35	MAX IO	Reserved	
36	MODULE LOAD ERROR	The LASAL Module or project cannot be loaded.	Solution: ■ Recompile and download the entire project
37	BOOTIMAGE FAILURE	A general error has occurred while loading the operating system.	Contact SIGMATEK
38	APPLMEM ERROR	An error has occurred in the application memory (user heap).	Solution: ■ Correct allocated memory access error
39	OFFLINE	This error does not occur in the control.	This error code is used in the programming system to show that there is no connection to the control.
40	APPL LOAD	Reserved	
41	APPL SAVE	Reserved	
44	VARAN MANAGER ERROR	An error number was entered in the VARAN manager and stopped the program.	Solution: ■ Read LogFile
45	VARAN ERROR	A required VARAN client was disconnected or a communication error has occurred.	Solution: ■ Read LogFile error tree

Number	Message	Definition	Cause/Solution
46	APPL-LOAD-ERROR	An error has occurred while loading the application.	Cause: - Application was deleted. Solution: - Reload the application into the control.
47	APPL-SAVE-ERROR	An error has occurred while attempting to save the application.	
50	ACCESS-EXCEPTION-ERROR	Read or write access of a restricted memory area. (I.e. writing to the NULL pointer).	Solution: Correct application errors
51	BOUND EXCEEDED	An exception error has occurred while accessing arrays. The memory area was overwritten by accessing an invalid element.	Solution: Correct application errors
52	PRIVILEGED INSTRUCTION	An unauthorized instruction for the current CPU level was given. For example, setting the segment register.	Cause: - The application has overwritten the application program code. Solution: - Correct application errors
53	FLOATING POINT ERROR	An error has occurred during a floating-point operation.	
60	DIAS-RISC-ERROR	Error from the Intelligent DIAS Master.	Restart, report error to SIGMATEK.
64	INTERNAL ERROR	An internal error has occurred, all applications are stopped.	Restart, report error to SIGMATEK.
65	FILE ERROR	An error has occurred during a file operation.	
66	DEBUG ASSERTION FAILED	Internal error	Restart, report error to SIGMATEK.
67	REALTIME RUNTIME	The total duration of all real-time objects exceeds the maximum time; the time cannot be configured. 2 ms for 386 CPUs 1 ms for all other CPUs	Solution: - Optimize the application's real-time task (RtWork). - Reduce the clock time for the real-time task of all objects. - Correct application errors - CPU is overloaded in real-time => use a higher capacity CPU.
68	BACKGROUND RUNTIME	The total time for all background objects exceeds the maximum time; the time can be configured using 2 system variables: - BTRuntime: -SWBTRuntime: pre-selected value for the runtime counter	Solution: - Optimize the application's background task (background) - Use higher capacity CPU - Set SWBTRuntime correctly

Number	Message	Definition	Cause/Solution
70	C-DIAS ERROR	A connection error with a C-DIAS module has occurred.	Cause: ■ The cause of the error is documented in the log file Solution: ■ This depends on the cause
72	S-DIAS ERROR	A connection error with an S-DIAS module has occurred.	Possible Causes: ■ Real network does not match the project, S-DIAS client is defective Solution: ■ Analyze log file
75	SRAM ERROR	An error occurred while initializing, reading or writing SRAM data.	Possible Causes: ■ SRAM configured incorrectly ■ Battery for powering the internal program memory is empty Solution: ■ Analyze log file (Event00.log, Event19.log) ■ Check configuration ■ Exchange battery for powering the internal program memory
95	USER DEFINED 0	User-definable code.	
96	USER DEFINED 1	User-definable code.	
97	USER DEFINED 2	User-definable code.	
98	USER DEFINED 3	User-definable code.	
99	USER DEFINED 4	User-definable code.	
100	C_INIT	Initialization start; the configuration is run.	
101	C_RUNRAM	The LASAL project was successfully started from RAM.	
102	C_RUNROM	The LASAL project was successfully started from ROM.	
103	C_RUNTIME		
104	C_READY	The CPU is ready for operation.	
105	C_OK	The CPU is ready for operation.	
106	C_UNKNOWN_CID	An unknown object from a stand-alone or embedded object, or an unknown base class was detected.	

Number	Message	Definition	Cause/Solution
107	C_UNKNOWN_CONSTR	The operating system class cannot be created; the operating system is probably wrong.	
108	C_UNKNOWN_OBJECT	Indicates an unknown object in an interpreter program; more the one DCC080 object.	
109	C_UNKNOWN_CHNL	The hardware module number is greater than 60.	
110	C_WRONG_CONNECT	No connection to the required channels.	
111	C_WRONG_ATTR	Wrong server attributes.	
112	C_SYNTAX_ERROR	Non-specific error. Recompile and download all project sections.	
113	C_NO_FILE_OPEN	An attempt was made to open an unknown table.	
114	C_OUTOF_NEAR	Memory allocation failed	
115	C_OUT OF_FAR	Memory allocation failed	
116	C_INCOMAPTIBLE	An object with the same name already exists but has a different class.	
117	C_COMPATIBLE	An object with the same name and class exists but must be updated.	
224	LINKING	The application is currently linking.	
225	LINKING ERROR	An error has occurred while linking.	
226	LINKING DONE	Linking is complete.	
230	OP BURN	The operating system is currently being burned into the Flash memory.	
231	OP BURN FAIL	An error has occurred while burning the operating system.	
232	OP INSTALL	The operating system is currently being installed.	
240	USV-WAIT	The power supply was disconnected; the UPS is active. The system is shutdown.	
241	REBOOT	The operating system is restarted.	

Number	Message	Definition	Cause/Solution
242	LSL SAVE		
243	LSL LOAD		
252	CONTINUE		
253	PRERUN	The application is started.	
254	PRERESET	The application is ended.	
255	CONNECTION BREAK		

10 Battery

10.1 Introduction

Rechargeable batteries are consumable components.

With increasing age, a lithium-ion battery loses its ability to hold a charge. The battery must therefore be recharged more often and the available capacity sinks.

10.2 Charge Status and Aging

There are two charge statuses available in the battery:

- Battery level with protective reserves
- Charge status displayed for the user

10.2.1 BatteryLevelAbsolute

The absolute charge status corresponds to the actual battery charge. here, the reserves (20 % absolute) for buffering the real-time clock and protecting the battery are included. The reserves are not available to the user.

To evaluate the operating ranges, the absolute charge is used in the chapter "Battery Operating Ranges", as well as for Transport Mode.

10.2.2 BatteryLevel

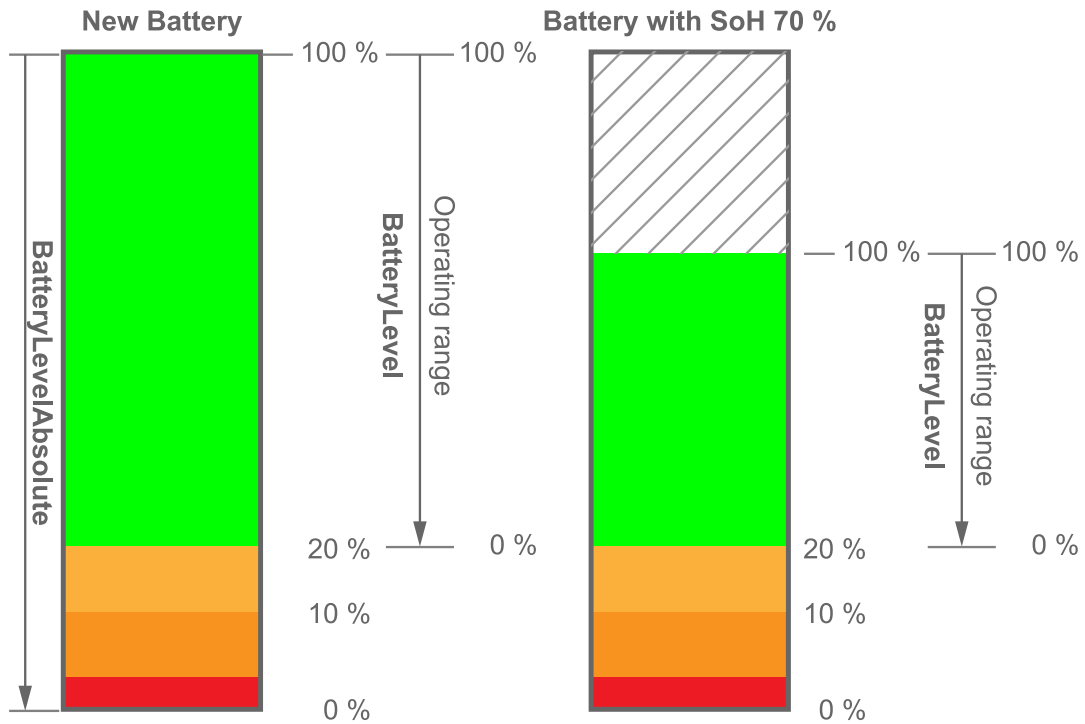
The BatteryLevel shows the battery capacity available for the end user and can therefore be used in the application.

The 0-100 % of the BatteryLevel is scaled from the BatteryLevelAbsolute (20-100 %).

10.2.3 BatteryStateofHealth

The State of Health indicates the battery age. Battery aging is caused by electrochemical processes and reduces the usable capacity of the battery. This value is used to calculate the remaining lifespan of the battery and is an evaluation criterion for the battery exchange.

The State of Health is evaluated in the BatteryLevel, so that the battery display is between 0 and 100 %. As the battery ages, the operating range becomes smaller. The lower 20 % remains unchanged regardless of the SoH.



10.3 Versions

So that all battery functions and parameters can be called, the following software versions are required.

System Component	From Version	Note
Operating system	09.03.187	starting with HW 1.20 in series
PMC Firmware	5.00	starting with HW 1.20 in series
HWK HGW1033_PMC	1.5	
HWK BWH 001	1.6	
HWK BWH 001-I	1.1	
HGW NT1	1.10	Firmware



INFORMATION

If a lower software version is used, contact SIGMATEK Support for an update.

10.4 Battery Transport/Storage

CAUTION



During transport, observe the applicable national regulations.

The device must be set to "Transport Mode" before shipping. See 10.10 Transport Mode.

Due to the battery's self-discharge, we recommend that it first be charged or discharged to a BatteryLevel of 30 % (absolute) for transport mode.

Deep discharge, as well as damage to the battery is thereby avoided. With a charge of 30%, the device can be stored in transport mode at 25 °C for at least six months.

After 6 months, the device must be charged to avoid damaging the battery via deep discharge! The battery must be recharged within the maximum storage time after transport or storage of the device for an extended period of time.

10.5 Commissioning and Charging Options

INFORMATION



During the initial startup after transport, the transport mode is ended when the device is charging. In the case, the device must be charged for the time specified in the table. While charging, no battery parameters can be called. The battery is calibrating during the time. The user must end the transport mode, see chapter Transport Mode.

Do not interrupt this initial charging process, this can falsify the battery parameters!

A Transpormode/DeepSleep is implemented by the battery with a delay of ca. 10 seconds.

HW version	Battery wake time
1.00	5 seconds

To charge the device, use the charging options provided and available for the respective product (mounting the device on the BWH XXX base station, HGW NT1 charger (12-246-001-Z4, ...)).

INFORMATION



When charging for the first time, we recommend letting the device fully charge.

Please note that depending on the quality of the USB-C charger or its output, the charging process could take considerably longer.

Observe the minimum requirement for the external USB-C supply of 20 V (profile 4).

10.5.1 Monitoring of the Charging Source

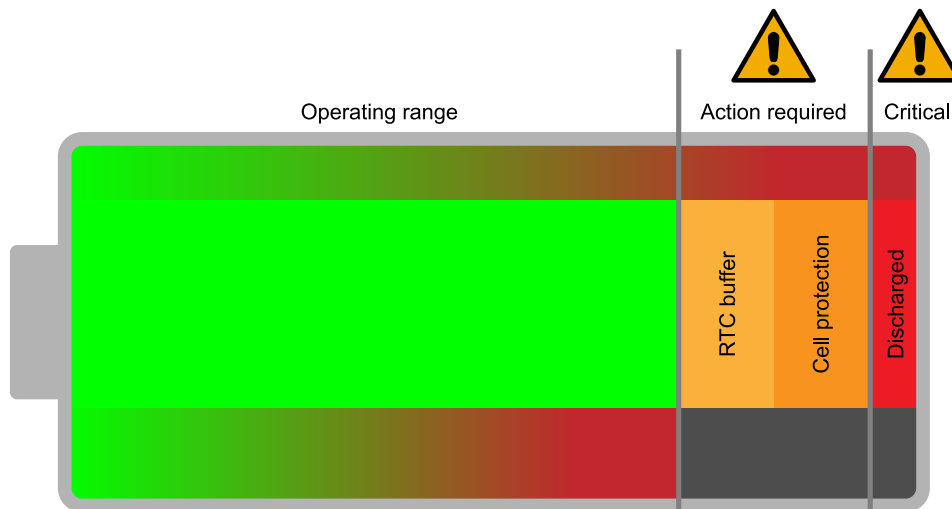
The HGW permanently checks the quality of the charging source. If an error is detected, charging is interrupted until the error is corrected and the device is reconnected to the charging source. If charging is interrupted during an active error, the device may discharge until it switches off automatically, see chapter 10.6 Battery Operating Ranges.

The error state will be output via the hardware class server "BatteryChargingSource". A description of the states can be found in the hardware class documentation. We recommend visualizing this state in the application.

If an error is detected when the device is switched off, the operating system issues a corresponding error message at startup. This can be acknowledged by the user or is automatically closed when the correct load function is restored.

Monitoring of charging sources is available from PMC firmware 5.20 in conjunction with operating system version 09.03.188.

10.6 Battery Operating Ranges



BatteryLevel	BatteryLevel Absolut	Range	Runtime ¹⁾	Description	Solution
100 % 1 %	100 % 21 %	1 Operating	2 h	Operating range of the device. Recommended: Low battery warning < 10 % (BatteryLevel). The hardware class provides the server (configurable) for this purpose. In the operating system CLI, the battery status is RED as soon as the relative charge goes below 10 %.	- The device must be charged to at least 25 % of the absolute charge before battery operation is possible again. - Display battery warning at 10 % relative charge.
-	20 % 11 %	2 RTC buffer	24 h	The device shuts down. In this range, the clock time is buffered.	- Device must be charged.
-	10 % 1 %	3 Cell protection	2 months	In this range, the battery is protected from a deep discharge for a period of 2 months without recharging. In this state, the device clock time is lost.	- The device must be charged. - The real-time clock must be reset.
-	≤ 0 %	4 Discharge	1 month	In this start, permanent damage to the battery can already occur.	- Charge device. - The real-time clock must be reset. - If the device has not been charged within 1 month, the battery must be exchanged.

¹⁾ The runtime parameters are based on a new battery, as well as a normal system load without external power consumption, such as USB sticks for example, and can be lower over the service life.

10.7 Hardware Class

The hardware class HGW10xx_PMC provides all battery-relevant information and functions. In this document, only the most important parameters required for using the device are explained. Detailed documentation of the class can be found in LASAL CLASS 2.

Parameter	Description
BatWarningThreshold	Battery status for the end user
BatteryLevel	Battery status incl. reserves
BatteryLevelAbsolute	Give a warning for battery status when the value set in the BatWarningThreshold server has been exceeded. This value is set to 10 % (relative) by default.
BatteryWarning	Battery state of health in % see "Battery Lifespan"
BatteryStateOfHealth	Number of charging cycles, each cycle corresponds to a duty cycle of 90 % – also in multiple steps (ex. 9x10 % charging and discharging)
BatteryCycle	Measured battery temperature
BatteryTemp	Turns the device off, this corresponds to a shutdown via button
Shutdown Device	Activates the transport mode, see chapter "Transport Mode"
BatteryTransportmode	Activates the power-save mode, see chapter "DeepSleepMode"
DeepSleepMode	Calcs all battery-relevant log data from the system for SIGMATEK support
UploadLogData	Activates or deactivates the automatic start with a battery level > 25 % absolute, while the device is charging
SwitchOnWhenCharging	

Parameter	Description
BatteryLevel	Battery status for the end user
BatteryLevelAbsolute	Battery status incl. reserves
BatteryWarning	Give a warning for battery status when the value set in the BatWarningThreshold server has been exceeded. This value is set to 10 % (relative) by default.
BatteryStateOfHealth	Battery state of health in % see "Battery Lifespan"
BatteryCycle	Number of charging cycles, each cycle corresponds to a duty cycle of 90 % – also in multiple steps (ex. 9x10 % charging and discharging)
BatteryTemp	Measured battery temperature
Shutdown Device	Turns the device off, this corresponds to a shutdown via button
BatteryTransportmode	Activates the transport mode, see chapter "Transport Mode"
DeepSleepMode	Activates the power-save mode, see chapter "DeepSleepMode"
UploadLogData	Calcs all battery-relevant log data from the system for SIGMATEK support
SwitchOnWhenCharging	Activates or deactivates the automatic start with a battery level > 25 % absolute, while the device is charging

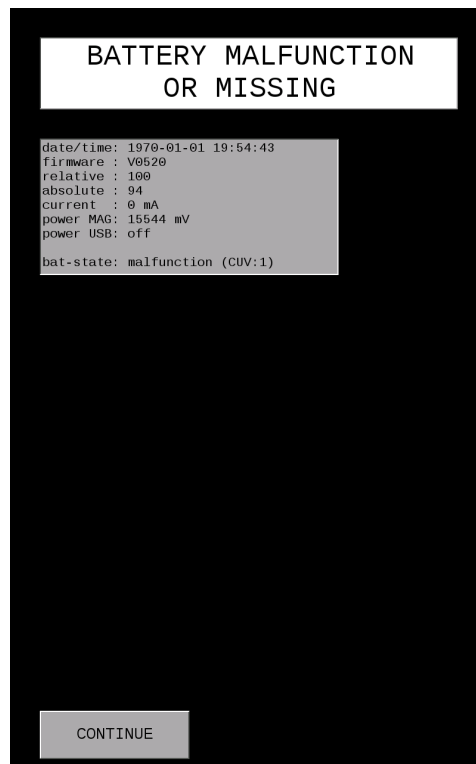
10.8 Exchanging the Battery

The battery **must** be exchanged when a deep discharge has occurred. The battery can be exchanged by a qualified service technician.

10.8.1 Deep Discharged Battery

If this state is reached, the battery can no longer be charged due to safety reasons. The device can only be started or operated when connected to an external power source, such as the base station for example (see 10.5 Commissioning and Charging Options).

In the operating system, a warning is output and the application is prevented from starting. The user can end the warning and start the application.



Information on the defect of the battery indicated can be read from the log files.

10.8.2 Recommendation

Depending on the respective end application, exchanging the battery is recommended under the following conditions.

- State of Health (BatteryStateofHealth): is below 70 %
- Charging cycle (BatteryCycle): greater than 300
- Battery age: 2 years

With these values, the battery is still usable but with reduced performance (shortened run time,...).

10.9 DeepSleepMode

The device has a power-save mode, in which the lowest possible battery discharge is achieved.

INFORMATION



This function is not designed for transport; use transport mode for this purpose.

A Transpormode/DeepSleep is implemented by the battery with a delay of ca. 10 seconds.

After activating the DeepSleep mode, the device must be disconnected from the charging source for at least 10 seconds for it to become active. Premature supply can lead to incorrect battery values.

The DeepSleepMode can be ended when the device is connected to an appropriate power source. See chapter 10.5 Commissioning and Charging Options.

10.9.1 Conditions

- The device is turned on and the DeepSleep function is called via the application.
- The absolute battery level (BatteryLevelAbsolut) is greater than 20 %.

INFORMATION



The RTC time is lost during activation and must be reset.

10.10 Transport Mode

The device has a transport mode. Via the transport mode, the device can be set in a power-save mode to minimize battery discharge to ensure transport and storage times.

Please see the chapter 10.4 Battery Transport/Storage.

10.10.1 Activating the Transport Mode

To enable the transport mode, enter the following command in the CLI:

```
BATTERY TRANSPORTMODE
```

Alternatively, the transport mode can be activated via the application when the appropriate server is set.

If the charge of the device is above or below 30 % absolute, the battery is prepared for the upcoming transport mode and is charged or discharged automatically.

After activating the transport mode, an information window is displayed that shows the current status. In this window, preparation for the transport mode can be stopped via the “Cancel” button.

After activating the Transport mode, the application is ended and the device can no longer go online.

In the displayed window, the estimated time until activating the transport mode is shown.

10.10.1.1 Conditions

- At a battery charge > 30 %, the transport mode can also be activated without a charging device.
- Device is turned on and the transport mode is activated via the application or the operating system command (CLI).

10.10.1.2 Note

- The real-time clock is lost when activating this function.
- If the device must be **charged**, (battery < 30 % BatteryLevelAbsolut) and it is not connected to a power source, transport mode is not activated.

Possible Causes:

- The base station is off
- The device is not connected to the base station
- The base station application is not started
- Incorrect operating system version (HGW, BWH...)
- If the device must be **discharged** (battery charge > 30 % BatteryLevelAbsolut) and the power source is cannot be deactivated. the process is stopped after 1 minute.

Possible Causes:

- Base station hardware class version incorrect
- Incorrect operating system version (HGW, BWH...)
- External charging device is not turned on

10.10.2 Ending the Transport Mode

As described in the Chapter Commissioning, the transport mode can be ended by charging the device. With the next device start, a dialog window appears in which the transport mode can be ended with the "Leave Transportmode" button.

If the process is interrupted by disconnecting the power source or cancelation via the user over the window, the device automatically returns to transport mode.

While the window is open, the battery is charged to a capacity of maximum 30 % (BatteryLevelAbsolut).

INFORMATION



A Transpormode/DeepSleep is activated by the battery with a delay of approx. 10 seconds.

After successful activation of the transport mode (30 % BatteryLevelAbsolut), the device must be disconnected from the charging source for at least 10 seconds for this to become active. Premature supply can lead to incorrect battery values.

10.11 Log Data

Over the lifespan of the battery, all relevant battery parameters are recorded. These can be exported for analysis by SIGMATEK support.

To ensure the analysis of the log data, the internal real-time clock (RTC) must always be set via the application. In transport mode, Deep Sleep and when the battery cell protection mode is triggered, the real-time clock data is lost.

The log data can be read out using the "HGW1033_PMC" hardware class. More detailed information can be found in the documentation of the "HGW1033_PMC" class in the Special Functions section under "Upload Log Data".

11 Operation/Start-up

11.1 Note

INFORMATION



For safety reasons, the HGW 1033-01 is set to transport mode. During the initial start-up, the HGW 1033-01 is still in this mode which can be cancelled by the user with the first charging process.

WARNING



The operating panel can be mounted onto magnetic components, for example, directly on the machine.

Caution must be taken to ensure that no magnetically sensitive objects are located in the immediate vicinity of the HGW 1033-01 (e.g. credit / magnetic stripe cards).

Le panneau de commande peut être monté sur des composants magnétiques, par exemple directement sur la machine.

Veiller à ce qu'aucun objet magnétiquement sensible ne se trouve à proximité immédiate de HGW 1033-01 (p. ex. cartes de crédit / cartes à bande magnétique).

DANGER



This device is equipped strong magnets, which can pose a danger to people with implants such as pacemakers!

Cet appareil est équipé d'aimants puissants, ce qui peut représenter un danger pour les personnes porteuses d'implants tels que les stimulateurs cardiaques!

INFORMATION



Please observe the installation guidelines in the BWH base station operating manual.

11.2 WLAN Channels and Settings

The WLAN channels and settings supported by the hardware and software can be found in the "WLAN Configuration" document. Only the channels and settings released there may be used.

INFORMATION



The information contained in the document "WLAN Configuration" does not release the user from the obligation to observe national standards and laws as well as special regional regulations.

11.3 Configuration

The operating panel can be configured in LASAL via the USB-C interface or WLAN.

INFORMATION



Never operate the panel without antennae. This can result in damage to the device.

At the time of delivery, the panel is configured as an access point and the network is accessible with the following parameters.

The serial number is contained in the network name (SSID). This can be found on the reverse side of the panel on the product label.

11.3.1 Example

Serial number HGW 1033-01: 12345678

SSID 2.4 GHz network: SN12345678_SIG_11

SSID 5 GHz network: SN12345678_SIG_10

Parameters	Default value
SSID 2.4 GHz network	SN<serial number>_SIG_11
SSID 5 GHz network	SN<serial number>_SIG_10
Password for both networks	12345678
IP address / mask 2.4 GHz network	192.168.2.1 / 255.255.255.0
IP address / mask 5 GHz network	192.168.1.1 / 255.255.255.0

INFORMATION



Problems can arise if a control is connected to an IP network, which contains modules that are not running with a SIGMATEK operating system. With such devices, Ethernet packets could be sent to the control with such a high frequency (i.e. broadcasts), that the high interrupt load could cause a real-time runtime error or runtime error. By configuring the packet filter (Firewall or Router) accordingly however, it is possible to connect a network with SIGMATEK hardware to a third party network without triggering the error mentioned above.

11.4 Testing the Operating Area

CAUTION



Test the function in the operating area. Ensure the operating panel can control the machine throughout the entire operating area.

Tester la fonction dans la zone d'utilisation. S'assurer que le panneau de commande peut commander la machine dans toute la zone de travail.

11.5 Operation

11.5.1 General

The HGW 1033-01 is operated via the touch screen.

INFORMATION



To avoid damage to the touch screen, it can only be operated using the fingers or an appropriate stylus. Suitable gloves are also permitted for the touch technology, as long as they do not damage the device (e.g. via chips, pointed or similar objects).

CAUTION



Do not lay the operating panel on its touch screen. Also avoid laying anything on top of the touch screen.

This can cause operating errors, undesired triggering of functions or damage to the device.

Ne posez pas le panneau de commande sur son écran tactile. Évitez également de poser quoi que ce soit sur l'écran tactile. Cela peut entraîner des erreurs de fonctionnement, des déclenchements intempestifs de fonctions ou des dommages sur l'appareil.

Do not place the panel on loose or unstable surfaces. It could fall onto the floor and be subsequently damaged.

Ne placez pas le panneau sur des surfaces lâches ou instables. Il pourrait tomber sur le sol et être endommagé par la suite.

The operating panel is constructed so that it can be operated by right and left handers equally.

The HGW 1033-01 can, when mounted in the base station, also be used as a stationary unit.

CAUTION



Typically, USB devices (keyboard, mouse etc.) are equipped with non-shielded cables. These devices are disrupted by ESD and in some instances, no longer function.

Généralement, les périphériques USB (clavier, souris etc) ne sont pas équipés de câbles blindés. Ces dispositifs sont perturbés par des décharges électrostatiques et, dans certains cas, ne fonctionnent plus.

Before any device is connected to, or disconnected from the product, the potential should be equalized (by touching the control cabinet or ground terminal). Electrostatic loads (through clothing and shoes etc.) can thereby be dissipated.

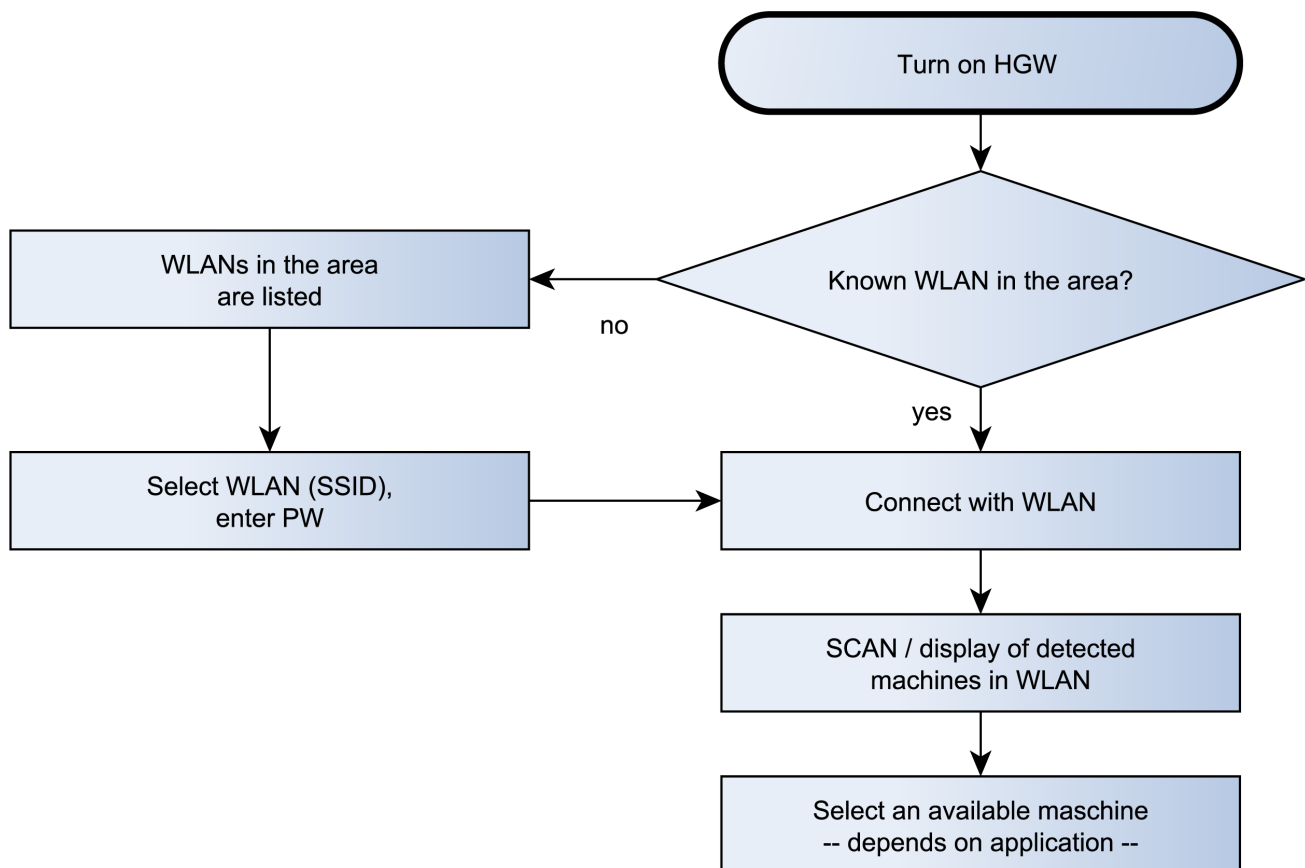
Avant de connecter ou de déconnecter un appareil à le produit, le potentiel doit être égalisé (en touchant l'armoire électrique ou la borne de terre). Les charges électrostatiques (à travers les vêtements et les chaussures etc.) peuvent ainsi être éliminées.

11.5.2 Turning On

The HGW 1033-01 is activated with short press of the On button.

11.5.3 Non-Safety Mode

A connection to the machine is established via WLAN. Depending on the application, machine data can be visualized.



11.5.4 Turning Off

The On/off switch can be configured via LASAL CLASS 2. The application engineer can define procedures for turning the operating panel off. Alternatively, a hard shutdown is possible by pressing the On button for at least 3 seconds (see 6.6 On/Off Button (illuminated)).

12 Help with Disruptions/Troubleshooting

Problem	Cause	Solution
HGW does not function, display remains dark, HGW does not turn on	HGW not charging from the base station	Check whether the base station is powered correctly.
	Battery empty	Mount HGW in the base station. The HGW is then charged.
	Battery defective	Return the device to SIGMATEK. See chapter 15.3 Repair
	Defective backlight	Call SIGMATEK customer service.
	Panel in transport mode	See chapter 13 Transport/Storage
Touch screen malfunction	Operation using gloves	Operate the HGW with the fingers directly or with suitable gloves.
Offset of touch screen press-points	Touch screen uncalibrated	Recalibrate the touch screen See chapter 15.2.1 Calibrating the Touch Screen
Undesired triggering of the touch screen	Panel placed with touch screen face down	Lay the panel on its base.
	Something has been placed on the touch screen	Remove the object from the touch screen.
Device does not go into transport mode	Device charging	Disconnect the device from all supplies

13 Transport/Storage

This device contains sensitive electronics. During transport and storage, high mechanical stress must therefore be avoided.

For storage and transport, the same values for humidity and vibration as for operation must be maintained!

Temperature and humidity fluctuations may occur during transport. Ensure that no moisture condenses in or on the device, by allowing the device to acclimate to the room temperature while turned off.

When sent, the device should be transported in the original packaging if possible. Otherwise, packaging should be selected that sufficiently protects the product from external mechanical influences. Such as cardboard filled with air cushioning.

CAUTION



The product HGW 1033-01 has an integrated battery. During transport, observe the applicable national regulations.

Le produit HGW 1033-01 est équipé d'une batterie intégrée. Pendant le transport, respecter les réglementations nationales en vigueur.

The product HGW 1033-01 must be set to "Transport Mode" before shipping. See chapter Transport Mode.

Le produit HGW 1033-01 doit être réglé sur "Transport Mode" lors de l'expédition.

INFORMATION



Important information regarding transport and storage of the battery can be found in the chapter Transport/Storage of the Battery.

14 Storage

When not in use, store the device according to the storage conditions. See chapter 13 Transport/Storage.

INFORMATION



During storage, ensure that all protective covers (if available) are placed correctly, so that no contamination, foreign bodies or fluids enter the device.

DANGER



After use, store the HGW 1033-01 in a secure location to prevent confusion with a panel that is coupled or in use. We recommend storing panels that are not being used in a lockable cabinet or similar container.

Après utilisation, entreposer le HGW 1033-01 dans un endroit sûr pour éviter toute confusion avec un panneau qui est couplé ou en cours d'utilisation. Nous recommandons de ranger les panneaux qui ne sont pas utilisés dans une armoire verrouillable ou un conteneur similaire.

15 Maintenance

During maintenance as well as servicing, observe the safety instructions from chapter 2 Basic Safety Directives.

15.1 Cleaning and Disinfecting the Touch Screen

CAUTION



Before cleaning and disinfecting the touch screen, it must first be deactivated; either by turning off the terminal or by disabling the touch screen via the application to avoid unintentionally activating functions or commands!

Avant de nettoyer et de désinfecter l'écran tactile, il faut d'abord le désactiver; soit en éteignant le terminal, soit en désactivant l'écran tactile via l'application pour éviter d'activer involontairement des fonctions ou des commandes!

The touch screen can only be cleaned with a soft, damp cloth. To dampen the cloth, a mild cleaning solution such as antistatic foam cleaner is recommended. To avoid fluids/cleaning solutions from getting into the housing, the device must not be sprayed directly. To clean, no erosive cleaning solutions, chemicals, abrasive cleansers or hard objects that can scratch or damage the touch screen may be used. The use of steam jets or compressed air is prohibited.

For disinfection, surface disinfectants on alcohol basis, which do not contain re-fattening agents, can be used. The disinfectant used must not leave any residues on the touch screen to ensure proper functioning of the touch screen.

WARNING



If the device is contaminated with toxic or erosive chemicals, it must be carefully cleaned as quickly as possible to prevent personal injury and machine damage!

Si l'appareil est contaminé par des produits chimiques toxiques ou érosifs, il doit être soigneusement nettoyé le plus rapidement possible afin d'éviter des dommages corporels et matériels!

INFORMATION



To ensure the optimal function of the device, the touch screen should be cleaned at regular intervals!

15.2 Service

This product was constructed for low-maintenance operation.

15.2.1 Calibrating the Touch Screen

The touch screen is calibrated at the factory. You should therefore only recalibrate the touch screen when press-point changes are noticed.

This can be achieved via the following command (depending on the operating system) or the application, if the application engineer has provided the option.

```
calib
```

15.3 Repair

In the event of a defect/repair, send the device with a detailed error description to the address listed at the beginning of this document.

For transport conditions, see chapter 13 Transport/Storage.

CAUTION



It is particularly important to observe the transport regulations for devices with batteries, as well as national regulations.

Il est particulièrement important de respecter les réglementations de transport pour les appareils à piles ainsi que les réglementations nationales.

Before shipping the HGW 1033-01, it must be set to the so-called "transport mode". See chapter 13 Transport/Storage for more information.

Avant d'expédier le HGW 1033-01, il faut le régler sur le "mode de transport". Voir le chapitre 13 Transport/Storage pour plus d'informations.

CAUTION



Danger of injury from damaged components!

- Damage to the device, especially the touch screen, poses a cut hazard. In such a case, use safety gloves.

Risque de blessure par des composants endommagés !

- Les dommages à l'appareil, en particulier à l'écran tactile, présentent un risque de coupure. Dans ce cas, utilisez des gants de sécurité.

16 Display „Burn-In“ Effect

The “Burn-In” effect describes a pattern burned into the display after displaying the same contents over a longer period of time (e.g. a single screen).

This effect is also described mostly as “image sticking”, “memory effect/sticking” or “ghost image”.

Here, a distinction is made between a temporary and permanent effect, while the temporary effect is eliminated by switching off the screen for a longer period of time or by displaying dynamic content, serious cases of burn-in can lead to permanent damage to the display.

This effect can have the following causes:

- Operation without a screen saver
- The same contents displayed over a longer time period (e.g. a single screen)
- Operation at high environmental temperatures
- Operation above specifications

The effect can be avoided/reduced by the following actions:

- Using a screen saver
- Deactivating the display when not in use (e.g. screen display black)
- Continuously changing screen content (e.g. video)

INFORMATION



Deactivating the display backlighting only does not prevent Burn-In!

17 Disposal

INFORMATION



The device contains a Li-Ion battery. Should you need to dispose of the device, the national regulations for disposal must be followed.

The device appliance must not be disposed of as household waste.



You can dispose of the device by sending it to the address listed at the beginning of this document. When shipping, the transport regulations for devices with Lithium-Ion batteries must be observed!

18 Accessories

18.1 Antennae



Description	Order Number
HGW 1033-E2	12-246-1033-E2

18.2 Touch Pen



Description	Order Number
Touch pen with holder V3	01-690-059-3

18.3 Edge Protection



Description	Order Number
Edge protector 10"	12-246-1033-Z1

19 Application Information

19.1 Visualization

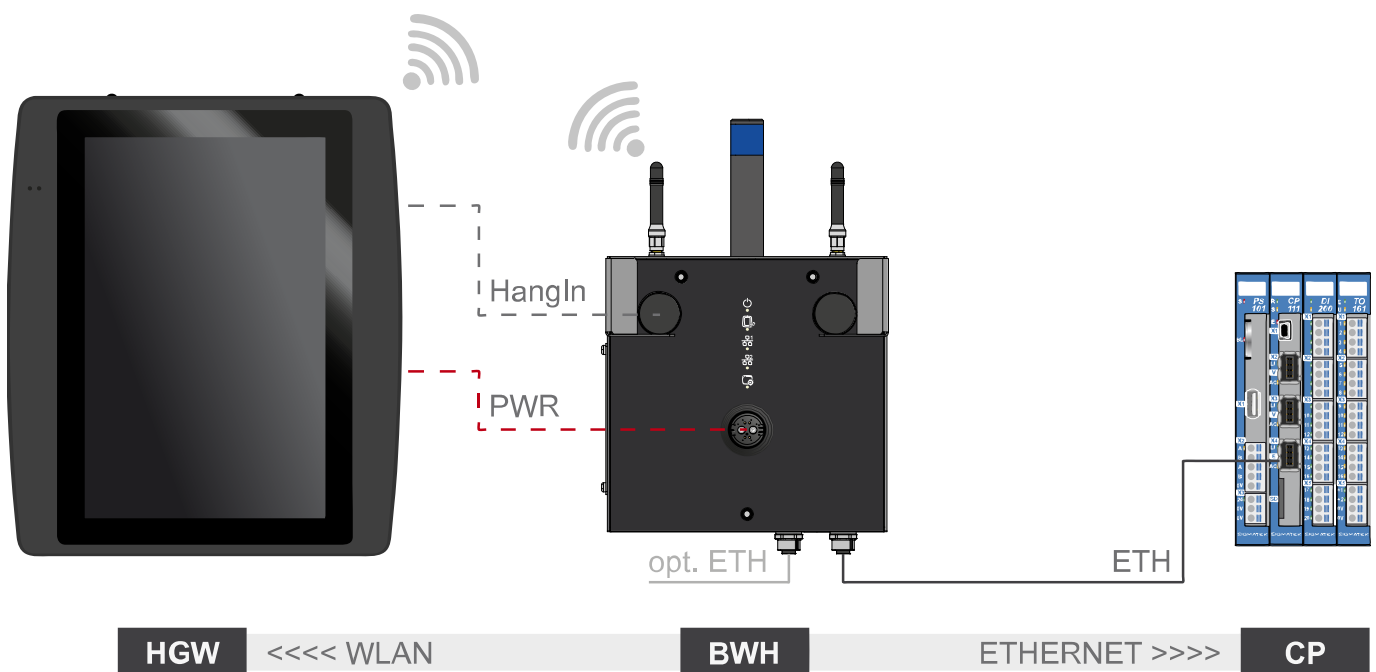
INFORMATION



In the application/visualization, the battery status can be indicated acoustically and visually (in this case, a configurable server is available in the hardware class). It is recommended that a warning is triggered with a remaining charge of 10 %.

19.1.1 Example Application

Basic HGW-BWH-PLC configuration



A configuration help can be found in the document HGW_BWH_Configuration Manual.

19.2 Updates

INFORMATION



Operating system updates can only be performed when battery has at least 50 % capacity and the HGW 1033-01 is being charged.

Non-compliance can lead to data loss and malfunction.

Changes Chart

Change date	Affected page(s)	Chapter	Note
20.08.2019	19	6.1 Connections Bottom	Boot stick info
	50	11.5.3 Non-Safety Mode	Chapter added
	59	19.1.1 Example Application	Info configuration help added
05.03.2020	16	5.6 Environmental Conditions	Free fall (with packaging) corrected to 1000 mm
16.07.2020	17	5.7 Wireless	Info note document "WLAN Configuration"
	17	5.7.1 WLAN 2.4 GHz	
	17	5.7.2 WLAN 5 GHz	
	47	11.2 WLAN Channels and Settings	Chapter added
30.07.2020	54	15.1 Cleaning and Disinfecting the Touch Screen	Notes on disinfection added
08.09.2020	12	5.1 Performance Data	Battery capacity updated
	13	5.2 Electrical Requirements	Protection class added
	16	5.6 Environmental Conditions	Added for Protection type (only with all protective caps fitted)
	17	5.7.1 WLAN 2.4 GHz	Standards added
	17	5.7.2 WLAN 5 GHz	Standards added
09.09.2020	Document		Restructuring
27.11.2020	12	5.1 Performance Data	Footnote cores (programming) added
	17	5.7 Wireless	Info text changed
	17	5.7.1 WLAN 2.4 GHz	Channels changed
	17	5.7.2 WLAN 5 GHz	Channels changed
02.12.2020	51	12 Help with Disruptions/Troubleshooting	Point Transport mode added
28.04.2021	15	5.4 Control Unit	Chapter added
14.05.2021	18	5.8 Miscellaneous	Default IP address added
20.10.2021	55	15.3 Repair	Note cut hazard added
16.11.2021	12	5.1 Performance Data	Real time clock information changed
		Battery/Power Supply	removed
	37	10 Battery	Chapter added
	47	11 Operation/Start-up	Information regarding transport mode changed
26.11.2021	14	5.3 Display	Chapter expanded

Change date	Affected page(s)	Chapter	Note
03.12.2021	39	10.5 Commissioning and Charging Options	Monitoring of the charging source added
28.01.2022	17	5.7 Wireless	Caution radiation added
22.02.2022	42	10.8 Exchanging the Battery	OS message added
	45	10.11 Log Data	HW class added
19.08.2022	12	5.1 Performance Data	Accu capacity from 3780 mA to 4170 mA changed
19.08.2022	21	6.2.1 X15: Power/Data	Pinning corrected, additional information added
04.10.2022	56	16 Display „Burn-In“ Effect	Chapter added
07.06.2024	12	5.1 Performance Data	microSD card updated
15.07.2026	25	6.6 On/Off Button (illuminated)	Description expanded