

HBG 1012

Handheld Operating Panel

Instruction Manual

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Translation of Original Instructions

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10.1" HANDHELD OPERATING PANEL**HBG 1012**

In combination with the SIGMATEK HMI-Link Gen 2.1 and a safety-related PLC, the HBG 1012 is a cable-connected handheld operating unit with an emergency stop function 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.



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1 Introduction

1.1 Target Group/Purpose of this Manual

This operating manual contains all information required to operate this 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 information on training, and the appropriate accessories can be found on our website www.sigmatek-automation.com.

Our support team is happily available to answer your questions.

Please see our website for our hotline number and business hours.

1.2 Important Reference Documentation

- Safety System Handbook

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

1.3 Contents of Delivery

1x HBG 1012

2x keys

2 Basic Safety Guidelines

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.

CAUTION

Danger for ESD-sensitive components.

Les signes de danger pour les composants sensibles aux décharges électrostatiques.

INFORMATION**Information**

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

2.2 Disclaimer

INFORMATION



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 Guidelines

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



INFORMATION

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.

Before commissioning this product, check that conformance with the provisions of the 2006/42/EG guidelines is correct. As long as the machine with which the product should be used does not comply with the guideline, operating this product is prohibited.

Operate the unit with devices and accessories approved by SIG-MATEK only.

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 device can only be used in the visible area for the application to control, the system integrator must perform a risk analysis.

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.

The module complies with EN 61131-2.

In combination with a facility, the system integrator must comply with EN 60204-1 standards.

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

Le module est conforme à la norme EN 61131-2.

En combinaison avec une équipement, l'intégrateur de système doit respecter la norme EN 60204-1.

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

2.4 Designated Use

The Safety functions implemented in the product are designed for use with safety applications in a PLC control and meet the required conditions for safe operation in compliance with SIL 3, HFT 1 according to EN IEC 62061 and in compliance with PL e. Cat. 4 in accordance with EN ISO 13849-1.

CAUTION



The instructions contained in this operating manual must be followed.

For error-free operation, proper transport and storage are essential.

Installation, mounting, programming, initial start-up, operation, maintenance and decommissioning can only be performed by qualified personnel.

Qualified personnel in this context are people, who have completed training or have trained under supervision of qualified personnel and have been authorized to operate and maintain safety-related equipment, systems and facilities in compliance with the strict directives and standards of safety technology (Functional Safety).

Les instructions contenues dans ce manuel technique doivent être suivies.

Pour un fonctionnement sans erreur, le transport et le stockage appropriés sont essentiels.

L'installation, le montage, la programmation, la mise en service initiale, l'exploitation, la maintenance et la mise hors service ne peuvent être effectués que par une personne qualifiée.

Dans ce contexte, on entend par personnel qualifié les personnes qui ont suivi une formation ou qui ont été formées sous la supervision d'un personnel qualifié et qui ont été autorisées à utiliser et à entretenir l'équipement, les systèmes et les installations de sécurité conformément aux directives et aux normes strictes de la technique de sécurité (Sécurité fonctionnelle).

For your own safety and that of others, the product should be used for their designated purpose only.

Correct EMC installation is also included under designated use.

Pour votre propre sécurité et celle des autres, le produit ne doivent être utilisés qu'à des fins prévues.

Une installation CEM correcte est également incluse dans l'utilisation prévue.

Non-designated use consists of:

- any changes made to the module or the use of damaged modules.
- use of the module inconsistent with the technical margins described in this operating manual or the specifications defined in the technical data.

L'utilisation non désignée consiste en:

- toute modification apportée au module ou l'utilisation des modules endommagés.
- utilisation du module non conforme aux marges techniques décrites dans ce manuel ou aux spécifications définies dans les données techniques.

As required by EN ISO 13850, section 4.1 and EN 60204-1, section 10.7.1, confusion between a functioning and non-functioning handheld operating panel is possible and must be prevented.

Conformément à la norme EN ISO 13850, section 4.1, et à la norme EN 60204-1, section 10.7.1, il est possible de confondre un pupitre de commande portatif en état de fonctionnement et un autre qui ne l'est pas, et il convient d'éviter cette confusion.

Before delivering the module, the machine manufacturer must ensure that it is in "delivery condition". See chapter Transport/Storage for more information.

Avant de livrer le module, le constructeur de la machine doit s'assurer qu'il est en "état de livraison". Voir le chapitre Transport/Storage pour plus d'informations.

INFORMATION

Hardware and software features (application-specific data) can be found in chapter 17 Application Information.

2.5 Software/Training

The application is created with the software LASAL CLASS 2 and LASAL SCREEN Editor, the safety application is created using the SAFETYDesigner. Basic safety information (functional safety) can be found in the Safety System Handbook.

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 Norms and Guidelines

3.1 Residual Risks



CAUTION

The following residual risks for the product must be included in the system integrator's risk assessment:

- Release of non-environmentally safe substances, emissions and unusual temperatures
- Hazardous contact voltages
- Effects of operational electrical, magnetic and electromagnetic fields
- Possible effects of information technology devices

Les risques résiduels suivants pour le produit doivent être inclus dans l'évaluation des risques de l'intégrateur de système:

- Libération de substances non respectueuses de l'environnement, émissions et températures inhabituelles
- Tensions de contact dangereuses
- Effets des champs électriques, magnétiques et électromagnétiques opérationnels
- Effets possibles des dispositifs de technologie de l'information

3.2 Safety of the Machine or Equipment



INFORMATION

Observe all on-site rules and regulations for accident prevention and occupational safety.

3.3 Regular Technical Inspection of the Safety-Related Switches

CAUTION



According to the machine guideline, mechanical and electromechanical safety-oriented components (e.g. relays, switches, etc.) must be regularly checked for correct function.

Emergency stop switch: at least 1x/month

Key switch: at least 1x/year

Confirmation switch: at least 1x/year

Please note the requirements of your machine. Due to Type C standards or other guidelines, requirements could differ regionally.

Conformément à la directive sur les machines, le bon fonctionnement des composants mécaniques et électromécaniques axés sur la sécurité (par exemple, les relais, les interrupteurs, etc.) doit être régulièrement vérifié.

Interrupteur d'arrêt d'urgence: au moins 1x/mois

Interrupteur à clé: au moins 1x/an

Interrupteur de confirmation: au moins 1x/an

Veillez noter les exigences de votre machine. En raison des normes de type C ou d'autres directives, les exigences peuvent varier d'une région à l'autre.

3.4 Directives

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

3.4.1 Functional Safety Standards

EN IEC 62061:A2	Safety of machinery - Functional safety of safety-related control systems
EN ISO 13849-1	Safety of machinery - Safety-related components of controls - Part 1: General Design Principles
EN ISO 13849-2	Safety of machinery - Safety-related components of controls - Part 2: Validation
EN ISO 13850	Safety of machines - Emergency stop function - design principles

3.4.2 EU Conformity Declaration



EU Conformity Declaration

The product, HBG 1012 conforms to the following European guidelines.

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

The EU Conformity Declarations are provided on the SIGMATEK website. See Products/Downloads or use the search function and the keyword "EU Declaration of Conformity".

3.5 Safety-relevant Parameters

Input Module	Safety Ratings (SIL 3, HFT 1, PL e / Cat. 4) ¹⁾
HBG 1012 Including Safe CPU (SCP XXX)	PFH _D = 1.1E-11 (1/h) MTTF _D = 306 years DC = 99 %

Confirmation Switch	B _{10D} = 100,000
Emergency stop switch	B _{10D} = 325,000
Key Switch	B _{10D} = 10,000

¹⁾ Depending on the application, the probability of failure must be determined for the electro-mechanical components included based on the B_{10D} values listed here and integrated into the calculation for the entire system.

4 Type Label

	HW: X.XX
	SW: XX.XX.XXX
	Safety Version: SXX.XX.XX
Serial No.	SIGMATEK GMBH & CO KG Sigmatekstrasse 1 A-5112 LAMPRECHTSHAUSEN
Article Number	Product Name Short Name

Exemplary nameplate (symbol image)

	HW: 1.00
	SW: 01.00.000
	Safety Version: S01.00.00
12345678	SIGMATEK GMBH & CO KG Sigmatekstrasse 1 A-5112 LAMPRECHTSHAUSEN
12-246-133-3	Handbediengerät Wireless HGW 1033-3

HW: Hardware Version

SW: Software Version

5 Technical Data

5.1 Performance Data

Interfaces	1x HMI-Link Gen 2.1 1x USB 2.0 Type A 1x Safety interface
Internal interface connections and devices	1x TFT color display 1x USB (touch connection)
Control elements	1x confirmation switch (2 normally open, 3-stage) 1x key switch (2 normally open) 1x emergency stop switch (2 normally closed contacts)
Signal generator	no
Display	10.1" TFT color display, 16:10, landscape mode
Resolution	WXGA 1280 x 800 pixels
Operating field	Touch screen (multi-touch, projective capacitive)
Status LEDs	1x back
Real-time clock	no
Temperature sensors	none
Cooling	passive (fanless)

5.2 Electrical Requirements

Supply voltage	typically +24 V DC $\pm 20\%$ (SELV/PELV), UL: NEC Class 2	
Current consumption Power supply +24 V	typically 480 mA (without externally connected devices)	maximum 650 mA (with external devices connected)
Protection class	III	
Inrush current	maximum 26 A for 50 μ s	
USB current load	maximum 0.5 A	

INFORMATION



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

USA and Canada:

The supply must be limited to:

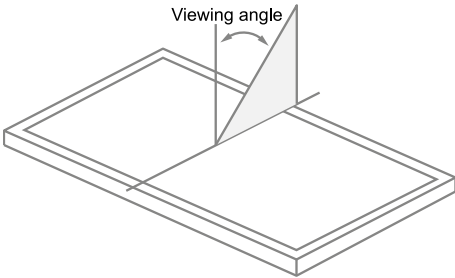
- a) max. 5 A at voltages from 0-20 V DC, or
- b) 100 W at voltages from 20-60 V DC.

The limiting component (e.g. transformer, power supply or fuse) must be certified by an NRTL (Nationally Recognized Testing Laboratory).

5.3 Display

Type	10.1" TFT LCD color display
Active range	135.6 x 216.96 mm
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
Backlighting	LED, adjustable
Contrast ratio	typically 800:1
Brightness	typically 300 cd/m²
Angle CR ≥ 10	85° from all sides

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.

5.4 Input

Input	Multi-touch screen (PCAP)
Emergency stop switch	1
Confirmation switch	1 (3 switch positions with panic function)
Key switch	1 (2 switch positions)

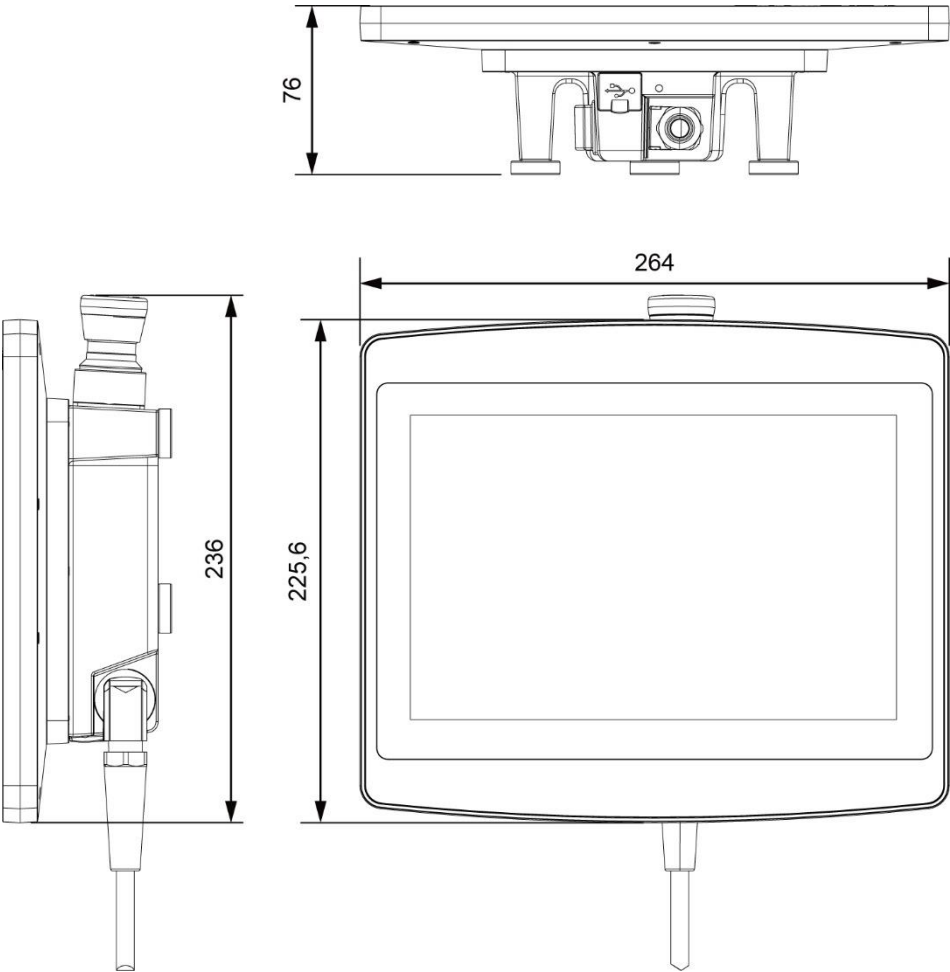
5.5 Environmental Conditions

Storage temperature	-5 ... +60 °C	
Ambient temperature	0 ... +45 °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	according to EN 61000-6-2 (industrial area) according to 61000-6-7 (noise immunity industry-functional Safety) (increased requirements according to EN IEC 62061)	
EMC noise generation	in accordance with EN 61000-6-4 (industrial area)	
Vibration resistance	EN 60068-2-6	3.5 mm of 5-8.4 Hz 1 g of 8,4-150 Hz
Shock resistance	EN 60068-2-27	15 g (147.15 m/s ²)
Protection type	EN 60529/NEMA 250	IP54/Type12 (only with all protective caps in place) (not evaluated by UL)
Free fall (with rough handling)	DIN EN 60068-2-31	1000 mm
Free fall (with packaging)	IEC 60068-2-32	500 mm

5.6 Miscellaneous

Article number	12-245-1012
Standards	designed according to UL
Approvals	CE, TÜV-Austria EG Type Tested

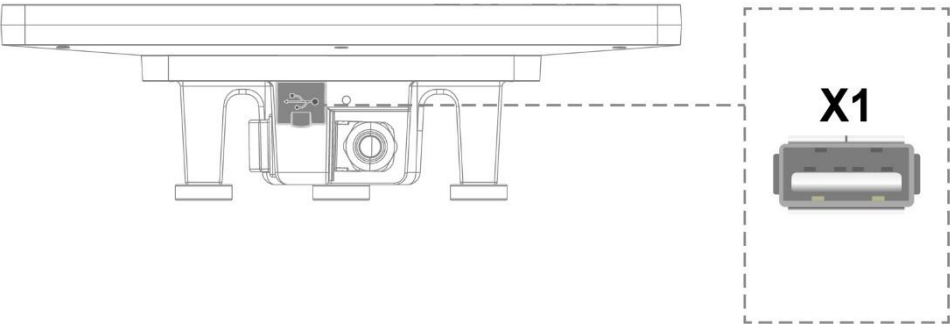
6 Mechanical Dimensions



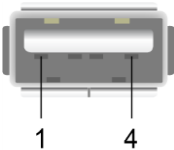
Dimensions	264 x 236 x 76 mm (W x H x D)
Material	Housing: PC/ASA
	Color: RAL7024
	Front: Glass 1.1 mm
Weight	3.30 kg incl. connector cable (permanently installed hybrid cable, 20 m)

7 Interfaces

7.1 Connections Bottom



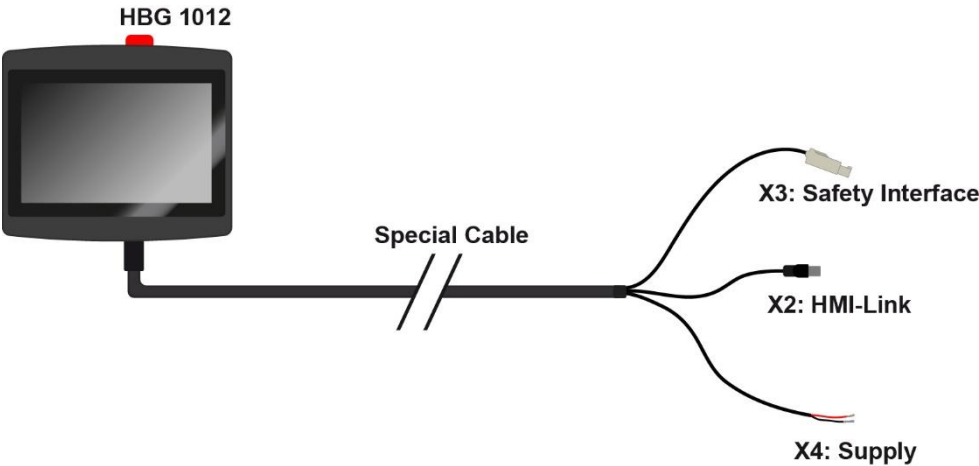
7.1.1 X1- USB 2.0 (Type A)



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, ...).

7.2 Cable-side Connections



7.2.1 X2- HMI Local IN (HMI-Link G2.1, Tyco Mini IO)

Pin	Function
1	HMI_P0
2	HMI_N0
3	HMI_P1
4	HMI_P2
5	HMI_N2
6	HMI_N1
7	HMI_P3
8	HMI_N3

7.2.2 X3- CAN (Phoenix 3-pin, FMC 1.5/ 3-ST-3.5)

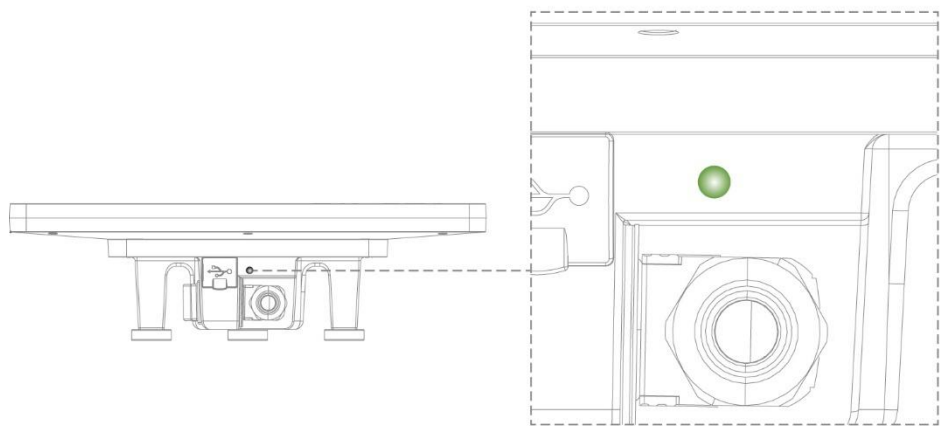
Color	Function
grey	CAN L
Pink	CAN H
black	CAN shield

7.2.3 X4: Supply Lines

Color	Function
red	+24 V
black	GND

7.3 Display

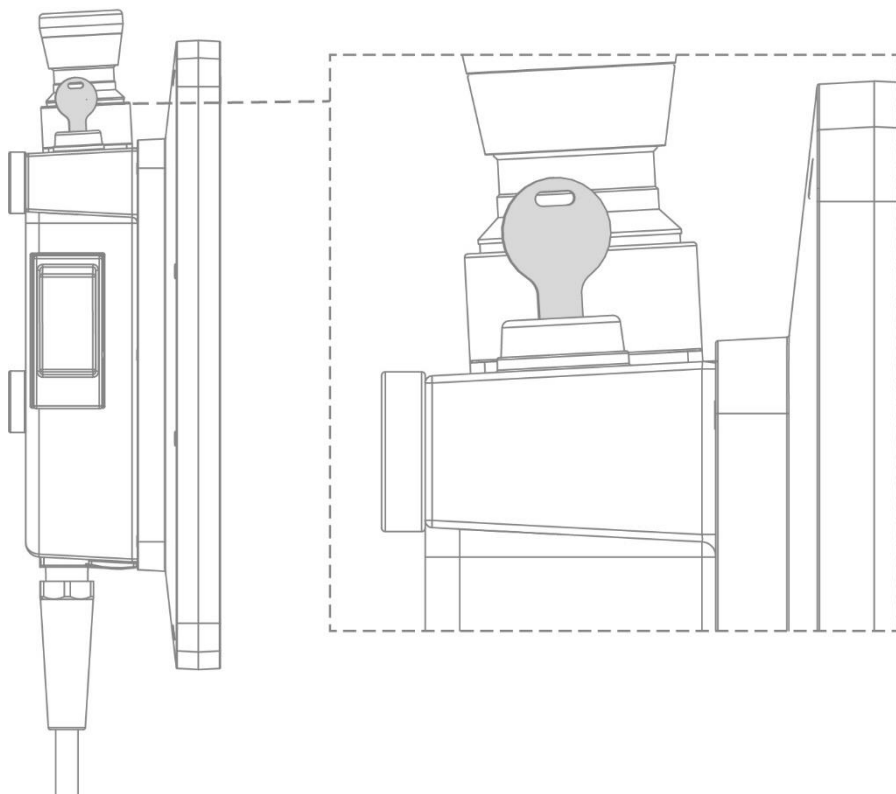
7.3.1 Bottom



LED Status	Meaning
LED off	Panel is off
LED lights green	DC OK

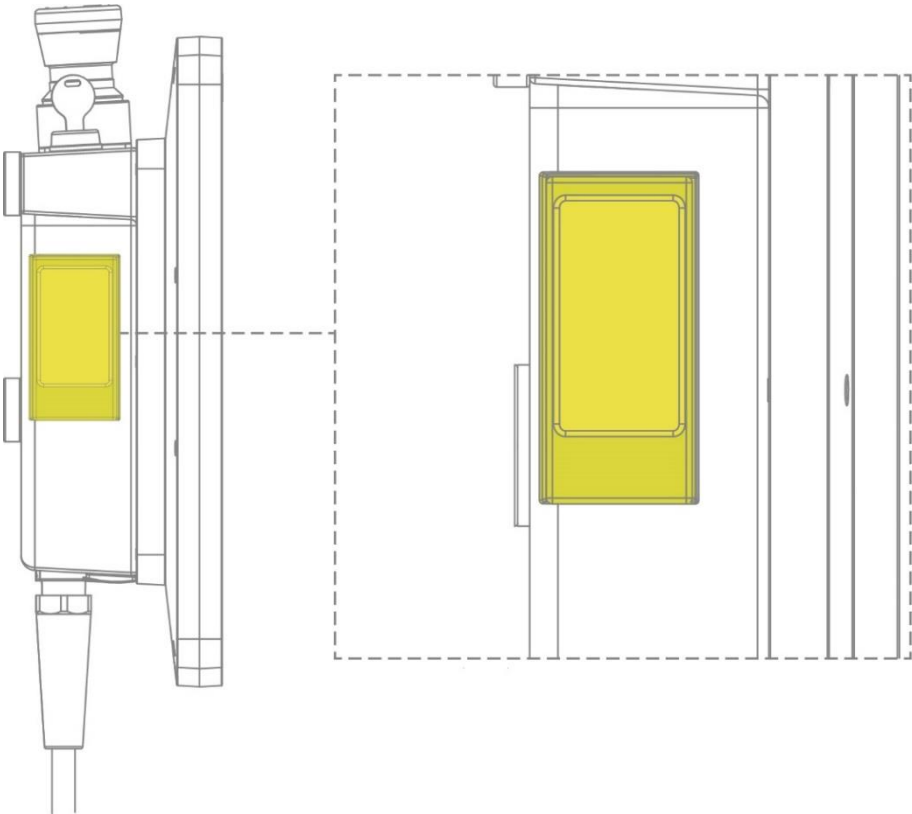
7.4 Key Switch

The key switch is implemented two-stage, connected in series with the confirmation switch and evaluated via the SCP XXX connected to the HBG 1012. For application info, see 17.2.2 Key Switch.



7.5 Confirmation Switch

The confirmation switch is three-stage. The confirmation switch must be activated via the key switch. If the switch is not pressed or pressed only partially, it is inactive. The switch is activated with a single press (middle stage). For application info 17.2.3 Confirmation Switch.



CAUTION

Activating the confirmation switch is a deliberate action. Do not press the confirmation switch for longer than required to confirm the affected operation.

L'activation de l'interrupteur de confirmation est une action délibérée. N'appuyez pas sur l'interrupteur de confirmation plus longtemps que nécessaire pour confirmer l'opération affectée.

The confirmation switch is part of the safety-related feature. Only the person activating the confirmation switch may work in the danger zone.

L'interrupteur de confirmation fait partie du dispositif de sécurité. Seule la personne qui active l'interrupteur de confirmation peut travailler dans la zone dangereuse.

INFORMATION

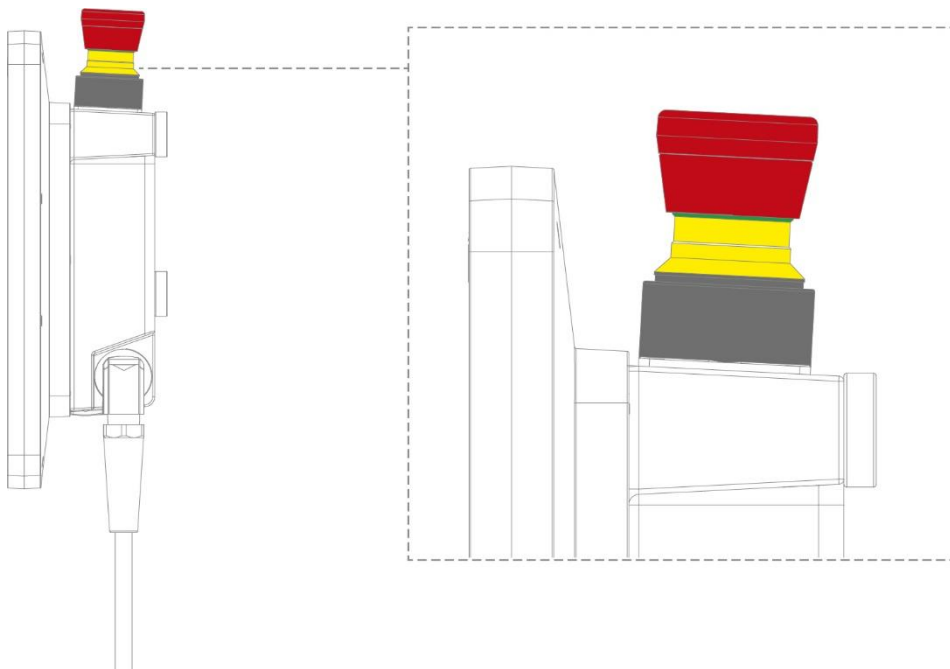
The confirmation switch is then only effective when the HBG is coupled with a machine and the user is logged in.

The confirmation switch can be operated with the hand used to hold the operating panel.

The confirmation switch can be used as a dead-man switch with a panic function.

7.6 Emergency Stop

The emergency stop has 2-channel construction. For application info 17.2.4 Emergency Stop.



8 Assembly/Installation

8.1 Check Contents of Delivery

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

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.

9 Wiring

9.1 ESD Protection

CAUTION



The operator must ensure that no ESD disturbances affect the product.

L'opérateur doit s'assurer qu'aucune perturbation ESD n'affecte le produit.

9.2 USB Interface

The handheld operating panel has a USB interface. This interface has a USB interface connection that can be used to connect various USB devices (keyboard, mouse, storage media, hubs, etc.).

10 Operation/Start-up

10.1 Operation

10.1.1 General

The safety functions (key switch, confirmation switch, emergency stop) are not functional at the time of delivery and must be defined by the applications engineer via programming. In order to use the safety functions, a safety-related SCP XXX CPU is required. See chapter 17 Application Information.

The HBG 1012 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 à 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 meubles ou instables. Il pourrait tomber sur le sol et être endommagé.

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

CAUTION

Typically, USB devices (keyboard, mouse...) are not equipped with shielded cables. These devices are disrupted by electrostatic discharge and in some instances, no longer function.

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

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

Avant de connecter ou de déconnecter un appareil de la borne, il convient d'égaliser le potentiel (en touchant l'armoire de commande ou la borne de mise à la terre). Les charges électrostatiques (par les vêtements et les chaussures) peuvent ainsi être dissipées.

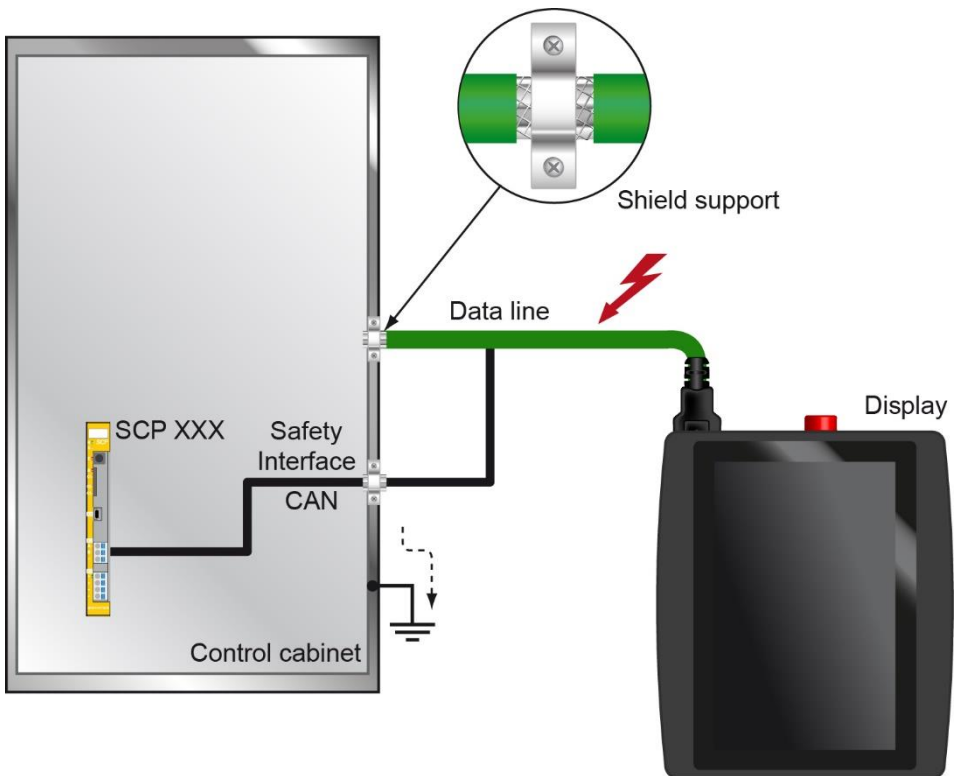
10.2 Recommended Cable Shielding

For applications in which the bus is operated outside the control cabinet, the correct shielding is required. Especially when for structural reasons, the bus line must be placed next to sources of strong electromagnetic interference. It is recommended that wiring the connector cable in parallel with power cables be avoided whenever possible.

10.2.1 From the Control Cabinet to the HBG

It is recommended that the shielding be mounted at the entry point of the control cabinet housing.

Noise can then be deflected from the electronic components before reaching the module.



10.2.2 Safety Functions

The following Safety functions are implemented with the HBG.

- Emergency stop switch
- Confirmation Switch
- Key switch

10.2.3 Evaluating Operating Elements

The HBG 1012 sends the following operating element statuses to the safety-oriented SCP XXX control, which can evaluate and process the information.

- Key switch
- Emergency stop
- Confirmation Switch

11 Transport/Storage

INFORMATION



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.

12 Storage

INFORMATION



When not in use, store the device according to the storage conditions. See chapter 11 Transport/Storage.

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

13 Maintenance

INFORMATION



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

13.1 Cleaning and Disinfecting the Touch Screen

CAUTION



Before cleaning and disinfecting the touch screen, it must be deactivated in order to prevent triggering functions or commands unintentionally; either by turning off the terminal or disabling the touch screen via the application!

Avant de nettoyer et de désinfecter l'écran tactile, il faut le désactiver afin d'éviter de déclencher des fonctions ou des commandes de manière intempestive, soit en éteignant le terminal, soit en désactivant l'écran tactile via l'application!

The touch screen can only be cleaned with a soft, damp cloth. To dampen the cloth, a mild cleaning solution such as an anti-static 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 disinfecting, alcohol-based surface disinfectants that do not contain lubricating agents can be used. For error-free function of the touch screen, the disinfectant cannot leave residue on the 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 nettoyé avec soin et le plus rapidement possible afin d'éviter les blessures corporelles et les dommages à la machine!

INFORMATION

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

13.2 Service

This product was constructed for low-maintenance operation.

13.3 Repair

INFORMATION

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 11 Transport/Storage.

14 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 fades after the screen has been turned off for some time or when dynamic content is displayed, damage from the permanent effect is irreversible.

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 ambient 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)

Using the Terminal Controller tool, the display backlighting can be turned off and on. Turning off extends the life of the display.

INFORMATION



Since the display signals come from the remote station (PC), a screen saver must be activated to avoid a “Burn-In” effect on the PC.

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

15 Disposal



INFORMATION

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.



16 Accessories

16.1 Touch Pen



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

16.2 Edge Protector

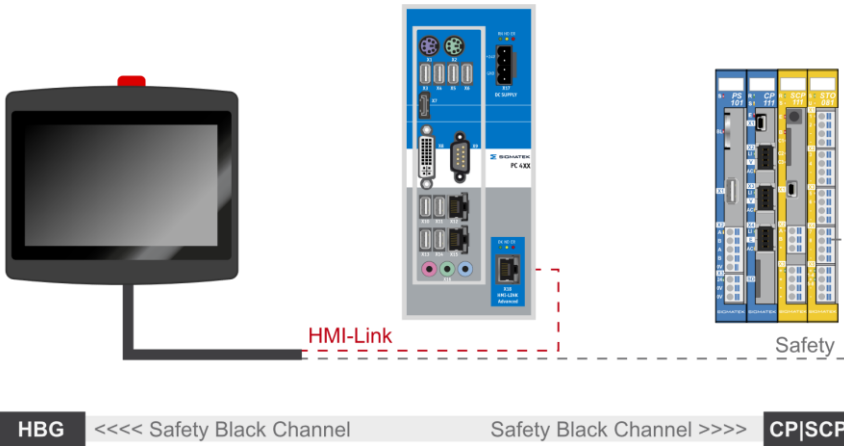


Description	Order number
Edge protector 10"	12-246-1033-Z1

17 Application Information

17.1.1 Example Application

Basic HBG-PC4xx-SCP configuration



For Safety examples, see the Safety System Handbook.

17.2 Configuring Safety Components

17.2.1 Adding the HBG 1012 to a SAFETYDesigner Project

To use the HBG in a Safety project, it must be integrated as follows:

1. Create a new project or open an existing one
2. Add an "SCPxxx" to the "hardware tree" if not already available.
3. Right-click on "**0-SAFETY_INTERFCE**", then via Add-Device, insert the "**HBG (HBG CAN)**".

17.2.2 Key Switch

The key switch is implemented two-stage and in series with the confirmation switch.

17.2.3 Confirmation Switch

The confirmation switch is three stage. The confirmation switch must be activated with the key switch, since they are connected in series. If the button is not pressed or only partially depressed, it is inactive. The button is active when simply pressed (middle stage). In the SCP XXX, the "HBG" module is used and inputs 1 and 2 are used for the confirmation switch.

17.2.4 Emergency Stop

The Emergency Stop is two-stage. In the SCP XXX, the "HBG" module is used with the inputs 3 and 4.

DANGER



Unlocking the emergency stop switch cannot trigger an automatic re-start of the machine.

After the application unlocks the emergency stop switch, the operator must be prompted to run a defined activation process.

Le déverrouillage de l'interrupteur d'arrêt d'urgence ne peut pas déclencher un redémarrage automatique de la machine.

Une fois que l'application a déverrouillé l'interrupteur d'arrêt d'urgence, l'opérateur doit être invité à exécuter un processus d'activation défini.

17.3 HW Facts

INFORMATION



The Safety functions must be used with the SIGMATEK SCP XXX exclusively! The status of the safety-related inputs (confirmation switch, key switch, emergency stop switch) is sent to the SCP XXX, which decodes these functions and makes them available for further use.

The key and confirmation switch must be tested at least once per year. The emergency stop switch must be tested every 30 days!

17.4 Terminal Controller

An application is provided, with which the brightness, as well as the display can be turned on and off.

Information on the installation and use of the terminal is available in a separate document (see Terminal Controller documentation)

Documentation Changes

Change date	Affected page(s)	Chapter	Note
04.07.2024		Document	HMI-Link G2 changed to HMI-Link G2.1