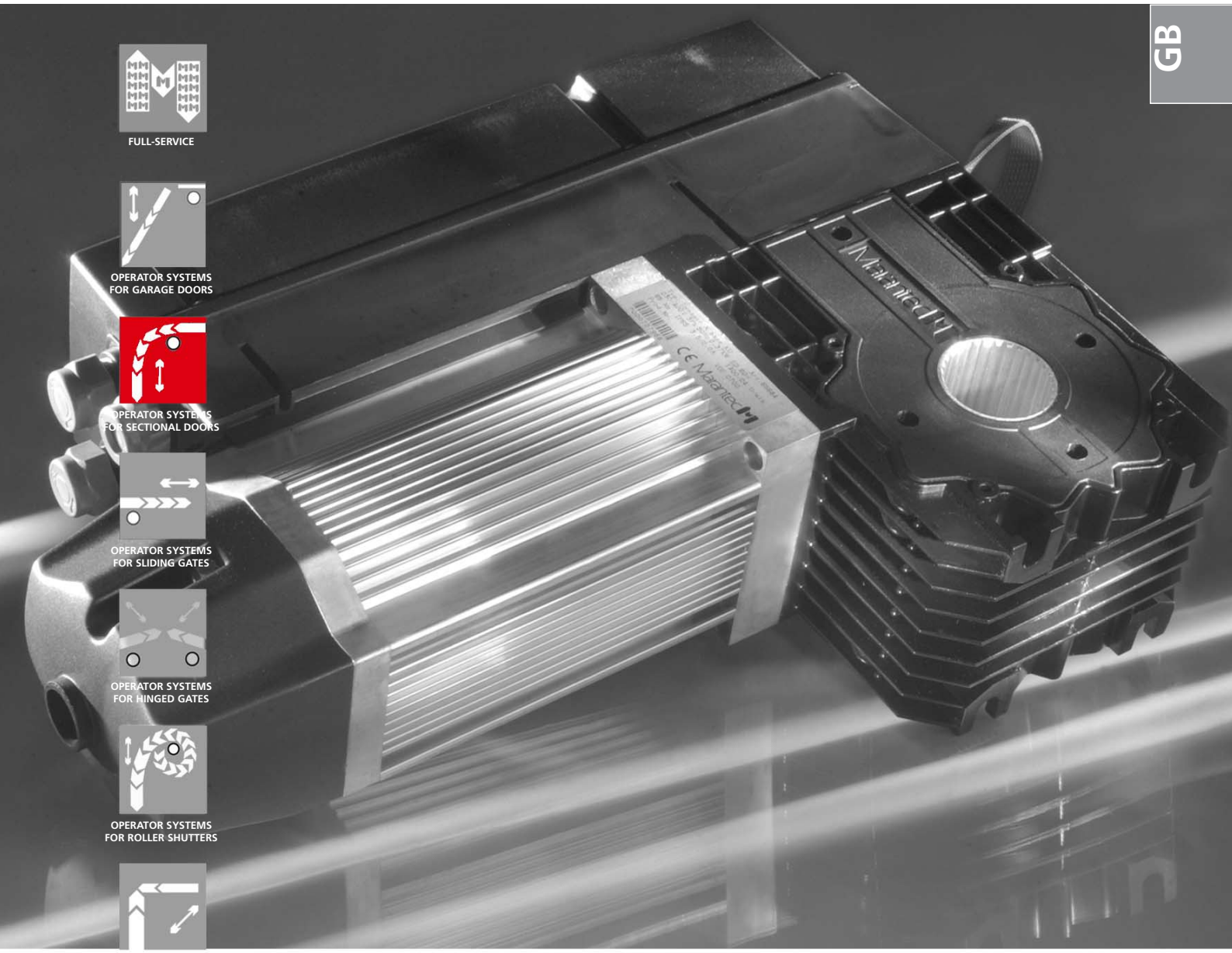
Dynamic xs.plus

Operator system for industrial doors

GB



FULL-SERVICE

OPERATOR SYSTEMS FOR GARAGE DOORS

OPERATOR SYSTEMS FOR SECTIONAL DOORS

OPERATOR SYSTEMS FOR SLIDING GATES

OPERATOR SYSTEMS FOR HINGED GATES

OPERATOR SYSTEMS FOR ROLLER SHUTTERS

PARK BARRIER SYSTEMS

ELECTRONIC CONTROL UNITS

PRODUCT SERVICE

ACCESSORIES

Manual for installation and operation

Marantec

Door operators » automatically the best choice

www.marantec.com

1. Meaning of symbols

Controls and motor unit symbols

- Safety devices
- "Door OPEN" position
- Intermediate position
- "Door CLOSED" position
- Maintenance indicator
- Messages specific to the operator system
- Impulse
  (remote control, external control elements)
- Operation

Advice

Caution!
Danger of personal injury!
The following safety advice must be observed at all times so as to avoid personal injury!

Attention!
Danger of material damage!
The following safety advice must be observed at all times so as to avoid material damage!

Advice / Tip

Check

Reference

Type plate on Control x.plus control unit

Type: _____

Art. No.: _____

Product No.: _____

Type plate on Dynamic xs.plus motor unit

Type: _____

Art. No.: _____

Product No.: _____

2. Table of contents

3. General safety advice

Please read carefully!

Target group
This operator system may only be installed, connected and put into operation by qualified and trained professionals!
Qualified and trained specialist personnel are persons
- who have knowledge of the general and special safety regulations,
- who have knowledge of the relevant electro-technical regulations,
- with training in the use and maintenance of suitable safety equipment,
- who are sufficiently trained and supervised by qualified electricians,
- who are able to recognise the particular hazards involved when working with electricity,
- with knowledge regarding applications of the EN 12635 standard (installation and usage requirements).

Warranty
For an operations and safety warranty, the advice in this instruction manual has to be observed. Disregarding these warnings may lead to personal injury or material damage. If this advice is disregarded, the manufacturer will not be liable for damages that might occur.

Batteries, fuses and bulbs are excluded from warranty.

To avoid installation errors and damage to the door and operator system, it is imperative that the installation instructions are followed. The system may only be used after thoroughly reading the respective mounting and installation instructions.

The installation and operating instructions are to be given to the door system user, who must keep them safe. They contain important advice for operation, checks and maintenance.

This item is produced according to the directives and standards mentioned in the Manufacturer's Declaration and in the Declaration of Conformity. The product has left the factory in perfect condition with regard to safety.

Power-operated windows, doors and gates must be checked by an expert (and this must be documented) before they are put into operation and thereafter as required, but at least once a year.

Correct use
The operator system is intended exclusively for opening and closing industrial doors.
The maximum torque must be observed.

Door requirements
The operator system is suitable for use with spring balanced sectional doors.

Beside the advice in these instructions, please observe the general safety and accident prevention regulations! Our sales and supply terms and conditions are effective.

3. General safety advice

Please read carefully!

Information on installing the operator system
- Ensure that the door is in good mechanical condition.
- Ensure that the door is balanced.
- Ensure that the door opens and closes properly.
- Ensure that there is a suitable mains connection near the door.
- Remove all unnecessary components from the door (e.g. cables, chains, brackets).
- Render any installations inoperable that will no longer be needed after the operator system has been installed.
- Before commencing cabling works, you MUST disconnect the operator system from the mains supply. Adhere to the safety period of 10 seconds to guarantee that the operator system is voltage free.
- Adhere to the local protection regulations.
- The electricity supply cables and control cables MUST be laid separately.
- Install the operator system with the door in the CLOSED position.
- Install all the impulse transmitters and control devices (e.g. remote control buttons) within sight of the door and at a safe distance from the moving parts of the door. A minimum installation height of 1.5 m must be observed.
- Permanently fix the warning signs, which advise of the danger of becoming trapped, at conspicuous locations.
- Ensure that no part of the door extends across public footways or roads when the installation is complete.

Information on commissioning the operator system
After initial operation, the persons responsible for operating the door system, or their representatives must be familiarised with the use of the system.
- Make sure that children cannot access the door control unit.
- Before moving the door, make sure that there are neither persons nor objects in the operating range of the door.
- Test all existing emergency command devices.
- Never insert your hands into a running door or moving parts.
- Pay attention to any parts of the door system that could cause crushing or shearing damage or accidents. The EN 13241-1 regulations must be observed.

Information on servicing the operator system
To ensure proper operation, the following items must be checked regularly and repaired if necessary. Before any works to the door system are undertaken, the operator system must be disconnected from the mains.
- Check all movable parts of the door and operator system.
- Check the door system for signs of wear or damage.
- Check whether the door can be easily moved by hand.

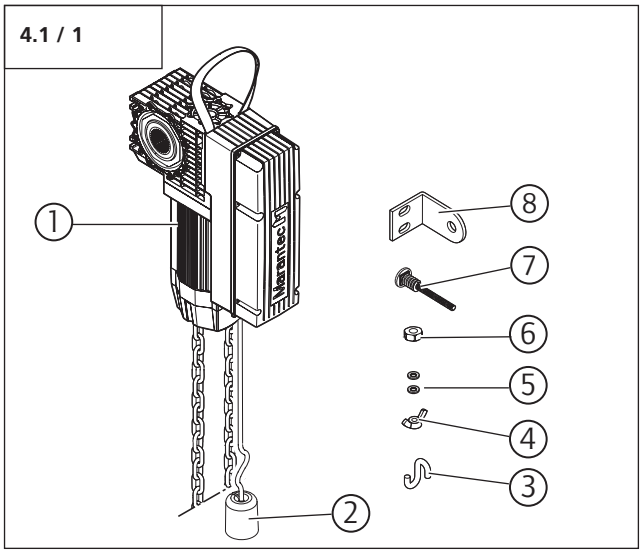
Information on cleaning the operator system
Never use water jets, high pressure cleaners, acids or bases for cleaning.

4. Product overview

4.1 Dynamic xs.plus supply package

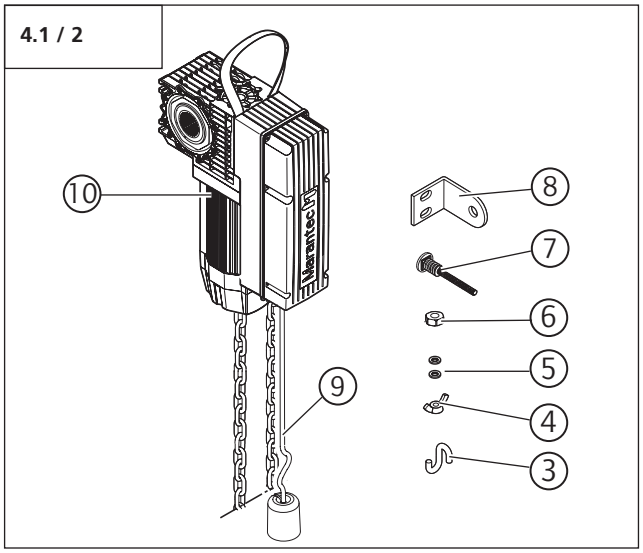
The Dynamic xs.plus motor unit can be supplied in the following versions as required:

Version with chain and maintenance release (CH/MR)



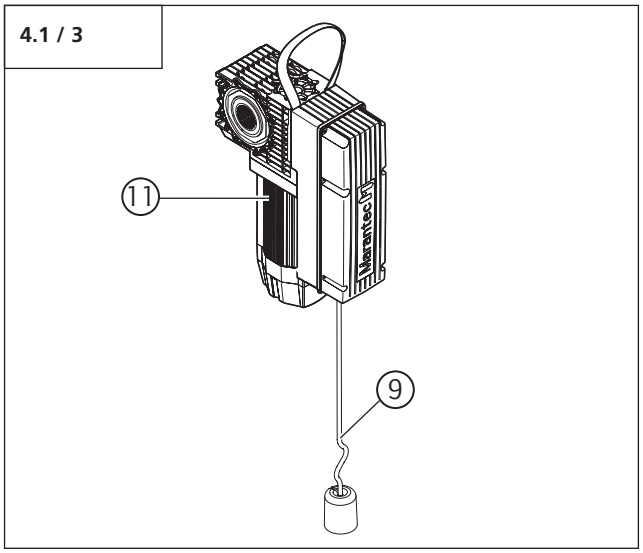
1 Dynamic xs.plus motor unit CH/MR
2 Release cable (200 mm)
3 Chain connecting link (2x)
4 Wing-nut
5 Washer (2x)
6 Nut, width across flats: 13
7 Securing bolt
8 Mounting bracket

Version with controlled quick release (QRC)



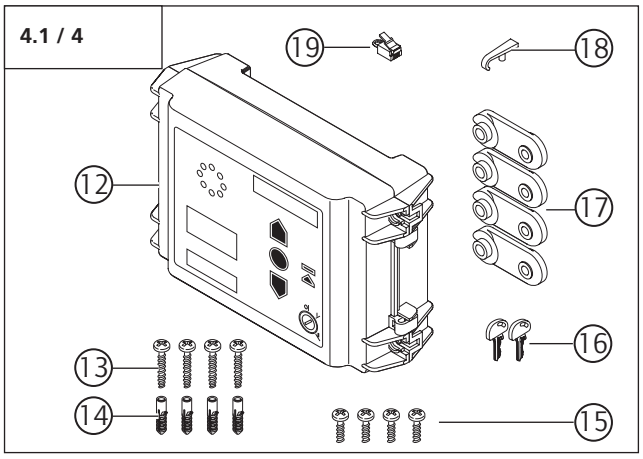
3 Chain connecting link (2x)
4 Wing-nut
5 Washer (2x)
6 Nut, width across flats: 13
7 Securing bolt
8 Mounting bracket
9 Release cable (6,000 mm)
10 QRC motor unit

Quick release version (QR)



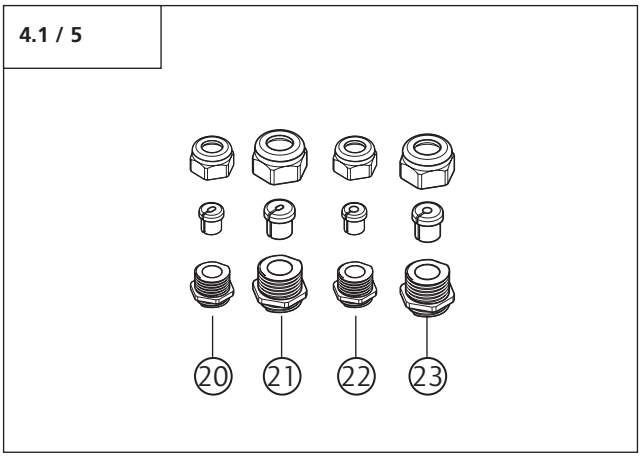
9 Release cable (6,000 mm)
11 Dynamic xs.plus motor unit, QR

Control x.plus control unit



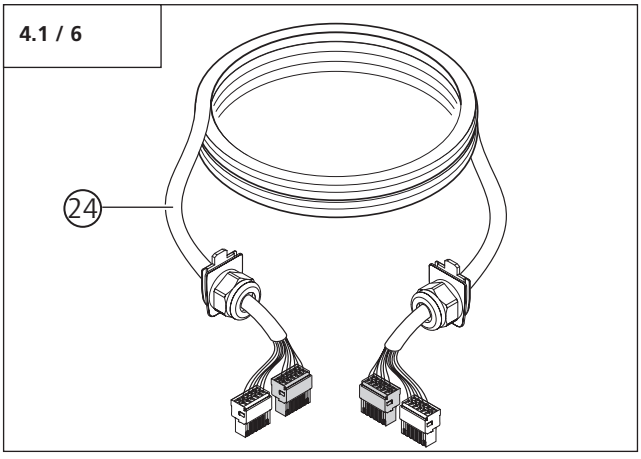
12 Control x.plus control unit
13 Wood screw 4 x 35 (4x)
14 Wall plug (4x)
15 Plastic screw 4 x 10 (4x)
16 Key (2x)
17 Foot for control unit housing (4x)
18 Operating handle
19 Shorting plug

Screw connection set



20 M16 screw fixing for 4-pole flat cable
21 M20 screw fixing for 6-pole flat cable
22 M16 screw fixing for 4 - 6 mm round cable
23 M20 screw fixing for 6 - 9 mm round cable

Cable loom, motor unit - control unit

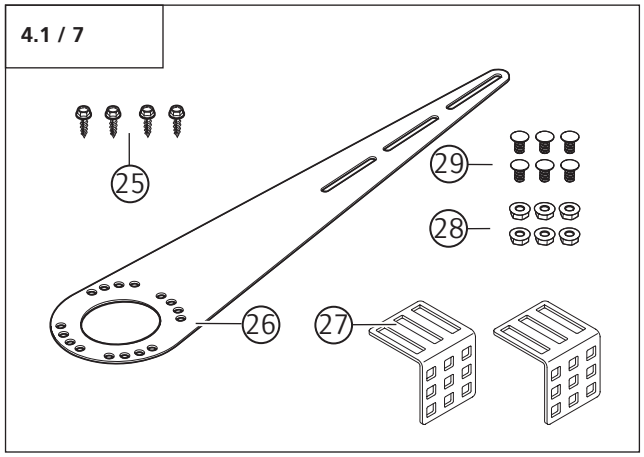


24 Cable loom, motor unit - control unit

Additional mounting parts are required for fixing the motor unit.

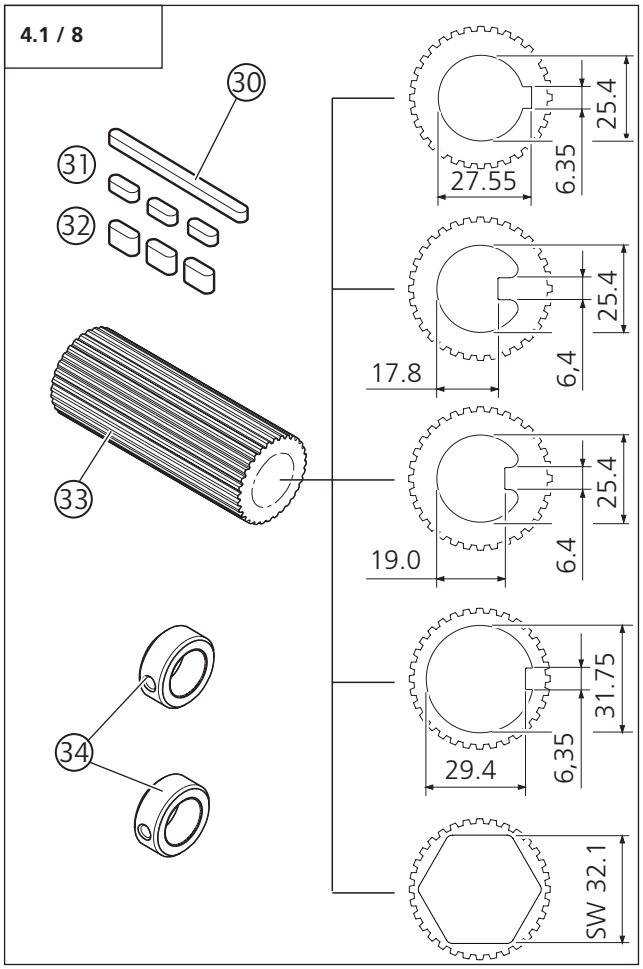
Mounting parts for push-on assembly

Steel sheet torque support



25 Screw B4.8 x 13 (4x)
26 Torque support
27 Fixing bracket (2x)
28 Nut with shoulder SW 13 (6x)
29 Screw M8 x 16 (6x)

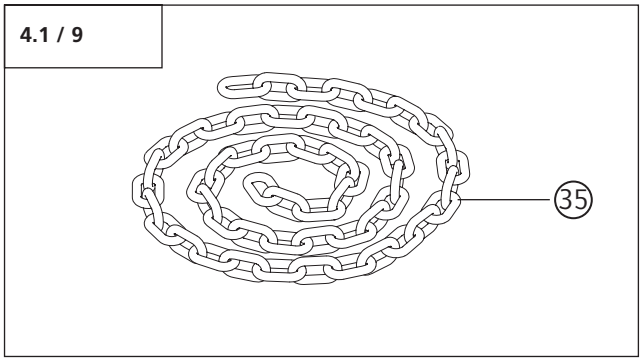
Shaft adapter set



30 Feather key 1 (1x)
(only for adapters without integrated feather key)
31 Feather key 2 (3x)
(only for adapters without integrated feather key)
32 Feather key 3 (3x)
(only for adapters without integrated feather key)
33 Shaft adapter (1x)
(Dimensions according to requirements)
34 Adjusting ring (2x)

Reference:
The relevant instructions are to be followed if the motor unit is to be installed according to other mounting options.

Emergency hand chain extension (optional)



35 Emergency hand chain (optional)

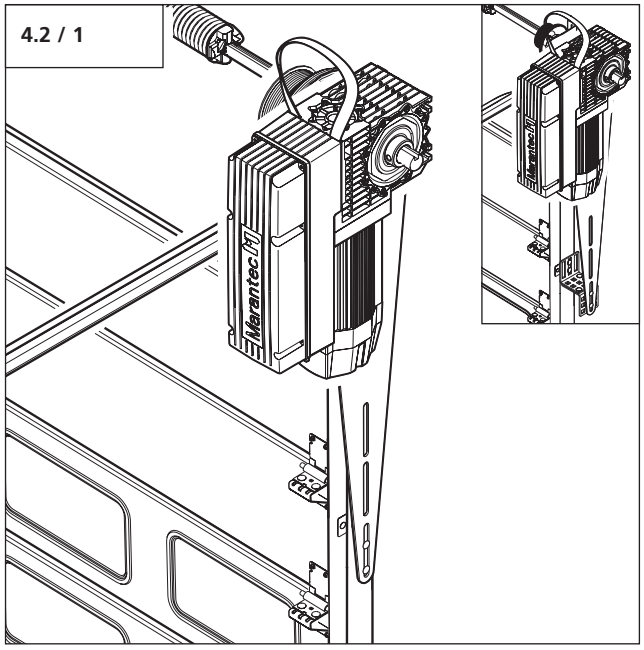
Safety devices (optional)

Remote control (optional)

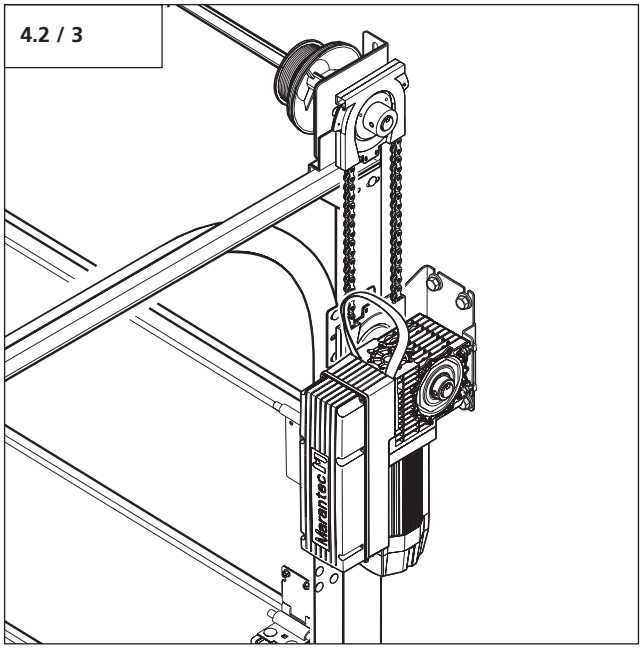
Reference:
To ascertain the exact contents of the supply packages for optional accessories, please refer to the relevant instructions included.

4.2 Mounting options

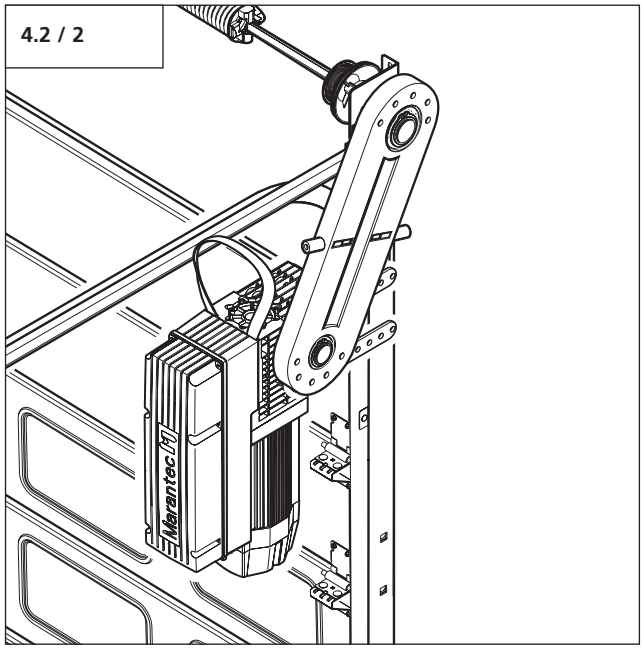
Push-on assembly



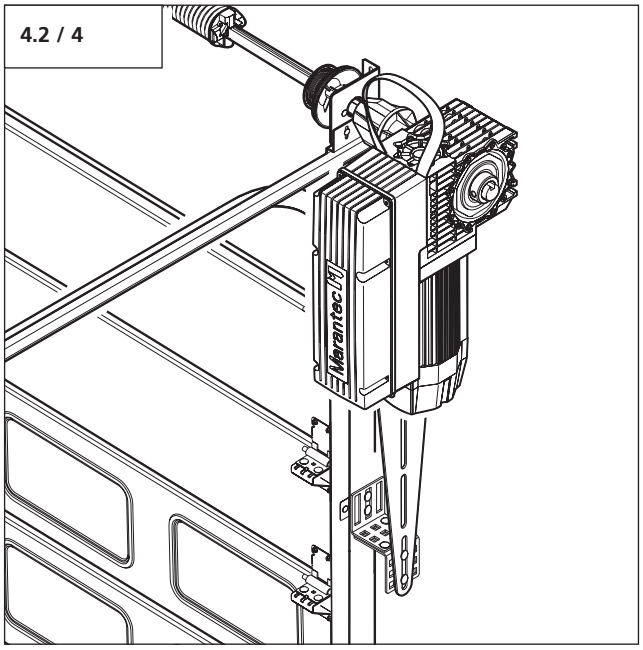
Assembly with chain drive (optional)



Assembly with spindle chain drive (optional)

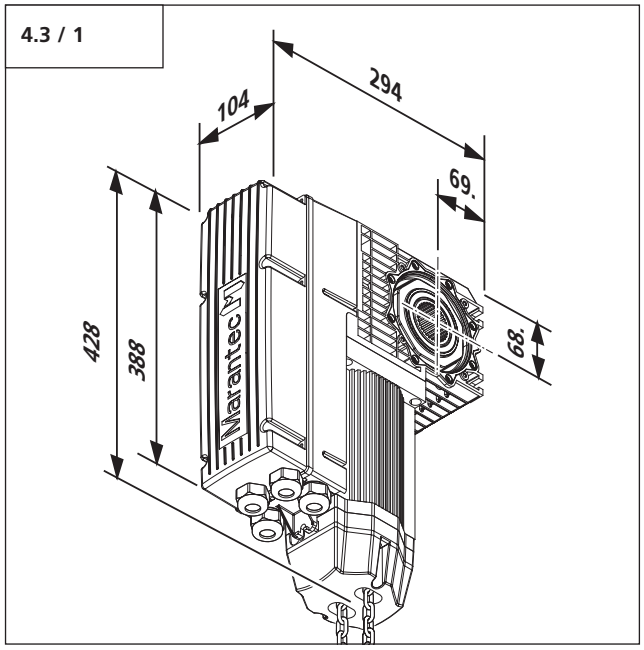


Assembly with push-on shaft adapter (optional)

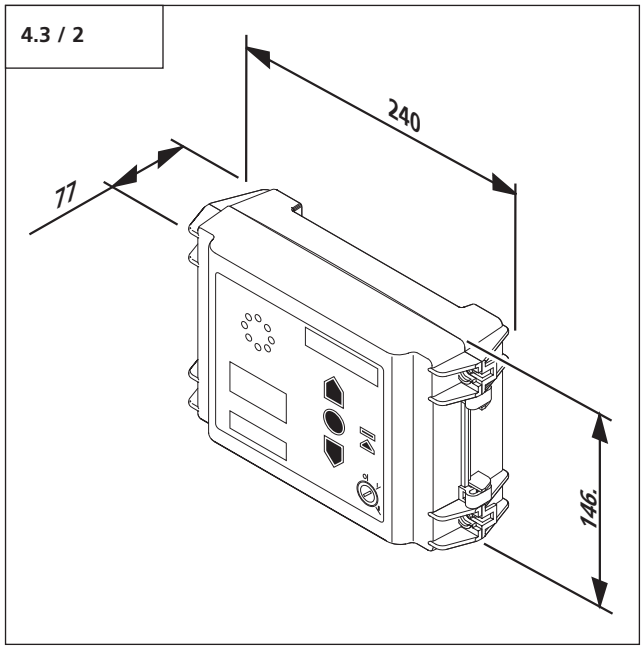


4.3 Dimensions

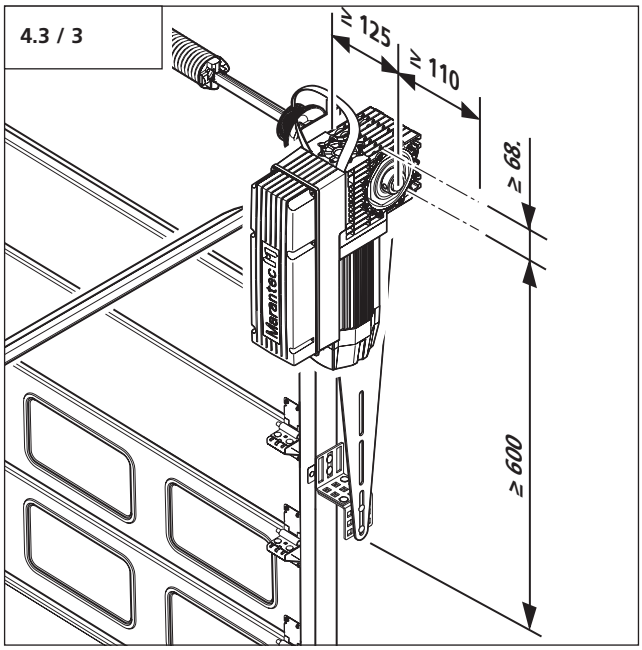
Dynamic xs.plus with emergency hand crank



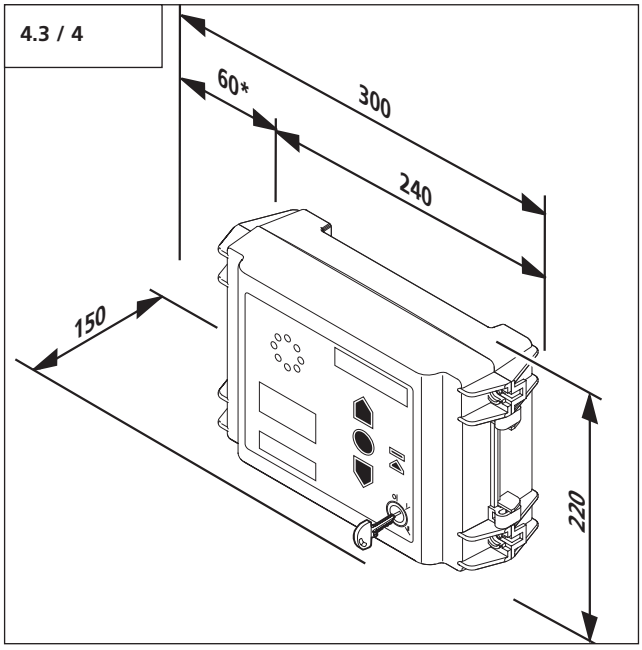
Control x.plus control unit



Space required when installed vertically
(Recommended for motor unit with emergency hand chain)



Space required for Control x.plus control unit



* Opening side

5. Preparation for mounting

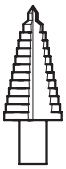
5.1 General notes

The instructions describe the push-on assembly for motor unit versions with:
- Maintenance release (CH/MR)
- Quick release (QR)
- Controlled quick release (QRC)

The pictures in these instructions are not true-to-scale. Dimensions are always given in millimetres (mm)!

The illustrations in these instructions show the installation on the inner right hand side, for a door with normal fittings.

For correct mounting you will need the following tools:

5.1 / 1			
	 **8 / 13**	 **2 / 2.5**	 **2.5**
 **3 / 4 / 5**			 **ø 9**
	 *	 **ø 4 - 20**	

* Grease

5.2 Checks

Attention!
In order to guarantee correct mounting, carry out the following checks before installing.

Supply package
- Check the package to ensure that all the parts are included.
- Check that you have all the additional components that are necessary for your particular installation requirements.

Door system

Attention!
The operator system cannot be disengaged from the outside.
A separate entrance must be available in order to gain access to the garage in the event of a malfunction.

Reference:
The relevant instructions must be observed when mounting the operator at the door.

The door must be properly installed and must have been checked to ensure that it functions correctly.

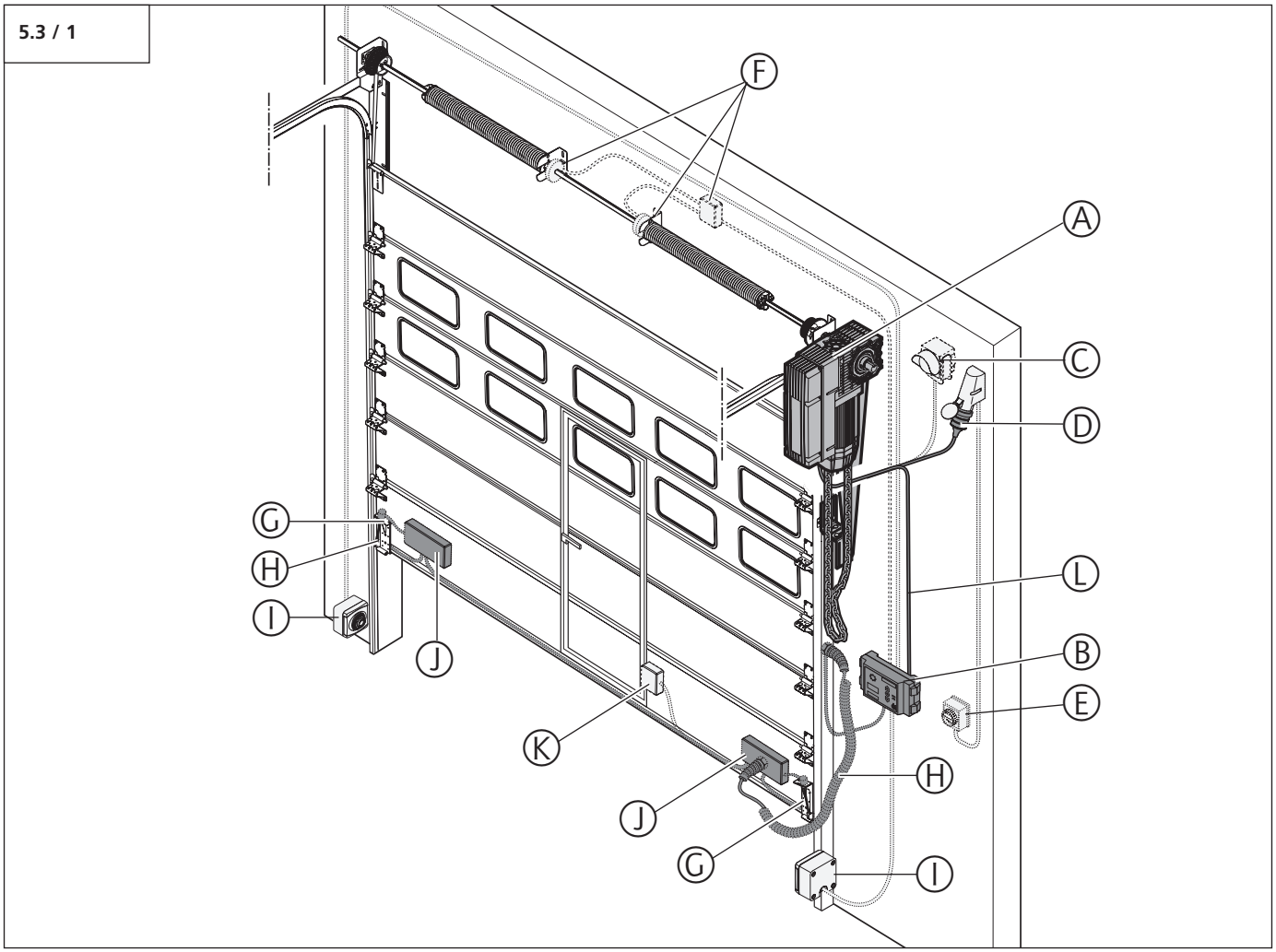
- Ensure that a suitable mains connection and a mains disconnection facility are available for your door system.
- Check to ensure that the door to be operated fulfils the following conditions:
  - The door must move easily when operated manually.
  - The door must always remain stationary in any position without external restraint.
- Determine on which side of the door system the operator system should be mounted.
- Check to ensure that there is sufficient space to mount the operator system.

Reference:
When using and installing accessories, always observe the specific instructions included with the equipment.

5.4 Cabling layout

Advice:
This is just an example of a cabling layout; the layout can vary according to the type of door and the associated equipment.

5.3 / 1



A Dynamic xs.plus motor unit
B Control x.plus control unit
C Signalling device (e.g. signal light)
D Mains connection
Useable length:
- 0.8 m (400 V)
- 1.1 m (230 V)
E Mains isolator switch
F Spring safety device, supplied by customer
G Door sensors for cable slack device
H Optosensors
I Photocell barrier
J Housing, connection unit
K Door sensor for wicket door
L Cable loom, motor unit - control unit

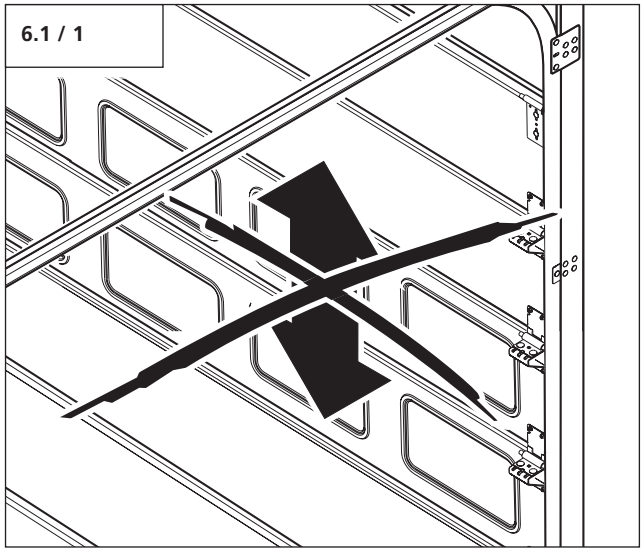
Reference:
The relevant installation instructions must be observed when mounting and connecting door sensors, control elements and signalling devices.

6. Installation

6.1 Preparing the door

Caution!
- To prevent falls, the installation works must be carried out from a safe standing position.
  A lifting platform or scaffold can be used.
- To avoid injury, the door must be secured for the duration of the installation works to prevent it from being opened or closed.

6.1 / 1

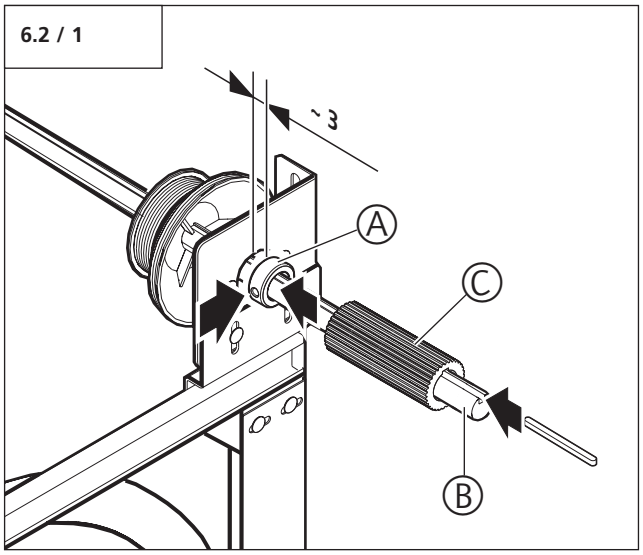


• Secure the door.

6.2 Mounting the shaft adapter

Attention!
To ensure proper operation,
- there must be a 3 mm gap between the frame and the adjusting ring,
- the shaft adapter must fit on the spring shaft with as little play as possible in the direction of rotation.

6.2 / 1



• Deburr the spring shaft (B) using a file.

• Push the adapting ring (A) onto the spring shaft (B).

• Tighten the screw of the adjusting ring (A).

• Grease the spring shaft.

• Push the shaft adapter (C) onto the spring shaft (B).

Only for shaft adapters without integrated feather keys:

• Insert the feather key into the shaft adapter.

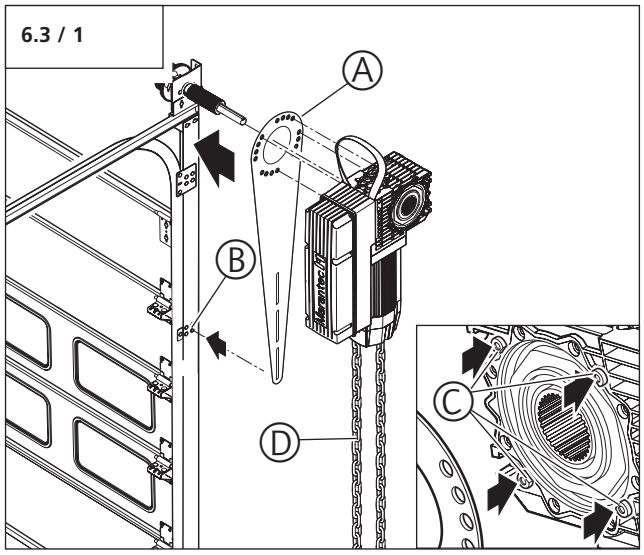
6.3 Determine the mounting position of the motor unit

The mounting position of the motor unit on the torque support (A) varies for different doors.

The screw position (B) for the force absorption of the torque support (A) can be located on the frame or on another fixed building component (e.g. wall).

Attention!
To ensure proper operation, the following conditions must apply:
- All motor unit gudgeons (C) engage in the torque support (A).
- The motor unit's emergency hand chain (D) can be operated without any restriction.

6.3 / 1

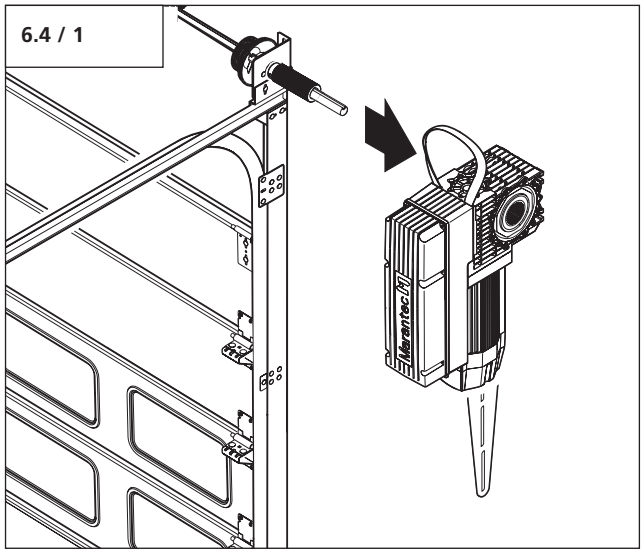


- Determine the mounting position of the torque support and the motor unit.

Advice:
The position can be determined by holding the torque support and the motor unit at the door.

6.4 Mounting the motor unit at the door

6.4 / 1

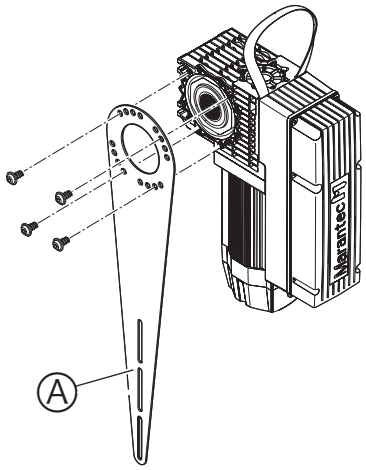


- Remove the motor unit and the torque support from the door.

Attention!
To ensure proper operation, all the gudgeons on the motor unit must engage in the pattern of holes in the torque support.

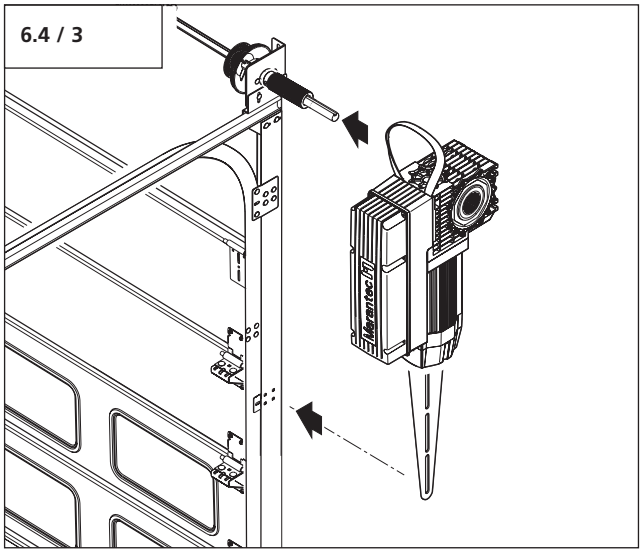
6.4 / 2

B 4,8 x 13



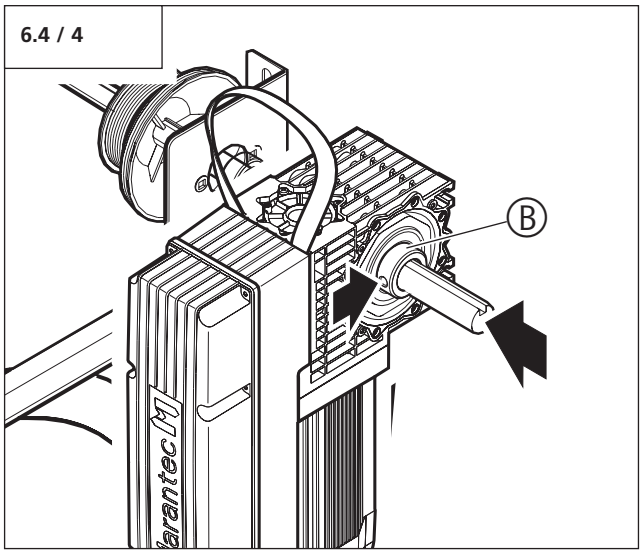
- Push the torque support (A) at the previously determined position onto the gudgeons of the motor unit.
- Screw the torque support (A) to the motor unit.

6.4 / 3



- Place the motor unit at the previously determined position onto the shaft adapter.

6.4 / 4



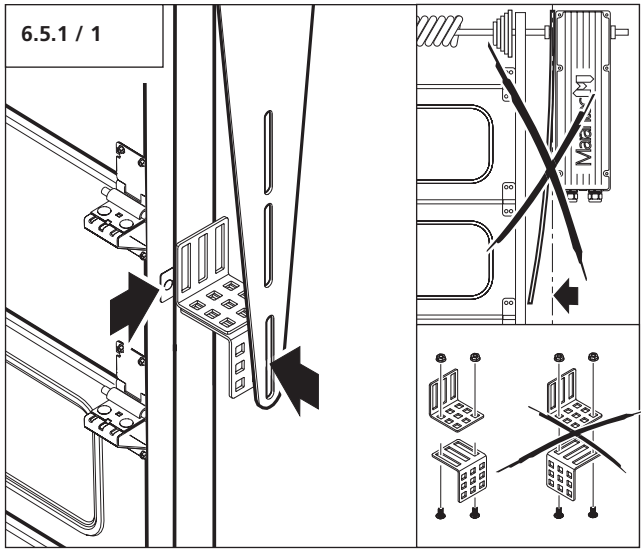
- Place the adjusting ring (B) on the spring shaft.
- Tighten the screw of the adjusting ring.

6.5 Mounting the torque support at the door

6.5.1 Mounting with the mounting bracket

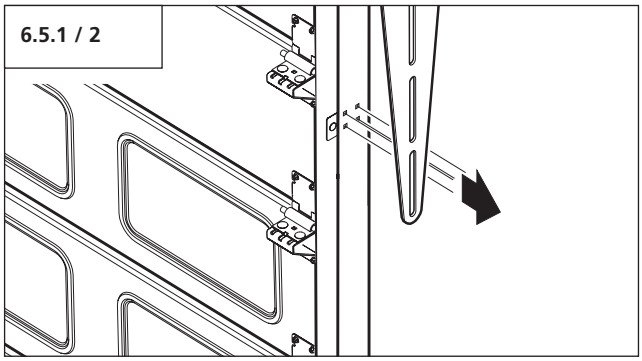
Attention!
To ensure proper long-term operation of the operator system, the torque support must not be bent.

Advice:
The illustration of the bracket combination is only an example.
The torque support can be
- screwed to the frame using a different bracket combination,
- screwed directly onto the frame,
- fixed to another static building component (e.g. a wall).



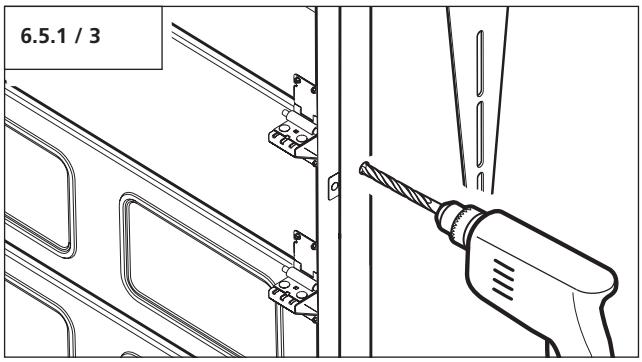
- Hold the mounting bracket between the frame and the torque support.
- Determine the position required for your door configuration.
- Screw the mounting bracket into place accordingly.

Using the existing hole pattern

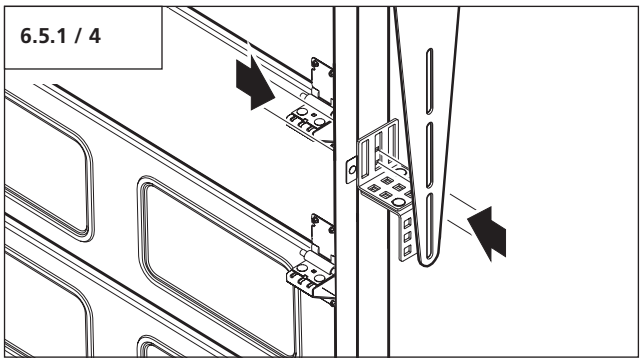


- Remove the screws from the door frame at the mounting position.

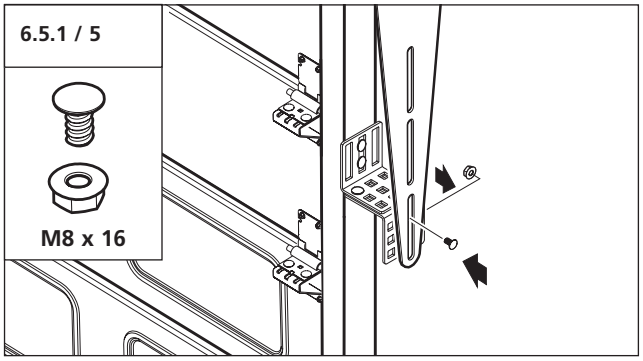
Creating a new hole pattern



- Drill holes in the frame at the screw positions.



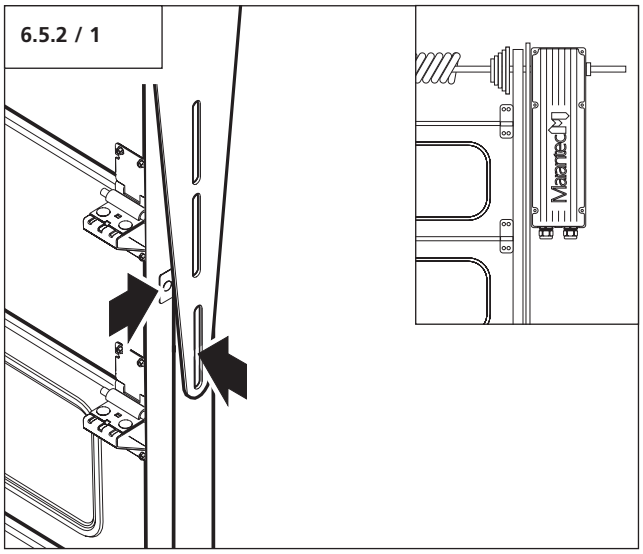
- Screw the mounting bracket to the door frame at the mounting position.



- Screw the torque support to the mounting bracket.
- Release the door so that it is no longer secured.

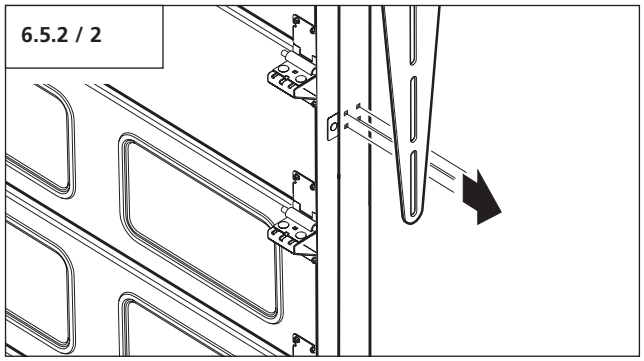
6.5.2 Mounting without the mounting bracket

Attention!
To ensure proper long-term operation of the operator system, the torque support must not be bent.



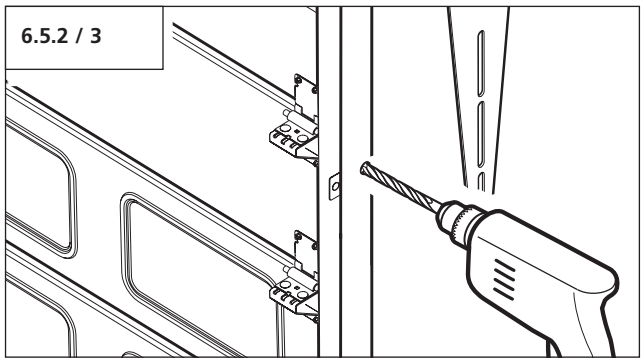
- Hold the torque support in place on the door frame.
- Determine the position required for your door configuration.

Using the existing hole pattern

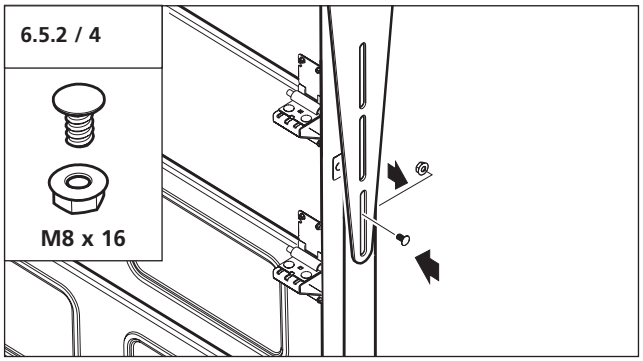


- Remove the screws from the door frame at the mounting position.

Creating a new hole pattern



- Drill holes in the frame at the screw positions.



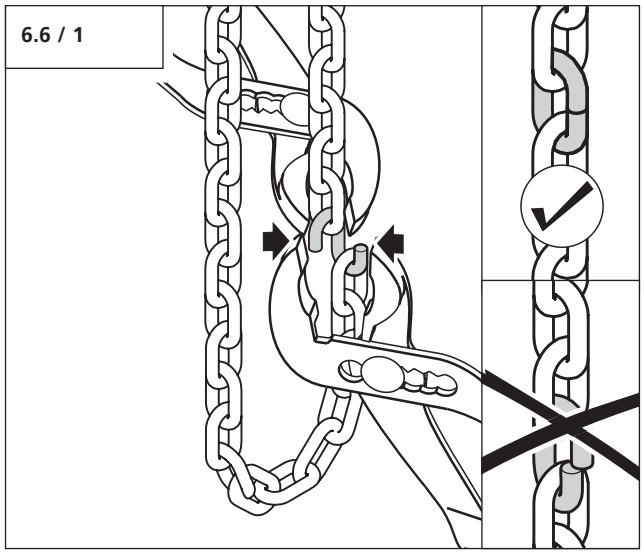
- Screw the torque support to the door frame.
- Release the door so that it is no longer secured.

6.6 Connect the emergency hand chain

Attention!
To ensure that the emergency operation facility functions properly, the following conditions must be ensured:
- The ends of the emergency hand chain must be joined together.
- The edges of the connecting link must be exactly aligned with each other when closed.
- The emergency hand chain should not be twisted.

The motor unit's emergency hand chain can be extended in length using an optionally available extension chain.

6.6 / 1



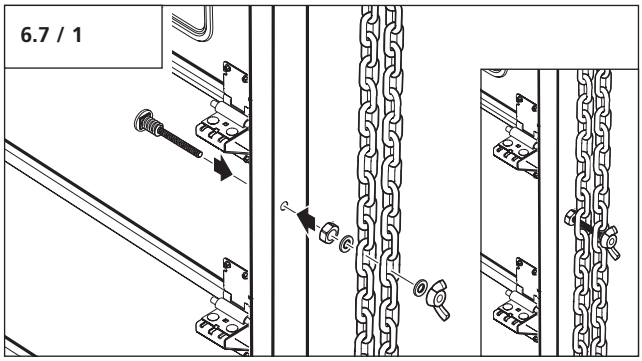
- Join the ends of the emergency hand chain together with the chain connecting link.

6.7 Secure the emergency operation facility

Attention!
The emergency hand chain must be secured to prevent it from being caught in the door mechanism when the door is operated.

Installation example 1
Secure the emergency hand chain at the door frame.

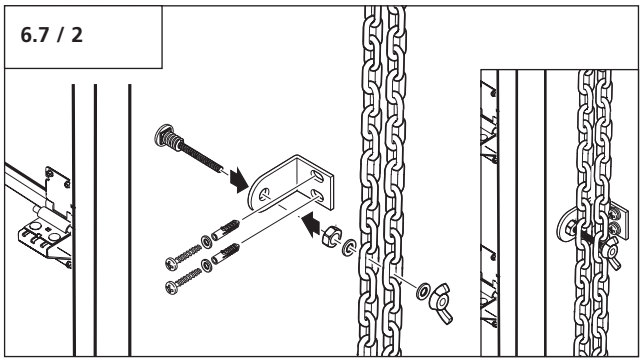
6.7 / 1



- Fix the securing assembly to the frame.
- Secure the emergency hand chain.

Installation example 2
Secure the emergency hand chain on the wall.

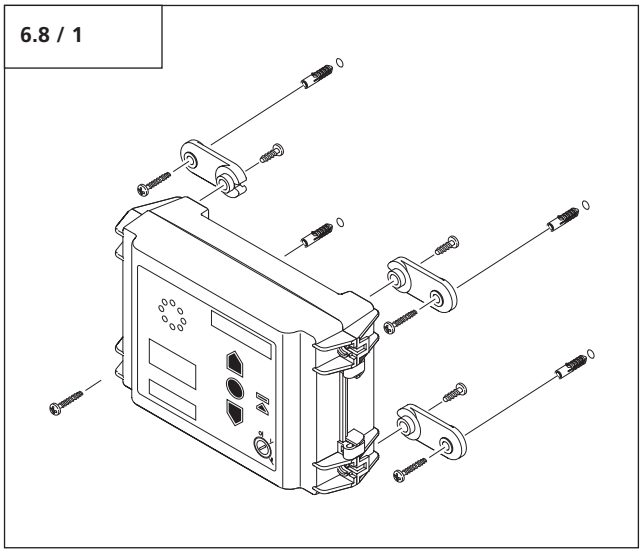
6.7 / 2



- Fix the bracket to the wall.
- Fix the securing assembly to the bracket.
- Secure the emergency hand chain.

6.8 Mounting the Control x.plus control unit

6.8 / 1

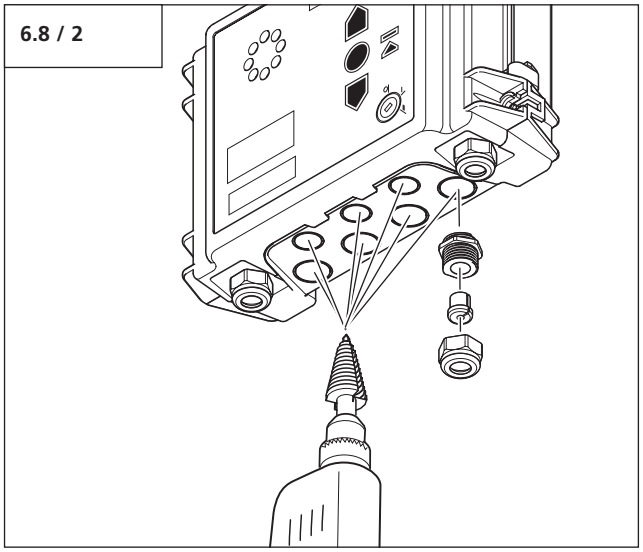


- Mount the Control x.plus control unit on the same side as the motor unit.

Creating further cable inlets

It is only necessary to create further cable inlets if additional systems are to be connected to the control unit.

6.8 / 2



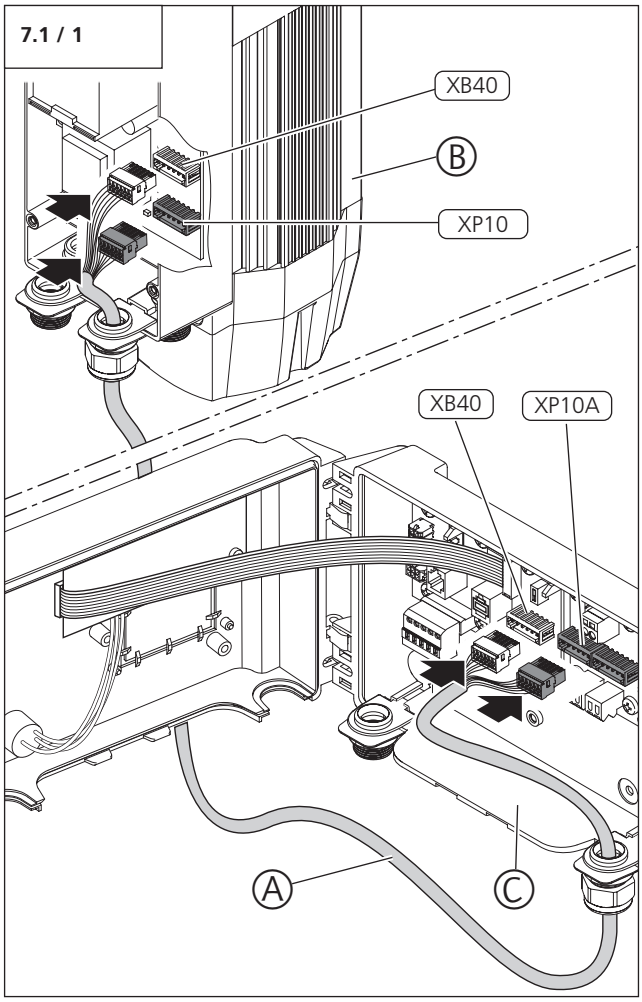
- Using a step drill, open up the corresponding cable inlet.
- Close the inlet using the corresponding screw fitting.

7. Initial operation

7.1 Cabling for the operator system

Attention!
To ensure that the system functions properly, the plugs of the motor cable loom (A) must be inserted in the designated sockets in the motor unit (B) and in the control unit (C).

7.1 / 1



Motor unit	Connection	Control unit
XB40 (white plug)	<--->	XB40 (white plug)
XP10 (blue plug)	<--->	XP10A (blue plug)

Reference:
The motor unit cabling is described in Section 7.2.
The control unit cabling is described in Section 7.3.

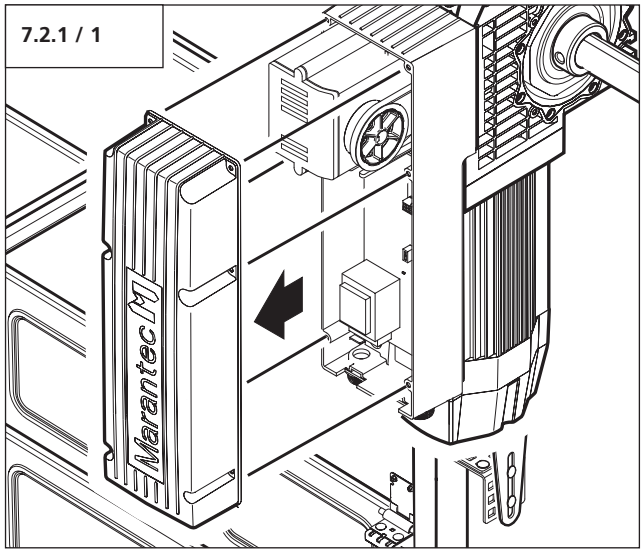
7.2 Motor unit cabling

7.2.1 Preparation

Caution!
Danger of electric shock:
Before cabling works commence, a check must be carried out to ensure that the cables are at zero voltage. Measures must be taken to ensure that the cables remain dead for the duration of the works (e.g. prevent the power supply from being switched back on).

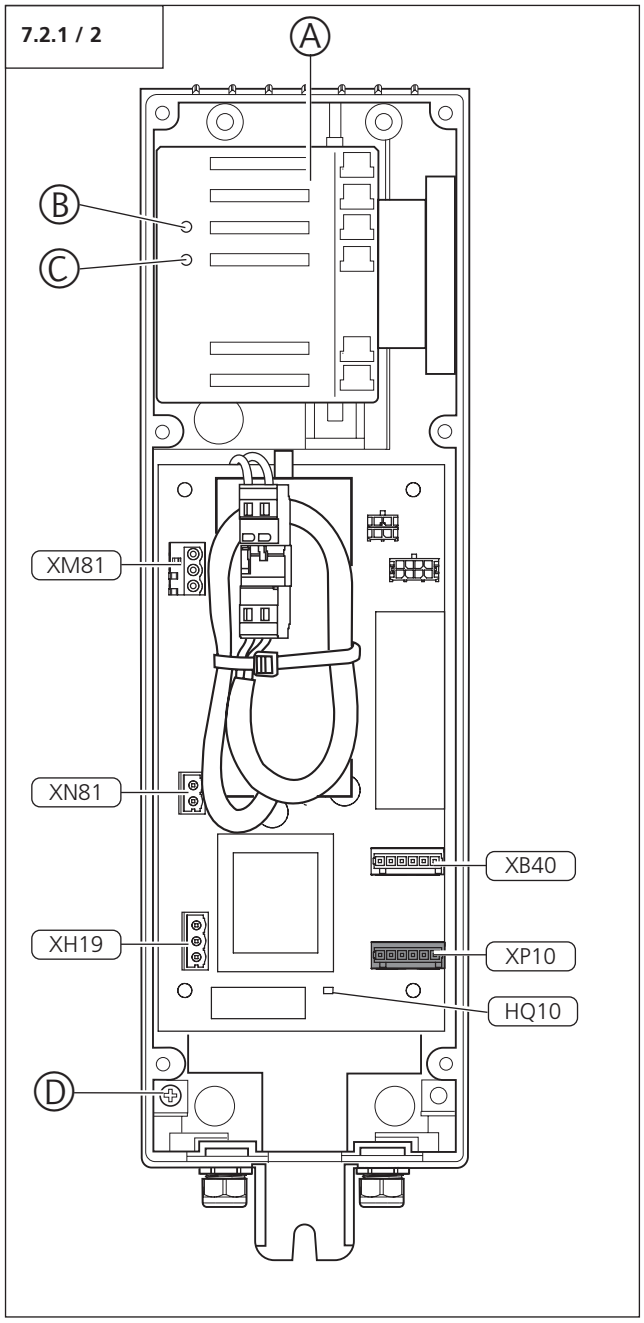
Attention!
- To avoid damage, it is essential that the following points be observed:
  - The local protection regulations are to be complied with at all times.
  - The mains cables and control cables MUST be laid separately.
- To maintain the specified protection category of the operating system, the cables must be fitted with the correct gaskets.

7.2.1 / 1



- Loosen the screws on the housing cover.
- Remove the housing cover.

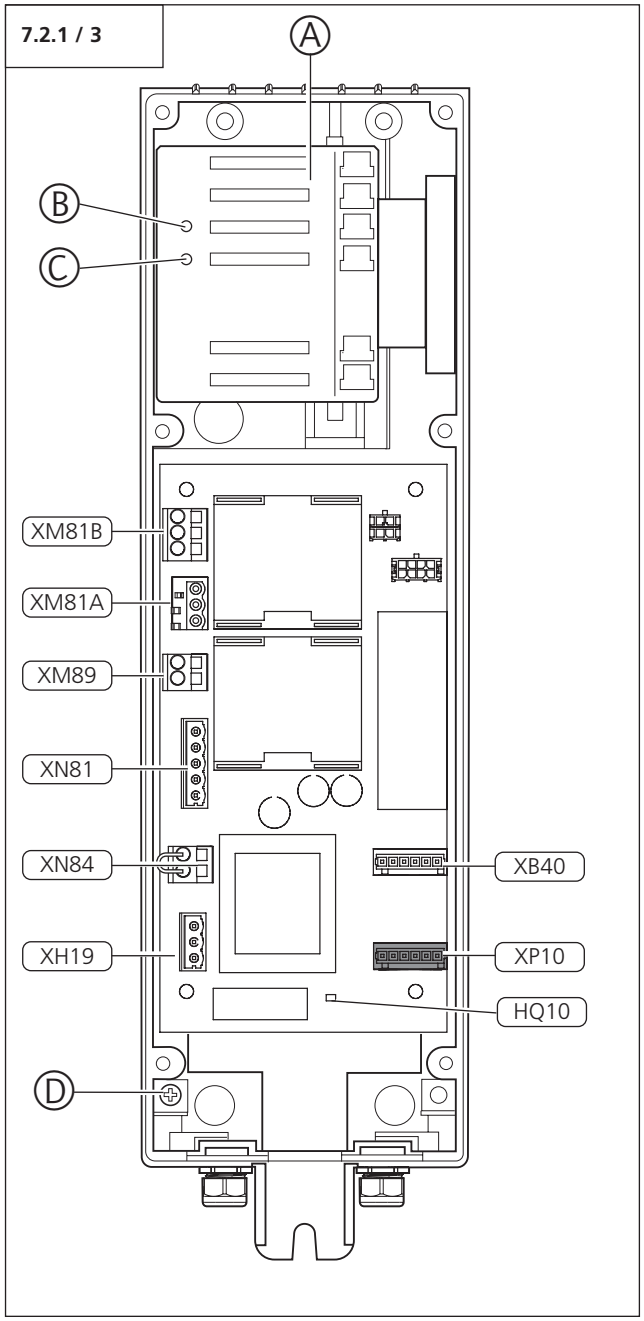
Control unit
Control x.base single-phase model



Label	Type / function	
A	Positioning box (EPM)	–
B	EPM stand-by mode indicator (LED off)	–
C	Operating indicator (EPM)	–
D	PE connection	7.4
HQ10	Operating voltage indicator for operator system	7.4 / 2
XB40	Connection of Control x.plus control unit	7.2.2
XH19	Connection of signalling device Programmable relay output	7.2.4 9.4
XM81	Connection of motor	7.4
XN81	Connection of mains cable	7.4
XP10	For connection of door sensors (safety circuit SC)	7.2.3

EPM: Electronic Positioning Module

Control unit
Control x.base 3-phase model

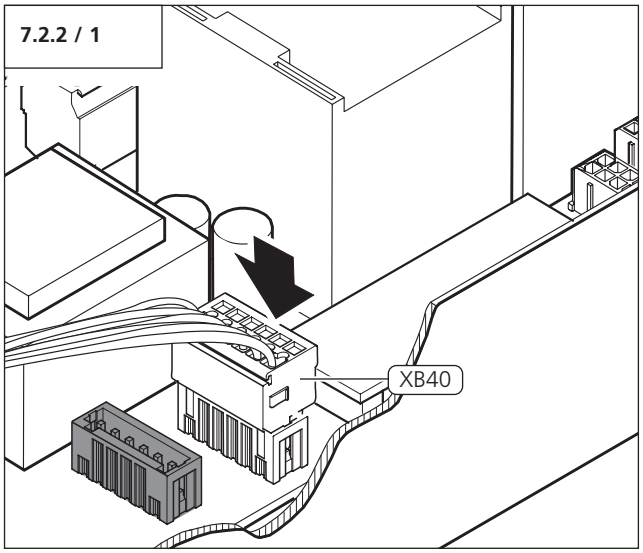


Label	Type / function	
A	Positioning box (EPM)	–
B	EPM stand-by mode indicator (LED off)	–
C	Operating indicator (EPM)	–
D	PE connection	7.4
HQ10	Operating voltage indicator for operator system	7.4 / 2
XB40	Connection of Control x.plus control unit	7.2.2
XH19	Connection of signalling devices Programmable relay output	7.2.4 9.4
XM81A	Connection of motor	7.4
XM81B	Connection of motor, delta mode	7.4.3
XM89	Connection of brake	–
XN84	Connection of external transformer	–
XN81	Connection of mains cable	7.4
XP10	For connection of door sensors (safety circuit SC)	7.2.3

EPM: Electronic Positioning Module

XN84: Supplied from factory with shorting jumper.
If this terminal is used, the shorting jumper must be removed.

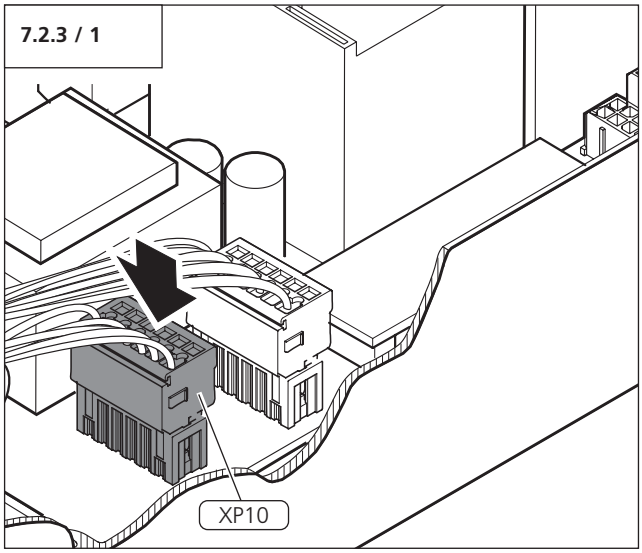
7.2.2 Connection of Control x.plus control unit (XB40)



- Insert the plug of the cable loom into terminal XB40 (white plug).

Terminal	Configuration (12 leads)	Configuration (6 leads)
B4	Blue lead	White lead
b	Red lead	Brown lead
c	Black lead	Green lead
d	Violet lead	Yellow lead
e	Grey/pink lead	Grey lead
f	Red/blue lead	Pink lead

7.2.3 Connecting safety devices (XP10)



- Insert the plug of the cable loom into terminal XP10 (blue plug).

Terminal	Configuration
P1	White lead
b	Brown lead
c	Green lead
d	Yellow lead
e	Grey lead
f	Pink lead

All connected and operational safety devices are recognised automatically.

Advice:
A defective or removed safety device must be deactivated.

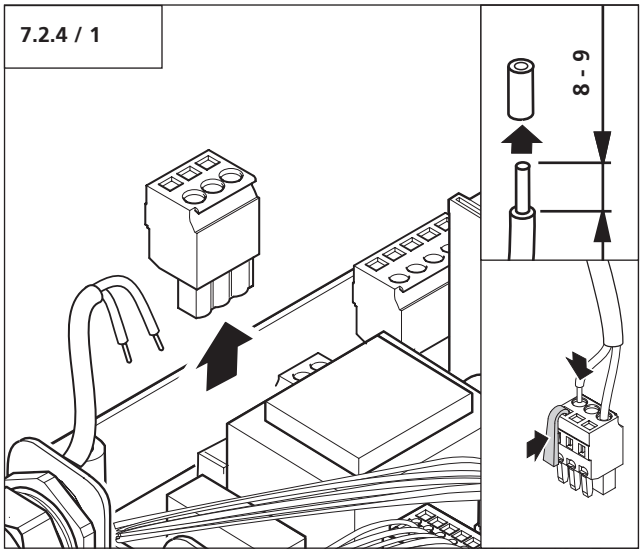
Reference:
Safety devices are deactivated in the Reset menu (Section 9.4 / Level 1 / Menu 8).

7.2.4 Connection of signal device

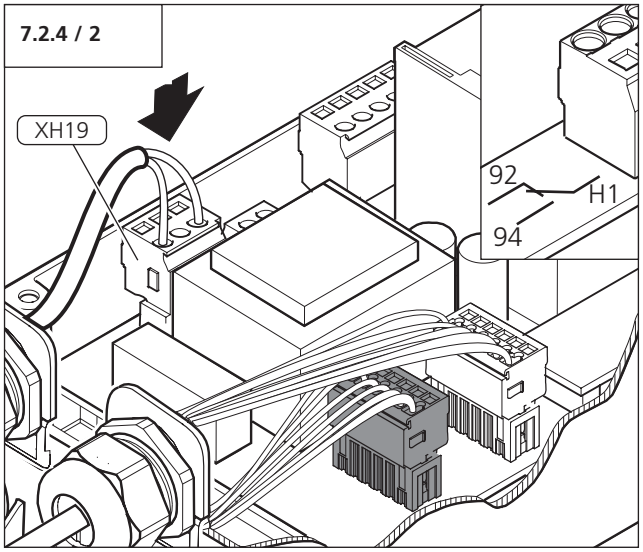
Signal lights are not included in the operator system supply package.

Attention!
To avoid damage being caused to the circuit board, the contact loading (max. 230 V / 2 A) must be observed.

7.2.4 / 1



7.2.4 / 2

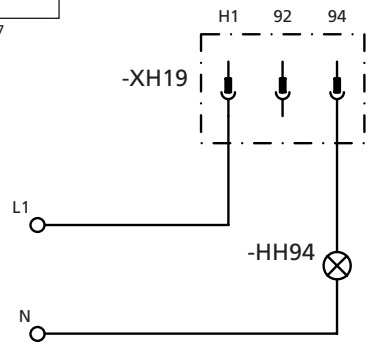


- Insert the plug of the devices to be connected into socket XH19.

Connection for signal light:

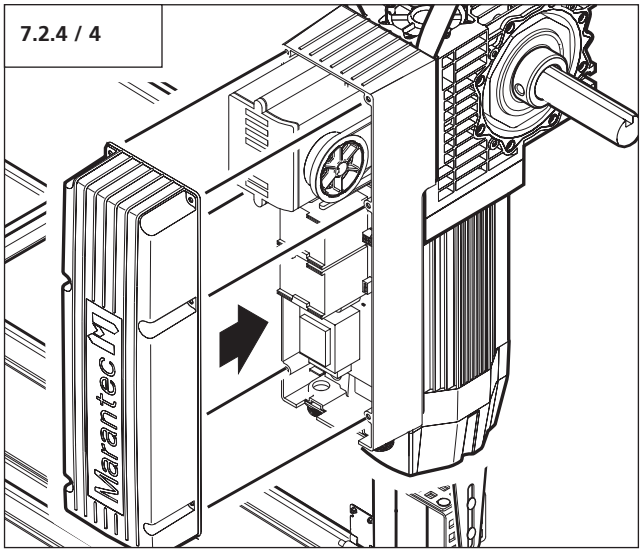
7.2.4 / 3

M06E047



Designation	Type / function
HH94	Signal light supplied by customer
XH19	Connection of signalling device

Attention!
- To avoid damage to the cabling, care must be taken not to trap the cables when closing the cover.
- To maintain the specified protection category of the operator system:
  - the inlet openings must be fitted with suitable cable gaskets,
  - the cables must lie correctly in the cable inlets.



- Place the housing cover on the motor unit.
- Screw the housing cover to the motor unit.

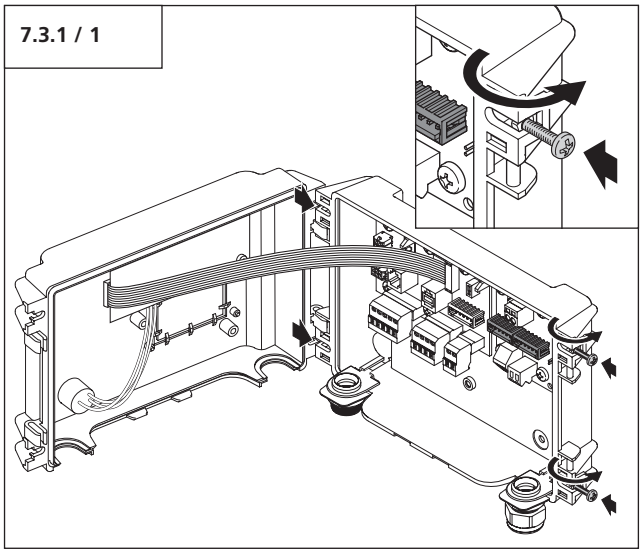
7.3 Cabling for the Control x.plus control unit

7.3.1 Preparation

Caution!
Danger of electric shock:
Before cabling works commence, a check must be carried out to ensure that the cables are at zero voltage. Measures must be taken to ensure that the cables remain dead for the duration of the works (e.g. prevent the power supply from being switched back on).

Attention!
- To avoid damage, it is essential that the following points be observed:
  - The local protection regulations are to be complied with at all times.
  - The mains cables and control cables MUST be laid separately.
- To maintain the specified protection category of the operating system, the cables must be fitted with the correct gaskets.

7.3.1 / 1

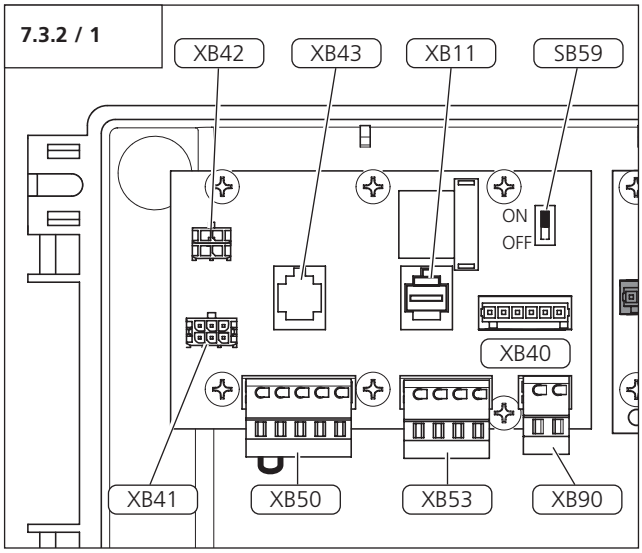


Advice:
The screws need not be removed in order to open the housing cover.

- Loosen all 4 screws on the housing cover.
- Swivel all four screws away from the cover.
- Open the housing cover out to one side.

7.3.2 Terminal board, Control x.plus control unit

7.3.2 / 1



Designation	Type / function	i
SB59	Programming switch (ON/OFF)	7.8.1 9.1
XB11	For connection of command device	–
XB40	For connection of Control x.plus control unit	7.3.2 / 5
XB41	For connection of expansion modules	–
XB42	For connection of remote transceiver module	–
XB43	For connection of MDS module	–
XB50	For connection of external control elements	7.3.2 / 2
XB53	For connection for closing prevention device	7.3.2 / 3
XB90	For connection of programmable impulse input	7.3.2 / 4

MDS Marantec Diagnostic System

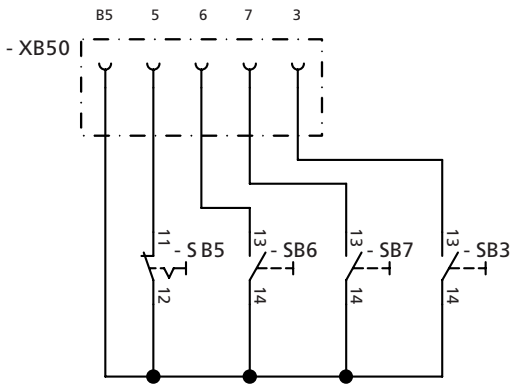
XB50 Supplied with shorting jumper in place.
If the STOP terminal is used, the shorting jumper must be removed.

XB11 If terminal XB11 is used, the shorting plug must be removed.

Advice:
Programming can be disabled with switch SB59.
ON Programming enabled
OFF Programming disabled

Connection of external control elements (XB50)

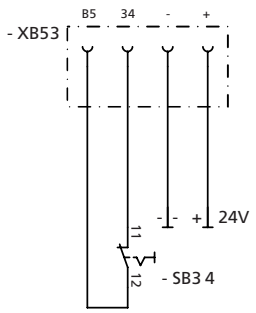
7.3.2 / 2
M06E045



Designation	Type / function
SB3	Operating button for intermediate position OPEN
SB5	Operating button for STOP
SB6	Operating button for OPEN
SB7	Operating button for CLOSE

Connection for closing prevention device (XB53)

7.3.2 / 3
M06E045



Designation	Type / function
24V	+ 24 V DC
-	GND
SB34	Potential-free normally closed contact for closing prevention device

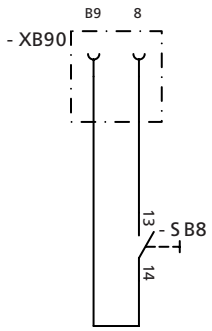
Advice:
- To enable the "automatic closing timer" function to be programmed, one of the following two elements must be connected:
  - a closing prevention device at terminal XB53, or
  - a photocell barrier at terminal XP62A/B.
- If a closing prevention device is connected, it will be recognised when the mains supply is switched on.
- A device that is faulty or has been removed must be deactivated.

Reference:
Safety devices and closing protection devices are deactivated in the Reset menu (Section 9.4 / Level 1 / Menu 8).

For connection of programmable impulse input (XB90)

7.3.2 / 4

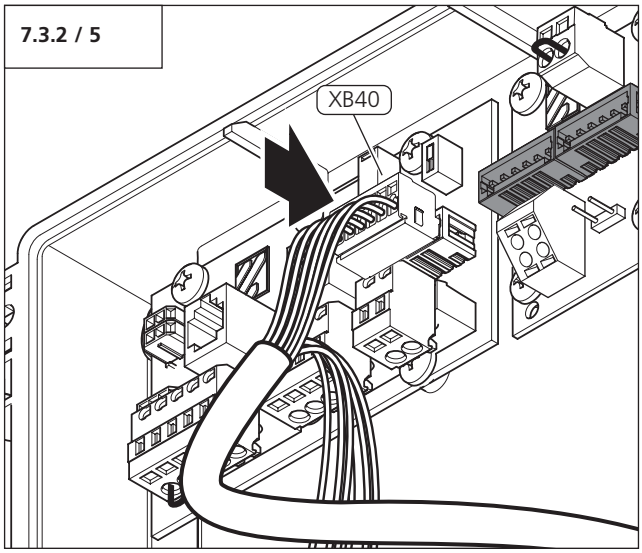
M06E045



Designation	Type / function	
SB8	Impulse button (programmable)	9.4 / Level 5 / Menu 1

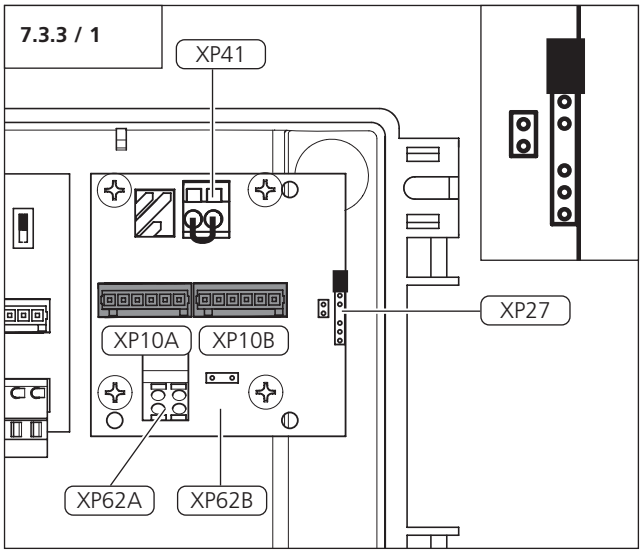
For connection of Dynamic xs.plus motor unit (XB40)

7.3.2 / 5



- Insert the plug of the cable loom into the socket XB40 (white plug).

7.3.3 Terminal board for safety device

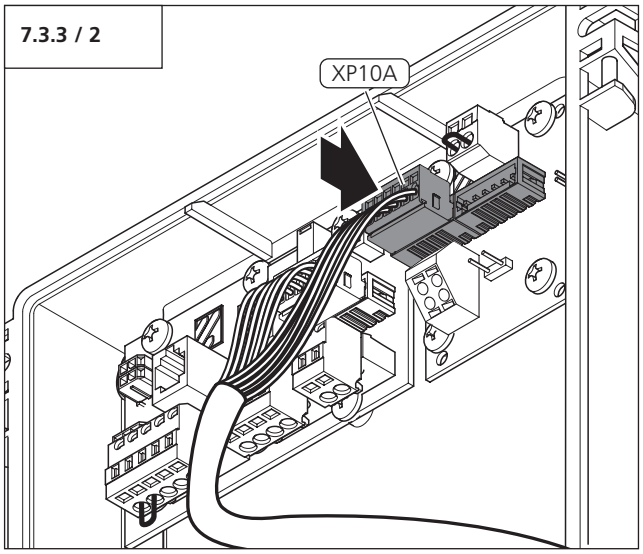


Designation	Type / function	
XP10A	For connection of Control x.plus control unit	7.3.3 / 2
XP10B	For connection of door sensors (safety circuit SC)	–
XP27	For connection of photocell expander circuit board	–
XP41	For connection of safety circuit, SC	–
XP62A	For connection of first photocell (2-wire design)	7.3.3 / 3
XP62B	For connection of second photocell (2-wire design) (only with photocell expander circuit board)	-

XP27 The unit is delivered with the jumper in the position shown.

XP41 Delivered with the shorting jumper in place. If this terminal is used, the shorting jumper must be removed.

Connecting the cable of the safety devices (XP10A)



- Insert the plug of the cable loom into socket XP10A (blue plug).

All connected and operational safety devices are recognised automatically.

Advice:
A defective or removed safety device must be deactivated.

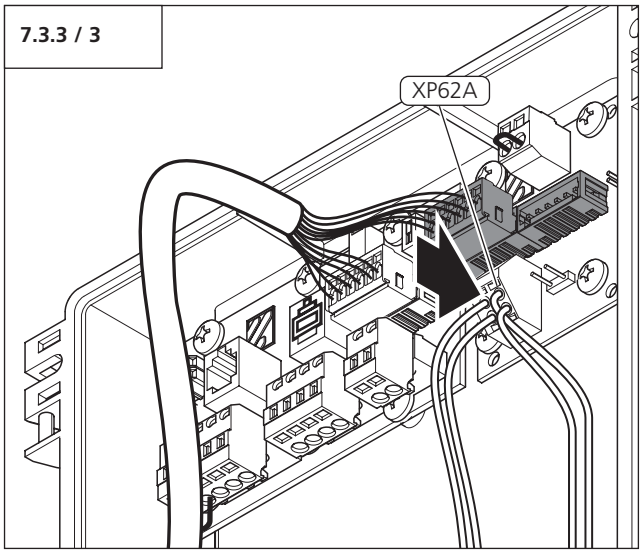
Reference:
Safety devices are deactivated in the Reset menu (Section 9.4 / Level 1 / Menu 8).

For connection of photocell (XP62A)

For the connection of further systems it may be necessary to extend the number of cable inlets in the control unit.

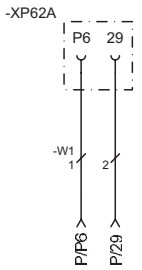
Reference:
Increasing the number of the cable inlets is described in Section 6.8.

7.3.3 / 3



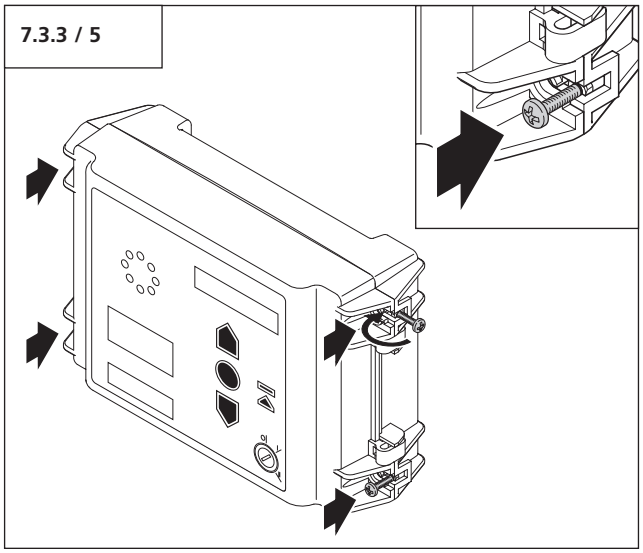
7.3.3 / 4

M07E054



Attention!
- To avoid damage to the cabling, care must be taken not to trap the cables when closing the cover.
- To maintain the specified protection category of the operator system
  - the inlet openings must be fitted with suitable cable gaskets,
  - the cables must lie correctly in the inlets.

7.3.3 / 5



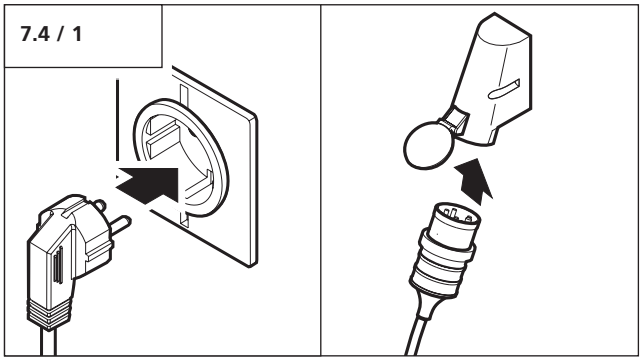
- Close the housing cover.
- Swivel all four screws into place above the housing cover.
- Screw the housing cover tight.

7.4 Connecting the power supply

Caution!
Danger of electric shock:
Before cabling works commence, a check must be carried out to ensure that the cables are at zero voltage. Measures must be taken to ensure that the cables remain dead for the duration of the works (e.g. prevent the power supply from being switched back on).

Attention!
To guarantee correct operation of the operator system,
- the system must be connected to a technically sound power supply network that is protected with a 16 A fuse;
- the voltage and frequency must correspond to those specified on the identification plate;
- for the 3-phase motor model, a clockwise rotating field must be provided right up to the connection of the controls;
- if fixed cabling is used, an all-pole mains isolator switch must be used.

7.4 / 1



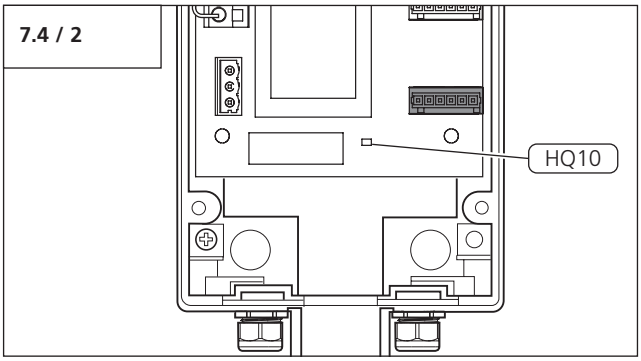
- Connect the mains plug of the operator system to an available mains socket near the door.

Advice:
For an unprogrammed control unit (first time installation), the start display for express programming is shown.

Reference:
Express programming is described in Section 7.8.

Check:
When the controls are supplied by the mains voltage, the indicator HQ10 should light up green.

7.4 / 2

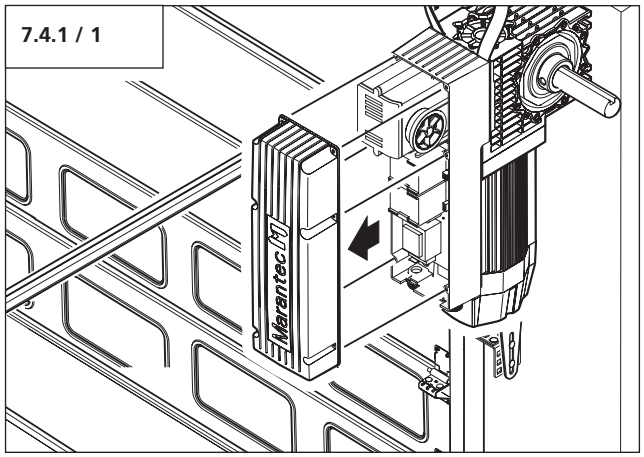


Advice:
A fixed connection must be made if a higher protection category is required on site than can be provided by a mains plug connection.
The motor unit must conform to the requirements of the protection category.

7.4.1 1N~, 230 V connection

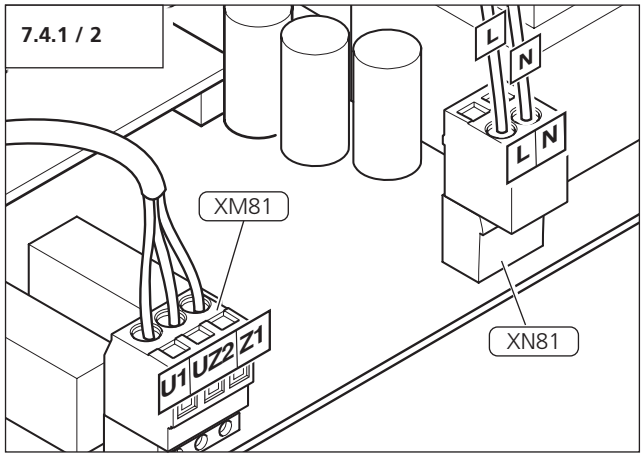
Terminal block XN81 is pre-cabled when delivered. The leads at terminal block XN81 need only be changed if the plug-in connection is replaced or if the controls are to be connected directly to the power supply network (fixed cabling).

7.4.1 / 1



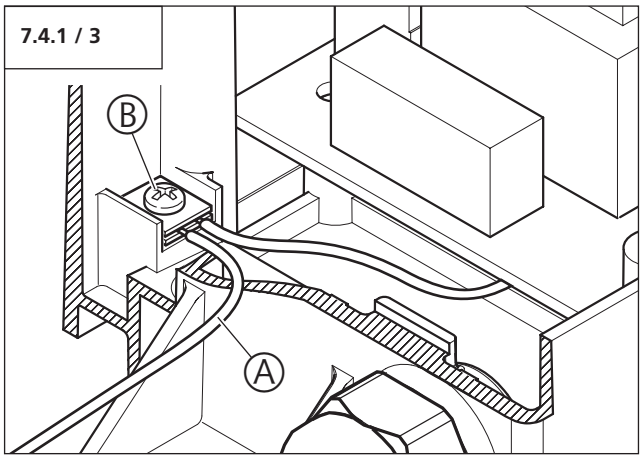
• Open the operator control unit.

7.4.1 / 2



• Connect the leads to terminal block XN81.

7.4.1 / 3

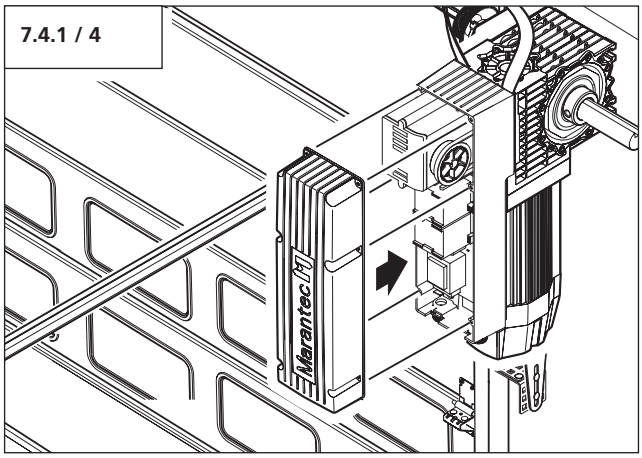


• Connect the PE (protective earth) lead (A) of the power supply network to the PE connection (B) of the motor unit.

• Check to ensure that the leads are screwed tightly in place.

Attention!
- To avoid damage to the cabling, care must be taken not to trap the cables when closing the cover.
- To maintain the specified protection category of the operator system
  - the inlet openings must be fitted with suitable cable gaskets,
  - the cables must lie correctly in the inlets.

7.4.1 / 4

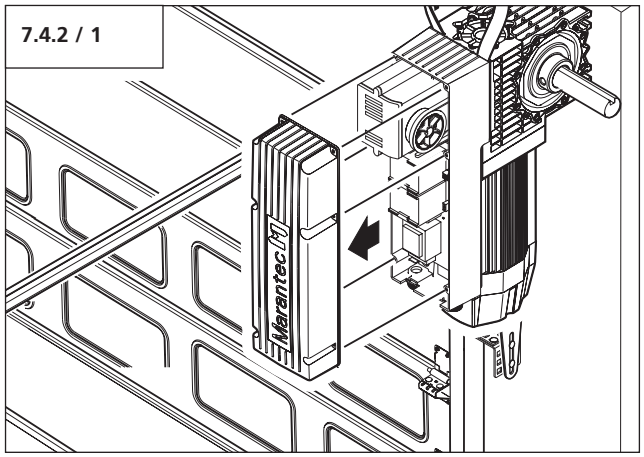


• Close the control unit.

7.4.2 3N~, 400 V connection

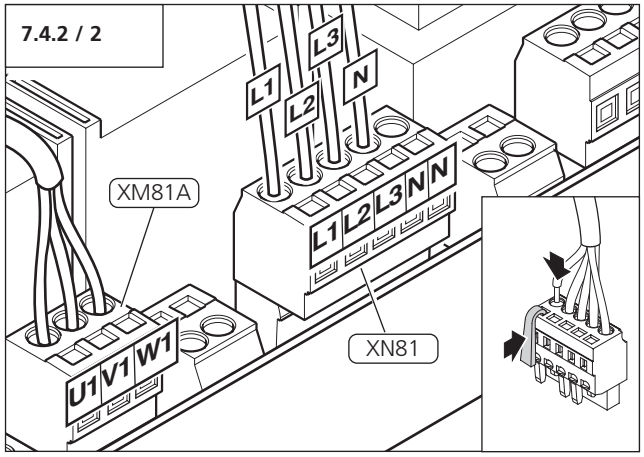
Terminal block XN81 is pre-cabled when delivered. The leads at terminal block XN81 need only be changed if the plug-in connection is replaced or if the controls are to be connected directly to the power supply network (fixed cabling).

7.4.2 / 1



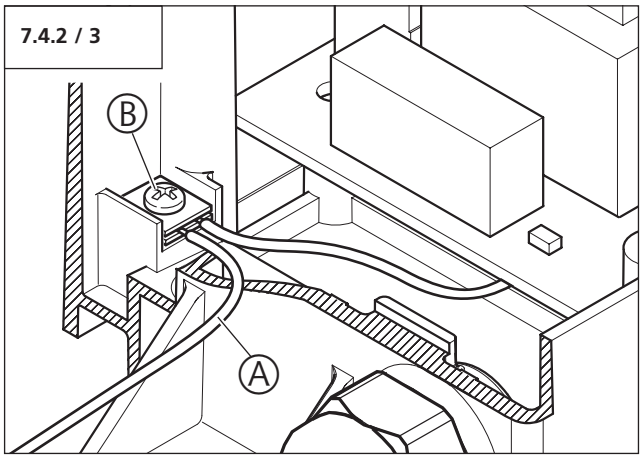
• Open the operator control unit.

7.4.2 / 2



• Connect the leads to terminal block XN81.

7.4.2 / 3

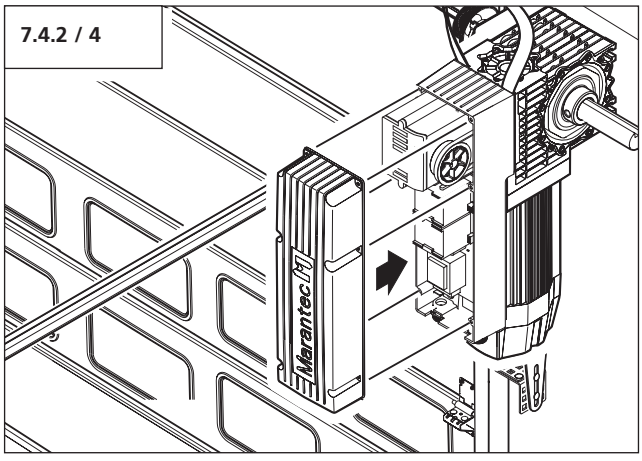


• Connect the PE (protective earth) lead (A) of the power supply network to the PE connection (B) of the motor unit.

• Check to ensure that the leads are screwed tightly in place.

Attention!
- To avoid damage to the cabling, care must be taken not to trap the cables when closing the cover.
- To maintain the specified protection category of the operator system
  - the inlet openings must be fitted with suitable cable gaskets,
  - the cables must lie correctly in the inlets.

7.4.2 / 4



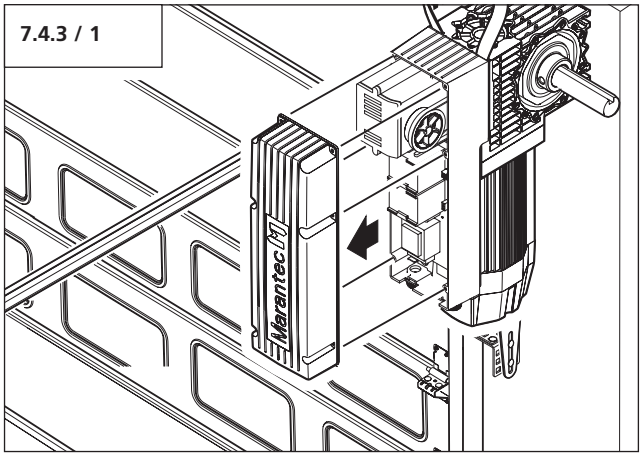
• Close the control unit.

7.4.3 3~, 230 V connection

Attention!
To avoid damage to the motor unit, the cabling may only be changed if a 3-phase AC power supply with a phase voltage of 230 V is available on site.

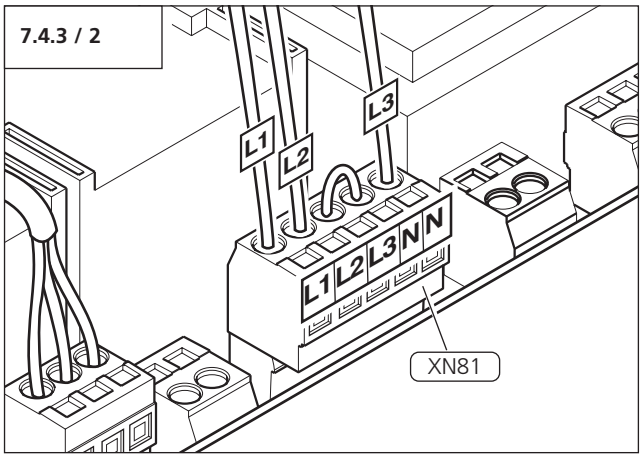
The star connection (400 V) of the motor unit can be changed to a delta connection (230 V) by rearranging the leads.

7.4.3 / 1



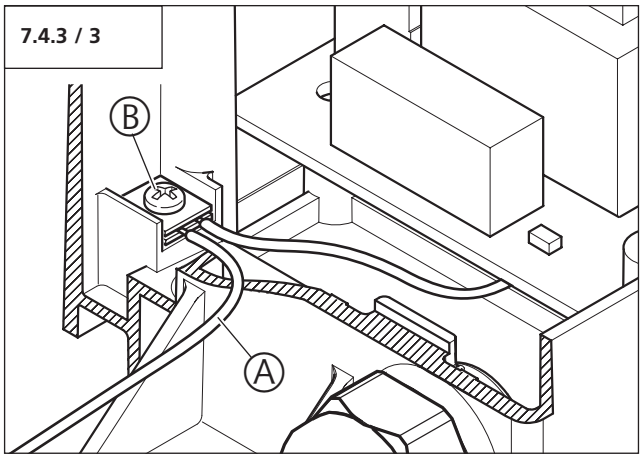
- Open the operator control unit.

7.4.3 / 2



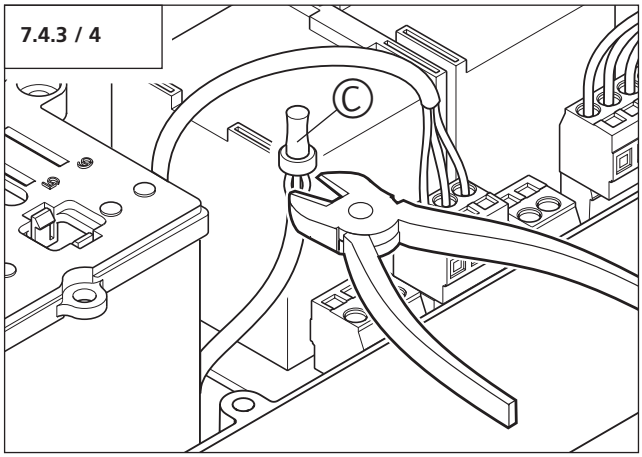
- Connect the three phases to terminal block XN81.
- Place a wire jumper between terminal L3 and terminal N.

7.4.3 / 3



- Connect the PE (protective earth) lead (A) of the power supply network to the PE connection (B) of the motor unit.
- Check to ensure that the leads are screwed tightly in place.

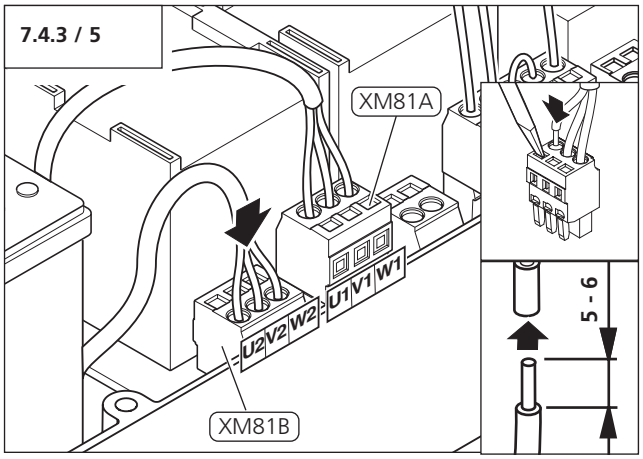
7.4.3 / 4



- Cut off the crimp sleeve (C).

Attention!
To guarantee correct operation, the order of the coloured leads at terminal block XM81B must be the same as the order of the coloured leads connected to terminal block XM81A.

7.4.3 / 5

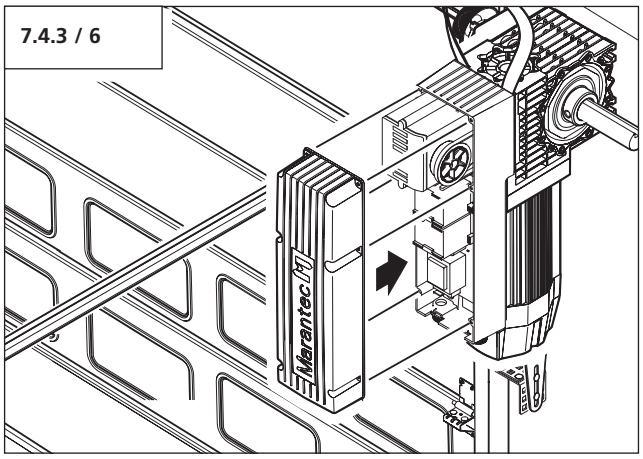


• Strip the casing from the ends of the leads.

• Insert the leads in terminal block XM81B.

Attention!
- To avoid damage to the cabling, care must be taken not to trap the cables when closing the cover.
- To maintain the specified protection category of the operator system
  - the inlet openings must be fitted with suitable cable gaskets,
  - the cables must lie correctly in the inlets.

7.4.3 / 6



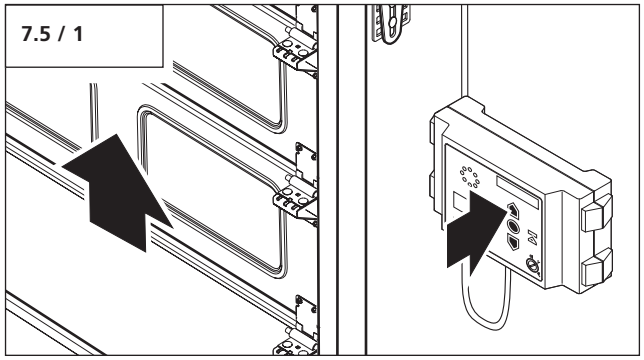
• Close the control unit.

7.5 Check the rotational direction

Attention!
Before the OPEN and CLOSED door positions have been set, the door can be moved electrically beyond these door positions, which could lead to the door being damaged.
In order to check that the operation is correct for the 3-phase version, a clockwise rotating field must be provided right up to the connection of the controls.

Reference:
The connection of the mains supply is described in Section 7.4.
The emergency operation facility is described in Section 8.2.

- Using the emergency operation facility, move the door approx. 50 cm from its mechanical end position.

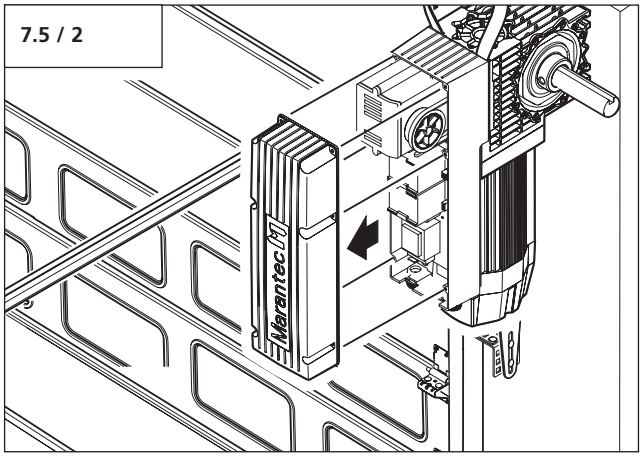


- Press the OPEN button on the control unit.

The door moves in the OPEN direction.
The rotational direction is correct.

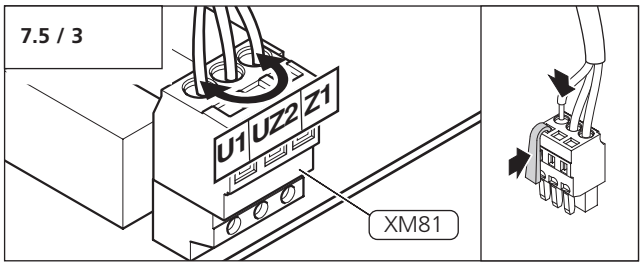
The door moves in the CLOSE direction.
The lead arrangement at the motor connection must be altered.

Caution!
Danger of electric shock:
Before cabling works commence, a check must be carried out to ensure that the cables are at zero voltage.
Measures must be taken to ensure that the cables remain dead for the duration of the works (e.g. prevent the power supply from being switched back on).



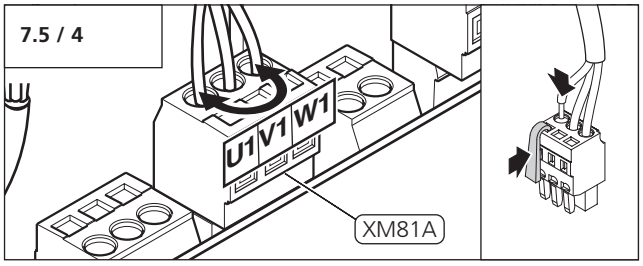
- Open the operator control unit.

1N~, 230 V connection



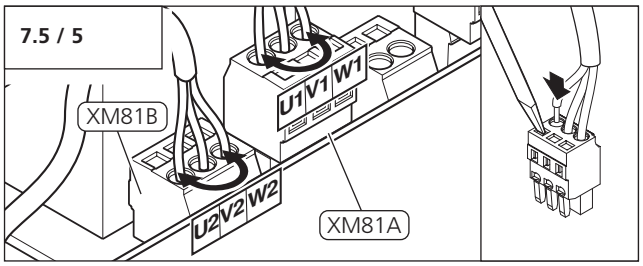
- At the motor connection (XM81), swap lead (U1) with lead (Z1).

3N~, 400 V connection

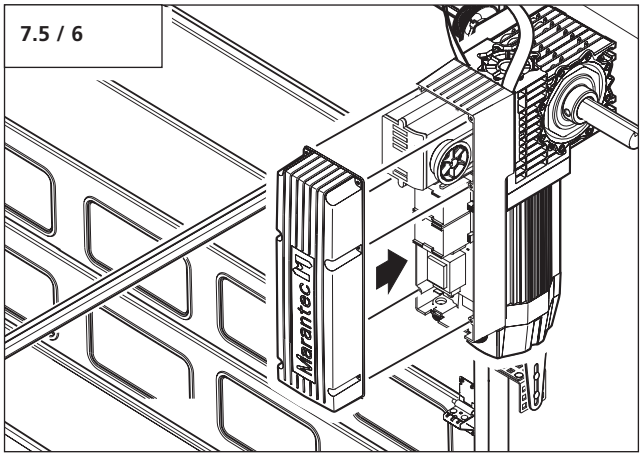


- At the motor connection (XM81A), swap lead (U1) with lead (W1).

3~, 230 V connection

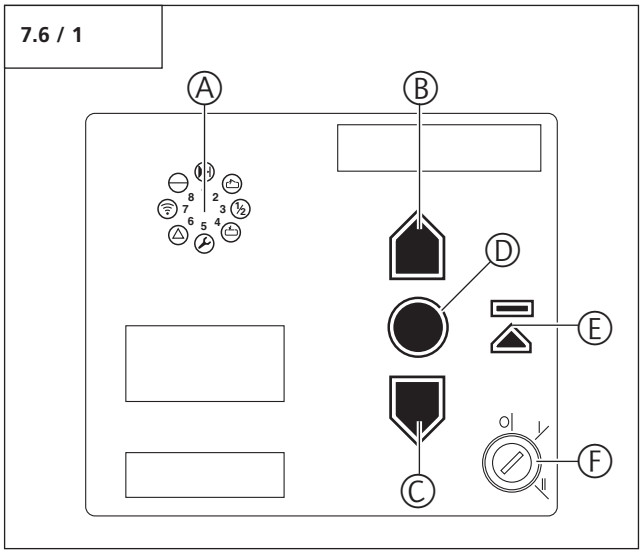


- At the motor connection (XM81A) swap lead (U1) with lead (W1).
- At the motor connection (XM81B) swap lead (U2) with lead (W2).



- Close the control unit.

7.6 Overview of the Control x.plus control unit

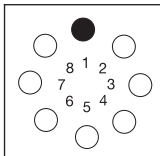
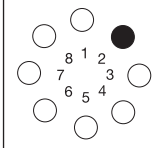
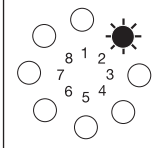
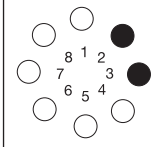
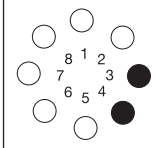
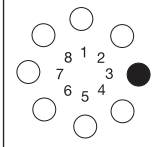
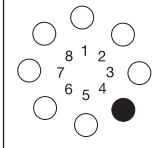
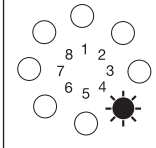
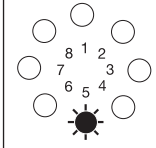
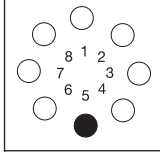


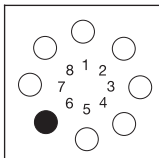
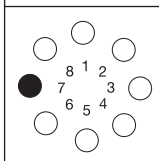
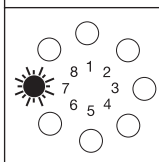
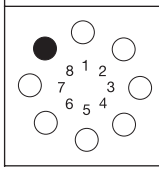
Operating elements

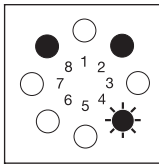
Label	Type / function	
A	Carousel display	7.7
B	OPEN button (+) (e.g. to drive the door to the OPEN position or to increase parameters in the programming mode)	-
C	CLOSE button (-) (e.g. to drive the door to the CLOSED position or to decrease parameters in the programming mode)	-
D	STOP button (P) (e.g. to switch to programming mode or to save parameters)	-
E	Intermediate OPEN button (e.g. to drive the door to the intermediate OPEN position, or to close the door from the intermediate OPEN position)	-
F	Key switch 0 = Locked I = Control x.plus control unit ready for operation II = Keypad on cover disabled	-

7.7 Overview of the display functions

LED displays in operating mode

	Status of safety devices
	Door in door position: OPEN
	The door is moving in the OPEN direction. or Start-up warning is active
	Intermediate OPEN position
	Intermediate CLOSE position
	Door in door position: CLOSED
	Door in door position: CLOSED
	The door is moving in the CLOSE direction. or Start-up warning or warning period is active
	Reference point (flashes as the reference point is passed)
	Maintenance

	Safety circuit, motor unit
	Command unit activated
	Remote control activated
	Ready for operation

	**Example:** The door is at the OPEN position. It starts to move towards the CLOSED position as soon as the warning period/start-up warning expires.

Legend:	
LED off	○
LED on	●
LED flashes slowly	☀
LED pulses	☼
LED flashes quickly	✺
Factory default setting	
Not possible	–

7.8 Express programming

7.8.1 General notes on express programming

Advice:
For proper initial operation of the operator system, the express programming procedure must be carried out. This applies for initial operation and after a reset.

The basic functions of the operator system are set during the express programming procedure.
- Door OPEN position
- Door CLOSED position
- Remote control

The programming procedure is a consecutive process. It is essential that this procedure be carried out.

Preconditions
The following conditions must be assured before express programming can commence:
- The door must be in the CLOSED end position.
- The rotational direction is must be set correctly.
- The programming switch SB59 is must be set to ON.

Advice:
If the door starts to move towards the CLOSED position when the OPEN button is pressed, the rotational direction must be changed.

Reference:
Changing the rotational direction is described in Section 7.5.

Fine adjustment
Fine adjustments are made by pressing the OPEN or CLOSE button for a short time (< 0.5 seconds). The door position adjusts itself by 2 to 7 mm (depending on the type of door fitting) each time a button is pressed in this way. The operator system does not actually move the door during this setting operation.

Advice:
If the OPEN button is pressed, LED 1 lights up. If the CLOSE button is pressed, LED 4 lights up. A maximum of 15 impulses in the OPEN direction and 15 impulses in the CLOSE direction can be given without the door being moved.

7.8.2 Programming buttons

The controls are programmed using the OPEN (+), CLOSE (-) and STOP (P) buttons.
If no buttons are pressed within 120 seconds while in programming mode, the controls revert to operating mode.
A corresponding message is displayed.

Reference:
The messages are explained in Section 10.

Starting the express programming

Advice:
The operator system is already in express programming mode when set in operation for the first time.

- Turn the key to the "0" position.
- Press the STOP button and keep it pressed.
- Switch the key from position "0" to position "1" within 4 seconds and then release the STOP button.
- Carry out the express programming according to the following procedure.

Legend:	
LED off	○
LED on	●
LED flashes slowly	☀
LED pulses	☼
LED flashes quickly	✹
Factory default setting	
Not possible	–

7.8.3 Express programming sequence

Operating mode	1.	<4s	**Start express programming / Programme the door OPEN end position**
	2.		Drive the door to the OPEN position
	3.		Correct the "door OPEN" position using (+) and (–)
	4.	1x <1s	**Save the "door OPEN" position / Programme the "door CLOSED" position**
	5.		Drive the door to the CLOSED position
	6.		Correct the "door CLOSED" position using (+) and (–)
	7.	1x <1s	**Save the "door CLOSED" position / Programme the remote control**
	8.		Press the hand transmitter button
	9.		Release the hand transmitter button
	10.	1x <1s	**Save the remote control settings / End the express programming procedure**

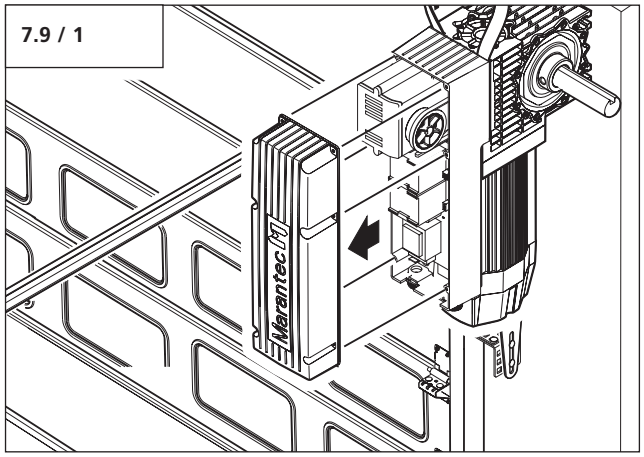
7.9 Setting the controlled quick release

Attention!
To prevent damage to the motor unit, the door must be in the CLOSED position.

- Drive the door to the CLOSED position using the control unit.

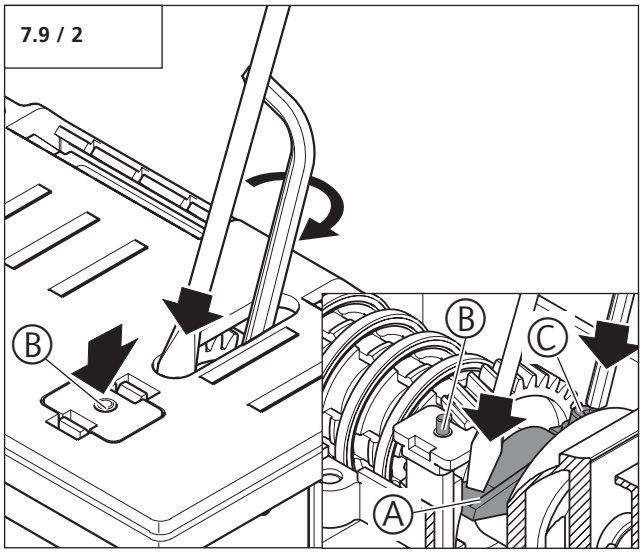
Caution!
Danger of electric shock:
Before cabling works commence, a check must be carried out to ensure that the cables are at zero voltage. Measures must be taken to ensure that the cables remain dead for the duration of the works (e.g. prevent the power supply from being switched back on).

7.9 / 1



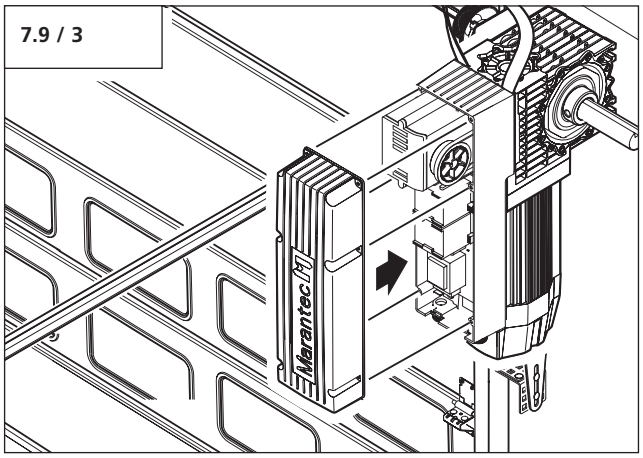
- Open the control unit.

7.9 / 2



- Press down the cam (A) until the ratchet brace (B) disappears completely into the positioning box.
- Hold the cam (A) pressed.
- Fix the cam (A) in position with the screw (C).

7.9 / 3



- Close the control unit.

7.10 Check the system

Learning run
- Use the operator system (with the door coupled up to it) to drive the door once from the CLOSED position to the OPEN position and back to the CLOSED position without interruption.

During this learning run, the drive system determines the maximum push and pull forces and the power required to move the door.

Before completing the installation, the following items must be checked to ensure that they function properly and that the settings are correct:

Door position

1.		After pressing the (+) button: The door must open and travel to the saved OPEN end position.
2.		After pressing the (–) button: The door must close and travel to the saved CLOSED end position.
3.		After pressing the button on the hand transmitter: The operator system should move the door towards the OPEN position. If the door is in the OPEN position, it should close.

Door sensors
- Cause each door sensor in turn to respond.

Check:
Check the door sensors with reference to the corresponding operating instructions. LED 1 lights up when a safety device is activated.

Signal device
- Check that the signal device functions correctly.

Emergency operation

Reference:
The emergency operation facility is described in Section 8.2.

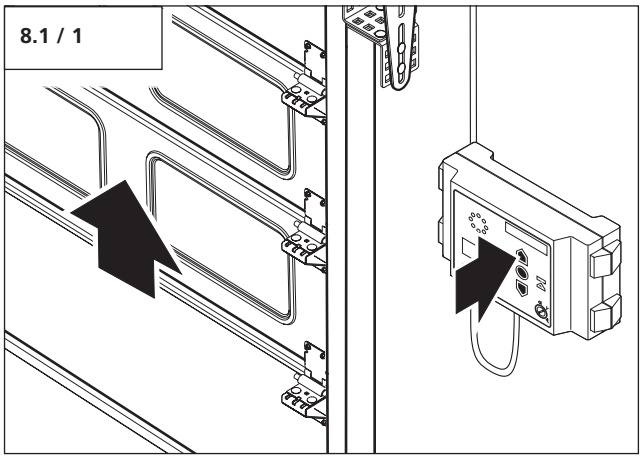
- Check that the emergency operation facility functions properly.

8. Operation

8.1 Standard operation

• Turn the key on the Control x.plus control unit to Position 1.

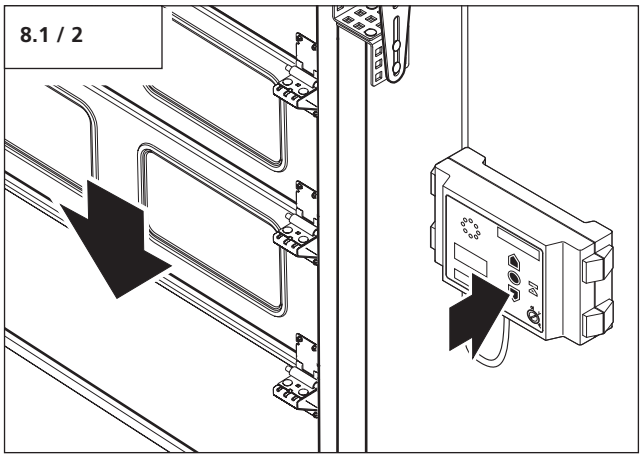
Drive the door in the OPEN direction



• Press the OPEN button on the Control x.plus control unit.

The door stops automatically when it reaches the "door OPEN" position.

Drive the door in the CLOSE direction



• Press the CLOSE button on the Control x.plus control unit.

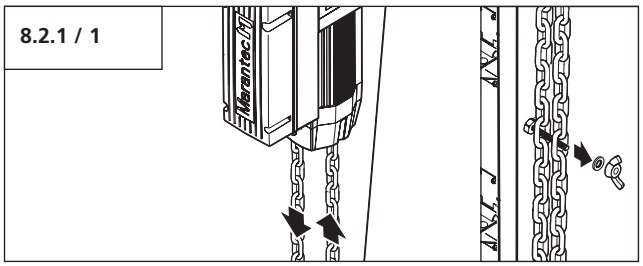
The door stops automatically when it reaches the "door CLOSED" position.

8.2 Emergency operation

Caution!
To avoid injury:
- Emergency operation may only be carried out from a safe standing position.
- The motor unit must be at zero voltage, i.e. disconnected from the power supply.

In the case of an electrical fault, the door can be moved in the OPEN or CLOSE directions using the emergency operation facility.

8.2.1 Motor unit with emergency hand chain

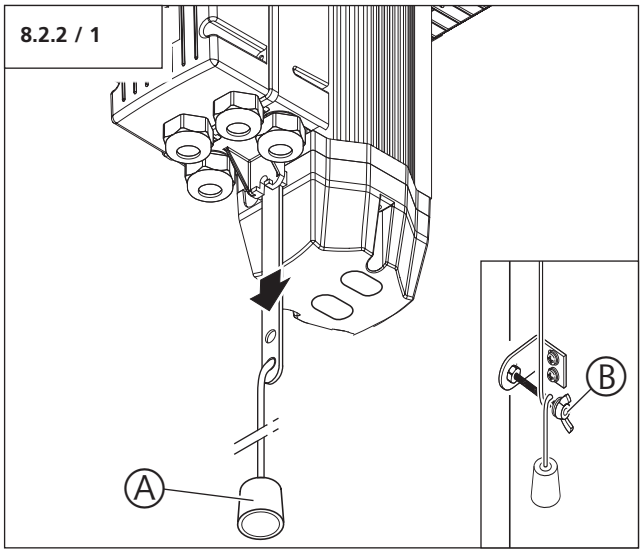


- Release the emergency hand chain from the securing assembly.
- Move the door in the OPEN or CLOSE direction by pulling on the emergency hand chain.
- Secure the emergency hand chain with the securing assembly after use.

8.2.2 Motor unit with quick release

In order to move the door manually, the drive unit can be disengaged from the spring shaft.
The quick release system is fitted with a return spring.

Disengaging the motor unit



- Pull down on the release cable handle (A).

Tip:
To maintain the disengaged condition, the release cable can be wound around the securing bolt (B).

Move the door
The door can now be moved manually towards the OPEN or CLOSED position.

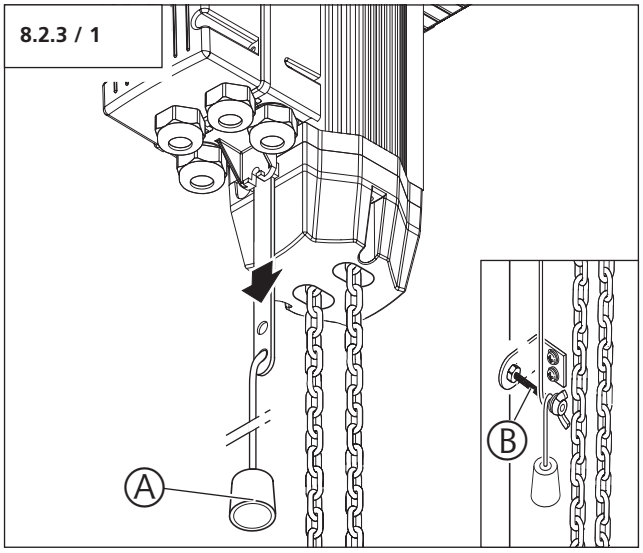
Engaging the motor unit
- Unwind and release the cable.
- Move the door manually until the drive unit engages.

8.2.3 Motor unit with controlled quick release

In order to move the door manually, the drive unit can be disengaged from the spring shaft.
The quick release system is fitted with a return spring.

Attention!
Any attempt to disengage the drive unit when the door is positioned between 0.1 m and 1 m above the ground will result in damage to the motor unit. The controlled quick release may only be activated when the door is in the CLOSED position.

Disengaging the motor unit



- Pull down on the release cable handle (A).
- Wind the cable tightly around the bolt (B), to secure it.

Move the door
The door can now be moved towards the OPEN or CLOSED position using the emergency hand chain.

Engaging the motor unit

Attention!
To avoid damage to the motor unit, the door must be in the CLOSED position before engaging.

- Unwind and release the cable.
- Move the door manually until the drive unit engages.

The door can now be moved manually towards the OPEN or CLOSED position.

8.3 Maintenance release

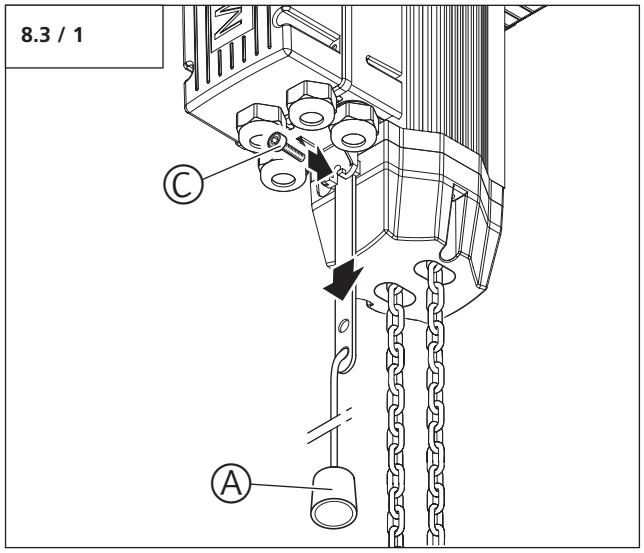
Caution!
To avoid injury:
- Emergency operation may only be carried out from a safe standing position.
- Ensure that no one is near the danger area of the door during operation.
- Only trained personnel may operate the system.

The drive unit can be disengaged from the spring shaft for door maintenance.
The maintenance release system is fitted with a return spring.

Advice:
To ensure that the maintenance release system functions properly, it must be secured with the screw (C).

Disengaging the motor unit

8.3 / 1

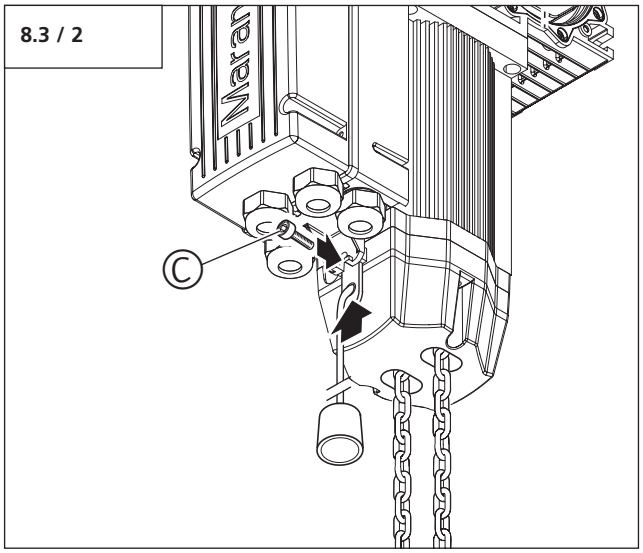


- Remove the screw (C).
- Pull down on the release cable handle (A).
- Secure the linking bar with the screw (C) when the system is disengaged.

Move the door
The door can now be moved manually towards the OPEN or CLOSED position.

Engaging the motor unit

8.3 / 2



- Remove the screw (C).

The linking bar is drawn up by the return spring.

- Move the door manually until the drive unit engages.
- Secure the linking bar with the screw (C) whilst the drive unit is engaged.

9. Extended operator functions

9.1 General notes on extended operator functions

Additional functions can be programmed for the operator system using the extended functions.

Caution!
Important factory default settings can be changed using the extended functions.
All the parameters must be set correctly to avoid damage to persons or property.

Advice:
To enable the programming procedure to be carried out, the programming switch SB59 must be set to ON.

Start programming
Before programming the extended operator functions, the key switch must be set to position "2".

- Press the STOP button and keep it pressed.
- Switch the key switch from position "2" to position "1" within 4 seconds and then release the STOP button.

The programming facility is divided into three areas:

Area 1: Levels
The adjustable functions have been grouped in 8 levels according to the type of function.
Each level can have up to 8 menus.
The (+) and (-) buttons are used to scroll through the selections within the levels.
Levels that are not used are displayed but cannot be opened.
"Levels-Exit" switches from programming mode back to operating mode.

Area 2: Menu
Each menu sets one parameter.
The (+) and (-) buttons are used to scroll through the settings within the menus.
Menus that are not in use are skipped over and are not displayed.
You can return to the first level via "Menu-Exit".

Area 3: Parameters
Each function has a maximum of 16 settings.
The (+) and (-) buttons are used to scroll through the settings for the adjustable parameters.
Parameters that cannot be adjusted are skipped over and not displayed.
It is not possible to overshoot by pressing the (+) and (-) buttons.
Pressing the (P) button saves the parameters you have set.

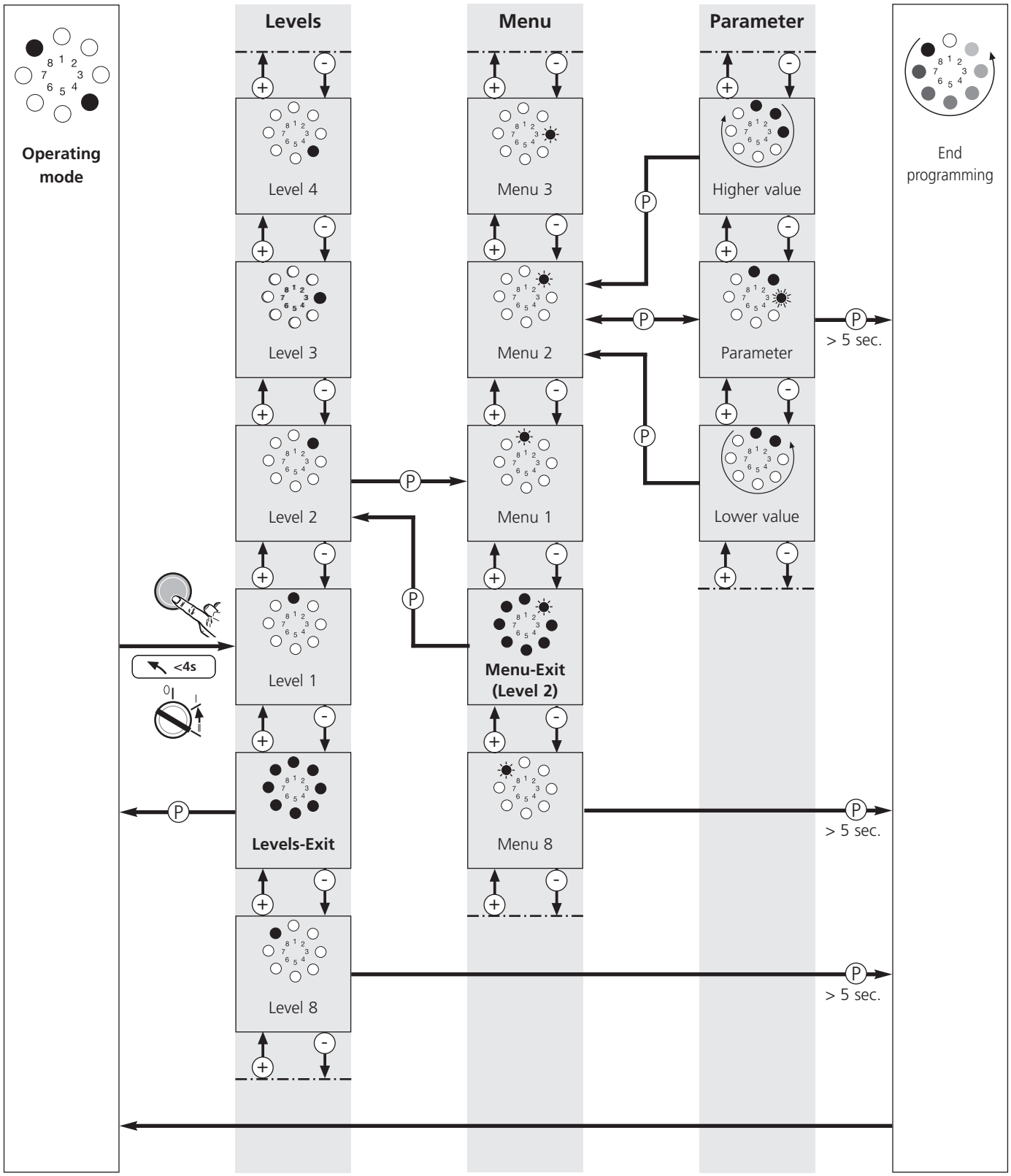
End Programming
The programming session can be ended in two ways:
1. Via "Levels-Exit", by pressing the STOP button (P).
2. By pressing the STOP button for longer than 5 seconds at any time and from any area.
   The controls then switch to operating mode.
   If a parameter had been changed, it will be saved in the process.

When the programming session ends, all the LEDs light up and then go out one after the other, in sequence from 8 to 1.

If no buttons are pressed within 120 seconds while in programming mode, the controls revert automatically to operating mode.
A corresponding message is displayed.

Reference:
- All the available levels and menus are described in the overview of the programmable functions (Section 9.3).
- The messages are explained in Section 10.

9.2 Programming structure for extended operator functions (Example for Level 2, Menu 2)



9.3 General overview of the programmable functions

Level	Menu	Factory default setting
Level 1 – Basic functions	Menu 3: Intermediate position OPEN	–
	Menu 4: Intermediate position CLOSE	–
	Menu 7: Relay output	Signal light
	Menu 8: RESET	No reset
Level 2 – Operator settings	Menu 1: Required driving power OPEN	Setting 14
	Menu 2: Required driving power CLOSE	Setting 14
	Menu 3: Automatic cut-out OPEN	Setting 9
	Menu 4: Automatic cut-out CLOSE	Setting 9
Level 3 – Automatic closing timer	Menu 1: Automatic closing timer	Deactivated
	Menu 5: Start-up warning	Off
	Menu 7: Signal light	Door movement / Warning: flashes Door stoppage: lights up
Level 4 – Remote programming	Menu 2: Intermediate position OPEN	–
	Menu 3: Intermediate position CLOSE	–
	Menu 4: OPEN	–
	Menu 5: CLOSE	–
Level 5 – Special function	Menu 1: Programmable impulse input	Impulse
Level 7 - Servicing and maintenance	Menu 1: Door cycle counter	–
	Menu 2: Maintenance counter	–
	Menu 3: Set the maintenance interval	OFF
	Menu 8: Reset servicing and maintenance	No reset

Level	Menu	Factory default setting
Level 8 – System settings	Menu 1: Photocell	Door reverses completely (OPEN/CLOSE)
	Menu 2: Closing edge safety device	Door reverses a little (OPEN/CLOSE)
	Menu 3: Automatic cut-out	Door stops (OPEN) Door reverses a little (CLOSE)
	Menu 4: Operating modes	Press-and-release (OPEN/CLOSE)
	Menu 5: Function of the direction command transmitters	STOP only
	Menu 6: Function of the impulse command transmitters	STOP only, followed by standard sequence

Legend:	
LED off	○
LED on	●
LED flashes slowly	☀
LED pulses	☼
LED flashes quickly	✹
Factory default setting	
Not possible	–

9.4 Functions overview for the levels

Level 1 – Basic functions																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Menu 3: Intermediate position OPEN																
	Set using the (+ / OPEN) and (- / CLOSE) buttons "Intermediate position OPEN" – closing function is possible with automatic closing timer															
Menu 4: Intermediate position CLOSE																
	Set using the (+ / OPEN) and (- / CLOSE) buttons															
Menu 7: Relay output																
	**A7**	**B7**	**C7**	**D7**	**E7**	**F7**	–	–	–	–	–	–	–	–	–	–
Menu 8: RESET																
	**A8**	**B8**	**C8**	**D8**	**E8**	**F8**	–	–	–	–	–	–	–	–	–	–

Attention!
After a reset, all the parameters revert to the factory settings.
In order to ensure that the controls operate properly:
- all the required functions must be re-programmed,
- the drive system must be driven once to the OPEN and CLOSED door positions.

Reference:
The function of the signal light (A7) can be adjusted in level 3, menu 7.

Menu 7: Relay output

A7	Signal light	D7	Intermediate position OPEN
B7	"Door OPEN" position	E7	Intermediate position CLOSE
C7	"Door CLOSED" position	F7	Motor starts (wiping impulse – 1 second)

Menu 8: Reset

A8	No reset	E8	Reset extended operator functions only (except door OPEN/CLOSED positions and remote control impulse) *
B8	Reset control unit *		
C8	Reset remote control		
D8	Reset extension module, automatic closing timer / two-way traffic control	F8	Reset safety devices *

* All connected and operational safety devices are recognised automatically after resetting.

Level 2 – Operator settings																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Menu 1: Required driving power OPEN (sensitivity in increments*)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Menu 2: Required driving power CLOSE (sensitivity in increments*)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Menu 3: Automatic cut-out OPEN (sensitivity in increments)**																
	OFF	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Menu 4: Automatic cut-out CLOSE (sensitivity in increments)**																
	OFF	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

* The higher the setting, the higher the driving power.
** The lower the setting, the more sensitive the automatic cut-out.

Caution!
To exclude any risk of injury, the automatic cut-out (Menus 3 and 4) may only be switched to OFF if a photocell barrier or closing edge safety device is installed.

Legend:	
LED off	○
LED on	●
LED flashes slowly	☀
LED pulses	☼
LED flashes quickly	✹
Factory default setting	
Not possible	–

Level 3 - Automatic closing timer																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
																
Menu 1: Automatic closing timer																
	**A1**	**B1**	**C1**	**D1**	**E1**	**F1**	**G1**	**H1**	–	–	–	–	–	–	–	–
Menu 5: Start-up warning (in seconds)																
	**OFF**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	–	–	–	–	–	–	–	–
Menu 7: Signal light																
	**A7**	**B7**	**C7**	**D7**	**E7**	**F7**	–	–	–	–	–	–	–	–	–	–

Advice:
- The automatic closing timer can only be programmed if a photocell barrier is connected.
- The functions in Menu 1 can be altered as desired via the time settings in Menu 5.

Legend:	
LED off	○
LED on	●
LED flashes slowly	☀
LED pulses	☼
LED flashes quickly	✹
Factory default setting	
Not possible	–

Menu 1: Automatic closing timer

Setting	Door open duration	Warning time	Automatic closing timer	Other functions
A1	-	-	deactivated	-
B1	15	5	activated	Extension (restart) of the door open duration after the photocell barrier has been driven past
C1	30	5	activated	
D1	60	8	activated	
E1	15	5	activated	Interruption of the door open duration after the photocell barrier has been driven past
F1	30	5	activated	
G1	60	8	activated	
H1	unlimited	3	activated	Closes after the photocell barrier has been driven past / closing prevention

Advice:
Without a connected photocell or closing prevention device, only parameter A1 can be adjusted.

Menu 7: Signal light

Setting	Door movement / Warning	Door stoppage
A7	light flashes	OFF (energy-saving)
B7	light on	OFF (energy-saving)
C7	light flashes	light flashes
D7	light on	light on
E7	light flashes	light on
F7	light on	light flashes

Reference:
The signal light connection can be adjusted in level 1, menu 7.

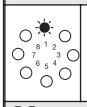
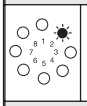
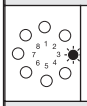
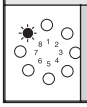
Level 4 – Remote programming	
	
Menu 2: Intermediate OPEN position	
	LED 7 flashes slowly -> press the hand transmitter button -> LED 7 flashes quickly
Menu 3: Intermediate CLOSE position	
	LED 7 flashes slowly -> press the hand transmitter button -> LED 7 flashes quickly
Menu 4: OPEN	
	LED 7 flashes slowly -> press the hand transmitter button -> LED 7 flashes quickly
Menu 5: CLOSE	
	LED 7 flashes slowly -> press the hand transmitter button -> LED 7 flashes quickly

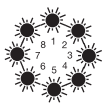
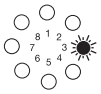
Level 5 – Special function																
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
																
Menu 1: Programmable impulse input																
	**A1**	**B1**	**C1**	–	–	–	–	–	–	–	–	–	–	–	–	–

Menu 1: Programmable impulse input

A1 Impulse (normally open contact only)
B1 Automatic on/off (normally open contact only)
C1 Intermediate CLOSE position (normally open contact only)

Legend:	
LED off	○
LED on	●
LED flashes slowly	☀
LED pulses	☼
LED flashes quickly	✹
Factory default setting	
Not possible	–

Level 7 - Servicing and maintenance																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
																
Menu 1: Door cycle counter																
	**A1**	**B1**	**C1**	**D1**	**E1**	**F1**	–	–	–	–	–	–	–	–	–	–
Menu 2: Maintenance counter																
	**A2**	**B2**	**C2**	**D2**	**E2**	–	–	–	–	–	–	–	–	–	–	–
Menu 3: Set the maintenance interval																
	**A3**	**B3**	**C3**	**D3**	**E3**	**F3**	**G3**	**H3**	**I3**	**J3**	**K3**	**L3**	**M3**	**N3**	**O3**	**P3**
Menu 8: Reset servicing and maintenance																
	**A8**	**B8**	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Portrayal of the number of operations:									
0	1	2	3	4	5	6	7	8	9
									

Menu 1: Door cycle counter

The door cycle counter of the controls displays the number of cycles here as a six-digit number (up to 999,999).
The display function is illustrated in the flow chart below.
The number of operations is shown as 1s, 10s, 100s, etc.
Pressing the (+) or (-) button displays the next or the previous digit of the number of operations.

A1 Number of operations – number of hundreds of thousands
B1 Number of operations – number of tens of thousands
C1 Number of operations – number of thousands
D1 Number of operations – number of hundreds
E1 Number of operations – number of tens
F1 Number of operations – number of units

Menu 2: Maintenance counter

The maintenance counter of the controls displays the number of operations here as a five-digit number (up to 99,999).
The display function is illustrated in the flow chart below.
The number of operations still required is shown as 1s, 10s, 100s, etc.
The digits are displayed as described for Menu 1.

A2 Number of operations – number of tens of thousands
B2 Number of operations – number of thousands
C2 Number of operations – number of hundreds
D2 Number of operations – number of tens
E2 Number of operations – number of units

Menu 3 Set the maintenance interval

The number of door operations after which the controls indicate that maintenance is required can be programmed here.

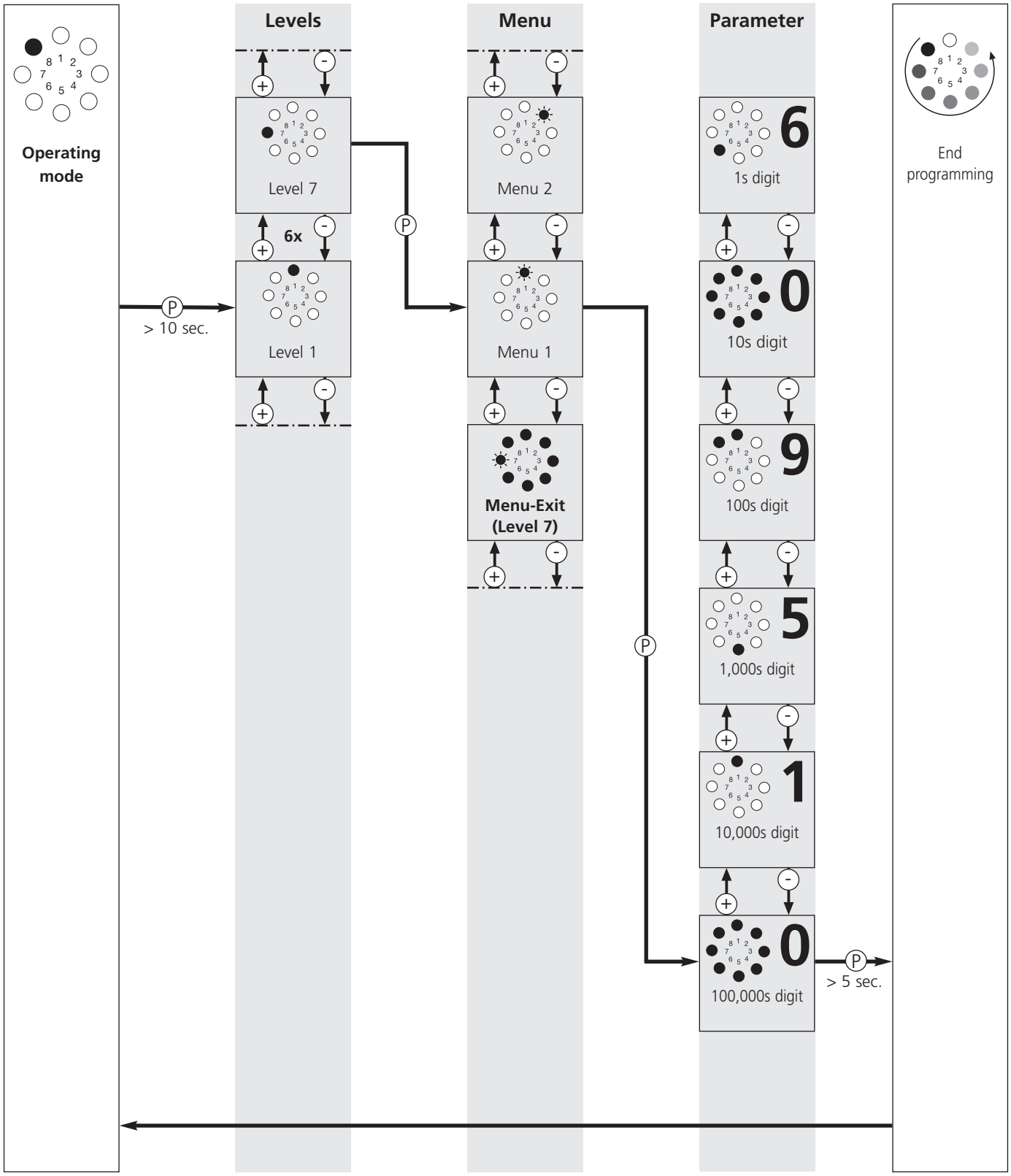
A3 Maintenance interval: OFF
B3 Maintenance interval: every 1,000 door operations
C3 Maintenance interval: every 2,000 door operations
D3 Maintenance interval: every 3,000 door operations
E3 Maintenance interval: every 4,000 door operations
F3 Maintenance interval: every 5,000 door operations
G3 Maintenance interval: every 6,000 door operations
H3 Maintenance interval: every 7,000 door operations
I3 Maintenance interval: every 8,000 door operations
J3 Maintenance interval: every 9,000 door operations
K3 Maintenance interval: every 10,000 door operations
L3 Maintenance interval: every 15,000 door operations
M3 Maintenance interval: every 20,000 door operations
N3 Maintenance interval: every 30,000 door operations
O3 Maintenance interval: every 40,000 door operations
P3 Maintenance interval: every 50,000 door operations

Menu 8: Reset servicing and maintenance

The fault memory for servicing, diagnostics and maintenance works can be reset here.

A8 No reset
B8 Reset fault memory

Flow chart: door cycle and maintenance counter (Example: 015,906 door cycles)



Level 8 – System settings																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Menu 1: Photocell																
	A1	B1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Menu 2: Closing edge safety device																
	A2	B2	C2	D2	-	-	-	-	-	-	-	-	-	-	-	-
Menu 3: Automatic cut-out																
	A3	B3	C3	D3	E3	-	-	-	-	-	-	-	-	-	-	-
Menu 4: Operating modes																
	A4	B4	C4	D4	-	-	-	-	-	-	-	-	-	-	-	-
Menu 5: Function of the direction command transmitters																
	A5	B5	C5	-	-	-	-	-	-	-	-	-	-	-	-	-
Menu 6: Function of the impulse command transmitters																
	A6	B6	C6	D6	-	-	-	-	-	-	-	-	-	-	-	-

Legend:	
LED off	○
LED on	●
LED flashes slowly	☀
LED pulses	☼
LED flashes quickly	✹
Factory default setting	
Not possible	–

Menu 1: Photocell

	Door movement, OPEN	Door movement, CLOSE
A1	Door reverses a little	Door reverses a little
B1	Door reverses completely	Door reverses completely

Menu 2: Closing safety edge device

	Door movement, OPEN	Door movement, CLOSE
A2	Door reverses a little	Door reverses a little
B2	Door reverses completely	Door reverses completely
C2	Door stops	Door reverses a little
D2	Door stops	Door reverses completely

Menu 3: Automatic cut-out

	Door movement, OPEN	Door movement, CLOSE
A3	Door reverses a little	Door reverses a little
B3	Door reverses completely	Door reverses completely
C3	Door stops	Door reverses a little
D3	Door stops	Door reverses completely
E3	Door stops	Door stops

Menu 4: Operating modes

	OPEN	CLOSE
A4	Press and hold	Press and hold
B4	Automatic closing	Press and hold
C4	Press and hold	Automatic closing
D4	Automatic closing	Automatic closing

Menu 5: Function of the direction command transmitter (OPEN/CLOSE)

	Direction command transmitters	Explanations
A5	Not active	The direction command transmitters only give a command when the door is stationary.
B5	STOP only	A moving door is stopped by every direction command transmitter.
C5	Active without STOP	The door travels towards the OPEN position after the OPEN button has been pressed. The door travels towards the CLOSE position after the CLOSE button has been pressed.

Menu 6: Function of the impulse command transmitter (Impulse, intermediate OPEN position, intermediate CLOSE position)

	Impulse command transmitters	Explanations
A6	Not active	The impulse command transmitters only give a command when the door is stationary.
B6	STOP only, then standard sequence	A moving door is stopped by every impulse command transmitter. The next command starts the drive system running in the opposite direction (OPEN - STOP - CLOSE - STOP - OPEN).
C6	STOP only, then standard sequence	A moving door is stopped by every impulse command transmitter. A subsequent command starts the operating system again in the preferred direction: OPEN (CLOSE - STOP - OPEN - STOP - OPEN).
D6	Active without STOP	The impulse command transmitters trigger the corresponding command, without a STOP, in the preferred direction: OPEN.

10. Messages

10.1 Status messages

In addition to messages regarding the door position, status messages give information regarding the status of the operator system during operation.

Safety elements:

During operation, LED 1 serves as a status indicator for the safety elements connected (closing edge safety device, photocell).
If the safety element in question is triggered, LED 1 lights up whilst it is activated.

Control elements / remote controls:

During operation and when carrying out component tests, LED 7 serves as a status indicator for the control elements connected (OPEN, CLOSE, STOP, half OPEN, etc.).
If the control element in question is triggered, LED 7 lights up whilst it is activated.

If a remote signal is received, LED 7 flashes quickly.

Maintenance:

LED 5 serves as a maintenance indicator.
If the specified maintenance interval is exceeded, LED 5 lights up continuously.

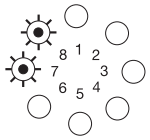
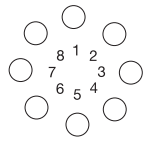
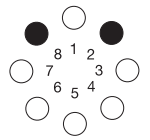
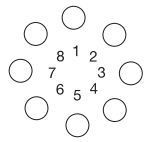
Safety circuit (SC), motor unit:

LED 6 serves as a status indicator for the safety devices connected to the controls, (thermal switch, CH, QR, MR).
If a safety element is activated, LED 6 lights up for the duration of its operation.

Legend:	
LED off	○
LED on	●
LED flashes slowly	☀
LED pulses	☼
LED flashes quickly	✹
Factory default setting	
Not possible	–

10.2 Fault messages

Malfunctions in the system are indicated by a corresponding message number.
The controls switch to message mode.

1.	Message number is displayed for approx. 3 seconds (example: Message 15).	
2.	Pause between messages for approx. 1 second.	
3.	Operating mode is displayed for approx. 3 seconds (example: operating voltage, "door OPEN" position).	
4.	Pause between messages for approx. 1 second.	
5.	Messages 1 to 4 are repeated.	

Advice:
- The controls show the message numbers via one or more rhythmically flashing LEDs.
  The message number is found by adding together the numbers next to the flashing LEDs.
- During programming, all status messages and other messages are suppressed. The messages in programming mode are never ambiguous.

The message numbers serve two purposes:
1. They indicate why the controls were unable to carry out the drive command given.
2. They indicate which components are faulty. This facilitates better and faster service on site, and only the control components identified as being faulty need be replaced.

The controls remain in message mode until they switch to operating mode or diagnostic mode.

Switching to operating mode
The controls switch to operating mode as soon as they receive a movement impulse.

Switching to diagnostic mode
The controls can be switched to diagnostic mode from either message mode or operating mode.
Before switching to diagnostic mode, the key switch must be in position "1".

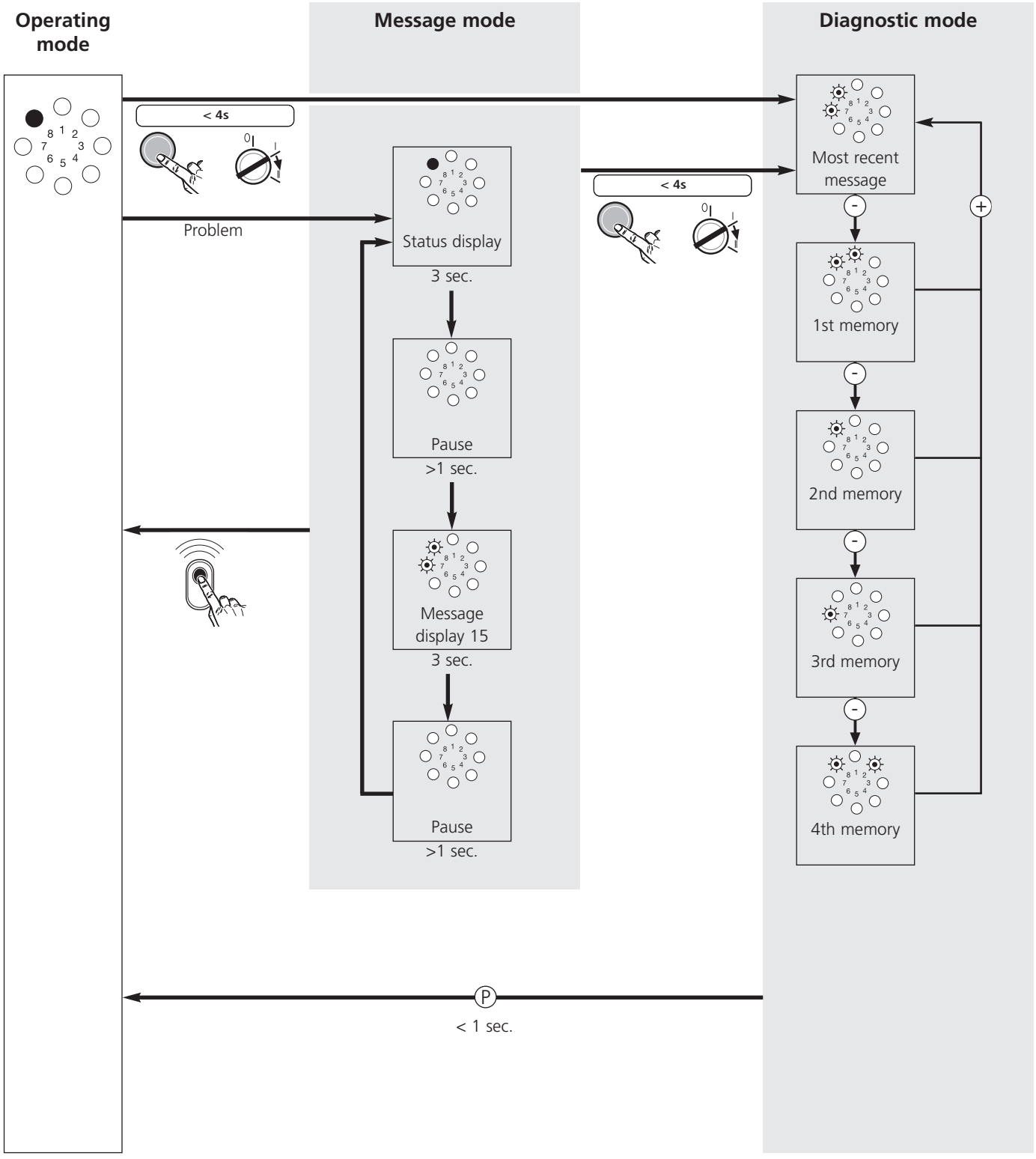
- Press the STOP button and keep it pressed.
- Switch the key switch from position "1" to position "2" within 4 seconds and then release the STOP button.

The controls switch to diagnostic mode.

Button functions in diagnostic mode

(+ / OPEN) button	The current fault is always shown when the (+) button is pressed.
(- / CLOSE) button	When the (-) button is pressed, up to 5 faults from the fault memory are shown in succession.
(P / STOP) button	Pressing the (P) button ends the diagnostic mode. The carousel display runs backwards. The controls return to operating mode.

10.3 Flow chart showing fault messages for control units with keypad on cover and key switch



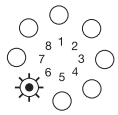
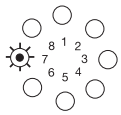
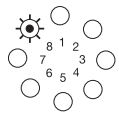
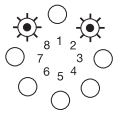
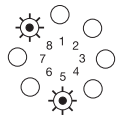
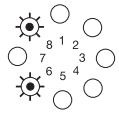
10.4 Rectifying faults

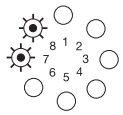
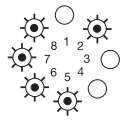
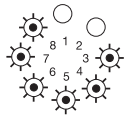
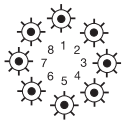
10.4.1 Malfunctions without error messages

Error	Cause	Solution
Operator system is not working.	- No voltage.	- Check the power supply to the system. - Check the external power supply against the specification on the identification plate. - Check the mains supply cable.
		3-phase model - Check that the wire jumper is in place between terminals 3 and 4 (standard configuration).
		Special model - Check whether voltage is present at terminal XN 84 from additional 230 Volt transformer. - Check whether there are 230 Volts between XN84 (terminal 4) and XN81 (terminal N).
	- Problem with connection between motor unit and control unit.	- Check cabling between motor unit and control unit (XB40) (Section 7.2.2 and 7.3.2/5).
Operator system is not working. Controls are in express programming mode.	- Safety circuit (door / operator controls) interrupted.	- Press the stop button 3 times. (The controls are now in operating mode. The status of the elements connected to the controls is displayed.)

Legend:	
LED off	○
LED on	●
LED flashes slowly	☀
LED pulses	☼
LED flashes quickly	✹
Factory default setting	
Not possible	–

10.4.2 Malfunctions with error messages

Error	Cause	Solution
Message 6 	- Closing prevention device (supplied by customer) activated.	- Check the door and remove any obstacles.
Message 7 	- If no buttons are pressed within 120 seconds, the programming mode terminates automatically.	
Message 8 	- OPEN and CLOSED door positions programmed without passing the reference point.	- Set the OPEN and CLOSED door positions again (Section 7.8.3).
	- Positioning box is defective.	- Have the operator system checked.
Message 10 	- Door movement too stiff. - Door blocked.	- Ensure that the door moves easily.
	- Maximum driving power setting is too low.	- Have the max. driving power (Section 9.4 / Level 2 / Menu 1+2) checked by an expert.
Message 13 	- CESD test in CLOSE direction not OK.	- Check closing edge safety device. - Programme out the closing edge safety device if there is no CESD present (Section 9.4 / Level 1 / Menu 8). - Reinsert an 8.2 kOhm resistance.
Message 14 	- End position is not OK.	- Set the OPEN and CLOSED door positions again (Section 7.8.3).

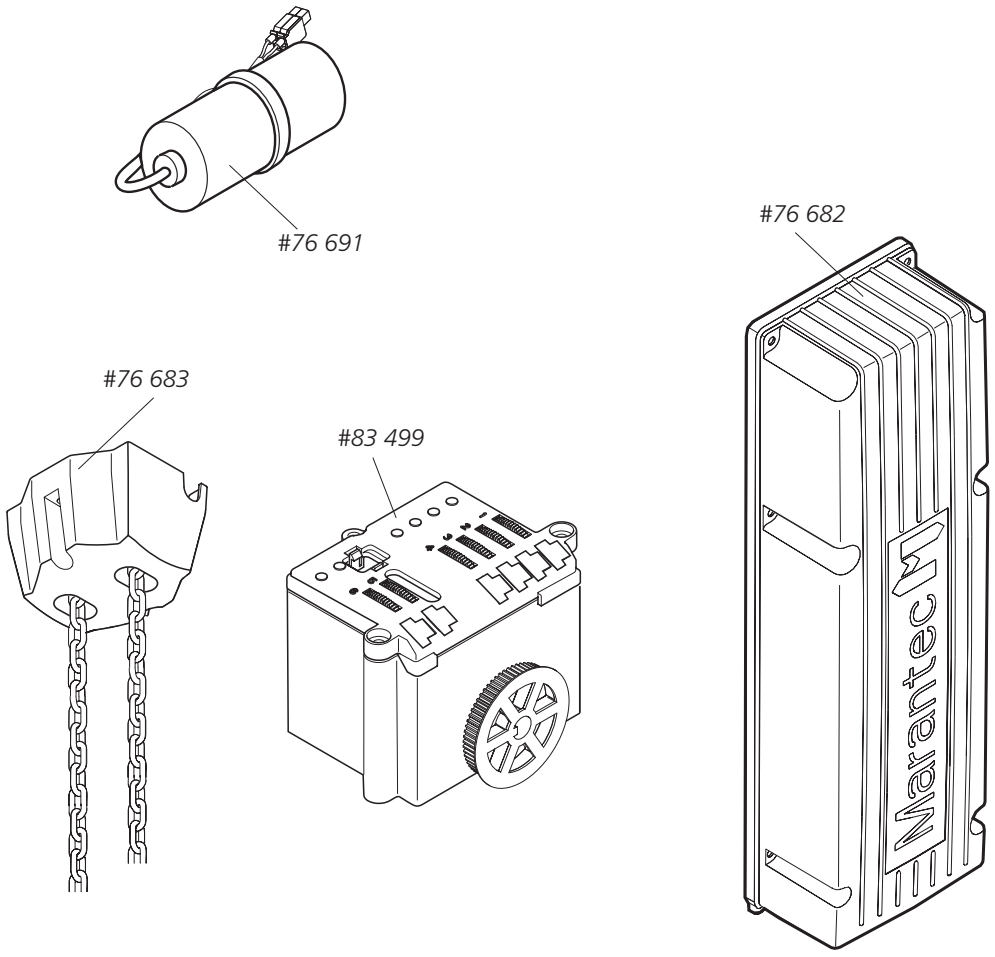
Error	Cause	Solution
Message 15 	- Photocell testing not OK.	- Check the photocell barrier. - Programme out the photocell barrier if no photocell barrier is connected (Section 9.4 / Level 8 / Menu 1). - Check the jumper at terminal XP27 (Section 7.3.3/1).
Message 28 	- Door movement too stiff or irregular.	- Check the path of the door and ensure that the door moves easily.
	- Automatic cut-out is set to be too sensitive.	- Have the automatic cut-out facility checked by an expert (Section 9.4 / Level 2 / Menu 3+4).
Message 33 	- Motor is not turning.	- Check the mains voltage. - Check the condenser. - Make sure the door can move smoothly.
Message 36 	- Wire jumper removed, but stop button not connected.	- Connect stop button or wire jumper B5/5 (XB50 / Section 7.3.2).
	- Operator system disengaged.	- Engage the operator system.
	- Safety circuit interrupted.	- Close safety circuit.

Legend:	
LED off	○
LED on	●
LED flashes slowly	☀
LED pulses	☼
LED flashes quickly	✹
Factory default setting	
Not possible	–

11. Attachment

11.1 Dynamic xs.plus replacement parts overview

11.1 / 1



Replacement parts legend 11.1 / 1

Art. No.	Description
76683	Emergency hand chain facility, complete
76682	Housing cover
76691	Condenser
83499	Positioning box

11.2 Technical data for Dynamic xs.plus

Mechanical data		**80/19**	**60/24**	**45/30**	**110/16**	**95/19**	**75/24**	**60/30**
Driving torque	Nm	80	60	45	110	95	75	60
Nominal RPM	min^{-1}	19	24	30	16	19	24	30
Max. revolutions, driven shaft		16						
Emergency operation		Emergency hand chain or quick release with pull cable						
Drive unit disengagement		Maintenance release, quick release or controlled quick release						
Sleeve shaft diameter		Aluminium hollow shaft / tooth system in acc. with DIN Standard 5480 - 42 x 1.25 x 30 x 32						

Electrical data		**80/19**	**60/24**	**45/30**	**110/16**	**95/19**	**75/24**	**60/30**
Mains voltage	V	1N~ 230			Y 3N~ 400/230 / Δ 3~ 230			
Rated frequency	Hz	50						
Input current	A	4.6			Y 1.7 / Δ 2.9	Y 2.0 / Δ 3.5		
Motor power	kW	0.37						
Motor duty cycle	ED %	S3 – 25			S3 – 60			
Power supply for external elements	V	24 / 200 mA						
Protection category		IP 65						
Protection class		I						

Physical and ambient data		
Dimensions	mm	104 x 428 x 293
Weight	kg	14.0
Temperature range	C°	-20 to +60
Mounting versions		Push-on or flange mounting, spindle chain drive, open chain drive

Recommendations regarding the use of Dynamic xs.base and plus / correlation with cable drum / area of door / weight

*up to max. ø cable drum at "door CLOSED" position, suspension cable located on outside, $V_{max.}$ approx. 200 mm/s.

Type	80/19	60/24	45/30	110/16	95/19	75/24	60/30
Cable drum*	225	175	145	275	225	175	145
Spindle chain drive 1:1.2*	270	210	174	330	270	210	174
Maximum door area, m²	20	20	20	45	45	45	45
Max. weight, kg	250	250	250	550	550	550	550

CE

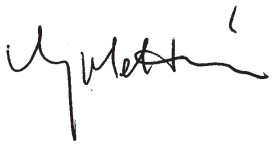
11.3 Manufacturer's Declaration

We hereby declare that the product sold by us and mentioned below corresponds in its design, construction and version to the relevant and basic health and safety requirements of the following EC regulations: EMC Directive, Machinery Directive and Low Voltage Directive.
Product changes made without our consent will render this Declaration void.

Product: Dynamic xs.plus

Relevant EC Regulations:
- EC EMC Directive (89/336/EEC),
- Machinery Directive (98/37/EEC) and
- Low Voltage Directive (73/23/EEC and 93/68/EEC).

Applied harmonised standards, in particular:
EN 292-1
EN 61000-6-2
EN 61000-6-3
EN 55014
EN 61000-3-2
EN 61000-3-3
EN 60335-2-103
EN 12445
EN 12453



2 January 2008 ppa. K. Goldstein

11.4 EC Declaration of Conformity

We hereby declare that the product sold by us and mentioned below corresponds in its design, construction and version to the relevant and basic health and safety requirements of the following EC regulations: EMC Directive, Machinery Directive and Low Voltage Directive.
Product changes made without our consent will render this Declaration void.

Product:

Relevant EC Regulations:
- EC EMC Directive (89/336/EEC),
- Machinery Directive (98/37/EEC) and
- Low Voltage Directive (73/23/EEC and 93/68/EEC.

Applied harmonised standards, in particular:
EN 292-1
EN 61000-6-2
EN 61000-6-3
EN 55014
EN 61000-3-2
EN 61000-3-3
EN 60335-2-103
EN 12445
EN 12453

Date / Signature

Marantec Antriebs- und Steuerungstechnik GmbH & Co. KG
Remser Brook 11 · 33428 Marienfeld · Germany

Tel. +49 (52 47) 7 05-0

English

83111

Version: 01.2008
#83 111

1 - GB 360266 - M - 0.5 - 0207