SIGMATEK

HGT 835-11

8.4" Handheld Operating Panel

Instruction Manual

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Translation of the Original Instructions

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8.4" Handheld Operating Panel HGT 835-11

The HGT 835- 11 is an intelligent panel for visualizing, operating and monitoring automated processes. Process diagnostics is therewith simplified.

The handheld operating panel has the following Safety components:

- Emergency stop switch
- Key switch
- Confirmation switch

A resistive touch screen serves as the input medium for process data and parameters. The output is shown on a 8.4-inch TN color display (SVGA 800 x 600) with LED backlighting.

With the LASAL visualization tool, graphics can be created on the PC, then stored and displayed on the handheld operating panel. The available interfaces can be used to exchange process data or configure the handheld operating panel. The operating system, application and application data are stored on the internal storage medium.

The safety elements are wired directly via the hybrid line.

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

1.2 Important Reference Documentation

- HW IP Address Settings

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

1.3 Contents of Delivery

1x HGT 835-11
2x keys

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

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 particular 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 Directives

The Safety Directives 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.

Operate the unit with devices and accessories approved by SIGMATEK 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 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.

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 essential.

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 Regular Technical Inspection of Safety-oriented Switches

CAUTION

According to the machine directive, 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 directives, requirements could differ regionally.

3.2 Directives

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

3.2.1 EU Conformity Declaration

CE

EU Declaration of Conformity

The product HGT 835-11 conforms to the following European directives:

- → **2014/35/EU** Low-voltage Directive
- → **2014/30/EU** Electromagnetic Compatibility (EMC Directive)
- → **2011/65/EU** “Restricted use of certain hazardous substances in electrical and electronic equipment” (RoHS Directive)

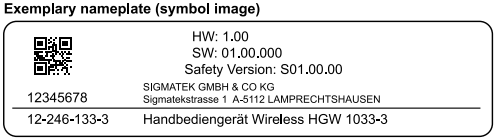
The EU Declaration of Conformity will be provided on request by support or the respective sales partner.

3.3 Safety-Relevant Parameters

Component	Safety Parameters
Confirmation switch	B_{10D} = 100,000
Emergency stop switch	B_{10D} = 325.000
Key switch	B_{10D} = 10,000

4 Type Plate

Exemplary nameplate (symbol image)



HW: Hardware version
SW: Software version

5 Technical Data

5.1 Performance Data

Processor	EDGE2-Technology
Processor cores	2[1)]
Internal program and data memory (RAM)	512-Mbyte (DDR3)
Internal remnant data memory	128-kByte MRAM
Internal storage device	4-Gbyte microSD card (3D-TLC pSLC technology)[2)]
Optional memory expansion	no
Graphic	integrated in EDGE processor
Interfaces	1x USB 2.0 Type A (Host) 10 m special cable => 1x VARAN bus (Tyco Mini I/O) 1x Ethernet (RJ45) Supply (2 strands) Safety (8 strands)
Internal interface connections and devices	1x TN color display 1x touch
Operating components	Confirmation switch (2 normally open contacts, 3-stage) Key switch (2 normally open contacts) Emergency stop switch (2 normally closed contacts)
Signal generator	no
Display Resolution	8.4“ TN color display SVGA 800 x 600 pixels
Operating field	Touch screen (analog resistive, 4-wire)
Status LEDs	LED (green)
Real-time clock	yes (ca. 10 days buffered)
Cooling	passive (fanless)

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

2) 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

Supply voltage	+24 V DC (SELV/PELV) UL: NEC Class 2	
Protection class	III	
Current consumption of (+24 V) power supply	typically 350 mA (with no external devices connected)	maximum 450 mA (with external devices connected)
Inrush current without current-limiting supply	maximum 10 A for < 50 µs	
Inrush current with 24 V/10 A fixed voltage supply	maximum 1.2 A for < 10 ms	

The specified supply voltage refers directly to the device connection. Take the generated voltage drop via the hybrid cable into consideration and if necessary, increase the required supply voltage.

INFORMATION

For USA and Canada:

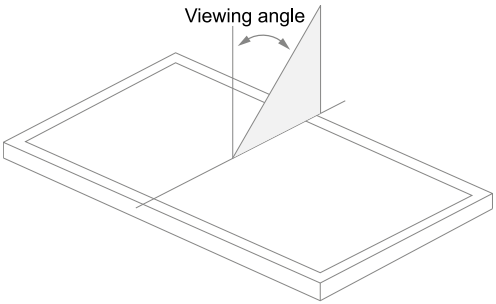
The supply must be limited to:
a) max. 5 A at voltages from 0-20 V DC, or
b) 100 W at voltages from 20-60 V DC

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

5.3 Display

Type	8.4" TN color display
Resolution	SVGA 800 x 600 pixels
Color depth	18-Bit RGB (262K colors)
LCD mode	normally white[1)]
LCD Polarizer	transmissive[2)]
Pixel size	0.213 x 0.213 mm
Active range	170.40 x 127.80 mm
Backlighting	LED
Contrast ratio	typically 600:1
Brightness	typically 400 cd/m²
Angle CR ≥ 10	from all sides 80°[3)]
Life span	By compliance with the ambient conditions, the brightness of the display sinks after 20,000 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 white 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 (analog resistive, 4-wire)
Maximum number of fingers	1
SIGMATEK Touch pen (passive)	yes
Cleaning	see chapter 15.1 Cleaning and Disinfecting the Touch Screen

5.5 Input

Input	Touch screen (analog resistive, 4-wire)
Emergency stop switch	1 (2 normally closed contacts)
Confirmation switch	1 (2 normally open, 3-stage)
Key switch	1 in series with confirmation switch (2 normally open contacts)

5.6 Special Cable Specifications

Length	10 m (flexible)
Type/description	1P×24AWG+8C×24AWG+2×2P×26AWG+2C×22AWG
Labeling	no
Diameter	10.10 mm ±0.3
Moving bend radius	10x diameter
Stationary bend radius	5x diameter
Voltage protection	300 V
Environmental temperature	0 … +80 °C
Tensile strength	≥ 10.3 MPa
Coating	PU
Color	black matt (RAL 9005)
General	RoHS & halogen-free
Norms	UL 758, UL 1581 & style page UL 21198

5.7 Environmental Conditions

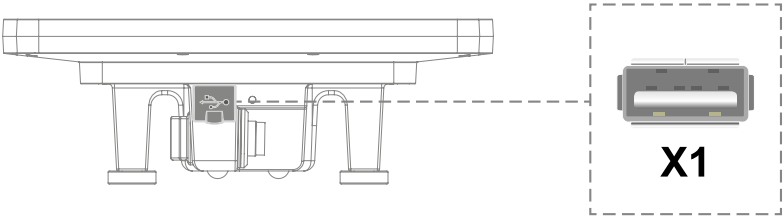
Storage temperature	-10 ... +60 °C	
Environmental temperature	0 ... +50 °C	
Humidity	10-95 %, non-condensing	
Installation altitude above sea level	0-2000 m without derating > 2000 m up to a maximum of 5000 m with derating of the maximum environmental temperature by 0.5 °C per 100 m	
Operating conditions	pollution degree 2	
Noise emissions	≤ 70 dB	
EMC resistance	EN 61000-6-2 (industrial area)	
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/s²)
Protection type	EN 60529/NEMA 250	IP54/Type12 (only with all protective in place) (not evaluated by UL)
Free fall (with rough handling)	DIN EN 60068-2-31	500 mm
Free fall (with packaging)	IEC 60068-2-32	500 mm

5.8 Miscellaneous

Article number	01-245-835-11
Operating system	Salamander
Default IP address	10.10.150.1
Standard	UL 508, cULus
Approvals	CE
Mission time	20 years

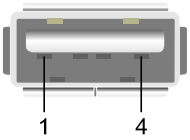
6 Interfaces

6.1 Connections Bottom



Symbol Image HGT 1053

6.1.1 X1: USB Interface 2.0 Type A



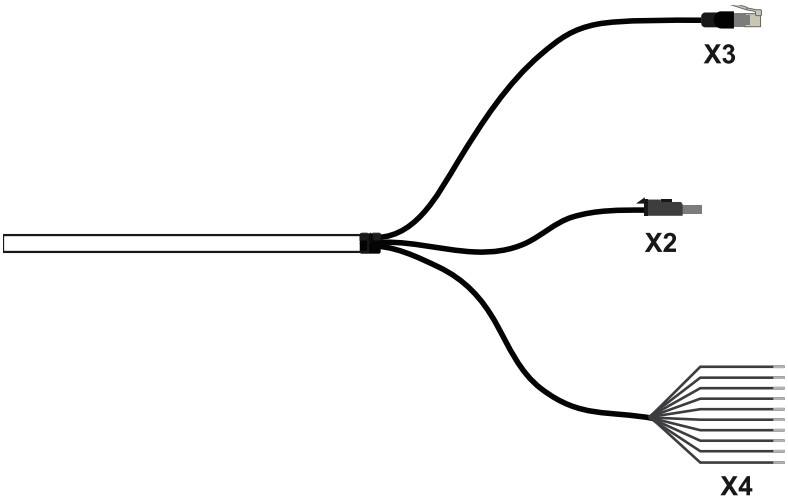
Pin	Function
1	+5 V, $I_{out,max}$ = 500 mA
2	D-
3	D+
4	GND

INFORMATION

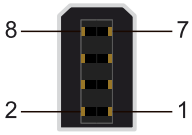
It should be noted that many of the USB devices on the market do not comply with USB specifications; this can lead to device malfunctions. This may cause the device to malfunction. It is also possible that these devices will not be detected at the USB port or function correctly. It is therefore recommended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

6.2 Hybrid Cable

Length HGT 835-11 = 10 m



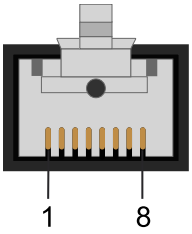
6.2.1 X2: VARAN (Tyco Mini I/O Connector)



Pin	Function	Color	Diameter
1	Tx+	orange	AWG26
2	Tx-	orange/white	AWG26
3	Rx+	brown	AWG26
4	n.c.		
5	n.c.		
6	Rx-	brown/white	AWG26
7	n.c.		
8	n.c.		
n.c. = do not use			

The cable is individually laid over a length of 1.2 m. The cable end is marked with the label “VAR”.

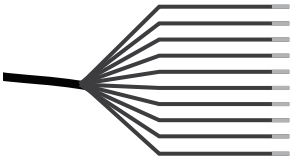
6.2.2 X3: Ethernet (RJ45 Connector)



Pin	Function	Color	Diameter
1	Tx+	blue	AWG26
2	Tx-	blue/white	AWG26
3	Rx+	green	AWG26
4	n.c.		
5	n.c.		
6	Rx-	green/white	AWG26
7	n.c.		
8	n.c.		
n.c. = do not use			

The cable is individually laid over a length of 0.4 m. The cable end is marked with the label “ETH”.

6.2.3 X4: Safety Elements (individual wires)



Function	Color	Diameter	Color sleeves
EMR-STOP1A	black	AWG24	lightblue
EMR-STOP1B	green	AWG24	lightblue
EMR-STOP2A	blue	AWG24	lightblue
EMR-STOP2B	grey	AWG24	lightblue
KEY SWITCH 1A	yellow	AWG24	lightblue
TA-CONFIRM NO+ 1B	white	AWG24	lightblue
KEY SWITCH 2A	red	AWG24	lightblue
TA-CONFIRM NO- 2B	brown	AWG24	lightblue
+24 V DC	red	AWG22	turquoise
GND	black	AWG22	turquoise

The cable is individually laid over a length of 0.3 m. The strands are individually guided on 0.1 m.

Affected Elements	Voltage/Temperature Range	Ampacity
Emergency Stop circuit (switching element)	120 V AC 240 V AC 120 V DC 240 V DC	maximum 3 A (resistive) maximum 1.5 A (resistive) maximum 550 mA (resistive) maximum 270 mA (resistive)

Affected Elements	Voltage/Temperature Range	Ampacity
Emergency Stop circuit (cable)	20 °C 50 °C	4.5 A 3 A
Confirm circuit (with key switch)	30 V DC 125 V DC	maximum 700 mA (inductive) maximum 800 mA (resistive) maximum 100 mA (inductive) maximum 200 mA (resistive)
Confirm circuit (cable)	20 °C 50 °C	4.5 A 3 A

CAUTION

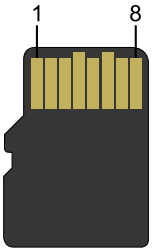
As required by EN ISO 13850, section 4.1 and EN 60204-1, section 10.7.1, confusion between a functioning and non-functioning handheld operating panel is possible must be prevented.

Conformément à la norme EN ISO 13850, section 4.1 et EN 60204-1, section 10.7.1, la confusion entre un panneau de commande portatif fonctionnel et non fonctionnel doit être évitée.

If an operating panel is not coupled and not in use, keep it in a location with restricted access.

Si un panneau de commande n'est pas couplé et n'est pas utilisé, conservez-le dans un endroit à accès restreint.

6.2.4 X6: microSD



Pin	Function
1	DAT2
2	CD/DAT3
3	CMD
4	+3V3
5	CLK
6	GND
7	DAT0
8	DAT1

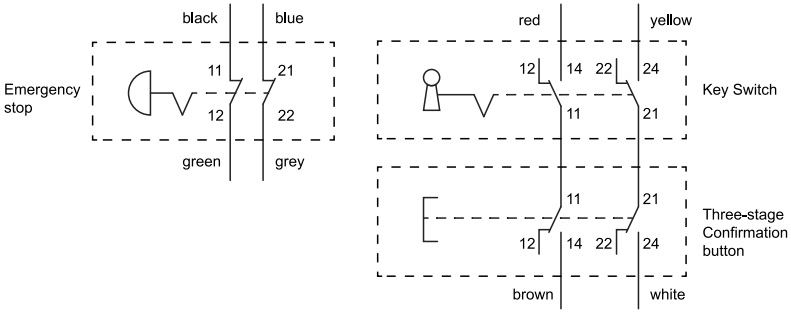
INFORMATION

It is recommended that only storage media provided by SIGMATEK be used.

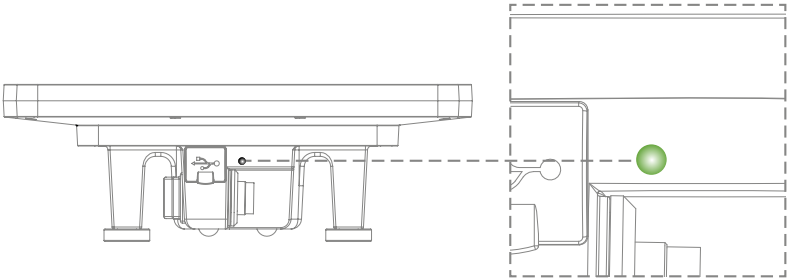
The number of read and write actions have a significant influence on the lifespan of the storage media.

The microSD card is not intended as an exchangeable medium and should therefore be removed from the card holder for maintenance purposed only.

6.2.5 Block Diagram Safety Functions



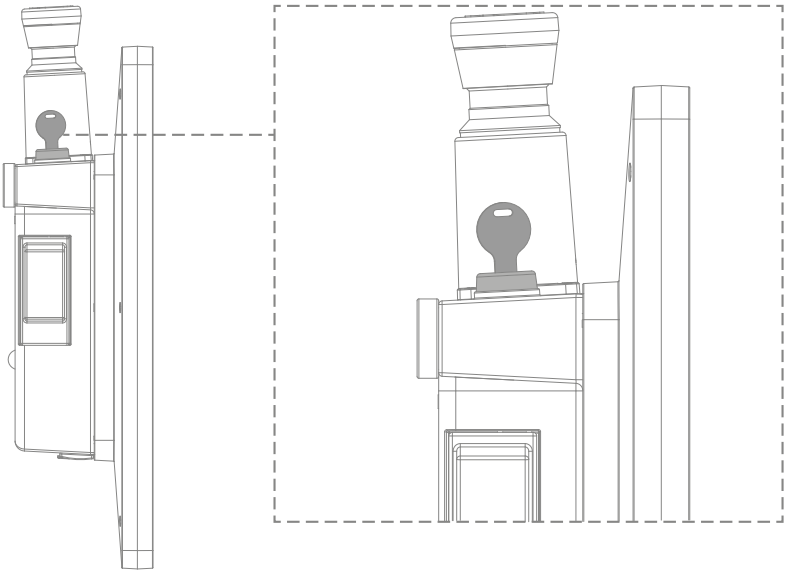
6.3 Status Display LEDs



LED Status	Status
off	Device is off
lights green	DC OK

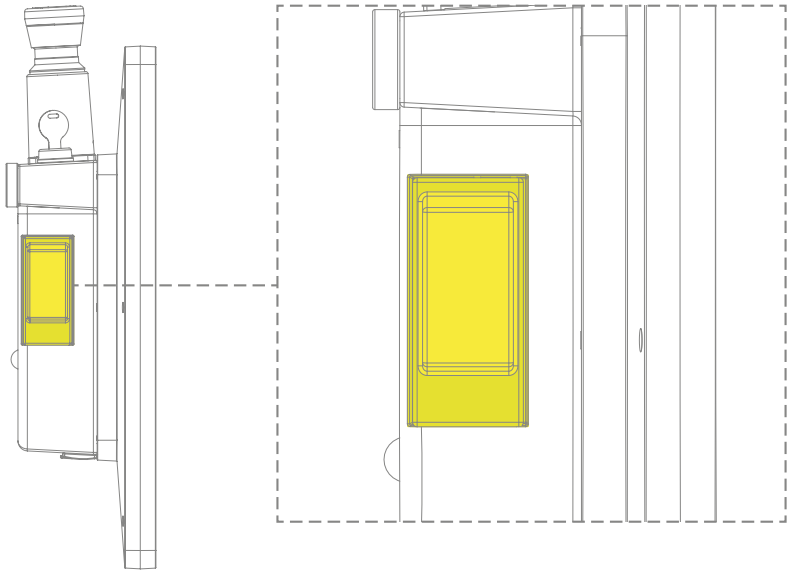
6.4 Key Switch

The key switch is two-stage.



6.5 Confirmation Switch

The confirmation switch is three stage. If the switch is not pressed or pressed only partially, it is inactive. The switch is active when “simply” pressed (middle stage).



CAUTION

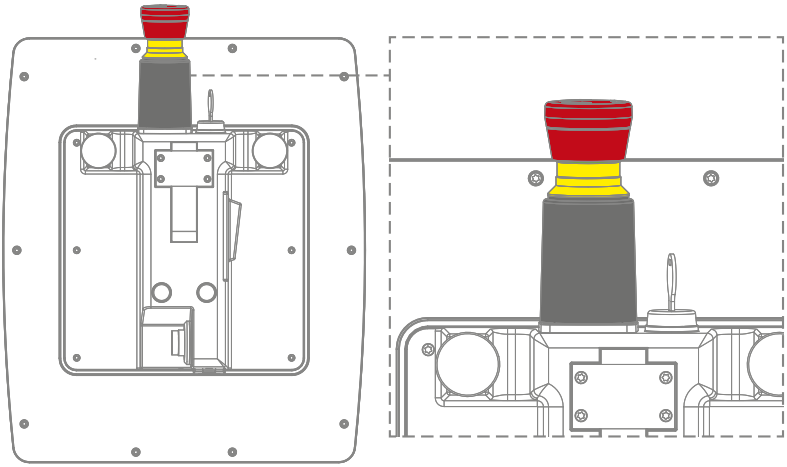
Activating the confirmation switch is a deliberate action. Do not press the confirmation switch for longer than required to confirm the affected operation.

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

The confirmation switch can be operated with the hand used to hold the operating panel. The confirmation switch can be used as dead-man switch with a panic function.

6.6 Emergency Stop

The emergency stop has 2-channel construction.



DANGER

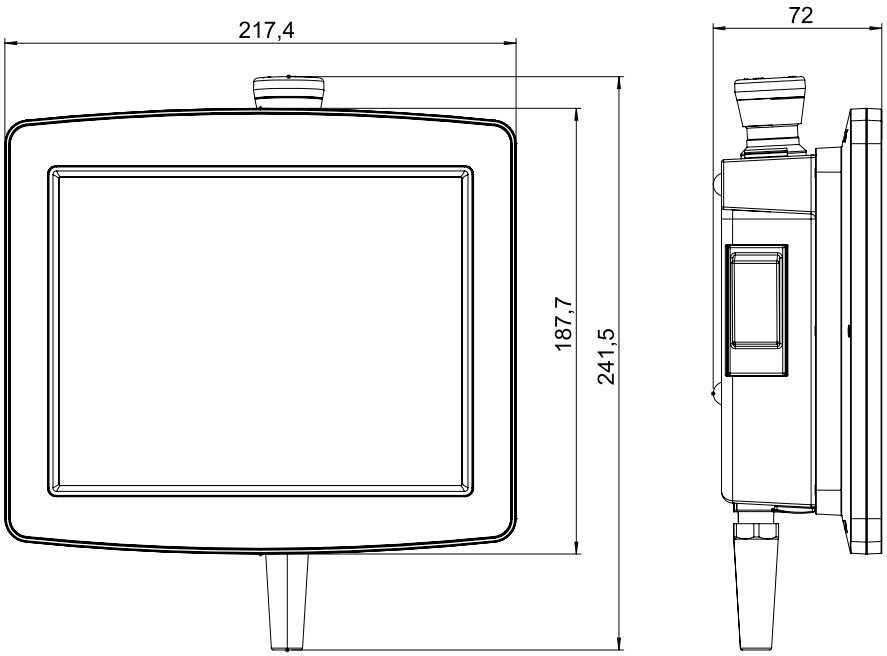
Unlocking the emergency stop switch cannot trigger an automatic restart of the machine.

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

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

Après que l'application ait déverrouillé l'interrupteur d'arrêt d'urgence, l'opé-rateur doit être invité à exécuter un processus d'activation défini.

7 Mechanical Dimensions



Dimensions	217.4 x 187.7 x 72 mm (W x H x D)
Material	Housing: PC/ASA Color: RAL7024 Front: glass 2.1 mm
Weight	2.3 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.

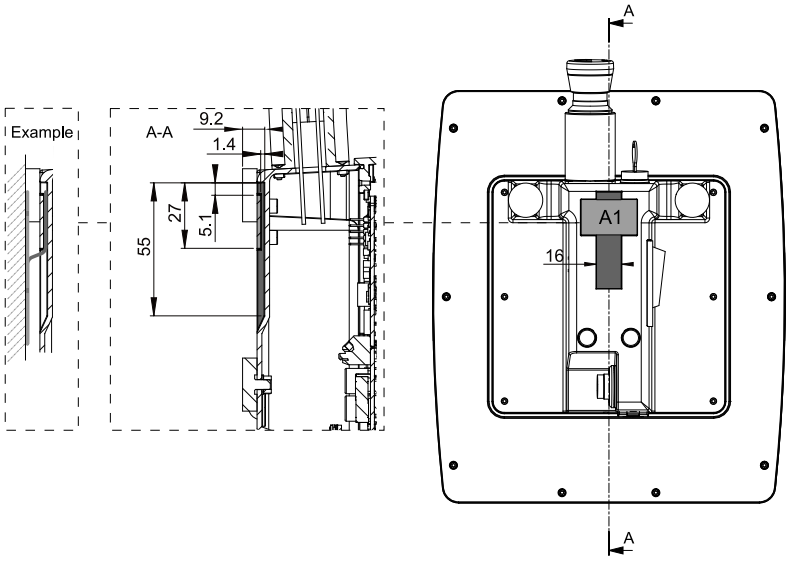
Damaged components can disrupt or damage the system.

8.2 Cooling

The cooling of the HGT 835-11 is passive (fanless).

8.3 Wall Mount

Using the corresponding wall mount, the panel can be attached to the provided holder (A1) on the back (see dimensions for counter piece).



Symbol Image 10”

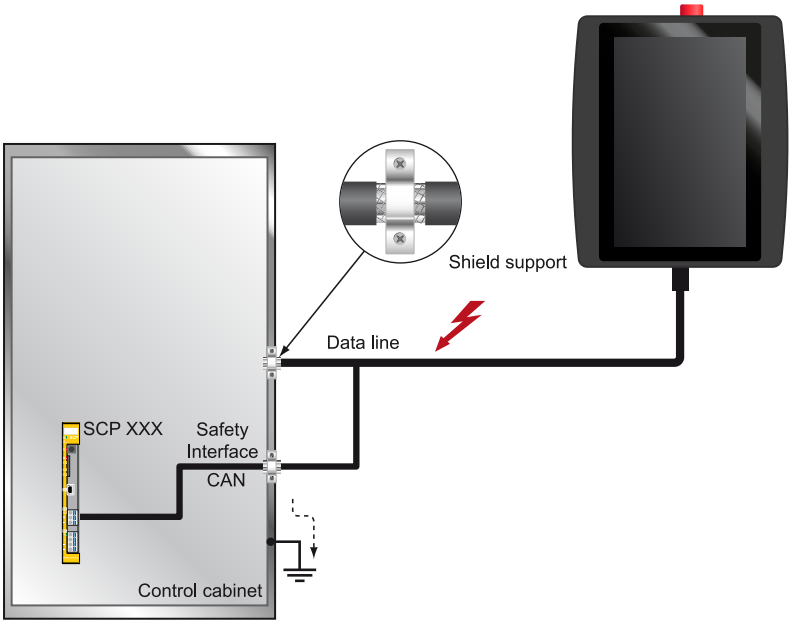
9 Wiring

9.1 Recommended Shielding

For applications in which the bus is operated outside the control cabinet, the correct shielding is required. This is especially important, if due to physical requirements, the bus cables must be placed next to sources of strong electromagnetic noise. It is recommended that wiring the connector cable in parallel with power cables be avoided whenever possible.

9.1.1 Connection from the Control Cabinet to the HGT 835-11

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.



Schematic Representation

9.2 Recommended Shielding for VARAN

The VARAN real-time Ethernet bus system exhibits a very robust quality in harsh industrial environments. Through the use of IEEE 802.3 standard Ethernet physics, the potentials between an Ethernet line and sending/receiving components are separated. In the event of an error, the VARAN Manager resends messages to a bus participant immediately. The shielding described below is mainly recommended. For applications in which the bus is operated outside the control cabinet, the correct shielding is required. This is especially important, if due to physical requirements, the bus cables must be placed next to sources of strong electromagnetic noise. It is recommended to avoid placing VARAN bus lines parallel to power cables whenever possible.

SIGMATEK recommends the use of **CAT5e** industrial Ethernet bus cables. An **S-FTP cable** should be used for the shielding.

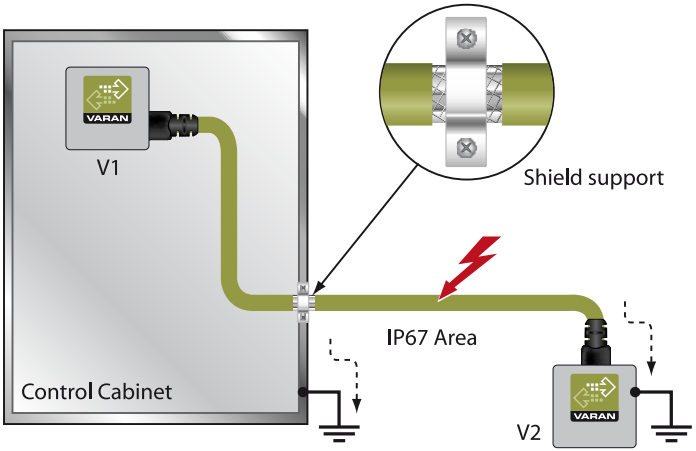
An S-FTP bus is a symmetric, multi-wire cable with unshielded pairs. For the entire shielding, a combination of foil and braiding is used. A non-laminated variant is recommended.

INFORMATION

The VARAN cable must be secured at a maximum distance of 20 cm from the connector to protect against vibration!

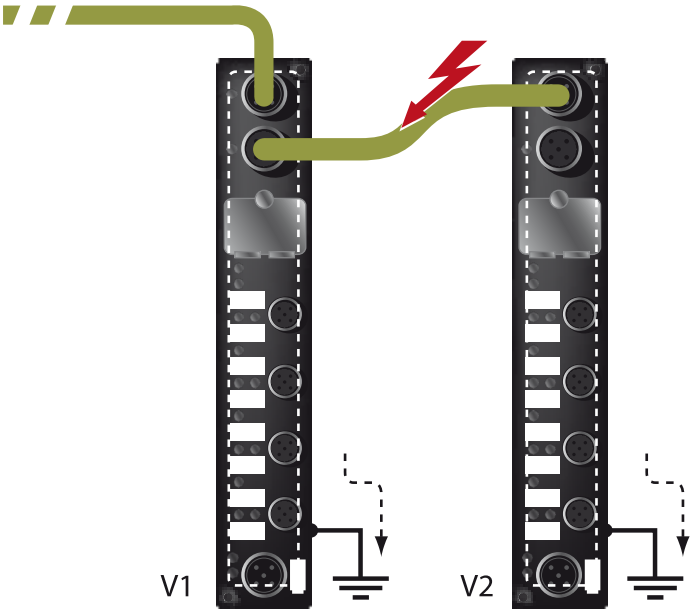
9.2.1 Wiring from the Control Cabinet to an External VARAN Component

If the Ethernet lines are connected from a VARAN component to a VARAN node located outside the control cabinet, the shielding should be placed at the entry point of the control cabinet housing. All noise can then be deflected from the electronic components before reaching the module.



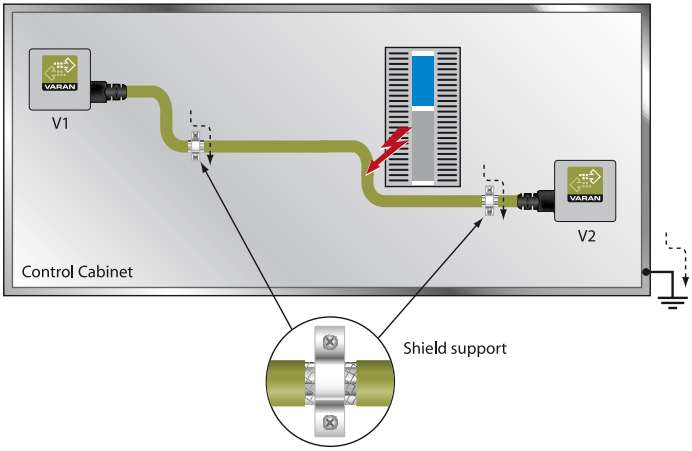
9.2.2 Wiring Outside of the Control Cabinet

If a VARAN bus line must be connected outside of the control cabinet only, no additional shield support is required. A requirement therefore, is that only IP67 modules and connectors can be used outside the control cabinet. These components are very robust and noise resistant. The shielding for all sockets in IP67 modules are electrically connected internally or over the housing, whereby voltage spikes are not dissipated through the electronics.



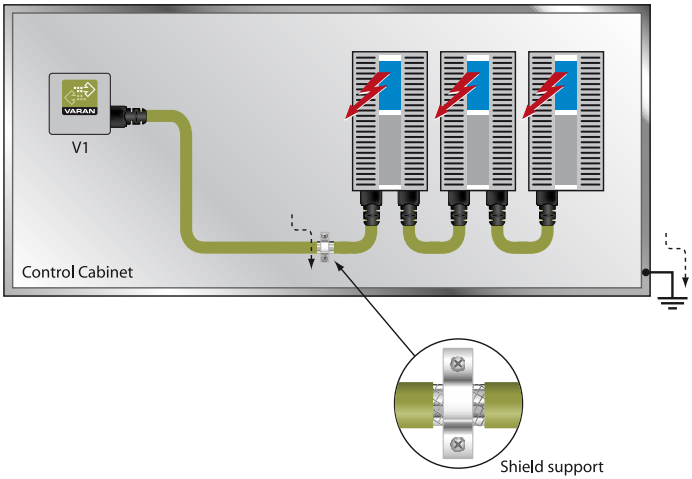
9.2.3 Shielding for Wiring Within the Control Cabinet

Sources of strong electromagnetic noise located within the control cabinet (drives, transformers, etc.) can induce interference in a VARAN bus line. Spike voltages are dissipated over the metallic housing of a RJ45 connector. Noise is conducted through the control cabinet housing without further action from the electronic components. To eliminate sources of noise during data exchange, it is recommended that the shielding for all electronic components be connected within the control cabinet.



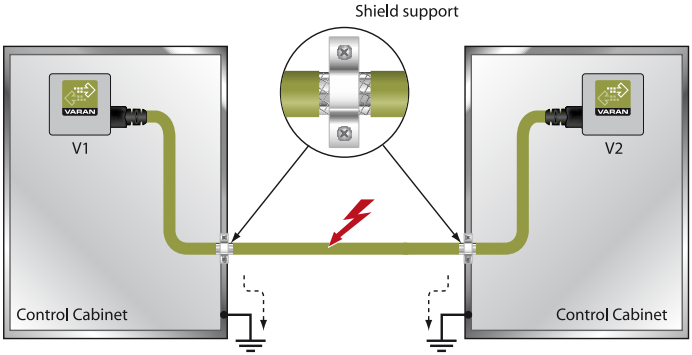
9.2.4 Connecting Noise Generating Components

With the connection of power components, which generate strong electromagnetic interference, it is also critical to ensure correct shielding. The shielding should be placed before a power element (or group of power elements).



9.2.5 Shielding Between Two Control Cabinets

If two control cabinets must be connected over a VARAN bus, it is recommended that the shielding be located at the entry points of both cabinets. Noise can be thereby prevented from reaching the electronics within the control cabinet.



9.3 ESD Protection

CAUTION

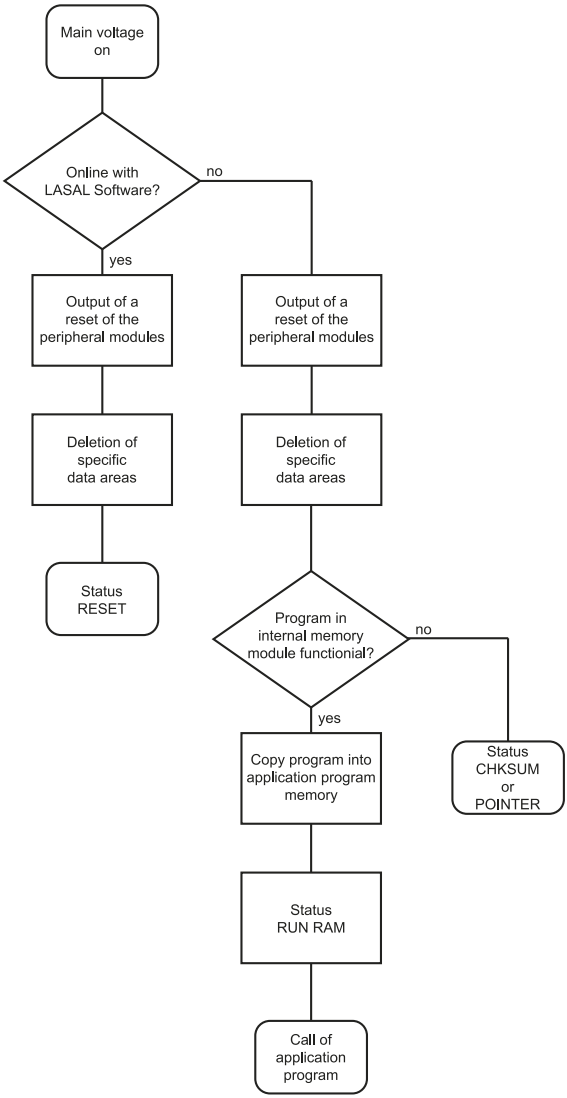
The operator must ensure that no ESD interference affects the product.

L'opérateur doit s'assurer qu'aucune interférence due à des décharges électrostatiques n'affecte le produit.

9.4 USB Interface

The product has a USB interface. This interface can be used to connect various USB devices (keyboard, mouse, storage media, hubs, etc.). Several USB devices can be connected using a hub, which are then fully functional.

10 Process Diagram



11 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

Number	Message	Definition	Cause/Solution
04	**CHKSUM**	An invalid checksum was detected before running the user program.	Cause/Solution: s. POINTER
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

Number	Message	Definition	Cause/Solution
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
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.

Number	Message	Definition	Cause/Solution
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

Number	Message	Definition	Cause/Solution
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
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	**PRIVILEDGED 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

Number	Message	Definition	Cause/Solution
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
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

Number	Message	Definition	Cause/Solution
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.	

Number	Message	Definition	Cause/Solution
106	C_UNKNOWN_CID	An unknown object from a stand-alone or embedded object, or an unknown base class was detected.	
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.	

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

12 Operation/Start-up

12.1 Note

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 HGT 835-11 (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 HGT 835-11 (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!

12.2 Operation

12.2.1 General

The HGT 835-11 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 to that it can be operated by right and left handers equally.

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.

13 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.

14 Storage

INFORMATION

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

15 Maintenance

INFORMATION

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

Lors de l'entretien et de la maintenance, respectez les consignes de sécurité du chapitre 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.

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!

To avoid damaging the touch screen, using either the fingers or a stylus to operate the panel is recommended.

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

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 13 Transport/Storage.

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.

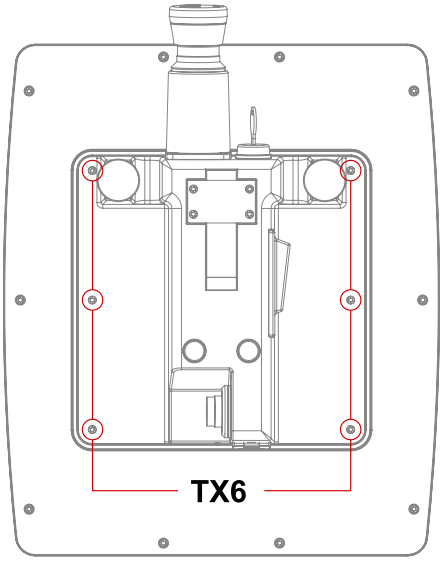
Risque de blessure par des composants endommagés !

→ 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 microSD Card

The 8.4" Handheld Operating Panel has a microSD card slot inside the device.

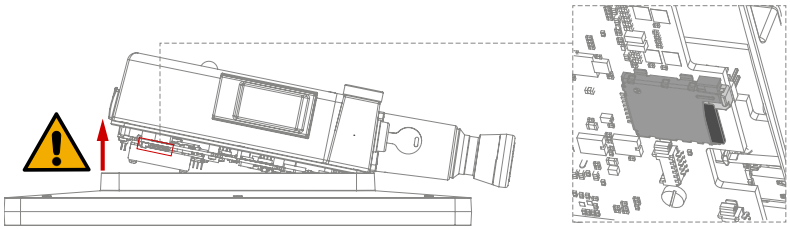
16.1 Exchanging the microSD Card

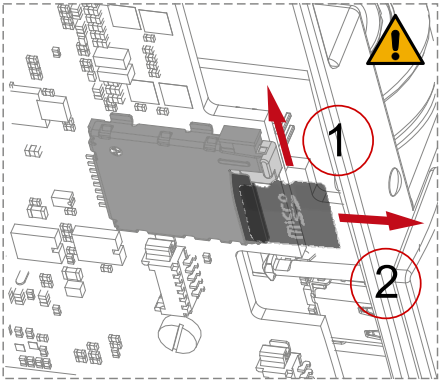


Symbol Image

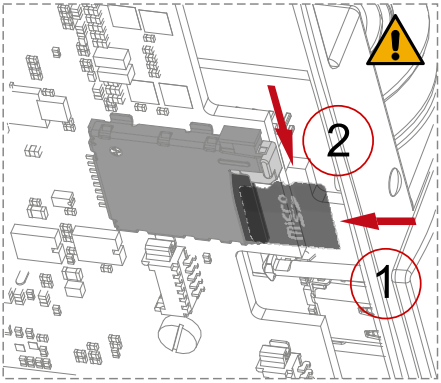
1. Turn off the device supply.
2. Create ESD-compliant conditions.
3. Remove the locking screws with a Torx screwdriver.

4. Carefully lift the cover to avoid damaging the connecting cable between the housing sections and access the microSD holder.





5. Carefully press the lock on the side (caution: card springs out due to mechanism).
6. Remove card.



7. Insert the new microSD card.
8. Ensure that the latch is completely engaged.

9. Close the cover (caution, connecting cable) and tighten the locking screws (0.2 Nm).

17 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!

18 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.

19 Accessories

19.1 Wall Mount

Description	Order Number
Wall mount Z5	01-245-835-Z5

19.2 microSD Card

Description	Order Number
4-Gbyte	12-630-105

Changes Chart

Change date	Affected page(s)	Chapter	Note