

EN

Assembly and operating instructions

Last updated: 03.2025

Operator systems for collective garages

Comfort 390 plus

works with



E
O
S EASY
OPERATING
SYSTEM

MSBUS 

Table of contents

1.	Safety information.....	3
1.1	Correct use.....	3
1.2	Target groups.....	3
1.3	General safety advice.....	3
2.	Product information.....	4
2.1	Scope of delivery.....	4
2.2	Scope of delivery - rail.....	6
2.3	Technical specifications.....	6
2.4	Gate variations.....	7
2.5	Example application.....	8
3.	Installation.....	8
3.1	Safety instructions for installation.....	8
3.2	Preparation for installation.....	8
3.3	Installing the drive.....	9
3.4	Connection housing assembly.....	13
3.5	Connection.....	14
3.6	Track controls.....	36
3.7	Completing the installation.....	43
4.	Commissioning.....	43
4.1	Safety instructions for commissioning.....	43
4.2	Overview of the controller.....	44
4.3	Status indication.....	44
4.4	Factory settings.....	44
4.5	Quick programming.....	45
4.6	Function test.....	46
4.7	Special programming.....	47
5.	Operation.....	57
5.1	Safety instructions for operation.....	57
5.2	Motor unit keyboard.....	57
5.3	Cover keyboard external connection housing.....	58
5.4	Remote controls.....	58
5.5	Release.....	58
6.	Care.....	59
7.	Maintenance.....	59
7.1	Maintenance work by the operator.....	59
7.2	Maintenance by qualified specialist personnel.....	59
8.	Disassembly.....	60
9.	Disposal.....	60
10.	Troubleshooting.....	60
11.	Attachment.....	63
11.1	Manufacturer's declaration.....	63
11.2	Radio conformity.....	63

About this document

- Original operating manual.
- Part of the product.
- Reading and subsequent storage mandatory.
- Protected by copyright.
- No part of this manual may be reproduced without our prior consent.
- Subject to changes which are in the interest of technical improvements.
- All dimensions in millimetres.
- Figures are not to scale.

Safety instructions



WARNING!

Safety information regarding a danger that can lead to death or serious injuries.



CAUTION!

Safety information regarding a danger that can lead to minor or moderate injuries.



ATTENTION!

Safety information regarding a danger that can lead to damage or destruction of the product.

Meaning of symbols

- Action prompt
- ✓ Check
- List, itemisation
- Reference to other parts of this document
-  Reference to separate documents that must be observed
-  Factory settings

1. Safety information

WARNING!

Risk of death due to a failure to observe the operating manual!

This manual contains important information for handling the product safely. Particular reference is made to possible dangers.

- Read this manual through carefully.
- Follow the safety instructions in this manual.
- Store the manual in an accessible location.

1.1 Correct use

The drive system is designed exclusively for opening and closing gates in multi-bay garage.

Use is only permissible:

- On counterbalanced sectional and up-and-over doors with anti-drop protection.
 - In dry rooms.
 - In technically faultless condition.
 - Following correct installation.
 - In compliance with the data in the technical specifications.
- "2.3 Technical specifications"

Any other use is deemed to be improper use.

1.2 Target groups

1.2.1 Operator

The operator is responsible for the building in which the product is used. The operator has the following tasks:

- Knowledge and safekeeping of the instruction manual.
- Instruction of all persons who use the door system.
- Ensure that the gate system is inspected and maintained regularly by qualified specialist personnel.
- Make sure that inspection and maintenance are documented in the inspection logbook.
- Safe and proper keeping of the inspection logbook.

1.2.2 Specialist personnel

Qualified specialist personnel are responsible for assembly, commissioning, maintenance, repair, disassembly and disposal.

Requirements applicable to qualified specialist personnel:

- Knowledge of the general and specific safety and accident-prevention regulations.
- Knowledge of the relevant electrical regulations.
- Training in the use and care of appropriate safety equipment.
- Knowledge of the application of the following standards
 - EN 12635 ("Doors and gates - Installation and use"),
 - EN 12453 ("Safety in use of power operated doors - Requirements"),
 - EN 12445 ("Gates - Safety in use of power operated gates - Test methods").
 - EN 13241-1 ("Gates - Product standard - Part 1: Products without fire resistance or smoke control characteristics")

Electrical work must be performed by qualified electricians exclusively, in accordance with DIN VDE 0100

Requirements applicable to qualified electricians:

- Knowledge of the basics of electrical engineering.
- Knowledge of national regulations and standards.
- Knowledge of the relevant safety regulations.
- Knowledge of this operating manual.

1.2.3 Users

Instructed users operate and care for the product.

Requirements applicable to instructed users:

- Users are instructed in relation to their work by the operator.
- Users must have been instructed on how to use the product safely.
- Knowledge of this operating manual.

Special requirements apply to the following users:

- Children aged 8 and above.
- Persons with reduced physical, sensory or mental capabilities.
- Persons with a lack of experience and knowledge.

These users are only authorised to operate the product.

Special requirements:

- The users must be supervised.
- Users must have been instructed on how to use the product safely.
- The users must understand the dangers involved in handling the product.
- Children are not allowed to play with the product.

1.3 General safety advice

Persons or objects must never be moved with the aid of the gate.

In the following cases, the manufacturer accepts no liability for damages. The guarantee on the product and accessory parts is voided with:

- A failure to observe these operating instructions.
- Misuse and improper handling.
- The assignment of unqualified personnel.
- Modifications or changes to the product.
- The use of spare parts that have not been produced or approved by the manufacturer.

The product is manufactured according to the directives and standards mentioned in the Declaration of Incorporation. The product has left the factory in perfect condition with regard to safety.

Batteries, accumulators, fuses and bulbs are excluded from warranty.

Further safety information can be found in the relevant respective sections of the document.

→ "3.1 Safety instructions for installation"

→ "4.1 Safety instructions for commissioning"

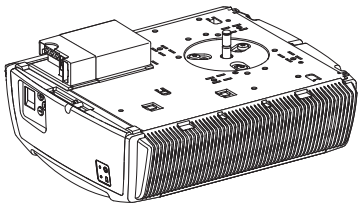
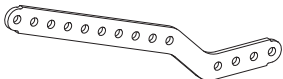
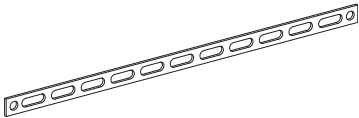
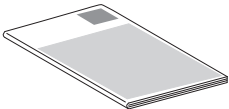
→ "5.1 Safety instructions for operation"

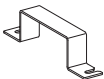
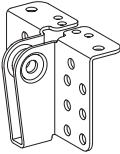
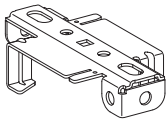
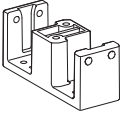
2. Product information

2.1 Scope of delivery

- Refer to the table for the supply package applicable to your product variant.

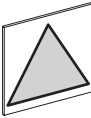
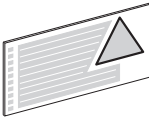
Country-specific deviations are possible.

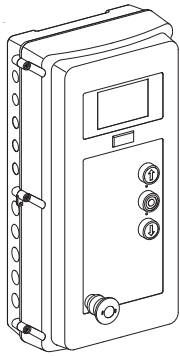
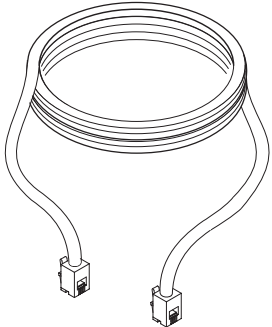
Pos.	Drive	
1		1x
2		1x
3		2x
4		1x

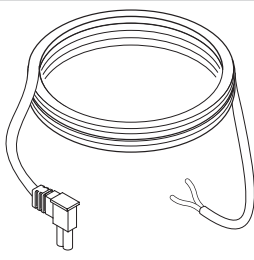
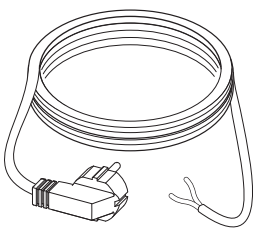
Pos.	Fixture	
5		2x
6		1x
7		2x
8		1x

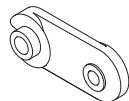
Pos.	Connection elements - 01	
9		4x
10		1x
11		1x
12		1x
13		4x

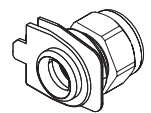
Pos.	Connection elements - 02	
14		6x
15		6x
16		6x

Pos.	Warning signs	
17		1x
18		1x

Pos.	External connection housing	
19		1x
20		1x

Pos.	External connection housing	
21		1x
22		1x

Pos.	Connection elements - 03	
23		4x
24		1x
25		1x
26		1x
27		1x
28		2x
29		2x
30		2x
31		2x
32		4x
33		4x
34		4x
35		1x
36		1x

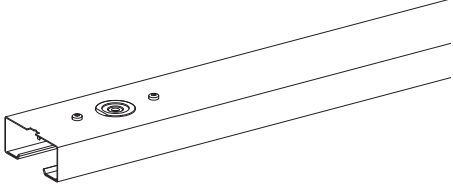
Pos.	Connection elements - 04	
37		3x
38		1x

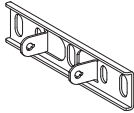
Pos.	Connection elements - 05	
39		2x
40		1x
41		2x
42		1x
43		2x
44		1x
45		2x
46		2x
47		2x

2.2 Scope of delivery - rail

- Refer to the table for the supply package applicable to your product variant.

Country-specific deviations are possible.

Pos.		
48		1x

Pos.	#4	A	B
49		1x	1x
50		1x	1x
51		1x	1x
52		2x	2x
53		1x	1x

2.3 Technical specifications

Electrical specifications

Rated voltage, national variations possible*	V	EU JP USA	230 100 120
Rated frequency*	Hz		50 / 60
Current consumption*	A	EU JP USA	1.1 2.5 2.1
Power consumption in operation**	kW		0.25
Power consumption in standby**	w		approx. 3.5
Control voltage	V DC		24
Protection category for motor unit			IP 20
Connection unit protection category			IP 65
Motor unit protection category			II
Connection unit protection class			I

* The drive-specific values can be found on the type plate on the motor unit.

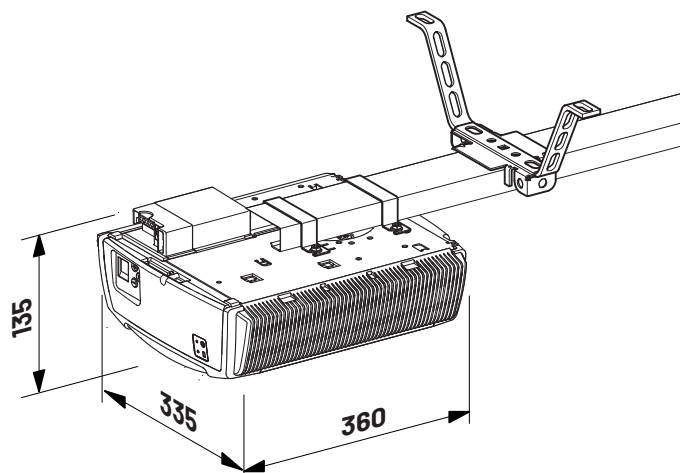
** Without accessories connected

Mechanical specifications

Max. push and pull force	N	1,200
Nominal force	N	360
Max. Travel speed	mm/s	160
Opening phase, specific to gate	s	13.0

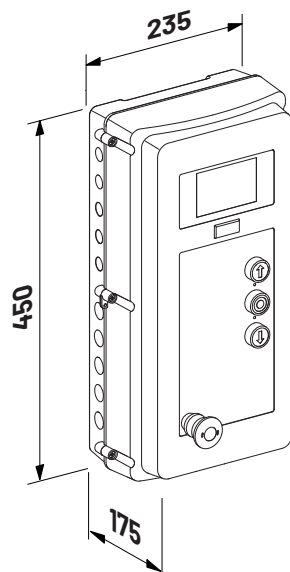
Ambient specifications

Motor unit dimensions



Ambient specifications

Controls dimensions

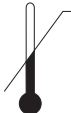


Weight (motor unit)	g	5,000
---------------------	---	-------

Weight (controls)	g	1,200
-------------------	---	-------

Sound pressure level	dB(A)	< 70
----------------------	-------	------

Temperature range		°C	-20
-------------------	---	----	-----

		°C	+60
--	---	----	-----

Area of application

Swing-out overhead door

- max. gate width	mm	6,000
- max. gate weight	kg	240

single-wall sectional gate

- max. gate width	mm	6,000
- max. gate weight	kg	240

double-wall sectional gate

- max. gate width	mm	6,000
- max. gate weight	kg	240

Tilt and canopy gate

- max. gate width	mm	6,000
- max. gate height	mm	2,250
- max. gate weight	kg	240

max. Cycles per hour	cph	18
----------------------	-----	----

max. Cycles per day	cpd	300
---------------------	-----	-----

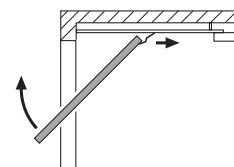
max. Number of parking spaces		100
-------------------------------	--	-----

2.4 Gate variations

The scope of supply with corresponding drive rail is suitable for the following types of gate.

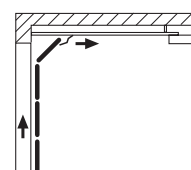
Swing-out overhead door (up-and-over door)

2.4 / 1



Sectional gate

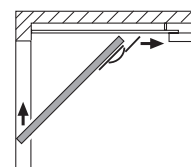
2.4 / 2



Special accessories are required for the following gate versions.

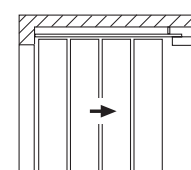
Non-swing-out overhead door

2.4 / 3



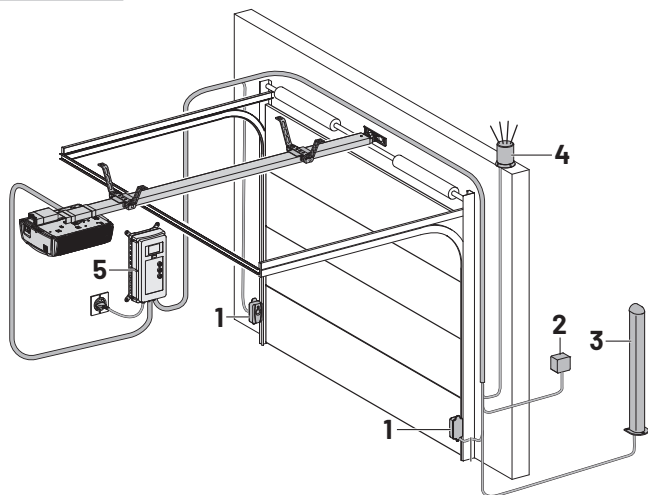
Side sectional gate

2.4 / 4



2.5 Example application

2.5 / 1



The gate system is an example and may vary depending on gate type and equipment. The system shown consists of the following components:

- 1 Photocell
- 2 Key switch
- 3 Post (for code buttons, transponders, etc.)
- 4 Signal light
- 5 External connection housing

 Further information regarding the accessories can be found on the manufacturer's website.

 For the installation and cabling of the gate sensors, control elements and safety equipment, the relevant installation instructions must be observed.

3. Installation

3.1 Safety instructions for installation



WARNING!

Danger due to a failure to observe the installation instructions!

This chapter contains important information for the safe installation of the product.

- Read this chapter through carefully before installation.
- Follow the safety instructions.
- Perform the assembly as described.

Assembly by qualified specialist personnel only.

→ "1.2.2 Specialist personnel"

Electrical work must be performed by qualified electricians exclusively.

→ "1.2.2 Specialist personnel"

- Before assembly, it is necessary to make sure that the power supply has been and remains disconnected. Only establish the power supply when prompted to do so in the corresponding assembly step.
- It is essential to adhere to the local protection regulations.
- It is essential that mains supply cables and control cables are laid separately. The controls voltage is 24 V DC.
- The gate must be in good mechanical condition:
 - The gate comes to a stop in any position.
 - The gate is easy to move.
 - The gate opens and closes correctly.
- All pulse transmitters and control devices (e. g. remote control buttons) must be installed within sight of the gate and at a safe distance from the moving parts of the gate. A minimum installation height of 1.5 metres must be observed.
- Only use fixing material that is suitable for the respective construction substrate.

3.2 Preparation for installation

Before starting installation, it is essential to perform the following work.

Scope of delivery

- Check which product variant you have, and ensure the scope of delivery is complete.
- Make sure that a suitable drive rail is available.
- Check that you have all the accessory parts required for your installation.

Garage

- Check whether your garage is equipped with a suitable power connection and circuit breaker.

Gate system

- Remove all unnecessary components from the gate (e. g. cables, chains, brackets, etc.)
- Render any installations inoperable that will no longer be needed after the operator system has been installed.

In the case of garages without a second access:

- Equip the garage gate with an emergency interlock, so that the garage can be entered in the event of a malfunction.

If a release set is used:

- Check the correct function of the gate locks. The function of the gate locks must never be disabled.

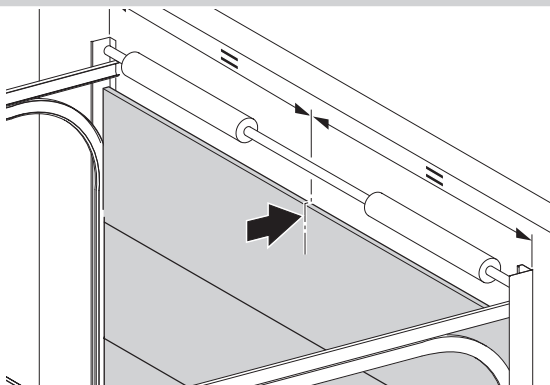
If a release set is not used:

- Remove the gate locks or disable the gate locks.

 When using and installing accessories, always observe the corresponding documentation.

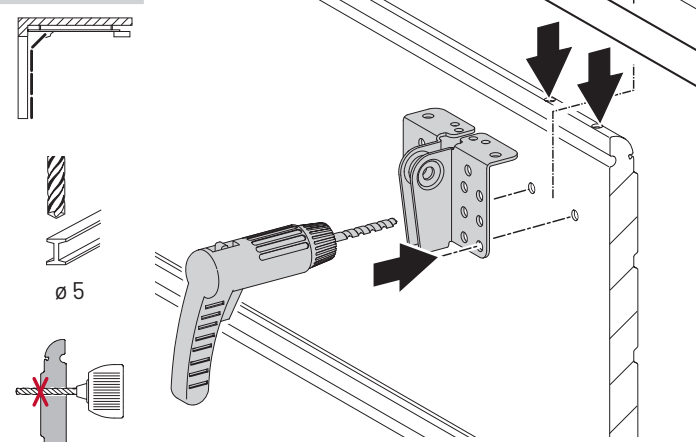
3.3 Installing the drive

3.3 / 1



3.3 / 2

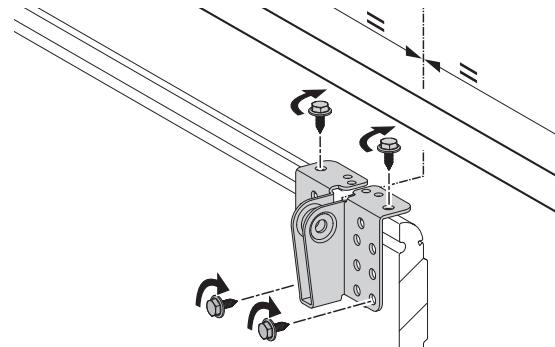
3.3 / 2 a



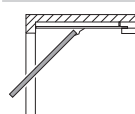
4x



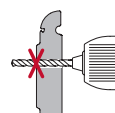
10



3.3 / 2 b



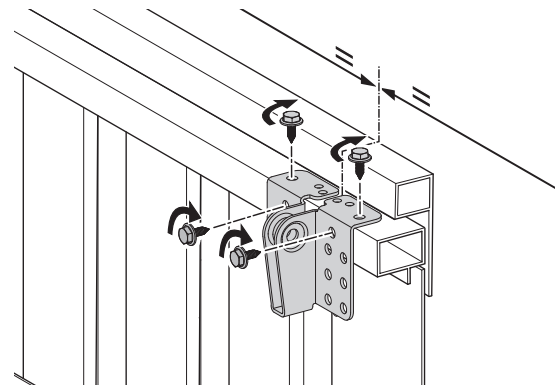
ø 5



4x



10



! ATTENTION!

Danger due to shaft adapter damage caused by the application of force!

Impacts with a hammer can damage the toothing of the shaft adapter.

- Proceed with caution when mounting the drive rail on the motor unit.

3.3 / 3

3.3 / 3 a



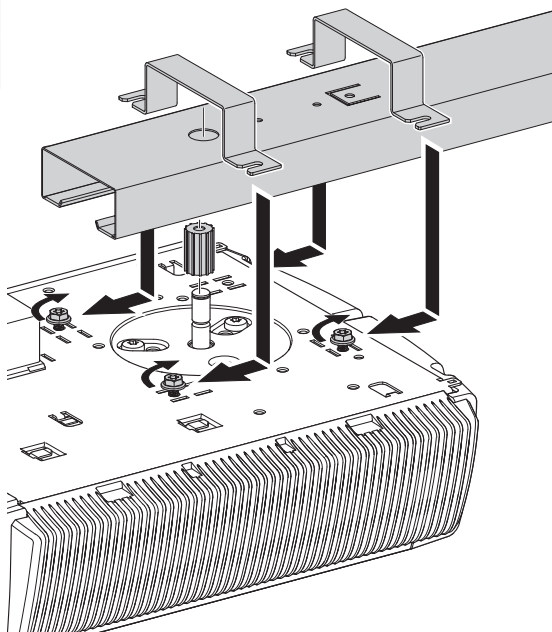
1x



10



25



3.3 / 3 b



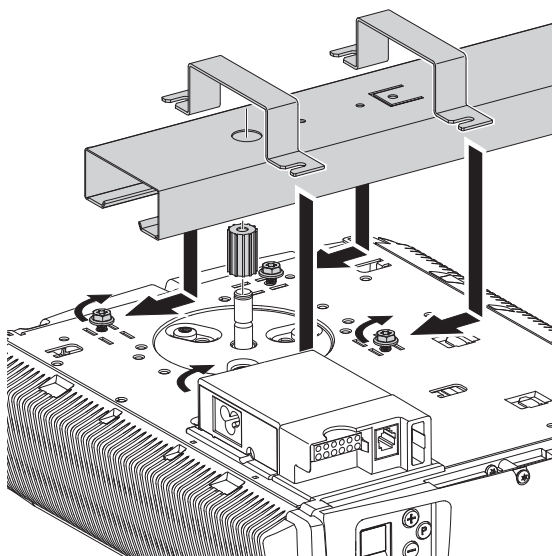
1x



10



25



3.3 / 4



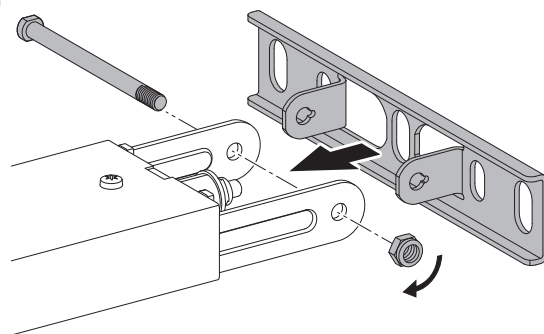
1x



1x



10



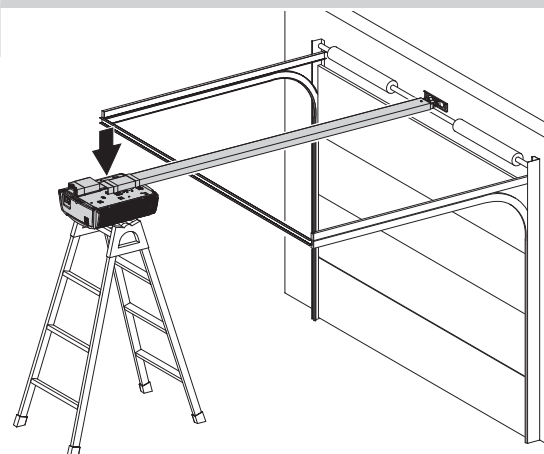
! WARNING!

Risk of injury due to loose components!

Falling parts can cause serious injuries.

- Secure the drive system against falling until it is securely fastened.

3.3 / 5



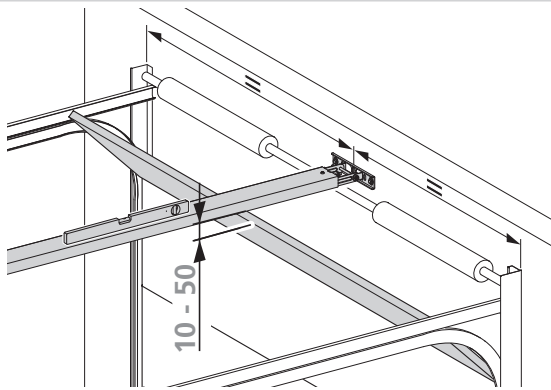
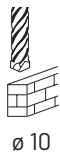
! ATTENTION!

Risk of damage to the door panel due to incorrect assembly!

Incorrect installation of the lintel connection plate can lead to collision of the door panel with the drive rail.

- Make sure the top edge of the gate leaf at the highest point of the opening track is 10 - 50 mm beneath the horizontal lower edge of the drive rail.
- Mount the lintel connection plate for the drive rail centrally above the gate leaf.

3.3 / 6



3.3 / 7



2x



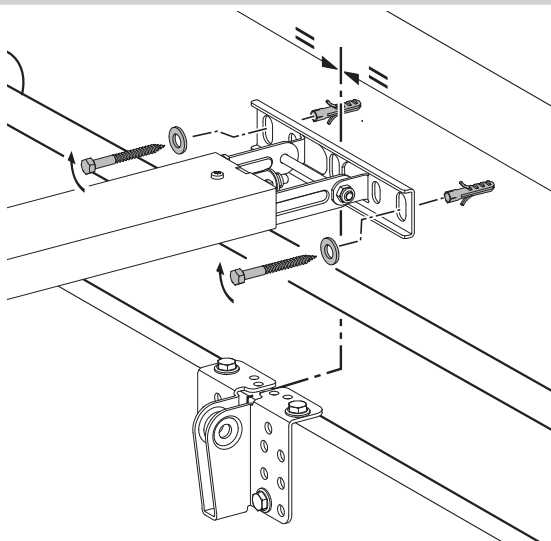
2x



2x



13



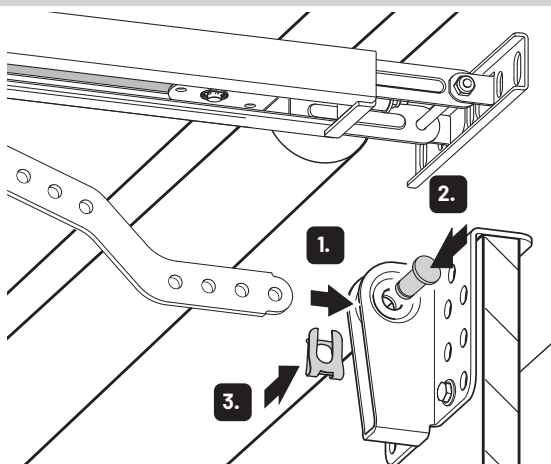
3.3 / 8



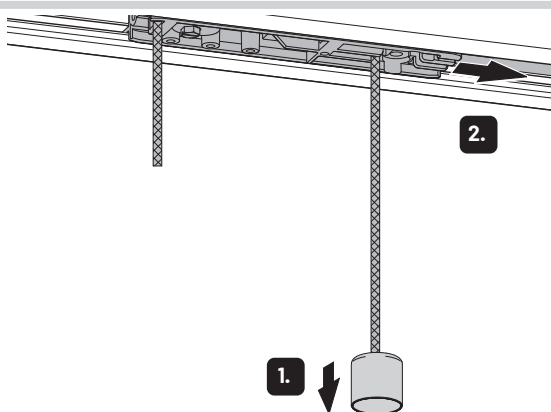
1x



1x



3.3 / 9



3.3 / 10

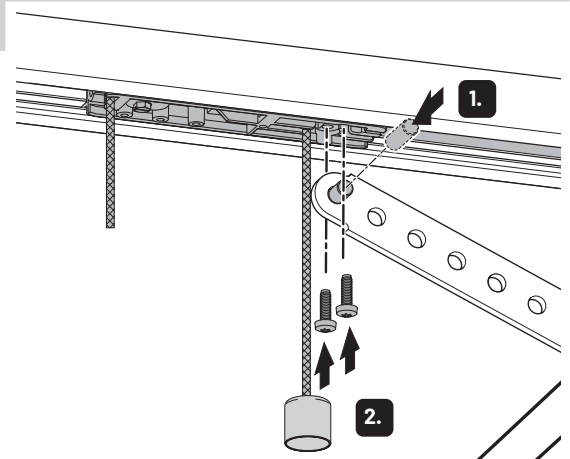


1x

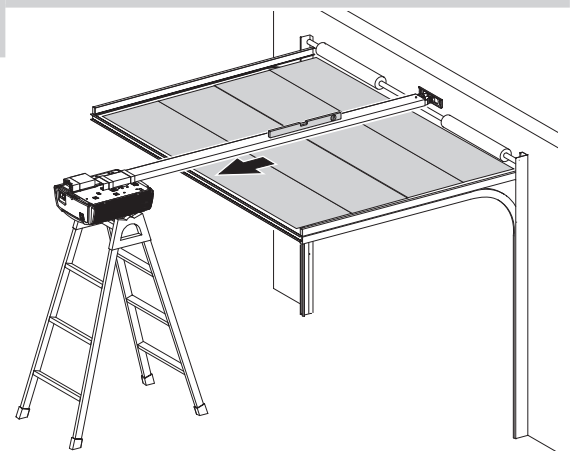
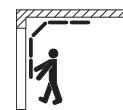
2x



25



3.3 / 11



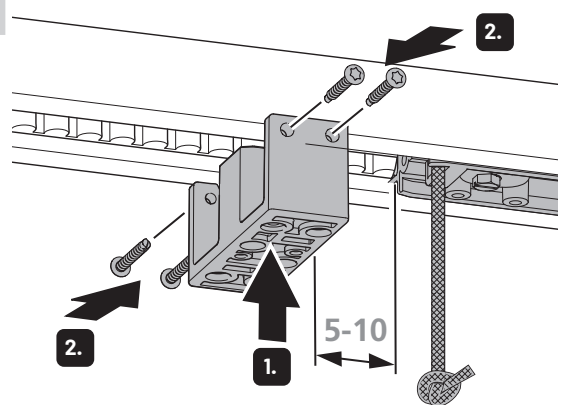
3.3 / 12



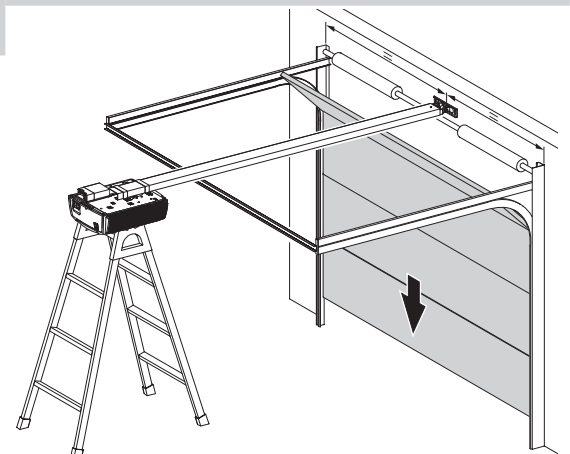
4x



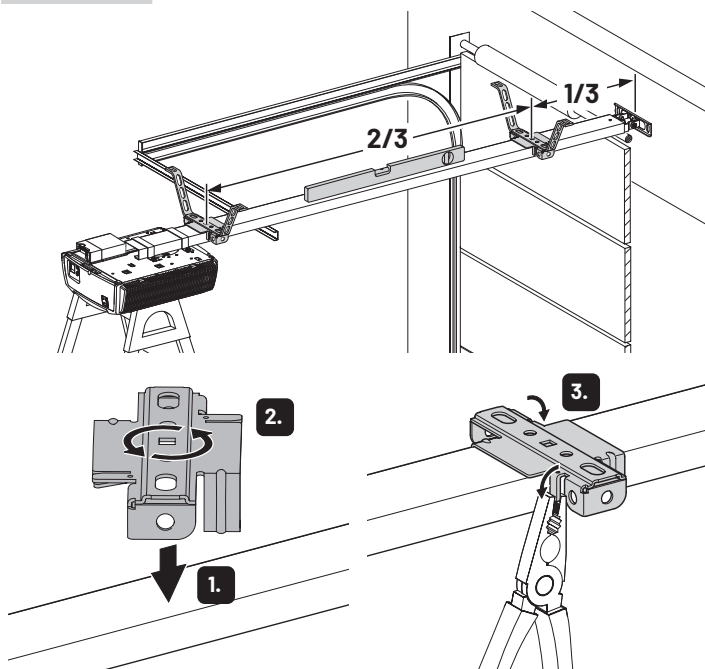
20



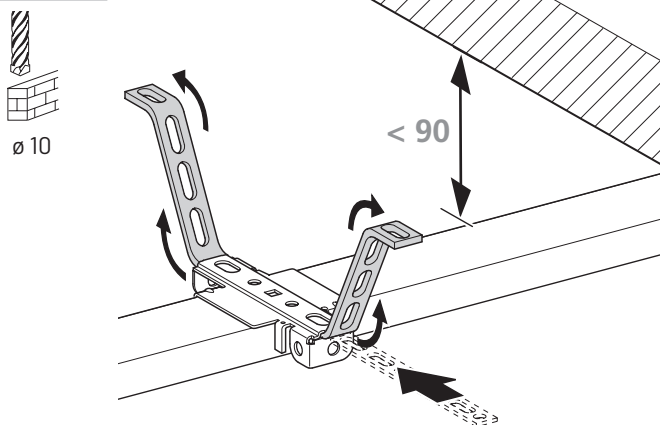
3.3 / 13



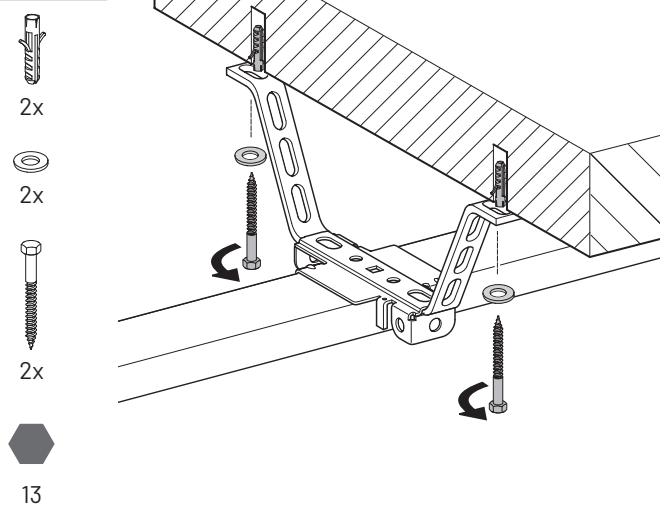
3.3 / 14



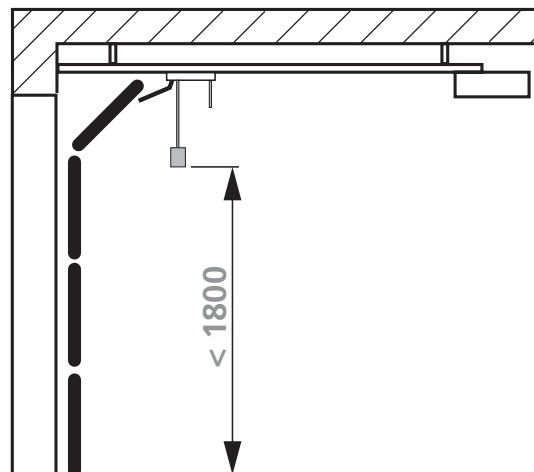
3.3 / 15



3.3 / 16

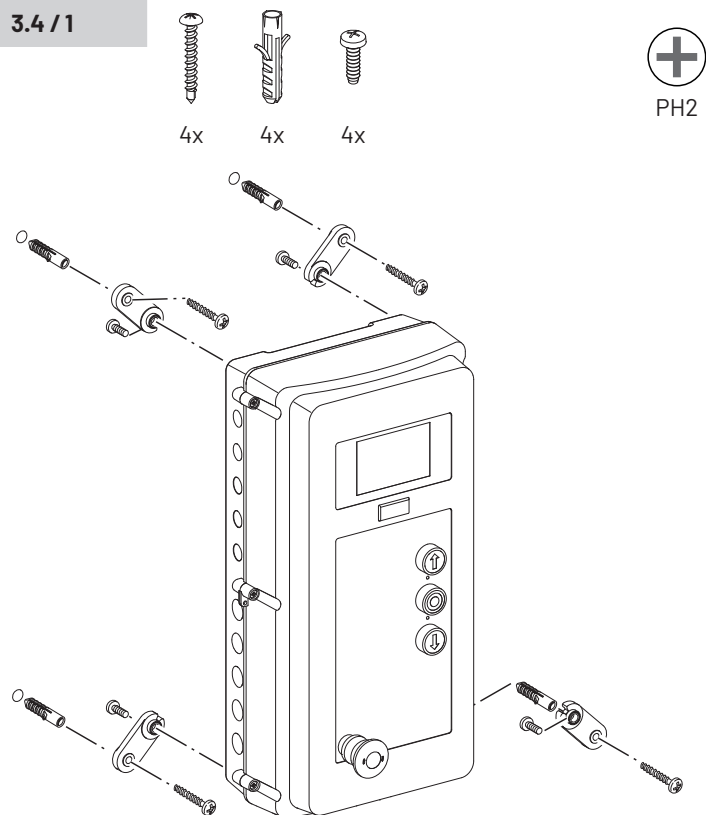


3.3 / 17



3.4 Connection housing assembly

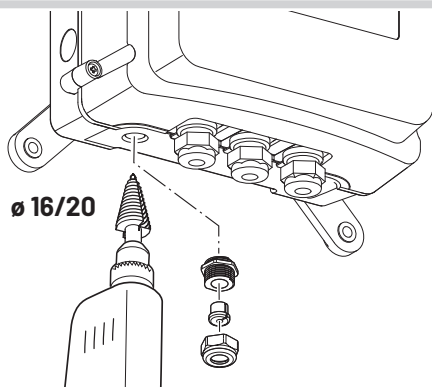
3.4 / 1



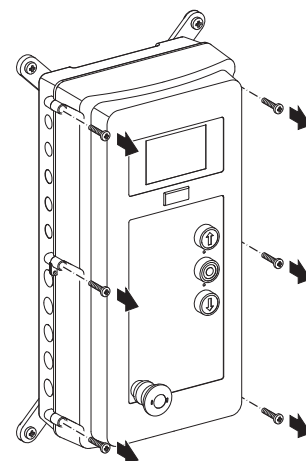
Cable opening expansion

Expanding the cable opening is only necessary if additional systems are connected to the controls.

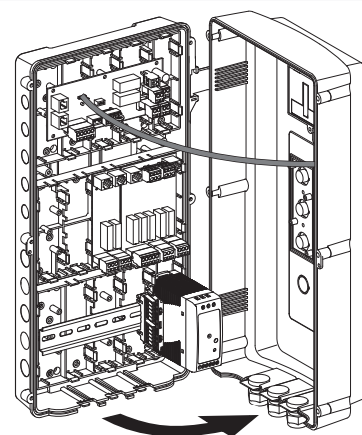
3.4 / 2



3.4 / 3



3.4 / 4



ATTENTION!

Danger of physical damage due to incorrect assembly of the controls!

In case of incorrectly assembled controls, malfunctions and damage may result (e. g. malfunctioning activation, penetrating water, or fouling).

- Adhere to the local protection regulations.
- Electrical supply cables and control cables must be laid separately.
- Provide the lines with the matching sealing plugs to maintain the indicated protection category of the terminal box.
- Connect all cables as described.

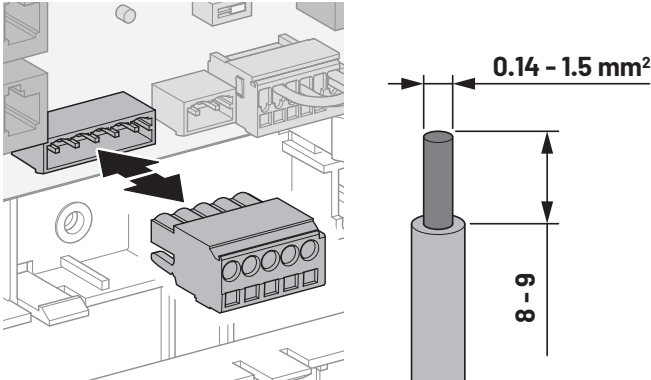
3.5 Connection

 WARNING!

Risk of fatal injuries due to electric shocks!
Contact with live parts can lead to electric shock, burns and death.

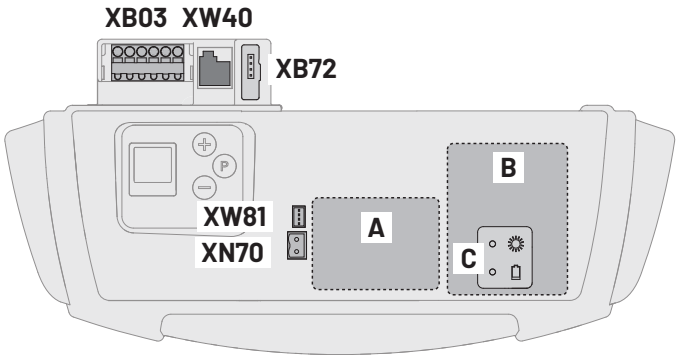
- Ensure that the power supply is and remains disconnected throughout any wiring work.

3.5 / 1



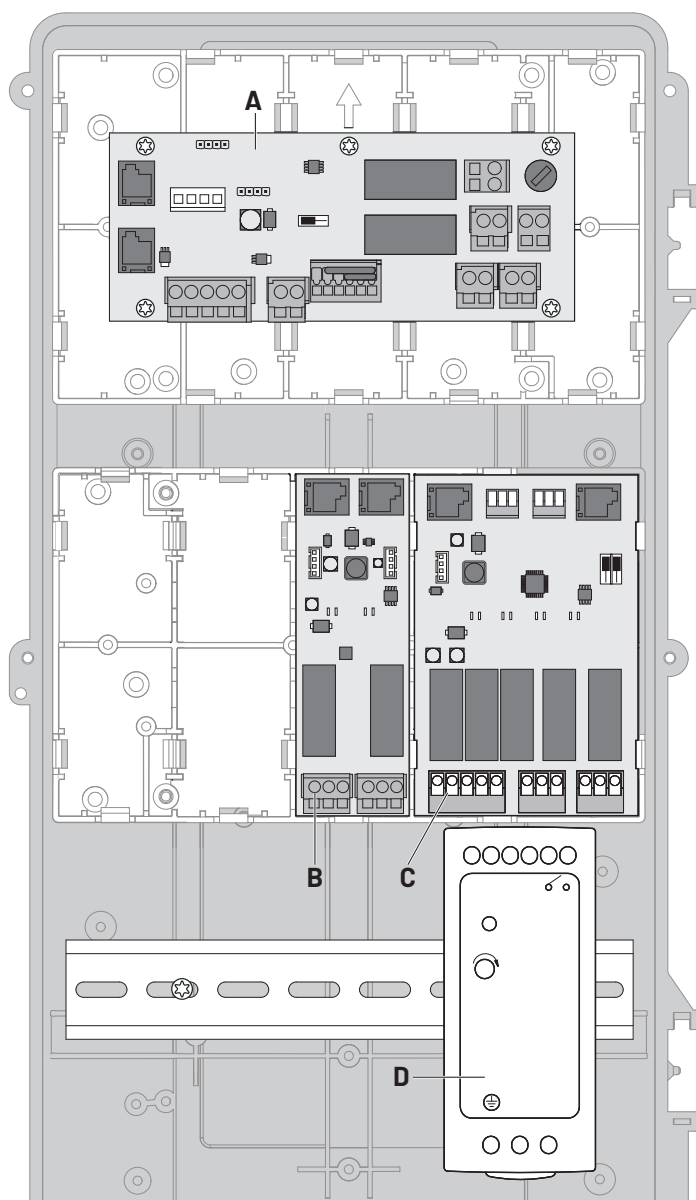
3.5.1 Complete overview

3.5.1 / 1



A	Expansion housing GDO
B	Battery backup-slide in unit
C	Battery backup display
XB03	Connection → "3.5.13 2-wire gate frame photocells (XB03)" → "3.5.15 4-wire gate frame photocells (XB03)" → "3.5.17 Personnel door contact connection (XP15)"
XB72	Connecting the module receiver → "3.5.11 Module receiver connection (XB72)"
XN70	Connection of the battery backup → "3.5.25 Connection of XN70 and XW81"
XW40	Connection of the MS-BUS for expansion modules
XW81	Connection of expansion Inputs / Outputs → "3.5.25 Connection of XN70 and XW81"

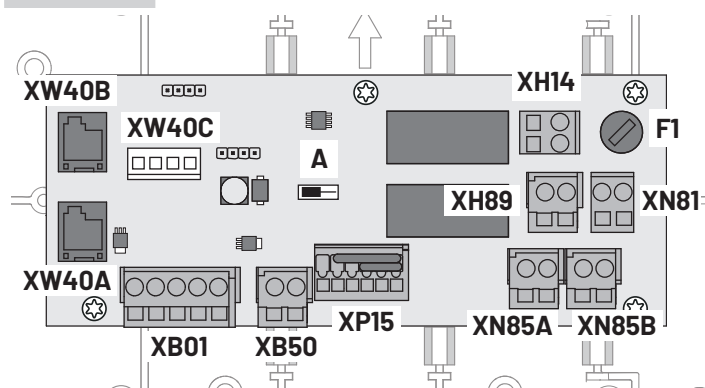
3.5.1 / 2



A	Vario circuit board → "3.5.2 Vario circuit board"
B	Relays circuit board → "3.5.3 Relays circuit board"
C	Track controls circuit board → "3.5.4 Track controls circuit board"
D	external switch power adapter, 24 VDC/ max. 2.5 A, supply to external elements

3.5.2 Vario circuit board

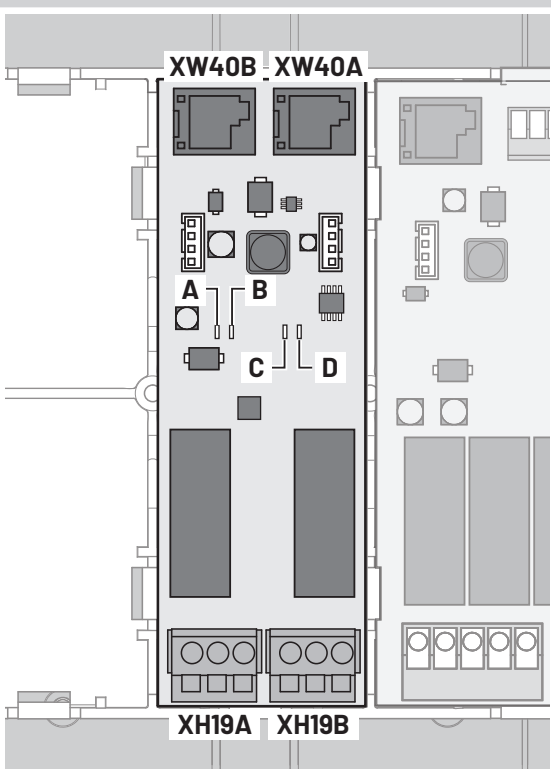
3.5.2 / 1



A	DIP switch programming. The DIP switch must always be in the ON position
F1	Fuse 6.3 A
XB01	Connection 2-wire photocell / external photocell and pulse button → "3.5.14 2-wire photocell connection (XB01)" → "3.5.15 4-wire gate frame photocells (XB03)" → "3.5.9 Potential-free button connection (XB01)" → "3.5.10 Connection of button with power supply (XB01)"
XB50	External control elements supply 24 V DC, max. 100 mA
XH14	Wiping pulse connection → "3.5.24 Stairway light-timer connection (XH14)"
XH89	Connection signal light NO configured with 230 V → "3.5.20 Signal light connection 230 V AC (XH89)"
XN81	Mains connection 1N~230 V
XN85A	Mains connection safeguarded for motor routing
XN85B	Mains connection safeguarded for extension module routing
XP15	Opto-sensors /contact bar connection → "3.5.18 Contact bar connection 8K2 (XP15)"
XW40A	Motor unit connection
XW40B	Expansion module connection
XW40C	Lid button connection

3.5.3 Relays circuit board

3.5.3 / 1



A	LED hand-held transmitter actuated
B	LED output XH19A
C	LED output XH19B
D	LED operating display Illuminated operation Flashing cable break Flashing quickly diagnostic mode
XW40A	Controls / additional module connection
XW40B	Controls / additional module connection
XH19A	Connection of potential-free relay contact
XH19B	Connection of potential-free relay contact

 ATTENTION!

Risk of malfunctions due to incorrect system connection!

An incorrectly connected cable on connections XW40A and XW40B can cause malfunctions.

- Make sure that only the Marantec bus system is connected (MS bus).

 ATTENTION!

Risk of material damage due to excessively high contact load!

Voltage that is too high can destroy the circuit board.

- Ensure that the contact load of the connection is maintained (max. 230 V / 6 A).

After connection with the controls, the display (D) flashes slowly.

Perform a reset of the MS Bus modules:

→ "Level 1, Menu 8 - RESET"

The control unit requires approx. 30 seconds to detect connected modules.

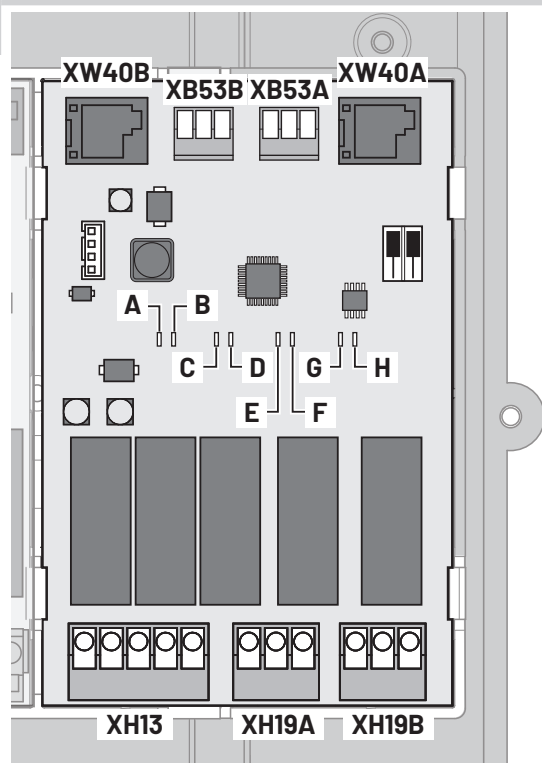
The module reset is ended automatically.

The display (D) glows.

Set the desired functions:

3.5.4 Track controls circuit board

3.5.4 / 1



A	LED entry RED
B	LED entry GREEN
C	LED exit RED
D	LED exit GREEN
E	LED hand-held transmitter actuated
F	LED output XH19A
G	LED output XH19B
H	LED operation Illuminated operation Flashing cable break Flashing quickly diagnostic mode
XB53A	Pulse button connection Entry/exit → "3.6.1 Entry/exit button connection (XB53A)"
XB53B	Automatic function connection → "3.6.2 Special functions button connection (XB53B)"
XH13	Signal equipment connection Entry/exit → "3.6.3 Lamps for entry/exit connection (XH13)"
XH19A	Signal equipment connection → "3.5.21 Signal light or lamp connection 230 V AC (XH19A / XH19B - relay)"
XH19B	Signal equipment connection → "3.5.21 Signal light or lamp connection 230 V AC (XH19A / XH19B - relay)"

ATTENTION!

Risk of malfunctions due to incorrect system connection!

An incorrectly connected cable on connections XW40A and XW40B can cause malfunctions.

- Make sure that only the Marantec bus system is connected (MS bus).

When track controls are connected, the button input of the drive or the controls is deactivated. Button and signal devices must be connected directly to the track controls. The level 3 programming menu, menu 1 for automatic feed is also deactivated. Depending on the factory settings for the green red phase, the gate may be moved immediately after the network is on.

3.5.5 Connection options

General

- Motor unit supply
→ "3.5.6 Motor unit supply connection (XN85A)"
- Motor unit data connection
→ "3.5.7 Motor unit data connection (XW40A)"
- Mains line
→ "3.5.8 Mains line connection (XN81)"

Control elements

- Button, key switch, ceiling pull switch – potential-free
→ "3.5.9 Potential-free button connection (XB01)"
- Radio receiver, transponder, induction loop – 24 V DC
→ "3.5.10 Connection of button with power supply (XB01)"
- Radio receiver – RIB-BUS
→ "3.5.11 Module receiver connection (XB72)"
- Timer
→ "3.5.12 Timer connection (XB01)"

Safety elements

- Personnel door contact
→ "3.5.17 Personnel door contact connection (XP15)"
- 2-wire photocell
→ "3.5.14 2-wire photocell connection (XB01)"
- 4-wire photocell
→ "3.5.15 4-wire gate frame photocells (XB03)"
- Contact bar 8K2
→ "3.5.18 Contact bar connection 8K2 (XP15)"
- Opto-sensors OSE
→ "3.5.18 Contact bar connection 8K2 (XP15)"
- "3.5.19 Opto-sensors connection OSE (XP15)"

Signal elements

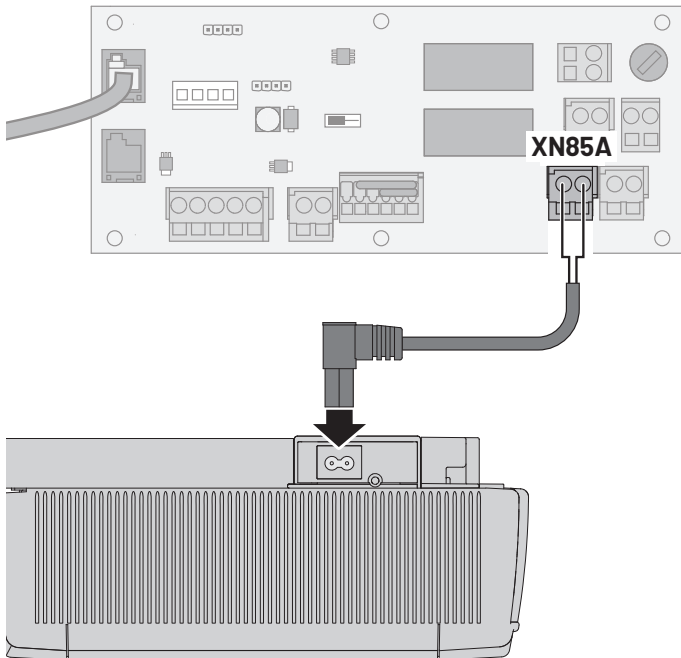
- Signal light 230 V AC
→ "3.5.20 Signal light connection 230 V AC (XH89)"
- "3.5.21 Signal light or lamp connection 230 V AC (XH19A / XH19B - relay)"
- Signal lamp 24 V DC
→ "3.5.22 Signal light or lamp connection 24 V DC (XH19A / XH19B - relay)"
- Lamp 230 V AC
→ "3.5.21 Signal light or lamp connection 230 V AC (XH19A / XH19B - relay)"
- Lamp 24 V DC
→ "3.5.22 Signal light or lamp connection 24 V DC (XH19A / XH19B - relay)"
- Lighting 230 V AC
→ "3.5.23 Lighting connection 230 V AC (XH19A / XH19B - relay)"
- "3.6.5 Special functions signal lamp connection (XH19B)"
- Stairway light timer
→ "3.5.24 Stairway light-timer connection (XH14)"

Track controls

- Entry/exit pulse
→ "3.6.1 Entry/exit button connection (XB53A)"
- Entry/exit master function switch contact
→ "3.6.2 Special functions button connection (XB53B)"
- Automatic function switch contact
→ "3.6.2 Special functions button connection (XB53B)"
- Red entry lamp
- Green entry lamp
- Red exit lamp
- Green exit lamp
→ "3.6.3 Lamps for entry/exit connection (XH13)"
- Signal light
→ "3.5.23 Lighting connection 230 V AC (XH19A / XH19B - relay)"
- "3.6.5 Special functions signal lamp connection (XH19B)"

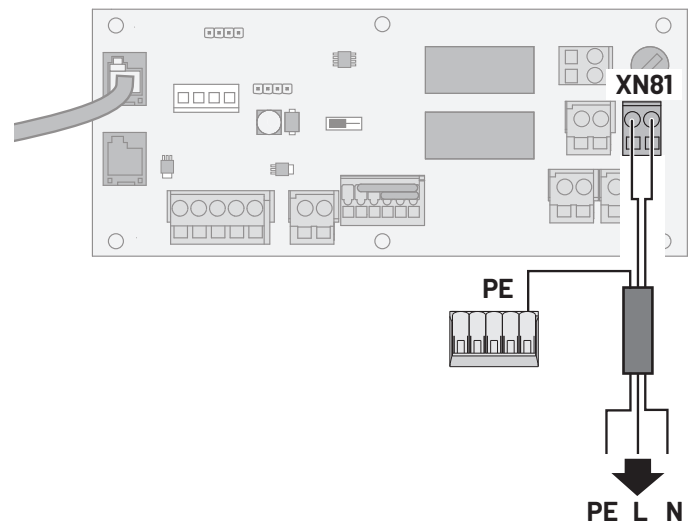
3.5.6 Motor unit supply connection (XN85A)

3.5.6 / 1



3.5.8 Mains line connection (XN81)

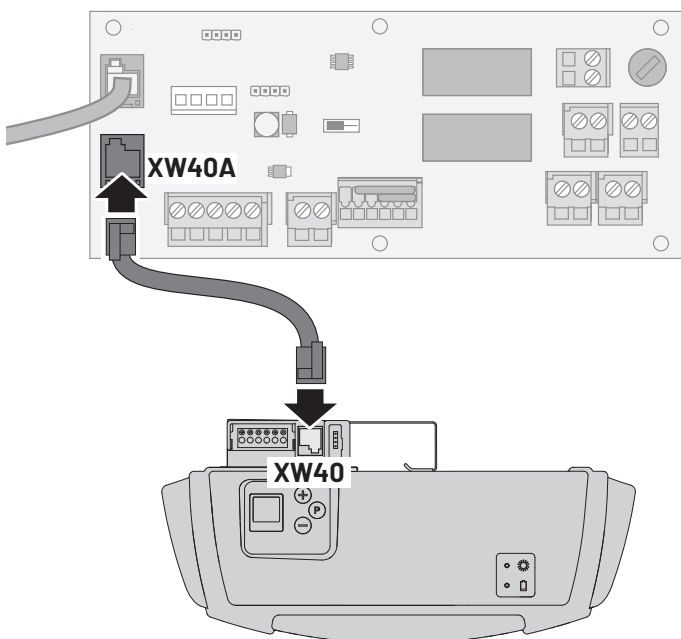
3.5.8 / 1



Designation	Connection colour
L	brown
N	blue
PE	green-yellow

3.5.7 Motor unit data connection (XW40A)

3.5.7 / 1



3.5.9 Potential-free button connection (XB01)

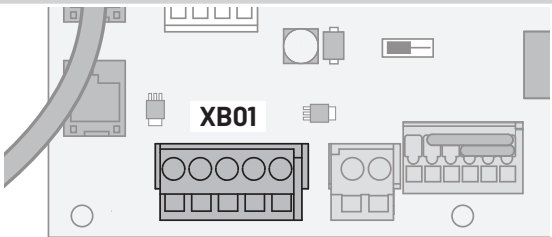
Product examples:

- Push-button
- Key switch
- Ceiling pull switch

Possible functions:

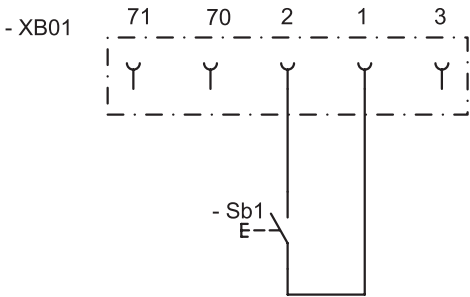
- Pulse – open/stop/close a gate
- OPEN pulse – open a gate
- Premature closing in case of automatic feed

3.5.9 / 1



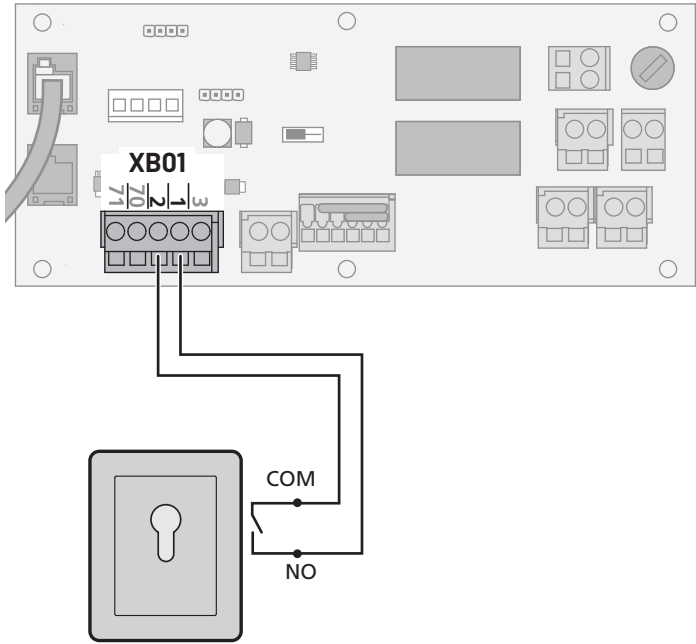
3.5.9 / 2

M19E011e



1	24 V DC / max. 50 mA
2	Pulse
Sb1	Pulse button

3.5.9 / 3



Level 5 – Special functions

Menu 1 – Programmable pulse input (terminal 1/2)

1	 Pulse (only NO)
5	OPEN pulse (induction loop – only NO)
6	Premature closing through actuation of button or hand-held transmitter > 2 seconds

If track controls are connected, this input is deactivated. The accessories must be connected to track controls.
→ "3.6.1 Entry/exit button connection (XB53A)"

3.5.10 Connection of button with power supply (XB01)

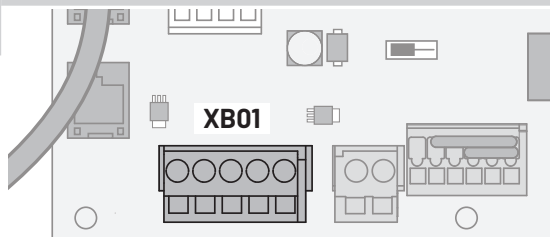
Product examples:

- Radio receiver
- Transponder system
- Induction loop detector

Possible functions:

- Pulse – open/stop/close a gate
- OPEN pulse – open a gate
- Premature closing in case of automatic feed

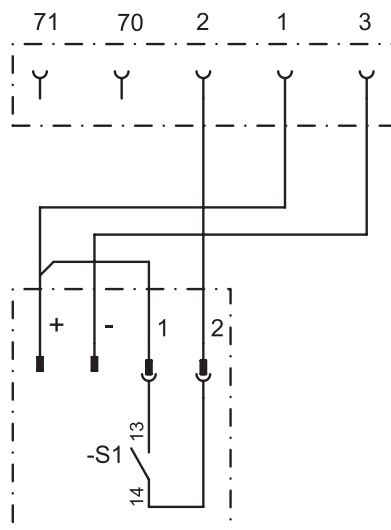
3.5.10 / 1



3.5.10 / 2

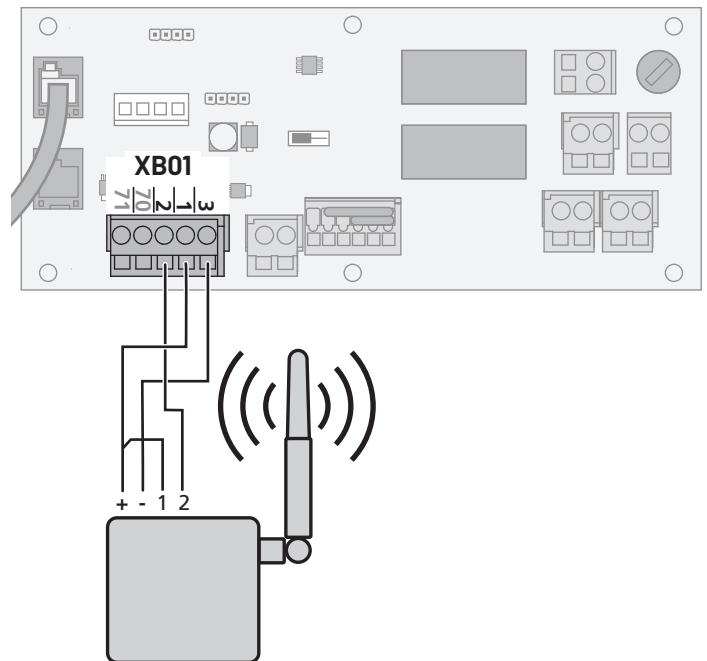
M19E011e

- XB01



1	24 V DC / max. 50 mA
2	Pulse
3	GND
S1	Potential-free make contact

3.5.10 / 3



Level 5 – Special functions

Menu 1 – **Programmable pulse input (terminal 1/2)**

1	 Pulse (only NO)
5	OPEN pulse (induction loop – only NO)
6	Premature closing through actuation of button or hand-held transmitter > 2 seconds

If track controls are connected, this input is deactivated.
The accessories must be connected to track controls.

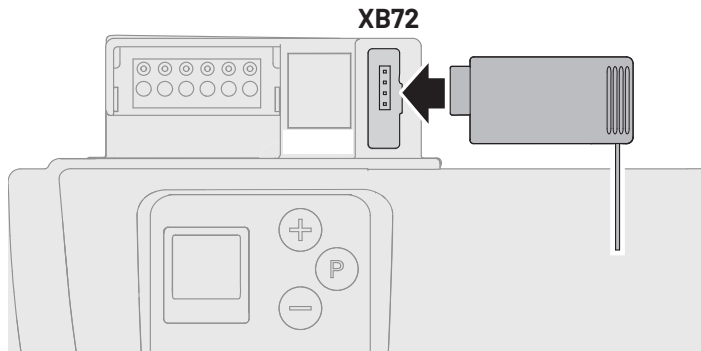
→ “3.6.1 Entry/exit button connection (XB53A)”

3.5.11 Module receiver connection (XB72)

Product examples:

- Multi-Bit module receiver
- Module receiver **bi•linked**

3.5.11 / 1



Level 4 – Radio programming

Only with **bi•linked** version:

Press the programming button on the rear side of the handheld transmitter before the button on the front side is pressed.

Menu 2 – Intermediate position OPEN

Parameter and hand-held transmitter display flashing
-> Press hand-held transmitter button -> Hand-held transmitter display lights up briefly -> The function has been taught.

Menu 3 – Intermediate position CLOSED

Parameter and hand-held transmitter display flashing
-> Press hand-held transmitter button -> Hand-held transmitter display lights up briefly -> The function has been taught.

Menu 4 – OPEN

Parameter and hand-held transmitter display flashing
-> Press hand-held transmitter button -> Hand-held transmitter display lights up briefly -> The function has been taught.

Menu 5 – CLOSED

Parameter and hand-held transmitter display flashing
-> Press hand-held transmitter button -> Hand-held transmitter display lights up briefly -> The function has been taught.

Menu 6 – Entry request

Parameter and hand-held transmitter display flashing
-> Press hand-held transmitter button -> Hand-held transmitter display lights up briefly -> The function has been taught.

Level 4 – Radio programming

Menu 7 – Exit request

Parameter and hand-held transmitter display flashing
-> Press hand-held transmitter button -> Hand-held transmitter display lights up briefly -> The function has been taught.

Menu 8 – Drive lighting ON / OFF or relay output

Parameter and hand-held transmitter display flashing
-> Press hand-held transmitter button -> Hand-held transmitter display lights up briefly -> The function has been taught.

Relay output:

The parameter "radio remote control" must be programmed.

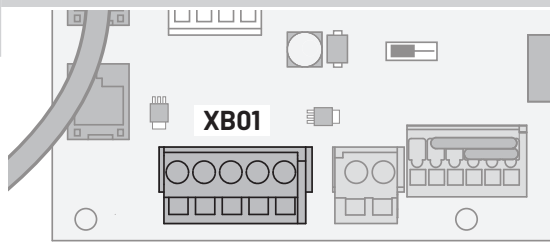
→ "Level 1, Menu 7 - Relay output"

3.5.12 Timer connection (XB01)

Possible function:

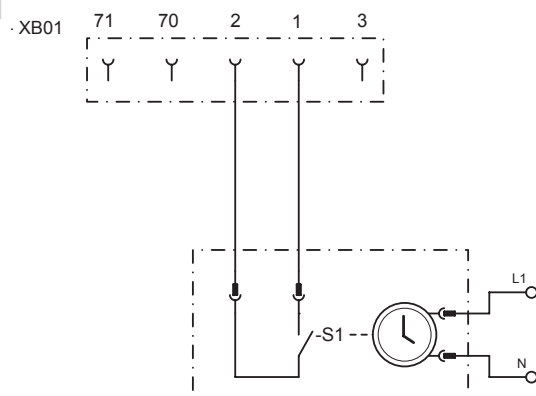
Hold gate open in connection with the automatic feed

3.5.12 / 1



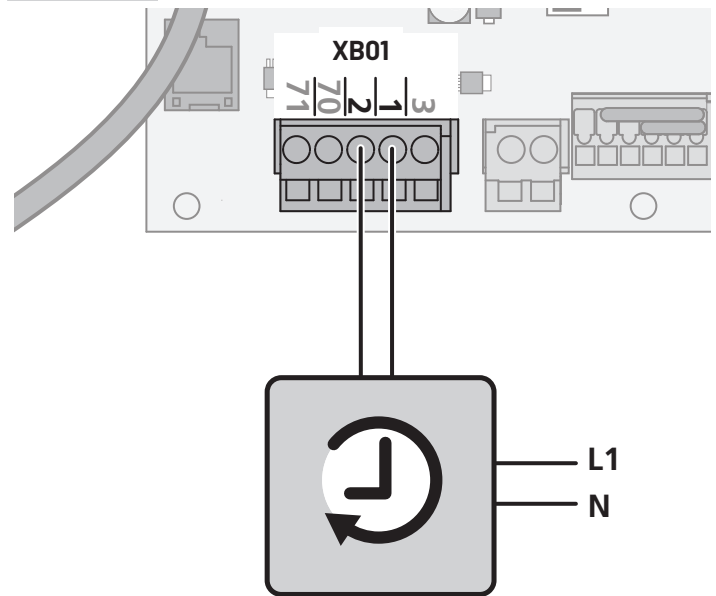
3.5.12 / 2

M19E013c



1	24 V DC / max. 50 mA
2	Pulse
S1	Potential-free make contact

3.5.12 / 3



The current supply for the timer can be implemented by the customer or via connection XN85.

Level 5 – Special functions

Menu 1 – **Programmable pulse input (terminal 1/2)**

2 Closing prevention (only NO)

The timer must provide a continuous pulse to the contact.

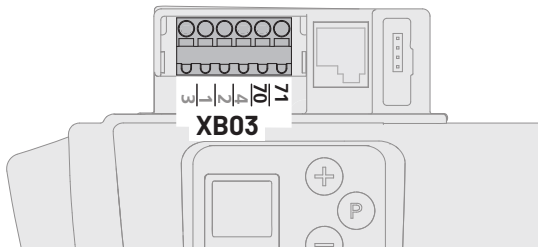
If track controls are connected, this input is deactivated.
The accessories must be connected to track controls.

→ "3.6.2 Special functions button connection (XB53B)"

3.5.13 2-wire gate frame photocells (XB03)

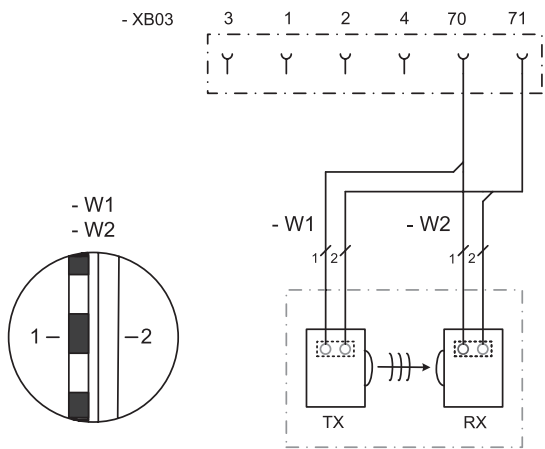
Possible function:
Contactless obstacle detection in CLOSE direction

3.5.13 / 1



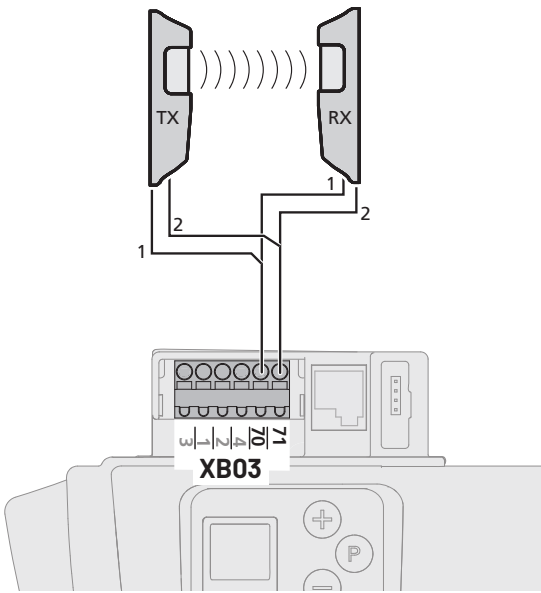
3.5.13 / 2

M19E010e



70	GND
71	Photocell
RX	Photocell receiver
TX	Photocell transmitter

3.5.13 / 3



A connected photocell is automatically detected by the controller as soon as the power supply is connected. The photocell can be retrospectively reprogrammed. Unwanted photocells must be disconnected before the power supply is connected, otherwise the controller will detect them. The position of a frame photocell is automatically learnt when programming the CLOSE position. If the position of the frame photocell is not detected correctly, it can be manually corrected in the special programming.

Level 8 – System settings

The following menus and functions are only accessible for qualified specialist personnel.

Gate reversal brief:
The drive system briefly moves the gate in the opposite direction to release an obstacle.

Gate reversal extended:
The drive system moves the gate to the OPEN gate position.

Level 8 – System settings

Menu 1 – Photocell

1	 Operation without photocell
2	2-wire photocell (Connection XB03 - terminal 70/71), Gate movement CLOSE: Gate reversal extended

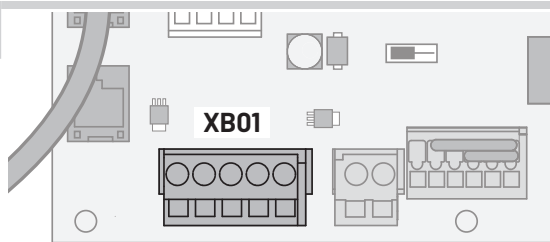
Menü 10 – Position of the frame photocell

The position of the frame photocell can be manually set if necessary.
Setting with button + (OPEN) and – (CLOSE).

3.5.14 2-wire photocell connection (XB01)

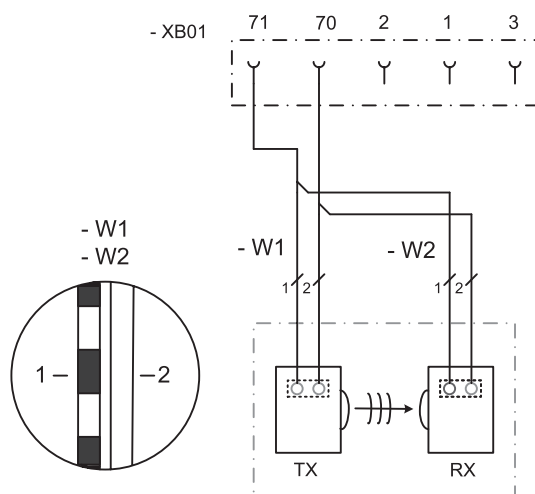
Possible function:
Contactless obstacle detection in CLOSE direction

3.5.14 / 1



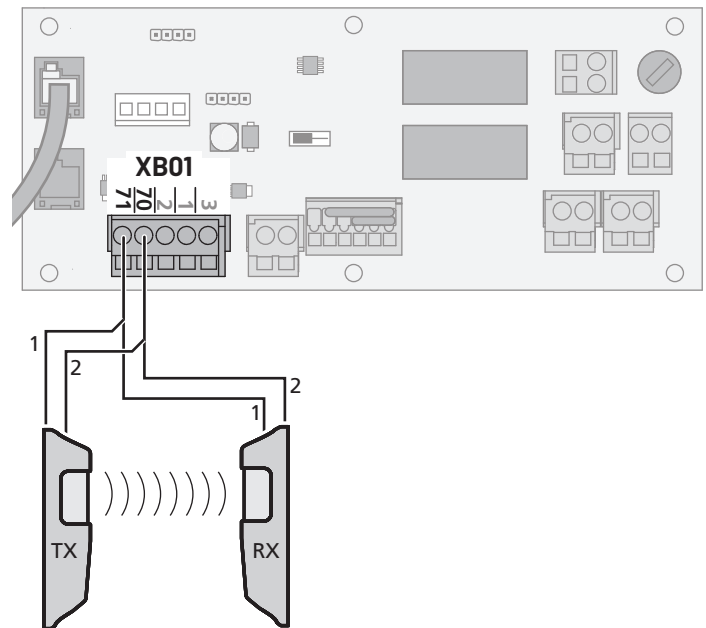
3.5.14 / 2

M19E011e



70	GND
71	Photocell
RX	Photocell receiver
TX	Photocell transmitter

3.5.14 / 3



A connected photocell is automatically detected by the controller as soon as the power supply is connected. The photocell can be retrospectively reprogrammed.

Unwanted photocells must be disconnected before the power supply is connected, otherwise the controller will detect them.

Level 8 – System settings

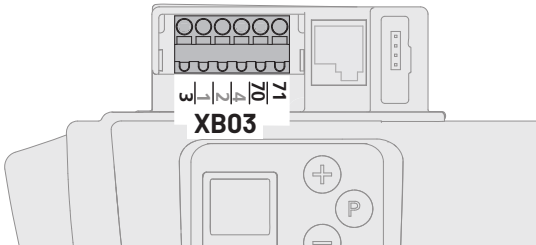
Menu 1 – Photocell

1	 Operation without photocell
2	2-wire photocell (Connection XB03 – terminal 70/71), Gate movement CLOSE: Gate reversal extended

3.5.15 4-wire gate frame photocells (XB03)

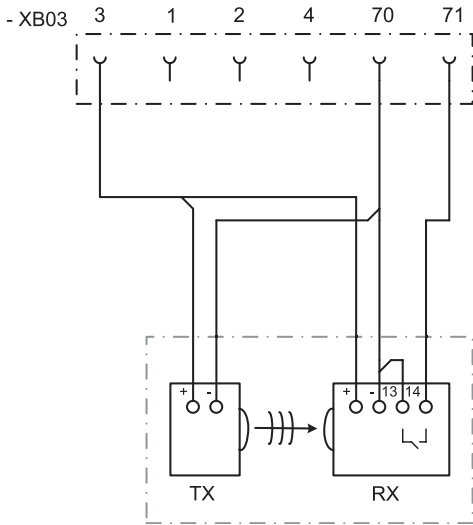
Possible function:
Contactless obstacle detection in CLOSE direction

3.5.15 / 1



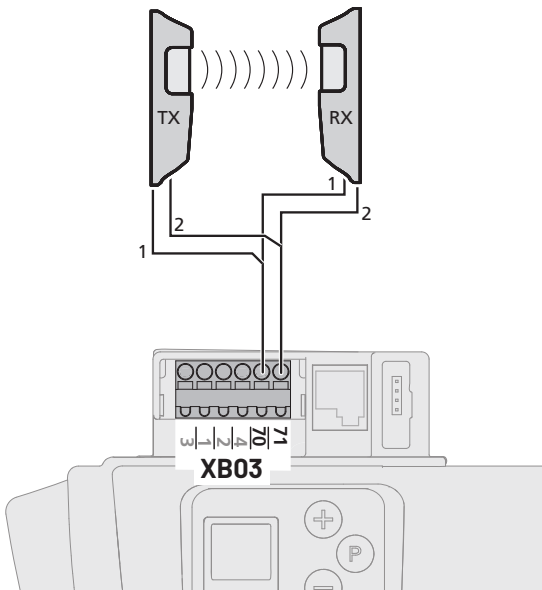
3.5.15 / 2

M19E010e



3	24 V DC / max. 50 mA
70	GND
71	Photocell
RX	Photocell receiver
TX	Photocell transmitter

3.5.15 / 3



A connected photocell is automatically detected by the controller as soon as the power supply is connected. The photocell can be retrospectively reprogrammed. Unwanted photocells must be disconnected before the power supply is connected, otherwise the controller will detect them. The position of a frame photocell is automatically learnt when programming the CLOSE position. If the position of the frame photocell is not detected correctly, it can be manually corrected in the special programming.

Level 8 – System settings

The following menus and functions are only accessible for qualified specialist personnel.

Gate reversal brief:
The drive system briefly moves the gate in the opposite direction to release an obstacle.

Gate reversal extended:
The drive system moves the gate to the OPEN gate position.

Level 8 – System settings

Menu 1 – Photocell

1	 Operation without photocell
2	2-wire photocell (Connection XB03 - terminal 70/71), Gate movement CLOSE: Gate reversal extended

Menü 10 – Position of the frame photocell

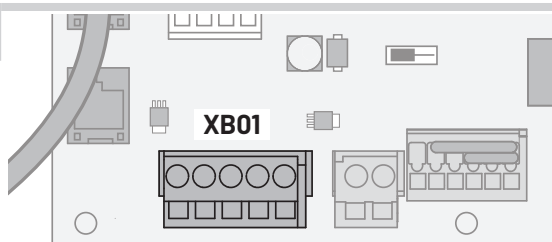
The position of the frame photocell can be manually set if necessary.
Setting with button + (OPEN) and – (CLOSE).

3.5.16 4-wire photocell connection (XB01)

Possible function:

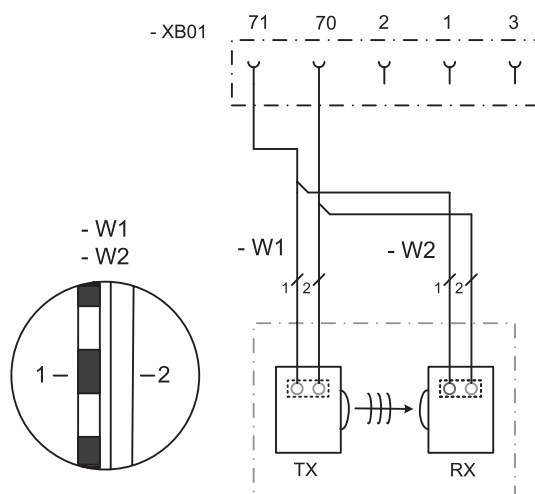
Contactless obstacle detection in CLOSE direction

3.5.16 / 1



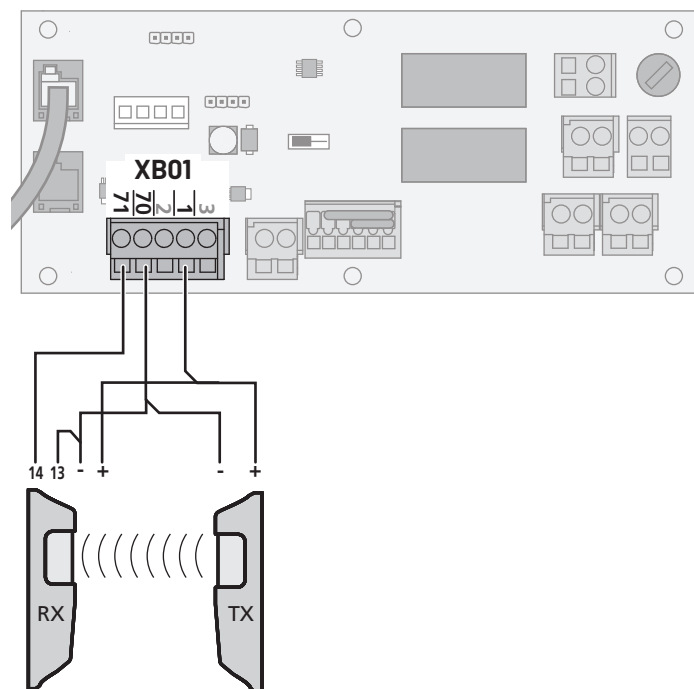
3.5.16 / 2

M19E011e



1	24 V DC / max. 50 mA
70	GND
71	Photocell
RX	Photocell receiver
TX	Photocell transmitter

3.5.16 / 3



A connected photocell is automatically detected by the controller as soon as the power supply is connected. The photocell can be retrospectively reprogrammed.

Unwanted photocells must be disconnected before the power supply is connected, otherwise the controller will detect them.

Level 8 – System settings

Menu 1 – Photocell

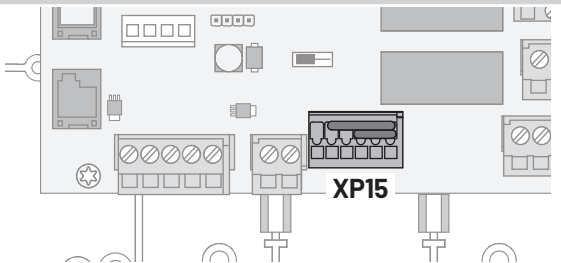
1	 Operation without photocell
2	2-wire photocell (Connection XB03 – terminal 70/71), Gate movement CLOSE: Gate reversal extended

3.5.17 Personnel door contact connection (XP15)

- Product examples:
- Personnel door contact opener (N.C.)
 - Personnel door contact 8K2

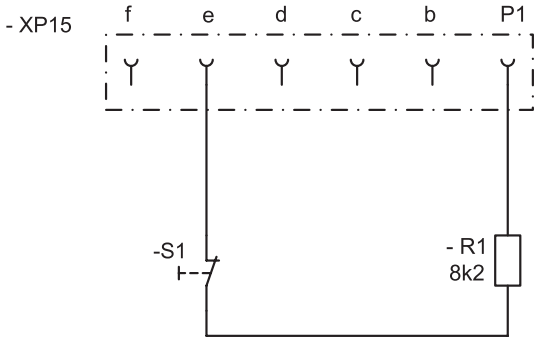
Possible function:
Personnel door safety feature

3.5.17 / 1



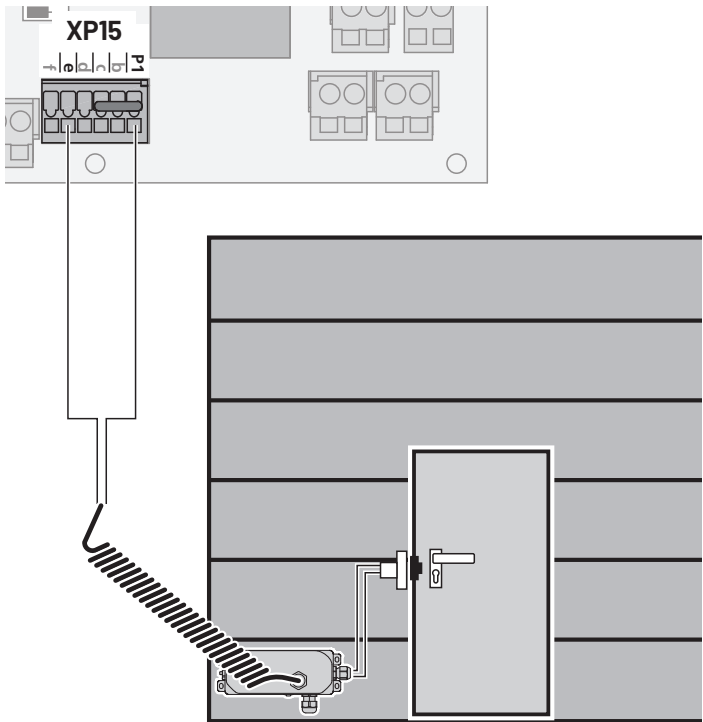
3.5.17 / 2

M19E012b



e	Holding circuit
P1	GND
R1	Resistor 8K2
S1	Personnel door contact

3.5.17 / 3



If a personnel door contact with an integrated 8K2 resistor is connected, the resistor installed on the terminal at the factory must be removed. In every other case, the resistance installed in the terminal must remain.

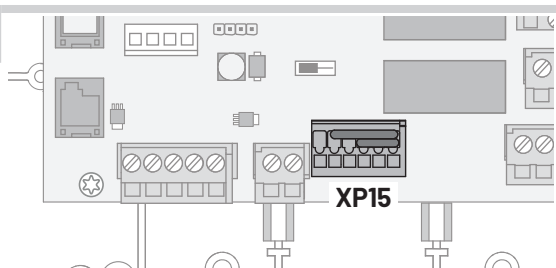
After connecting the accessory and the subsequent mains On, the controller automatically detects the accessory. The gate must be closed so that the personnel door contact can be correctly detected.

3.5.18 Contact bar connection 8K2 (XP15)

Possible function:

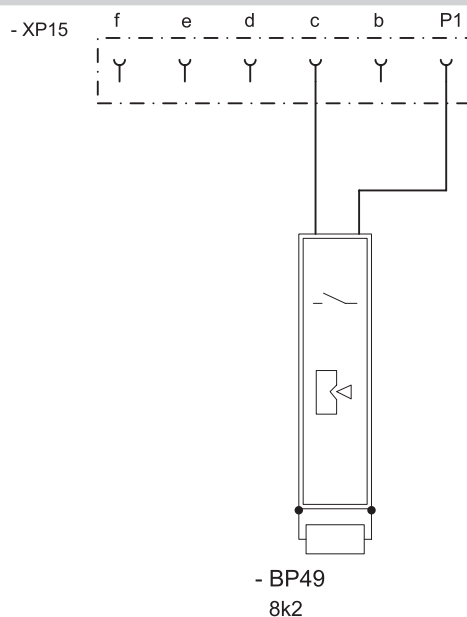
Obstacle detection in CLOSED direction

3.5.18 / 1



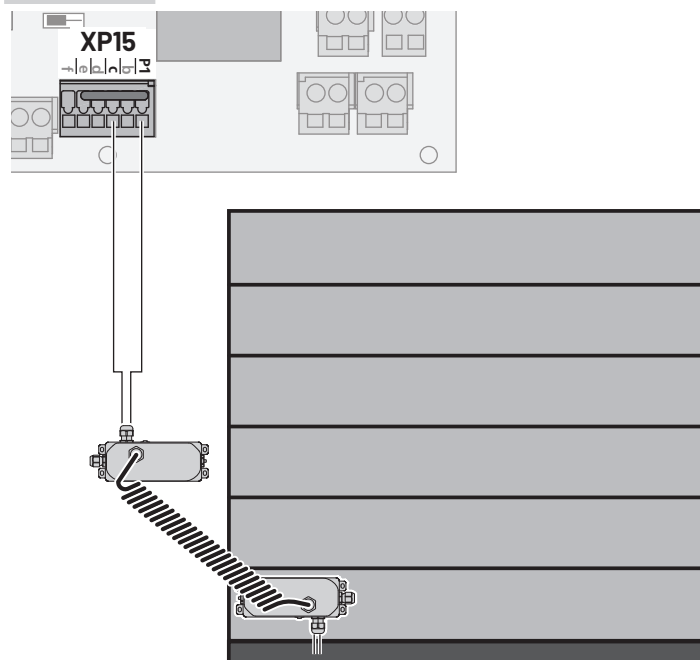
3.5.18 / 2

M19E012b



c	Contact bar
P1	GND
BP49	Contact bar 8K2

3.5.18 / 3



If accessories are connected, the resistor installed on the terminal at the factory must be removed.

In every other case, the resistance installed in the terminal must remain.

After connecting the accessory and the subsequent mains On, the controller automatically detects the accessory.

Level 8 – System settings

The following menus and functions are only accessible for qualified specialist personnel.

Gate reversal brief:

The drive system briefly moves the gate in the opposite direction to release an obstacle.

Gate reversal extended:

The drive system moves the gate to the OPEN gate position.

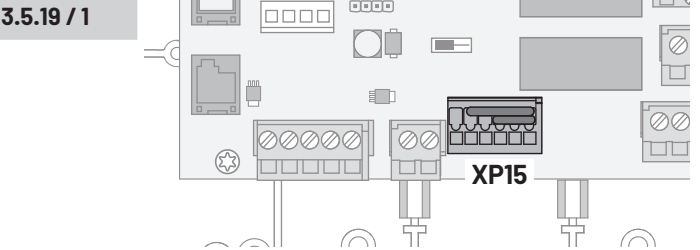
Menu 2 – Closing edge safety device

Gate movement OPEN changes the function of an optionally connected expansion module EM 183 OPEN.

1	 Gate movement OPEN: Gate reversal brief Gate movement CLOSE: Gate reversal brief
2	Gate movement OPEN: Gate reversal brief Gate movement CLOSE: Gate reversal extended
3	Gate movement OPEN: Gate reversal extended Gate movement CLOSE: Gate reversal brief
4	Gate movement OPEN: Gate reversal extended Gate movement CLOSE: Gate reversal extended

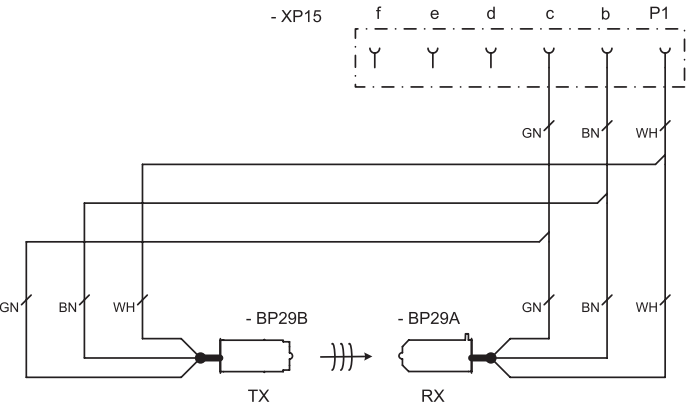
3.5.19 Opto-sensors connection OSE (XP15)

Possible function:
Obstacle detection in CLOSED direction



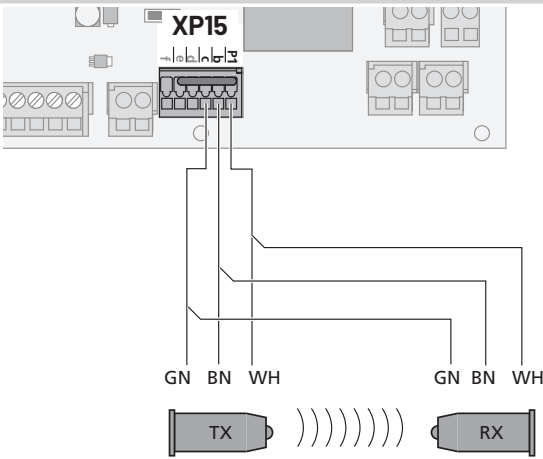
3.5.19 / 2

M19E012b



b	10 to 16 V DC
c	Opto-sensor
P1	GND
BP29A	Opto-sensor receiver (RX)
BP29B	Opto-sensor transmitter (TX)

3.5.19 / 3



If accessories are connected, the resistor installed on the terminal at the factory must be removed. In every other case, the resistance installed in the terminal must remain.

After connecting the accessory and the subsequent mains On, the controller automatically detects the accessory.

Level 8 – System settings

The following menus and functions are only accessible for qualified specialist personnel.

Gate reversal brief:
The drive system briefly moves the gate in the opposite direction to release an obstacle.

Gate reversal extended:
The drive system moves the gate to the OPEN gate position.

Menu 2 – Closing edge safety device

Gate movement OPEN changes the function of an optionally connected expansion module EM 183 OPEN.

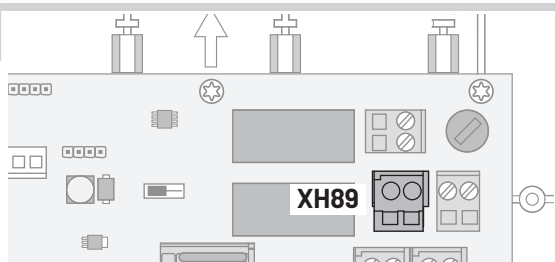
1	Gate movement OPEN: Gate reversal brief Gate movement CLOSE: Gate reversal brief
2	Gate movement OPEN: Gate reversal brief Gate movement CLOSE: Gate reversal extended
3	Gate movement OPEN: Gate reversal extended Gate movement CLOSE: Gate reversal brief
4	Gate movement OPEN: Gate reversal extended Gate movement CLOSE: Gate reversal extended

3.5.20 Signal light connection 230 V AC (XH89)

Possible function:

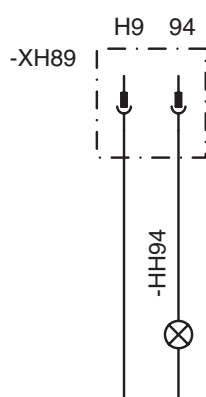
- Flashing during gate movement and approach warning

3.5.20 / 1



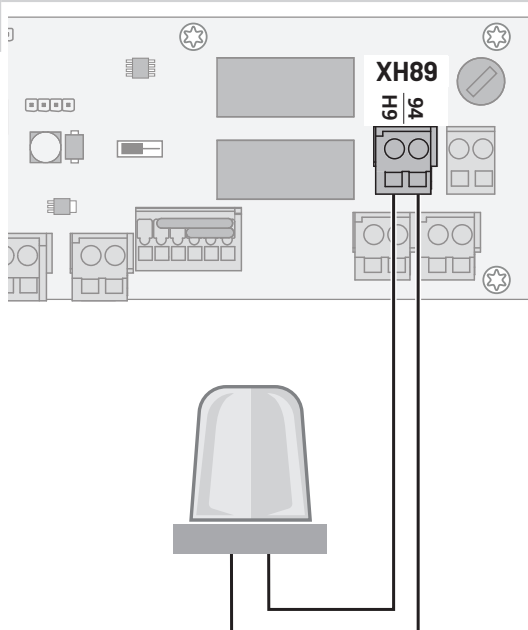
3.5.20 / 2

M10E022



94	Make contact N.O. (N)
H9	Common connection, configured with 230 V~ (L1)
HH94	Signal light 230 V~

3.5.20 / 3



3.5.21 Signal light or lamp connection 230 V AC (XH19A / XH19B - relay)

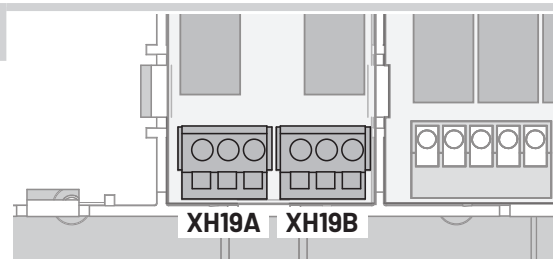
Possible signal light functions:

- Flashing or illumination in case of gate movement as a warning
- Illumination in case of fault

Possible lamp functions:

- Flashing in case of gate movement as a warning (RED/YELLOW)
- Illumination in case of CLOSED limit position as a warning (RED)
- Illumination at OPEN limit position as authorisation (GREEN)

3.5.21 / 1



ATTENTION!

Risk of material damage due to excessively high contact load!

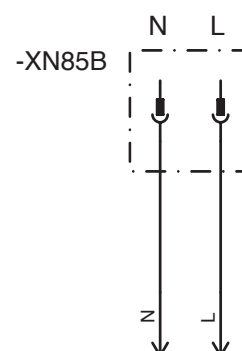
Voltage that is too high can destroy the circuit board.

- Ensure that the contact load of the connection is maintained (max. 230 V / 6 A).

The signal light or lamp power supply may be implemented by the client or via the XN85B connection.

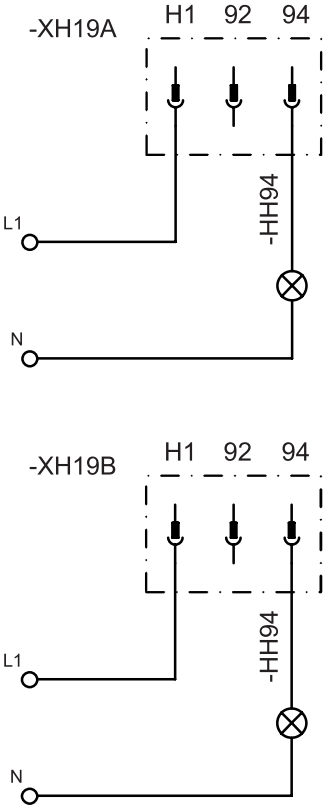
3.5.21 / 2

M10E022



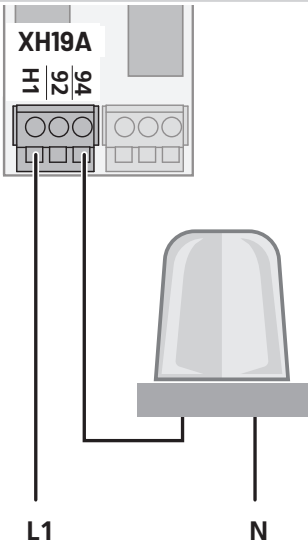
3.5.21 / 3

M09E028a

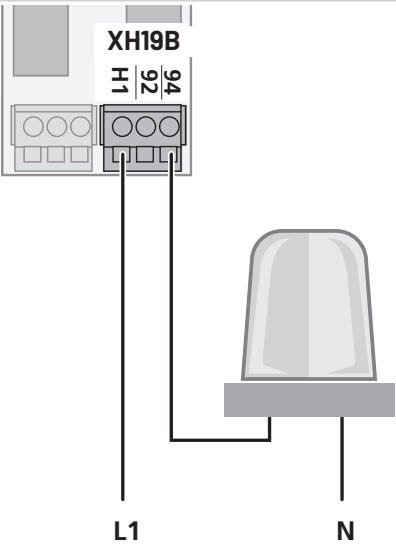


92	Break contact N.C.
94	Make contact N.O.
H1	Shared connection, potential-free
HH94	Signal light 230 V~
L1	Customer's supply voltage
N	Customer's supply voltage

3.5.21 / 4



3.5.21 / 5



Level 1 – Basic functions

Menu 5/6 – **Relay output (XH19A/XH19B)**
(only with connected and programmable and visible relay expansion module)

1	Relay OFF
2	 Signal light (available / not available) → "Level 3, Menu 7 - Signal light"
3	Gate position OPEN
4	Gate position CLOSED
5	Intermediate position OPEN
6	Intermediate position CLOSED

Level 3 – Automatic closing

The following menus and functions are only accessible for qualified specialist personnel.

Menu 7 – **Signal light**

1	 Gate movement / warning: flashing Gate standstill: Off (energy saving)
2	Gate movement / warning: illuminated Gate standstill: Off (energy saving)
3	Gate movement / warning: flashing Gate standstill: flashing
4	Gate movement / warning: illuminated Gate standstill: illuminated
5	Gate movement / warning: flashing Gate standstill: illuminated
6	Gate movement / warning: illuminated Gate standstill: flashing

3.5.22 Signal light or lamp connection 24 V DC (XH19A / XH19B – relay)

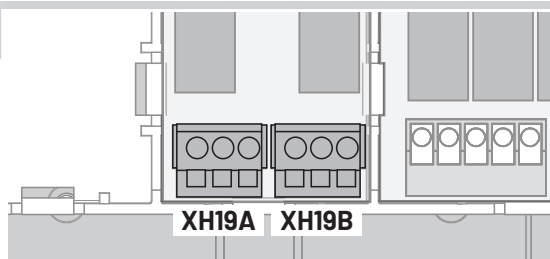
Possible signal light functions:

- Flashing or illumination in case of gate movement as a warning
- Illumination in case of fault

Possible lamp functions:

- Flashing in case of gate movement as a warning (RED/YELLOW)
- Illumination in case of CLOSED limit position as a warning (RED)
- Illumination at OPEN limit position as authorisation (GREEN)

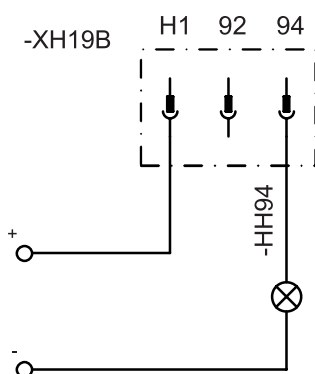
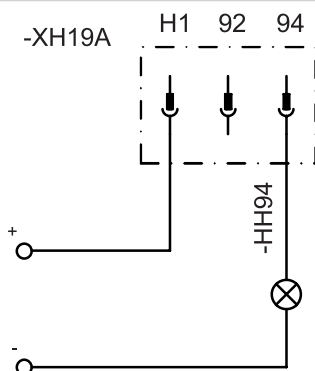
3.5.22 / 1



The signal light or lamp power supply is implemented via the included power adapter.

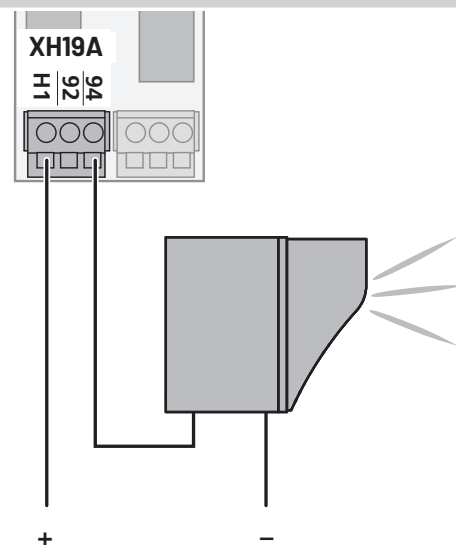
3.5.22 / 2

M09E028a

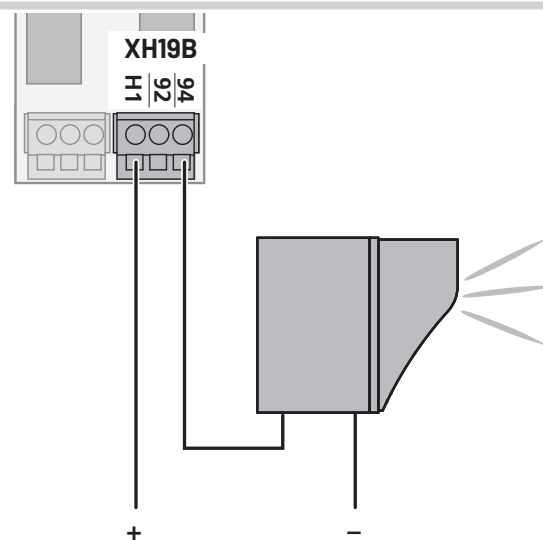


92	Break contact N.C.
94	Make contact N.O.
H1	Shared connection, potential-free
HH94	Signal lamp 24 V DC
+	Supply voltage
-	Supply voltage

3.5.22 / 3



3.5.22 / 4



Level 1 – Basic functions

Menu 5/6 – Relay output (XH19A/XH19B)

(only with connected and programmable and visible relay expansion module)

1	Relay OFF
2	 Signal light (available / not available) → "Level 3, Menu 7 – Signal light"
3	Gate position OPEN
4	Gate position CLOSED
5	Intermediate position OPEN
6	Intermediate position CLOSED

Level 3 – Automatic closing

The following menus and functions are only accessible for qualified specialist personnel.

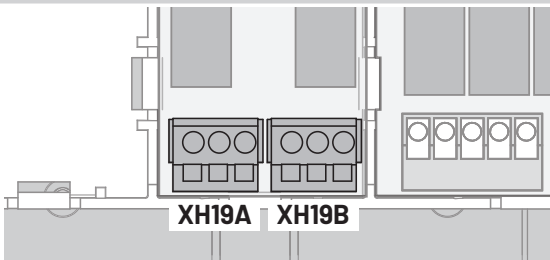
Menu 7 – Signal light

1	 Gate movement / warning: flashing Gate standstill: Off (energy saving)
2	Gate movement / warning: illuminated Gate standstill: Off (energy saving)
3	Gate movement / warning: flashing Gate standstill: flashing
4	Gate movement / warning: illuminated Gate standstill: illuminated
5	Gate movement / warning: flashing Gate standstill: illuminated
6	Gate movement / warning: illuminated Gate standstill: flashing

3.5.23 Lighting connection 230 V AC
(XH19A / XH19B – relay)

Possible function:
– Lighting for a duration of 180 s (adjustable)

3.5.23 / 1



 ATTENTION!

Risk of material damage due to excessively high contact load!

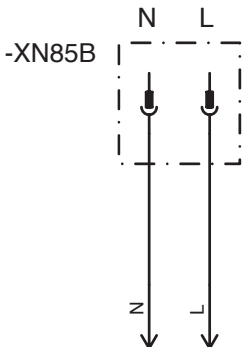
Voltage that is too high can destroy the circuit board.

- Ensure that the contact load of the connection is maintained (max. 230 V / 6 A).

The signal light or lamp power supply may be implemented by the client or via the XN85B connection.

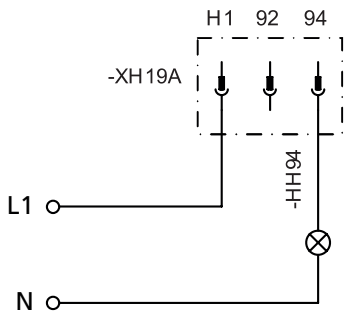
3.5.23 / 2

M10E022



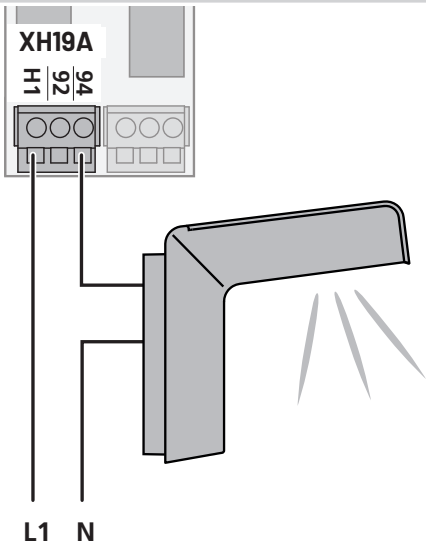
3.5.23 / 3

M09E028



92	Break contact N.C.
94	Make contact N.O.
H1	shared connection, potential-free
L1	Customer's supply voltage
N	Customer's supply voltage
HH94	Signal light 230 V~

3.5.23 / 4



Level 1 – Basic functions

Menu 5 – Relay output

(only with connected and programmable and visible relay expansion module)

8	Lighting time → "Level 5, Menu 4 - Lighting time"
---	--

3.5.24 Stairway light-timer connection (XH14)

Possible function:

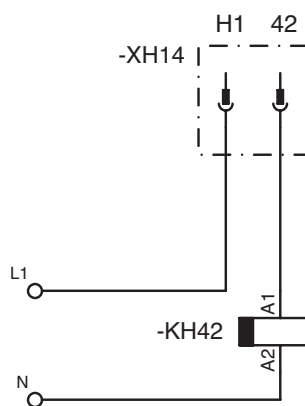
- Wipe pulse of 1 second for activation of a time relay for the lighting

3.5.24 / 1



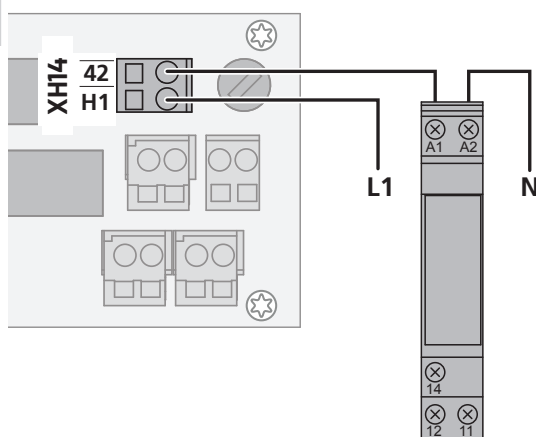
3.5.24 / 2

M10E022



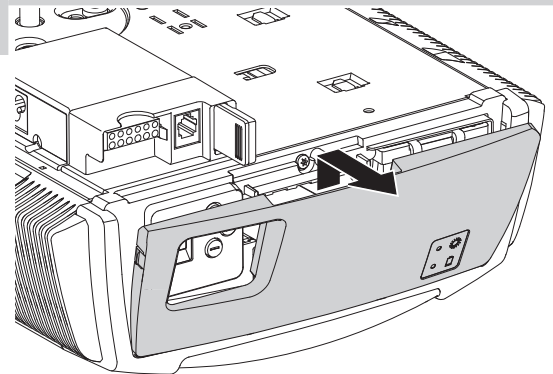
42	Wipe pulse 1 second
H1	shared connection, potential-free
KH42	LED lighting time relay
L1	customer's supply voltage
N	customer's supply voltage

3.5.24 / 3



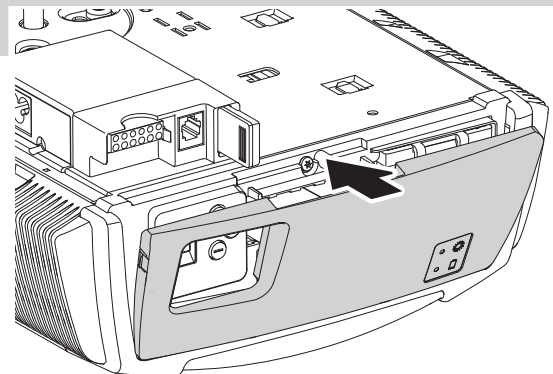
3.5.25 Connection of XN70 and XW81

3.5.25 / 1



 For a description of the connection element installation, refer to separate documentation.

3.5.25 / 2



3.6 Track controls

3.6.1 Entry/exit button connection (XB53A)

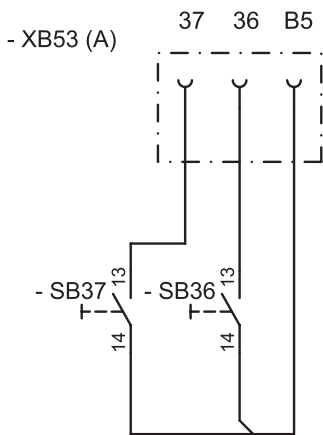
Possible function:
- Entry/exit request

3.6.1 / 1



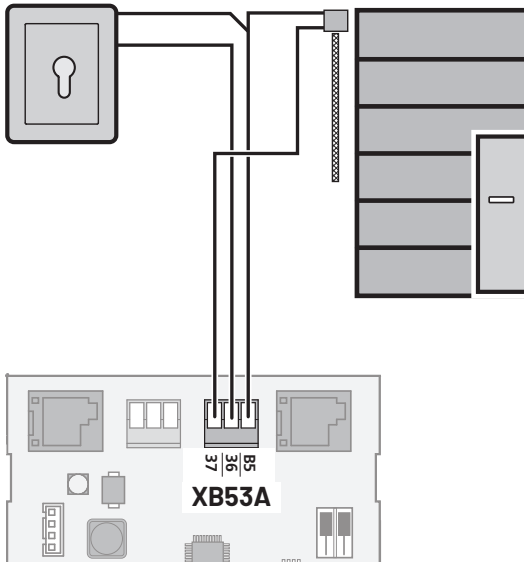
3.6.1 / 2

M09E028b



36	Entry request
37	Exit request
B5	Share connection
SB36	Entry button
SB37	Exit button

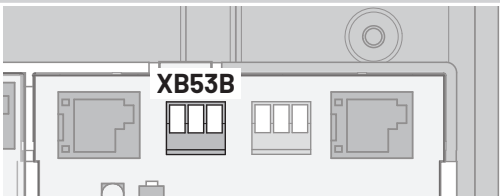
3.6.1 / 3



3.6.2 Special functions button connection (XB53B)

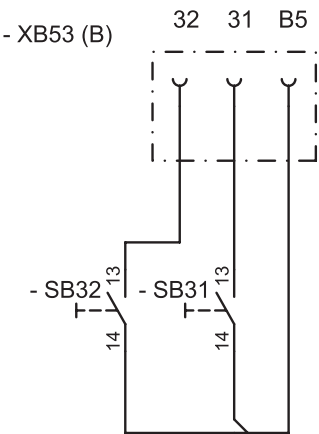
Possible functions:
- Entry/exit master function - switch contact
- Automatic - switch contact

3.6.2 / 1



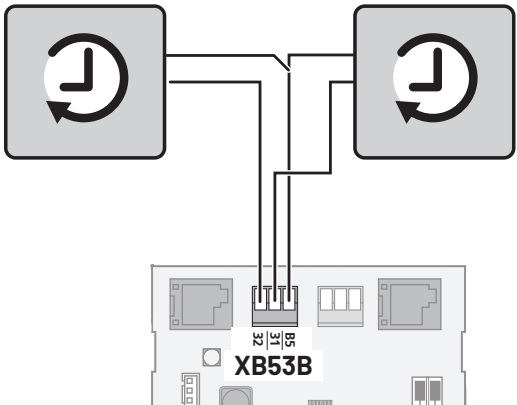
3.6.2 / 2

M09E028b



31	Entry/exit master function
32	ON/OFF automatic function
B5	Share connection
SB31	Master function switch contact Entry/exit
SB32	Switch contact ON/OFF automatic function

3.6.2 / 3



3.6.3 Lamps for entry/exit connection (XH13)

Possible functions:

- Entry lamp:
 - Glows RED during movement, when stopped between limit positions, during advanced warning time, and during the green phase for exit.
 - Glows GREEN if gate is open and entry authorised
- Exit lamp:
 - Glows RED during movement, when stopped between limit positions, during advanced warning time, and during the green phase for entry.
 - Glows GREEN if gate is open and exit authorised

(Depending on programming)

3.6.3 / 1



ATTENTION!

Risk of material damage due to excessively high contact load!

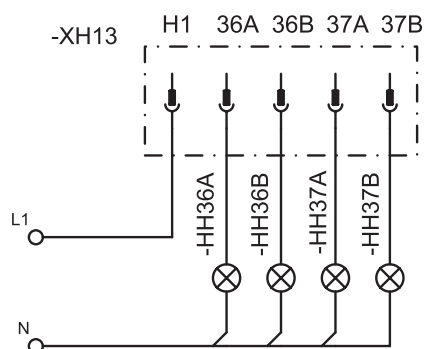
Voltage that is too high can destroy the circuit board.

- Ensure that the contact load of the connection is maintained (max. 230 V / 6 A).

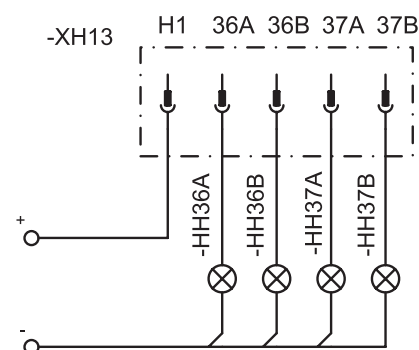
3.6.3 / 2

230 V AC

M09E028c

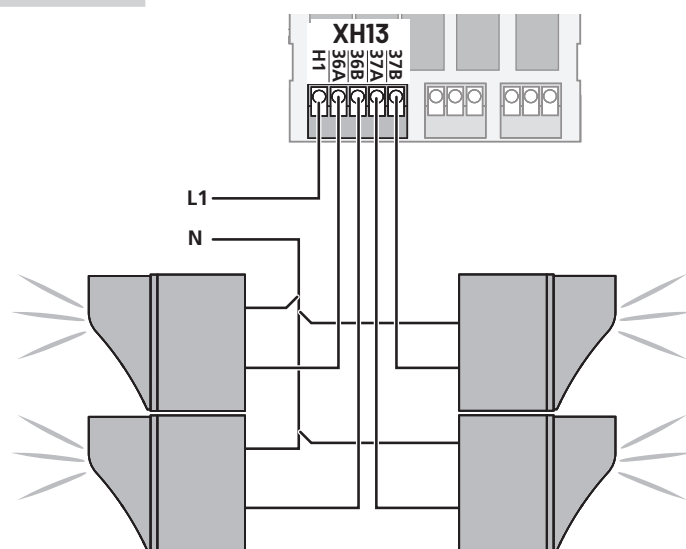


24 V DC



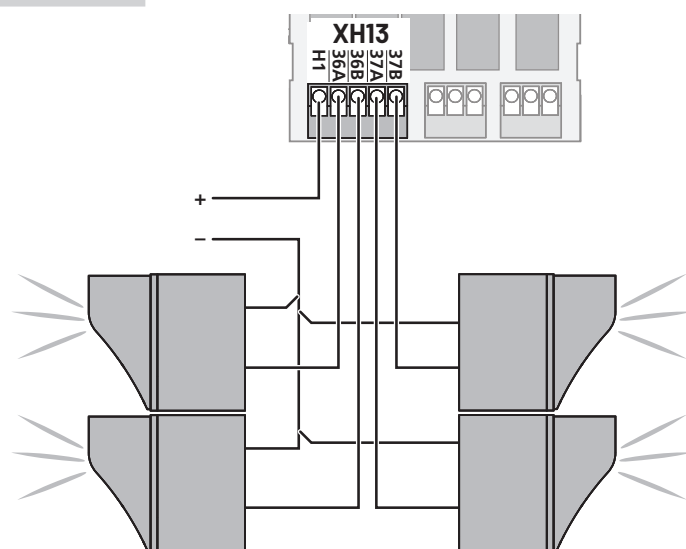
3.6.3 / 3

230 V AC



3.6.3 / 4

24 V DC



The signal light or lamp power supply may be implemented by the client, via the XN85B (230 V AC) connection, or via the included power adapter (24 V DC).

3.6.4 Entry/exit signal lamp connection (XH19A)

Possible function:
– Flashing during gate movement and approach warning

3.6.4 / 1



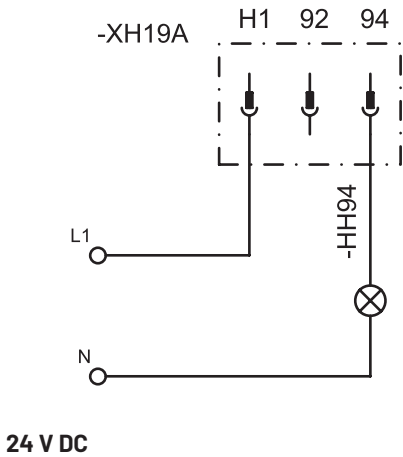
 ATTENTION!

Risk of material damage due to excessively high contact load!
Voltage that is too high can destroy the circuit board.

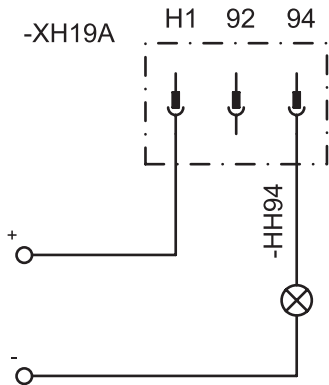
- Ensure that the contact load of the connection is maintained (max. 230 V / 6 A).

3.6.4 / 2 230 V AC

M09E028c

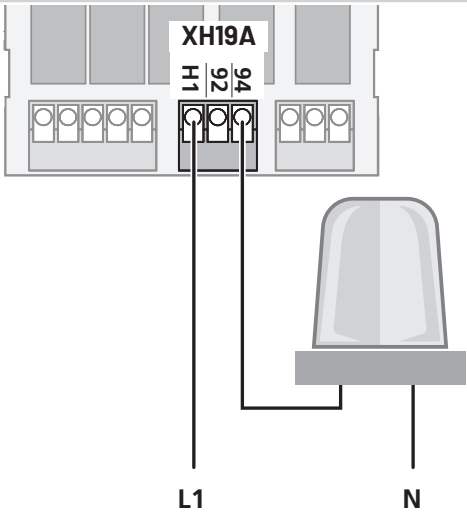


24 V DC

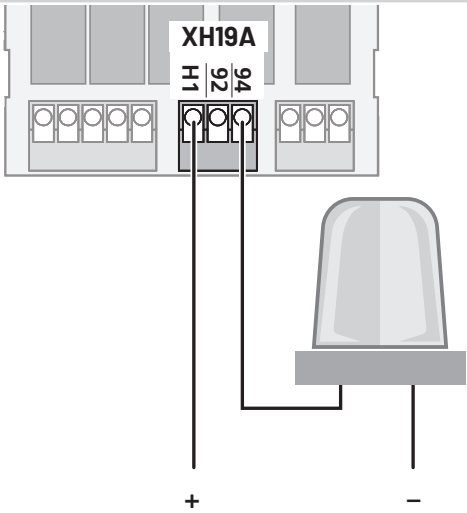


H1	Shared connection, potential-free
92	Break contact
94	Make contact N.O.
HH94	Customer's signal light
L1 / +	Customer's supply voltage
N / -	Customer's supply voltage

3.6.4 / 3
230 V AC



3.6.4 / 4
24 V DC



The signal light or lamp power supply may be implemented by the client, via the XN85B (230 V AC) connection, or via the included power adapter (24 V DC).

Level 3 – Automatic closing

The following menus and functions are only accessible for qualified specialist personnel.

Menu 6 – Relay output expansion module (XH19A - Track controls)

1	Signal light (available / not available) → "Level 3, Menu 7 - Signal light"
2	Gate position OPEN
3	Gate position CLOSED
4	Intermediate position OPEN
5	Intermediate position CLOSED
6	Drive system starts (wipe pulse 1 second)
7	Fault
8	Lighting time → "Level 5, Menu 4 - Lighting time"
9	Locking release (drive system running)
10	Lock release (drive system starts / wipe pulse 3 seconds)
11	Anti-opening mechanism
12	Radio remote control (relay switches for the duration of the pulse) → "Level 4, Menu 8 - Drive lighting ON / OFF or Relay output"

Menu 7 – Signal light

1	 Gate movement / warning: flashing Gate standstill: Off (energy saving)
2	Gate movement / warning: illuminated Gate standstill: Off (energy saving)
3	Gate movement / warning: flashing Gate standstill: flashing
4	Gate movement / warning: illuminated Gate standstill: illuminated
5	Gate movement / warning: flashing Gate standstill: illuminated
6	Gate movement / warning: illuminated Gate standstill: flashing

3.6.5 Special functions signal lamp connection (XH19B)

Possible function:

- Illumination in case of fault
- Acknowledge an entry/exit command

3.6.5 / 1



ATTENTION!

Risk of material damage due to excessively high contact load!

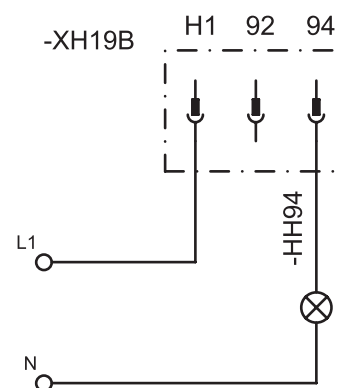
Voltage that is too high can destroy the circuit board.

- Ensure that the contact load of the connection is maintained (max. 230 V / 6 A).

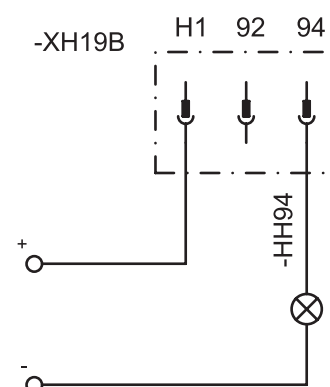
3.6.5 / 2

230 V AC

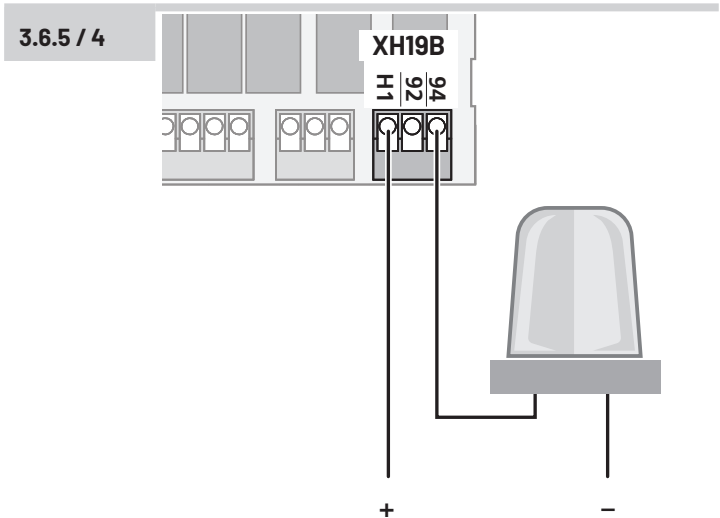
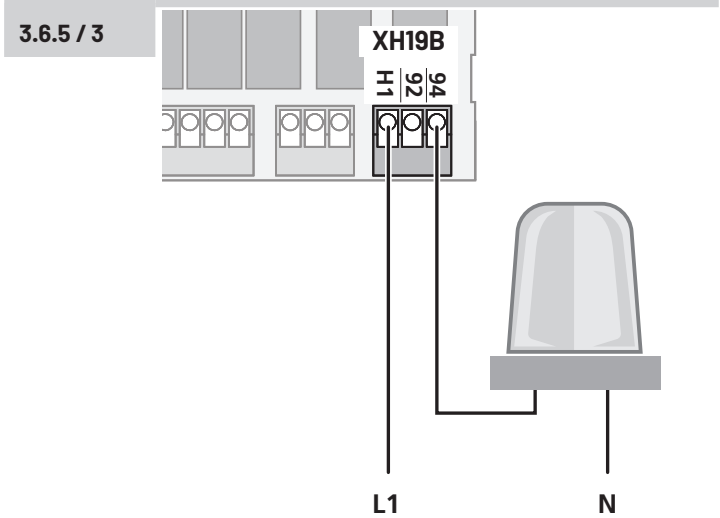
M09E028c



24 V DC



H1	Shared connection, potential-free
92	Break contact
94	Make contact N.O.
HH94	Customer's signal light
L1 / +	Customer's supply voltage
N / -	Customer's supply voltage



The signal light or lamp power supply may be implemented by the client, via the XN85B (230 V AC) connection, or via the included power adapter (24 V DC).

Level 3 – Automatic closing

The following menus and functions are only accessible for qualified specialist personnel.

Menu 8 – Relay output expansion module

1	Error message
2	Each wiping pulse request
3	Entry pulse
4	Exit pulse
5	Locking pulse start

3.6.6 Track controls settings

Level 3 – Automatic closing

The following menus and functions are only accessible for qualified specialist personnel.

When track controls are connected, the button input of the drive or the controls is deactivated.

Button and signal devices must be connected directly to the track controls.

The level 3 programming menu, menu 1 for automatic feed is also deactivated. Depending on the factory settings for the green red phase, the gate may be moved immediately after the network is on.

Menu 2 – Track controls (automatic closing)

The tables in the following must be observed:

- Automatic OFF (SB32)
- Master function (SB31)
- Photocell

Functions without special start pulse

1	 Normal operation with green phase restart. Automatic OFF: A Master function: G Photocell: H
2	Normal operation with green phase cancellation. Automatic OFF: A Master function: G Photocell: I
3	Normal operation with cancellation of green and red phase. Automatic OFF: A Master function: G Photocell: J
4	Normal operation without influencing the times. Automatic OFF: A Master function: G Photocell: K
5	Master mode for entry or exit due to continuous green on the respective side Automatic OFF: B Master function: G Photocell: K or Automatic OFF: C Master function: F Photocell: K
6	Automatic mode change from green phase for entry and exit Automatic OFF: D Master function: G Photocell: K or Automatic OFF: E Master function: G Photocell: K

Level 3 – Automatic closing

The following menus and functions are only accessible for qualified specialist personnel.

Functions with start impulse (if the automatic OFF (SB32) contact is closed, the gate moves to the OPEN position)

7	Normal operation with green phase restart. Automatic OFF: A Master function: G Photocell: H
8	Normal operation with green phase cancellation. Automatic OFF: A Master function: G Photocell: I
9	Normal operation with cancellation of green and red phase. Automatic OFF: A Master function: G Photocell: J
10	Normal operation without influencing the times. Automatic OFF: A Master function: G Photocell: K
11	Master mode for entry or exit due to continuous green on the respective side Automatic OFF: B Master function: G Photocell: K or Automatic OFF: C Master function: F Photocell: K
12	Automatic mode change from green phase for entry and exit Automatic OFF: D Master function: G Photocell: K or Automatic OFF: E Master function: G Photocell: K

Menu 3 – Opening time / GREEN lamp

1	2 – 250 seconds.  2 seconds
---	---

Menu 4 – Pre-warning time / RED lamp

1	1 – 70 seconds.  1 second
---	---

Level 3 – Automatic closing

The following menus and functions are only accessible for qualified specialist personnel.

Menu 7 – Signal light

1	 Gate movement / warning: flashing Gate standstill: Off (energy saving)
2	Gate movement / warning: illuminated Gate standstill: Off (energy saving)
3	Gate movement / warning: flashing Gate standstill: flashing
4	Gate movement / warning: illuminated Gate standstill: illuminated
5	Gate movement / warning: flashing Gate standstill: illuminated
6	Gate movement / warning: illuminated Gate standstill: flashing

Menu 8 – Relay output expansion module

1	 Error message
2	Each wiping pulse request
3	Entry pulse
4	Exit pulse
5	Locking pulse start

More information about track controls (level 3, menu 2)

Automatic OFF (SB32)

A	Switch contact open: Door closes automatically after expiry of times Closed switch contact: Door does not close automatically after expiry of times
B	Switch contact open: Master function switched off (operation like parameter 3)
C	Closed switch contact: Master function due to continuous green
D	Switch contact open: automatic alternate mode switched off (operation like parameter 3)
E	Closed switch contact: automatic alternate mode

Master function (SB31)

F	Switch contact open: Exit continuous green Closed switch contact: Entry continuous green
G	No influence on the function

Photocell

H	Green phase / door open time restarts after passing by the photocell
I	Green phase / door open time ends after passing by the photocell
J	Green and red phase / door open and door closed time ends after passing by the photocell
K	No influence on the times

Level 4 – Radio programming

Menu 6 – Entry request

Hand-held transmitter display flashing slowly -> Press hand-held transmitter button -> Hand-held transmitter display flashes quickly

Menu 7 – Exit request

Hand-held transmitter display flashing slowly -> Press hand-held transmitter button -> Hand-held transmitter display flashes quickly

3.6.7 Oncoming traffic controls sample settings

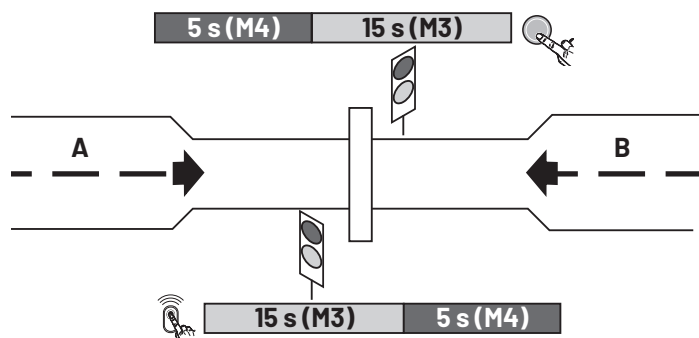
Gate system and entries (factory settings)

- The lamps and the buttons for entry and exit are located directly next to the gate.
- The green phase time for entry and exit is the same.
- The red phase time for entry and exit is the same.
- The green phase should be extended if a photocell is passed.

Parameter description:

- Operation of oncoming traffic controls with extension of green phase after driving by the photocell (parameter 1).
- Times: Entry and exit green phase = 15 sec.
Entry and exit red phase = 5 sec.

3.6.7 / 1



Legend:

- A Entry
- B Exit
- M Menu
- s Seconds

3.7 Completing the installation

- Attach permanent warning labels indicating risk of pinching at the relevant places.
- Ensure that no part of the gate extends across public footways or roads when the installation is complete.

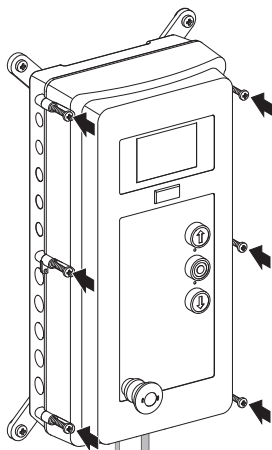
ATTENTION!

Danger of physical damage due to incorrect assembly of the controls!

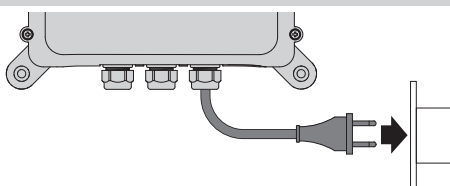
The controls or the cable could be damaged if the cable is clamped.

- Provide the openings with the matching sealing plugs.
- Make sure that the cables are seated correctly in the openings.
- Make sure that the plug-in cable openings are seated correctly in the controls.
- Make sure that the cables are not clamped by closing the lid.

3.7 / 1



3.7 / 2



After inserting the mains connection, the controls search for and learn new MS bus modules. In this case, a counter that counts down from 24 hours appears on the LCD of the drive.

4. Commissioning

4.1 Safety instructions for commissioning

WARNING!

Danger due to a failure to observe the commissioning instructions!

This chapter contains important information for the safe commissioning of the product.

- Read this chapter through carefully before commissioning.
- Follow the safety instructions.
- Perform commissioning as described.

Commissioning must be performed by qualified specialist personnel.

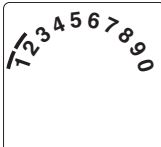
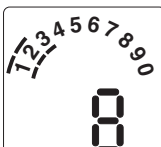
→ "1.2.2 Specialist personnel"

Power-operated windows, doors and gates must be inspected by qualified specialist personnel before first commissioning and as required, although at least once a year, with a suitable closing force measuring device (written inspection records must be kept). After initial operation, the persons responsible for operating the gate system, or their representatives must be familiarised with the use of the system.

- Children must not play with the gate control unit or the hand-held transmitter.
- No persons or objects are permitted inside the operating range of the gate.
- Before passing through the gate opening, make sure the gate is in the OPEN gate position.
- All available emergency command devices must be tested.
- Pay attention to any parts of the gate system that could cause crushing or shearing damage.
- Never insert your hands into a running gate, the guide rails or moving parts.
- The EN 13241-1 regulations ("Doors and gates - Product standard") must be observed.

4.2 Overview of the controller

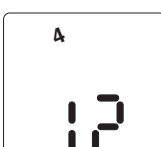
Control elements	
	LCD display
	Drive gate in OPEN direction, Increase parameter
	Drive gate in CLOSED direction, Reduce parameter
	Start programming, confirm and save values
Legend	
	Display flashing
	Display illuminated
Display	Function / element
	Ready for operation
	Gate drives CLOSED
	Gate position CLOSED
	Gate drives OPEN
	Gate position OPEN
	Error message / maintenance indication in gate position CLOSED
	Error message / maintenance indication in gate position OPEN
	Photocell or closing edge safety device actuated
	Remote control actuated
	External button pressed or holding circuit open

	Status indication (Example display 3 – Battery backup connected) → “4.3 Status indication”
	Display of the levels (example: Level 2)
	Display of the menus and parameters (Example: Menu 3, parameter 8)

Minute display

	Times of more than one minute are displayed in minutes and seconds. Example: 1.2 = 1 minute + 20 seconds = 80 seconds
---	--

4.3 Status indication

	Battery backup connected (optional)
	Pre-warning time display (only with programmed automatic closing). Times of more than one minute are displayed in minutes and seconds. Example: 1.2 = 1 minute + 20 seconds = 80 seconds

4.4 Factory settings

The drive can be restored to the factory settings with a reset.
→ “Level 1, Menu 8 – RESET”

4.5 Quick programming

It is necessary to perform quick programming for correct commissioning of the drive system and after a reset.

Preconditions:

- The gate is in the CLOSED gate position.
- The guide carriage is engaged.
- "5. Operation"

If no button is pressed for 120 seconds in programming mode, the controller changes back to operating mode.
A corresponding error number is displayed.

→ "10. Troubleshooting"

- Perform the quick programming.

- ✓ It is necessary to perform a functional test after quick programming.

→ "4.6 Function test"

ATTENTION!

Danger due to damaging the motor unit as a result of a collision with the guide carriage!

When setting the OPEN gate position, the guide carriage must not be driven to the end position at maximum speed!

- Carefully drive the gate to the OPEN position at low speed.

Quick programming

1. Programming the gate position OPEN

Controller is in operating mode.	 
 P > 3 sec. < 10 sec.: Start of quick programming.	
 Drive gate to OPEN position.	
 Save OPEN gate position.	

Quick programming

2. Programming the gate position CLOSED

 Drive gate to CLOSED position.	
 Save gate position CLOSED.	

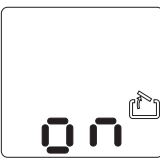
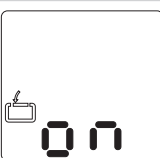
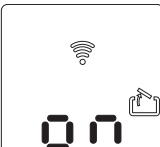
3. Programming the remote control (XB72)

 Only with bi-linked version: Actuate the programming button on the hand-held transmitter.	
 Actuate hand-held transmitter.	
 Release hand-held transmitter.	
 Save remote control. End of quick programming.	
Controller is in operating mode.	 

If track controls are connected, the remote controls in level 4, menu 5 and 6 must be programmed.

4.6 Function test

4.6.1 Checking the drive functions

1.	Controller is in operating mode.	
2.	 The gate must open and drive to the saved gate position OPEN.	
3.	 The gate must close and drive to the saved gate position CLOSED.	
4.	 The drive system must drive the gate in the OPEN or CLOSED direction.	
5.	 The drive system must stop.	
6.	 The drive system runs in the opposite direction.	

4.6.2 Teaching run for the drive force

The drive system learns the maximum drive force required during the first six runs after setting the gate positions.

- Run the drive system (with gate engaged) from the OPEN gate position to the CLOSED gate position and back three times without interruption.

4.6.3 Checking the automatic cut-out

WARNING!

Risk of injury due to operation without automatic cut-out!

The drive is equipped with an automatic cut-out for personal protection.

Only ever operate the product if the correct function of the automatic cut-out is guaranteed.

- Test the automatic cut-out with OPEN and CLOSE.
- Commission a qualified specialist with testing the driving power using a force tester designed for this purpose.

Automatic cut-out OPEN

- Load the gate in the centre of the lower edge with a mass of 20 kg during the gate run:
The gate must stop immediately.

Automatic cut-out CLOSE

- Place a 50 mm tall obstacle on the ground.
- Drive the gate over the obstacle:
The drive system must stop and reverse upon encountering the obstacle.

The settings for the drive forces OPEN and CLOSE are retained if the mains power is interrupted.

Only after a reset are the parameters restored to the factory settings.

→ "Level 1, Menu 8 - RESET"

4.6.4 Checking the photocell

Photocell

- Check all photocells individually by triggering the function.
- Check all connected photocells directly in front of the CLOSED gate position.

Peculiarities with gate frame photocells

- The function of a connected frame photocell must be realised above the installation position. Beneath the installation position, the function is suppressed by the controller.
- If multiple photocells are connected, all photocells react in the same way with a possible frame photocell.

4.6.5 Check the closing edge safeguard

- Check all closing edges individually by triggering the function.

4.6.6 Check the personnel door contact

- Open the personnel door.
- Move the gate: The drive system is not permitted to move.

4.7 Special programming

WARNING!

Risk of injury due to incorrect gate force setting!

In order to guarantee personal protection, the gate forces must comply with specified limit values. If the parameters are changed, these limit values could be exceeded. After changing the settings, it is therefore necessary to check the gate forces to guarantee safe operation.

- Test the automatic cut-out.
- "4.6.3 Checking the automatic cut-out"

After a reset, all parameters are reset to the factory settings. Connected and functional safety elements are redetected after the reset.

Connected further accessories must be reprogrammed after a reset.

In order to guarantee faultless operation of the controller:

- Reprogram all desired functions.
- Teach the remote control again.
- Run the drive system into the gate position OPEN and CLOSED once.

A connected photocell is automatically detected by the controller as soon as the power supply is connected. The photocell can be retrospectively reprogrammed.

Unwanted photocells must be disconnected before the power supply is connected, otherwise the controller will detect them.

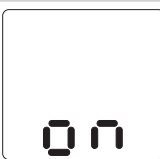
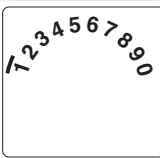
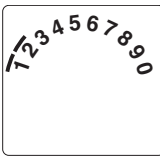
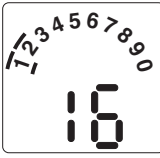
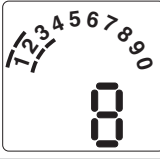
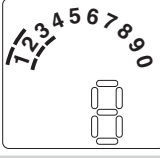
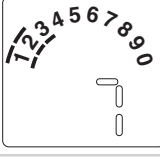
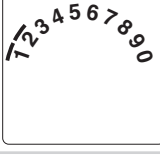
→ "3.5.14 2-wire photocell connection (XB01)"

- ✓ It is necessary to perform a functional test after changes in programming mode.

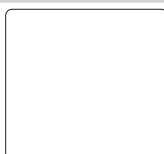
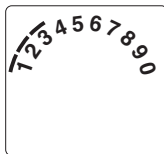
→ "4.6 Function test"

4.7.1 Programming the special functions

Programming sequence

1.	Controller is in operating mode.	
2.	 P > 10 sec.: Start of programming the expanded drive functions. Display of the levels.	
3.	  Selection of the desired level (example level 2).	
4.	 Confirmation of the desired level. Display of the first menu and the set parameter.	
5.	  Selection of the desired menu (example menu 3).	
6.	 Confirmation of the desired menu. Display of the set parameter.	
7.	  Change of the parameter.	
8.	 Saving the parameter. The controller switch to the levels view	

Programming sequence		
9.		Selection of the next desired level.
		Continuation of programming.
	or	
		P > 5 sec.: End of programming. All changed parameters are saved.
		Controller is in operating mode.



4.7.2 Overview of the special functions

Level	Menu
1 Basic functions	3 Intermediate position OPEN
	4 Intermediate position CLOSED
	5 Relay output (XH19A - relay)
	6 Relay output (XH19B - relay)
	7 Relay output (XH89)
	8 RESET
2 Drive settings	1 Required drive force OPEN
	2 Required drive force CLOSE
	3 Automatic cut-out OPEN
	4 Automatic cut-out CLOSE
3 Automatic closing	1 Automatic closing
	2 Track controls (automatic closing)
	3 Opening time / GREEN lamp
	4 Pre-warning time / RED lamp
	5 Start-up warning
	6 Relay output expansion module (XH19A - track controls)
	7 Signal light
	8 Relay output expansion module (XH19B - track controls)

Level	Menu
4 Radio programming	2 Intermediate position OPEN
	3 Intermediate position CLOSED
	4 OPEN
	5 CLOSED
	6 Entry request
	7 Exit request
	8 Drive lighting ON / OFF or relay output
5 Special functions	1 Programmable pulse input (terminal 1/2)
	3 Programmable input
	4 Lighting time
	5 Manual programming device
	7 Battery-back-up
6 Variable speed	1 Speed OPEN
	2 Speed soft running OPEN
	3 Soft running position OPEN
	4 Speed CLOSE
	5 Speed smart running CLOSE
	6 Speed soft running CLOSE
	7 Smart running position CLOSE
	8 Soft running position CLOSE
	9 Soft start time OPEN
	10 Soft start time CLOSE
7 Service and maintenance	1 Gate cycle counter
	2 Maintenance counter
	3 Maintenance interval
	8 Reset service and maintenance
	9 Fault indication
8 System settings	1 Photocell
	2 Closing edge safety device
	3 Automatic cut-out function
	4 Operating modes
	5 Function of the direction command device
	6 Function of the pulse command device
	7 Force relief in the GATE CLOSED position (back-jump)
	8 Direction of rotation
	10 Position of the frame photocell

4.7.3 Contents of the special functions

Level 1 – Basic functions

Menu 3 – Intermediate position OPEN

Setting with button + (OPEN) and – (CLOSE).
Closing function is possible with automatic closing.
It is only possible to use the most recently programmed intermediate position.

Menu 4 – Intermediate position CLOSED

Setting with button + (OPEN) and – (CLOSE).
Closing function is not possible with automatic closing.
It is only possible to use the most recently programmed intermediate position.

Menu 5 – Relay output (XH19A – relay)

(only with connected and programmable and visible relay expansion module)

1	Relay off
2	 Signal light (available / not available) → "Level 3, Menu 7 – Signal light"
3	Gate position OPEN
4	Gate position CLOSED
5	Intermediate position OPEN
6	Intermediate position CLOSED
7	Wipe pulse 1 second (drive system starts)
8	Fault
9	Lighting time → "Level 5, Menu 4 – Lighting time"
10	Locking release (drive system running)
11	Maintenance indication
12	Gate running OPEN
13	Gate running CLOSED
14	Radio remote control (relay switches for the duration of the pulse – multi-bit only)
15	Lock release (drive system starts / wipe pulse 3 seconds)
16	Anti-opening mechanism

Level 1 – Basic functions

Menu 6 – Relay output (XH19B – relay)

(only with connected and programmable and visible relay expansion module)

1	Relay off
2	 Signal light (available / not available) → "Level 3, Menu 7 – Signal light"
3	Gate position OPEN
4	Gate position CLOSED
5	Intermediate position OPEN
6	Intermediate position CLOSED
7	Wipe pulse 1 second (drive system starts)
8	Fault
9	Lighting time → "Level 5, Menu 4 – Lighting time"
10	Locking release (drive system running)
11	Maintenance indication
12	Gate running OPEN
13	Gate running CLOSED
14	Radio remote control (relay switches for the duration of the pulse – multi-bit only)
15	Lock release (drive system starts / wipe pulse 3 seconds)
16	Anti-opening mechanism

Level 1 – Basic functions

Menu 7 – Relay output (XH89)

1	 Signal light (available / not available) → "Level 3, Menu 7 – Signal light"
2	Gate position OPEN
3	Gate position CLOSED
4	Intermediate position OPEN
5	Intermediate position CLOSED
6	Drive system starts (wipe pulse 1 second)
7	Fault
8	Lighting time → "Level 5, Menu 4 – Lighting time"
9	Locking release (drive system running)
10	Locking release (drive system stationary)
11	Lock release (drive system starts / wipe pulse 3 seconds)
12	Anti-opening mechanism
13	Radio remote control (relay switches for the duration of the pulse) → "Level 4, Menu 8 – Drive lighting ON / OFF or Relay output"
14	Test pulse for closing edge safety device (relay issues a test pulse and switches for 300 ms)

Menu 8 – RESET

The drive system can be reset to the factory settings.
After a reset of the control or replacement of the
control box, all desired individual settings must be
input again.

1	 No reset
2	Reset control (Connected modules (bus modules, remote control) must be reset separately)
3	Reset remote control (telegrams are deleted)
4	Reset expansion automatic closing → "Level 3 – Automatic closing"
5	Reset only expanded drive functions (apart from gate position OPEN/CLOSE and remote control pulse)
6	Reset safety elements (photocell / hold circuit)
7	Reset bus modules (connected bus modules are taught)

Level 2 – Drive settings

The following menus and functions are only accessible for
qualified specialist personnel.

Menu 1 – Required drive force OPEN

Sensitivity in stages from 1 - 16
(the higher the stage, the higher the driving force).
 8

Menu 2 – Required drive force CLOSE

Sensitivity in stages from 1 - 16
(the higher the stage, the higher the driving force).
 8

Menu 3 – Automatic cut-out OPEN

Sensitivity in stages from 1(OFF) - 16
(the lower the stage, the more sensitive the automatic
cut-out).
 12

Menu 4 – Automatic cut-out CLOSE

Sensitivity in stages from 1(OFF) - 16
(the lower the stage, the more sensitive the automatic
cut-out).
 8

Level 3 – Automatic closing

The following menus and functions are only accessible for qualified specialist personnel.

When track controls are connected, the button input of the drive or the controls is deactivated.

Button and signal devices must be connected directly to the track controls.

The level 3 programming menu, menu 1 for automatic feed is also deactivated. Depending on the factory settings for the green red phase, the gate may be moved immediately after the network is on.

Menu 1 – Automatic closing

With activated automatic closing, the relay output (level 1 / menu 7) can be reprogrammed if necessary (not with visible and programmable track controls expansion module connected).

1	 Deactivated	
2	Open time 15 / pre-warning time 5	Extension of the open time only through pulsing (Button, hand-held transmitter).
3	Open time 30 / Pre-warning time 5	
4	Open time 60 / Pre-warning time 8	
5	Open time 15 / Pre-warning time 5	Cancel the open time after passing the photocell.
6	Open time 30 / Pre-warning time 5	
7	Open time 60 / Pre-warning time 8	
8	Open time endless / Pre-warning time 3	Close after passing the photocell / closing prevention.

Level 3 – Automatic closing

The following menus and functions are only accessible for qualified specialist personnel.

Menu 2 – Track controls (automatic closing)

The tables in the following must be observed:

- Automatic OFF (SB32)
- Master function (SB31)
- Photocell

Functions without special start pulse

1	 Normal operation with green phase restart. Automatic OFF: A Master function: G Photocell: H
2	Normal operation with green phase cancellation. Automatic OFF: A Master function: G Photocell: I
3	Normal operation with cancellation of green and red phase. Automatic OFF: A Master function: G Photocell: J
4	Normal operation without influencing the times. Automatic OFF: A Master function: G Photocell: K
5	Master mode for entry or exit due to continuous green on the respective side Automatic OFF: B Master function: G Photocell: K or Automatic OFF: C Master function: F Photocell: K
6	Automatic mode change from green phase for entry and exit Automatic OFF: D Master function: G Photocell: K or Automatic OFF: E Master function: G Photocell: K

Level 3 – Automatic closing

The following menus and functions are only accessible for qualified specialist personnel.

**Functions with start impulse
(if the automatic OFF (SB32) contact is closed, the
gate moves to the OPEN position)**

7	Normal operation with green phase restart. Automatic OFF: A Master function: G Photocell: H
8	Normal operation with green phase cancellation. Automatic OFF: A Master function: G Photocell: I
9	Normal operation with cancellation of green and red phase. Automatic OFF: A Master function: G Photocell: J
10	Normal operation without influencing the times. Automatic OFF: A Master function: G Photocell: K
11	Master mode for entry or exit due to continuous green on the respective side Automatic OFF: B Master function: G Photocell: K or Automatic OFF: C Master function: F Photocell: K
12	Automatic mode change from green phase for entry and exit Automatic OFF: D Master function: G Photocell: K or Automatic OFF: E Master function: G Photocell: K

Menu 3 – Opening time / GREEN lamp

2 – 250 seconds.
 2 seconds

Menu 4 – Pre-warning time / RED lamp

1 – 70 seconds.
 1 second

Menu 5 – Start-up warning

0 – 7 seconds.
 0

Level 3 – Automatic closing

The following menus and functions are only accessible for qualified specialist personnel.

Menu 6 – Relay output expansion module (XH19A – track controls)

1	Signal light (available / not available) → “Level 3, Menu 7 – Signal light”
2	Gate position OPEN
3	Gate position CLOSED
4	Intermediate position OPEN
5	Intermediate position CLOSED
6	Drive system starts (wipe pulse 1 second)
7	Fault
8	Lighting time → “Level 5, Menu 4 – Lighting time”
9	Locking release (drive system running)
10	Lock release (drive system starts / wipe pulse 3 seconds)
11	Anti-opening mechanism
12	Radio remote control (relay switches for the duration of the pulse) → “Level 4, Menu 8 – Drive lighting ON / OFF or Relay output”

Menu 7 – Signal light

The setting acts on all relays that were programmed ex works or retrospectively to the “Signal light” parameter.

1	 Gate movement / warning: flashing Gate standstill: Off (energy saving)
2	Gate movement / warning: illuminated Gate standstill: Off (energy saving)
3	Gate movement / warning: flashing Gate standstill: flashing
4	Gate movement / warning: illuminated Gate standstill: illuminated
5	Gate movement / warning: flashing Gate standstill: illuminated
6	Gate movement / warning: illuminated Gate standstill: flashing

Menu 8 – Relay output expansion module (XH19B – track controls)

(only with connected and programmable and visible relay track controls expansion module)

1	 Error message
2	Each wiping pulse request
3	Entry pulse
4	Exit pulse
5	Locking pulse start

More information about track controls (level 3, menu 2)

Automatic OFF (SB32)

A	Switch contact open: Door closes automatically after expiry of times Closed switch contact: Door does not close automatically after expiry of times
B	Switch contact open: Master function switched off (operation like parameter 3)
C	Closed switch contact: Master function due to continuous green
D	Switch contact open: automatic alternate mode switched off (operation like parameter 3)
E	Closed switch contact: automatic alternate mode

Master function (SB31)

F	Switch contact open: Exit continuous green Closed switch contact: Entry continuous green
G	No influence on the function

Photocell

H	Green phase / door open time restarts after passing by the photocell
I	Green phase / door open time ends after passing by the photocell
J	Green and red phase / door open and door closed time ends after passing by the photocell
K	No influence on the times

Level 4 – Radio programming

Menu 6 – Entry request

Hand-held transmitter display flashing slowly -> Press hand-held transmitter button -> Hand-held transmitter display flashes quickly

Menu 7 – Exit request

Hand-held transmitter display flashing slowly -> Press hand-held transmitter button -> Hand-held transmitter display flashes quickly

Level 4 – Radio programming

Only with bi-linked version:

Press the programming button on the rear side of the handheld transmitter before the button on the front side is pressed.

Menu 2 – Intermediate position OPEN

Parameter and hand-held transmitter display flashing
-> Press hand-held transmitter button -> Hand-held transmitter display lights up briefly -> The function has been taught.

Menu 3 – Intermediate position CLOSED

Parameter and hand-held transmitter display flashing
-> Press hand-held transmitter button -> Hand-held transmitter display lights up briefly -> The function has been taught.

Menu 4 – OPEN

Parameter and hand-held transmitter display flashing
-> Press hand-held transmitter button -> Hand-held transmitter display lights up briefly -> The function has been taught.

Menu 5 – CLOSED

Parameter and hand-held transmitter display flashing
-> Press hand-held transmitter button -> Hand-held transmitter display lights up briefly -> The function has been taught.

Menu 6 – Entry request

Parameter and hand-held transmitter display flashing
-> Press hand-held transmitter button -> Hand-held transmitter display lights up briefly -> The function has been taught.

Menu 7 – Exit request

Parameter and hand-held transmitter display flashing
-> Press hand-held transmitter button -> Hand-held transmitter display lights up briefly -> The function has been taught.

Menu 8 – Drive lighting ON / OFF or Relay output

Parameter and hand-held transmitter display flashing
-> Press hand-held transmitter button -> Hand-held transmitter display lights up briefly -> The function has been taught.

Relay output:
The parameter "radio remote control" must be programmed.
→ "Level 1, Menu 7 - Relay output"

Level 5 – Special functions

Programming the special functions is dependent on the connection XB01.

→ “3.5.2 Vario circuit board”

Menu 1 – Programmable pulse input (terminal 1/2)

1	 Pulse (only NO)
2	Closing prevention (only NO)
3	Stops and reverses (only OPEN direction - only NC)
4	Stops and reverses (only CLOSE direction - only NO)
5	OPEN pulse (induction loop - only NO)
6	Premature closing through actuation of button or hand-held transmitter > 2 seconds
7	Pulse (only NO) with permanent power supply 24 V DC / max. 50 mA

Menu 3 – Programmable input (XW81)

1	 Pulse (only NO)
2	Pulse RC (only NO)
3	Closing prevention (only NO)
4	Stops and reverses (only OPEN direction - only NC)
5	Stops and reverses (only CLOSE direction - only NO)
6	OPEN pulse (only NO)
7	Stop (only NC)
8	Premature closing through actuation of button or hand-held transmitter > 2 seconds (only Multi-Bit)
9	Automatic closing ON/ OFF

Menu 4 – Lighting time

2 – 250 seconds.

 3.0 (180 seconds)

Menu 5 – Manual programming device

1	 Operating and programming possible
2	Only operating possible

Menu 7 – Battery-back-up

1	 Battery-back-up deactivated
2	Battery-back-up active

Level 6 – Variable speed

The following menus and functions are only accessible for qualified specialist personnel.

Menu 1 – Speed OPEN

Stages of speed soft running OPEN up to 16.

 16

Menu 2 – Speed soft running OPEN

Stages from 1 to speed OPEN.

 8

Menu 3 – Soft running position OPEN

Setting with button + (OPEN) and - (CLOSE).

Menu 4 – Speed CLOSE

Stages of speed soft running CLOSE up to 16.

 8

Menu 5 – Speed smart running CLOSE

Stages of speed soft running CLOSE up to speed CLOSE.

 8

Menu 6 – Speed soft running CLOSE

Stages from 1 to speed CLOSE.

 8

Menu 7 – Smart running position CLOSE

Setting with button + (OPEN) and - (CLOSE).

Menu 8 – Soft running position CLOSE

Setting with button + (OPEN) and - (CLOSE).

Menu 9 – Soft start time OPEN

1	 1 second
2	2 seconds
3	3 seconds
4	6 seconds

Menu 10 – Soft start time CLOSE

1	 1 second
2	2 seconds
3	3 seconds
4	6 seconds

Level 7 – Service and maintenance

Menu 1 – Gate cycle counter

Six-digit display of gate actuations up to 999999.
Digits in turn until the dot is displayed, then repeat.

Menu 2 – Maintenance counter

Five-digit display of the remaining gate actuations until the maintenance display.
Digits in turn until the dot is displayed, then repeat.

Menu 3 – Maintenance interval

Setting the number of gate actuations from which the required maintenance is displayed.

1	 OFF
2	100
3	500
4	1,000
5	4,000
6	5,000
7	6,000
8	7,000
9	8,000
10	9,000
11	10,000
12	15,000
13	20,000
14	30,000
15	40,000
16	50,000

Menu 8 – Reset service and maintenance

The error memory is reset here for service, diagnostic and maintenance work.

1	 No reset
2	Reset error memory

Menu 9 – Fault indication

Display of the current error message.
(max. 16 error displays possible).

	Display of the previous error / Navigation through the error list
	Navigation through the error list

Level 8 – System settings

The following menus and functions are only accessible for qualified specialist personnel.

Gate reversal brief:

The drive system briefly moves the gate in the opposite direction to release an obstacle.

Gate reversal extended:

The drive system moves the gate to the OPEN gate position.

Menu 1 – Photocell

This menu is related to a photocell on motor unit as required connection XB03. A photocell at connection XB01 of the vario circuit board is recognised automatically and may be removed with a MS bus reset.

1	 Operation without photocell
2	2-wire photocell (Connection XB03 – terminal 70/71), Gate movement CLOSE: Gate reversal extended
3	External photocell (Connection XB03 – terminal 70/71), Gate movement CLOSE: Gate reversal extended

Menu 2 – Closing edge safety device

Gate movement OPEN changes the function of an optionally connected expansion module EM 183 OPEN.

1	 Gate movement OPEN: Gate reversal brief Gate movement CLOSE: Gate reversal brief
2	Gate movement OPEN: Gate reversal brief Gate movement CLOSE: Gate reversal extended
3	Gate movement OPEN: Gate reversal extended Gate movement CLOSE: Gate reversal brief
4	Gate movement OPEN: Gate reversal extended Gate movement CLOSE: Gate reversal extended

Menu 3 – Automatic cut-out function

1	 Gate movement OPEN: Gate stops Gate movement CLOSE: Gate reversal brief
2	Gate movement OPEN: Gate reversal brief Gate movement CLOSE: Gate reversal brief
3	Gate movement OPEN: Gate stops Gate movement CLOSE: Gate reversal extended
4	Gate movement OPEN: Gate reversal extended Gate movement CLOSE: Gate reversal extended
5	Gate movement OPEN: Gate reversal brief Gate movement CLOSE: Gate reversal extended

Level 8 – System settings

The following menus and functions are only accessible for qualified specialist personnel.

Menu 4 – Operating modes

1	Gate movement OPEN: Dead man Gate movement CLOSE: Dead man
2	Gate movement OPEN: Self-retaining Gate movement CLOSE: Dead man
3	Gate movement OPEN: Dead man Gate movement CLOSE: Self-retaining
4	 Gate movement OPEN: Self-retaining Gate movement CLOSE: Self-retaining

Menu 5 – Function of the direction command device

1	Direction command device not active: The direction command devices only trigger a command with a stationary gate.
2	 Direction command device only STOP: A running gate is stopped by every direction command device.

Menu 6 – Function of the pulse command device

1	Pulse command device not active: The pulse command devices only trigger a command with a stationary gate.
2	Pulse command device only STOP, subsequently standard sequence: A running gate is stopped by every pulse command device. A subsequent command starts the drive system in the opposite direction (OPEN - STOP - CLOSE - STOP - OPEN).
3	 Pulse command device only STOP, subsequently standard sequence: A running gate is stopped by every pulse command device. A subsequent command starts the drive system in the opposite direction (OPEN - STOP - CLOSE - STOP - OPEN). With automatic closing, no STOP in the OPEN direction.

Menu 7 – Force relief in the GATE CLOSED position (back-jump)

1	 not active
2	minimal
3	short
4	medium
5	long

Menu 8 – Direction of rotation

1	 Standard
2	Reversal of rotational direction

Level 8 – System settings

The following menus and functions are only accessible for qualified specialist personnel.

Menu 10 – Position of the frame photocell

The position of the frame photocell can be manually set if necessary.

Setting with button + (OPEN) and – (CLOSE).

5. Operation

5.1 Safety instructions for operation

WARNING!

Danger due to a failure to observe the operating instructions!

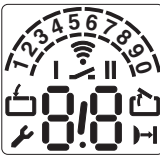
This chapter contains important information for the safe operation of the product.

- Read this chapter through carefully before operation.
- Follow the safety instructions.
- Use the product as described.

- The controller or hand-held transmitter shall only be operated when no persons or objects are inside the range of movement of the gate.
- The controller and hand-held transmitter must not be used by children or unauthorised persons.
- The hand-held transmitter must not be inadvertently actuated (e. g. in the trouser pocket).
- No obstacle shall be present in the path of the gate and hand cable. Otherwise the hand cable may become trapped during gate movements, resulting in damage (e. g. with roof rack systems).

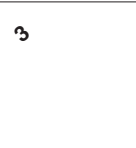
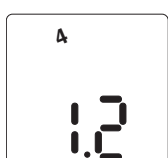
5.2 Motor unit keyboard

Control elements

	LCD display
	Drive gate in OPEN direction, Increase parameter
	Drive gate in CLOSED direction, Reduce parameter
	Start programming, confirm and save values

Legend

	Display flashing
	Display illuminated

	Ready for operation
	Door drives CLOSED
	Gate position CLOSED
	Door drives OPEN
	Gate position OPEN
	Error message / maintenance indication in gate position CLOSED
	Error message / maintenance indication in gate position CLOSED
	Photocell or closing edge safety device actuated
	Remote control actuated
	External button pressed or holding circuit open
	Status indication (Example display 3 – Battery backup connected) → "4.3 Status indication"
	Pre-warning time display (only with programmed automatic closing). Times of more than one minute are displayed in minutes and seconds. Example: 1.2 = 1 minute + 20 seconds = 80 seconds

5.3 Cover keyboard external connection housing

Control elements	
	Drive gate in OPEN direction
	Stop gate
	Drive gate in CLOSED direction
	Interrupt holding circuit

Legend	
	Display off
	Display illuminated
	Display flashes slowly
	Display flashes fast

Display	Function / element
	Door drives OPEN
	Gate position OPEN
	Door drives CLOSED
	Gate position CLOSED

5.4 Remote controls

-  Refer to the associated documentation for operation of the control unit with remote controls.

5.5 Release

WARNING!

Risk of injury due to uncontrolled gate movements!

Uncontrolled gate movements may arise when actuating the unlocking, e.g. if the gate springs are weak or broken, or the gate is not balanced.

- Move the gate cautiously in the unlocked condition and only at moderate speed!

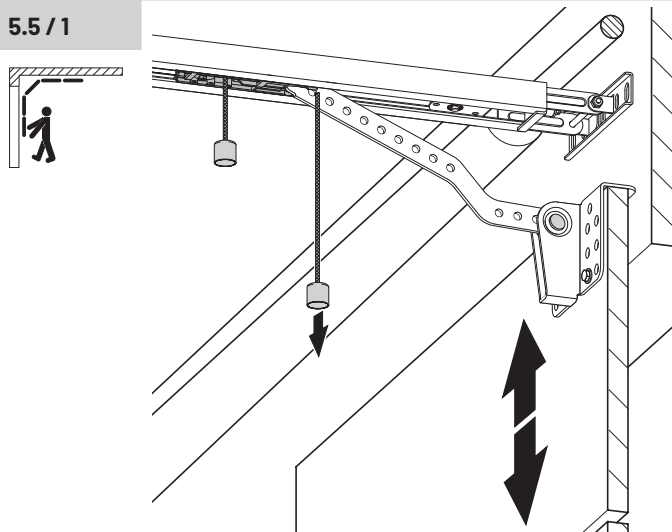
ATTENTION!

Risk of material damage due to uncontrolled gate movements!

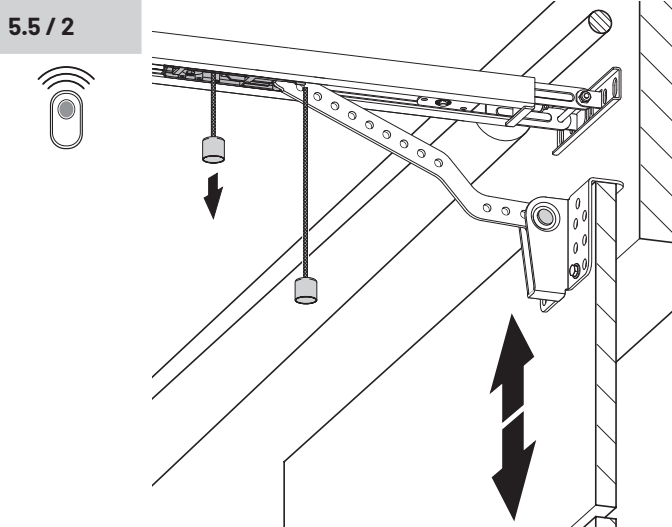
When opening the gate by hand, the guide carriage can collide with the rail stop.

- Move the gate cautiously in the unlocked condition and only at moderate speed!

5.5 / 1



5.5 / 2



6. Care



WARNING!

Risk of fatal injuries due to electric shocks!

Contact with live parts can lead to electric shock, burns and death.

- Ensure that the power supply is and remains disconnected throughout any cleaning work.



ATTENTION!

Damage resulting from incorrect operation!

When cleaning the drive, never use:

direct water jets, high pressure cleaners, acids or alkaline solutions.

- Use a soft, non-linting cloth for cleaning.

If particularly dirty, the housing can be cleaned using a mild detergent.

- Clean the outside of the housing using a damp cloth.

7. Maintenance

7.1 Maintenance work by the operator

Damage or wear to a gate system may only be rectified by qualified specialist personnel.

To ensure fault-free operation, the gate system must be inspected regularly and, if necessary, be repaired. Before starting work on the gate system, the drive system must always be disconnected from the power supply.

- Check once a month that the operator system reverses when the gate touches an obstacle. To check this, place an obstacle, 50 mm in height, in the path of the gate in the direction of travel.
- Check the settings of the automatic cut-out in the OPEN and CLOSE directions.
→ "4.6.3 Checking the automatic cut-out"
- Check all the moving parts of the gate system and gate operator system.
- Check the gate system for signs of damage or wear and tear.
- Move the gate manually to check that the gate travels easily and smoothly.
- Check all connection lines for damage.
For safety reasons, if the power supply cable is damaged it must be replaced by the manufacturer or the manufacturer's customer service department, or by a similarly qualified person.

7.2 Maintenance by qualified specialist personnel

Power-operated windows, doors and gates must be inspected by qualified personnel whenever necessary, but at least once a year (written inspection records must be kept).

Before starting work on the gate system, the drive system must always be disconnected from the power supply.

- Test the driving power with a force tester designed for this purpose.
- Replace any damaged or worn parts.

8. Disassembly

Disassembly by qualified specialist personnel only.
→ "1.2.2 Specialist personnel"

WARNING!

Risk of fatal injuries due to electric shocks!

Contact with live parts can lead to electric shock, burns and death.

- Ensure that the power supply is and remains disconnected throughout disassembly.

WARNING!

Risk of injury due to incorrect use!

Size and weight of the product require extensive force during disassembly. If the product drops, this may result in serious injuries.

- Secure the drive system against falling before disassembly.
- Comply with all applicable occupational health and safety regulations.

Disassembly is performed in reverse order to assembly.
→ "3. Installation"

9. Disposal

Disposal by qualified specialist personnel only.
→ "1.2.2 Specialist personnel"



Do not dispose of old equipment or batteries with normal household waste!

- Dispose of old equipment at a collection centre for electronic scrap or via your specialist dealer.
- Dispose of used batteries in a recyclables collection container for used batteries or via your specialist dealer.
- Dispose of the packaging materials in a collection container for paper, cardboard and plastic.

10. Troubleshooting

Faults without the error message display

LCD display has no display and does not light up.

Voltage missing.

- Check whether mains voltage is present.
- Check current connection.

Thermal contactor in mains transformer has triggered.

- Leave the mains transformer to cool down.

Controller unit defective.

- Have the drive system checked.

No response after pulsing.

Connection terminals for "Pulse" button bypassed, e.g. through line short-circuit or flat terminal.

- Possibly test-disconnect wired key switch or internal push-button from the controller unit: Unplug cable from socket XB01, insert short-circuit plug and search for wiring fault.

→ "3.5.14 2-wire photocell connection (XB01)"

No response after pulsing by hand-held transmitter.

Module receiver not plugged in.

- Connect module receiver with controller unit.

→ "3.7 Completing the installation"

Hand-held transmitter coding does not match receiver coding.

- Reactivate hand-held transmitter.

→ "4.4 Factory settings"

Hand-held transmitter battery empty.

- Insert new battery.

Radio operation deactivated ("external button" symbol flashes).

- Press the + (OPEN) or - (CLOSE) button on the drive to reactivate the radio.

Hand-held transmitter or controller electronics or module receiver defective.

- Have all 3 components checked.

"External button" symbol glows continuously in the LCD display.

- Check if the DIP switch on the vario circuit board is set to OFF. Set the DIP switch to ON.

→ "3.5.2 Vario circuit board"

Drive system reverses with interruption to frame photocell.

Programming was not performed correctly. Frame photocell was not identified correctly.

- Manually set the position of the frame photocell.

→ "Level 8, Menu 10 - Position of the frame photocell"

Faults without the error message display

Low or no range.

Hand-held transmitter defective.

- Check hand-held transmitter, replace if necessary.

Antenna defective or installed incorrectly.

- Check / replace antenna.
- Lay antenna to the lintel or feed out of the garage, if nec. install outside antenna.

Faults on frequency band used.

- Switch to alternative frequency.

Drive lighting not working.

Bulb defective.

- Replace LED.

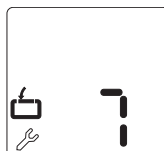
With further faults.

- Observe error message (see LCD display).
- Have article no., production no. and version to hand (see type plate) for any queries.
- Reset and re-commissioning in accordance with the operating manual.

Faults with error message display

The display shows detected faults with an error number (example error number 7). The controller switches to the message mode.

In operating mode, pressing the P button displays the most recent error number.



Error number 5

Closing edge safety device interrupted or defective.

- Remove obstacle or have closing edge safeguard checked.

Error number 7

After 120 seconds without pressing a button, programming mode switches off automatically.

- Restart the programming procedure.

Error number 9

Speed sensor pulse not available, drive system blocked.

- Have the drive system checked.

Faults with error message display

Error number 10

Gate running sluggish or gate blocked.

- Re-establish gate movement.

Maximum drive force set too low.

- Have the maximum drive force checked by qualified specialist personnel using an appropriate force tester.

→ "Level 2, Menu 1 - Required drive force OPEN"

→ "Level 2, Menu 2 - Required drive force CLOSE"

Error number 11

Run-time limiting.

- Have the drive system checked.

Error number 13

Closing edge safety device CLOSED testing not okay.

- Have closing edge safety device checked.

Error number 15

Photocell interrupted or defective.

- Remove obstacle or have photocell checked.

Photocell programmed but not connected.

- Deactivate or connect photocell.

Error number 16

Current sensor for automatic cut-out defective.

- Have motor unit checked.

Error number 26

Undervoltage. Drive system overloaded when drive force set to stage 16 (maximum).

- Have external voltage supply checked.

Error number 28

Gate running sluggish, irregular or gate blocked.

- Check gate running and re-establish gate movement.

Automatic cut-out setting is too sensitive.

- Have automatic cut-out checked by specialist dealer.

→ "Level 2, Menu 3 - Automatic cut-out OPEN"

→ "Level 2, Menu 4 - Automatic cut-out CLOSE"

Faults with error message display

Error number 30

MS-Bus error.

- Perform reset of the MS Bus modules.
→ "Level 1, Menu 8 - RESET"
- Have connected BUS modules checked.

Error number 33

Overtemperature due to overheating.

- Leave the drive system to cool down.

Error number 35

Electronics defective.

- Have the drive system checked.

Error number 36

This error number can also be triggered by a connected expansion module.

Function of stop button programmed, but no stop button connected.

- Connect stop button.
→ "3.5 Connection"
- If no stop button is available, complete "RESET safety elements" or "RESET BUS modules".
→ "Level 1, Menu 8 - RESET"

Error number 38

Anti-opening mechanism has triggered.

- Check gate for signs of a break-in.

Error number 44

8K2 hold circuit of gate leaf has triggered.

- Check personnel door to make sure it is correctly closed.

Error number 48

Gate running sluggish, irregular or gate blocked.

- Check gate running and re-establish gate movement.

Setting of gate positions CLOSED incorrect.

- Check gate positions OPEN and CLOSED and reset if necessary.
- Check gate.

Faults with error message display

Error number 51

Snagging safety device interrupted or defective.

- Remove obstacle or have snagging safeguard checked.

Faults with error message display

The system indicates recognised faults via the red and green LEDs between the cover buttons.



Both LEDs flash at the same time.

BUS cable interrupted.

- Check connection. Replace cable.

Both LEDs flash in alternation.

MS BUS addressing is running.

- Wait until the running light goes out (max. 2 minutes).

11. Attachment

11.1 Manufacturer's declaration

Declaration of incorporation

within the context of EC Machinery Directive 2006/42/EC for integration with an incomplete machine in accordance with Annex II, Part 1B.

Declaration of conformity

within the context of Directives for Electromagnetic Compatibility 2014/30/EU and RoHS 2011/65/EU + 2015/863/EU + 2017/2102/EU.

Manufacturer:

Marantec Marienfeld GmbH & Co. KG, Remser Brook 11,
33428 Marienfeld, Germany

We hereby declare that the following listed product

Product designation: **Garage door drive**
Type designation: **Comfort 390 plus**
Revision status: **R01, R10**

as an incomplete machine that is exclusively intended for installation in a door system and that has been developed, constructed, and manufactured in harmony with the following directives:

- Machinery Directive 2006/42/EC
- Electromagnetic Compatibility Directive 2014/30/EU
- RoHS Directive 2011/65/EU + 2015/863/EU + 2017/2102/EU

Furthermore, the requirements of the Low Voltage Directive 2014/35/EU as per Appendix I Part 1.5.1 of Machinery Directive 2006/42/EC are also satisfied.

Applied and referenced standards:

- EN 12453
Safety in use of power operated doors: Requirements and test methods
- EN 12604
Gates - Mechanical aspects: Requirements and test methods
- EN ISO 13849-1, PL "c", Cat. 2
Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design
- EN 60335-1
Household and similar electrical appliances - Safety - Part 1: General requirements
- EN 60335-2-95
Household and similar electrical appliances - Safety - Part 2-95: Particular requirements for drives for vertically moving garage doors for residential use
- EN 61000-6-2
Electromagnetic Compatibility (EMC) - Part 6-2: Generic standards - Immunity standard for industrial environments
- EN 61000-6-3
Electromagnetic Compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light industrial environments

The following requirements of EC Directive 2006/42/EC were complied with: General principles, No. 1.1.2, 1.1.3, 1.1.5, 1.1.6, 1.2.1, 1.2.2, 1.2.3, 1.2.6, 1.3.1, 1.3.4, 1.3.7, 1.3.8, 1.3.9, 1.4.1, 1.4.3, 1.5.1, 1.5.4, 1.5.6, 1.5.8, 1.5.14, 1.7.

Furthermore, we declare that the special technical documentation for this partly completed machine was prepared in accordance with Annex VII Part B and we undertake to supply these documents, in electronic form, to the national authorities in response to a duly reasoned request.

Authorised representative for preparation of the technical documentation:

Marantec Marienfeld GmbH & Co. KG, Remser Brook 11.
33428 Marienfeld, Germany
Tel. +49 (5247) 705-0

Incomplete machines within the scope of EC Directive 2006/42/EC are only specified for integration with other machines or other incomplete machines or plants or connection with them to form a machine together with them within the context of the Directive indicated above. For this reason, this product may only be commissioned if it has been confirmed that the complete machine / system that it has been integrated with complies with the requirements of the above EC directives.

This declaration is void if changes are made to the product without our approval.



Marienfeld, 16.07.2020

M. Hörmann
Managing Director



11.2 Radio conformity

The company
Marantec Marienfeld GmbH & Co KG,
hereby declares that the radio system model complies with
directive 2014/53/EU.

1. Digital 168, Digital 179, Digital 921, Digital 941, Digital 991
2. Digital 382, Digital 384, Digital 392, Digital 564, Digital 572

The complete EU declaration of conformity text can be found at the following internet address:
marantec.group/conformity

Motor type plate

Model (A)

Production month / year (B)

Art. No. Product (C)

Revision. (D)

Art. No. Sales product (E)

Serial number (F)

A

B / C

D

E

F

CE

Type plate on control unit

Model (A)

Production month / year (B)

Revision. (C)

Art. No. Sales product (D)

Serial number (E)

A

B

C

D

E

CE

