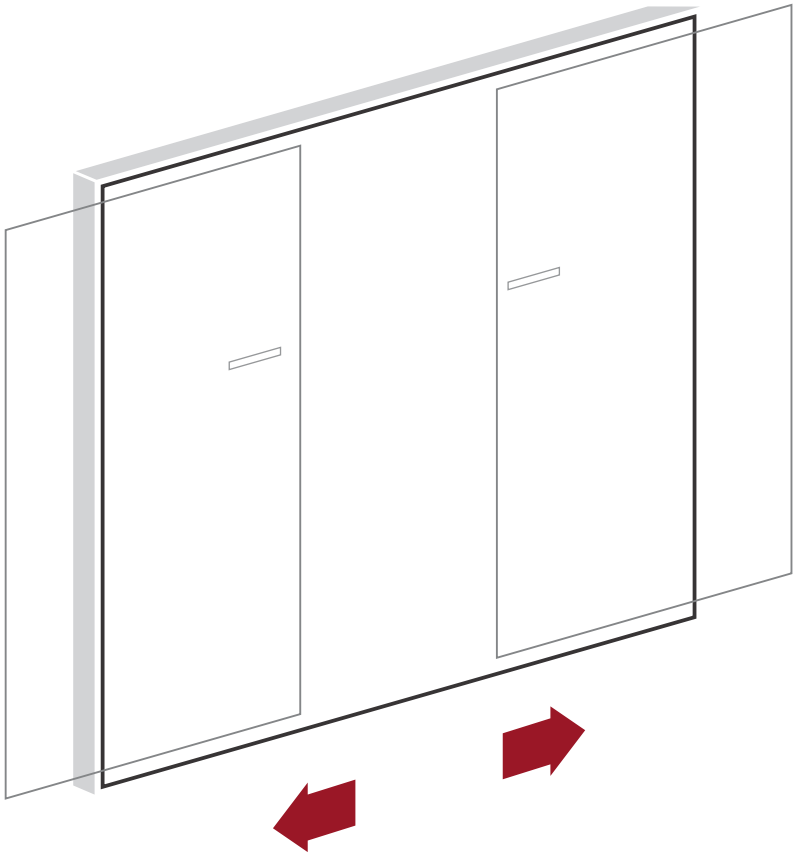
Holux Automatic Door

www.holux-door.de



Holux X4/Holux X3

Installation Instruction

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Introduction

This guide is for service engineers who service Holux X3/X4 operators and gives information on:

- Operation
- Installation
- Electrical Characteristics
- Maintenance

In this booklet, the installation process is predesignated for the engineers who install Holux X3/X4 operators.

We are a part of the FTA committee. The professional association "Fachverband Türautomation e.V." (FTA) aims to provide comprehensive and solution-oriented advice, to guarantee a consistently high standard of quality and to provide information about the wide range of possible applications.

Fachverband Türautomation

Symbols of the manual

This manual uses the following symbols and the keywords indicate hazards that pose a risk to life and limb:

NOTICE: An important hint.

INFORMATION: An important information.

DANGER

DANGER: A hint representing a danger that immediately leads to death or severe injury.

WARNING

WARNING: A hint representing a danger that can lead to death or severe injury.

CAUTION!

CAUTION: A hint representing a danger that can lead to slight injuries.

1 General Information of the Product

1.1 Product Introduction

In Holux X3 and X4 your longing for a glamorous façade is considered and this is why this system offers the 120 mm header. The sleek profiles of Holux series is a perfect combination of beauty and strength. The aesthetically pleasing entrances which is provided to enjoy impressive frame designs, are capable of matching with both aluminum and glass to fulfill every single need for modern charming architecture.

1.2 Technical Specifications

	Holux X3	Holux X3/U	Holux X4	Holux X4/U
Opening width-single panel	800 – 2000mm	800 – 2000mm	800 – 2000mm	800 – 2000mm
Opening width – double panel	1000 – 3000mm	1000 – 3000mm	1000 – 3000mm	1000 – 3000mm
Max leaf weight, single	1 × 150 kg	1 × 150 kg	1 × 200 kg	1 × 200 kg
Max leaf weight, double	2 × 100 kg	2 × 100 kg	2 × 150 kg	2 × 150 kg
Operator Height	120 mm	120 mm	120 mm	120 mm
Operator Depth	150 mm	150 mm	150 mm	150 mm
Opening Speeds(adjustable)	100 - 550mm/s	100 - 550mm/s	100 - 550mm/s	100 - 550mm/s
Closing Speeds(adjustable)	100 - 500mm/s	100 - 500mm/s	100 - 500mm/s	100 - 500mm/s
Hold-open Time	0 - 30 s adjustable	0 - 30 s adjustable	0 - 30 s adjustable	0 - 30 s adjustable
Ambient Temperature	-15 to +50 °C	-15 to +50 °C	-15 to +50 °C	-15 to +50 °C
Protection Class	IP20	IP20	IP20	IP20
Track profile	Detachable aluminum	Detachable aluminum	Detachable aluminum	Detachable aluminum
Input power	230V AC +- 10%, 50/60 Hz	230V AC +- 10%, 50/60 Hz	230V AC +- 10%, 50/60 Hz	230V AC +- 10%, 50/60 Hz
Gear motor power	50 W	50 W	100 W	100 W
Max power consumption	200 W	200 W	250 W	250 W
Fuse protection input power primary	250 V-TA 2.2 L	250 V-TA 2.2 L	250 V-TA 2.2 L	250 V-TA 2.2 L
Fuse protection input power secondary	250 V-TA 6.3 L	250 V-TA 6.3 L	250 V-TA 6.3 L	250 V-TA 6.3 L

Technical Feature	Holux X3	Holux X3/U	Holux X4	Holux X4/U
Possibility to adjust force limitation to DIN 18650 and EN 16005	✓	✓	✓	✓
Possibility to use safety sensors with testing signal	✓	✓	✓	✓
Mechanical key switch (optional)	✓	✓	✓	✓
24V DC output for external accessories	✓	✓	✓	✓
Possibility of using electromechanical lock (optional)	✓	✓	✓	✓
Read-out error memory with error codes (with digital programmable switch)	✓	✓	✓	✓
Lock monitoring	✓	✓	✓	✓
Power Lock	✓	✓	✓	✓

1.3 Copyright

1.4 Standards

These operators in agreement with following standards:

- EN 16005
- DIN 18650
- EN 60335
- EN ISO 13849
- EU low voltage directives
- EU EMC directives

1.5 Warranty Guidelines

Conformance with the following installation and service procedures must be maintained to assure a proper installation and to maintain the Deutschtec warranty.

1.6 Declaration of Incorporation

Declaration of Incorporation

In accordance with Annex II section 1.B. of the EC Machinery Directive 2006/42/EG
Authors and persons responsible for creating the relevant technical documents:

Deutschtec GmbH
Am Fuchsbau13
15345Petershagen/Eggersdorf/Germany

We hereby declare that the incomplete machine:
Holux X3/X4
as long as supply is possible within the scope of delivery, and corresponds to the basic requirements of the following directives (refer to the Annex regarding which requirements were met):

Machinery Directive 2006/42/EG	EU Official Journal L 157/24 dated 09.06.2006
EG Low Voltage Directive2006/95/EG	EU Official Journal L 374/10 dated 27.12.2006
EMC Directive 2004/108/EG	EU Official Journal L 390/24 dated 31.12.2004

Harmonized standards that were used, whose references have been published in the Official Journal of the EU:

EN ISO 13849-1: 2016-6
EN 60335-1:2012
EN 16005:2012

(Signature of the Authorized Individual)

Petershagen/Eggersdorf, 17.01.2021 (Place, Date)

Requirements of Annex I of 2006/42 EC, which have been complied with. The numbers refer to the sections of Annex:
I: 1.1.5, 1.3.4, 1.3.7, 1.5.14, 1.3.1, 1.3.2, 3.4.5, 1.2.1, 1.3.8.2, 1.4.1, 1.4.3, 1.5.1, 1.5.2, 1.5.5, 1.5.6, 1.5.7, 1.5.8, 1.5.9, 1.5.10, 1.5.13, 1.1.3, 1.1.6, 1.2.6, 1.6.3, 1.5.15, 1.3.2, 1.3.3, 1.6.1, 1.2.4.1, 1.2.4.3, 1.2.4.4, 1.2.3, (partially)

2 Contents of Delivery Holux X3/X4 operators kit is as following:

2.1 Operator Kit

Part Picture	Description	Quantity (Pedestrian Automatic Sliding Door Operator)	Quantity (Single-leaf Sliding Door Operator)
	Control unit	1 PCS	1 PCS
	Hanger	4 PCS	2 PCS
	Idler Pulley	1 PCS	1 PCS
	Geared motor	1 PCS	1 PCS
	Belt Clamp Set	2 PCS	1 PCS
	Stopper Pack	1 PCS	1 PCS
	Side Cover Pack	1 PCS	1 PCS
	Bracket of Cover Lock	2 PCS	2 PCS
	Floor guide	2 PCS	1 PCS

2.2 Profile Set

Part Picture	Description
	Rail Profil e
	Track Profil e
	Rubber Profile
	Cover Profile

2.3 Accessories

Part Picture	Description
 Optional	Digital Program Switch
	Mechanical Key Switch
 Optional	Electromechanical Lock Lock
 Optional	Emergency Stop
 Optional	Combined Sensor

Note: Screws and dowels are required for fastening that will be provided by the sub foundation.

3 Assembly and Installation

Note: This installation manual is based on combination of Holux X3/X4 'operators.

3.1 Precautionary Measures

This section presents the precautionary measures that must be taken into account for the installation of the product.

ⓘ Special attention must be given to this section. Deutschtec GmbH shall not be liable for accidents caused by ignorance of this part.

- All tasks of installation should be carried out by trained professionals authorized by Deutschtec. Following these instructions avoids material damage and personal injuries. Any other person, under any circumstances, must not be involved in the technical affairs of this product.

☛ Not following installation manual may result in faulty operation, injuries and voiding warranty.

-Local building code requirements for automatic doors must be taken into consideration.
- There has to be secured space and enough time for installation of this product without any interruptions by unauthorized individuals.
- Do not install the drive on a wall that is damp or may get wet.
- Ensure the installation area is safe for workers, technicians and pedestrians.
- The areas with a risk of injury must be visually labeled by safety barricades and signs to keep pedestrians away from hazardous areas.
- Assembly and installation of the system has to be performed by trained technicians using protective equipment, such as:
    - Gloves
    - Safety footwear
    - Hard hats
    - Goggles
- Ensure equipment stability to prevent any unintended dangerous movement or collapse of any part of the equipment.
- Make sure the floor is not slippery.
- Make sure the workspace is well-lit.
- Before lifting heavy modules identify the center of gravity of the object and beware to control the object movements.
- While moving long components of the product, watch both sides of them.
- Never perform the high risk tasks alone.
- Ensure the stability of the installed operator parts on the wall. Secure the parts against falling.
- Pay attention to the hazard signage attached to the components inside the operator.

DANGER Before working with electrical system, make sure the drive is disconnected from the power supply

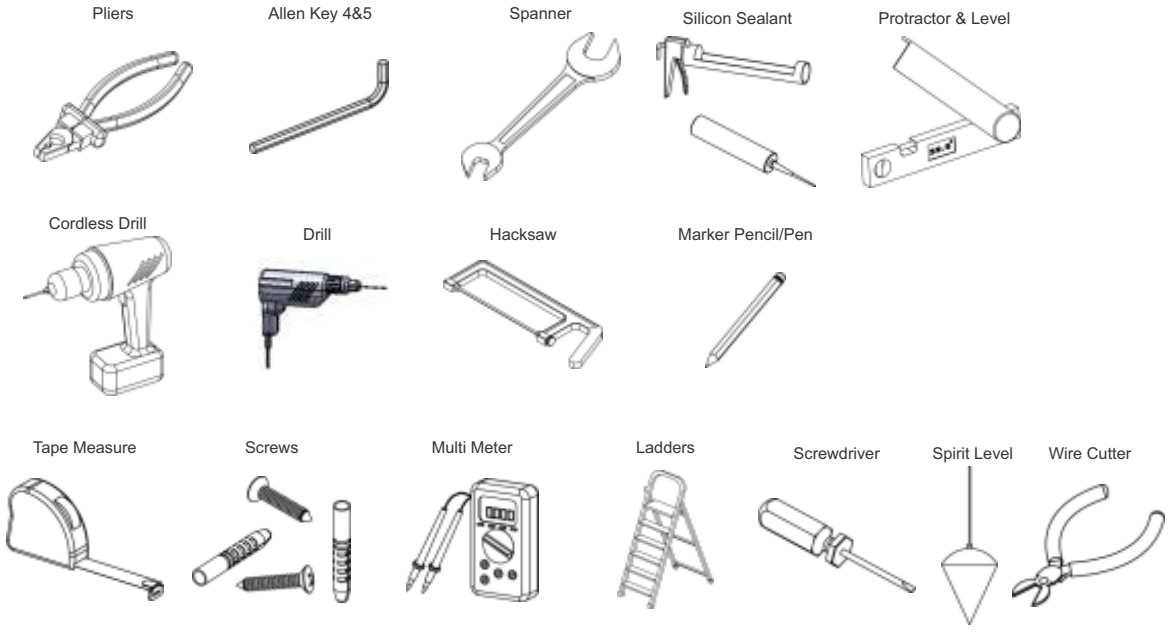
- Do not touch the electronic board. Make sure to touch an earthed metal prior to having contact with the module.
- Secure the cables inside the drive by the cable ties.
- Before activating the mechanical part, make sure that the surrounding is clear of any object. Moving parts can draw loose cables, hair or clothing into the system.
- Do not carry/move the glazing alone.
- Beware of glass breakage and resulting injuries.
- Beware of sharp components in the drive.
- Beware of moving parts in the drive.
- Emergency Stop Button (optional)

In case of any emergency situation, emergency stop button is available beside the door for stopping the operator's functioning. By pressing the emergency stop button, Holux operator will stop the moving leaf/leaves immediately either in opening or closing direction until releasing the button. By releasing the emergency stop button, Holux operator will reset the system automatically and the door will function normally after reset procedure.

- Acoustic Emission

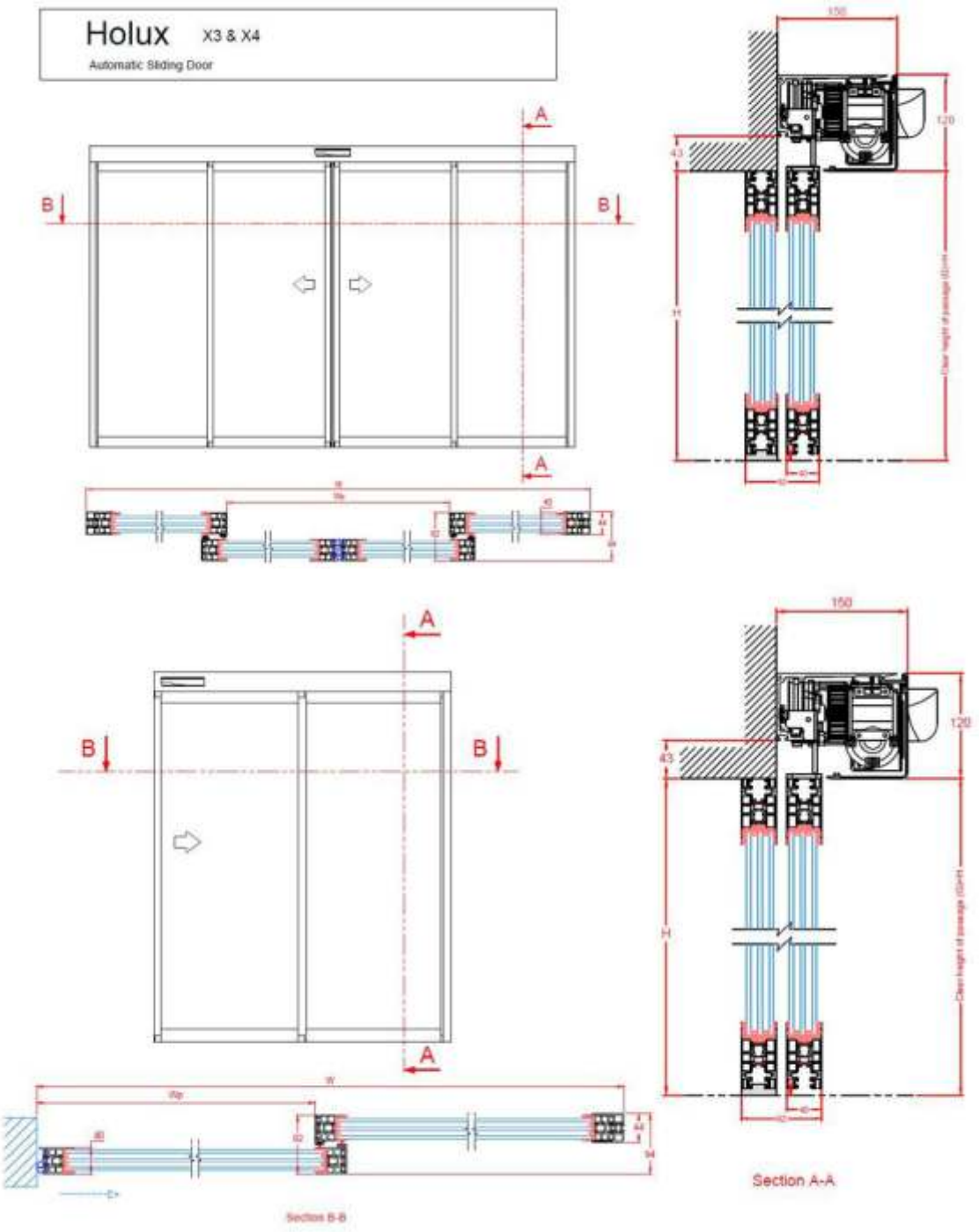
Working frequency of the electromotor of this product is 30 kHz that is out of human hearing threshold. Moreover, maximum noise generated by this system in most unfavorable condition is 55 db that will be reduced to less than 25 db in normal working condition. So this range would not cause any hearing loss and would not be harmful in any case.

3.2 Required Tools



3.3 Technical drawings (HoluxX3/X4)

Two-leaves door version(THB)

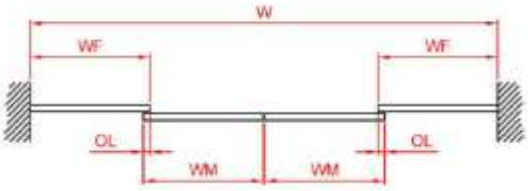


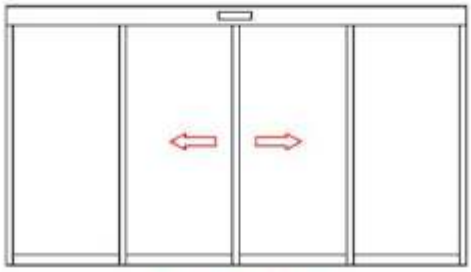
Note: The focus of this manual, within the assembly section, is on a two leaves version of the door but it is roughly analogous with the one leaf version apart from positional differences on the rail.

3.4 Mechanical installation procedure:

- Specify the place for the installation of the rail
- Install the rail.
- Mount the components onto the rail.
- Install the fixed leaves (if requested).
- Install the moving leaves onto the rail.
- Do mechanical adjustments.
- Install electrical & electronic components.
- Do the wiring.
- Do the commissioning.
- Install the main cover.
- Do sensor adjustment.
- Install the side cover.

1. Door leaves installation options

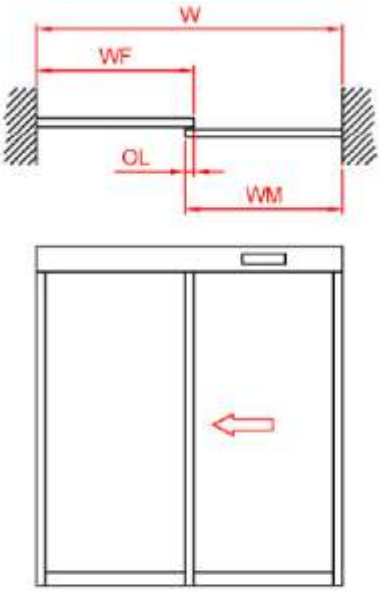




$WF = \left(\frac{W + 2 \times OL}{4}\right) - 20\ mm$

$WM = \left(\frac{W + 2 \times OL}{4}\right) - 10\ mm$

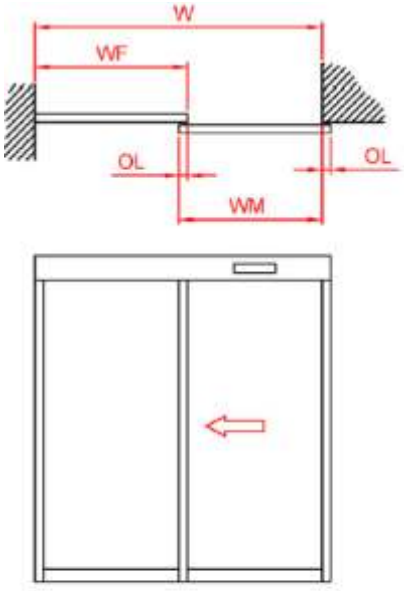
single-leaf sliding door + fixed side screen leaf (both side wall)



$$WF = \left(\frac{W + OL}{2}\right) - 20\ mm$$

$$WM = \left(\frac{W + OL}{2}\right) - 10\ mm$$

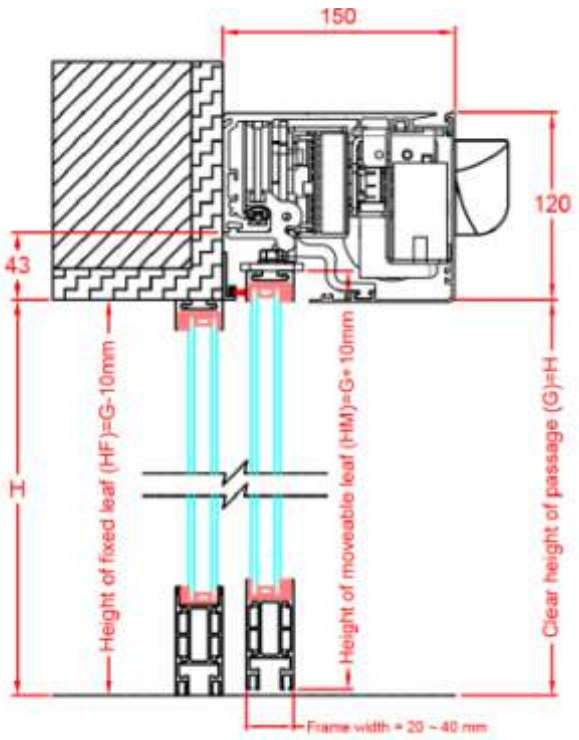
single-leaf sliding door + fixed side screen leaf



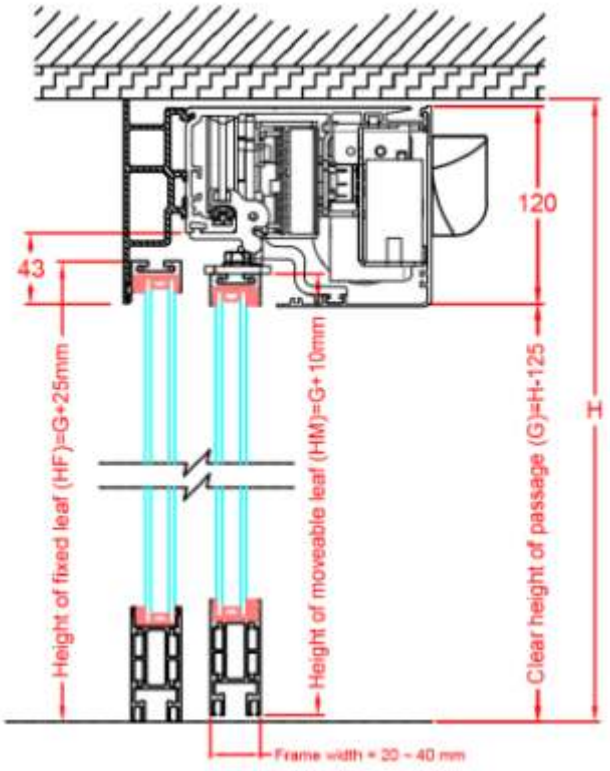
$$WF = \left(\frac{W + 2 \times OL}{2}\right) - 20\ mm$$

$$WM = \frac{W + 2 \times OL}{2}$$

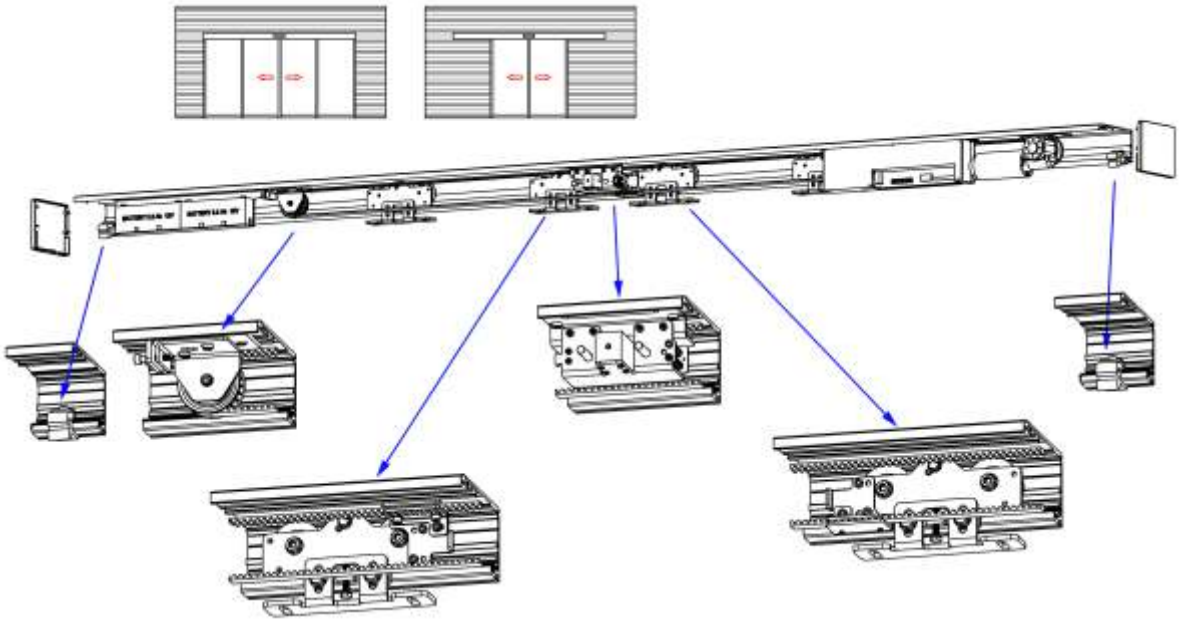
Header installation side view



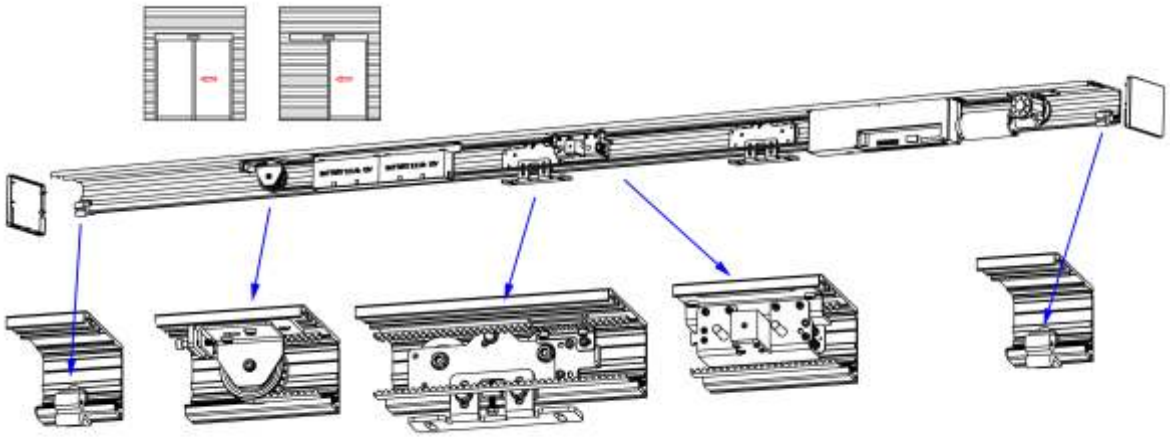
Lintel installation side view



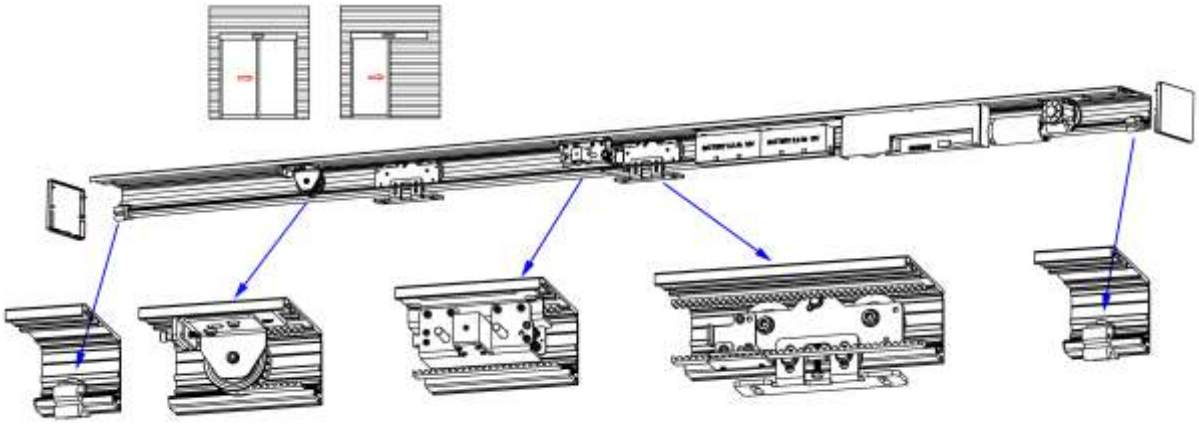
2. Concept of Double - Leaf Sliding Doors



3. Concept of Single - Leaf Sliding Doors ER

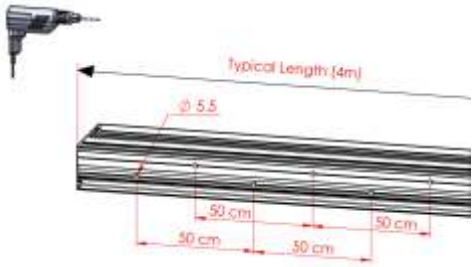


4. Concept of Single - Leaf Sliding Doors EL

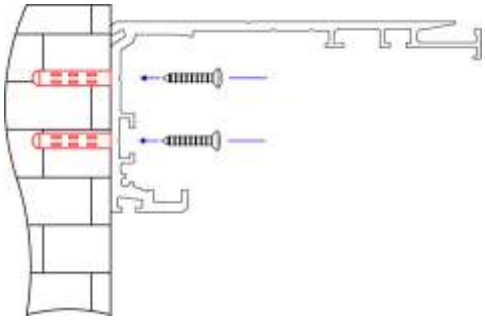


5. Installation of the Rail Profile

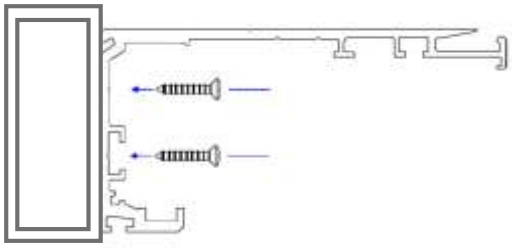
For the mounting of the rail profile on to the surface, the middle of the rail must be figured out and holes must be drilled like the side image.



The position of the holes must be marked on the mounting surface by holding the rail against it. The marks on the surface must be drilled out and wall plug inserted. By holding the rail onto the surface (positioned on the wall plug) the corresponding screws can be inserted and fastened.

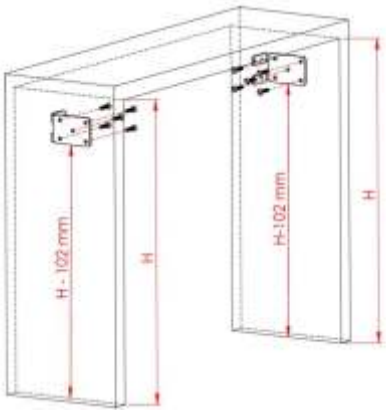


Note: In case the wall does not have enough strength, it is better to screw the rail to a support part first, then attach the structure to the wall.

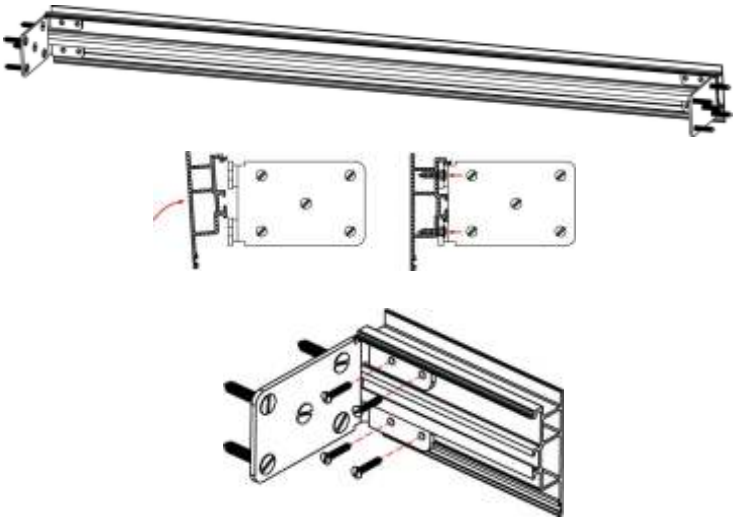


6. Installation of the Base Profile (optional)

First, mount and screw base profile brackets in accordance with the total door height. Bracket positions must be aligned and be in the same height.

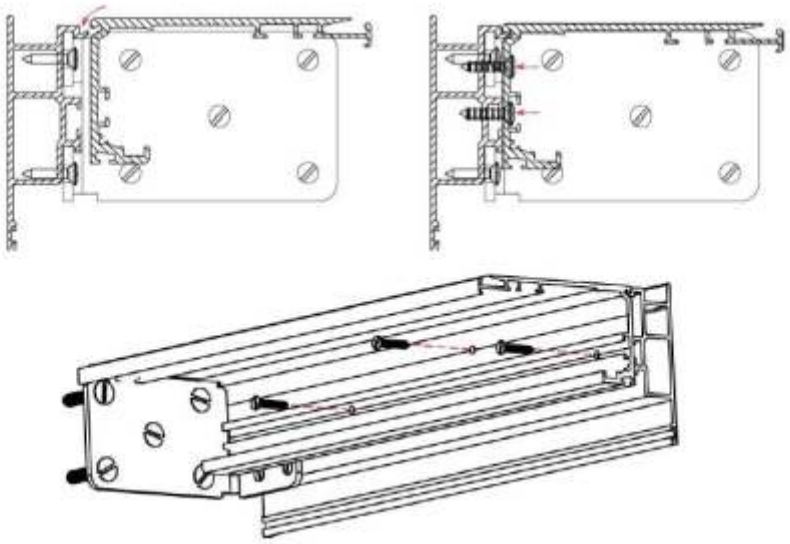


Emplace base profile after fixing the brackets like the below images. Then, fasten the base profile to brackets by 4 screws for each side.



7. Installation of the Base Profile and Rail Profile

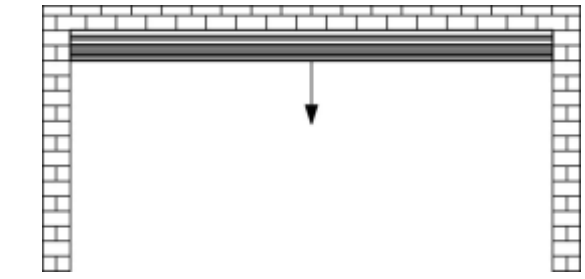
Set the rail profile on base profile and fix it by screws through holes on rail profile.

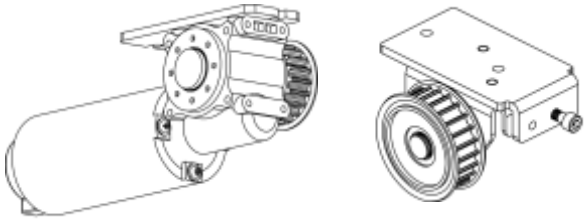


Note: In case there is no base profile for lintel installation, a support profile or surface should be prepared for rail support such as steel rectangular tube.

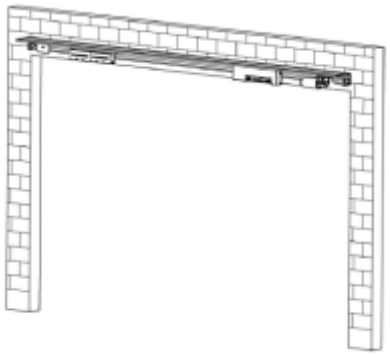
8. Mounting of some Main Parts on the Rail Profile

After installation of the rail base and by marking the center of the rail, you are now able to mount parts including motor, idler pulley and lock.



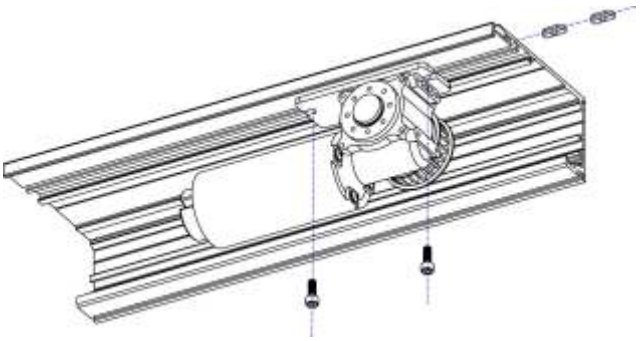


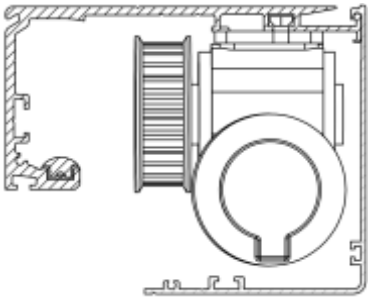
Note: The timing belt can be cut to match the table.



9. Installation of Gear Motor

Mount geared motor on the rail profile by fastening two M6 screws through bottom plate on special nuts in the specified rail track.

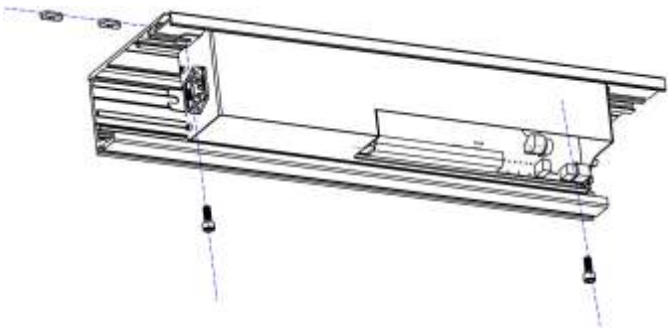


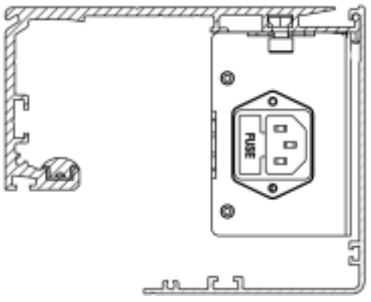


side view of the mounted motor

10. Installation of Control System

Main controller of the system (control system) is installed and fixed on the rail by using screw M6.



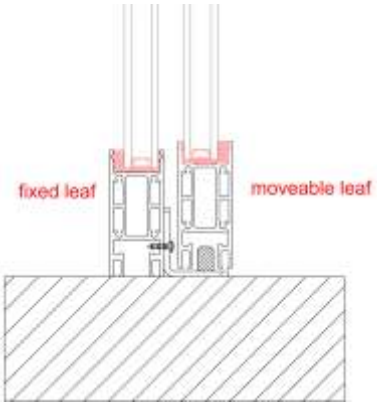


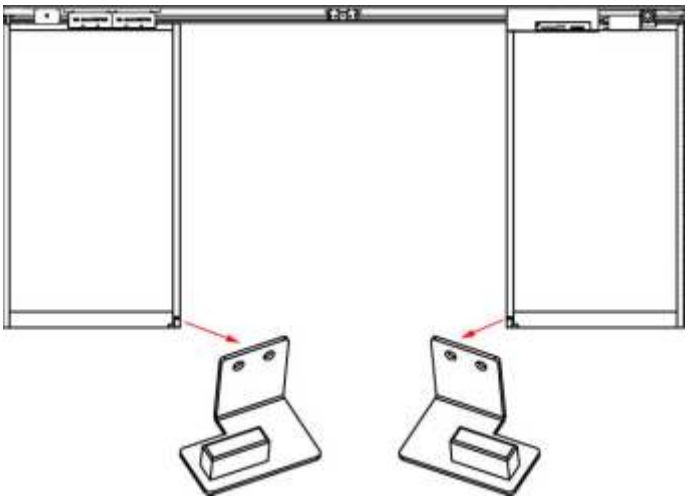
Side view of the mounted control system

11. Fixture of the Floor Guide

Main controller of the system (control system) is installed and fixed on the rail by using screw M6.

Note: Floor guide will differ in different frame systems.

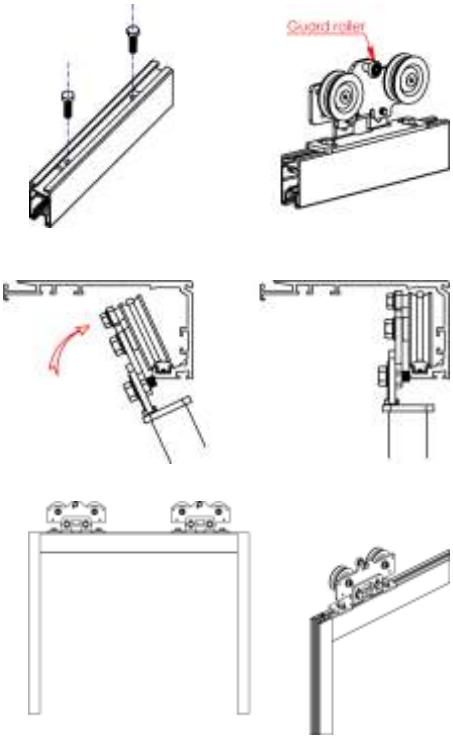




12. Fixture of Hangers on the Movable Leaves

Hangers must fix on door leaves to connection plate. Layout and way of positioning the hanger on the rail is shown in the picture. After fixing the hangers on door leaves, hangers´ height and position must reach the right angle of door leaves and make door leaves´ movement smooth.

Note: There is another way to mount the leaves and hangers to the rail. First place the hangers on the rail, then approach the leaves to the hangers and screw the hangers to the leaves.



13. Adjusting the Hanger Holder

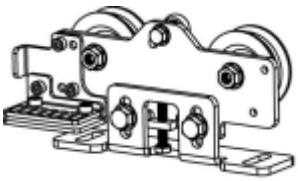
(To prevent disengagement of hanger from the rail profile)

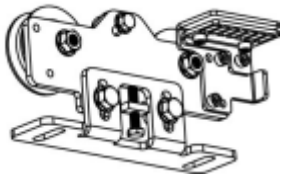
By losing the especial screw of guard roller on hanger, lead the guard roller downward. Put the index plate with certain thickness (0.5 mm) in the appointed location in the figure.

Lead the guard roller on hanger upward.

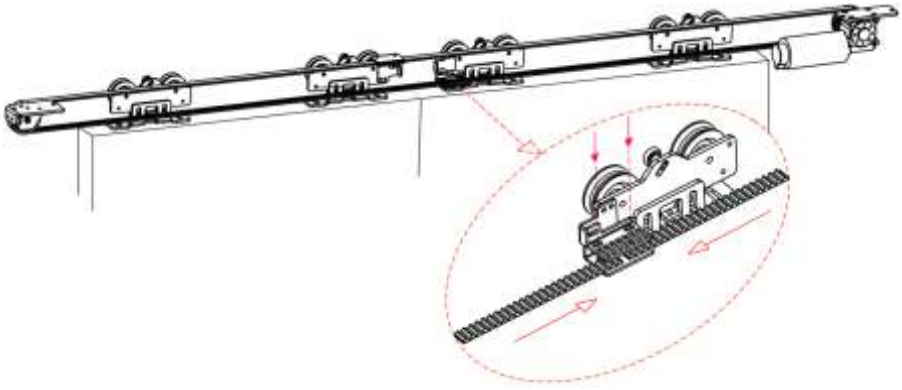
Finally, firm the especial screw of the guard roller and take the index plate out.

A view of hangers with down and up belt fixtures



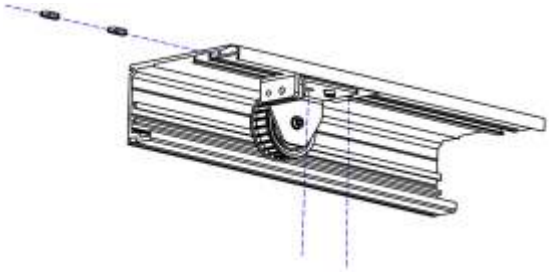


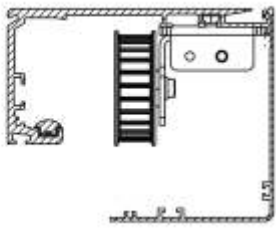
Lay the timing belt on motor pulley and idler pulley and bring two ends together on belt clamp. Then, fix it to hanger by fastening screws on belt clamp.



14. Installation of Idler Pulley and Timing Belt Adjustment

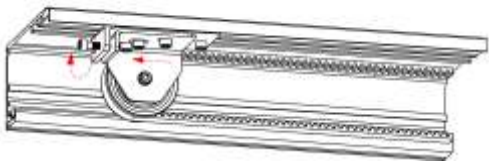
Mount idler pulley on the rail profile by fastening two M6 screws on special nuts in the specified rail track.





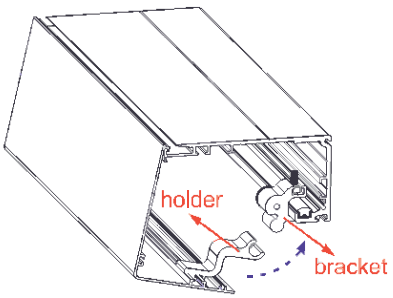
The shape and position idler pulley are shown in this figure.

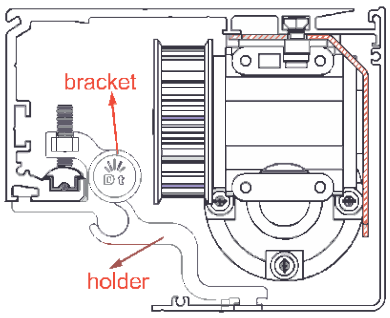
Fasten a screw near the idler pulley on left side. Loosen idler pulley´s screw on rail profile. By one hand, apply a screwdriver to lever idler pulley on the base of the fastened screw and then, by the other hand, fasten idler pulley´s screws on rail as soon as enough belt tension is reached.



15. Installation of Cover Clip

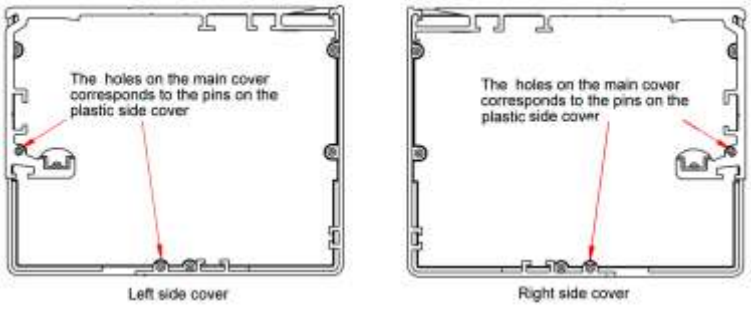
In the first place, slide the holders in the specified groove on the cover. Before fixing the holders be sure that the holders are both in the right needed length. Then fix the holders after cleaning the area on the cover. Mount the stopper at the rail profile by using the provided M6 set screw, move it in the exact position and tighten up the screw gently. Close the cover carefully and check the position of the holders and stoppers. Adjust the stopper if necessary – if the parts are one upon another. It is very important that the cover is in closed position and parallel. Otherwise, adjust the stopper until it is upright.

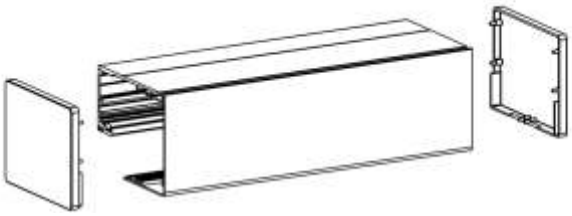




By opening and closing for several times, you can easily check if the holder is fixed properly and will last in its position.

16 Installation of Side Covers





setting plastic side covers to related holes

3.5 Startup and Commissioning of the Operator

3.5.1 Holux X3 & Holux X4 non-escape version

Note:

This manual must be read thoroughly and comprehended by the installer before any operation. Otherwise, the system will not operate, also it might damage the components or parts and also it is possible to be dangerous. Please follow the instructions carefully and step by step.

For connecting the power, you need to work with high voltage. Therefore, only trained people are allowed to connect the power to this control unit.

You should be able to connect and disconnect the power of the control unit within the startup procedure. After the completion of door setting, you must make sure that you have a per- manent power connection and your power supply will not disconnected during the night, especially if you use battery and/or lock.

It is installer´s responsibility to make sure that the complete installed door conforms to all norms, standards, building rules and regulations of the country of installation. And it is installer´s responsibility to make sure related settings of the door such as opening speed, closing force, hold-open time, sensor settings etc. conform to related norms, standards, building rules and regulations of the country of installation.

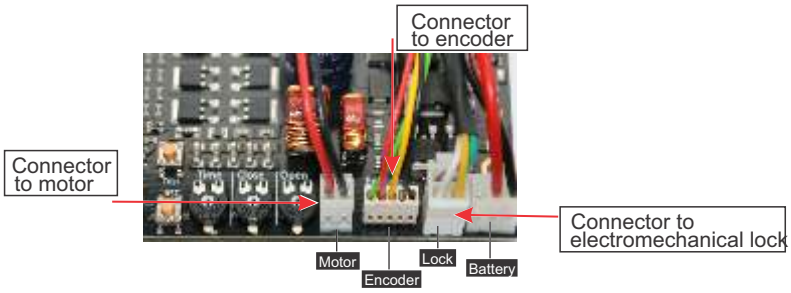
During the installation and commissioning, please make sure that no person is in the range of mechanical operations of the door or inside the sensor range near the door or passing by the door.

3.5.2 Starting up the operator

Note: Before starting, make sure the power is not connected.

1 - Install control unit on rail (no need to remove cover)

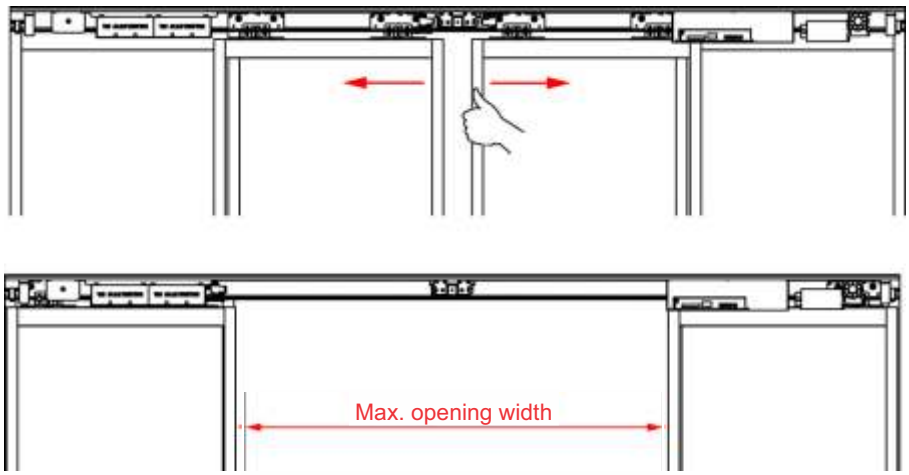
2 - Connect the motor & encoder cable to the controller and also connect the lock cable if you want to use electromagnetic lock.



3 - Make a short circuit (bridge) between terminal 21 & 22. This jumper is for setting system on automatic state. If the key switch is installed, this jumper is not required but the key switch must be set on automatic position for startup.

4 - Make a short circuit (bridge) between terminal 26 & 27. This jumper is for emergency button connection. In case the emergency stop button is installed, this jumper is not required.

5 - Manually open the door leaves up to the desired opening width.



6 - Adjust the related potentiometers of open time, close speed and open speed on desired value clockwise direction to increase and counter clockwise to decrease.

7 - Put the jumper to the left position as shown in the picture.

8 - Connect system´s main power.

9 - If, for any reason, it is necessary to do factory reset (erasing old data), keep reset button for 30 seconds until you see red light of LED flashing.

10 - After connecting the power you will see the blue light of LED. Push the reset button for 5 seconds and wait. You must see the blue light flashing and then the system will test the lock (if there is a lock) and you can hear the sound of testing the lock (open close).Now the door will start to do the learning drive (measuring the weight and width of the door automatically) and will close very slowly! Just you need to wait till the door close completely.

Note:
If the door jump starts at high speed and stops after a short distance please check the encoder connection. It is possible that connector at motor side is plugged into wrong position. Turn by 180 degree.

Note:
If the opening way of the door is less than 1000 mm or more than 3000mm (less than 500 mm or more than 1500 mm for one leaf) the learning drive will fail!

Note:
If the mechanical installation is too bad or the door leaves are very heavy the learning drive can be failed.

Note:
If none of these 3 conditions happened and the LED light is still blue and doesn't turned green, the encoder polarity is not the same as the motor direction. Therefore, the A and B signal of encoder must be switched.

11 - When the door is closed completely, push the test button. Then, the door will open and you can see the opening speed. If necessary, you can change the speed. Push the test button for second time. Then, the door will close you can see the closing speed. If necessary, you can change the speed.

Note:
You can do this trial drives only for 5 times and in maximum 30 second and if this is not enough, you need to do the learning drive from the beginning.

Note:
Please note that system will enumerate the opening width which manually opened in phase 5 as the determined opening width for door operation.

12 - Put the jumper to the right position as shown in the picture. Push the test button and the door will open and after passing the hold-opening time, the door will close. You can do this step as many times as it is necessary for doing the mechanical adjustment.

Note:

When the jumper is not at the left position, the changes of the value of potentiometers will not be considered by micro controller and therefore, you cannot change the speeds or opening time unless you follow step 7 from beginning.

3.5.3 Wiring and sensors installation

Before starting the installation, you need to decide which type of sensor you want to install. Please note that this control unit is able to work with a wide range of door sensors with/without testing signal and it is the installer´s responsibility to use suitable sensors which match with all rules, norms, standards and regulations in the installation country/area.

There are 2 general possibilities for sensors:

A: Activation command NO (normally open) and also safety command NO (normally open) without test signal.

B: Activation command NO (normally open) and safety command NC (normally close) with test signal for safety sensors which is the normal type for EU countries.

Please follow the interaction according to the type of sensor and if you wish to use European type (B), jump from 16A to the 16B.

Note:
You must follow the sensor manufacturer´s instructions carefully.

If a Plug and Go version is used (See Picture)
it is necessary to remove the Bridge from connector 21 and 22 and no Wiring is necessary. Plug and Go is only suitable in international mode!

13 - A) Disconnect the power from the source and make sure the battery is disconnected.

14 - A) Make sure the jumper is in right position.

15 - A) If mechanical key switch is required , remove the bridge between no 21 & 22 terminals and connect the mechanical key switch as follow:
21 of control unit = command/connect to E key switch
22 of control unit = automatic/connect to D key switch
23 of control unit = winter open/connect to C key switch
24 of control unit = lock/connect to B key switch
25 of control unit = one-way/connect to A key switch

16 - A) If digital programmer is required connect it as follow:
31 of control unit = GND/connect to GND digital programmer
30 of control unit = +24V/connect to +24V digital programmer
29 of control unit = B data/connect to B digital programmer
28 of control unit = A data/connect to A digital programmer

17 - A) If emergency stop button is required, remove the bridge between 27 & 26 terminals and connect the emergency stop button NC.

18 - A) Connect outside activator sensor as follows:

1 of control unit = +24V /connect to the sensor VCC

2 of control unit = GND /connect to the sensor GND

3 of control unit = +24V /connect to the sensor command COM

4 of control unit = sensor input /connect to the sensor command NO.

19 - A) Connect inside activator sensor as follows:

9 of control unit = +24V /connect to the sensor VCC

10 of control unit = GND /connect to the sensor GND

11 of control unit = +24V /connect to the sensor command COM

12 of control unit = sensor input /connect to the sensor command NO.

20 - A) Connect 1st safety sensor as follows:

5 or 13 of control unit = +24V /connect to the sensor command COM

6 of control unit = sensor input /connect to the sensor command NO.

14 of control unit = sensor input /connect to the sensor command NO.

21 - A) If you want to use mechanical safety key for opening the lock, you have to connect it to the terminal 19 and 20 NO momentary command.

22 - A) If you want to connect remote control receiver for unlocking, please make sure that the receiver has a momentary NO command. It must run with 24V DC and consume not more than 100 mA. Connect it as follows:

19 or 17 of control unit = +24V/connect to the receiver command COM

20 or 18 of control unit = sensor input/connect to the receiver command NO

23 - A) Connect the battery if it is required.

24 - A) Connect the power and set the sensors according to the sensor manufacturer´s instruction.

3.5.4 Wiring and Sensors´ Installation - EU-Version

13 - B) Disconnect the power from the source and make sure the battery is disconnected.

14 - B) Make sure the jumper is at middle position.

15 - B) If mechanical key switch is required, remove the bridge between no 21 & 22 terminals and connect the mechanical key switch as follows:

21 of control unit = command/connect to E key switch
22 of control unit = automatic/connect to D key switch
23 of control unit = winter opren/connect to C key switch
24 of control unit = lock/connect to B key switch
25 of control unit = one way/connect to A key switch

16 - B) If digital programmer is required connect it as follows:

31 of control unit = GND/connect to GND digital programmer
30 of control unit = +24V/connect to +24V digital programmer
29 of control unit = B data/connect to B digital programmer
28 of control unit = A data/connect to A digital programmer

17 - B) If emergency stop button is required, remove the bridge between 26 & 27 terminals and connect the emergency stop button NC.

18 - B) Connect outside combine activation and safety sensor as follows:
1 of control unit = +24V /connect to the sensor VCC
2 of control unit = GND /connect to the sensor GND
3 of control unit = +24V /connect to the sensor activation command COM
4 of control unit = sensor input /connect to the sensor activation command NO
5 of control unit = +24V /connect to the sensor safety command COM
6 of control unit = sensor input /connect to the sensor safety command NC
7 of control unit = test + /connect to the sensor test +
8 of control unit = test- /connect to the sensor test-

19 - B) Connect inside combine activation and safety sensor as follows:

9 of control unit = +24V /connect to the sensor VCC

10 of control unit = GND /connect to the sensor GND

11 of control unit = +24V /connect to the sensor activation command COM

12 of control unit = sensor input /connect to the sensor activation command NO

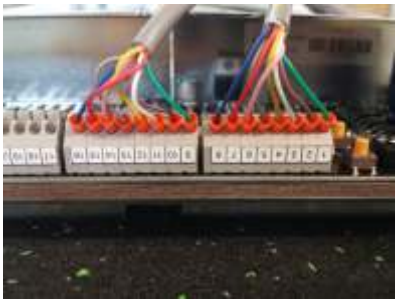
13 of control unit = +24V /connect to the sensor safety command COM

14 of control unit = sensor input /connect to the sensor safety command NC

15 of control unit = test + /connect to the sensor test +

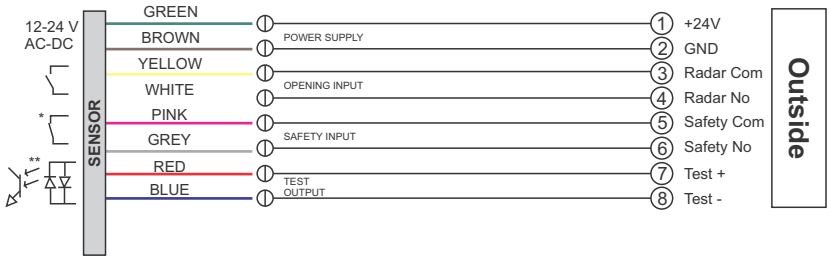
16 of control unit = test- /connect to the sensor test-

Example

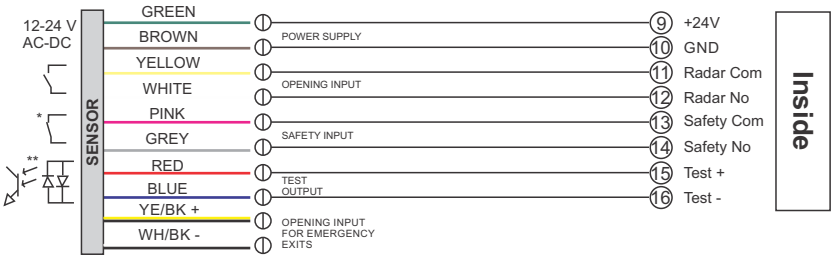


BEA IXIO-DT1 sensor

Holux controller



Holux controller



20 - B) If you want to use mechanical safety key for opening the lock, you have to connect it the terminal 19 and 20 NO momentary command.

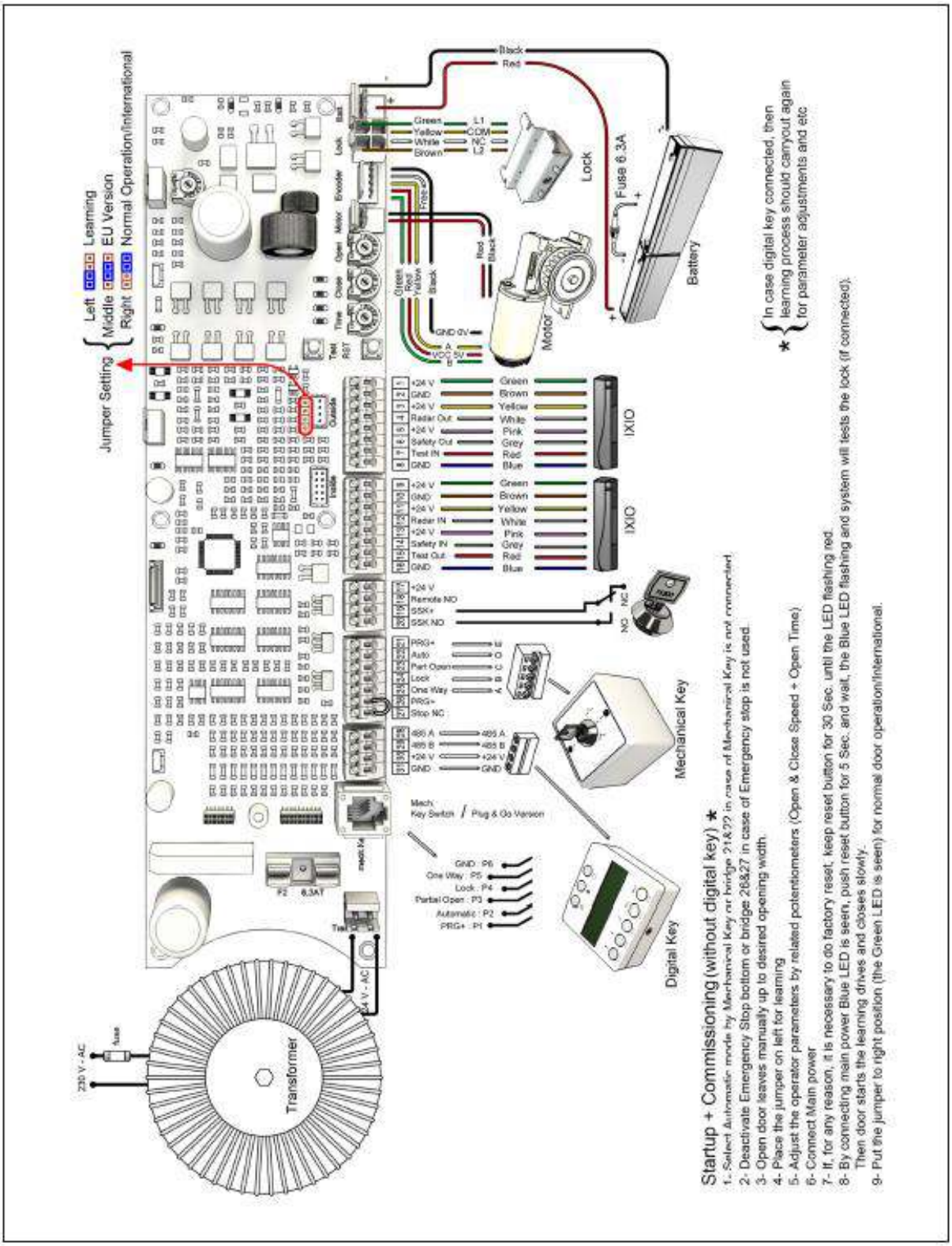
21 - B) If you want to connect remote control receiver for unlocking, please make sure that the receiver has a momentary NO command. It must run with 24V DC and consume not more than 100 mA. Connect it as follows:
19 or 17 of control unit = +24V/connect to the receiver command COM
20 or 18 of control unit = sensor input/connect to the receiver command NO

22 - B) Connect the battery if it is required.

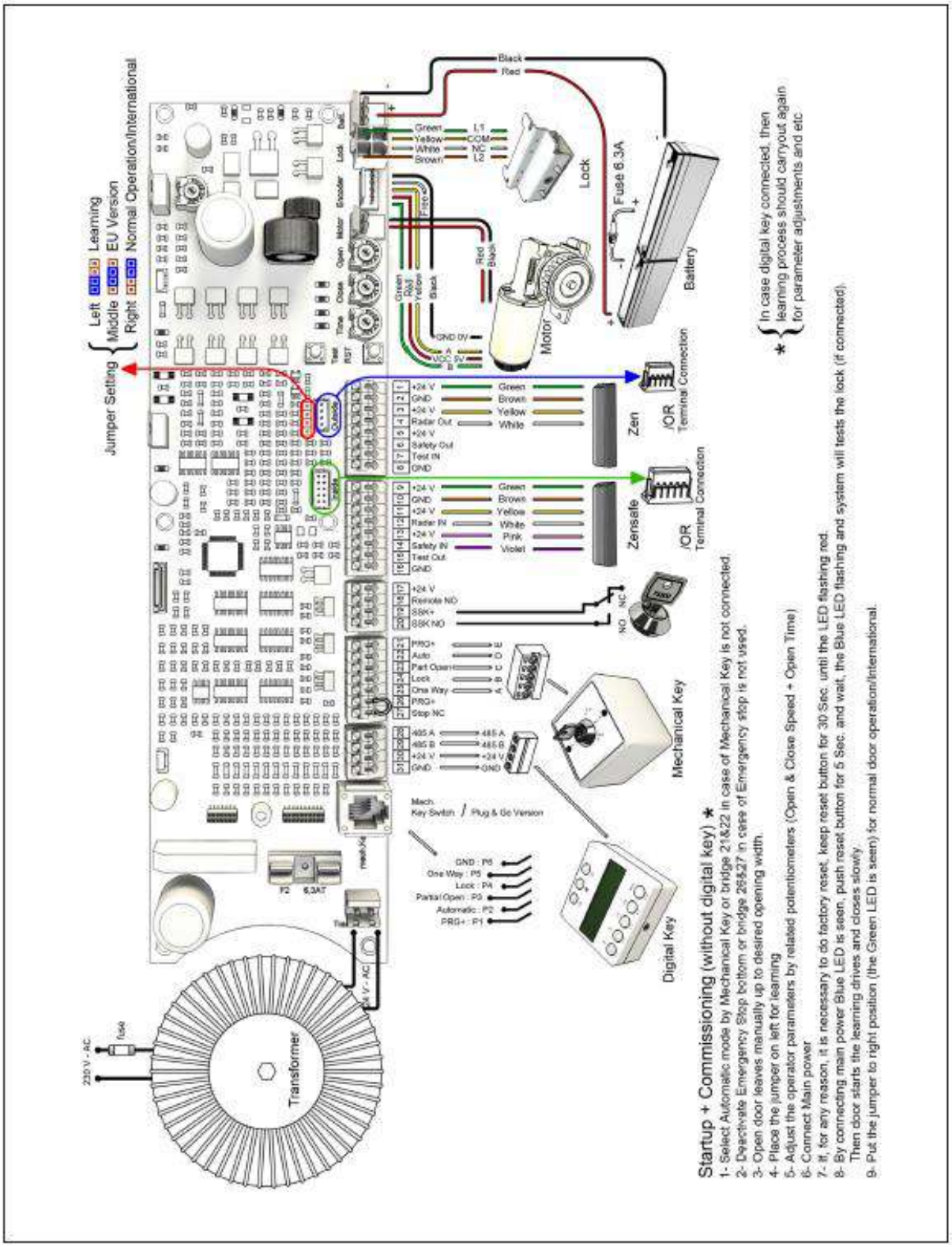
23 - B) Connect the power and set the sensors according to the sensor manufacturer´s instruction.

3.5.5 Wiring Diagrams

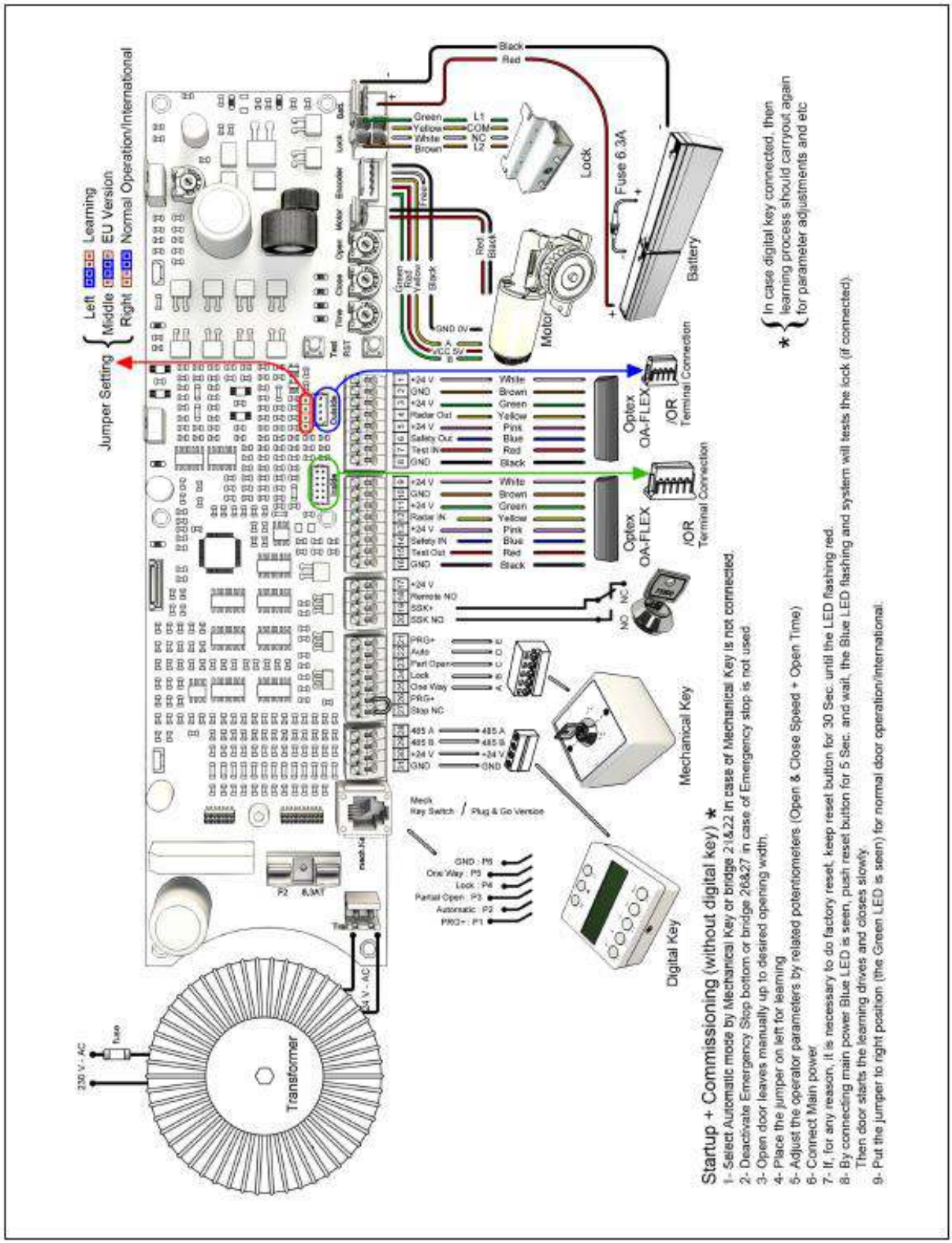
Wiring Diagram BEA IXIO Sensor



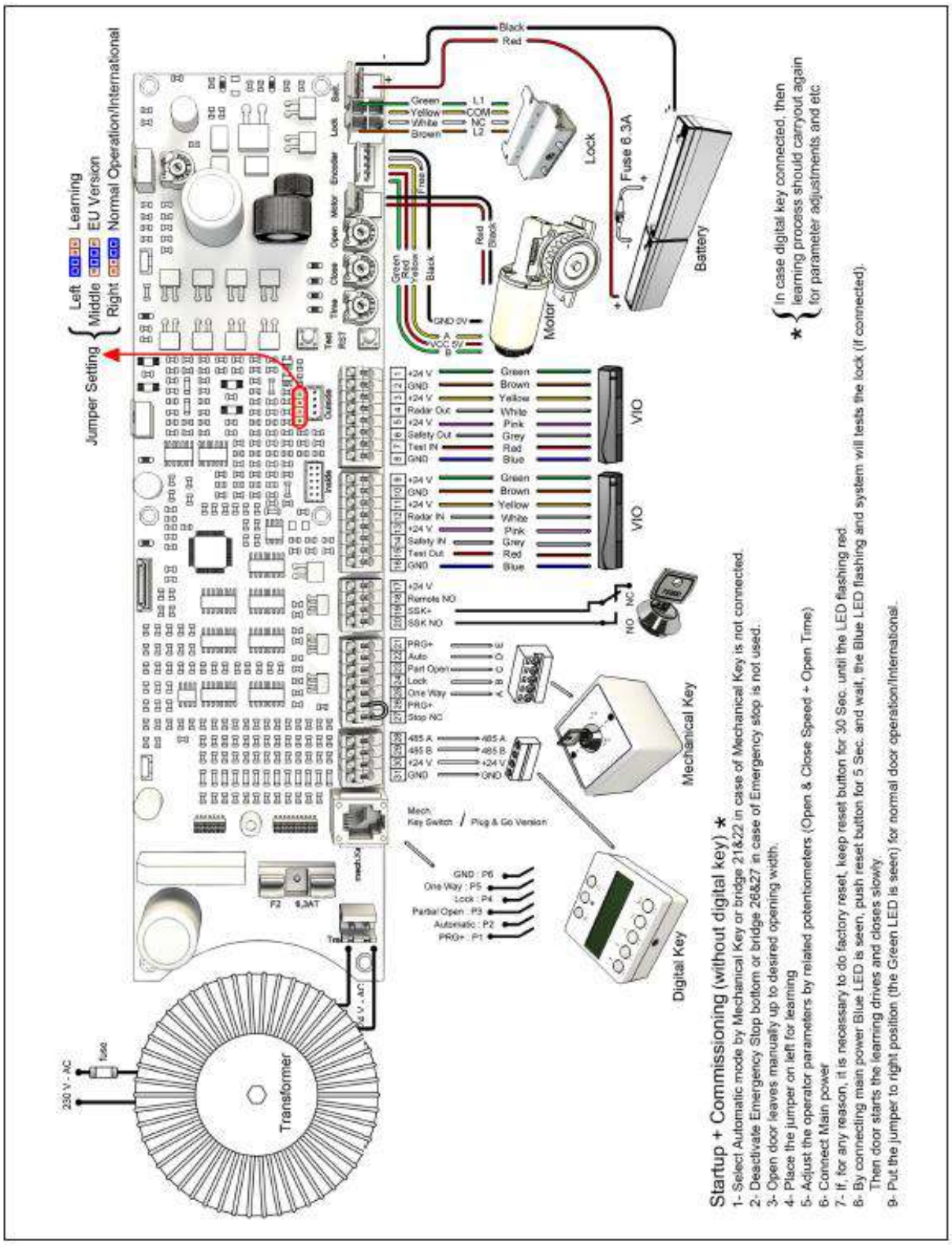
Wiring Diagram BEA ZEN/ZENSAFE



Wiring Diagram Optex OA-Flex sensor



Wiring Diagram BEA VIO sensor



NOTE: If each of these sensors needed be adjusted to European settings, the adjustment must be done according to respective manual.

3.5.6 Mechanical Key Switch

Full Open
The door leaves are opened and kept open.

One-way
The door leaves are only opened when the internal sensors are activated.

Partial Open
The door leaves are opened to a prespecified width.

Lock
The opening door leaves are closed and the lock (if installed) is activated.

Automatic
The opening door leaves are opened and closed when the sensors are activated.

4 Maintenance Service

In case of questions regarding technical issues, contact the after-sales service for clarification.

4.1 Precautionary Measures

This section presents the precautionary measures that must be taken into account in maintenance and fault finding.

Special attention must be given to this section. Deutschtec GmbH shall not be liable for accidents caused by ignorance of this part.

- All technical tasks of maintenance and fault finding must be carried out by trained professionals authorized by Deutschtec. For the maintenance tasks reserved for user, please refer to section 5. Following these instructions avoids material damage and personal injuries.

Not following installation manual may result in faulty operation, injuries and voiding warranty.

- Maintenance and fault finding must be performed only by trained and qualified professionals, familiar with the hazards and safety requirements. Any other person, under any circumstances, must not be involved in the technical affairs of this product.

4.2 Timing Belt Tension

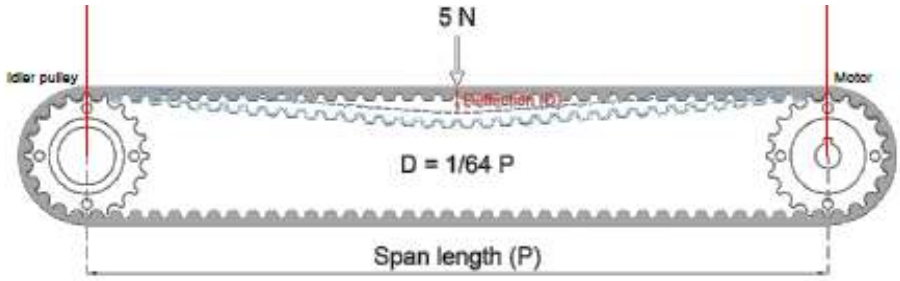
In order to evaluate whether the belt tension is off, the system has to be put in operation.

Observe the timing belt:

- The belt might not lift up from the motor gear or skip when breaking and accelerating
- If the belt lifts up increase the belt tension, and vice versa

In order to determine the correct belt tension, follow the steps depicted below:

Apply a force of 5 Newton to the belt and measure the deflection distance as depicted below:



4.3 Maintenance Check

Note: The mandatory maintenance work on the Holux X3 and X4 series is to be carried out by properly trained personnel at least once a year.

In order to maintain a functional and properly working system, operating elements need a regular inspection during the maintenance cycle. In order to determine what action needs to be taken to fulfill Deutschtec's maintenance requirements check the actions listed in the following table:

System Component	Actions	Remarks
Runner	Check for cleanliness	Clean the runner
Roller carriage	Check the wear condition of the rollers	Replace worn rollers if necessary
Floor guide area	Check for smooth operation	Clean the floor routing section, if necessary
Door leaf threshold (brushes)	Check for imperfection and severity of the ground	Clean or replace, if necessary
Door leaf	Check for smooth movement	adjust the tension on the timing belt
Timing belt	Check for attrition and damage Check tension Check at locking device for damage	Replace timing belt, if necessary Tighten the timing belt, if necessary
Lock	Check the operation	Reposition the locking device, if necessary
Battery	Check battery voltage and replace it when voltage is below 24 V	The battery loading feature is active as soon as the system is powered. This includes the case when the battery is drained
Bolts	Check for firm seating	Tighten the bolts, if necessary
Modules and peripherals	Check for correct operation	Replace module, if necessary
Cables	Check for damage and proper wiring	Fasten/replace cables, if necessary

4.4 Mechanical Faults

Cause	Recommended measures
Running rail deformed	Replace the rail Check the installation surface
Door leaf does not move	Check the door leaf (see bullet point below)
Roller carriage jammed or defective high mechanical attrition on the roller	Replace the carrier roller (see bullet point below) Clean the running rail
Belt damaged	Replace the belt
Assembly group defective	Replace the assembly group (see Bullet point below)

Check the door leaf

- Separate moving leaf from the belt clamps.
- Move door leaves and check for a smooth movement through the entire trajectory path of the leaf.
- If door leafs move smooth Check the drive motor and replace it if necessary.

Replacing the hanger

- Loosen the timing belt.
- Separate the hangers from the leafs
- Loosen the hanger bolts on roller carriage
- Remove the leafs carefully and secure them
- Take the hangers out of the rail and replace them with new ones
- Reinstall the door leafs

4.5 Changing Fuse

DANGER

Electrical shock (injury risk or death). Disconnect the system from 230V/110V main power supply before attempting to change the fuse!

Make sure that the fuse is replaced by a 2 A type fuse.

Changing Primary Side Fuse

Take out the fuse holder sitting in the 230 V connection port.
You can use a screw driver.

There is an additional spare fuse inside the holder.
The above fuse in the picture shows the used one.
It can be replacing by the one below.

Put it back

Changing Secondary Side Fuse

DANGER Electrical shock (injury risk or death). Disconnect the system from 230V/110V main power supply before attempting to change the fuse! Make sure that the fuse is replaced by a 6.3 A TL type fuse.

Its located on the 40 V side.
Take it out by using a tool like a screw driver.

Replace it and put it back with the cover

4.6 Troubleshooting

This section provides some instructions to solve the abnormal operations of the door.

Note: Before starting the troubleshooting, check that the operation mode is correctly selected.

If the instructions don't solve the problem, please decommission the door temporarily contact after-sales service.

4.6.1 Malfunctions

Error	Cause	Action
Door does not open.	Rotary switch is set to the 'Close' mode.	Change the operation mode.
Door does not open.	Emergency shut down button is activated in the closed position.	Reset the emergency shut down button (deactivate).
Door does not open.	The main power supply is inaccessible and the battery is inoperative.	Connect the main power supply and check the battery.
Door does not open.	Activated sensor is inoperative.	Notify your service center.
Door remains open.	Emergency shut down button is activated in the fully -opened position.	Reset the emergency shut down button (deactivate).
Door remains open.	Safety sensors are activated. LED at the sensor turns red.	Remove the obstacle that is in the door's threshold range.
Door remains open.	The main power supply is inaccessible and the battery is inoperative.	Reconnect the main power supply and check the battery.
Door moves forward by a few centi meters, but then it moves backwards.	Safety sensors detect an obstacle in the door's threshold range.	Remove the obstacle that is in the door's threshold range.
Door moves forward by a few centi meters, but then it moves backwards.	The activated sensor scans the door wings.	Contact your service center in order to get the sensors adjusted.
Door moves forward by a few centi meters, but then it moves backwards.	The encoder line is disconnected or open.	Actuate the emergency shut down button and contact the service center.

4.6.2 LED Status – Error Codes

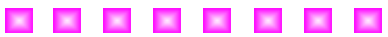
Blue LED Status	Error Code on Digital Key	Case	Required action
Permanent (1 2 3 4 5 6 7 8 9 10)	10	Delivery condition	Start initial scan.
Faster Blinking	11	Initial scan is in progress	--
1 time Blinking	12	Opening width during learning drive NOT OK	Opening width needs more than 400mm per leaf. Check the distance
2 time Blinking	13	SLT or jumper settings are ok	--
3 time Blinking	14	Max door leaf weight is exceeded or door is blocked	Check the weight of the door and whether the door is blocked.
5 time Blinking	15	SLT or jumper settings not ok	Check SLT potentiometer or Jumper position.

Note: Blue LED information are only shown in installation mode SLT right or jumper right position.

Yellow LED			
Permanent (1 2 3 4 5 6 7 8 9 10)	109	Not referenced	Activate sensor.
Fast blink	145	Key switch error	Check position of key switch or cable the connection.
1 time Blinking	120	Over load cut off	Check mechanical installation.
2 times Blinking	110	Outside sensor activated	Check outside sensing area or adjustment of sensor.
3 time Blinking	111	Inside sensor activated	Check inside sensing area or adjustment of sensor.
6 time Blinking	100	Power supply error	Check wiring and connections.
7 time Blinking	142	Door is locked	Check the electromechanical lock.
8 time Blinking	130	Door is blocked	Check for present obstacles.
9 time Blinking	121	Door cannot close	Check for mechanical problems.
10 time Blinking	101	Door is closing	--

Note: Yellow codes are disturbances which in some cases may get reset by the system automatically.

Red LED Status		Error Code on Digital Key	Case	Required action
on		250,240 251,252 253,254	Critical error on control board	To be replaced.
Constant Blinking		238 237 236	Master/slave or digital key communication error	Check the the connections.
Fast Blinking		239	Factory reset (after pressing reset for 15 sec)	–
1 time Blinking		233,202	Safety circuit not closed. Stop and ESC or bridges.	Check connections of safety circuit
2 time Blinking		200	Failure of Outside sensor test	Check outside sensor, cable and connectors.
3 time Blinking		201	Failure of inside sensor test	Check inside sensor, cable and connectors.
4 time Blinking		210,211	Failure of battery test	Check battery capacity and voltage.
5 time Blinking		223,224	No motor-starting-current	Check motor and connection.
6 time Blinking		230 231 232	Key switch self-test and ESC and stop	Check key switch and stop and ESC or bridges.
7 time Blinking		245	Software version not ok	Check if master & slave have the same software version.
8 time Blinking		241	Broken motor cable	Check motor cable and connection.
9 time Blinking		243	Puls generator defect or cable damaged	Check puls generator and cable for damages.

Purple LED				
1 time Blinking		141	Lock is blocked	Check if lock is working or microswitch is damaged.
2 time Blinking		144	Locked microswitch	Check if switch is well-adjusted or damaged.
8 time Blinking		242	Motor starting current is too high.	Check if door is blocked.
9 time Blinking		244	Drive cannot open	Check if blocked.

5. User Instructions

This section provides important information for correct use of the doorset. Before use, please carefully read the entire instructions and pay attention to the precautionary measures listed in the next section.

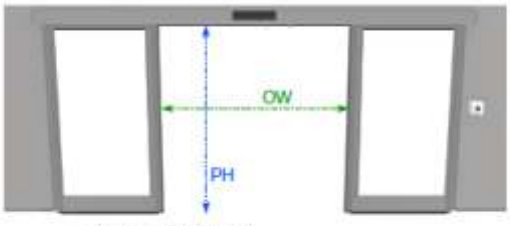
5.1 Precautionary measures

This section presents the precautionary measures that must be taken into account by customer.

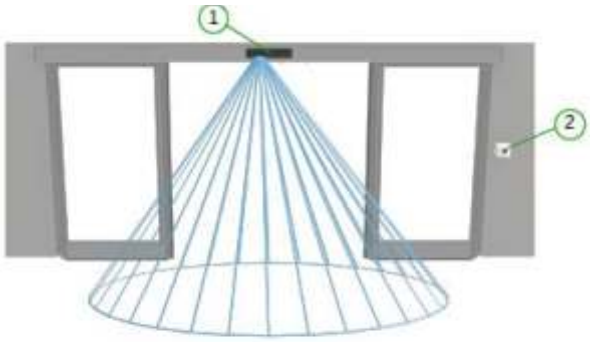
 Special attention must be given to this section. Deutschtec GmbH shall not be liable for accidents caused by ignorance of this part.

- Before first operation, check the overall status of the door and its protective devices.
- Frequently check the door status (signs of wear, suspicious noise, damaged rubber covers of the leaves, inadequate functioning and damage to wires or moving parts).
- Do not allow door operation if repair or adjustment is necessary.
- In case of physical damages, contact only the authorized company's representatives to solve the problem.
- In case of faulty operation, contact only the authorized company's representatives to solve the problem.
- The signage attached to the door parts are for safety and must not be removed or damaged.
- When the system is locked, the escape function is disabled!
- Avoid any kind of misuse of the door set. The door leaves are not meant to be used as leverage, push or pull mechanism.
- Do not allow children to play with automatic doors.
- Always escort children when walking through automatic doors.
- Avoid putting any obstructions or objects near automatic doors which could hinder the functioning of the sensors.
- Injury risk is imminent if a person is running towards the door. The peak moving speed of the leafs is 0.7 meters per second. Please approach the door at walking pace.
- When the door is in automatic mode and performing a closing or opening procedure, do not put fingers or hands between the moving and fixed leafs. As soon as a leaf encounters an obstacle the movement is interrupted through force measurement. The applied force to the obstacle does not exceed 150 Newton. This is sufficient in order to cause injury to unwary small children.
- The operator performs after every power outage a reference drive. This means the door is going to perform the opening procedure up to the maximum opening length. Conclusory the system goes into the set state on the Mechanical Key/Digital Key/DMS.

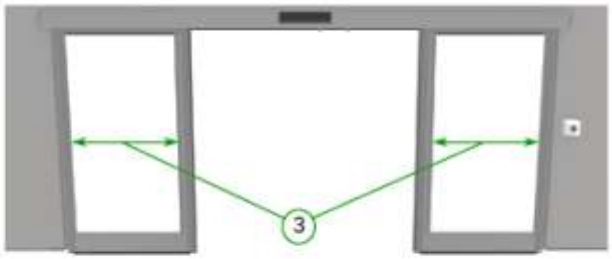
5.2 Main elements of the system



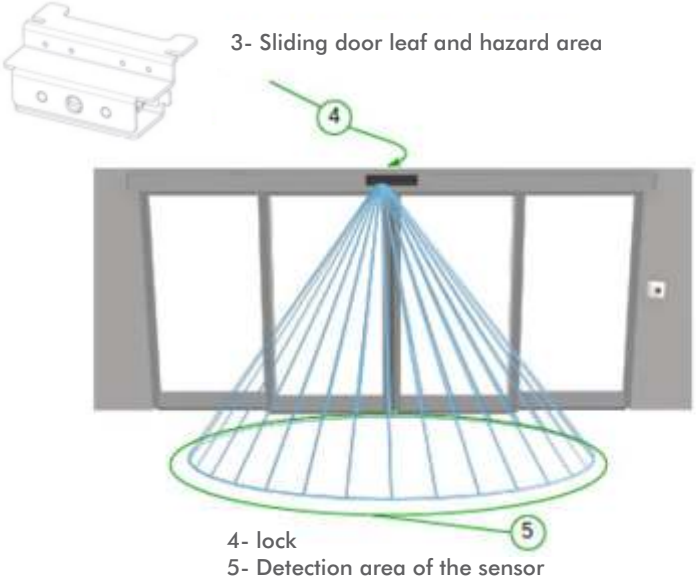
OW=Opening width
PH=Passage height



1- Radar of the outside sensor
2- Mechanical Key Switch



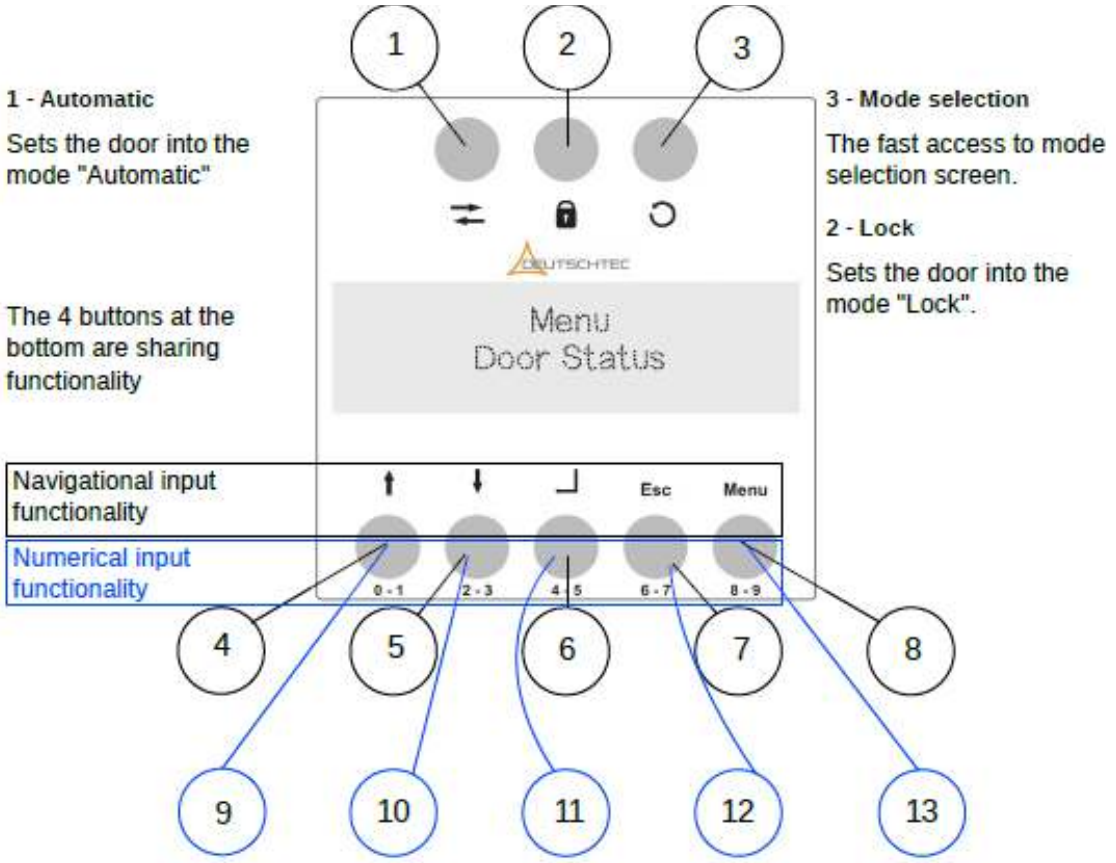
3- Sliding door leaf and hazard area



4- lock
5- Detection area of the sensor

5.3 Digital key switch

Operating Interface of the digital key switch:



4- Menu navigation up

5- Menu navigation down

6- Confirmation

7- Return(Esc)

8- Menu

9- Switching between zero and one

10- Switching between two and three

11- Switching between four and five

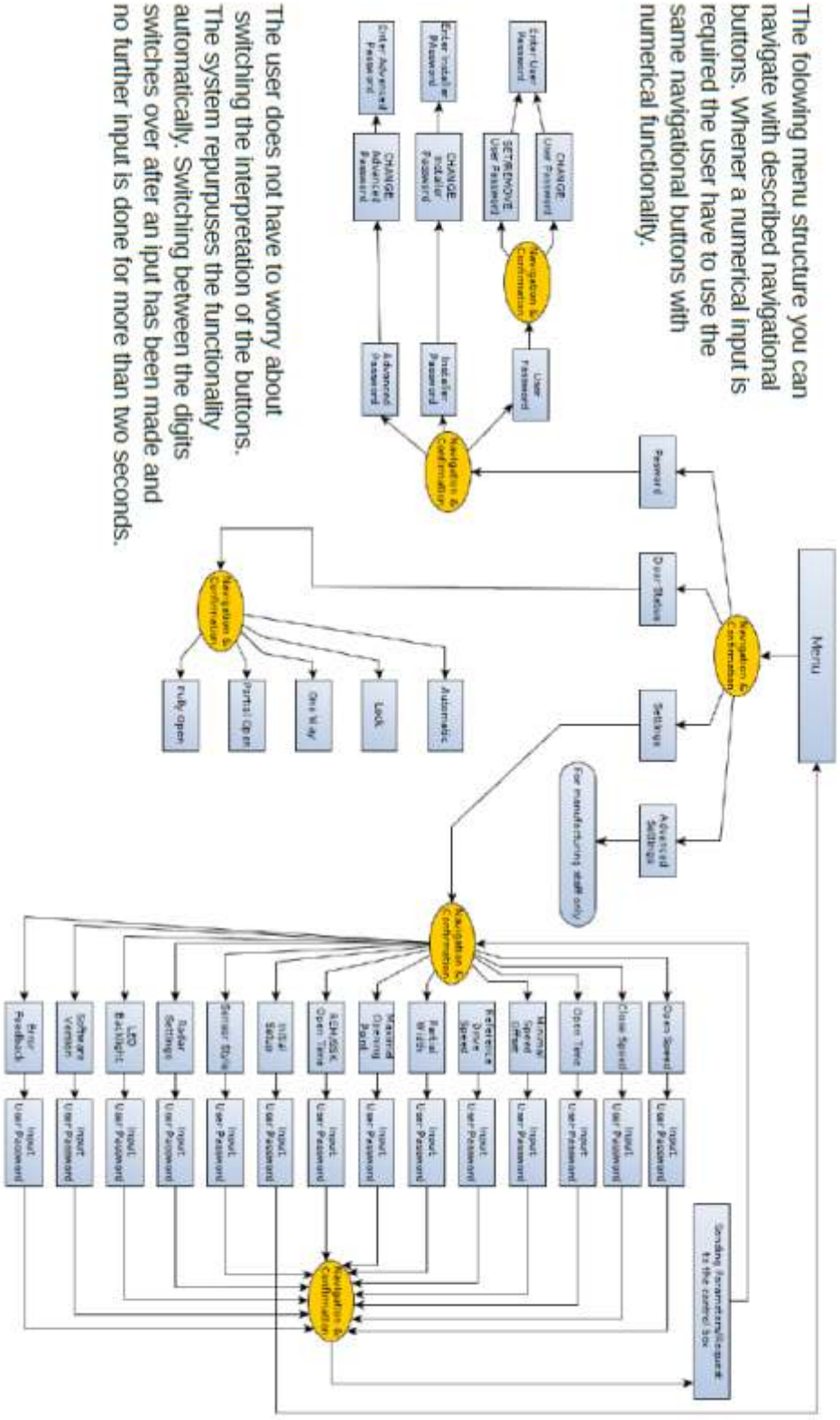
12- Switching between six and seven

13- Switching between eight and nine

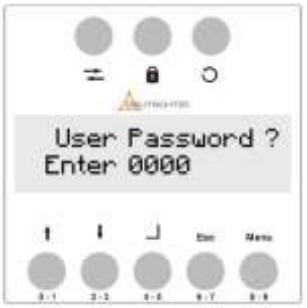
Operational worflow of the Digital Key Switch

The folowing menu structure you can navigate with described navigational buttons. Whener a numerical input is required the user have to use the same navigational buttons with numerical functionality.

The user does not have to worry about switching the interpretation of the buttons. The system repurpuses the functionality automatically. Switching between the digits switches over after an iput has been made and no further input is done for more than two seconds.



5.3.1 Operating the system with the digital key switch



Press any button to activate the Digital Key Switch. Afterwards use the default "0000" password in order to unlock the functionality of the Digital Key Switch. If necessary, use the "Lock" button to perform corrections. In case the password is not correct the user is prompted to retype the password.

The input digits which were chosen within the number string are displayed with "*" character. Whenever during the input procedure of the password a 20 second break occurs in which no input has been made on the Digital Key Switch then the password attempt is forfeit and the user is prompted to repeat the password input from the start.

Once the Digital Key Switch is unlocked you can choose your door state:

Fully Open	The door is permanently open
Automatic	The door is activated by radar sensors
Lock	The door is closed and locked, afterwards the systems powers down (optional)
One Way	The door can only be opened from the inside
Partial Open	The door is only opening partially

While you are in the process of choosing a mode and have not performed any input on the digital key switch the currently selected mode will be applied to the system.
Once 30 seconds have passed during which no input has been made on the digital key switch the functionality of it will be locked. However, you can unlock it by entering the password again.

The password is a sequence of four digits. Moreover, the default is: "0000".
You can change the password within the menu of the Digital Key Switch.

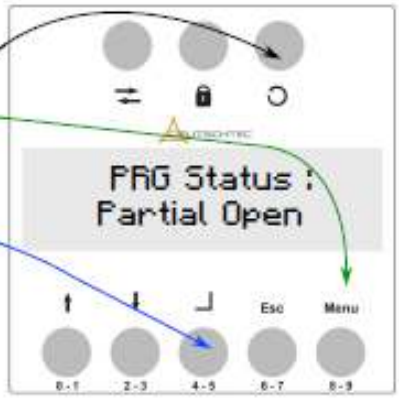
5.3.2 Main menu

After you entered the password (Standard "0000") press the menu button

You can choose a submenu and confirm with the enter button

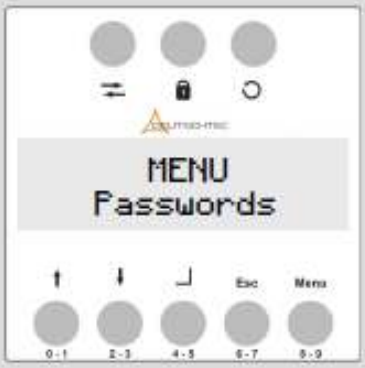
You can exit the menu with the (ESC) button

Navigate through the presented options and the menue options with the up and down buttons

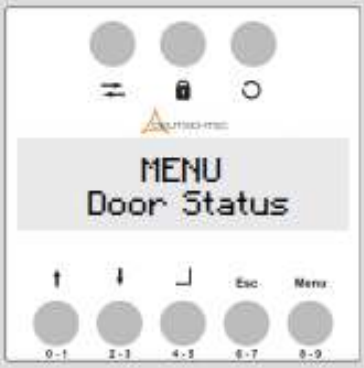


The main menu consist of four main submenus depicted below:

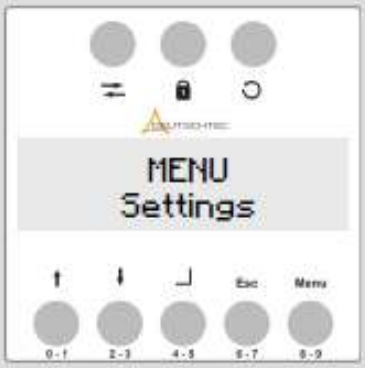
- "Passwords"



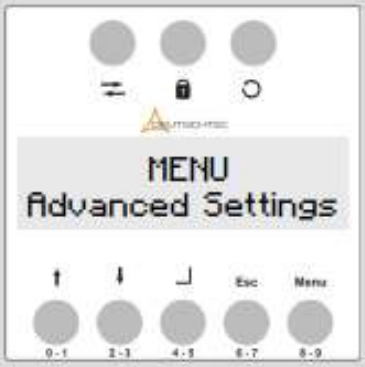
- "Door State"



- "Settings" (only for service staff)

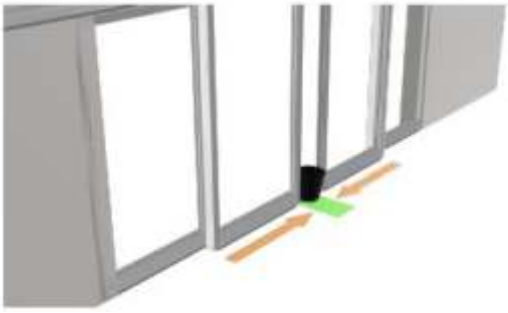


- "Advanced Setting" (only for service staff)



5.4 System behavior

When the door encounters an obstacle during the closing procedure, the door leafs will reverse its trajectory and open up.



The door opens and encounters an obstacle on the opening edge as depicted in the image at the red line. There will not be a reversal of the opening procedure and crushing injury is imminent in this situation.

The system is equipped with infrared curtain which is monitoring the narrow area in front of the operating area of the leaves. As long as an obstacle or a person remains static within the infrared (IR) curtain for 30 seconds the door will remain open. After the timeframe of 30 seconds the sensor will apply the static object to the permanent background and the door will attempt to close. However, the door will reverse the closing operation as soon as it encounters an obstacle. The pressure force from the leaves though will not exceed 150 Newton.

During the opening procedure the side scanners can recognize an obstacle or within the hazardous area and slow the door down in order to ensure the obstacle has enough time to react.

5.5 Failures

Common causes of failure are usually:

- False operating mode of the system
- Dirt on the sensors optical input surface
- Short term power outage
- Interruption of the flow through the door through a person or an obstacle
- Malfunctioning of the control electronics

In case you are encountering a disruption of the system contact your supplier. However, if the supplier is not available you can contact the manufacturer directly at:

Deutschtec GmbH
Am Fuchsbau 13
15345 Petershagen/Eggersdorf
Germany
Phone: +49 (0)3341 30 22 4 – 0
Fax: +49 (0)3341 30 22 4 – 25
E-mail: info@deutschtec.de

5.6 Error handling

If an error situation occurs on the system:

- Acknowledge the error with the mechanical key switch as it is described in the paragraph below.
- If the error situation can be resolved the door will be functioning after the acknowledgement procedure.
- Perform a visual check of the system in order to spot potential damage
- For acknowledgement of error regard to the following paragraph

Acknowledge Errors

1. Turn the mechanical key switch into the "full open" position
2. Wait 2 seconds
3. Choose your desired operating mode

Acknowledgement procedure with a Digital Key Switch

1. Choose the mode "Full Open"
2. Wait 2 seconds
3. Choose your desired operating mode

5.7 Routine Maintenance

In accordance with European standard EN 16005, the owner of the doorset must hire a Deutschtec-authorized technician to carry out the periodic maintenance service and regular inspection, thus ensuring operation of the door and all protective devices. Frequency of maintenance to be carried out is at least once a year. This is very important when the installation concerns a fire-approved door or a door with an emergency opening function.

Note: All maintenance and repairs must be recorded in the log book.

Deutschtec shall be in no case liable for any damage resulted from interventions by unauthorized personnel.

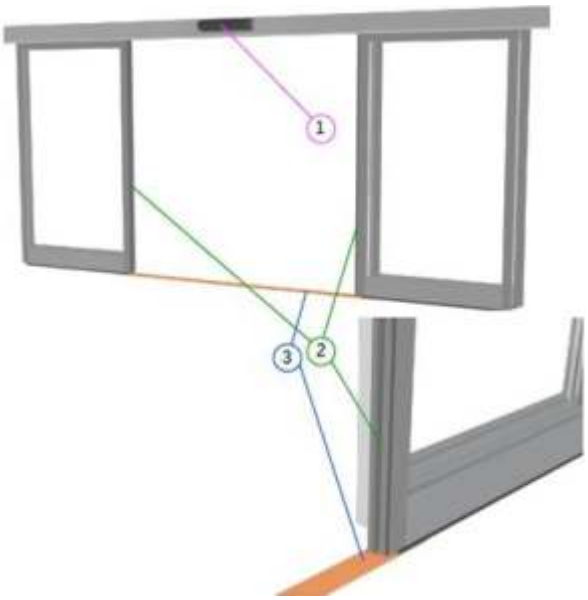
5.8 Cleaning

This section presents the precautionary measures that must be taken into account in the cleaning of the product.

DANGER Make sure the power supply is disconnected while cleaning.

WARNING Make sure to set the set the system into "Full Open" state.

- Cleaning must not be made by children.
- Do not clean with a water jet.
- Do not use sharp objects and abrasive materials to remove dirt.
- Do not use any cleaners containing aggressive substances and solvents.
- Remove the dirt with a soft cloth soaked in a non-aggressive cleaner.
- Wipe off any water and detergent with a dry cloth.
- Wipe off the dirt on the sensors (No. 1 in the following figure) only with a soft, clean and dry cloth.
- Wipe off dirt on the rubber covers (No. 2 in the following figure) with a soft cloth soaked in a non-aggressive cleaner
- Keep the door passage clean (No. 3 in the following figure).



6. Disabling and Dismantling

Disabling the door must be performed only by trained and qualified professionals, familiar with the hazards and safety requirements. Any other person, under any circumstances, must not be involved in the technical affairs of this product.

Sort the materials after uninstallation. Consult the local communal or waste service about material transport and storage.

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