



Operating instructions

Last updated: 04.2015

Control unit for hinged gates

Control x.52, Control x.52 u

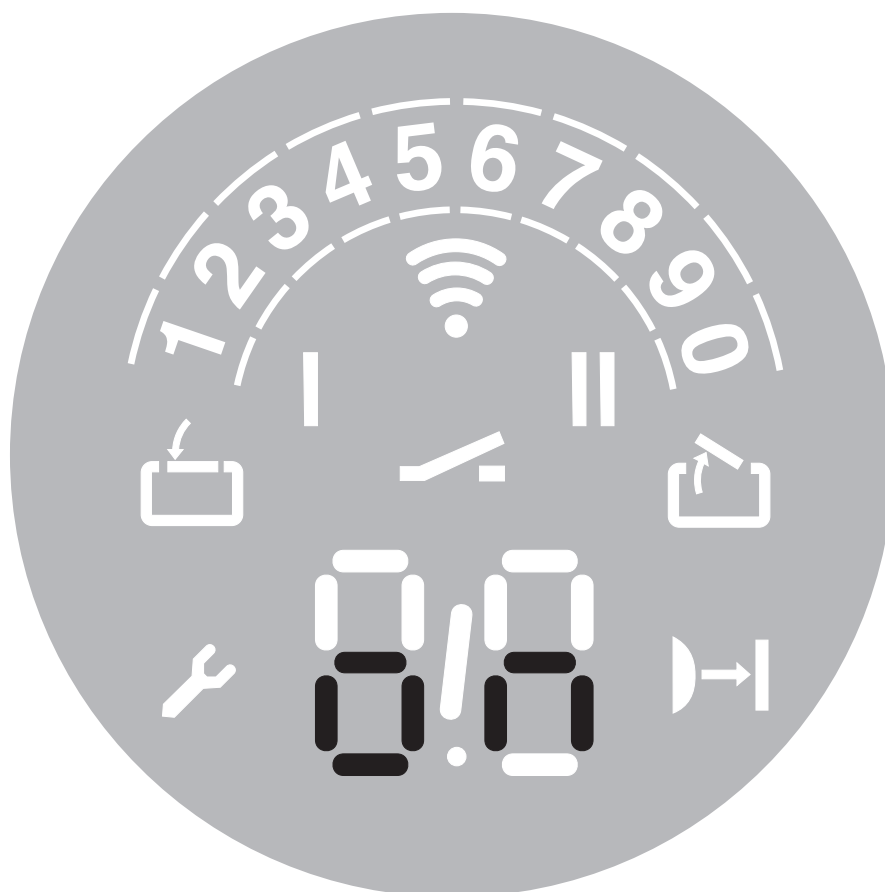


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DANGER!

IMPORTANT SAFETY INSTRUCTIONS:

ATTENTION! IT IS VITALLY IMPORTANT FOR THE SAFETY OF PERSONS THAT YOU FOLLOW ALL THE INSTRUCTIONS. KEEP THESE INSTRUCTIONS IN A SAFE PLACE.

IMPORTANT INSTRUCTIONS FOR SAFE INSTALLATION:

ATTENTION! SERIOUS INJURIES CAN BE CAUSED IF THE EQUIPMENT IS NOT INSTALLED CORRECTLY – BE SURE TO FOLLOW ALL THE INSTALLATION INSTRUCTIONS.

Regarding this document

- Original instruction manual.
- Part of the product.
- Read these instructions carefully before use and keep them in a safe place for future reference.
- Protected by copyright.
- No part of this manual may be reproduced without our prior approval.
- Subject to alterations in the interest of technical progress.
- All dimensions are given in millimetres.
- The drawings are not true to scale.

Meaning of symbols

DANGER!

Safety notice indicating a danger that will directly result in death or severe injury.

WARNING!

Safety notice indicating a danger that could result in death or severe injury.

CAUTION!

Safety notice indicating a danger that could result in slight or moderate injuries.

NOTICE


Safety notice indicating a danger that could result in damage to property or in irreparable damage to the product.

CHECK

Reference to a check that needs to be carried out.

REFERENCE

Reference to separate documents that must be observed.

- Instruction requiring action
- List, itemisation
- Reference to other sections of this document
-  Factory settings

1. General safety instructions

DANGER!

Failure to comply with the documentation could result in life-threatening danger!

- Be sure to follow all the safety instructions in this document.

1.1 Intended use

- The operator system is to be used only for opening and closing gates.
- Never use the gate to help lift persons or objects.

The following applies for the product Control x.52, Control x.52 u:

- The product is intended for private use.
- The control unit is intended exclusively for controlling hinged gates.
- A suitable motor unit is required to operate the control unit.

1.2 Target group

- Installation, connection and setting in operation: qualified, trained specialist personnel.
- Operation, inspection and servicing: the operator of the gate system.

Requirements to be met by qualified and trained specialist staff:

- Knowledge of the general and specific safety and accident-prevention regulations.
- Knowledge of the relevant electrical regulation.
- Training in the use and care of appropriate safety equipment.
- Adequate instruction and supervision by qualified electricians.
- The ability to recognise hazards that can be caused by electricity.
- 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 ("Safety in use of power operated doors - Test methods").

Requirements to be met by the operator of the gate system:

- Knowledge and safekeeping of the instruction manual.
- Knowledge of general safety and accident-prevention regulations.

Special requirements apply to the following users:

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

These users may be involved only in operation and maintenance.

Special requirements:

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

1.3 Warranty

The product is manufactured in accordance with the guidelines and standards listed in the manufacturer's declaration and in the declaration of conformity. The product left the factory in perfect order with regard to safety.

In the following cases, the manufacturer will accept no liability for damage. The warranty on the product and accessory components becomes void in the event of:

- Failure to observe these operating instructions.
- Incorrect handling and use of the product for anything other than its intended purpose.
- Work being carried out by unqualified personnel.
- Changes or modifications to the product.
- The use of replacement parts that have not been approved or were not manufactured by the manufacturer.

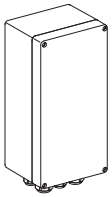




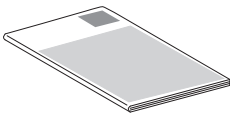
The warranty does not cover batteries, rechargeable batteries, fuses or bulbs.

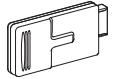



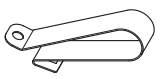

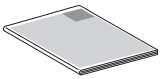
Further safety instructions are given in the relevant sections of the document.

- "4. Installation"
- "5. Setting in operation"
- "6. Operation"
- "7. Maintenance"
- "8. Disassembly"

2. Scope of supply

There may be some country-specific differences.

Item	Control unit	
1		1x
2		1x
3		3x
4		4x
5		2x
6		1x

Item	Hand transmitter	Multi-Bit	bi-linked
7		1x	1x
8		1x	–
9		–	1x
10		1x	1x
11		1x	1x
12		1x	–
13		–	1x

The control unit is integrated in the following products without an external housing:

- Comfort 560

3. Gate system

REFERENCE

The gate construction is described in the documentation provided with the motor unit.

4. Installation

DANGER!

Life-threatening danger due to electric shock!

- It is vital that you disconnect the operator system from the power supply before commencing cabling work. Take measures to ensure that the power supply remains disconnected for the duration of the work.
- Observe the local safety regulations.
- It is imperative that you lay power cables separately from control cables.
The control voltage is 24 V DC.

NOTICE

Material damage resulting from incorrect installation of the operator!

To avoid installation errors and damage to the gate or operator system, the following installation instructions must be observed at all costs.

- Install all impulse transmitters and control equipment (such as radio code buttons e. g.) within sight of the gate and at a safe distance from the gate's moving parts. The installation height must be at least 1.5 metres from the ground.
- Only use fixing materials that are suitable for the foundation material in question.

4.1 Preparing for installation

Before commencing installation, the following works must be carried out without fail.

Supply package

- Check that all the parts are present.
- Check that all the necessary accessory parts for your installation situation are present.

Gate system

- Ensure that a suitable mains connection and a mains disconnection facility are available for your gate system.
- The minimum cross-section of the earth cable is 3 x 1.5 mm².
- Ensure that all cables are suitable for outdoor use with respect to UV resistance and cold resistance.
- Ensure that a suitable motor unit is available for your gate system.

REFERENCE

When using and installing accessory equipment, observe the corresponding documentation.

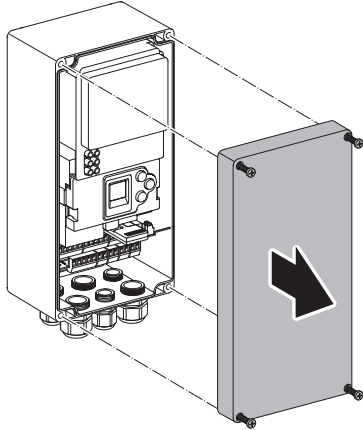
4.2 Mounting the control unit

NOTICE

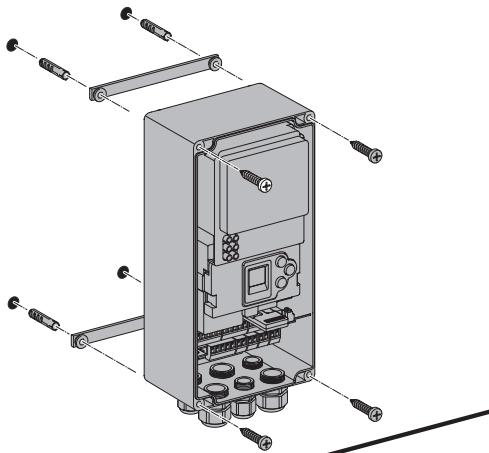
Water entering the control unit can cause damage and present a hazard!

- The control unit must be installed in such a way that the motor cable can be fed through the screw fixing in the base of the control unit.

4.2 / 1



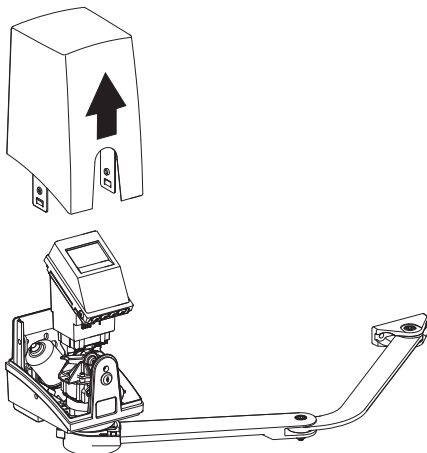
4.2 / 2



4.3 Opening the control unit

Comfort 560

4.3 / 1



4.4 Connection of control elements

DANGER!

Life-threatening danger due to electric shock!

- It is vital that you disconnect the operator system from the power supply before commencing cabling work. Take measures to ensure that the power supply remains disconnected for the duration of the work.

NOTICE

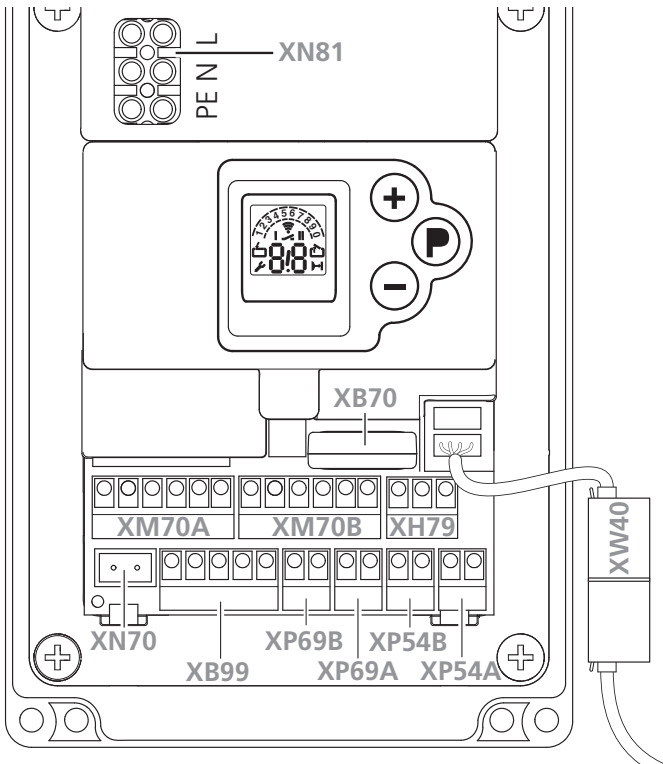
Danger of material damage resulting from incorrect installation of the operator!

If an external voltage is connected to terminal block XB03, the entire electronic system will be irreparably damaged.

- Connect only potential-free contacts to terminals B9, 5, 34, 3 and 8 (XB99).

4.4.1 Overview of the control unit connections

4.4.1 / 1



XB70	Connection for modular antenna
XB99	Connection for external control elements / max. 50 mA → "4.4.3 Terminal XB99"
XH79	Connection for electric lock and signal light → "4.4.5 Terminal XH79"
XM70A	Connection for motor (motor unit I), Single wing version → "4.4.2 Connecting the motor unit"
XM70B	Connection for motor (motor unit II) → "4.4.2 Connecting the motor unit"
XN70	Connection for battery backup
XN81	Mains connection → "4.4.4 Terminal XN81"
XP54A	Connection for closing edge safety device, gate travelling direction CLOSE → "4.4.6 Terminal XP54A / XP54B"
XP54B	Connection for closing edge safety device, gate travelling direction OPEN → "4.4.6 Terminal XP54A / XP54B"
XP69A	Connection for photocell, gate travelling direction CLOSE → "4.4.7 Terminal XP69A / XP69B"
XP69B	Connection for photocell, gate travelling direction OPEN → "4.4.7 Terminal XP69A / XP69B"
XT34	Connection power pack PCB (not shown)
XW40	Connection MS BUS

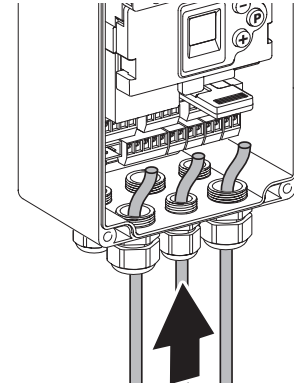
4.4.2 Connecting the motor unit

NOTICE

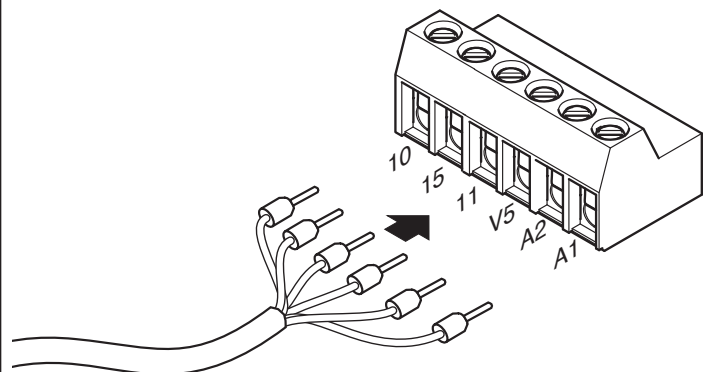
Beware of danger due to motor unit malfunctions!

- Pass the cable through the correct screw fixing.
- In the case of double wing gate systems, attach both motor cables to the control unit.
- In the case of single wing gate systems, the motor unit must always be connected to terminal XM70A (motor unit I).

4.4.2 / 1



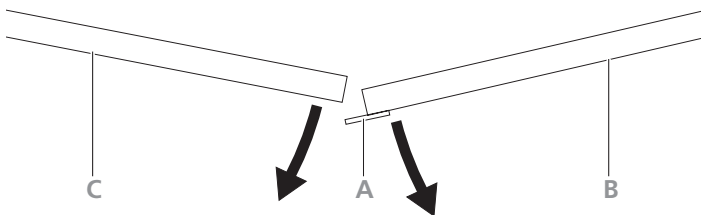
4.4.2 / 2



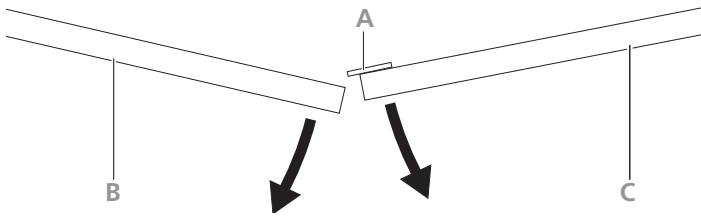
Terminal	Wiring colours
A1	brown
A2	white
V5	black
11	blue
15	violet
10	red

- Connect the motor cable wires to the motor connector.

4.4.2 / 3



4.4.2 / 4



B	Gate wing motor unit I (XM70A)
C	Gate wing motor unit II (XM70B)

- For double wing gate systems, note the overlap (F) when connecting the motor units.
- Connect the motor units to the control unit.

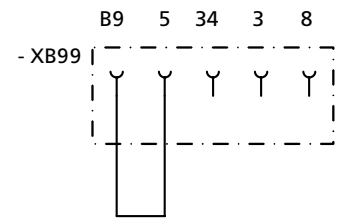
4.4.3 Terminal XB99

Factory default settings

B9 and 5 bridged

4.4.3 / 1

M06E039



The connection arrangement depends on the programming of the special functions. Depending upon the programming, it is possible to connect impulse or directional pushbuttons.

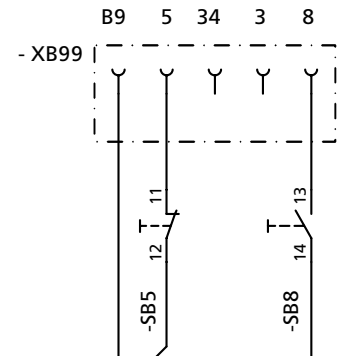
→ "5.6 Special programming"

- If a closing prevention device (photocell, timer, ...) is connected to XB99, the controls will recognize it automatically after "Mains On" (contact SB34 must be closed). Only in conjunction with automatic closing timer.
- When the contacts of a closing prevention device are open, the gate can be closed only in deadman mode.
- Additional external control elements and safety devices with a 24 V connection (50 mA maximum) must be connected to XB99.

Connection option number 1

4.4.3 / 2

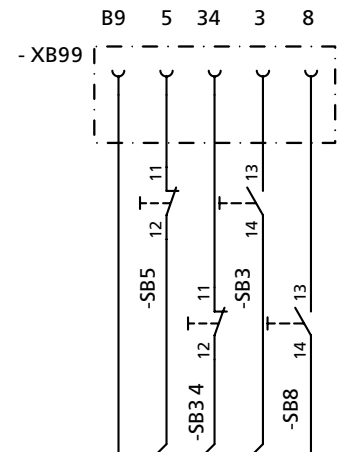
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Connection option number 2

4.4.3 / 3

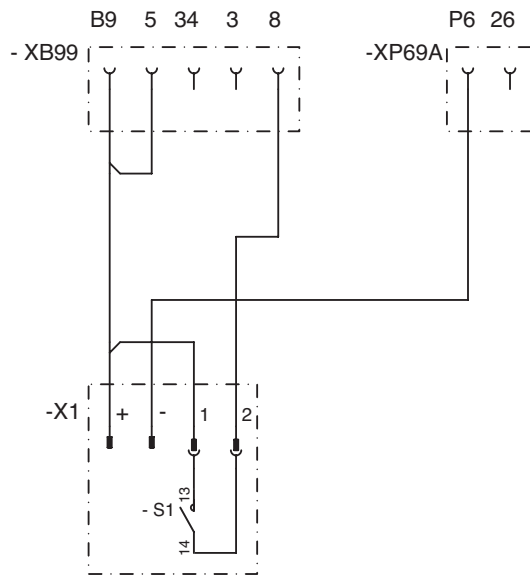
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Connection option number 3

4.4.3 / 4

M12E016

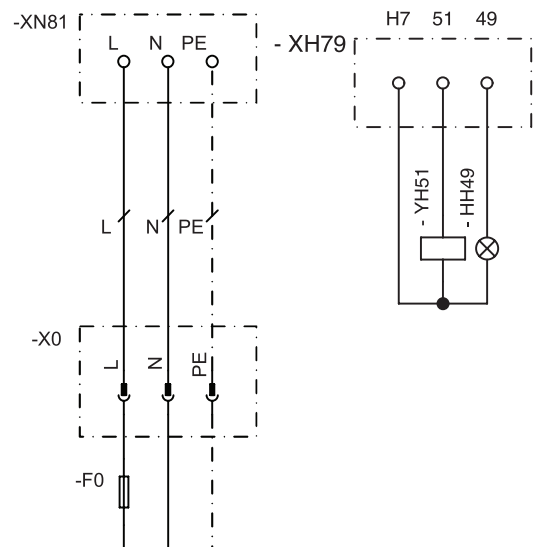


+	24 V DC connection (50 mA max.)
-	GND connection
1	Connection of potential-free normally open contact
2	Connection of potential-free normally open contact
3	CLOSE connection
5	STOP connection
8	Impulse connection
26	Photocell connection
34	Connection → "Level 5, Menu 3 - Programmable input"
B9	+24 V DC connection (50 mA max.)
P6	GND connection
S1	Receiver normally open contact, potential-free
SB3	Button → "Level 5, Menu 1 - Programmable impulse input"
SB5	STOP button
SB8	Button → "Level 5, Menu 1 - Programmable impulse input"
SB34	Closing prevention device button (photocell) / operator system stops and reverses
X1	Connection for external receivers
XP69A	Connection for photocell, gate travelling direction CLOSE

4.4.4 Terminal XN81

4.4.4 / 1

M07E039
M12E019

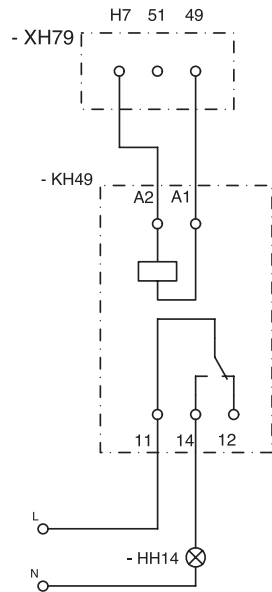


4.4.5 Terminal XH79

Signal light connection with external relay

4.4.5 / 1

M12E019



L	Phase connection
N	Neutral wire connection
PE	Earth wire connection
H7/51	Connection for electric lock, 24 V DC, 0.5 A
H7	24V DC connection / max. 1.0 A
H7/49	Connection for programmable output (24 V DC / 0.5 A) → "Level 1, Menu 7 - Signal light output"
HH14	Signal light
HH49	Signal light 24 V DC / max. 0.7 A
KH49	User's relay 24 V
YH51	Electric lock (provided by the customer) → "4.4.4 Terminal XN81"

4.4.6 Terminal XP54A / XP54B

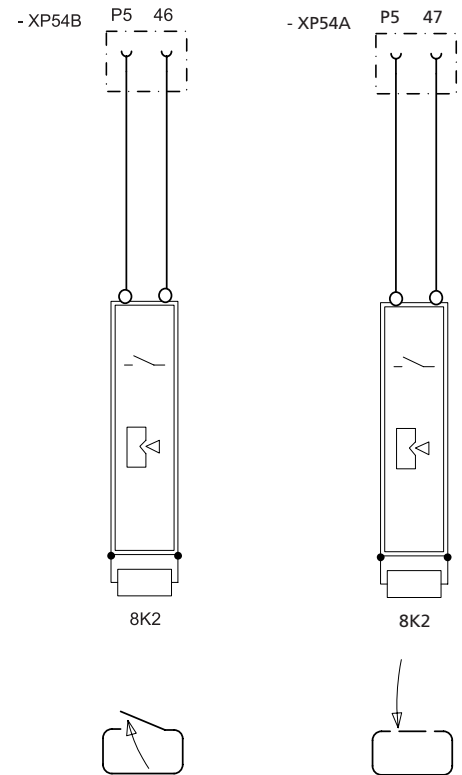
NOTICE

Failure to make connections correctly can result in material damage.

If an 8.2 kΩ contact strip closing edge safety device is connected, the 8.2 kΩ resistors installed at terminals XP54B closing edge OPEN and XP54A closing edge CLOSE must be removed.

4.4.6 / 1

M07E037

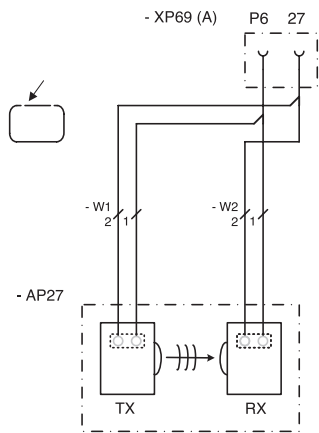
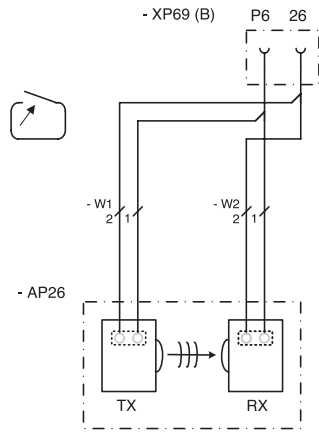
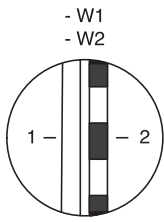


P5	GND connection
46	Connection for signal of closing edge safety device Gate travelling direction OPEN (XP54B)
47	Connection for signal of closing edge safety device Gate travelling direction CLOSE (XP 54A)

4.4.7 Terminal XP69A / XP69B

4.4.7 / 1

M12E017



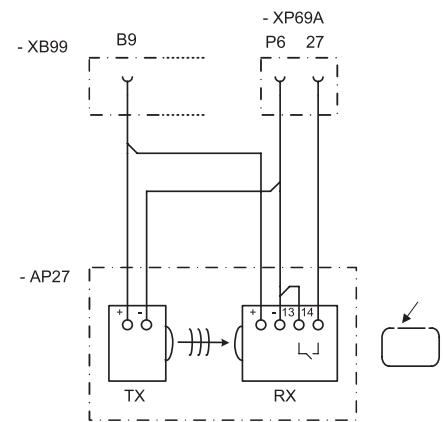
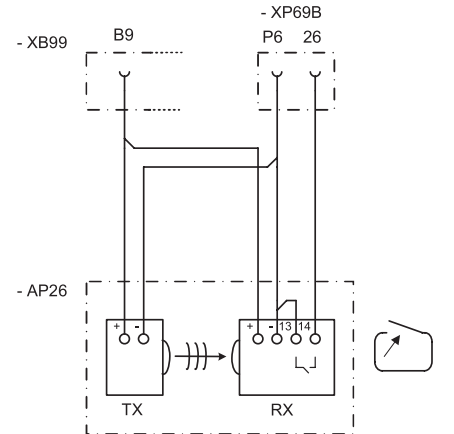
26	Connection for signal photocell, gate travelling direction OPEN (XP69B)
27	Connection for signal of photocell, gate travelling direction CLOSE (XP69A)
P6	GND OPEN connection (XP69B) GND CLOSE connection (XP69A)
RX	Receiver for the two-wire photocell
TX	Transmitter for the two-wire photocell

A two-wire photocell connected to terminals X69A / XB69B will be recognised automatically by the controls after "Mains On". The photocell can be deactivated later (Level 8 / Menu 1). A two-wire photocell for the OPEN direction can only be installed if a two-wire photocell is available in the CLOSING direction. If a photocell is connected, it will be switched off in energy saving mode.

4.4.8 Connection to different makes of photocell

4.4.8 / 1

M12E017a



+	Connection of supply voltage
-	Connection of supply voltage
13	Relay contact input
14	Relay contact output
26	Connection for photocell OPEN
27	Connection for photocell CLOSE
AP26	Relay photocell
AP27	Relay photocell
B9	+24V DC connection
P6	GND connection
RX	Photocell receiver RX
TX	Photocell transmitter TX
XB99	External control elements connection
XP69A	Connection terminal for 2-wire photocell CLOSE
XP69B	Connection terminal for 2-wire photocell OPEN

4.5 Connecting the mains cable

⚠ DANGER!

Life-threatening danger due to electric shock!

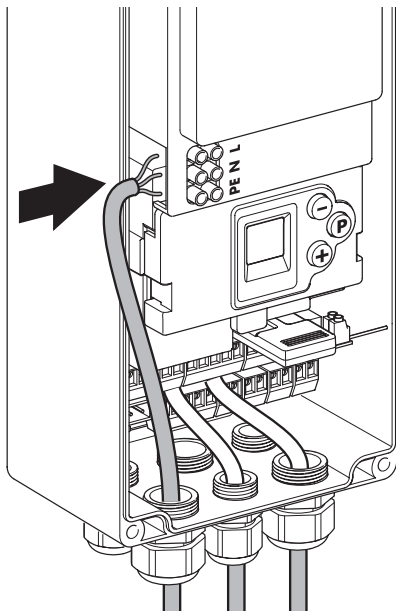
- It is vital that you disconnect the operator system from the power supply before commencing cabling work. Take measures to ensure that the power supply remains disconnected for the duration of the work.
- If the mains cable is connected via a permanent mains connection, this connection must have an all-pole disconnection switch.

👉 NOTICE

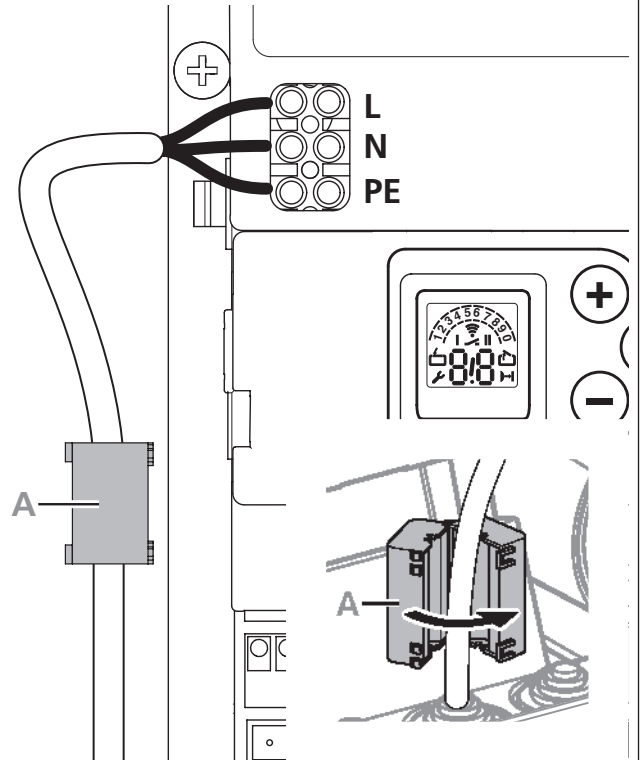
Danger of material damage resulting from incorrect installation of the operator!

In order to guarantee the protection grade of the control unit, the cable must be passed through the screw fixing in the control unit base.

4.5 / 1

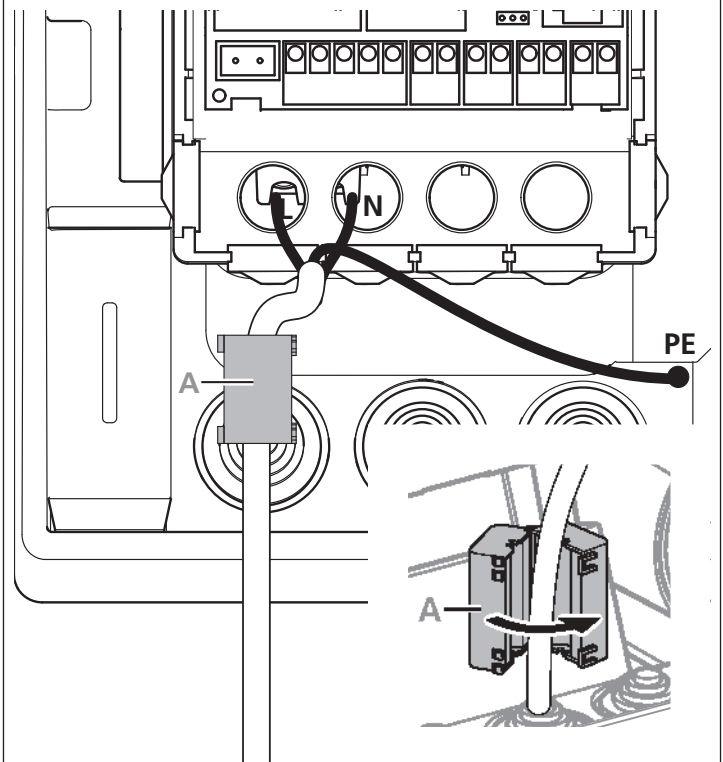


4.5.1 / 1



Comfort 560

4.5.1 / 2

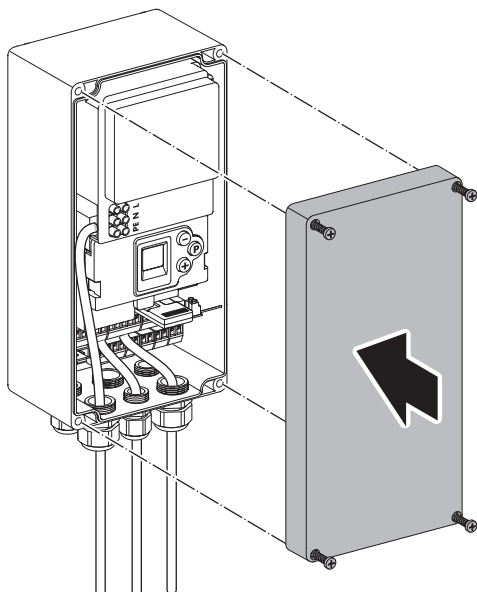


A Split ferrite

4.6 Completing the installation

Before closing the control unit, the following work must be carried out:
→ "5. Setting in operation"

4.6 / 1



5. Setting in operation

Before initial operation and at regular intervals of no more than one year, power-operated windows, doors and gates must be inspected by a qualified person (whereby written inspection records must be kept). After setting the system in operation, the operator of the gate system, or the operator's representatives, must be instructed in the operation of the system.

⚠ WARNING!

Danger of injury due to uncontrolled movement of the gate!

- Ensure that children can not play with the gate controls or the hand transmitter.
- Before setting the gate in motion, make sure that no persons or objects are within the danger zone of the gate.
- Before going through the gate opening, make sure that the gate is in the OPEN position.
- Check all the existing emergency command devices.
- Pay attention to potential crushing and shearing zones in the gate system.
- Never touch a running gate, the guide rail or any moving parts.
- The regulations of DIN EN 13241-1 ("Doors and gates - Product Standard") must be observed.

5.1 Overview of the controls

Control elements



LED display



Drive the gate in the OPEN direction, increase the value



Drive the gate in the CLOSE direction, decrease the value



Start programming, confirm and save values








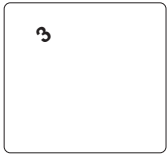
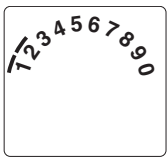


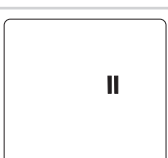
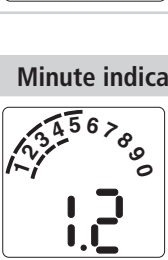
Legend



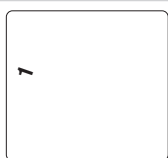
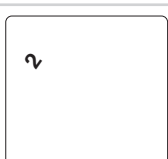

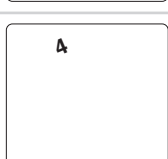
The display flashes



Display lights up

Display	Function / Element
	Ready for operation
	Gate position: CLOSED
	Gate position: OPEN
	Fault message / Maintenance indicator in CLOSED gate position
	Photocell or closing edge safety device
	Remote control
	External button activated
	Status display (example: 1 – Reference point of GATE 1 is approached) → "5.2 Status display"
	Level indicator (example: Level 2)
	Menu and parameter indicator (example: Menu 3, Parameter 8)
	Display, gate 1
	Display, gate 2
Minute indicator	
	Times exceeding one minute are shown in minutes and seconds. Example: 1.2 = 1 minute + 20 seconds = 80 seconds

5.2 Status display

Display	Function / Element
	Reference point of GATE 1 is approached
	Reference point of GATE 2 is approached
	Battery backup connected (optional)
	Warning time indicator (only for programmed automatic closing)

5.3 Factory settings

Using the reset procedure, the operator parameters can be restored to their original factory settings.

→ "Level 1, Menu 8 – RESET"

5.4 Express programming

To set the operator system properly in service and after every reset, the express programming procedure must be carried out.

Requirements:

- The gate must be in the CLOSED position.
- The carriage must be coupled up.

REFERENCE

A description of the operator locking mechanism release can be found in the documentation for the motor unit.

When in programming mode, the controls will revert automatically to operating mode if a period of 120 seconds passes without any buttons being pressed.

A corresponding fault number will be displayed.

→ "10. Rectifying faults"

- Carry out the express programming procedure.

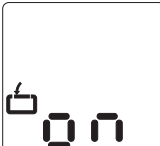

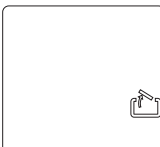

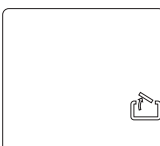


CHECK

A function test must be carried out after express programming.


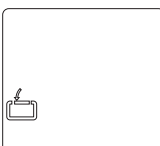


→ "5.5 Function test"

Express programming – Single wing gate


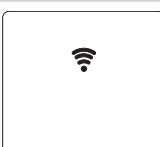





1. Programming the "OPEN" gate position

	The control system is in operating mode.	
	P > 3 sec. < 10 sec.: Start express programming.	
	Drive the gate to the OPEN position.	
	Save the OPEN position.	

2. Programming the "CLOSED" gate position






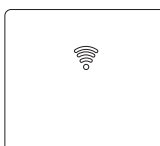


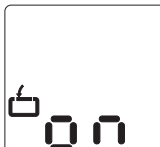
	Drive the gate to the CLOSED position.	
	Save the CLOSED position.	

3. Programming the remote control Multi-Bit

	Press the hand transmitter button.	
	Release the hand transmitter button.	
	Save the remote control setting. End express programming.	
	The control system is in operating mode.	

Express programming – Single wing gate

3. Programming the remote control bi-linked

	Press the programming button inside the hand transmitter.	
	Press the hand transmitter button.	
	Release the hand transmitter button.	
	Save the remote control setting. End express programming.	
	The control system is in operating mode.	

Express programming – Double wing gate

1. Programming the "OPEN" gate position (Gate 1)

	The control system is in operating mode.	
	P > 3 sec. < 10 sec.: Start express programming.	
	Drive the gate to the OPEN position.	
	Save the OPEN position.	

2. Programming the "OPEN" gate position (Gate 2)

	Drive the gate to the OPEN position.	
	Save the OPEN position.	

3. Programming the "CLOSED" gate position (Gate 2)

	Drive the gate to the CLOSED position.	
	Save the CLOSED position.	

Express programming – Double wing gate

4. Programming the "CLOSED" gate position (Gate 1)









	Drive the gate to the CLOSED position.	
	Save the CLOSED position.	

5. Programming the remote control Multi-Bit

	Press the hand transmitter button.	
	Release the hand transmitter button.	
	Save the remote control setting. End express programming.	
	The control system is in operating mode.	

Express programming – Double wing gate

6. Programming the remote control bi-linked

	Press the programming button inside the hand transmitter.	
	Press the hand transmitter button.	
	Release the hand transmitter button.	
	Save the remote control setting. End express programming.	
	The control system is in operating mode.	

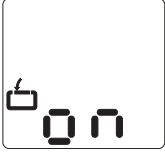

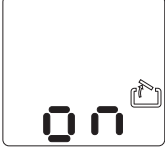

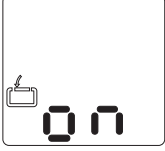

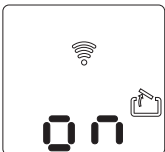

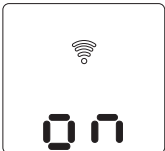

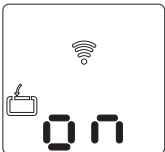
5.5 Function test

5.5.1 Programming run for setting the driving power

During the first two runs after the gate positions have been programmed, the operator system determines the maximum required driving power.

- Drive the operator system (with the gate coupled up) from the CLOSED gate position to the OPEN position and back again, without interruption.
- Check the driving power.

Check the function

1.		The control system is in operating mode.	
2.		The gate should open and move to the saved "OPEN" gate position.	
3.		The gate should close and move to the saved "CLOSED" gate position.	
4.		The gate operator should move the gate in the OPEN or CLOSE direction. Richtung ZU bewegen.	
5.		The operator system should stop.	
6.		The operator system should run in the opposite direction.	

5.5.2 Checking the automatic cut-out

WARNING!

Danger of injury due to incorrectly programmed values for the gate driving power!

- Check the automatic cut-out function in the OPEN and CLOSE directions.

Automatic cut-out

All gate systems must be in compliance with EN 13241 when tested.

- Place an obstacle in the path of the gate in both the OPEN and CLOSE directions.
- For each direction, drive the gate into the obstacle.
The operator system should stop and reverse when it touches the obstacle.

The settings for the driving power in the OPEN and CLOSE directions remain saved even if the mains power supply is interrupted.

The parameters are returned to the factory settings only after a reset.

→ "Level 1, Menu 8 – RESET"

5.5.3 Checking the photocell

- Check all the photocells individually by triggering them.
- Check all the photocells individually by triggering them.

5.6 Special programming

WARNING!

Danger of injury due to incorrect settings for the gate driving power!

Important factory settings can be changed when programming the special functions.

- Check the programmed parameter values.
- Check the programmed gate driving power values after changes have been made to the automatic cut-out setting.
→ "5.5.2 Checking the automatic cut-out"
- Carry out the necessary measurements to validate the correct force limitation.

NOTICE

Material damage resulting from incorrect programming of the gate operator.

After a reset, all the parameters are returned to the factory settings. Safety elements that are operational and are connected to the system will be recognised anew after a reset.

To ensure that the controls functions properly:

- Reprogram all the required functions.
- Reprogram the remote control.
- Drive the operator system once to the OPEN position and then the CLOSED position.

If a photocell is connected, it will be automatically detected by the control system as soon as the power supply is connected.

The photocell can be reprogrammed later.

Photocells that are not required must be disconnected before the power supply is connected; otherwise they will be recognised by the controls.

→ "4.4.7 Terminal XP69A / XP69B"

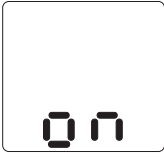

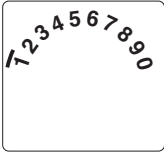


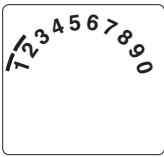




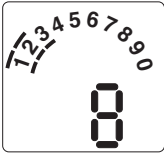

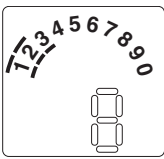


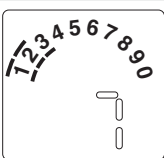

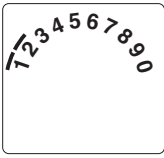


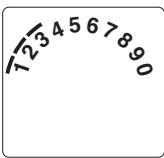


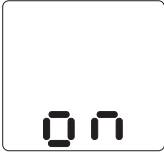
In the case of double wing gates, certain parameters for gate 1 and gate 2 are set separately.

CHECK

A function test must be carried out after changes have been made in programming mode.

→ "5.5 Function test"

5.6.1 Programming the special functions

Programming procedure		
1.	The control system is in operating mode.	
2.	 P > 10 sec.: Start programming the extended operator functions. Display the levels.	
3.	  Select the level required (example: Level 2).	
4.	 Confirm the level required. Display the first menu and the programmed parameter.	
5.	  Select the menu required (example Menu 3).	
6.	 Confirm the menu required. Display the programmed parameter value.	
7.	  Change the parameter value.	
8.	 Save the parameter value. The control system switches to display the levels	
9.	  Select the next level required. Continue programming.	
	or	
9.	 P > 5 sec.: Finish programming. All the altered parameters are saved.	
	The control system is in operating mode.	

5.6.2 Overview of the special functions

Level	Menu
1 Basic functions	3 Intermediate OPEN position (only for single wing gates)
	4 Intermediate CLOSE position (nur bei 1-flügeligen Toren)
	7 Signal light output
	8 RESET
2 Operator settings	1 Driving power required to OPEN
	2 Driving power required to CLOSE
	3 Automatic cut-out in the OPEN direction
	4 Automatic cut-out in the CLOSE direction
3 Automatic closing timer	1 Automatic closing timer
	3 Gate open duration
	4 Warning time
	5 Start-up warning
	7 Signal light
4 Remote programming	2 Intermediate OPEN position
	3 Intermediate CLOSE position (only for single wing gates)
	4 OPEN
	5 CLOSE
	8 Operator lighting ON / OFF
5 Special functions	1 Programmable impulse input
	2 Motor unit start delay
	3 Programmable input
	4 Lighting duration
	5 Hand-held programming device
	6 Control unit version
	7 Battery back-up
	8 Magnetic lock version
6 Variable speed	1 OPEN speed
	2 Soft run OPEN speed
	3 Soft run OPEN position
	4 CLOSE speed
	6 Soft run CLOSE speed
	8 Soft run CLOSE position
7 Maintenance and servicing	1 Gate cycle counter
	2 Servicing counter
	3 Servicing interval
	8 Fault log reset
	9 Fault indicator

Level	Menu
8 System settings	1 Photocell
	2 Closing edge safety device
	3 Automatic cut-out function
	4 Operating modes
	5 Function of the direction command transmitters
	6 Function of the impulse command transmitters
	9 Changing the display language

5.6.3 Contents of the special functions

Level 1 – Basic functions


Menu 3 – Intermediate OPEN position (only for single wing gates)

Adjust the setting using the + (OPEN) and – (CLOSE) buttons.
The closing function with automatic closing is possible.

Menu 4 – Intermediate CLOSE position (only for single wing gates)

Adjust the setting using the + (OPEN) and – (CLOSE) buttons.
The closing function with automatic closing is not possible.


Menu 7 – Signal light output (only programmable with optional signal light relay)

1	 Signal light → "Level 3, Menu 7 - Signal light"
2	Gate position: OPEN
3	Gate position: CLOSED
4	Intermediate OPEN position (only for single wing gates)
5	Intermediate CLOSE position (only for single wing gates)
6	Operator system starts (wiping impulse, 1 second)
7	Fault
8	Lighting (3-minute light) → "Level 5, Menu 4 - Lighting duration"
9	Locking mechanism release (operator system running)
10	Locking mechanism release (operator system immobile)
11	Release lock (operator system starts / wiping impulse, 3 seconds)
12	Push-open security device
13	Radio remote control (relay is activated for the duration of the impulse)
14	Test impulse for the closing edge safety device (relay transmits a test impulse and is activated for 300 ms)

Level 1 – Basic functions


Menu 8 – RESET


The operator system can be reset to the factory settings.

1	 No reset
2	Reset the controls (Factory setting) Connected modules (BUS-Module, bi-linked) must be reset separately.
3	Reset the remote control (telegrams are deleted)
4	Reset the special function: automatic closing timer → "Level 3 - Automatic closing timer"
5	Reset only the special operator functions (except the OPEN/CLOSED gate positions and the remote control impulse)
6	Reset the safety elements (photocell / Hold circuit)
7	Reset bus modules (connected bus modules will be programmed in)


Level 2 – Gate operator settings


Menu 1 – Driving power required to OPEN

Gate 1:
Sensitivity in on a scale of 1 to 16 (the higher the number, the greater the driving power).
 10


Gate 2:
Sensitivity in on a scale of 1 to 16 (the higher the number, the greater the driving power).
 10


Menu 2 – Driving power required to CLOSE

Gate 1:
Sensitivity in on a scale of 1 to 16 (the higher the number, the greater the driving power).
 10

Gate 2:
Sensitivity in on a scale of 1 to 16 (the higher the number, the greater the driving power).
 10

Menu 3 – Automatic cut-out in the OPEN direction

Gate 1:
Sensitivity on a scale of 1 (OFF) to 16 (the lower the number, the more sensitive the automatic cut-out).
 8

Gate 2:
Sensitivity on a scale of 1 (OFF) to 16 (the lower the number, the more sensitive the automatic cut-out).
 8

Level 2 – Gate operator settings

Menu 4 – Automatic cut-out in the CLOSE direction

Gate 1:
Sensitivity on a scale of 1 (OFF) to 16
(the lower the number, the more sensitive the automatic cut-out).

 8


Gate 2:
Sensitivity on a scale of 1 (OFF) to 16
(the lower the number, the more sensitive the automatic cut-out).

 8

Level 3 - Automatic closing timer

Menu 1 – Automatic closing timer

If the automatic closing function is activated, the relay output (Level 1 / Menu 7) can be reprogrammed if required.

1	 Deactivated	
2	Gate open duration 15 / Warning time 5	The open duration can only be increased via an impulse signal (button or hand transmitter).
3	Gate open duration 30 / Warning time 5	
4	Gate open duration 60 / Warning time 8	
5	Gate open duration 15 / Warning time 5	The gate open duration ends after the photocell has been triggered.
6	Gate open duration 30 / Warning time 5	
7	Gate open duration 60 / Warning time 8	
8	Gate open duration infinite / Warning time 3	Gate closes after the photocell has been triggered / Closing prevention.

Menu 3 – Gate open duration

2 – 250 seconds in increments.

 2

Menu 4 – Warning time

1 – 70 seconds in increments.

 1


Level 3 - Automatic closing timer

Menu 5 – Start-up warning

0 – 7 seconds.

 0

Menu 7 – Signal light

1	 Gate movement / Warning: Flashing Gate stationary: Off (energy saving)
2	Gate movement / Warning: Light on Gate stationary: Off (energy saving)
3	Gate movement / Warning: Flashing Gate stationary: Flashing
4	Gate movement / Warning: Light on Gate stationary: light on
5	Gate movement / Warning: Flashing Gate stationary: Light on
6	Gate movement / Warning: Light on Gate stationary: Flashing

Level 4 – Remote programming

Menu 2 – Intermediate OPEN position for single wing gates / active wing (for double wing gates)

Parameter indicator flashes -> Press the hand transmitter button -> Hand transmitter display also flashes -> The function has been programmed.

Menu 3 – Intermediate CLOSE position (only for single wing gates)

Parameter indicator flashes -> Press the hand transmitter button -> Hand transmitter display also flashes -> The function has been programmed.

Menu 4 – OPEN

Parameter indicator flashes -> Press the hand transmitter button -> Hand transmitter display also flashes -> The function has been programmed.

Menu 5 – CLOSE

Parameter indicator flashes -> Press the hand transmitter button -> Hand transmitter display also flashes -> The function has been programmed.

Menu 8 – Operator lighting ON / OFF



Parameter indicator flashes -> Press the hand transmitter button -> Hand transmitter display also flashes -> The function has been programmed.
The parameter „Lighting“ must be programmed.
→ “Level 1, Menu 7 - Signal light output”

Level 5 – Special functions

Programming of the special functions is dependent on terminal block XB99.

→ "4.4.3 Terminal XB99"

Menu 1 – Programmable impulse input

1	 Connection option number 1: Terminal B9/3: Intermediate OPEN position (single wing only) / active wing  Terminal B9/8: Impulse (OPEN/STOP/CLOSE)
4	Connection option number 4: Terminal B9/3: Direction command transmitter, CLOSE Terminal B9/8: Direction command transmitter, OPEN

Menu 2 – Motor unit start delay (in seconds)

→ "4.4.2 Connecting the motor unit"

	OPEN direction SLAVE (C)	CLOSE direction MASTER (B)
1	0	0
2	2	1
3	2	2
4	2	3
5	2	4
6	2	5
7	2	6
8	2	10
9	2	15
10	3	3
11	3	4
12	3	5
13	3	6
14	3	10
15	3	15
16	3	20


Menu 3 – Programmable input (Terminal B9/34)

1	Impulse (normally open contact only)
2	Impulse RC (normally open contact only)
3	Closing prevention device (normally open contact only)
4	OPEN impulse (normally open contact only)
5	Stop (normally closed contact only)
6	Earlier closing possible by pressing the buttons on the input device or hand transmitter > 2 seconds (Multi-Bit only)
7	Automatic closing timer ON/OFF (closed)


Level 5 – Special functions

Menu 4 – Lighting duration

2 – 250 seconds in increments.

 3.0 (180 seconds)

Menu 5 – Hand-held programming device


1	 Operation and programming option
2	Operation only

Menu 6 – Control unit version


(after this is saved, the control automatically carries out a RESET)

1	Comfort 515 single wing limit switch
2	Comfort 515 double wing limit switch
3	Comfort 5xx single wing reference point
4	Comfort 5xx double wing reference point

Menu 7 – Battery back-up


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


Menu 8 – Electric lock version (Terminal H7/51)

1	 Electric lock (Electric lock active for 3 seconds when operator starts)
2	Electric lock / magnetic lock (Electric lock / magnetic lock inactive for 3 seconds when operator starts)
3	Electric lock with locking pin (Electric lock active when operator running)
4	Lockmatic electric lock (Electric lock inactive when operator running)


Level 6 – Variable speed


Menu 1 – OPEN speed

Gate 1:
On a scale of 3 to 16.
 16

Gate 2:
On a scale of 3 to 16.
 16

Menu 2 – Soft run OPEN speed

Gate 1:
On a scale of 3 to 16.
 7


Gate 2:
On a scale of 3 to 16.
 7


Menu 3 – Soft run OPEN position

Gate 1:
Adjust the setting using the + (OPEN) and – (CLOSE) buttons.


Gate 2:
Adjust the setting using the + (OPEN) and – (CLOSE) buttons.


Menu 4 – CLOSE speed

Gate 1:
On a scale of 3 to 16.
 16

Gate 2:
On a scale of 3 to 16.
 16

Menu 6 – Soft run CLOSE speed

Gate 1:
On a scale of 3 to 16.
 7

Gate 2:
On a scale of 3 to 16.
 7

Menu 8 – Soft run CLOSE position

Gate 1:
Adjust the setting using the + (OPEN) and – (CLOSE) buttons.

Gate 2:
Adjust the setting using the + (OPEN) and – (CLOSE) buttons.

Level 7 – Maintenance and servicing

Menu 1 – Gate cycle counter


Six-figure indicator showing the number of gate operations, up to 999999.
Figures shown one after the other up to the indicator point, then repeated.

Menu 2 – Servicing counter

Five-figure indicator showing the number of gate operations still to go, up to maintenance indication.
Figures shown one after the other up to the indicator point, then repeated.


Menu 3 – Servicing interval

Adjustment of the number of gate operations to be completed before a servicing reminder is displayed.

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



Menu 8 – Fault log reset

The fault log for maintenance, diagnostics and servicing work is reset here.
When servicing is required:
Before deleting, note down the displayed error messages in case queries arise later.

1	 No reset
2	Reset the fault log

Menu 9 – Fault indicator

Shows the current fault message.
(No more than 16 fault messages can be viewed).

	Display the previous fault / Navigate through the list of faults
	Navigate through the list of faults

Level 8 – System settings


Gate reverses a short distance:

The operator system moves the gate slightly in the opposite direction in order to release an obstacle.


Gate reverses over a long distance:

The operator system moves the gate all the way to the OPEN position.

Menu 1 – Photocell


0	 Operation without photocell
1	2-wire photocell for CLOSE direction
2	2-wire photocell for CLOSE direction 2-wire photocell for OPEN direction
3	2-wire photocell for CLOSE direction (2x)
4	2-wire photocell for CLOSE direction 2-wire photocell for OPEN + CLOSE direction
5	Other make of photocell for CLOSE direction
6	Other make of photocell for CLOSE direction Other make of photocell for OPEN direction
7	Other make of photocell for CLOSE direction (2x)
8	Other make of photocell for CLOSE direction Other make of photocell for OPEN + CLOSE direction

Menu 2 – Closing edge safety device


1	 Gate movement in OPEN direction: gate reverses a short distance Gate movement in CLOSE direction: gate reverses a short distance
2	Gate movement in OPEN direction: gate reverses a short distance Gate movement in CLOSE direction: gate reverses over a long distance
3	Gate movement in OPEN direction: gate reverses over a long distance Gate movement in CLOSE direction: gate reverses over a long distance
4	Gate movement in OPEN direction: gate reverses over a long distance Gate movement in CLOSE direction: gate reverses over a long distance

Level 8 – System settings


Menu 3 – Automatic cut-out function

1	 Gate movement in OPEN direction: gate stops Gate movement in CLOSE direction: gate reverses a short distance
2	Gate movement in OPEN direction: gate reverses a short distance Gate movement in CLOSE direction: gate reverses a short distance
3	Gate movement in OPEN direction: gate stops Gate movement in CLOSE direction: gate reverses over a long distance
4	Gate movement in OPEN direction: gate reverses over a long distance Gate movement in CLOSE direction: gate reverses over a long distance

Menu 4 – Operating modes


1	Gate movement in OPEN direction: Deadman Gate movement in CLOSE direction: Deadman
2	Gate movement in OPEN direction: Press-and-release Gate movement in CLOSE direction: Deadman
3	Gate movement in OPEN direction: Deadman Gate movement in CLOSE direction: Press-and-release
4	 Gate movement in OPEN direction: Press-and-release Gate movement in CLOSE direction: Press-and-release

Menu 5 – Function of the direction command transmitters

1	Direction command transmitters not activated: The direction command transmitters trigger a com- mand only when the gate is stationary.
2	 Direction command transmitters, STOP only: A moving gate is stopped by every direction command transmitter.

Level 8 – System settings

Menu 6 – Function of the impulse command transmitters

1	Impulse command transmitters not activated: The impulse command transmitters trigger a command only when the gate is stationary.
2	Impulse command transmitters, STOP only, then standard sequence: A moving gate is stopped by every impulse command transmitter. The next command starts the drive system running in the opposite direction (OPEN - STOP - CLOSE - STOP - OPEN). STOP in OPEN direction possible in the case of automatic closing.
3	 Impulse command transmitters, STOP only, then standard sequence: A moving gate is stopped by every impulse command transmitter. A subsequent command will start the operator system moving in the opposite direction (OPEN - STOP - CLOSE - STOP - OPEN). With automatic closing, there is no STOP in the OPEN direction.

Menu 9 – Changing the display language

The plain text display can be set to 16 different languages.

1	 German
2	English
3	French
4	Dutch
5	Italian
6	Spanish
7	Czech
8	Russian
9	Polish
10	Norwegian
11	Swedish
12	...
13	...
14	...
15	...
16	...

6. Operation

The following operating devices can be used to actuate the gate system:

- Code button
- Transponder
- Coin acceptor
- Induction loop
- Hand transmitter / radio technology

REFERENCE

Please refer to the relevant manuals for instructions on using the operating devices.

7. Maintenance

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 operator 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 in the path of the gate in the direction of travel.
→ “5.5.2 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 the operation of the photocell.
→ “5.5.3 Checking the photocell”
- Check that the closing edge safety device functions properly.
- Check the power supply cable for signs of damage.
For safety reasons, if the power supply cable is damaged it must be replaced by the manufacturer or his customer service department, or by a similarly qualified person.

Care and cleaning

DANGER!

Life-threatening danger due to electric shock!

- It is vital that you disconnect the operator system from the power supply before cleaning. Take measures to ensure that the power supply remains disconnected for the duration of the cleaning operation.

NOTICE

Damage resulting from incorrect operation!

When cleaning the operator system, never use:
direct water jets, high pressure cleaners, acids or alkaline solutions.

- Clean the outside of the housing using a damp, soft cloth that does not shed fibres.

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

8. Disassembly

DANGER!

Life-threatening danger due to electric shock!

- It is vital that you disconnect the operator system from the power supply before disassembly. Take measures to ensure that the power supply remains disconnected during disassembly.

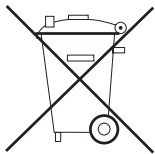
WARNING!

Improper dismantling may result in severe injury!

- Observe all the applicable health and safety regulations.

The system must be disassembled by a qualified technician, following the installation instructions in reverse.

9. Disposal



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

- Dispose of old devices at a waste collection centre for electronic waste or via your specialist dealer.
- Dispose of old batteries in a battery recycling container or via a specialist dealer.
- Dispose of the packaging material in the special waste collection containers for paper, cardboard and plastic.

10. Rectifying faults

Faults with no fault messages

LCD display does not light up or display information.

No supply voltage present.

- Check that the mains voltage supply is operational.
- Check the electrical connection.

The thermal overload protection in the mains transformer has been triggered.

- Allow the transformer to cool down.

Control unit defective.

- Have the operator system checked.

Faults with no fault messages

No reaction after impulse signal.

Connection terminals for "impulse" button are bridged, e.g. due to flat terminals or a short circuit in the wiring.

- If key switches or interior push buttons are connected, try disconnecting them from the control unit: remove cables from the XB99 terminal block, insert the shorting plug and search for the wiring fault.
→ "4.4.3 Terminal XB99"

No reaction after an impulse signal has been transmitted by the hand transmitter.

Modular antenna is not plugged in.

- Connect the modular antenna to the control unit.

Hand transmitter code does not correspond to the receiver code.

- Activate the hand transmitter anew.
→ "5.4 Express programming"

The battery in the hand transmitter is empty.

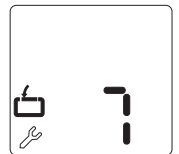
- Insert new battery.
→ "6. Operation"

The hand transmitter, control electronics or modular antenna are defective.

- Have all 3 components checked.

Faults with fault messages

The system indicates recognised faults by showing a fault number (example: fault number 7). The control system switches to reporting mode. In operating mode, the last fault number can be shown by pressing the P button.



Fault number 3

The closing edge safety device in the OPEN direction has been tripped.

- Check the gate and remove any obstacles.

Fault number 5

The closing edge safety device in the CLOSE direction has been tripped.

- Check the gate and remove any obstacles.

Fault number 7

Programming mode will end automatically if 120 seconds elapse without a button being pressed.

- Start the programming procedure again.

Fault number 8

Motor 1 reference point is not detected.

- Have the operator system checked.

Faults with fault messages

Fault number 9

Motor 1 RPM detector defective, motor 1 anti-blocking device was activated.

- Have the motor 1 operator system checked.

Fault number 10

Motor 1 power limitation has been triggered.

- Take measures to ensure that the gate moves freely and smoothly.

The gate does not move easily or is obstructed.

- Take measures to ensure that the gate moves freely and smoothly.

Motor 1 maximum power limitation set too low.

- Have the motor 1 maximum driving power checked by a specialist dealer.
- "Level 2, Menu 1 - Driving power required to OPEN"
→ "Level 2, Menu 2 - Driving power required to CLOSE"

Fault number 11

Excess travel stop.

- Have the operator system checked.

Fault number 12

Closing edge safety device testing in OPEN direction not OK.

- Have the closing edge safety device checked.

Closing edge safety device in OPEN direction programmed but not connected.

- Deactivate or connect closing edge safety device in OPEN direction.

Fault number 13

Closing edge safety device testing in CLOSE direction not OK.

- Have the closing edge safety device checked.

Closing edge safety device in CLOSE direction programmed but not connected.

- Deactivate or connect closing edge safety device in CLOSE direction.

Fault number 14

OPEN and CLOSED gate positions not correctly set.

- Perform RESET.
- "Level 1, Menu 8 – RESET"

Fault number 15

Photocell triggered or defective.

- Remove obstacle or have the photocell checked.

Photocell programmed but not connected.

- Deactivate or connect the photocell.

Faults with fault messages

Fault number 16

The current sensor for motor 1 automatic cut-out is defective.

- Have the motor 1 operator system checked.

Fault number 17

RPM detector faulty, motor 2 anti-blocking device was activated.

- Have the motor 2 operator system checked.

Fault number 18

RPM detector faulty, motor 2 anti-blocking device was activated.

- Have the motor 2 operator system checked.

Fault number 19

Power limitation for motor 2 was activated.

- Make sure that the gate moves freely and smoothly.

Maximum driving power setting for motor 2 is too low.

- Have the maximum driving power for motor 2 checked by a specialist dealer.
- "Level 2, Menu 1 - Driving power required to OPEN"
→ "Level 2, Menu 2 - Driving power required to CLOSE"

Fault number 25

The current sensor for motor 2 automatic cut-out is defective.

- Have the motor unit 2 checked.

Fault number 26

The operator system is overloaded when the driving power is set to 16 (maximum).

- Have the external power supply checked.

Fault number 28

Motor 1 gate movement difficult, irregular or obstructed.

- Have gate movement checked and take measures to ensure that the gate moves freely and smoothly.

Fault number 29

Motor 2 gate movement difficult, irregular or obstructed.

- Have gate movement checked and take measures to ensure that the gate moves freely and smoothly.

Fault number 30

MS bus fault.

- Reset the bus modules.
- "Level 1, Menu 8 – RESET"
- Have the connected bus modules checked.

Faults with fault messages

Fault number 33

- Rise in temperature due to overheating.
- Allow the motor unit to cool down.

Fault number 35

- Electronic defect.
- Have the operator system checked.

Fault number 36

- Wire jumper removed but stop button not connected.
- Plug in stop button or insert shorting plug.
→ "4.4 Connection of control elements"
- Operator system released or closed circuit interrupted.
- Engage the operator system.

11. Appendix



11.1 Technical Data

Electrical data

Rated voltage, regional deviations are possible	V	230 / 260
Rated frequency	Hz	50 / 60
Power consumption in operation*	kW	0,4
Power consumption in standby*	W	3.2
Duty cycle	min.	KB 5
Control voltage	V DC	24
Protection category of motor unit		IP 44
Protection class		II

* without any additional equipment connected

Environmental data

Weight control unit	kg	2.50
Sound pressure level	dB(A)	< 70
Temperature range	 °C	-20
	 °C	+60

11.2 Declaration of Incorporation

We hereby declare that in its design and construction, and in the form as delivered, the product mentioned below complies with the basic requirements of the Machinery Directive 2006/42/EC.

EC Machinery Directive 2006/42/EC Annex I, with the following basic health and safety requirements:

Sections: 1.1.2, 1.1.3, 1.1.5, 1.1.6, 1.2.1, 1.2.2, 1.2.3, 1.2.6, 1.3.2, 1.3.3, 1.3.4, 1.3.7, 1.3.9, 1.5.1, 1.5.2, 1.5.4, 1.5.6, 1.5.8, 1.5.9, 1.5.10, 1.5.11, 1.5.13, 1.5.14, 1.6.1, 1.6.3, 1.7.1, 1.7.2, 1.7.3, 1.7.4

This declaration shall no longer be valid if changes are made to the product without our authorisation.

Product: Control x.52, Control x.52 u hinged gate control unit
Revision status: R01, R10

This partly completed machine also complies with the all of the regulations of the:

EC – Construction Products Directive EU/305/2011

EC – Electromagnetic Compatibility Directive 2004/108/EC

EC – Low Voltage Directive 2006/95/EC


Specifications from applied and referenced standards:

EN ISO 13849-1, Safety of machinery – Safety-related parts of control systems – Part 1: General principles for design, Cat. 2 / PL "C" for the power limitation function and the travel limit recognition function
EN 60335-1/2, Safety of electrical appliances/Drives for doors – as applicable

EN 61000-6-2, Electromagnetic compatibility – Emitted interference
EN 61000-6-3, Electromagnetic compatibility – Immunity

The special technical documents were prepared in accordance with Annex VII, Part B of the Machinery Directive 2006/42/EC. We undertake to supply these documents, in electronic form and within a reasonable period, in response to a duly reasoned request from the market surveillance authorities.

The partly completed machine may not be set in operation until it has been ascertained that the machine in which the partly completed machine is to be installed complies with all the requirements of the Machinery Directive 2006/42/EC.



17 February 2015

ppa. M. Hörmann
Management



Person authorised to compile the relevant technical documentation:
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Type plate

Typ (A)	_____
Rev (B)	_____
Art. No. (C)	_____
Prod. No. (D)	_____

