Instruction Manual
Frequenz

Operators for industrial overhead doors
Operators for high speed doors

Contents

1. General Safety Information

- The door operator may only be used under the conditions described in these instructions. Any other use will be considered improper usage and therefore dangerous. The manufacturer is not liable for damage resulting from improper, incorrect or inappropriate usage.

- Failure to observe the information contained in these instructions may lead to personal or material damage. The instructions must be passed on to all future users and operators of the door operator.

- Only use the door operator if no maintenance or adjustment measures are required to do so. Disconnect the operator from the power supply for cleaning or maintenance.

- Only use the door operator if the entire area of movement is fully visible. During operation, be aware of other people who may be within the operating range of the product or who may enter this area. Do not drive or walk underneath the door while it is moving.

- Do not use the door operator to lift up objects and/or people.

- Ensure that children are kept away from the area around the door.

- Children over the age of 8 and persons with reduced physical, sensory or mental capabilities may operate the door operator when supervised or if they have been instructed in the safe handling of the equipment and are aware of the associated risks.

- Keep remote controls and/or other controls out of reach of children to prevent the accidental activation of the door operator.

- Cleaning work on the door operator or the door or any maintenance measures may only be performed by children when supervised.

2. Product Description

The door operator has been developed for industrial doors and high speed doors.

The door operator can be equipped with the following additional safety devices, such as:

- Photocells, Light curtains, Safety edges
- Radar
- Loop detector
- Remote control, Push buttons, Pull switches
- Traffic light

The door operator is operated via the control unit.

You can choose different operating settings for the operator (e.g. automatic, semi-automatic or hold to run).

3. Technical Data

Balanced industrial sectional doors:

	Balanced industrial sectional doors	
Hyper lift-model	HL100-ISD	HL140-ISD
Rated Voltage/Frequency	220-240V 50Hz	220-240V 50Hz
Rated input power in KW	0.55	1.1
Torque in Nm	100	140
Speed in RPM	5-30	5-30
Frequency converter	Yes	Yes
Diameter hollow shaft in mm	25.44	25.44
Max cycles per hour	35	30
Emergency release	Chain hoist	
Limit setting of door travel	Digital encoder	

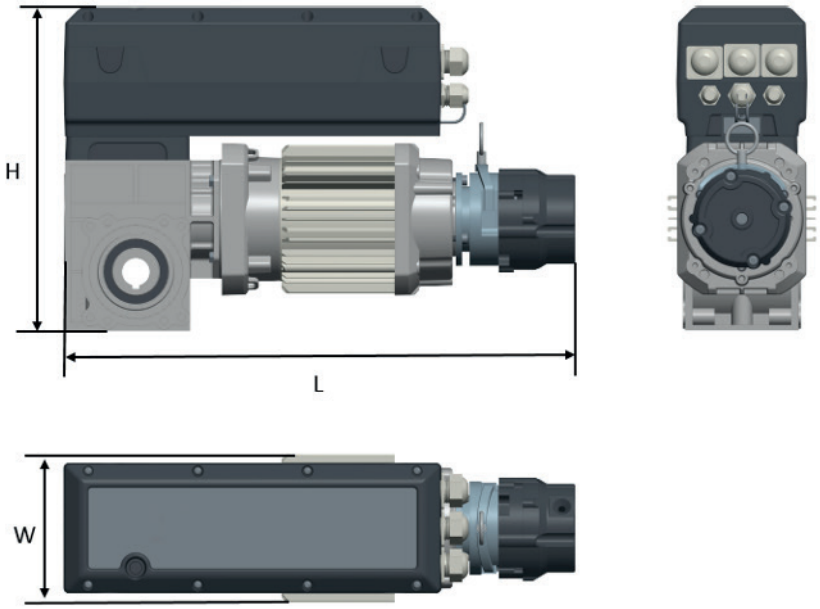
Industrial highspeed doors:

	Industrial highspeed doors		
Hyper lift-model	HL30-HSD	HL65-HSD	HL100-HSD
Rated Voltage/Frequency	220-240V 50Hz	220-240V 50Hz	220-240V 50Hz
Rated input power in KW	0.55	1.1	1.5
Torque in Nm	30	65	100
Speed in RPM	30-200	30-200	30-200
Frequency converter	Yes	Yes	Yes
Diameter hollow shaft in mm	30	30	30
Max cycles per hour	60	60	60
Emergency release	Crank		
Limit setting of door travel	Digital encoder		
Force of mechanical brake	8 Nm	8 Nm	12 Nm

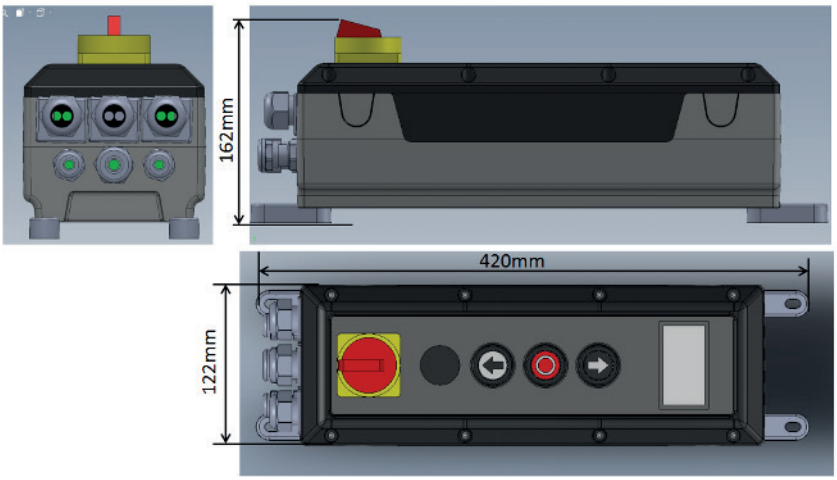
4. Drawing of appearance and dimension

Frequenz model	HL100-ISD	HL140-ISD	HL30-HSD	HL65-HSD	HL100-HSD
Door operator L*W*H(mm)	432*180*300	478*180*300	431*138*300	476*138*300	516*138*300
Control box L*W*H(mm)	420*122*162	420*122*162	420*122*162	420*122*162	420*122*162
Packing L*W*H(mm)	573*510*200	573*510*200	573*510*200	573*510*200	573*510*200
Net Weight (kg)	21.895	26.54	22.175	25.095	28.405
Rough Weight (kg)	20.155	24.8	20.435	23.355	26.665

Door operator



Control Box



5. Warnings – Symbols

Note: Technical information must be observed

Fig. 1 Number of a figure

Caution: Warns of a risk to a person / risk of injury

Warning: Warns of a risk to material / risk of damage

6. Safety information of operation

The door may only operated if:

- Conformity in accordance with Machinery Directive 2006/42/EC was declared following assembly.
- The door complies with the standards EN 12605, EN 12604 and DIN EN 13241-1.
- The door operator has been assembled in accordance with EN 12453, EN 12445 and EN 12635.
- Any additionally installed safety equipment is functioning properly.
- There is an internally operated emergency release for garages that have no second access.
- Any pass door set within the door is equipped with a safety device that prevents switch-on while the door is open.
- The emergency release cannot be caught on any vehicle parts (e.g. roof structures).
- It is insured that the installation is conform with the national safety regulations.

Keep the instruction manual at a safe place!

7. Safety information for installation

Important:

The door must move easily and be functional and well-balanced in accordance with the manufacturer's specifications.

It must be possible to open and close the door by hand easily.

Assembly must be carried out by trained and specialized personnel.

Electrical installation work must only be performed by authorized and specialized personnel.

The suitability and bearing capacity of the supporting structure of the building in which the door operator is to be installed must be checked and confirmed by expert personnel.

The door operator must be securely fastened at all the mounting points provided. The mounting material must be chosen according to the material characteristics of the supporting structure to ensure that a minimum tensile force of 900 N can be withstood.

If these requirements are not fulfilled, the door operator may fall down or the door may move without control. This means there is a risk of personal injury or material damage.

When mounting the door operator, it must be secured by appropriate means against falling until it is completely and safely attached.

Observe the relevant occupational health and safety regulations during the installation.

8. Proper Use

This door operator is suitable for use with balanced sectional/ high speed doors and sectional/ high speed doors equipped with spring-break protection and/or safety catch.

The maximum dimensions given in the technical data must be complied with.

Before installing the door operator, any existing locking mechanisms for the door must be disassembled or taken out of operation.

Use in an explosion-proof environment is not permitted.

Any other use above and beyond this is considered as improper use.

All of the below activities performed without the express written approval of the manufacturer:

- Expansions or modifications
- Use of non-original replacement parts
- Performance of repairs by persons or operators that have not been authorized by the manufacturer may result in the loss of the warranty.

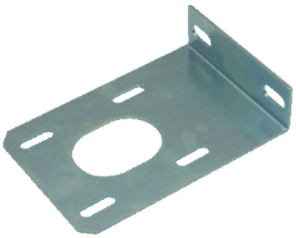
No liability can be accepted for damages that result from the following causes:

- Technical defects on the door to be operated and structural deformations occurring during operation
- Improper maintenance of the door
- Failure to observe the operating instructions

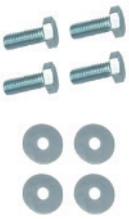
9. Scope of delivery

1

2



3



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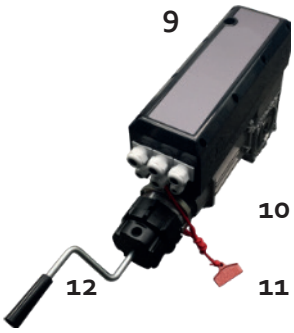
5

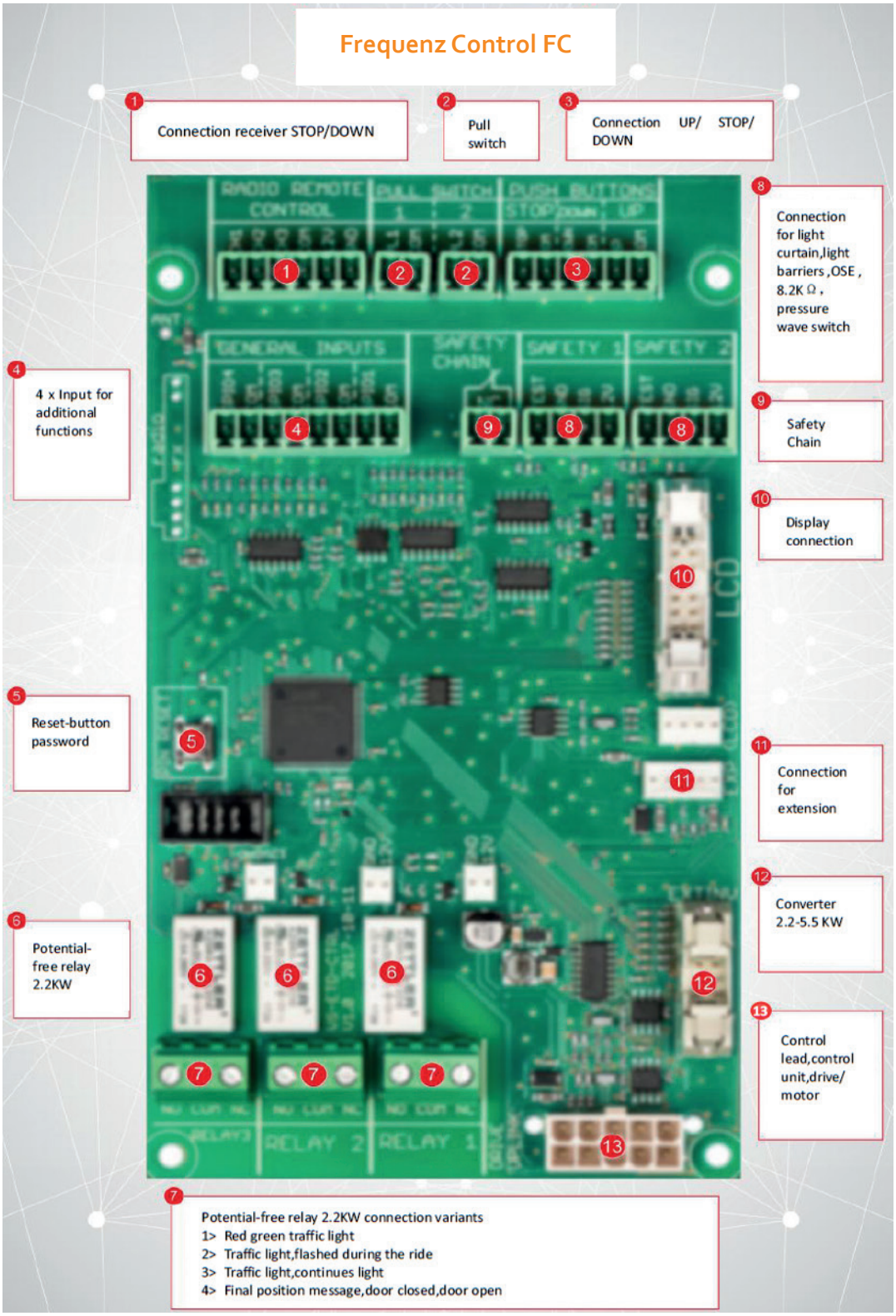
1	Door operator with emergency release (chain or crank)
2	Control unit with main switch
3	Torque bracket
4	Assembly material
5	Key for shaft

10. Table of components



6	Door operator (for balanced sectional doors)
7	Chain hoist
8	Emergency release (Chain)
9	Door operator (for high speed doors)
10	Brake (for high speed doors)
11	Emergency release cord
12	Emergency release (Crank)
13	Display
14	Main switch
15	“UP” button
16	“STOP” button
17	“DOWN” button
18	Industrial power plug

11. Lay-out of control unit



12. Installation

The door operator shown is similar to sectional door operators type with chain drive. Unless described otherwise, the assembly steps also apply to high speed door operators with crank.

Preparation for installation

Risk of personal injury and/or material damage due to electrical voltage. Have a specialized electrician open and close the cover for the motor controller.

Determine the installation location of the door operator

- The door operator must be positioned 100% above the door drive shaft.
- Make sure that neither the emergency manual operation chain nor crank (depending on version) can impair the normal operation of the door (clearance) and that they can be used at any time.

12.1 Install the torque bracket

Install the torque bracket (3) as shown in Fig. 1. Make sure that the drive shaft for the door can extend at least 135 mm (dimension A) in the door operator to be installed.

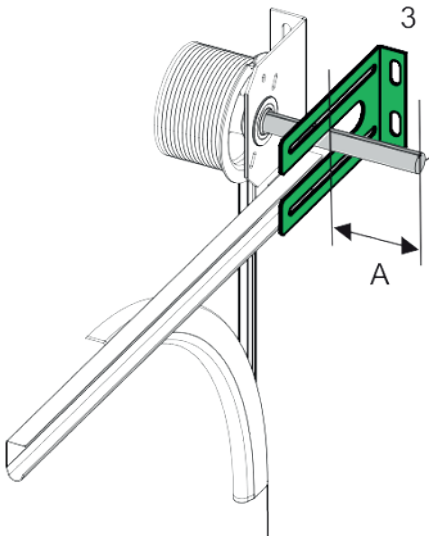


Fig. 1

12.2 Install the feature key

Install the key (8) in the groove of the drive shaft for the door so that is secured against movement in Fig2.

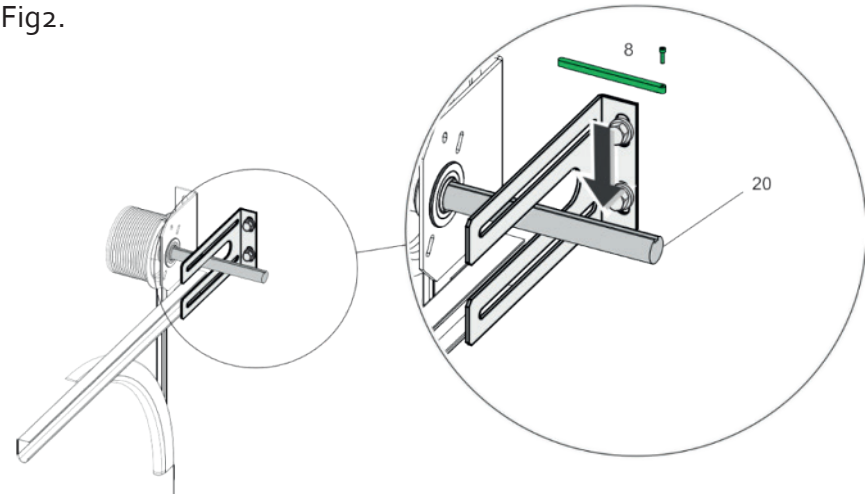


Fig. 2

- The door operator is heavy, which may falls and causes personal injury and/or material damage. A suitable hoist must be used to bring it into the installation location.

- Do not supply power to the door operator yet. Do not connect any plugs.
- Position the drive shaft for the door operator such that it is suitable for the position of the anti-twist device (key, position 8 in Fig. 2). To do this, turn the transmission via the emergency operation.
- Grease the drive shaft for the door such that the door operator can be easily connected.

12.3 Secure the door operator

Slide the door operator onto the door drive shaft (20) in Fig. 2. Secure the door operator with the 4 screws and washers (13) in Fig. 3.

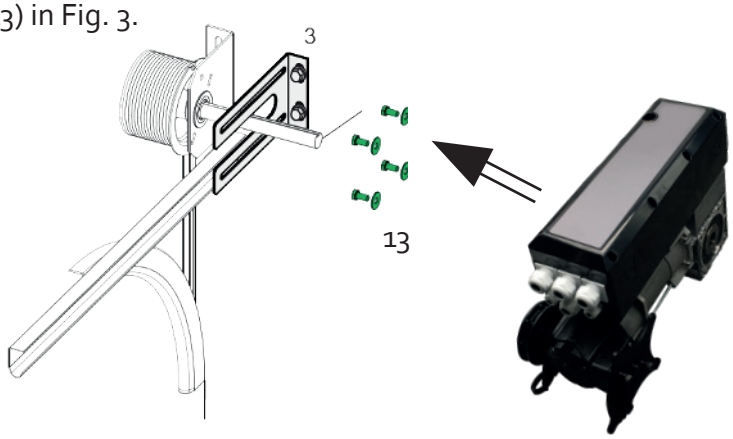


Fig. 3

12.4 Install the emergency release cord

Emergency release with chain

- Secure the emergency release cord such that the emergency release can be activated using the end of the cord with the "HAND" label on it.
- The emergency release is activated when the chain wheel (3) has been moved by pulling the emergency release cord (2) to in the direction of the arrow in Fig. 4.
- Make sure that the emergency release can be deactivated again by pulling the other end of the cord.

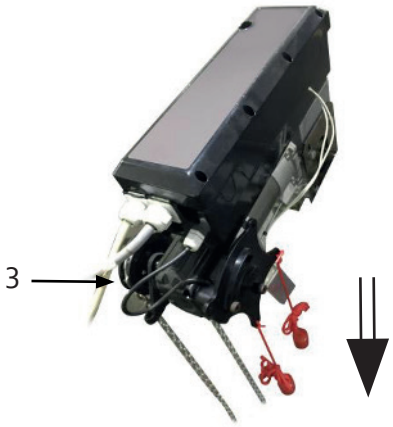


Fig. 4

Emergency release with crank

- Secure the emergency release cord such that the emergency release can be activated using the end of the cord with the "HAND" label on it.
- The emergency release is activated when the brake (1) is pulled by the cord (2) to the direction of arrow in Fig. 5.
- Make sure that emergency release can be deactivated again by loosening the cord.
- Insert the emergency crank (3) to hand crank housing in Fig. 5.

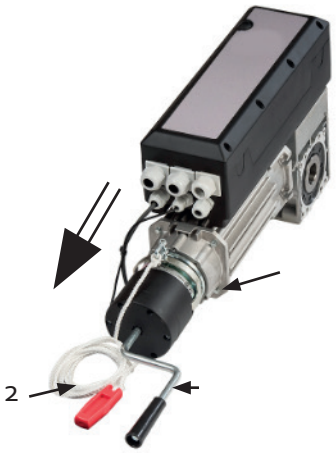


Fig. 5

12.5 Check the emergency operation

Activate the emergency release by pulling the cord (HAND label). The transmission is decoupled from the motor.

Emergency release with chain

Make sure that the door can be opened and closed without any problems by pulling on the chain (2) in Fig. 6.

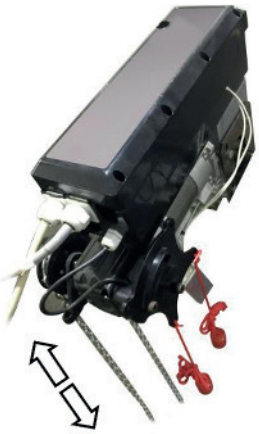


Fig. 6

Emergency release with crank

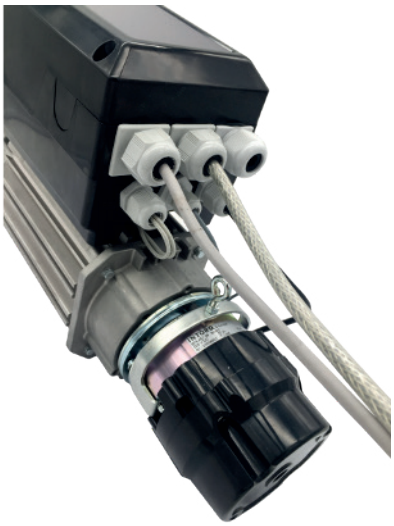
Make sure that the door can be opened and closed by crank (3) or hands without any problems in Fig. 7.

Fig. 7

If the door can be opened and closed without any problems, this confirms the functional reliability of the emergency operation. The door operator can be commissioned.

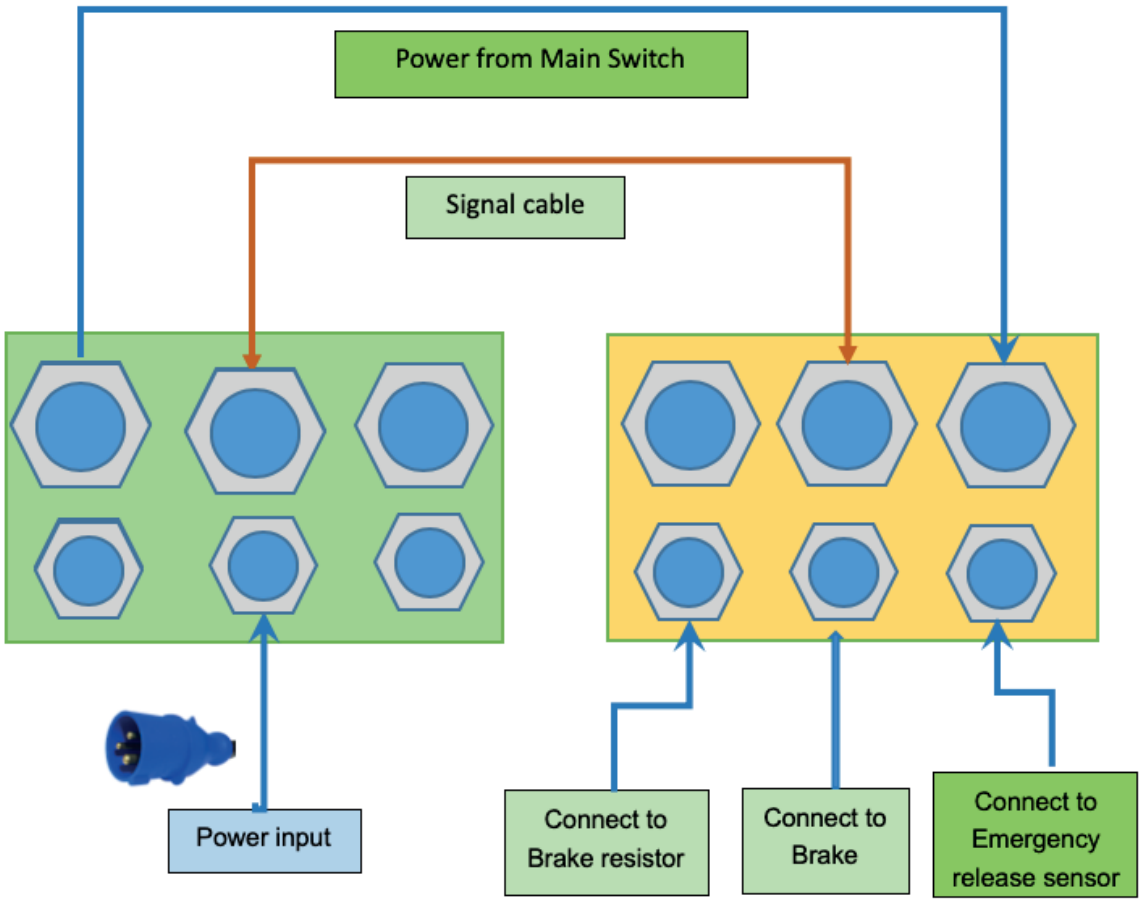
13. Wiring

13.1 Control box connect with door operator guideline



Control Box

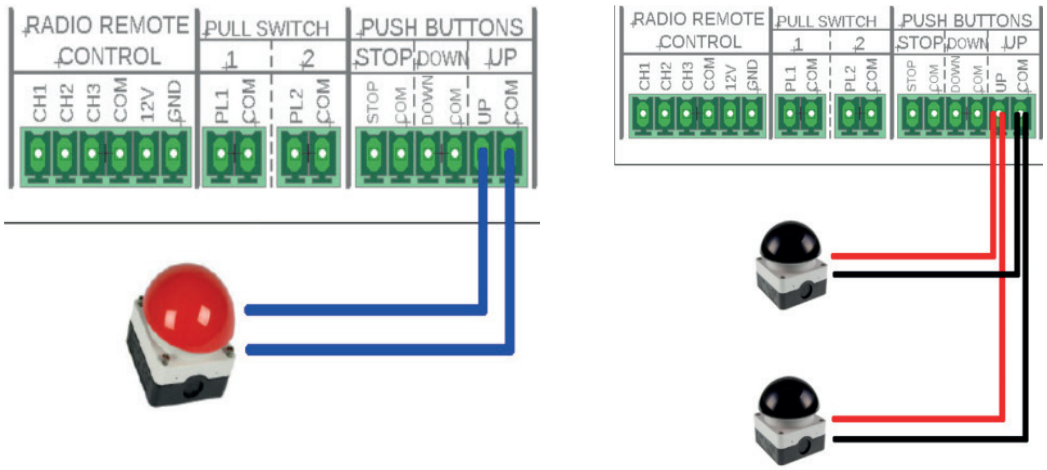
Door Operator



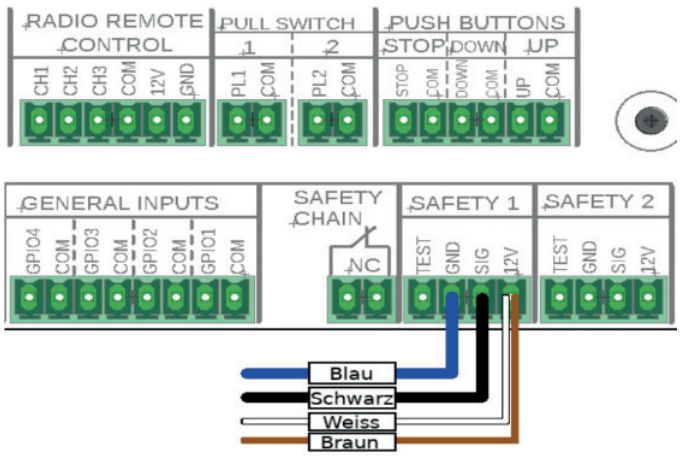
13.2 Additional accessories wiring guideline

Must use **NC mode** safety devices.
Activate the connected devices in the menu SAFETY, Relays outputs and/or in the expert settings.
Maximum current: 400 mA.

Push buttons (defined OPEN)
For opening and closing you can use different types of push buttons or key switches.
For defined OPEN please connect the button to terminal push buttons => UP
For defined STOP please connect the button to terminal push buttons => STOP
For defined CLOSE please connect the button to terminal push buttons => DOWN

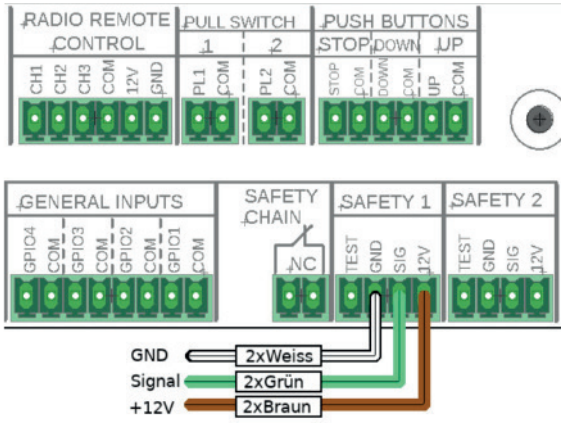


Light curtain
As safety device you connect the light curtain either to terminal SAFTEY 1 or SAFETY 2
According to the light curtain`s manufacturers instruction you must connect power supply, ground, signal to terminal SAFETY 1 or SAFETY 2

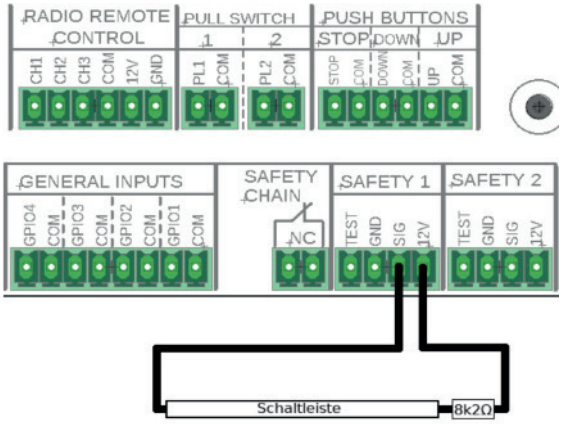


Safety edges

As safety device you connect the safety edge either to terminal SAFTEY 1 or SAFETY 2
According to the safety edge`s manufacturers instruction you must connect power supply, ground, signal to terminal SAFETY 1 or SAFETY 2



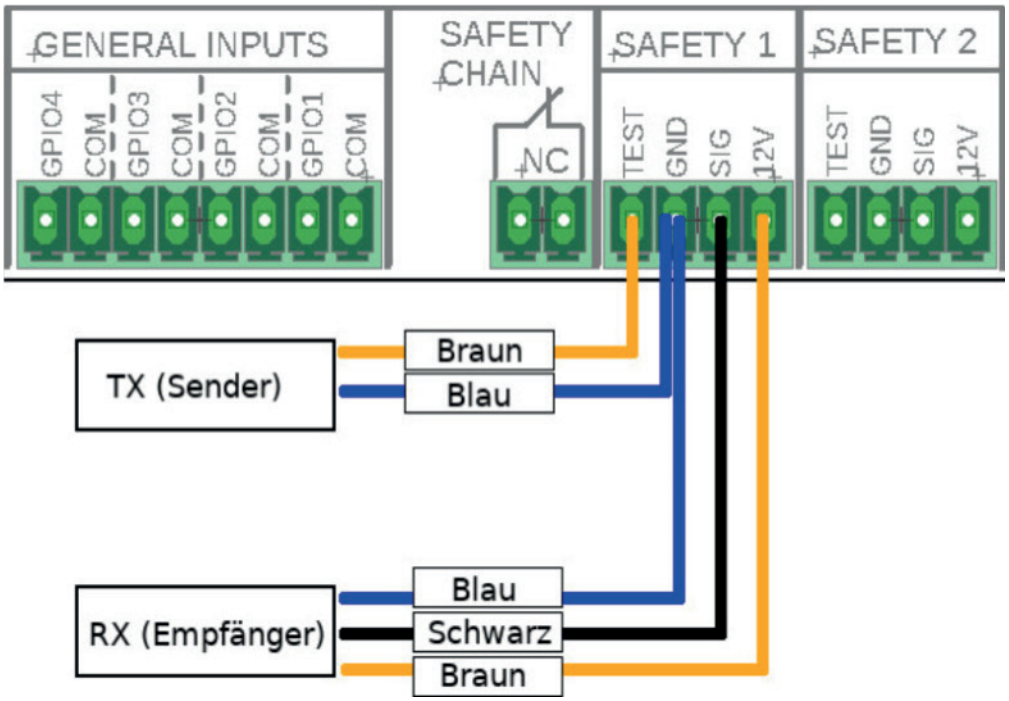
Pulsed safety edge (OSE)



8k2-safety edge

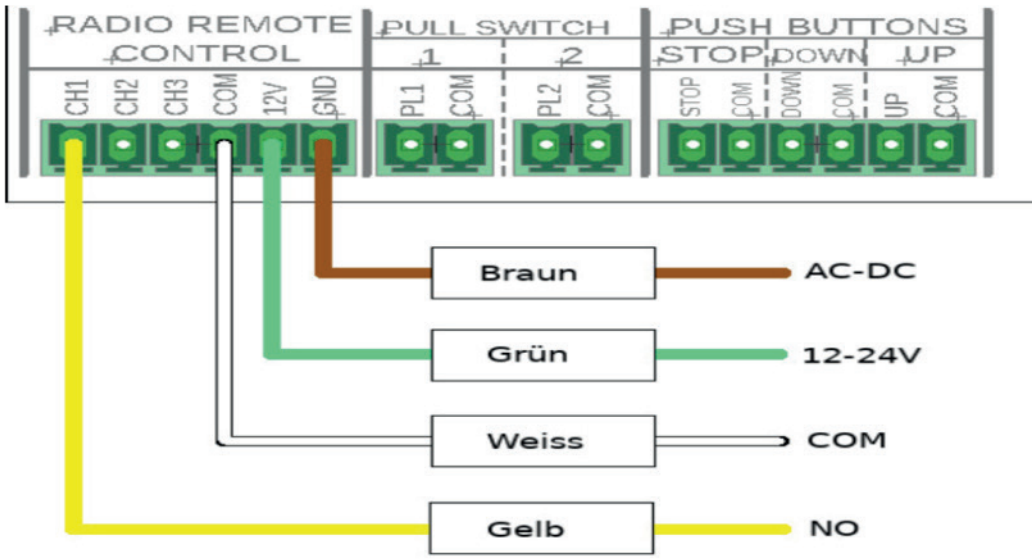
Photocell

As safety device you connect the photocell either to terminal SAFTEY 1 or SAFETY 2
According to the photocell`s manufacturers instruction you must connect power supply, ground, signal to terminal SAFETY 1 or SAFETY 2



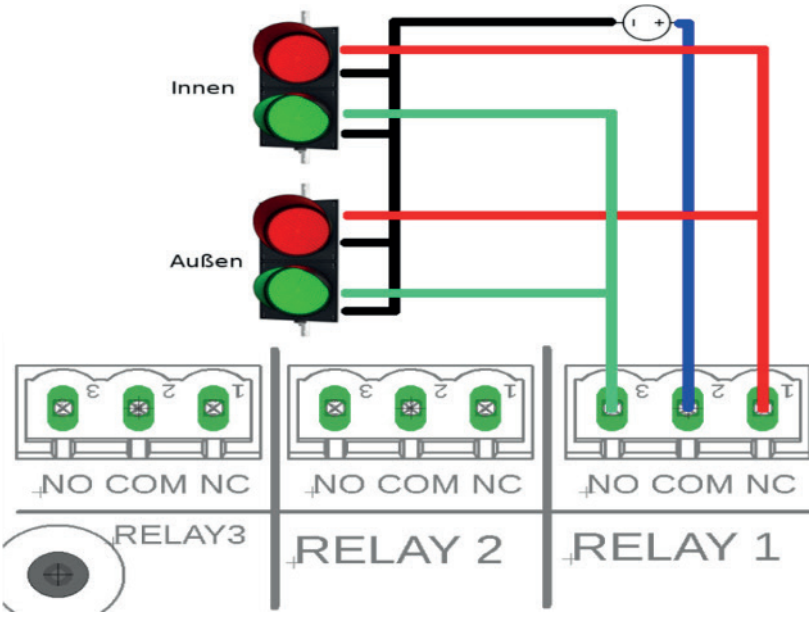
Radar/ remote control external receiver

For giving OPEN impulse you can use for example a radar device. This is going to be connected to terminal Radio Remote Control



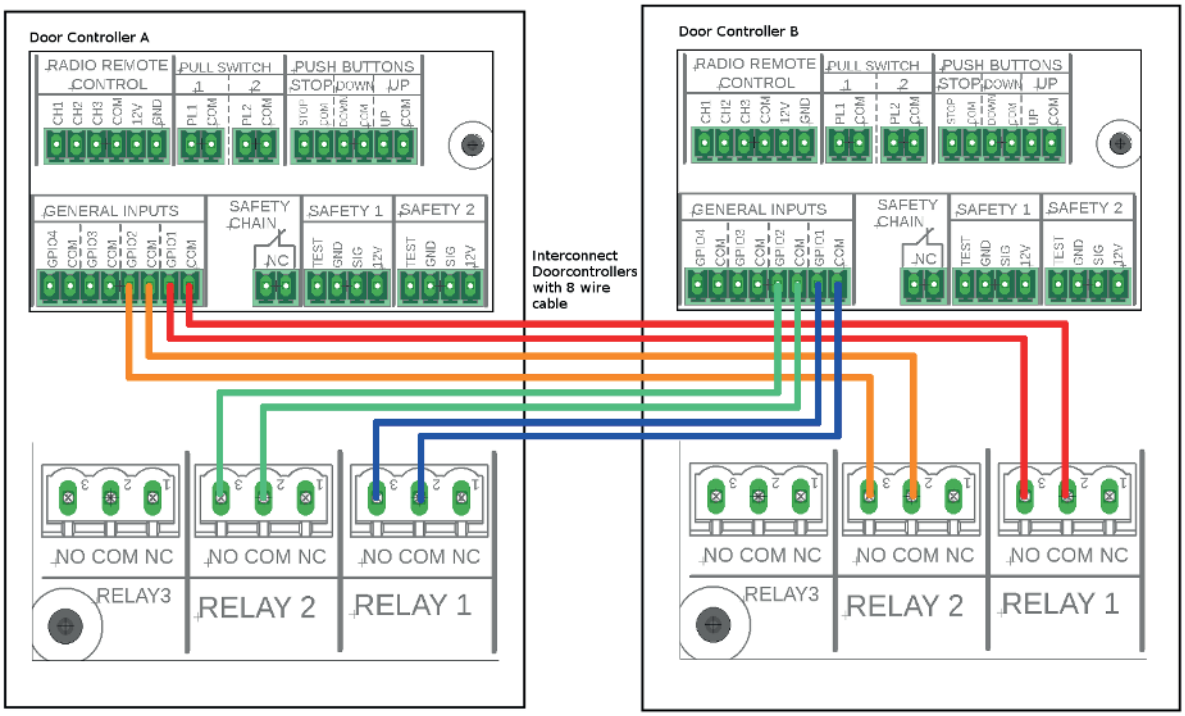
Traffic light

For red-green traffic lights you use the special programs in Inputs/Outputs menu

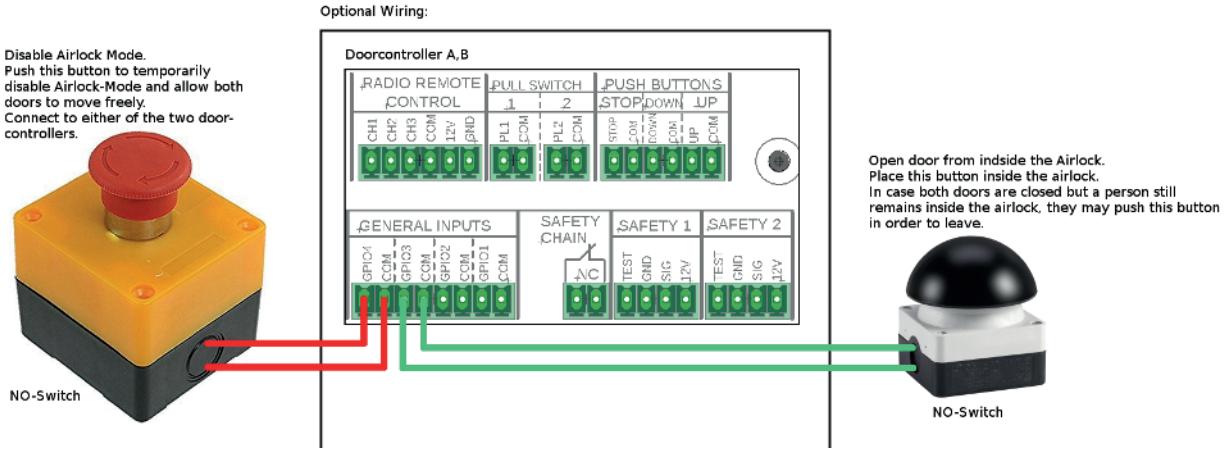


Airlock

Interconnect two Door controllers to realize Airlock function: two doors may remain Closing but can't be Open status in the meantime.
Which means only after one door is closed then you can open another door.
You may set the function in menu Inputs/Outputs --> Special Programs Airlock.



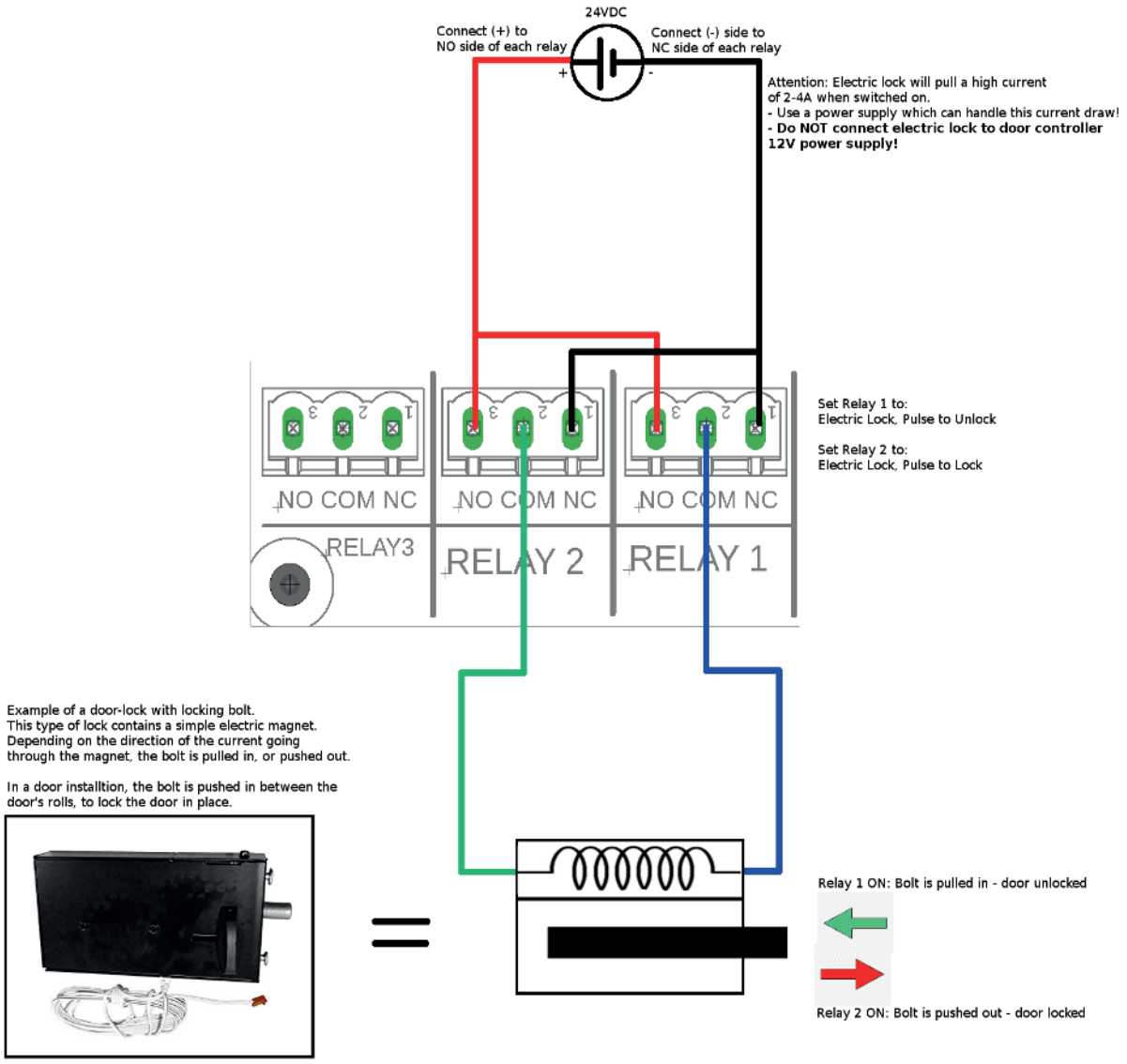
If in case of emergency to allow both doors open, please connect one push button to GPIO4 & COM to disable Airlock-Mode.
If both doors are closed but a person still remains inside the airlock, you can push no-switch which connects to GPIO3 & COM in order to leave.



Electric Door-Lock

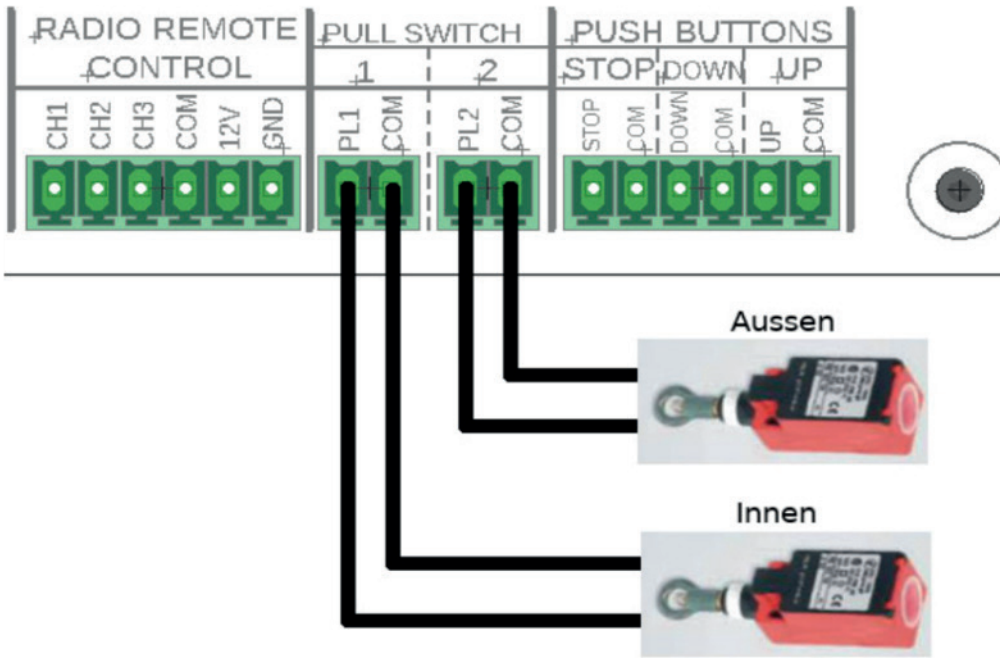
If there is Electric Door-Lock on your door, output port can be used to control lock opening/closing with automation.

Please make function setting in menu Inputs/Outputs --> Relay Outputs --> Relay 1 or Relay 2 --> Electric Door-Lock



Push buttons / Pull switches

Push buttons for impulse function (open-stop-close are connected at terminal Pull switch



14. Operator Programming

14.1 Main Menu

Keep pressed (+) OR (+) for 3 sec. to enter menu.

Use and buttons to scroll through the menu.

Use the button to enter the menu and to confirm your settings.

Control Box

14.2 Set Password

By activating the password-function you can protect the control unit to be modified by unauthorized persons.

Unauthorized modifications of the control unit settings can lead to personal injuries and/or damage of property! We recommend generally to use a password!

Main Menu	
1	Set Password
2	Load Settings
3	Door-Positions
4	Safety Devices
5	Operation Mode
6	Inputs / Outputs
7	Automatic Close
8	Service
9	Expert Settings
10	Motor Settings
<—	Exit Menu

▶ ◉

Set Password	
1	Set Password
2	Disable Password
<—	Back

▶ ◉

Set Password
2 ⬆
1----
<-- ⇩

▶ ◉

Wijziging toepassen?	
	CONFIRM
<—	CANCEL

Press ⬆ and ⇩ to select the password figure you need.

➡ **Do not forget to note the password!**

14.3 Load Settings

The control unit is already configured with the most common set-up of different types of industrial doors. This saves you valuable installation time.

In the "Quick Setup" menu you can load the set up which is closest to your installed door.

If needed you can adjust these settings in the Menu 9 "Expert Settings" and Menu 10 "Motor Settings".

Main Menu	
1	Set Password
2	Load Settings
3	Door-Positions
4	Safety Devices
5	Operation Mode
6	Inputs / Outputs
7	Automatic Close
8	Service
9	Expert Settings
10	Motor Settings
<—	Exit Menu

Load Settings	
1	Load Preset
2	Factory Reset
<—	Back

Choose the type of door that is closest to your installed door!

Example sectional door:

Load Settings	
1	Load Preset
2	Factory Reset
<—	Back

Door Type	
1	Sectional door
2	High Speed sectional
3	High Speed foil
4	Rolling Shutter
<—	Back

Drum Form ϕ	
1	ϕ< 140 mm
2	ϕ140-180mm
3	ϕ> 180mm
4	< 210 mm high lift
5	> 210 mm high lift
6	< 250 mm vertical lift
7	> 250 mm vertical lift
<—	Back

Door balanced?	
1	Balanced
2	Unbalanced
<—	Back

Motor	
1	ETD 1.5KW
2	ETD 1.5KW
3	ETD 0.55KW
<—	Back

Motor	
1	ETD 1.5KW
2	ETD 1.5KW
3	ETD 0.55KW
<—	Back

Closing Speed	
1	Slow
2	Normal
3	Fast
<—	Back

Apply Change?	
	CONFIRM
<—	CANCEL

If you have installed a foil door or a spiral door then follow the advise in the menu as shown an the example above.

Choose those parameters, which fit best to your installed door!

Caution!
Choosing a wrong door can seriously lead to personal injuries or damages of property due to the different behavior of the door in regards of speed and obstacle detection. If you are not sure about the type of your door, please consult a professional person!

14.4 Door Positions

In this menu you define the following parameters:

- Rotation direction of the motor (depending on your installation, it has to be changed)
- "Closed" and "Open" position of the door
- Position of partial opening
- Position of hiding photocell (e.g. at fast acting doors)
- Position of average speed

Main Menu	
1	Set Password
2	Load Settings
3	Door-Positions
4	Safety Devices
5	Operation Mode
6	Inputs / Outputs
7	Automatic Close
8	Service
9	Expert Settings
10	Motor Settings
<—	Exit Menu

Door-Positions	
1	Check Direction
2	Closed Endposition
3	Open Endposition
4	Med. Speed Pos.
5	Partial Open Pos.
6	Blank Light barrier
<—	Back

Check Direction

Press "UP" or "DOWN" button and keep pressed to move the door.

Door-Positions	
1	Check Direction
2	Closed Endposition
3	Open Endposition
4	Med. Speed Pos.
5	Partial Open Pos.
6	Blank Light barrier
<—	Back

Check Direction	
1	Direction OK
2	Direction Wrong
<—	Cancel

Closed End Position (Door closed):

Door Positions	
1	Check Direction
2	Closed End Position
3	Open End Position
4	Med. Speed Pos.
5	Partial Open Pos.
6	Blank Light barrier
<—	Back

Closed Endposition	
	Position
	123

Apply Change?	
	CONFIRM
<—	CANCEL

Open End position (Door open):

Redo in Menu 3 "Open End Position" the steps shown above for programming the "OPEN" end position.

Medium Speed Position:

Here you define at which position the door should run with the medium speed in direction "DOWN" and to which position it should partial open.

Door Positions	
1	Check Direction
2	Closed End Position
3	Open End Position
4	Med. Speed Pos.
5	Partial Open Pos.
6	Blank Light barrier
<—	Back

Med. Speed Pos.	
1	Enable
2	Disable
<—	Back

Move door with "UP" and "DOWN" buttons to the relevant position.

Med. Speed Pos.	
	Position
	123

Apply Change?	
	CONFIRM
<—	CANCEL

Partial Open Position:

For "Partial open", redo the steps above identically.

Caution!
If you change the "Medium speed", you MUST learn a new force reference in Menu 4 "Safety–Torque limiter".

This is to avoid any personal injuries and damages on properties that could occur if the torque limit is wrong!

Blank light barrier:

If you have a very fast acting door, it might be needed that you switch off the light barrier at a certain door position in order to avoid malfunction in obstacle detection by the photocell.

Caution!

Before blanking the light barrier, ensure that a second safety device (light curtain, safety edge etc.) is installed!

Door Positions	
1	Check Direction
2	Closed End Position
3	Open End Position
4	Med. Speed Pos.
5	Partial Open Pos.
6	Blank Light Barrier
<—	Back

Safety Device	
1	SAFETY 1
2	------
<—	Back

Blanking	
1	Enable
2	Disable
<—	Back

Blank Light barrier	
	Position
	123

Apply Change?	
	CONFIRM
<—	CANCEL

14.5 Safety Devices

SAFETY 1 and SAFETY 2:
The control unit has 2 supervised connectors for safety devices (e.g. photocells, light curtains, safety-edges, stop-buttons etc.)

We strongly recommend to use always safety devices in order to ensure a safe operation of the door !

Connect the safety device according to its manufacturers manual with the inputs "SAFETY 1" and/or "SAFETY 2" of the control unit and select the relevant safety device from the menu "Safety".

Example Safety Edge:

Main Menu	
1	Set Password
2	Load Settings
3	Door-Positions
4	Safety Devices
5	Operation Mode
6	Inputs / Outputs
7	Automatic Close
8	Service
9	Expert Settings
10	Motor Settings
<—	Exit Menu

Safety Devices	
1	SAFETY1
2	SAFETY2
3	Torque Limiter
<—	Back

Safety	
1	Off
2	Safety-Edge
3	Retractable Photocell
4	Photocell
5	Light curtain
6	Stop-Switch
<—	Back

Test Mode	
1	Untested
2	8K2 resister
3	8K2 Pneumatic
4	Pulsed (3Wire/OSE)
5	4-Wire:Active Test (+)
6	4-Wire:Active Test (-)
<—	CANCEL

Active Direction	
1	Down
<—	CANCEL

Reverse Mode	
1	Full Reverse
2	Partial Reverse
3	Stop
<—	CANCEL

Apply Change?	
	CONFIRM
<—	CANCEL

For SAFETY 2 or other safety devices, re-do the configuration similar as shown in above example.

Please pay attention:

1. Must use NC mode safety devices.
2. If only connect 1 single channel photocell, CDO won't work. Must connect 1 single channel photocell and another 1 safety edge or 1 light curtain.
3. "Stop-Switch" can be used to set door-in-door function

Caution!

Check the function of the safety devices before you set the door in operation!

Torque Limiter:

The control unit HYPER CONTROL FC is supervising the torque that is needed and also has a force learning and obstacle detection system.

With a torque learning door travel the relevant torque is learned and will be supervised during future operations. According to your settings the door reacts very or less sensitive to changes of the torque.

Caution!

1. The torque limit function does NOT replace any safety devices.
2. Do confirm safety devices work well before torque limit setting.

Main Menu	
1	Set Password
2	Load Settings
3	Door-Positions
4	Safety Devices
5	Operation Mode
6	Inputs / Outputs
7	Automatic Close
8	Service
9	Expert Settings
10	Motor Settings
<—	Exit Menu

▶ ◉

Safety Device	
1	SAFETY1
2	SAFETY2
3	Torque Limiter
<—	Back

▶ ◉

Torque Limiter	
1	Closing Direction
2	Opening Direction
<—	Back

▶ ◉

Torque Limiter	
1	Set Torque Limit
2	Record Reference
<—	Back

▶ ◉

Maximum Torque	
1	Off
2	Very High
3	High
4	Normal
5	Sensitive
6	Very sensitive
<—	Back

Apply Changes?	
1	CONFIRM
2	CANCEL

After the selection of the sensitivity you have to do a learning door travel in order to learn the relevant torque.

Torque Limiter	
1	Set torque limit
2	Record reference
<—	Back

Record reference	
	Please release all [STOP] keys to continue

Drive door into "CLOSED" position.

For the settings in "Door open direction", re-do the above steps in the Menu 2 "Open Direction".

14.6 Operation Mode

Here you can choose between 3 different operation modes:
Manual UP and DOWN (Hold to run mode)
Automatic UP and DOWN
Semi Automatic (automatic UP, hold to run DOWN)

If choose Automatic UP/DOWN mode, do confirm that you have installed safety device(at least 1 safety edge, or 1 light curtain, or 1 photocell + 1 safety edge / light curtain).

Main Menu	
1	Set Password
2	Load Settings
3	Door-Positions
4	Safety Devices
5	Operation Mode
6	Inputs / Outputs
7	Automatic Close
8	Service
9	Expert Settings
10	Motor Settings
<—	Exit Menu

Operation Mode	
1	Manual UP/DOWN
2	Automatic UP/DOWN
3	Semi-Automatic
<—	Back

Apply Changes?	
	CONFIRM
<—	CANCEL

14.7 Inputs / Outputs

The control unit has 3 protentional free relays contacts/ 4 GENERAL INPUTS/ 1 RADIO REMOTE CONTROL, which can be used for different applications during door movement or when the door reached one of the endpositions.
You can choose in the menu how the relays should react.
Furthermore the relays contacts can be used for the realization of red-green traffic light connections, warning light, eclectic Door-lock and Airlock.

Outputs

Example:
Warning light just blinking while door closing (connect to NO & COM on RELAY1)

Main Menu	
1	Set Password
2	Load Settings
3	Door-Positions
4	Safety Devices
5	Operation Mode
6	Inputs / Outputs
7	Automatic Close
8	Service
9	Expert Settings
10	Motor Settings
<—	Exit Menu

Inputs / Outputs	
1	Relay Outputs
2	Inputs
3	Radio channels
4	Special Programs
<—	Back

Relay outputs	
1	Relay 1
2	Relay 2
3	Relay 3
<—	Back

Relay function	
1	Off
2	Door- Movement
3	Endposition
4	Electrical Door-Lock
5	Radio Remote
6	Fault Indication
<—	Back

Direction	
1	Opening
2	Closing
3	Both directions

During Movements	
1	Blinking
2	Relay On

Pre-Run Delay	
	Closing:
	----- Seconds

Apply Changes?	
	CONFIRM
<—	CANCEL

For the programming of relays 2+3 you redo the steps above

Inputs

Example:
Control door opening with input signal (connect to GPIO1 & COM on GENERAL INPUTS)

Inputs / Outputs	
1	Relay Outputs
2	Inputs
3	Radio channels
4	Special Programs
<—	Back

Inputs	
1	Input GPIO1
2	Input GPIO 2
3	Input GPIO 3
4	Input GPIO 4
<—	Back

GPIN Function	
1	Off
2	Impulse
3	Open
4	Open to part.position
5	Close
6	Stop
<—	Back

Apply Changes?	
	CONFIRM
<—	CANCEL

Radio Channels

You can connect a **remote control external receiver or a Radar** to terminal RADIO REMOTE CONTROL on control PCBA to open the door, and follow the steps "Inputs".

Special programs "two-way-traffic"

Note!
Activating the function "two-way-traffic" overwrites the relays functions and the "automatic closing function"

Inputs / Outputs	
1	Relay Outputs
2	Inputs
3	Radio channels
4	Special Programs
<—	Back

Special Programs	
1	Disable
2	Two-Way-Traffic
3	Airlock
<—	Back

Overwrite	
1	Proceed
2	Cancel

On closed door	
1	Lights stay on
2	Lights off
<—	Back

Pre-Run Delay	
	Open:
	-----Seconds

Pre-Run Delay	
	Closing:
	-----Seconds

Closing Delay	
	Automatic close after
	-----Seconds

Close on Pass	
1	Enable
2	Disable

Closing Delay	
	Close door ----- seconds after pass-through
	seconden na passeren

Apply Changes?	
	CONFIRM
<—	CANCEL

For the "two-way-traffic" function it is mandatory to install a photocell.
The photocell can also be used as impulse for closing the door after passing through it.

14.8 Automatic Close

It is mandatory to install a photocell before activating "automatic closing" !

Example "Closing on pass"

Main Menu	
1	Set Password
2	Load Settings
3	Door-Positions
4	Safety Devices
5	Operation Mode
6	Inputs / Outputs
7	Automatic Close
8	Service
9	Expert Settings
10	Motor Settings
<—	Exit Menu

Automatic Closing	
1	Timed Close
2	Close on pass
<—	Back

Close on Pass	
1	Enable
2	Disable
<—	Back

Apply Changes?		Closing Delay
	CONFIRM	Close door --- Seconds after pass-through
<—	CANCEL	

The function "timed close" is programmed similar.

14.9 Service

In the service menu you can show up all information that is related to the door and operator. You can define service intervals, store service contacts etc.

Main Menu				
1	Set Password		Service	
2	Load Settings		1	System Information
3	Door-Positions		2	Door Information
4	Safety Devices		3	Service Done
5	Operation Mode	▶◉	4	Service Contact
6	Inputs / Outputs		5	Service Interval
7	Automatic Close		6	View Settings
8	Service		<—	Back
9	Expert Settings			
10	Motor Settings			
<—	Exit Menu			

1. "System Information":
shows model of control unit and software release

2. "Door information":
Shows total number of door cycles and cycles from and until next service

3. "Service done":
Here you confirm that you made service

4. "Service contact":
Here you can store a service contact and phone number

5. "Service interval":
Here you define the no. of cycles for next service

Please respect your local regulations in terms of safety of automatic doors !

14.10 Expert settings

Caution:
Expert settings may only be executed by trained and authorized professional persons !Changes and wrong configurations can lead to personal injuries and/or damage of property !

Main Menu	
1	Set Password
2	Load Settings
3	Door-Positions
4	Safety Devices
5	Operation Mode
6	Inputs / Outputs
7	Automatic Close
8	Service
9	Expert Settings
10	Motor Settings
<—	Exit Menu

Expert Settings	
1	Safety Limit
2	Pre-End Position
3	Brake Offset
4	3 x PB Stop Logic
5	Door Type
<—	Back

1. Safety Limit:
Here you define a emergency stop position which is prior the endposition. This is to avoid that very dynamic doors may move over the endposition.

2. Pre-end-position:
Here you define the position where the safety edge logic is switched from reversing to stop. This is to avoid that fast acting doors reverse when they hit the safety edge at the bottom.

3. Brake offset:
Here you define the position where the electrical brake should be activated.

4. 3xpush button logic:
Here you define if the connectors at the "push buttons" terminal should act as NC or NO contact

5. Door Type
Here you can choose your door type, such as sectional or highspeed. If you have selected door type at Load Settings stage, please ignore it.

14.11 Motor settings

Caution:
Motor settings may only be modified by authorized and trained persons! Changes and wrong configurations can lead to personal injuries and/or damage of property !

After changing the motor settings it is mandatory that you re-adjust the sensitivity of the operator in menu" safety-torque limiter" and also you must do a new record of the driving forces.

Menu	
1	Set Password
2	Load Settings
3	Door-Positions
4	Safety Devices
5	Operation Mode
6	Inputs / Outputs
7	Automatic Close
8	Service
9	Expert Settings
10	Motor Settings
<—	Exit Menu

First choose the direction in which you want to do the modification

In the menu ".load settings-Quick Setup" have been already loaded pre-defined parameters that you normally should not change !

"UP direction"
A. By changing the Hz-frequency you can change the fastest, medium and slowest speed of the door.
B. By changing the ms-values you can change the acceleration and slowing down of the door.

"DOWN direction"
The same configuration as UP direction

"Motor": Here you should set-up the correct electrical motor

Up Direction:

Motor Settings	
1	Up Direction
2	Down Direction
3	Motor
<—	Back

Up Direction 1/6
Fast Speed
.....HZ

Up Direction 2/6
Slow Speed
.....HZ

Up Direction 3/6
Ramp up to fast speed in .....ms

Up Direction 4/6
Slow Down to slow speed in ..... ms

Up Direction 5/6
Stop within .....ms

Up Direction 6/6
Slow down....increments before endposition

Apply Changes?	
	CONFIRM
<—	CANCEL

Suggested setting value:
Highspeed door ≥1000
Sectional door ≥500
Adjust the value according to actual running state.

Down Direction:

Motor Settings	
1	Up Direction
2	Down Direction
3	Motor
<—	Back

Down Dir. 1/8
Fast Speed
.....HZ

Down Dir. 2/8
Medium Speed
.....HZ

S Down Dir. 3/8
Slow Speed .....HZ

Down Dir. 4/8
Ramp up to fast speed in.....ms

Down Dir. 5/8
Slow down to slow speed in.....ms

Down Dir. 6/8
Stop within.....ms

Down Dir. 7/8
Slow down ..Increments above endposition

Down Dir. 8/8	
1	Door Balanced
2	Door Unbalanced

Apply Changes?	
	CONFIRM
<—	CANCEL

Suggested setting value:
Highspeed door ≥1000
Sectional door ≥500
Adjust the value according to actual running state.

Motortype:

Motor Settings	
1	Up Direction
2	Down Direction
3	Motor
<—	Back

Motor type	
1	ETD 1.5KW
2	ETD 1.1KW
3	ETD 0.55KW
<—	Back

Apply Changes?	
	CONFIRM
<—	CANCEL

You can also check Motor power on CDO nameplate.

15. Foutcodetabel

Error Code	Issue	Description
01	End position	The door was moving over the CLOSED end position. Go to menu "Motor settings" and reduce the speed of the door in DOWN direction. In addition to that you can go to menu "expert settings – brake offset" and increase the value of the brake offset. If needed, learn the end positions anew.
02	End position	The door was moving over the OPEN end position. Go to menu "motor settings" and reduce the speed of the door in UP direction. In addition to that you can go to menu "expert settings – brake offset" and increase the value of the brake offset. If needed, learn the end positions anew.
03	Wrong rotation direction	The direction of the motor's rotation is wrong. Due to this UP and DOWN are changed. Go to menu "door positions => motor direction" and change the direction of the motor Motors
04	Door blocked	During movement the door was blocked unexpected. Check the door for manual obstacles (locking devices etc.) This failure also occurs if there is no signal from the encoder. In this case check the wiring of the encoder
05	Door movement	The door has moved but it was supposed to be stopped. If the movement was due to emergency release then you can ignore the failure. If installed, then check the electrical brake of the motor.
08	Configuration	The file of the door configuration is defective. The operator did automatically a factory reset. Program the operator anew.
10	Torque UP	The torque limiter in UP direction is not activated. Go to menu "safety – torque limiter – record reference" and make a new reference learning.
11	Torque DOWN	The torque limiter in DOWN direction is not activated. Go to menu "safety – torque limiter – record reference" and make a new reference learning.
14	End position	At least one end position is missing. Go to menu "door position" and learn the door positions anew.
20	Relays (only 400V Version)	The relays for the motor is broken. Control unit needs to be replaced.
23	Converter overheat	The thermal fuse of the converter is triggered. Wait until the operator cooled down and check if there are any devices nearby the operator that could cause the heating up. Perhaps the duty cycle of the door is too high, please check.

Error Code	Issue	Description
25	Converter hardware	The connection between motor and converter is missing. Please check wiring between motor and converter.
30	Limit switch (only 400 V control unit)	Both limit switches are triggered simultaneously. Check limit switches and their wiring.
33	Pass-door	The stop-switch of the pass door is triggered. Check door and switch and their wiring
35	Maximum reverse	In auto closing mode the door reached its maximum attempts to close the door. It reversed due to a triggered safety device. Check the safety device and check for obstacles in the driveway.
60-64	Safety 1 defective	Safety device connected to SAFETY 1 is not working. Check the safety device.
70-74	Safety 2 defective	Safety device connected to SAFETY 2 is not working. Check the safety device.
93	Encoder	Signals from the encoder are missing. Check the wiring of the encoder.
94	Converter	Signals from the converter are missing. Check the wiring of the converter.
96	Safety chain	The terminal "Safety Chain" is open. Check the connected devices on function
97	Safety chain motor	The thermal fuse of the motor is triggered or the emergency release is activated. Let the motor cool down and check emergency release mechanism.

EC Declaration of Incorporation

for the assembly of a partly machine
in accordance with machinery directive 2006/42/EG, annex II part 1 B

the manufacturer herewith declares that the door operators
Frequenz HL30-HSD,HL65-HSD,HL100-HSD,HL100-ISD and HL140-ISD
with the control unit Frequenz control FC

is developed and produced in accordance with
– machinery directive 2006/42/EG
– low voltage directive 2014/35/EU
– emc directive 2014/30/EU
– RoHS directive 2011/65/EU

Following normatives have been applied:
– EN 60335-1, as far as it concerns (safety of electrical devices/ operators for doors)
– EN 61000-6-3 (emc)
– EN 61000-6-2 (emc)
– EN 12453:2000 part 5.2 (safety of doors)
– EN 60335-1:2012 (safety of electrical devices)
– EN 60335-2-103:2003 (safety of electrical devices)
– EN ISO 13849-1:2008 (safety of control units for machnery)

Following requirements of machinery directive 2006/42/EG are fullfilled:
1.1.2, 1.1.3, 1.1.5, 1.2.1, 1.2.2, 1.2.3, 1.2.4, 1.2.6, 1.3.2, 1.3.4, 1.3.7, 1.5.1, 1.5.4,
1.5.6, 1.5.14, 1.6.1, 1.6.2, 1.6.3, 1.7.1, 1.7.3, 1.7.4
On request of authorities the technical approvals can be transferred electronically.

The partly machine is only for use on door applications in order to built a complete machine in accordance with machinery directive 2006/42/EG. The door must set in operation only if the above normatives are fulfilled.

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