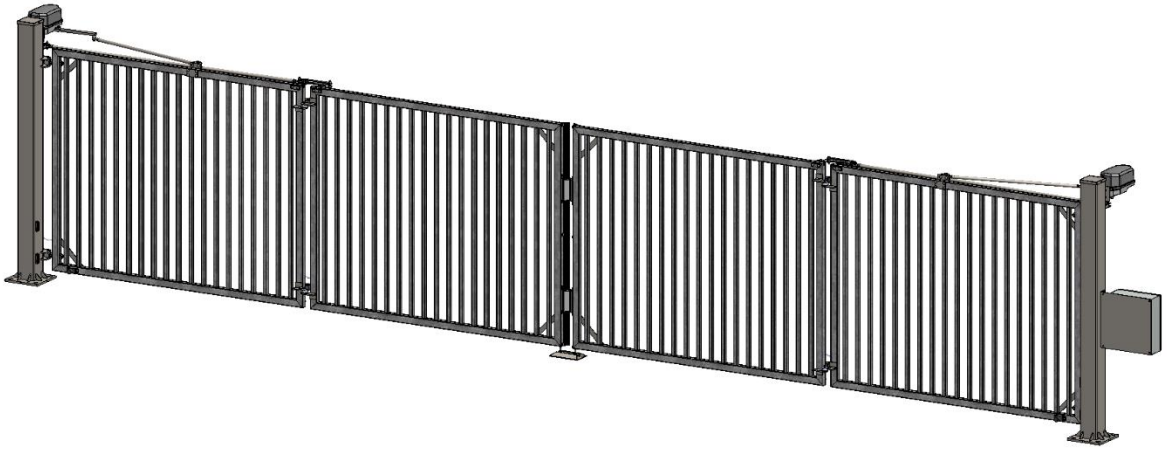
BETAFENCE
a PRÆSIDIAD brand

SPEED FOLDING GATES



Faldivia®

User &
Installation
Manual

Table of contents

1. Warnings

These warnings constitute an integral and essential part of the product and must be issued to the user. Carefully read the warnings in this chapter as they supply important information concerning the safety issues during installation, use and maintenance. This handbook must be kept safely for any future consultation.

1.1. Warnings for installer and end user

After removing the packaging, make sure that the equipment is in a good & serviceable condition. If this is not the case, please do not use the equipment until it has been checked by professional qualified personnel. Children should not be allowed to come into contact with packaging elements (plastic bags, expanded polystyrene, nails, etc.) as they are potential sources of danger.

The installation must be carried out by qualified personnel, which have received technical training on the product, in accordance with current regulations and according to the manufacturer's instructions. The installation regulations can vary from country to country. Incorrect installation can cause harm to humans, animals and foreign objects, for which the manufacturer cannot be held responsible.

In case of a failure and/or poor functioning of the equipment, apply exclusively only professional qualified personnel, ideally the manufacturer or a certified installer. Only original spare parts should be used to carry out the repairs to the product. A lack of observance of that mentioned above could compromise the safety of the equipment.

This gate should only be used for that what it has been expressly designed for (the complete system). Any other use breaching this, should be considered improper and therefore dangerous. Betafence cannot be held responsible for eventual damage caused by improper, incorrect and unreasonable use.

1.2. Special points to note

- Avoid operating close to mechanical moving components, this could lead to a dangerous situation, should parts of the body or clothing become caught up in them. The difficulty of freeing oneself from their grasp is not always possible and can lead to serious injury.

- Only set the gate in motion when it is completely visible and free from all hazards and obstacles.

- Do not try to stop the gate manually once in motion, this can lead to damage or serious injury.

- Please note that the gate can generate a considerable force during operation, which could be a source of danger. Do not move into the operating area of the gate during motion.

- Do not allow children to play by opening and closing the gate.

- Do not allow children to play within the opening area of the gate.

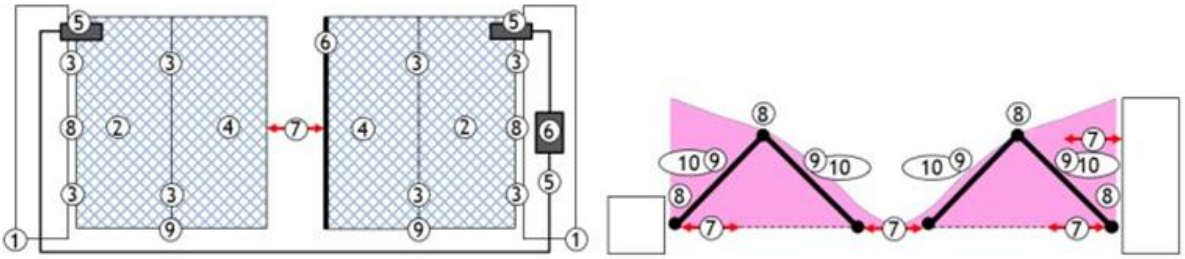
- Ensure that the electromagnetic lock is installed, functioning and locked properly when the gate wing is closed.

- When you close the door, take care that the lock is in the open position, to avoid damage to the counter lock on closing (Risk of breaking the lock).

- Ensure that the wing is held properly (manual operation) during the opening or closing of the gate so that uncontrolled movement of the wing can be excluded. Reduce speed when reaching the fully open and fully closed positions to avoid unnecessary wear when coming into contact with the buffers.

- During heavy wind conditions (greater than windload class 1) gate should not be operated and kept in closed position

- Persons are not allowed to ride on the any part of gate during operation because of the following crush hazards:



1	Structural failure - supporting structures
2	Structural failure - leaf
3	Structural failure - hinges, fixings & travel stops
4	Structural failure - wind load
5	Electrical - shock/fire
6	Control - faults in safety systems
7	Crush - within 500mm of a fixed object (open/close)
8	Crush - hinge area
9	Crush - under gate
10	Impact - swept area

Please adhere to the following to prevent persons from getting caught between any of these mentioned elements and serious injury.

-Do not climb onto the wings or posts.

-Inform all users of these hazards. Ideally this information should be displayed at a suitable place either on or close to the gate.

-To guarantee the efficiency of the installation and its correct functioning, it is imperative that the manufacturers guide lines are observed.

1.3. Safety rules for end user

- Attention: In all cases once the gate has been installed and taken into service the user is, from this point on responsible for his gate.

- The user is responsible for the following:

  - That all safety related hazards are correctly controlled (Photocell, Safety Strips).
  - Correct functioning.
  - Maintenance frequency → according to table on page 34.
  - Safety Inspection (dependent on country of use)

- Under the safety and correct functioning of the gate it is understood that the user checks on a regularly basis **(minimum once a year)** if all safety devices and access control options are still working properly as they should.

- Under the maintenance frequency it is understood that the maintenance that is described by the manufacturer has been followed. If a maintenance contract between the customer and **Betafence** exists, **Betafence** will carry of this maintenance in cooperation with the user.

- For gates installed in Germany the user must ensure that every 12 months the gate is inspected as per ASR A 1.7. Once inspected the testing agency raises a report. If the gate meets all requirements, then this is indicated in the report and a test sticker is applied to the gate. If the gate fails, then the faults are captured in the report and communicated to the user. The user is then responsible for the repairs and the re-submission of the gate for re-inspection.

- For older gates which have not been built according to DIN EN 13241-1, the user is obligated legally to ensure that his gate meets all new standards / regulations issued.

2. Guidelines for installation

- Only licensed technicians or installers who have had adequate product training provided by **Betafence** should be permitted to install the gate.

- The integration of the gate into a fence must not create additional dangers / hazards. Please read carefully the warning document and consider the integration examples in the document package delivered with the gate.

- The connection to the electrical power supply must be carried out by a qualified technician and in accordance with the regulations and standards that are applicable in the country of installation.

3. Guidelines for gate lifting

- Gates are delivered to the construction site completely assembled.
- Lift-up points for unloading and positioning during the installation.
- The gate may only be lifted using the correct lifting tackle. This should have an up to date test certificate and be sufficiently dimensioned for the weight of the gate. By preference use undamaged flexible lift slings with sufficient lifting capacity.

4. Foundations

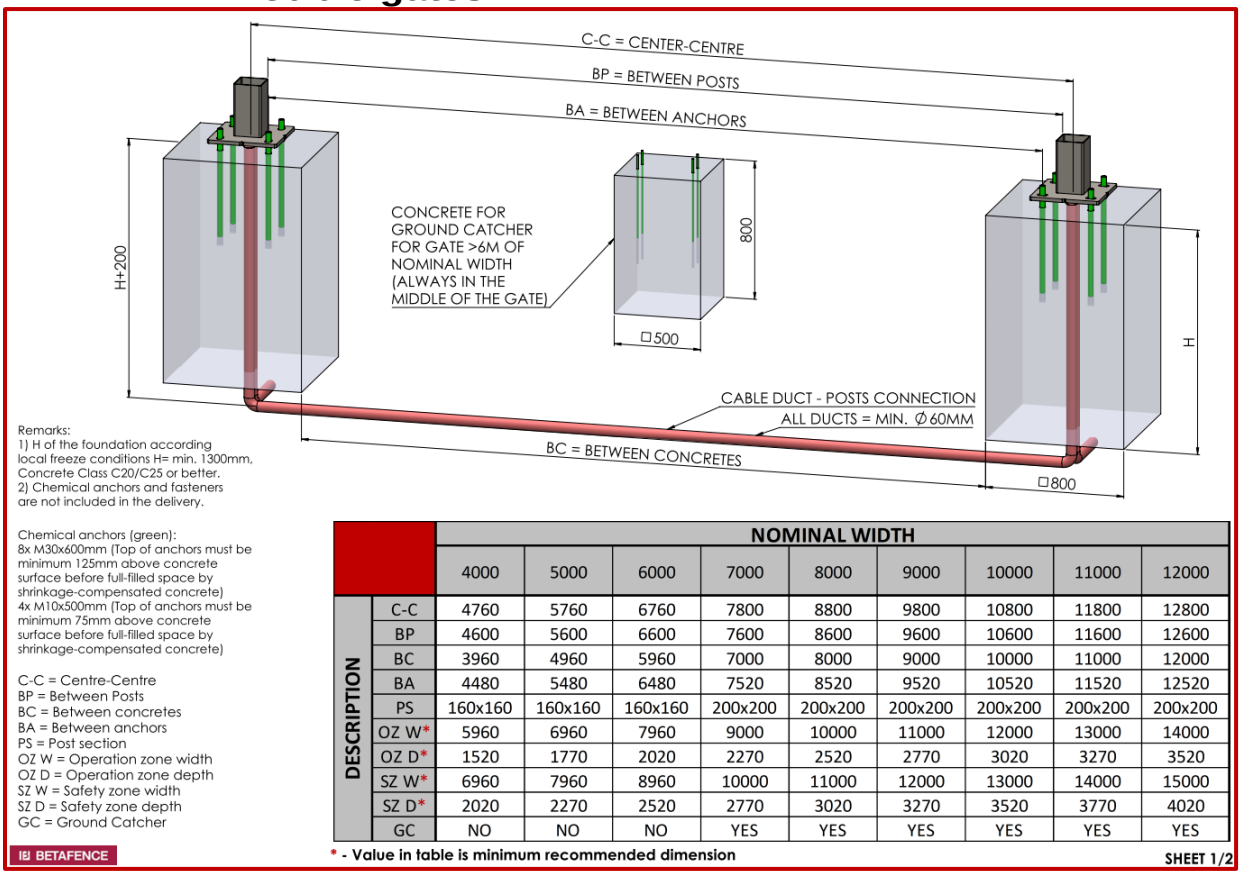
- Foundations prepared according to the corresponding drawing.
  - For standard range of gates see page 7. For the rebars see page 8.
  - For all non-standard executions and gate combinations, please consult the special foundation drawings supplied with the gate.
  - The gate must not be installed following the slope of the construction site. Make sure that the foundations for both posts is at the same level.
  - 1 cable pipe for the connection between the power source and the gate hinge post with cabinet.
  - 1 cable pipe for the cable connections between the posts (Photocells, Pressure strips, Extra equipment).
  - **DO NOT LAY SIGNAL CABLES IN THE POWER SUPPLY CABLE PIPE!**

Warning:

THE FOUNDATION PLANS PROVIDED ON THE FOLLOWING PAGES SERVE ONLY AS AN EXAMPLE!
ALWAYS USE THE PLANS PROVIDED WITH THE ORDER DOCUMENT.

- Concrete quality: C25 or better = cubic pressure resistance 25 N/mm^2.

4.1. Double gates



Remarks:
1) H of the foundation according local freeze conditions H= min. 1300mm, Concrete Class C20/C25 or better.
2) Chemical anchors and fasteners are not included in the delivery.

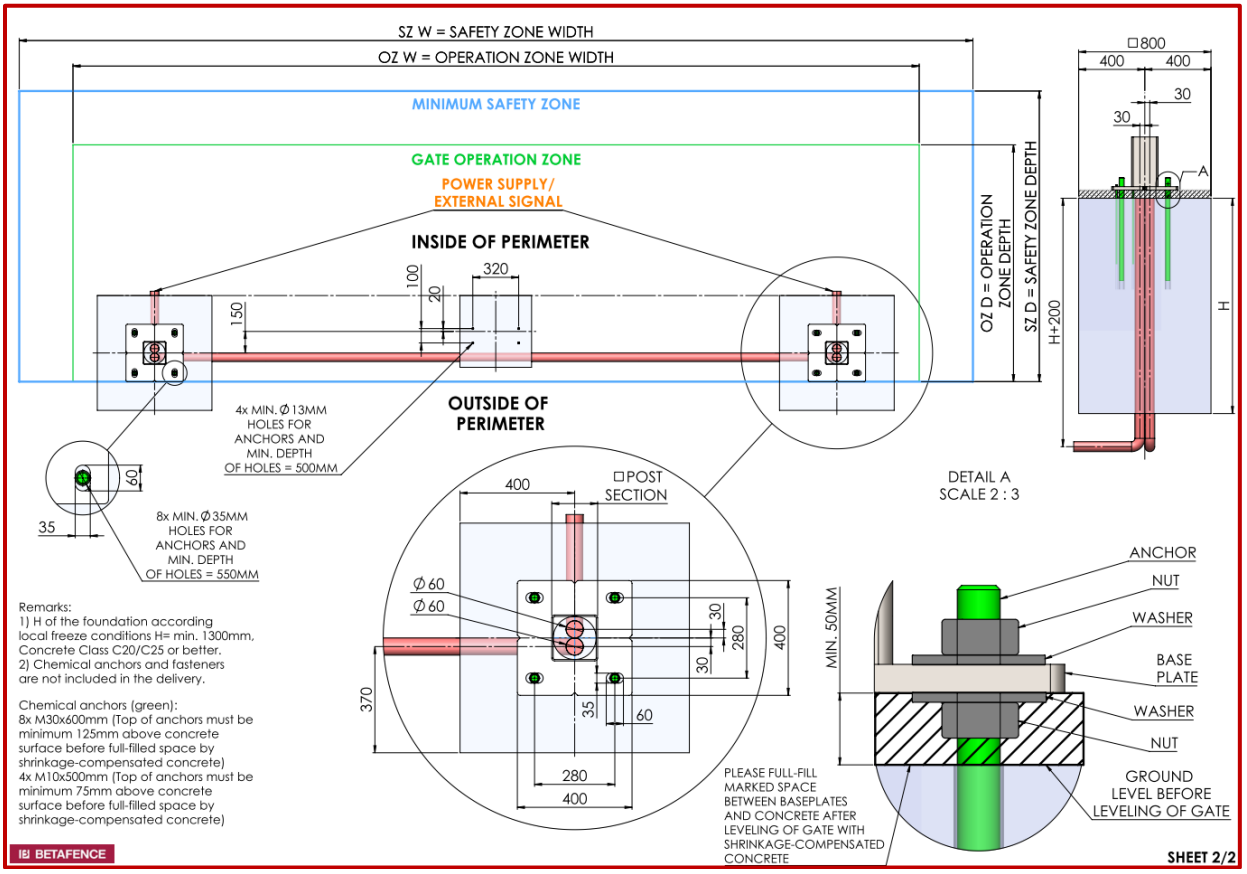
Chemical anchors (green):
8x M30x600mm (Top of anchors must be minimum 125mm above concrete surface before full-filled space by shrinkage-compensated concrete)
4x M10x500mm (Top of anchors must be minimum 75mm above concrete surface before full-filled space by shrinkage-compensated concrete)

C-C = Centre-Centre
BP = Between Posts
BC = Between concretes
BA = Between anchors
PS = Post section
OZ W = Operation zone width
OZ D = Operation zone depth
SZ W = Safety zone width
SZ D = Safety zone depth
GC = Ground Catcher

DESCRIPTION	NOMINAL WIDTH								
	4000	5000	6000	7000	8000	9000	10000	11000	12000
C-C	4760	5760	6760	7800	8800	9800	10800	11800	12800
BP	4600	5600	6600	7600	8600	9600	10600	11600	12600
BC	3960	4960	5960	7000	8000	9000	10000	11000	12000
BA	4480	5480	6480	7520	8520	9520	10520	11520	12520
PS	160x160	160x160	160x160	200x200	200x200	200x200	200x200	200x200	200x200
OZ W*	5960	6960	7960	9000	10000	11000	12000	13000	14000
OZ D*	1520	1770	2020	2270	2520	2770	3020	3270	3520
SZ W*	6960	7960	8960	10000	11000	12000	13000	14000	15000
SZ D*	2020	2270	2520	2770	3020	3270	3520	3770	4020
GC	NO	NO	NO	YES	YES	YES	YES	YES	YES

* - Value in table is minimum recommended dimension

SHEET 1/2



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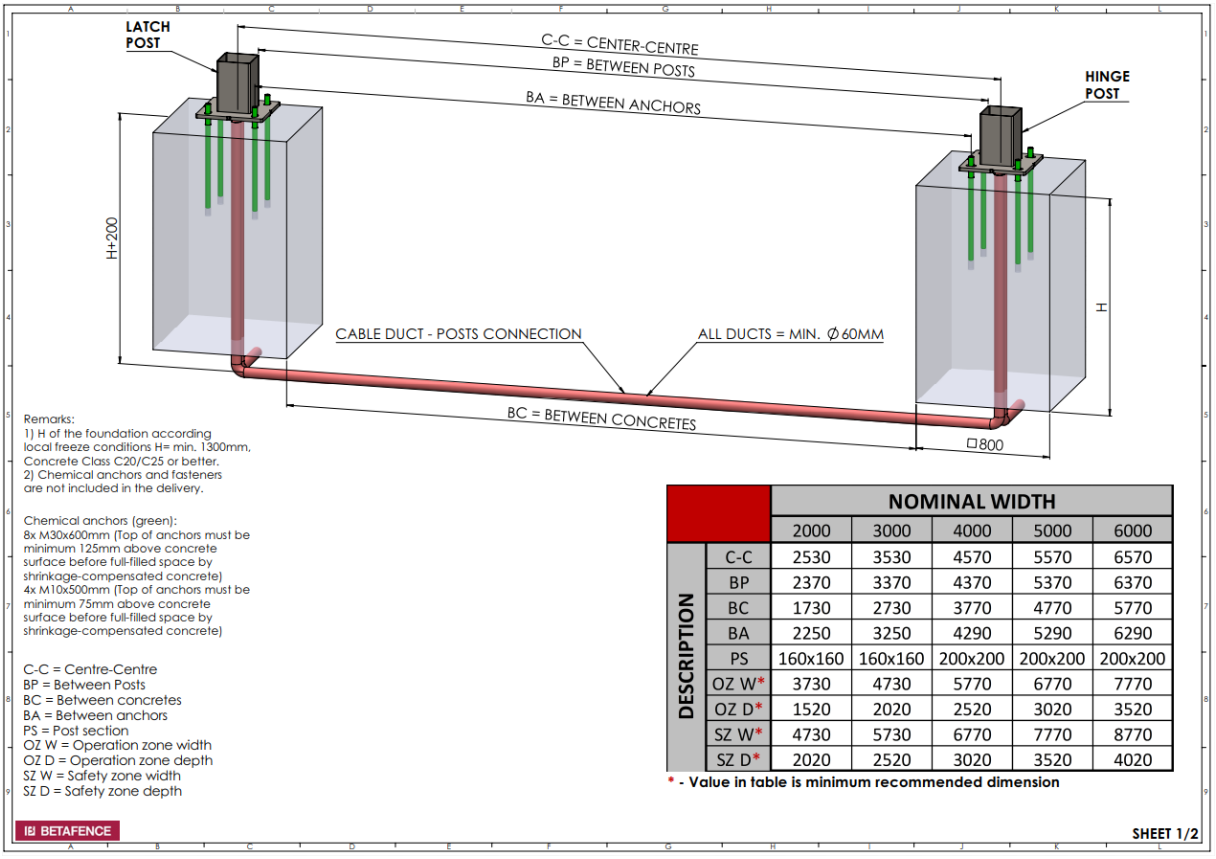
SHEET 2/2

The information and data given are typical for the product described. However technical changes are possible without any notice.

Proud to be a PRÆSIDIAD brand, Betafence is part of a global network, working alongside Guardiar and Hesco as a leader in perimeter security systems and solutions. For more information please visit praesidiad.com.

4.2. Single gates



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4x M10x500mm (Top of anchors must be minimum 75mm above concrete surface before full-filled space by shrinkage-compensated concrete)

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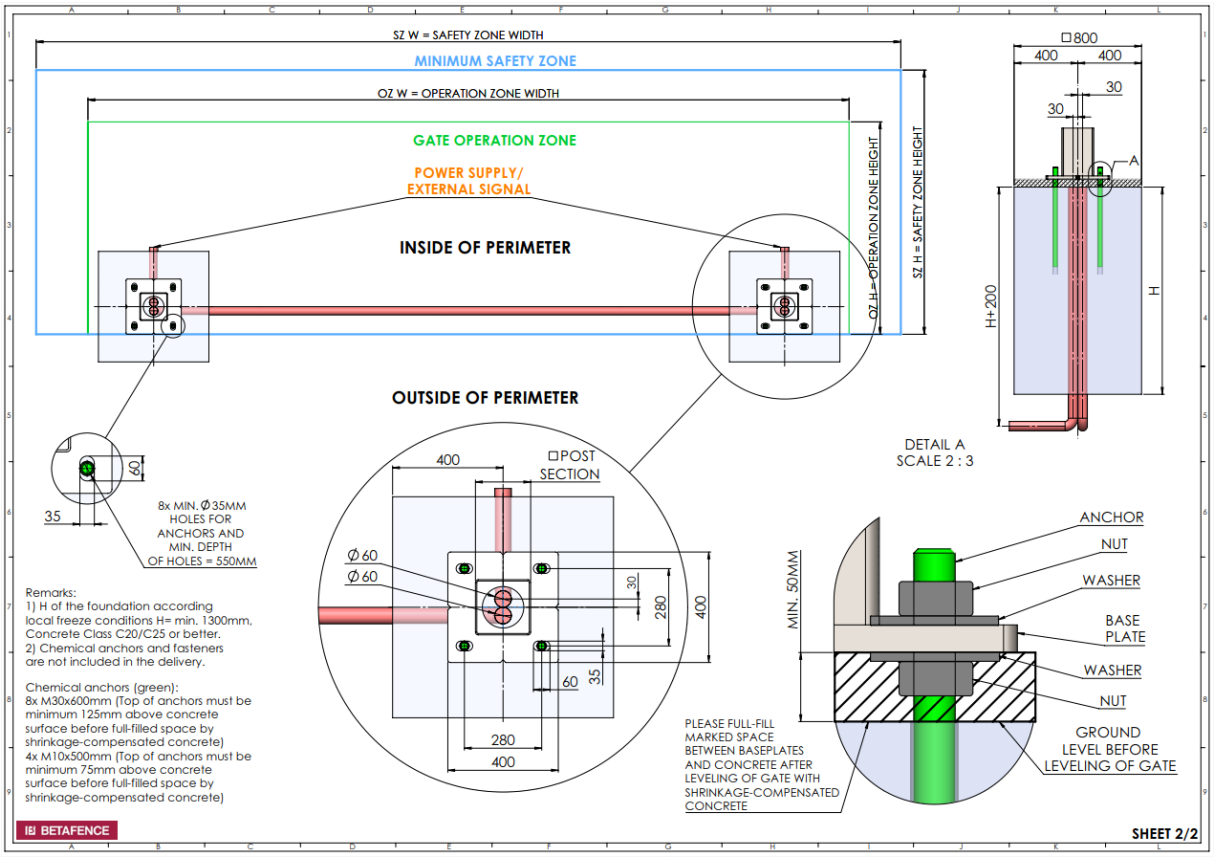
BP = Between Posts
BC = Between concretes
BA = Between anchors
PS = Post section
OZ W = Operation zone width
OZ D = Operation zone depth
SZ W = Safety zone width
SZ D = Safety zone depth

DESCRIPTION	NOMINAL WIDTH				
	2000	3000	4000	5000	6000
C-C	2530	3530	4570	5570	6570
BP	2370	3370	4370	5370	6370
BC	1730	2730	3770	4770	5770
BA	2250	3250	4290	5290	6290
PS	160x160	160x160	200x200	200x200	200x200
OZ W*	3730	4730	5770	6770	7770
OZ D*	1520	2020	2520	3020	3520
SZ W*	4730	5730	6770	7770	8770
SZ D*	2020	2520	3020	3520	4020

* - Value in table is minimum recommended dimension

BETAFENCE

SHEET 1/2



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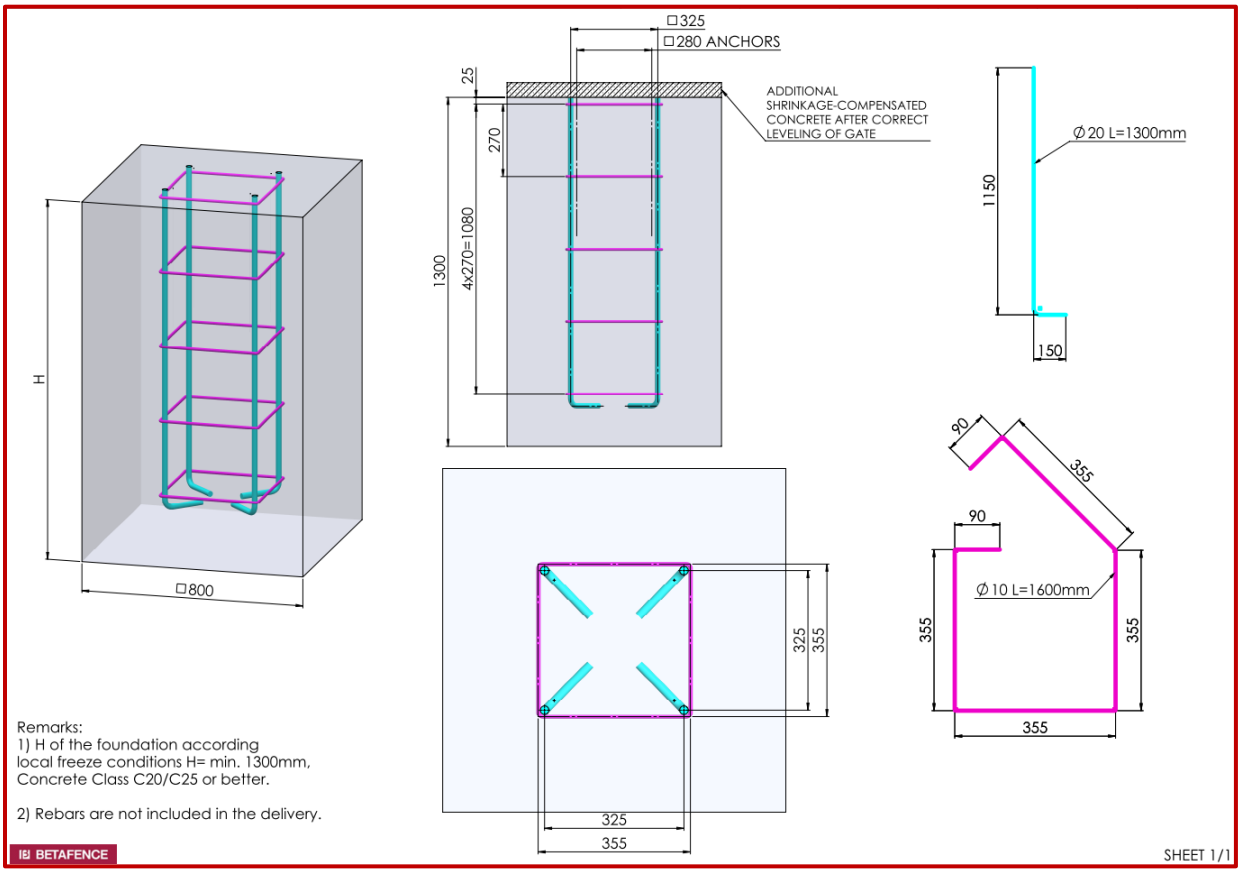
BETAFENCE

SHEET 2/2

The information and data given are typical for the product described. However technical changes are possible without any notice.

4.3. Rebars of concrete blocks



4.4. Minimum levels of safeguarding at main edge

A: Hold-to-run control mode of operation;

B: Hold-to-run control mode of operation with a manual actuator equipped with a key switch or similar;

C: Limitation of forces;

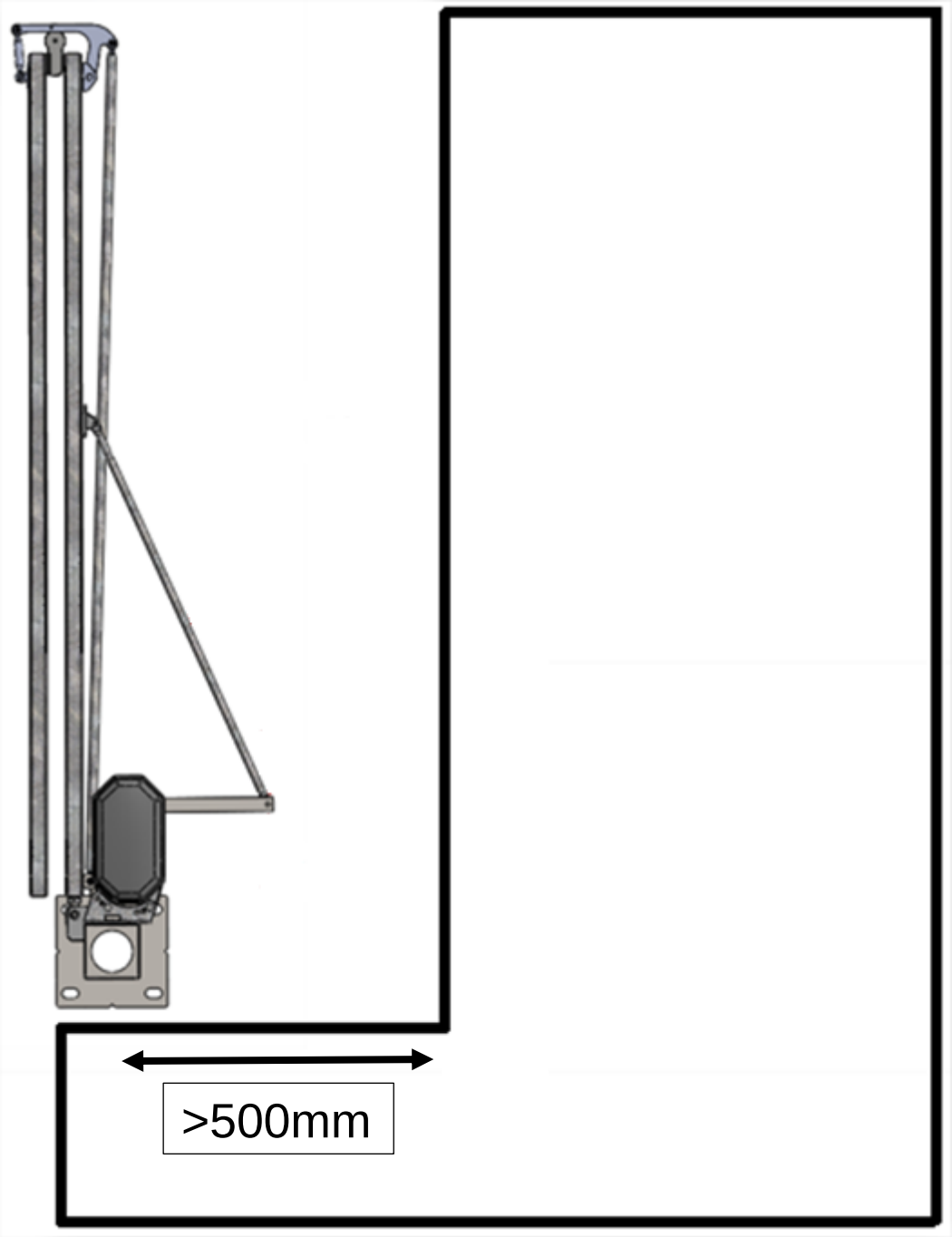
D: A device detecting the presence of a person or obstacles on the ground on one side of the door;

E: Presence detection device, designed and installed in such a way that a person cannot be touched by a moving door leaf.

Type of door activation	Types of use	
	Trained users (public not likely to be present) Type 1	Trained users (public likely to be present) Type 2
Hold-to-run mode of operation	A	B
Impulse activation in sight of the door	C or E	C or E
Impulse activation out of sight of the door	C or E	C and D, or E
Automatic control	C and D, or E	C and D, or E

All regulations regarding safety requirements must be validated on specific installation site in accordance with the standard 12453: 2017 [E]

4.5. Space around the gate



5. Preparations before gate installation

5.1. Fixing requirements

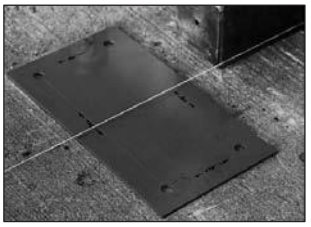
- Chemical anchors M30 x min. 600 mm for posts with “Fender” type washers (minimum 475 mm anchor depth and minimum 125 mm above finished Ground Level).
- Chemical anchors M10 x min. 500 mm for ground catchers (minimum 425 mm anchor depth and minimum 75 mm above finished Ground Level).
- For the mounting and securing of:
  - Post (8 anchors - M30)
  - Ground catcher (4 anchors - M10)

WARNING!

DO NOT USE MECHANICAL ANCHORS AS THEY ARE NOT SUITABLE FOR THIS APPLICATION!

The max distance between the concrete and post base plate should not be more than 50mm. Otherwise the stability is reduced.
(Within the warranty period, should the user report that “the gate does not move smoothly” and it is established that the gate position is not correct while this rule has not been followed, then the claim will not be accepted).

5.2. Installation of the ground anchors



1) Lay a tension line through the central axis of the foundations to indicate the exact position where the gate is to be installed. This incorporates the posts and the ground catcher support.

2) Position the templates for the posts. Using the tension line as a guide, align the center markings of the templates, ensure that the distances between the templates are adhered to as laid down in the foundation plans provided with the order document.

3) Mark the position of the holes with a small diameter concrete drill. This will help to centralize the final drilling to the required diameter.

4) Drill the corresponding holes for the fixation of the chemical anchors according to the supplier’s installation instructions. Drilled holes must be vertical.

5) Remove any dust and small particles from the drill

holes using a brush and hand pump. This will ensure perfect adhesion between the resin, ground anchor and the concrete foundation.

6) Place the chemical anchors according to the supplier's instructions. Resin drying times must be observed.

5.3. Preparing installation levels

1) Screw the lower adjustment nuts onto their ground anchors some 50mm above the concrete and place the 3d washers onto the nuts.

2) Using a spirit level (see photo) adjust the height of all 4 nuts so that they are horizontal to one and other.

3) The nuts of each mounting position should be perfectly horizontal and relative to another, so that the horizontal and vertical positions for the main support elements of the gate are correctly aligned before the gate is lowered onto the anchors.

6. Installation of the gate onto the ground anchors

Important:

Ensure your electrical cables have been passed through the cable pipes that are provided in the concrete. This enables an easier installation of the cables into the main guide post.
The cables should protrude at least 2000mm above the concrete.

Once this has been established the installation of the gate can begin.

1) The gate is positioned as a complete unit with the hinge post assembly onto their corresponding ground anchors.

2) Chronological order of actions:

    1) Remove packaging from the gate.

    2) Position the gate with the posts above the ground anchors approximately 500mm above the ground.

    3) Open the access door of the post cabinet.
    4) Identify the cables which go to the post (photocells, etc.).

    5) Pull these cables through the cable pipe to the second post.

    6) Pass the exposed ends of the power supply

and other cables through the hole in the base plate of the post into the connection box.

7) Cut off the straps which hold wing sections.

8) Now lower the gate until the post are resting on the washers of the ground anchors. Fit a washer and nut to each ground anchor. Tighten the nuts slightly for temporary fixation.

ATTENTION!
Ensure that cables and wires are not crushed between surfaces while lowering and positioning the gate onto the ground anchors.

7. Installation of the ground catcher support onto the ground anchors

1) Remove the ground catcher from the gate wing and suspend it over its ground anchors.

2) Position the ground catcher support onto the ground anchors and install the upper washers with nuts. Tighten the nuts slightly for temporary fixation.

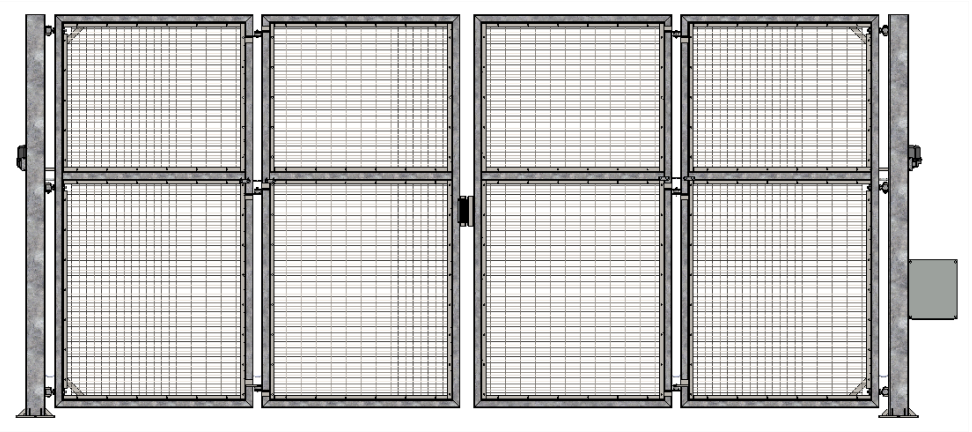
8. Alignment and levelling of the gate

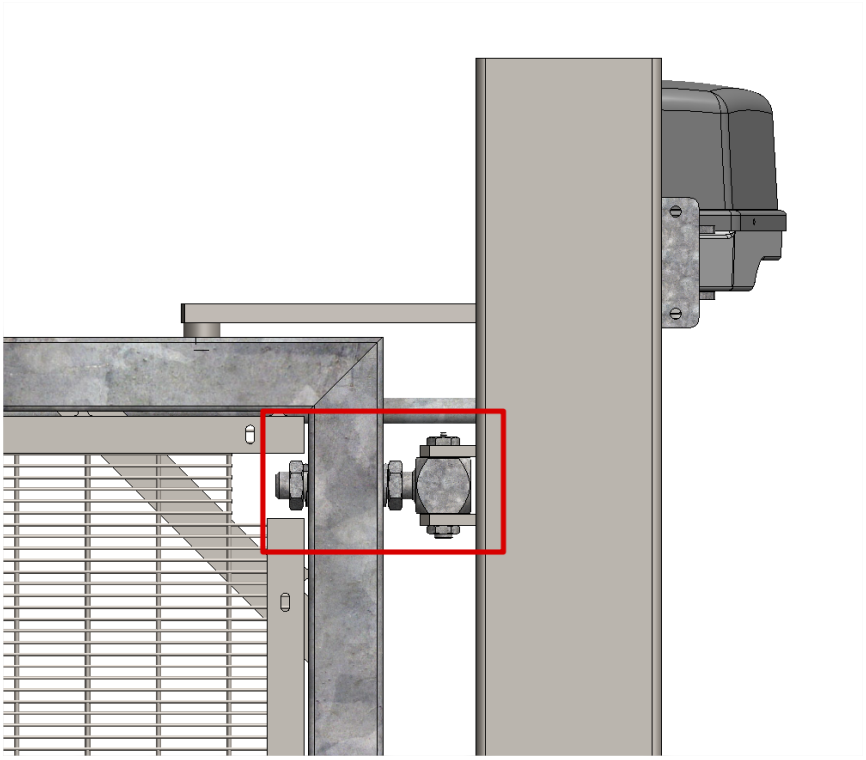
1) The posts should be placed vertically in the **closed** position. The vertical position is adjusted on the 4 M30 threaded rods fixed in the foundation.

Remarks:
It's very important after the connecting, starting and setting the gate to fill the space under the plate of the posts and ground catcher with shrinkage-compensated concrete.

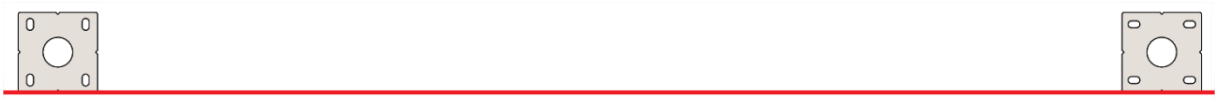
2) Put the gate in manual (disengaged) mode, unscrew the T-pin.

To align the wings horizontally, adjust the hinges on the posts. You can use both the upper, middle and lower hinges.

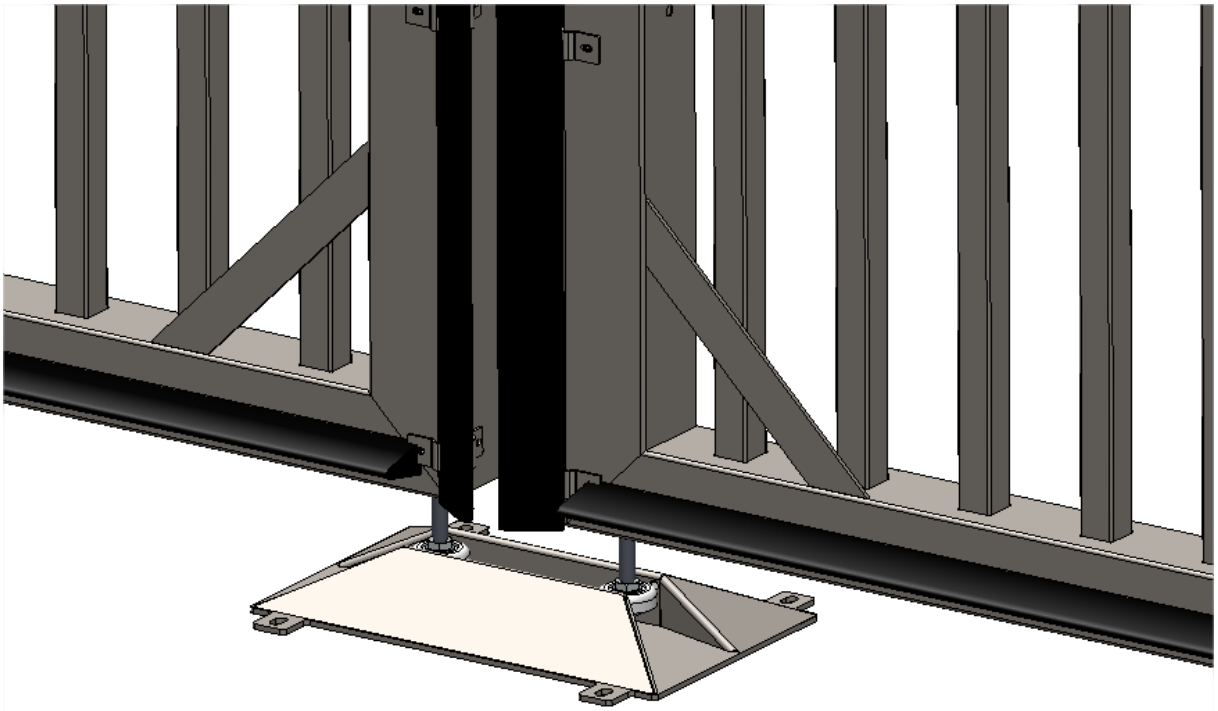




3) Align the post base plates straight in line:



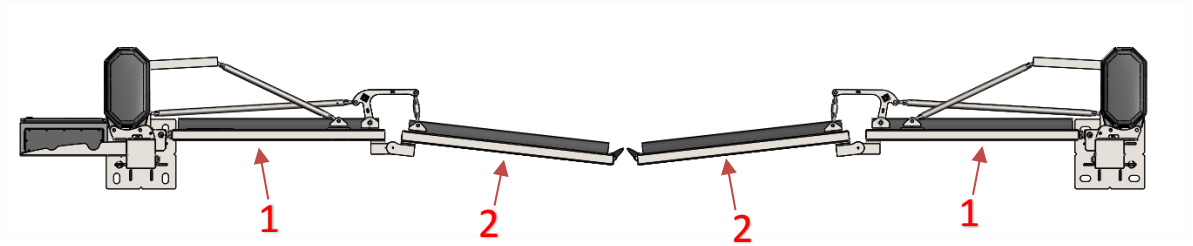
4) Gates with a free passage of more than 6000mm or a height of more than 2400mm have a ground catcher to support the gate in the closed position (obligatory by CE certification).



5) Gates with or without ground catcher are aligned on a different way, if you have a gate without ground catcher, please continue to step 8.

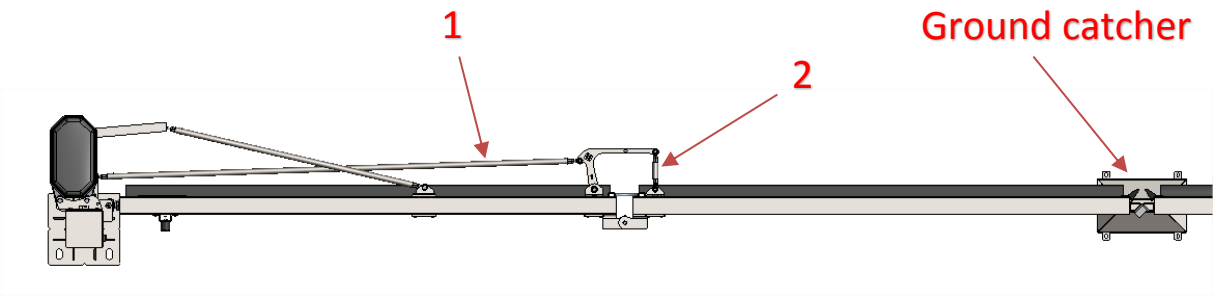
For gates with ground catcher the gate is not installed in straight line (see picture below).

Wings with number 1 should be aligned, wings with number 2 need to be adjusted to the outside so they smoothly enter the ground catcher.

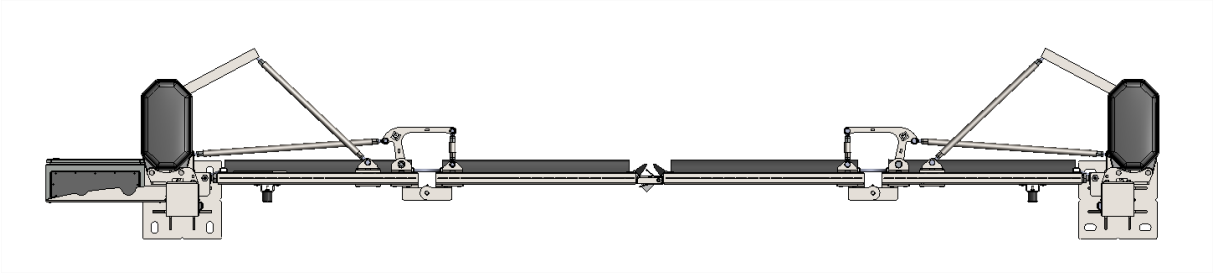


6) Install the ground catcher on the ground according to the foundation plan (4.1).

7) If required, adjust the 2 wings simultaneous. Turn the adjustment rods 1 and 2 to change the angle of the wings. The wings should be adjusted so that the roller on the wing will enter the catcher smoothly.



8) For gates without ground catcher installing the base plates and wings in straight line is enough.



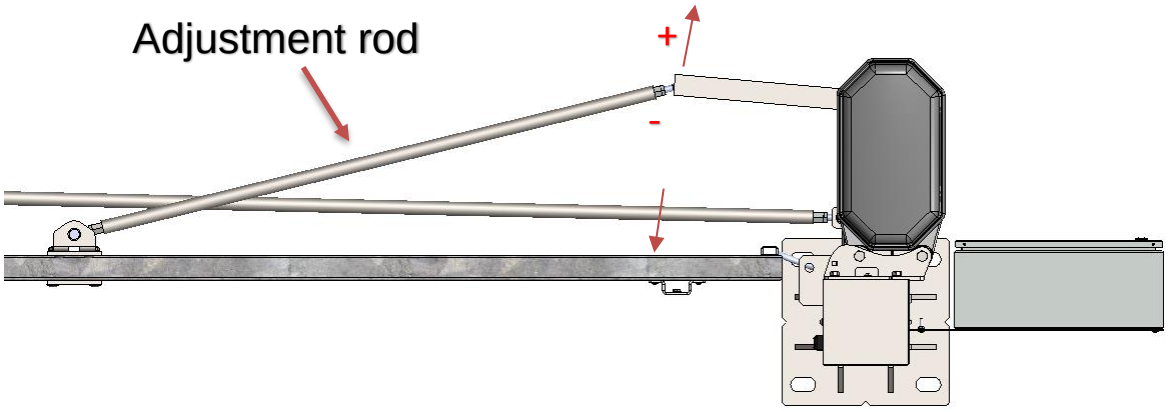
9) Check if the gate moves freely by hand over the complete span of the wing during opening and closing. Do this slowly as not all adjustments are done.

10) After full adjustment of the gate, tighten all ground anchor nuts. Then cut the lengths of the ground anchor bolts to 5mm above the nuts, and paint with corrosion resistant paint (Do this only when the gate function has been tested and the installation is complete).

11) Setting the angle of the motor arm in the **closed** position is done by changing the parameters:

Motor 1: L113
Motor 2: L123

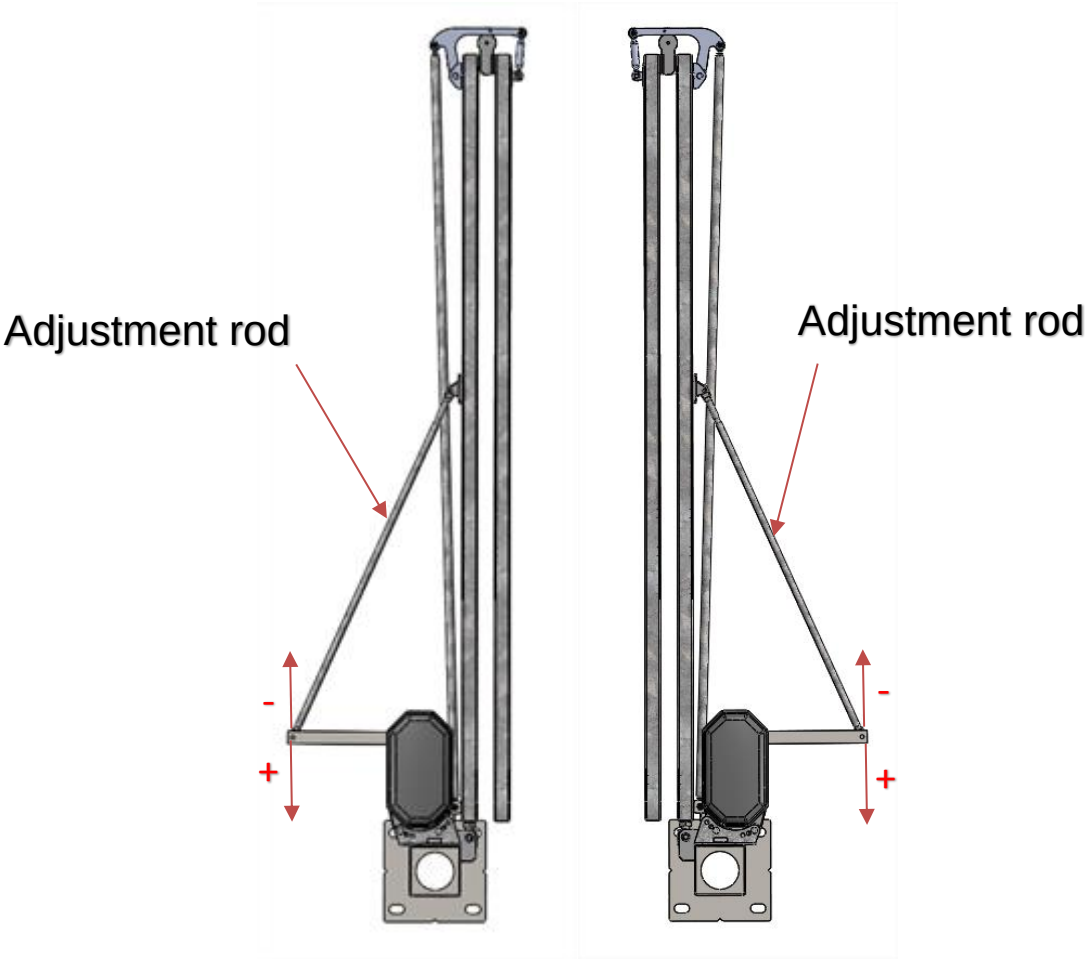
Increasing of this parameters moves the arm inside the property and decreasing to the outside.
An adjustment rod can be used for fine adjustment. Unscrew the lock nuts and adjust the position with the whole rod, tighten the lock nuts at the end.



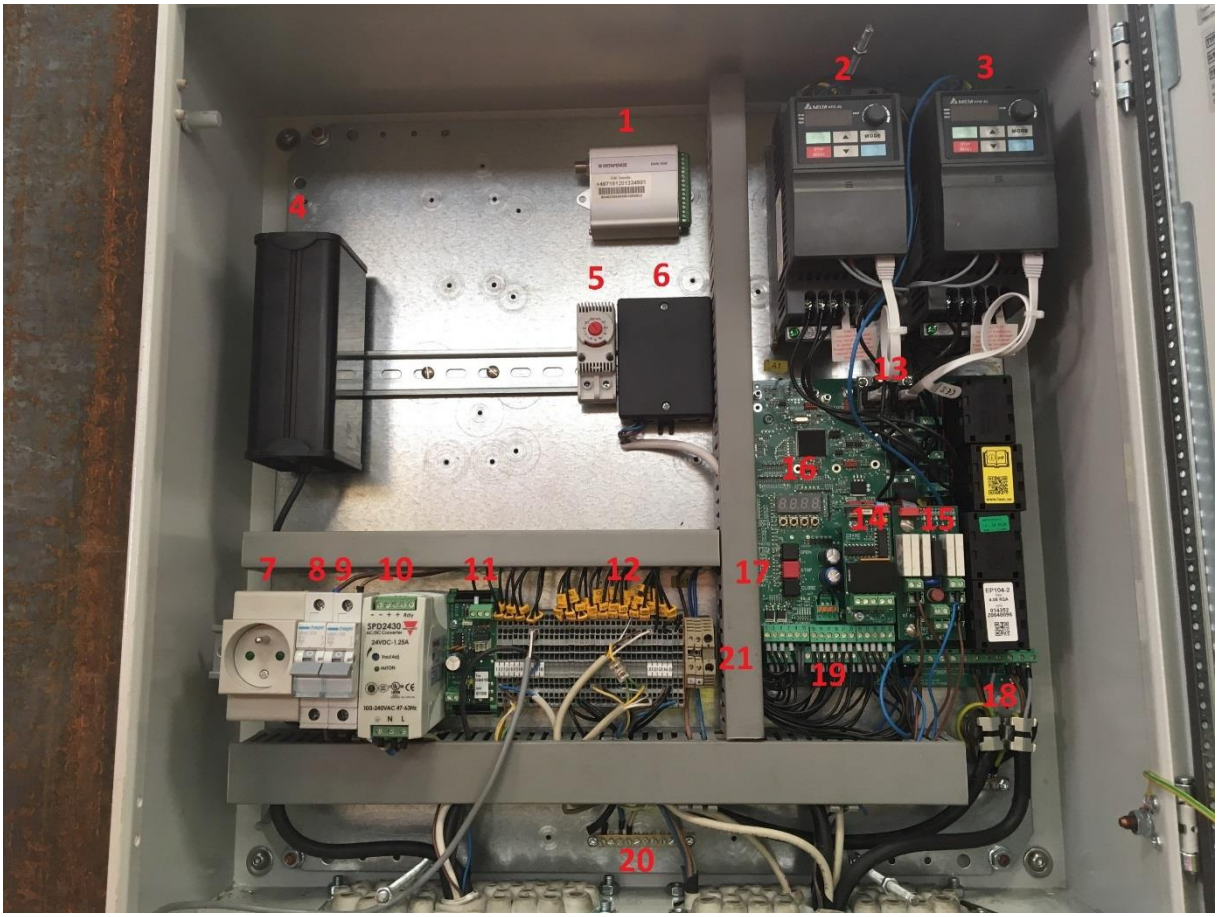
12) Setting the angle of the motor arm in the open position is done by changing the parameters:
Motor 1: L112
Motor 2: L122

Increasing of this parameters moves the arm outside of the property and decreasing to the inside.

An adjustment rod can be used for fine adjustment. Unscrew the lock nuts and adjust the position with the whole rod, tighten the lock nuts at the end.



9. Cabinet equipment



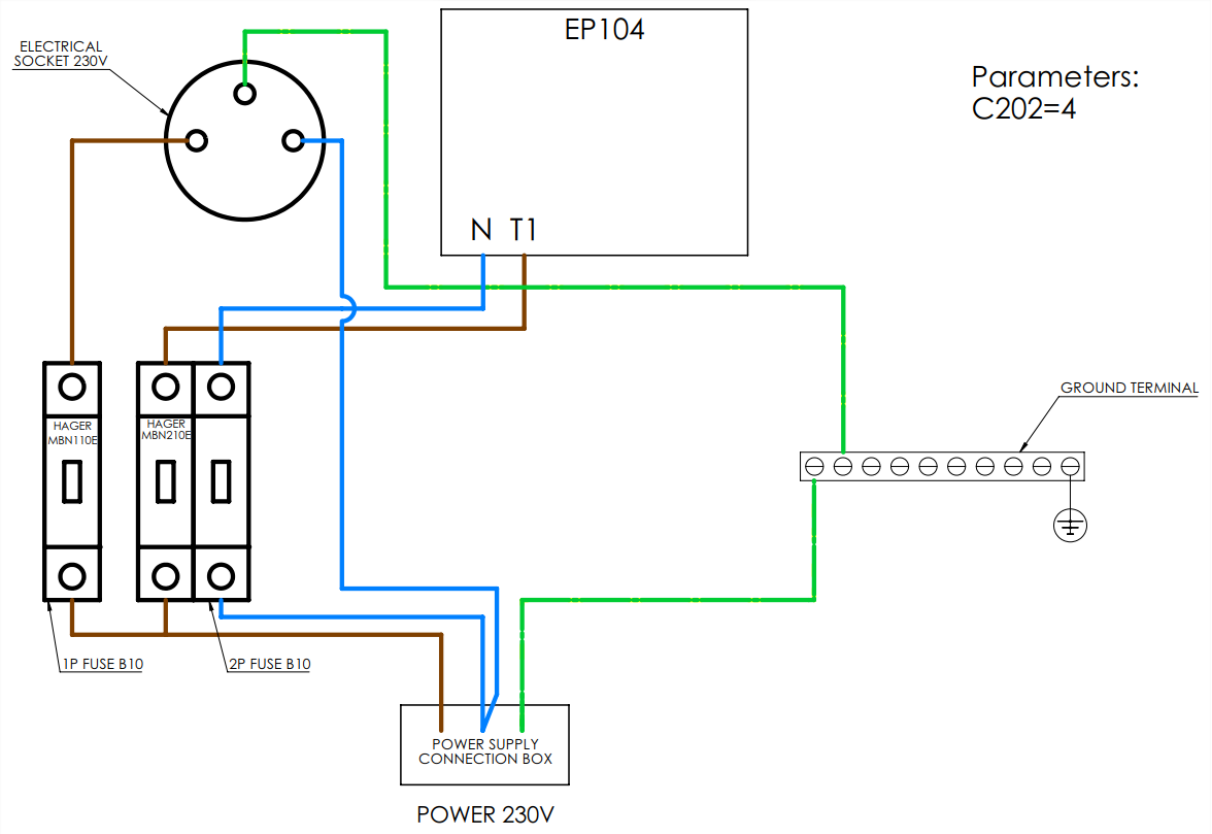
1) GSM module,
2) Frequency converter motor 1,
3) Frequency converter motor 2,
4) Heating element,
5) Thermostat for heating element,
6) Remote control receiver,
7) Socket,
8) Socket fuse,
9) Main fuse,
10) 230V ->24V transformer,
11) DB310, magnetic lock module,
12) Connection bridges,
13) DB409, frequency converter module,
14) DB402, loop detector module,
15) DB407, output card,
16) EP104 display and indicators,
17) Control buttons (open, stop, close),
18) Terminal block for motor 1 and 2,
19) Terminal block for low current,
20) Ground terminal,
21) Power supply.

10. Power Supply

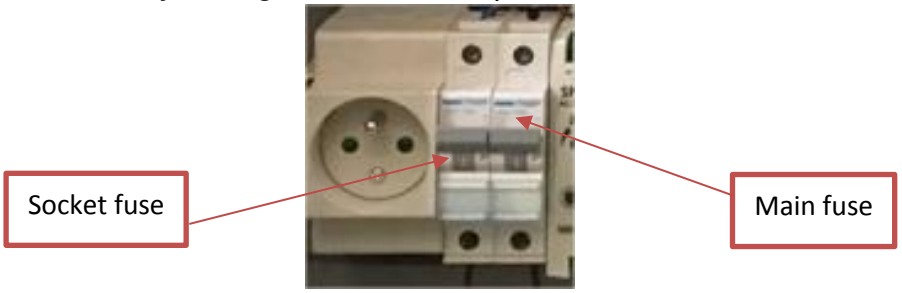
1) Power source must be 230V AC. Connect the power supply cable to the main switch connectors. There are three connectors foreseen for connection of the power supply. The cable from the main board to the gate must be secured according to the latest electrical installation regulations.
   Use a low voltage solid cable with a section according to the table underneath. (For example: NYJZ 3 x 2,5mm^2 according to VDE0276 part 603, VDE 0271 and IEC 52)

Section (mm^2)	Maximum distance (m)
2.5	300
4	600
6	900

2) Power supply and socket connection diagram:



3) Switch the current on by turning the main switch position to “ON”.



WARNING:

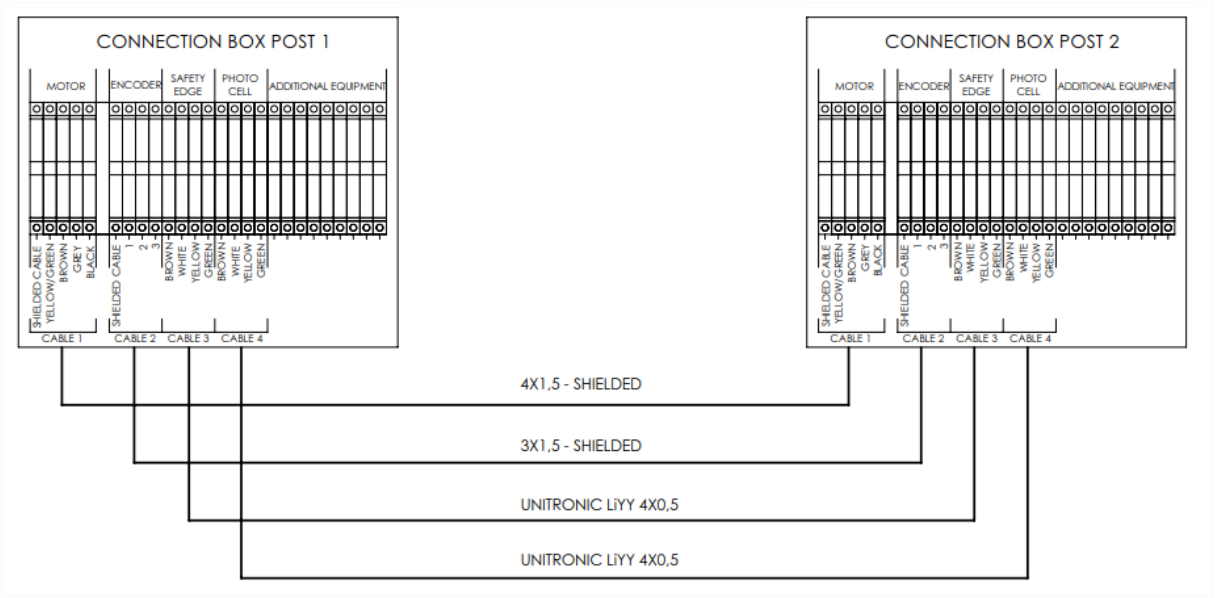
THE CABLE DIAMETER CALCULATIONS ARE BASED ON OUR GATE WITH ALL OUR POSSIBLE ACCESSORIES. IF YOU ARE CONNECTING MORE CONSUMERS TO IT, IT MAY BE NECESSARY TO USE A BIGGER CROSS-SECTION.

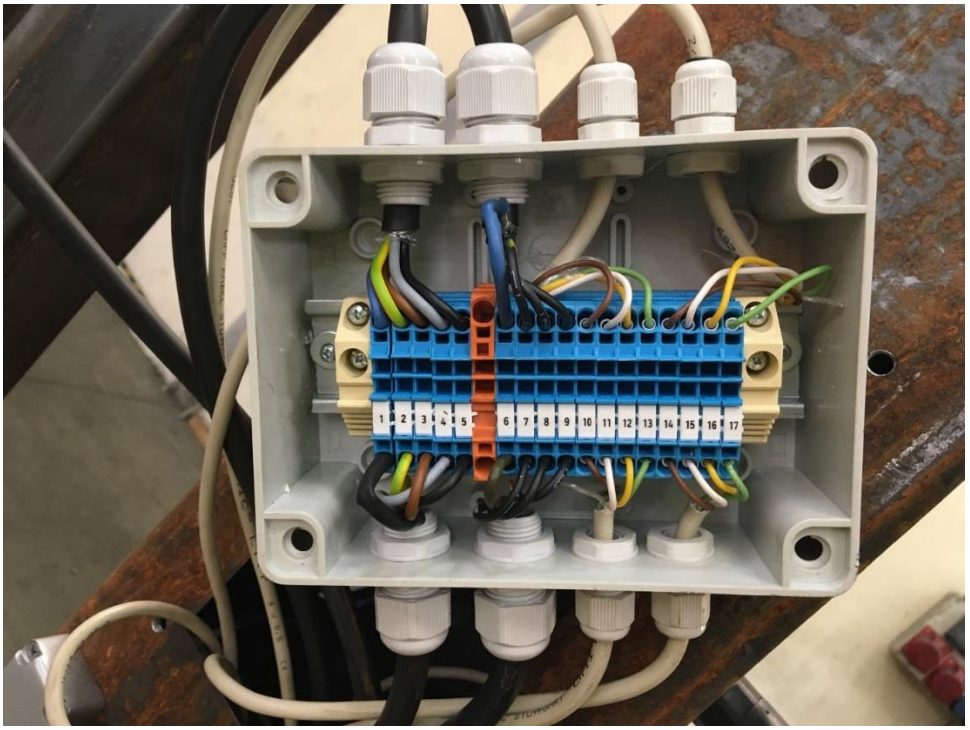
11. Connection between posts

The gate is preassembled, you only need to connect the wires between the posts. The wires are plugged into the boxes, which are located in the holes prepared for it in the post 1 and 2. Cables should be routed through the duct in the foundation.

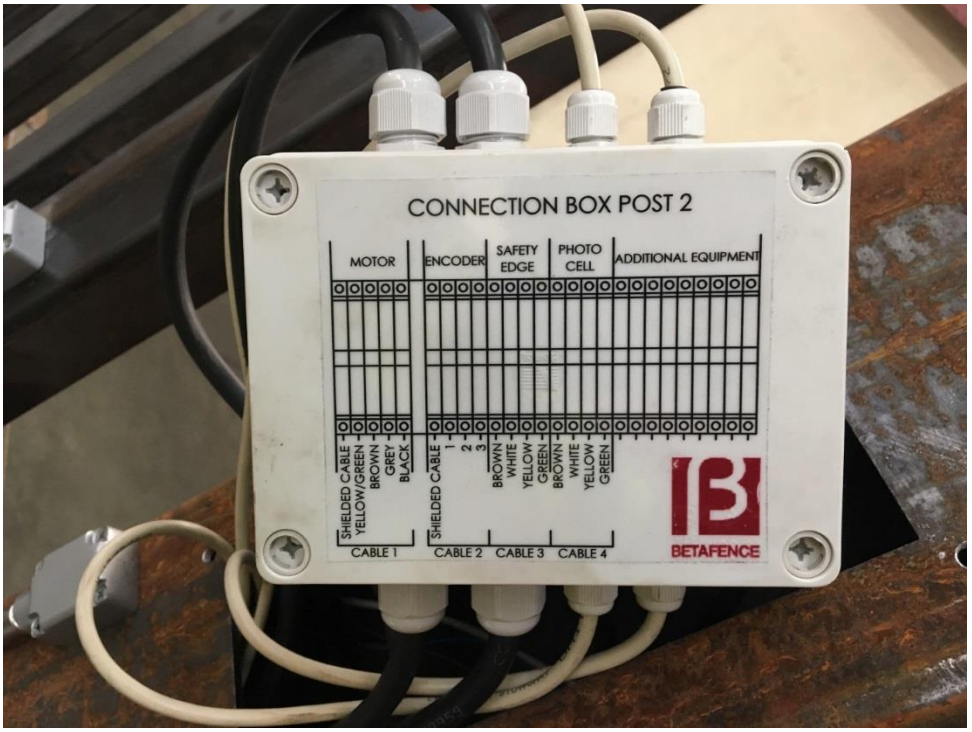
11.1. Connection diagram of boxes between posts

All cables have been prepared to the required lenght.





Connection diagram is drawn stuck on the junction box:

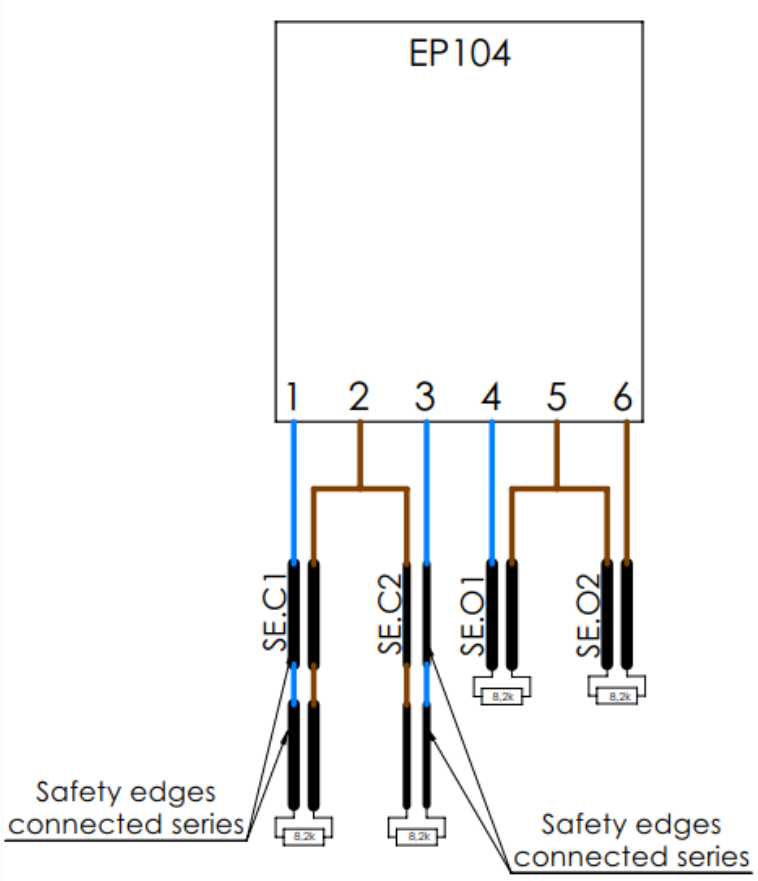


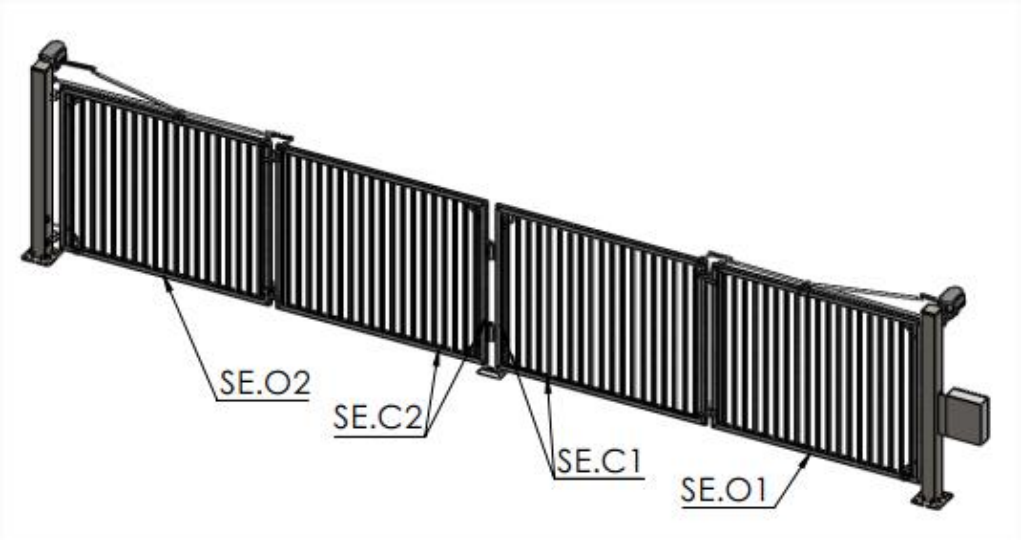
Junction box1 and 2 are the same, the connection is also the same.

12. Adjustment and testing of safety equipment

12.1. Safety strips

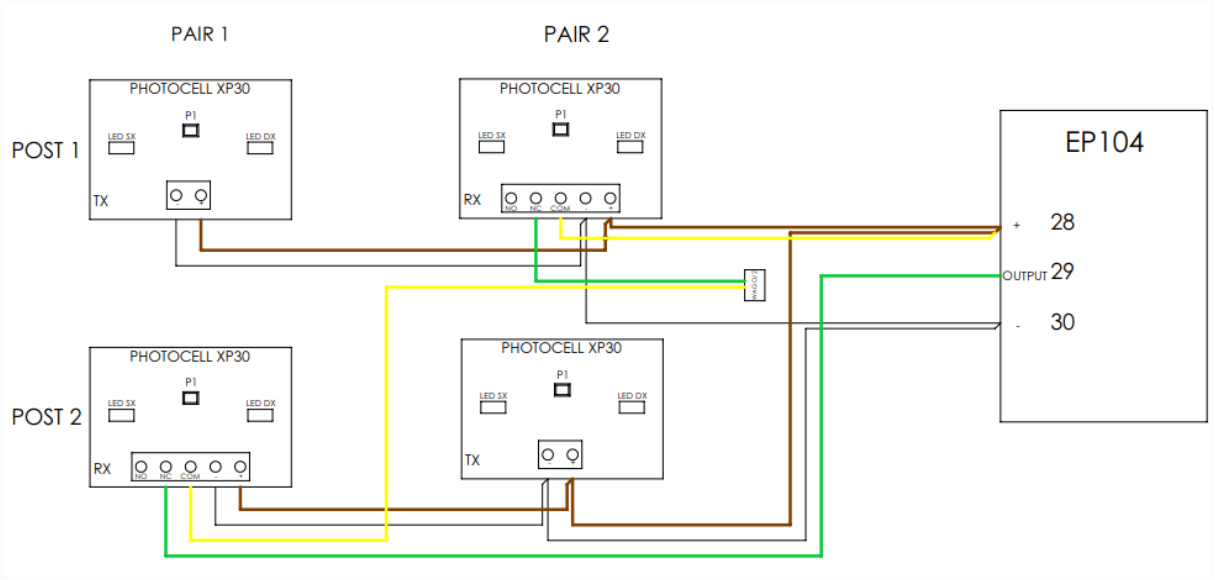
Wiring diagram for the safety edges is presented below:





Check if all safety strips are functioning. SE.O1 and SE.O2 safety strips are connected to opening, SE.C1 and SE.C2 safety edges are connected to closing.

12.2. Photocells



Rx photocells are connected to the power supply (+, -), one contact to + and the other to the input in the controller.
Tx photocells are connected only to the power supply.
Each set consists of a transmitter and receiver.
You can program the photocells so that they work in:

- Closing direction
- Opening direction
- Both directions

The photocells work in pairs and must be aligned so.

Before continuing the commissioning process, check that all LEDs are working correctly.
If there is a problem, review the connection instructions and check the connections.

Both when opening and closing the gate, after crossing the photocell line the gate stops.

12.3. Remote controls

12.3.1 Programming Remote control devices to the board

-On the SLH master radio control, simultaneously press and hold down push-buttons P1 and P2.

-The radio control LED begins to flash (for about 10 secs.).

-Release both push-buttons.

-Press, for 1 second, the push-button on the receiver (Fig.1 ref.h) relating to the channel you wish to associate with the radio control.

- The relevant LED on the receiver (Fig. 1 ref. g) begins to flash slowly for 5 secs.

- Within these 5 secs., while the radio control LED is still flashing, press and hold down the required push-button on the radio control (the radio control LED lights up on steady beam).

- The LED on the board (Fig.1 ref.g) lights up on steady beam for 1 second and then goes OFF, indicating that storage was executed.

- Release the radio control push-button.

- Quickly press twice in succession the memory stored radio control push-button.

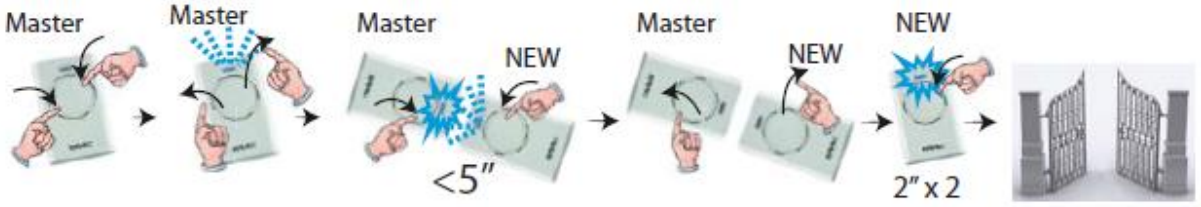
12.3.2 Remote control parameters

P100	**Channels in programable input 1** 0 Disabled 1 Enabled
P160	**Control function** 0 Disabled 1 Open 2 Close 3 Stop 4 Open/close 5 Open/Stop/Close
P161	**Type of control signal when activated** 0 Pulse (hold-to-run mode not possible) 1 Signal for as long as the input is activated
P162	**Half operation** 1 Motor 1 2 Motor 2 3 Motors 1 and 2
P200	**Channels in programable input 1** 0 Disabled 1 Enabled
P260	**Control function** 0 Disabled 1 Open 2 Close 3 Stop 4 Open/close 5 Open/Stop/Close
P261	**Type of control signal when activated** 0 Pulse (hold-to-run mode not possible) 1 Signal for as long as the input is activated
P262	**Half operation** 1 Motor 1 2 Motor 2 3 Motors 1 and 2

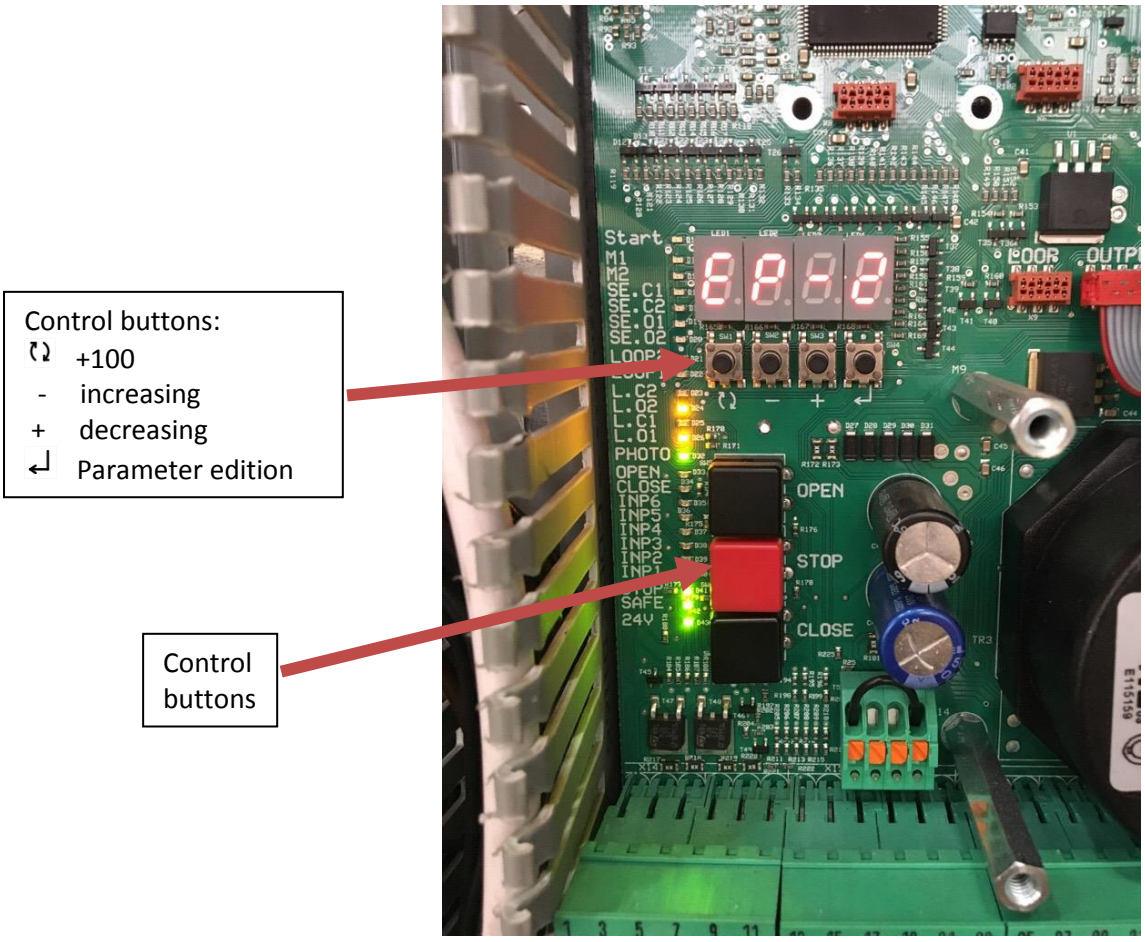
P100-P162 channels are used to set the P1 button on the remote control.
P200-P262 channels are used to set the P2 button on the remote control.

12.3.3. Programming a transmitter to another transmitter

- Using the programmed transmitter (function tested).
- Push both buttons (2 to 3 secs.) until the LED on the top starts to flash. Release both buttons. Transmitter is in programming mode.
- Take the transmitter which is to be programmed and hold it together (head to head) with the **Master** transmitter which is already in programming mode (see diagram below).
- Push the programmed button on the Master and simultaneous the button to be programmed on the second transmitter.
- When the LED on the Master stays on, release both buttons.
- Finally push the programmed button on the second transmitter twice in quick succession. LED DL11 on the controller illuminates.
- If this happens the programming was successful.



12.3.4. Parameter adjustment



13. The most important parameters to set the gate

13.1. Motor angle settings

L110	Position of motor 1, viewed from the motor side 0 Disabled 1 Left 2 Right
L111	Position readout It shows the current angle of the motor 1, 0-360 degrees
L112	Limit for open position, motor 1 Set the maximum angle in the open position, 145-330 degrees
L113	Limit for closed position, motor 1 Set the maximum angle in the closed position, 15-180 degrees
L120	Position of motor 2, viewed from the motor side 0 Disabled 1 Left 2 Right
L121	Position readout It shows the current angle of the motor 2, 0-360 degrees
L122	Limit for open position, motor 2 Set the maximum angle in the open position, 145-330 degrees
L123	Limit for closed position, motor 2 Set the maximum angle in the closed position, 15-180 degrees
C033	Pulse/hold-to-run 0 Open and close with hold-to-run and load guard inactive 1 Open with pulse and close with hold-to-run and load guard active 2 Open with hold-to-run and close with pulse and and load guard active 3 Open and close with pulse and load guard active 4 Open and close with hold-to-run and load guard active 5 Service mode, only internal open/close buttons with hold to run. Enables L001/2 to be set to 4, operation without limit switch. Load guard inactivated
C063	Reverse priority during movement 0 None 1 Open 2 Close 3 Open and close

13.2. Safety edges

C101	Safety edge acknowledgement SE.C1 0 Disabled 1 Enabled
C102	Function of output for external protection 0 Check disabled, open output, setting of C113, C123, C133, C143, C343, C643 is disabled 1 Open with pulse and close with hold-to-run and load guard active 2 Open with hold-to-run and close with pulse and and load guard active 3 Open and close with pulse and load guard active 4 Open and close with hold-to-run and load guard active
C103	Function of safety edge input during test of external safety edge unit 0 Low restistance during test 1 High resistance during test
C104	Connection and safety edge function 1 SE.C1 or 2 High resistance during test
C105	Halved speed or activated safety edge (only using a frequency converter) 0 Disabled 1 Active
C111	Selects function for safety edge SE.C1 0 SE.C1 disabled 1 Limits according to set value in C115 2 Fixed limits between 5kΩ and 15kΩ
C112	Reverse /stop with activated safety edge SE.C1 (KSS) 1 Reverse 2 Stop
C113	Control of external protection connected to SE.C1 0 No check 1 Test of protection connected to SE.C1
C114	Reading impedance SE.C1, 0-99.9kΩ Shows the impedance of safety edge SE.C1, you can set it in C115
C115	Setting impedance value for safety edge SE.C1, 1-9,9kΩ Only if C111 is set to 1!

C121	Selects function for safety edge SE.C2 0 SE.C2 disabled 1 Limits according to set value in C125 2 Fixed limits between 5kΩ and 15kΩ
C122	Reverse /stop with activated safety edge SE.C2 (KSS) 1 Reverse 2 Stop
C123	Control of external protection connected to SE.C2 0 No check 1 Test of protection connected to SE.C2
C124	Reading impedance SE.C2, 0-99.9kΩ Shows the impedance of safety edge SE.C2, you can set it in C125
C125	Setting impedance value for safety edge SE.C2, 1-9,9kΩ Only if C121 is set to 1!
C131	Selects function for safety edge SE.O1 0 SE.O1 disabled 1 Limits according to set value in C135 2 Fixed limits between 5kΩ and 15kΩ
C132	Reverse /stop with activated safety edge SE.O1 (KSS) 1 Reverse 2 Stop
C133	Control of external protection connected to SE.O1 0 No check 1 Test of protection connected to SE.O1
C134	Reading impedance SE.O1, 0-99.9kΩ Shows the impedance of safety edge SE.O1, you can set it in C135
C135	Setting impedance value for safety edge SE.O1, 1-9,9kΩ Only if C131 is set to 1!
C141	Selects function for safety edge SE.O2 0 SE.O2 disabled 1 Limits according to set value in C145 2 Fixed limits between 5kΩ and 15kΩ
C142	Reverse /stop with activated safety edge SE.O2 (KSS) 1 Reverse 2 Stop
C143	Control of external protection connected to SE.O2 0 No check 1 Test of protection connected to SE.O2
C144	Reading impedance SE.O2, 0-99.9kΩ Shows the impedance of safety edge SE.O2, you can set it in C145
C145	Setting impedance value for safety edge SE.O2, 1-9,9kΩ Only if C141 is set to 1!

13.3. Load guard and motor settings

C200	Function of output for external protection 0 Disabled Service and troubleshooting only 1 Reverse when closing, stop when opening 2 Stop when closing and reverse when opening 3 Reverse when closing and opening 4 Stop when closing and opening
C205	Load guard for personal protection active during the closing movement 0 Disabled 1 Active
C211	Load guard delay, 0,01-2,5 seconds
C212	Load guard, connection delay on start, all starts. 0,1-2,5 seconds
C221	Motor protection delay, 3,0-5,0 seconds
C230	Set motor power readout in C231 for personal protection, motor 1 After exceeding the set power, motor 1 stops
C231	Motor power readout, motor 1
C232	Set load guard limit for motor 1 opening, 0,05-1,99 kW
C233	Set load guard limit for motor 1 closing, 0,05-1,99 kW
C240	Set motor power readout in C241 for personal protection, motor 2 After exceeding the set power, motor 2 stops
C241	Motor power readout, motor 2
C242	Set load guard limit for motor 2 opening, 0,05-1,99 kW
C243	Set load guard limit for motor 2 closing, 0,05-1,99 kW
C251	Motor current readout, motor 1
C252	Set motor current readout, motor 1 opening
C253	Set motor current readout, motor 1 closing
C261	Motor current readout, motor 2, 0-20A
C262	Set motor current readout, motor 2 opening
C263	Set motor current readout, motor 2 closing

13.4. Frequency converter channel list

F-channels are only viewed if c202 is set to 4, frequency converter.

F001	Comunication with frequency converter 0 Disabled 1 Enabled
F002	Acceleration time from closed position motor 1 and 2 (from 0-100Hz) 0,5 - 9,9 seconds
F003	Acceleration time in all movements except at closed position motor 1 and motor 2 0,5 - 9,9 seconds
F004	Acceleration time when P500 is set to 2 and the input is activated, battery backup 5,0 - 12,0 seconds
F005	Retardation time with limit switch and change of direction for motor 1 and 2 0,5 - 9,9 seconds
F006	Retardation time with photocell and vehicle loops for motor 1 and 2 0,5 - 9,9 seconds
F008	Low-speed frequency for opening movement, 5-20Hz
F009	Low-speed frequency for closing movement, 5-20Hz
F012	Opening frequency / opening speed for motor 1 21-99Hz
F013	Closing frequency / closing speed for motor 1 21-99Hz
F014	Increase in limit in L114 as speed will decrease during the opening movement, motor 1 (Only when using a frequency converter)
F015	Increase in limit in L115 as speed will decrease during the closing movement, motor 1 (Only when using a frequency converter)
F022	Opening frequency / opening speed for motor 2 21-99Hz
F023	Closing frequency / closing speed for motor 2 21-99Hz
F024	Increase in limit in L124 as speed will decrease during the opening movement, motor 2 (Only when using a frequency converter)
F025	Increase in limit in L125 as speed will decrease during the closing movement, motor 2 (Only when using a frequency converter)

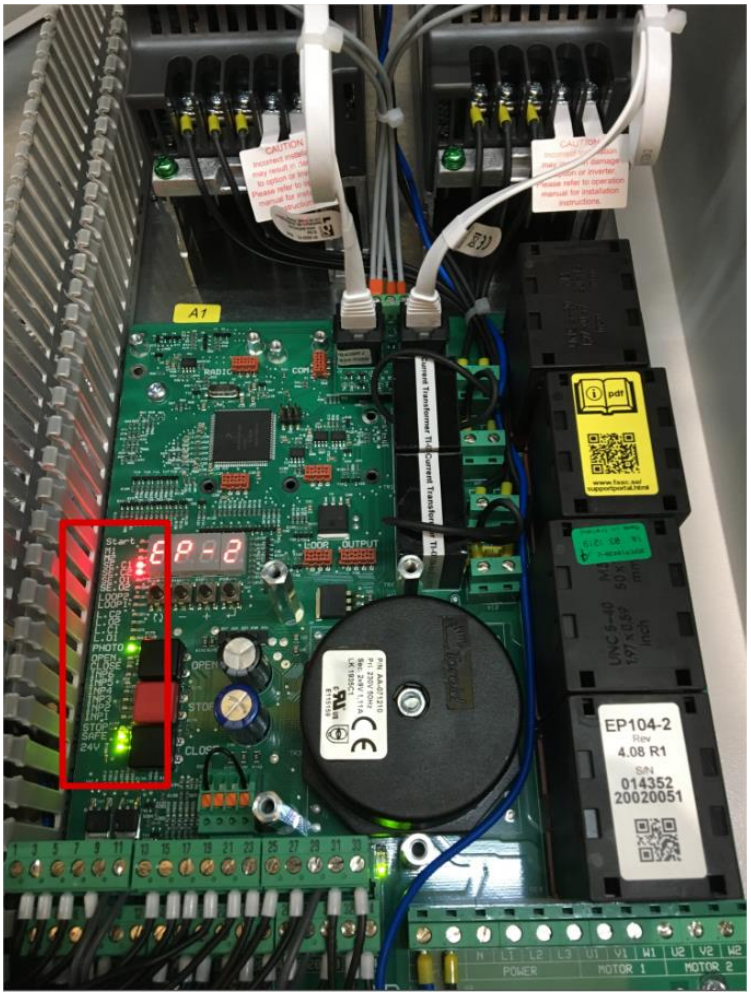
13.5. Photocell

C340	Photocell safety function in closing movement 0 Disabled 1 Reverse to fully open 2 Stop with restart of automatic closing 3 Stop, wait for new control signal or time in C520 and automatic closing
C341	Safety during run-on-time or disengagement angle in closing movement 0 Disabled when both halves are in run-on or disengagement angle 1 Activated according to C340
C342	Function of output for external protection 0 Disabled 1 Reverse to fully closed 2 Stop with automatic restart of automatic closing 3 Stop, wait for new control signal or time in C520 and automatic closing 4 Stop with restart of opening
C343	Check of external protection connected to PHOTO 0 No check 1 Test of protection connected to PHOTO
C351	PHOTO closing 0 disabled 1 Enabled and subordinated to C340
C354	Type of closing with PHOTO 0 Close immediately if PHOTO is clear 1 Open first then close if PHOTO is clear
C500	Automatic closing time, 0,00-9,59 minutes
C501	Short automatic closing time, 0,00-9,9 seconds

14. Indications

To simplify commissioning and troubleshooting, LEDs are provided to indicate faults and the status of input signals, as shown in the table below.

Colour	Indication	Active when
Yellow	START	Constant when control signal received, flashing when counting down for automatic closing. Slowly flashing when counting down channel C520.
Red	M1	A constant LED means that the load guard setting has been exceeded, and a flashing LED means that the load guard has been triggered for motor 1.
	M2	A constant LED means that the load guard setting has been exceeded, and a flashing LED means that the load guard has been triggered for motor 2.
	SE.C1	A constant LED means that the safety edge has been activated, and a flashing LED means that the safety edge has been reset.
	SE.C2	A constant LED means that the safety edge has been activated, and a flashing LED means that the safety edge has been reset.
	SE.O1	A constant LED means that the safety edge has been activated, and a flashing LED means that the safety edge has been reset.
	SE.O2	A constant LED means that the safety edge has been activated, and a flashing LED means that the safety edge has been reset.
Yellow	LOOP2	Vehicle loop 2 activated
	LOOP1	Vehicle loop 1 activated
	L.C2	Motor 2 not finished closing, extinguished in closed position, flashing means the input is not programmed, quick flashing means hold-to-run without limit switch
	L.O2	Motor 2 not finished opening, extinguished in closed position, flashing means the input is not programmed, quick flashing means hold-to-run without limit switch
	L.C1	Motor 1 not finished closing, extinguished in closed position, flashing means the input is not programmed, quick flashing means hold-to-run without limit switch
	L.O1	Motor 1 not finished opening, extinguished in closed position, flashing means the input is not programmed, quick flashing means hold-to-run without limit switch
Green	PHOTO	Photocell not activated, circuit closed
Yellow	OPEN	Signal from internal button – open
	CLOSE	Signal from internal button – close
	INP6	Signal on programmable input 6, closed circuit between terminals 25 & 27
	INP5	Signal on programmable input 5, closed circuit between terminals 25 & 26
	INP4	Signal on programmable input 4, closed circuit between terminals 22 & 24
	INP3	Signal on programmable input 3, closed circuit between terminals 22 & 23
	INP2	Signal on programmable input 2, closed circuit between terminals 19 & 21
	INP1	Signal on programmable input 1, closed circuit between terminals 19 & 20
Green	STOP	Stop not activated, circuit closed - Okay
	SAFE	Electronics for the internal safety circuit are active – Okay
Green	12 V	Voltage 12VDC - Okay
	24V	Voltage 12VDC - Okay
Indications in top right-hand corner		
Yellow	CLOSE2	Contactor for closing movement activated – motor 2
	OPEN2	Contactor for opening movement activated – motor 2
	CLOSE1	Contactor for closing movement activated – motor 1
	OPEN1	Contactor for opening movement activated – motor 1



15. Maintenance

We recommend checking system operation every three months, paying special attention to the safety devices (including the motor thrust power, this must comply with the local regulations in force) and release devices.

Openings/day	Maintenance interval
<100	24 months
100-200	12 months
200-500	6 months
>500	3 months

~~To ensure that the correct maintenance is chosen, the drive unit shall be checked 2-3 months after commissioning to decide which interval is required in the current installation~~.

16. Revision

Revision	Date	Person

This Manual is made on 30/07/2020