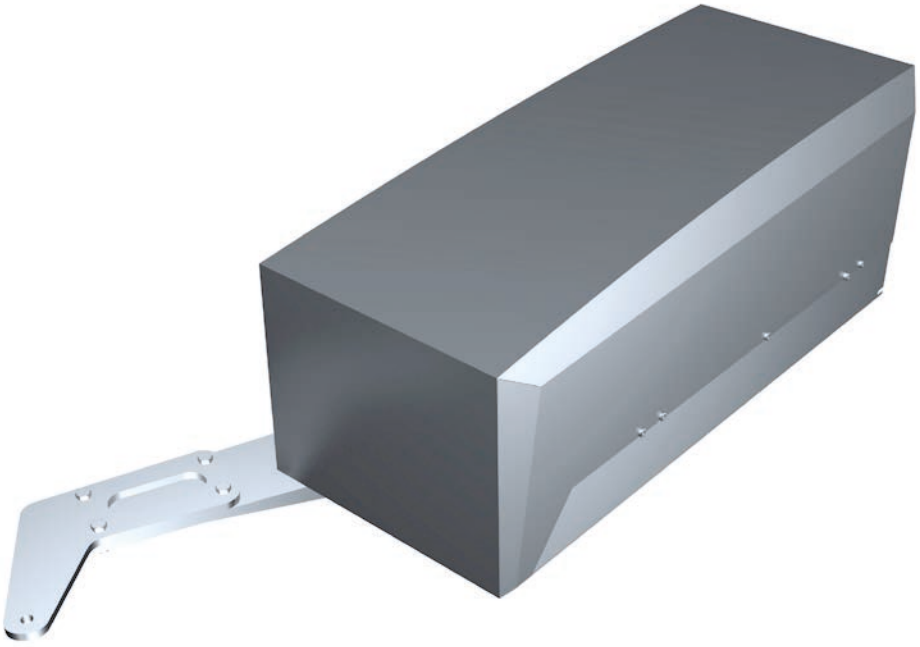
Mounting and operating manual

Swing gate operator REX Force



tousek®
GATE AUTOMATION

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Important warning and safety notes for installation and operation

- These installation- and operating instructions form an integral part of the product “gate operator”. They have been specifically written for professional installers trained and skilled in the trade and should be carefully read in their full length before carrying out the installation. They describe the proper installation and operation of the sliding gate operator only, not of the overall device “automatic gate”. After the installation this manual has to be handed over to the user.
- **Installation, connection, adjustments, putting into operation, and servicing may only be carried out by trained professionals in full accordance with these installation- and operating instructions.**
- The EU Machine Directive, laws and rules concerning the prevention of accidents, and laws and standards which are in force in the EU and in the individual countries have to be strictly followed.
- The TOUSEK Ges.m.b.H. cannot be held liable for any claims resulting from disregards of the laws and standards in force during the installation and operation.
- The product may only be used in accordance with its original purpose, for which it has been exclusively designed, and which is described in these installation and operating instructions. The TOUSEK Ges.m.b.H. rejects any liability if the product is used in any way not fully conforming to its original purpose as stated herein.
- **The product is not suitable for installation in explosion-hazardous areas. The existance of inflammable gas and steam is of great danger !**
- The packaging materials (cardboard, plastic, EPS foam parts and filling material etc.) have to be properly disposed of in accordance with the applying recycling- and environmental procection laws. They may be hazardous to children and therefore have to be stored out of children´s reach.
- Before beginning with the installation the installer has to make sure that all mechanical components of the gate facility, like carrier profile/rail, gate frame and panels, guiding elements etc. are sufficiently supportive and resistant for the purpose of gate automation. Check also whether the product has transport damages.
- All electrical installations have to be made in full conformity with the applying rules and laws (e.g. using a fault current circuit breaker, proper grounding etc.).
- An all-pole disconnecting main switch with a contact opening-gap of minimum 3 mm has to be foreseen.
- When installing the safety device (photocells, safety edges, emergency-stops etc.) please comply with the valid direcitves/standards, the criteria of practical rules of conduct, the installation environment, the operating logic of the system and the effected force of the motorised gate. .
- The safety devices must secure possible bruise, shear and general danger areas of the motorised gate.
- After installation the proper function of the gate facility and the safety devices has to be checked!
- Place warning signs and notes of the valid regulations to indicate danger areas .
- With each installation the identification data of the motorised gate has to be placed in a visible place.
- The label for the Handauslöser has to be placed next to its operating element.
- The electric motor heats up during operation. Therefore the device should only be touched after it has cooled off.
- Please make sure that no other persons are on site of the motorised gate area, especially in when operating the facility in hold to run mode (switch with OFF-pre adjustment) . The pre-adjusted OFF-button/switch has to be placed in sight of the actuated gate but away from moving parts. This switch/button (except key-switch) has to be mounted in min. 1,5m height and non-accessible to the public.
- **Children have to be instructed, that the gate facility as well as the belonging parts may not be used improperly, e.g. for playing. Furthermore handheld transmitters have to be kept in safe places and other impulse emitters as buttons and switches have to be installed out of children‘s reach.**
- Only original spare- and replacement parts may be used for repair of the product.
- The TOUSEK Ges.m.b.H. rejects any liability for claims resulting from usage of the product in combination with components or devices which do not fully conform to the applying safety laws and rules.
- The installer has to inform the user about all aspects of the automatic operation of the complete gate facility, as well as about emergency operation. The installer further has to supply to the user all instructions relating to the safe operation of the gate facility. The installation and operating instructions also have to be handed over to the user.
- The user has to be informed that he has to turn off the main power switch in case of malfunction of the product and that he can use the facility again after repair and adjustment works have been completed.
- **Please notice that the warranty will not be applicable if the label with the engine number has been removed or damaged.**

Maintenance

- **Disconnect the power supply during mounting, maintenance and repair works.**
- **Maintenance works may only be carried out by qualified personnel.**
- **Check the proper force adjustment once a month.**
- **Check the proper function of the emergency release mechanism periodically.**
- **Check if all mounting screws are securely fastened periodically.**
- **Remove dirt from the operator periodically.**
- **Maintenance and servicing of the complete gate facility has to be carried out according to the gate builder’s/ installer’s instructions.**

Product features

REX Force

- Suitable for heavy duty use (100% duty/cycle)
- Large, illuminated LC-Display (2x16 characters)
- Clear text menu programmable via four buttons
- Operation mode is selectable (Impulse, Automatic, Deadman)
- Free adjustable partial opening (also for 1 leaf)
- Traffic light function in combination with the traffic light controlSTA 11 (one way traffic or two way traffic regulation)
- Distance measurement via absolute encoders (no limit switches), no need of learning the way after unlocking or blackout.
- Adjustable soft stop (distance and speed
- Adjustable speed (separately for OPEN and CLOSE), controlled by a frequency converter
- Motor locking function with optional motor locking module
- Mechanical brake for safe gate stop
- Electronic monitoring of emergency release
- Direct connection of separate 8,2 kΩ safety contact edges (inside/outside)
- Input for gate back area surveillance
- Separate input for I-loop detectors
- Status display for safety inputs and push button inputs
- Self-monitoring of photocell
- Connection slot for radio receiver
- 12Vd.c. flashing light output
- Integrated event message contact
- Optional, external gate status display (e.g. for concierge)
- Optional courtyard lamp module (230V, 100W)

CE

Function

REX Force

The control unit can be adjusted in 3 logic modes:

- **Impulse mode:** **with open and close switch function**
- **Automatic mode:** **automatic closing**
- **Dead-man mode:** **gates moves as long as switch/button is pressed**

Depending on the door situation (1 or 2 leaves), the main control unit ST REX gets connected via BUS cables to one or two ST REX smart motor control units. The ST REX smart manages the brake, the emergency release, the motor and the frequency converter and has two inputs for the direct connection of 8.2 kΩ contact strips (separated for inside / outside). Furthermore, the ST REX has a traffic light function when used in combination with the traffic light control STA 11. The connection to the STA 11 is also established via a BUS line (*page 16, 41*).

Technical data

REX Force			
supply voltage	230V a.c. ±10%, 50Hz	weight REX Force	99kg
motor voltage	3 x 230V a.c.	max. wing width	12m
max. current consumption	2A (excl. accessories)	max. wing weight	1500kg
travel speed	1,3°/s –3°/s	internal limit stops up to	max. 6m wing width, max. 700kg per wing (external limit stops for higher values necessary!)
nominal torque	2000Nm		
max. torque	3500 Nm	ambient temperature	-20°C to +40°C
duty cycle in S1 mode	100%	emergengy release	■
output photocells	24Va.c.	Motor bolt output	24V d.c. (optional with module)
flashing light output	230Va.c. und 12Vd.c. (über Blinkprint)	magnetic clamp output	24Vd.c. (optional with module)
force adjustment	frequency converter	Article no.	11260500

Optional equipment	pluggable receiver • flashing light module • additional module for courtyard/control lamp • additional module for gate status • motor bolt module • traffic light control unit

Note: the max. leaf widths here indicated are for wind permeable and non-raising gates!

- **To esnsure a perfect operation an all-current-sensitive residual current circuit breaker type B must be used!**
- **DANGER: Please note that due to the big mass of the gate and its high speed, a huge kinetic energy gets generated. This must be necessarily taken into account when planning and constructing the gate. The external limit stops and the mechanical construction have to be dimensioned accordingly!**

General installation instructions

- The operator REX force is equipped with internal limit stops which are used to set the end positions OPEN and CLOSE. These can be used for gates up to a **max. wing width of 6m and a max. gate weight of 700kg.**
  For gates that exceed these values, external limit stops with sufficient dimensions must be provided!
- *) Attention: In order to avoid soiling and to ensure a permanently reliable operation, a minimum distance of **500mm** to the upper edge of the roadway should be maintained.

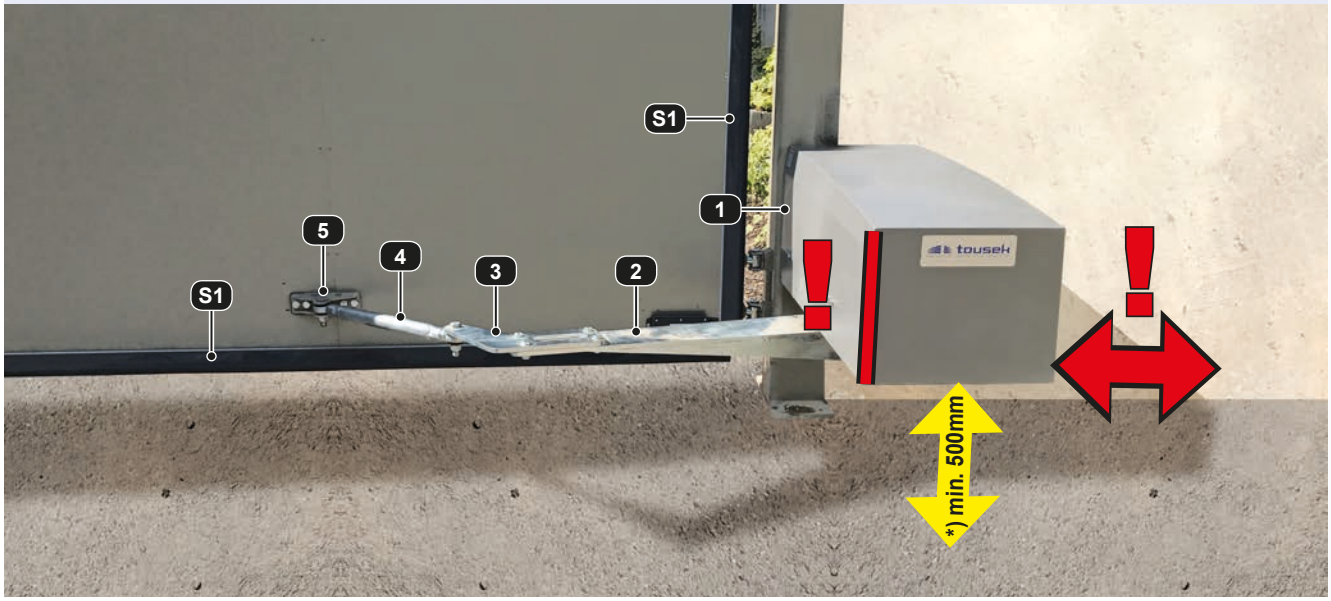
Important: Mounting position of the operator

- **The mounting position of the REX operator must be selected according to the given door situation and the planned opening angle of the door:**

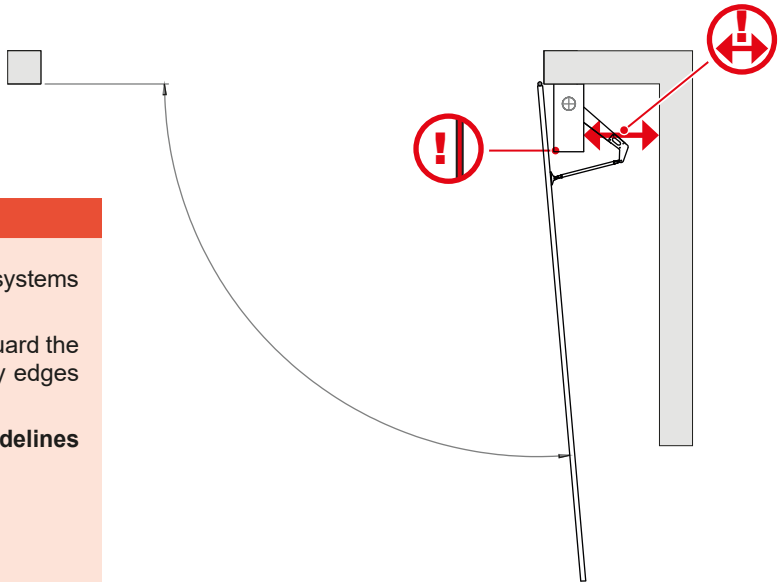
When planning or installing the operator make sure that there is a sufficient space for the gate and the motor arm (2) even in the open position of the gate.

It is essential to note the dependence of the mounting position of the operator on the planned opening angle of the door so that a collision between the door and the operator when opening is excluded. Futhermore sufficient space for the installation of safety edges must be available to secure safety-relevant points. The safety edge must not be triggered by an operator arm or the gate itself.

see also installation examples page 9–11



(1) Motor console
(2) Motor arm
(3) Elbow
(4) Gate arm
(5) Gate console
(S1) Safety edges

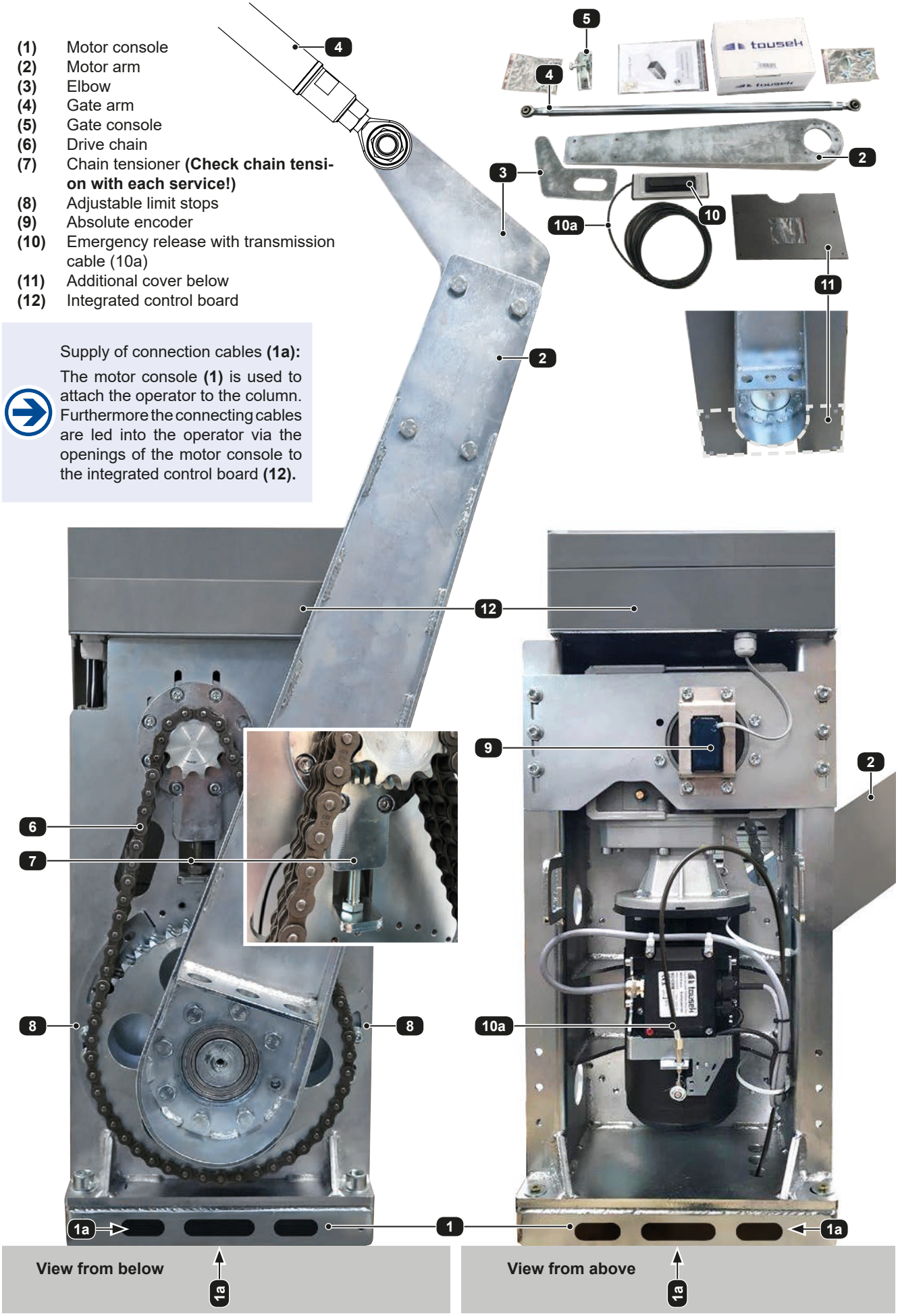


Danger !

- Please note that moving machine parts and gate systems form danger spots.
- Therefore set up protective measures to safeguard the danger points: Anti-trap protection using safety edges **(S1).**
- **Please observe the valid standards and guidelines when setting up automatic gate systems!**

(1) Motor console
(2) Motor arm
(3) Elbow
(4) Gate arm
(5) Gate console
(6) Drive chain
(7) Chain tensioner **(Check chain tension with each service!)**
(8) Adjustable limit stops
(9) Absolute encoder
(10) Emergency release with transmission cable (10a)
(11) Additional cover below
(12) Integrated control board

Supply of connection cables **(1a):**
The motor console **(1)** is used to attach the operator to the column. Furthermore the connecting cables are led into the operator via the openings of the motor console to the integrated control board **(12).**



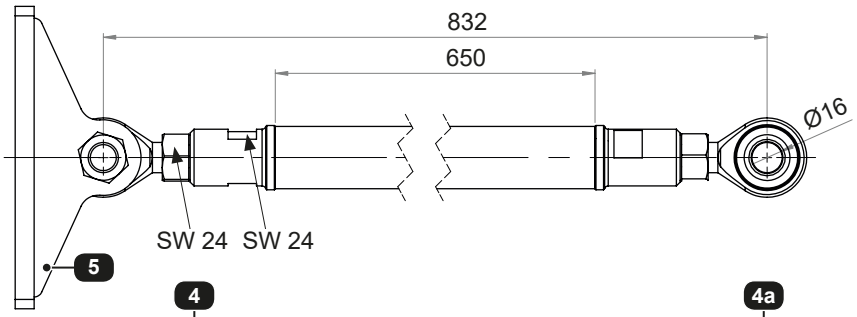
View from below

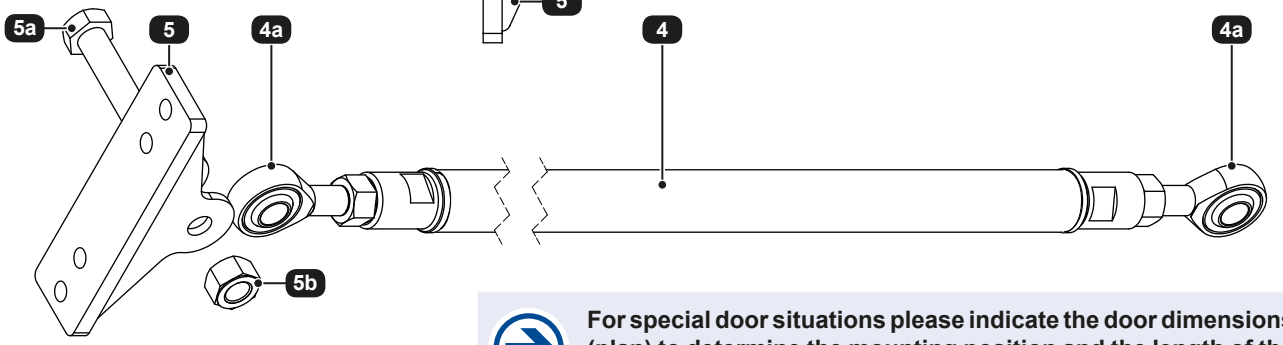
View from above

Gate arm REX Force (4) with screwable gate console (5)

- Measurements in mm

(4) Gate arm
(4a) 2x ball-link M16
(5) Gate console
(5a) Hexagon head bolt M16
(5b) Nut M16

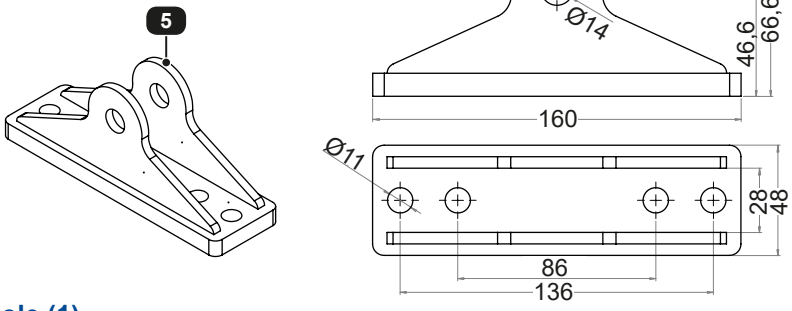




For special door situations please indicate the door dimensions (plan) to determine the mounting position and the length of the door arm.

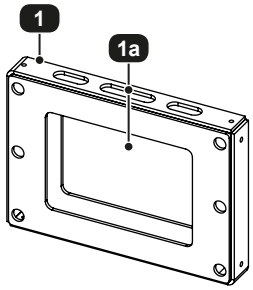
Gate console (5)

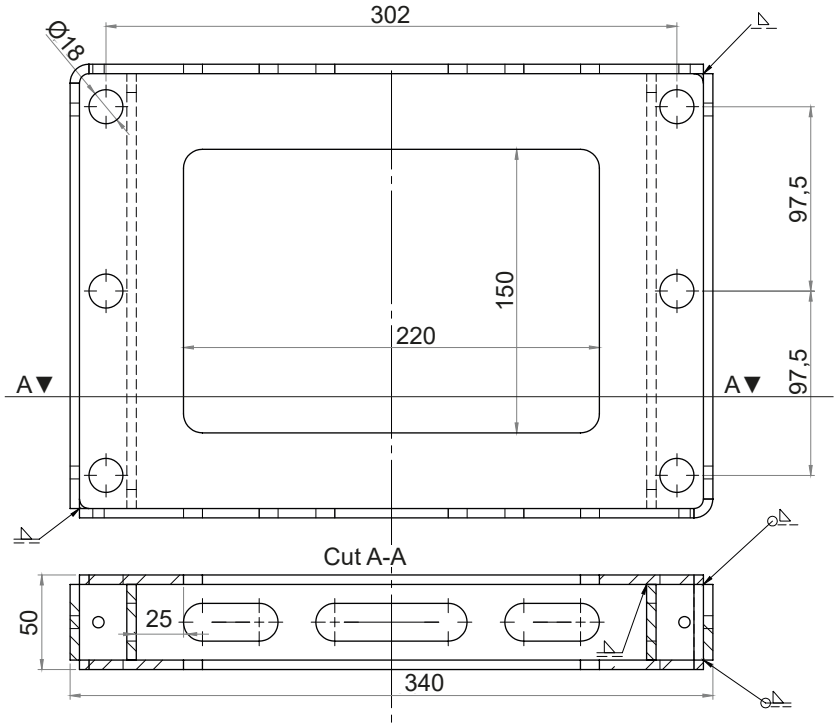
- Maße in mm



Motorkonsole (1)

- Measurements in mm





The connecting cables are led from the rear into the operator via the openings (1a) of the motor console.

Important

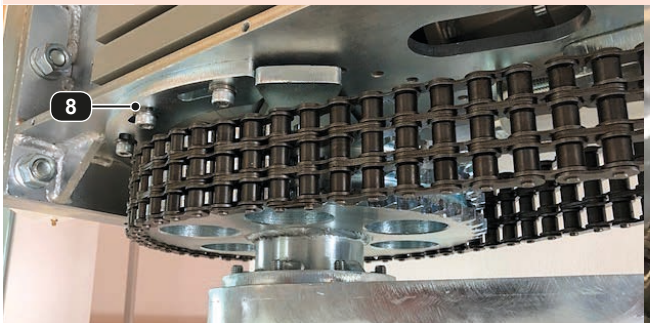
Note the following assembly criteria:

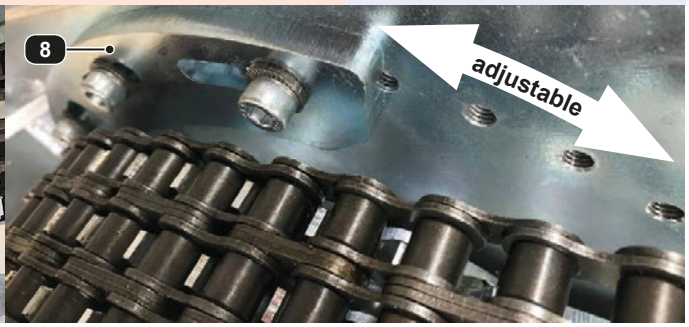
- Motor arm (2) and elbow (3) are assembled differently depending on the opening direction (left/right, viewed from the inside).
- **For a left-hand operator the elbow (3) musst be turned over.**
- The motor arm must be placed on the operator at the correct angle in accordance with the door situation and fixed with the Hexagon head bolts (2a) so that the planned installation point of the gate console (5) can be implemented with the door closed in conjunction with the door arm (4).
- Make sure there is enough room for movement so that neither the gate nor the motor arm is restriced or collided during opening. Also plan the necessary space for safety edges. These are used to protect dangerous areas and must be planned in such a way that they can not be triggered by the gate or the motor arm.
- Set jumpers J1/2 (1-wing/2-wings) and JF (left-/right-operator) according to your door situation *page 14, 15*

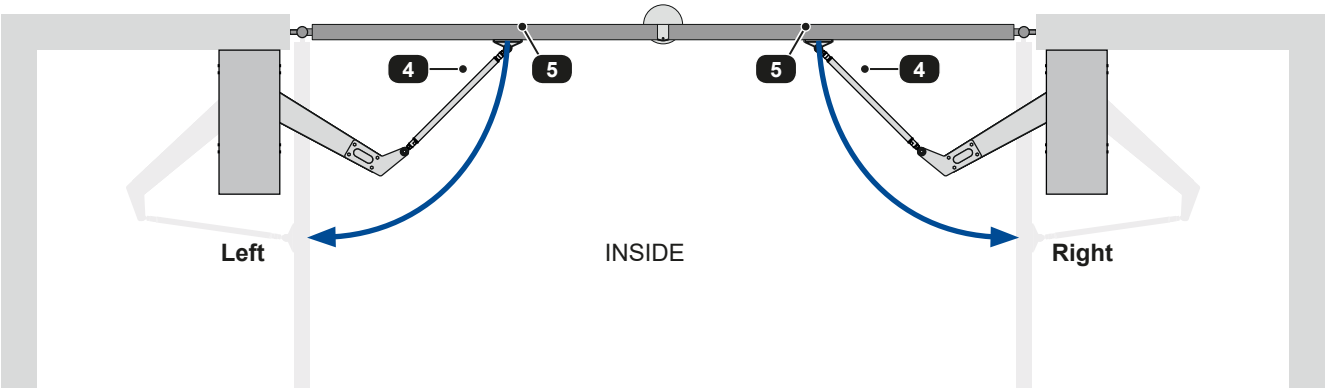
Condition as delivered:
right operator

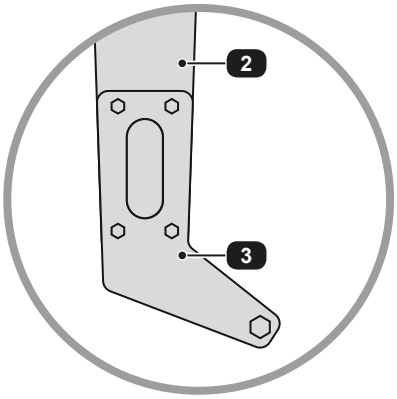
View from below

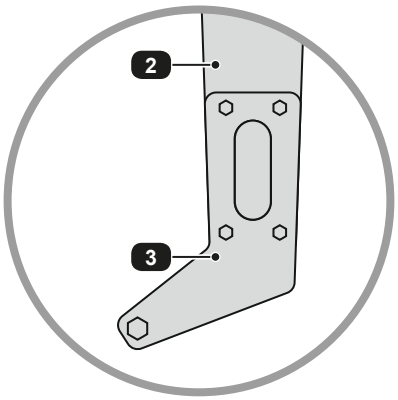
DANGER: The possible high gate weight or high speed can cause a very high kinetic energy. The mechanical door construction and external limit stops for the gate must be dimensioned accordingly!





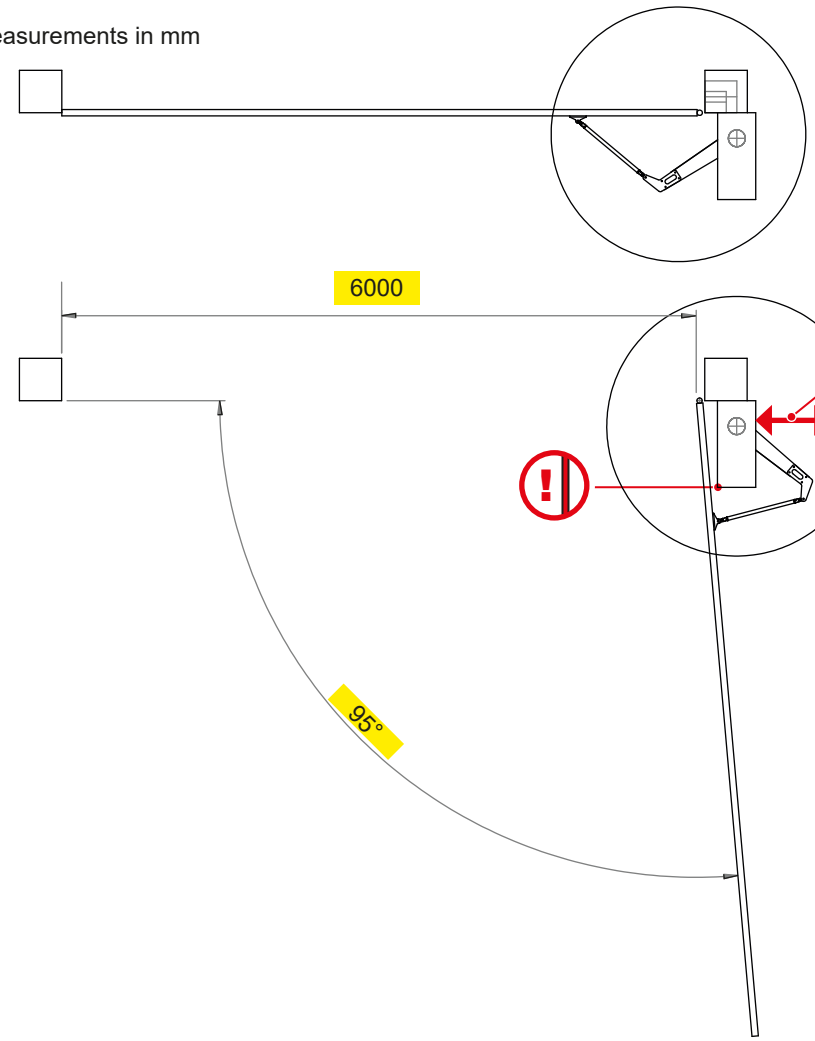






Mounting example 1: entrance width = 6m, opening angle 95°

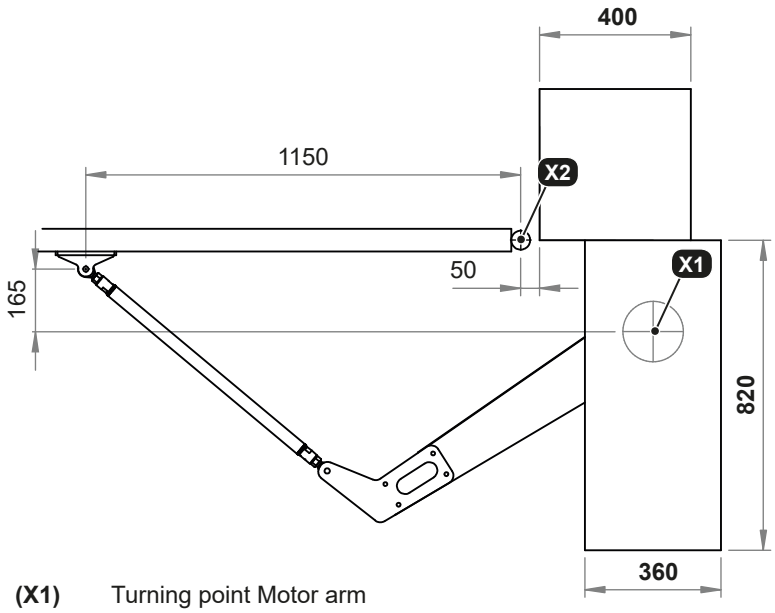
- Measurements in mm



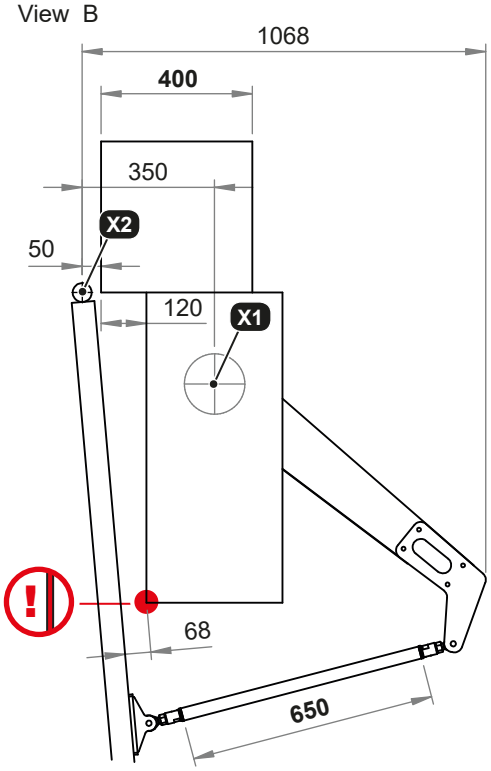
View A
Gate closed

View B
Gate opened to the inside 95°

View A



View B

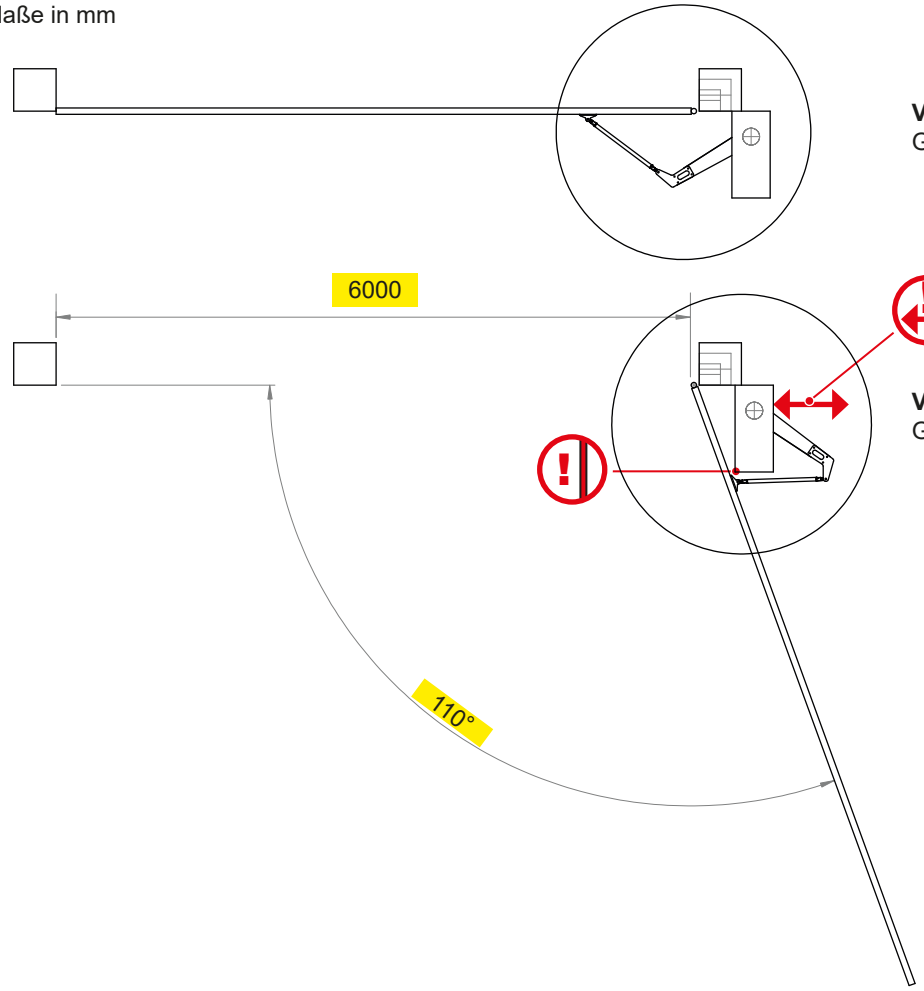


(X1) Turning point Motor arm
(X2) Turning point gate

Neither the gate nor the motor arm may be restriced in the movement. Also provide the necessary sppace for safety edges. These are used to safeguard danger spots and must be planned in such way that they can not be triggered by the gate or the motor arm.

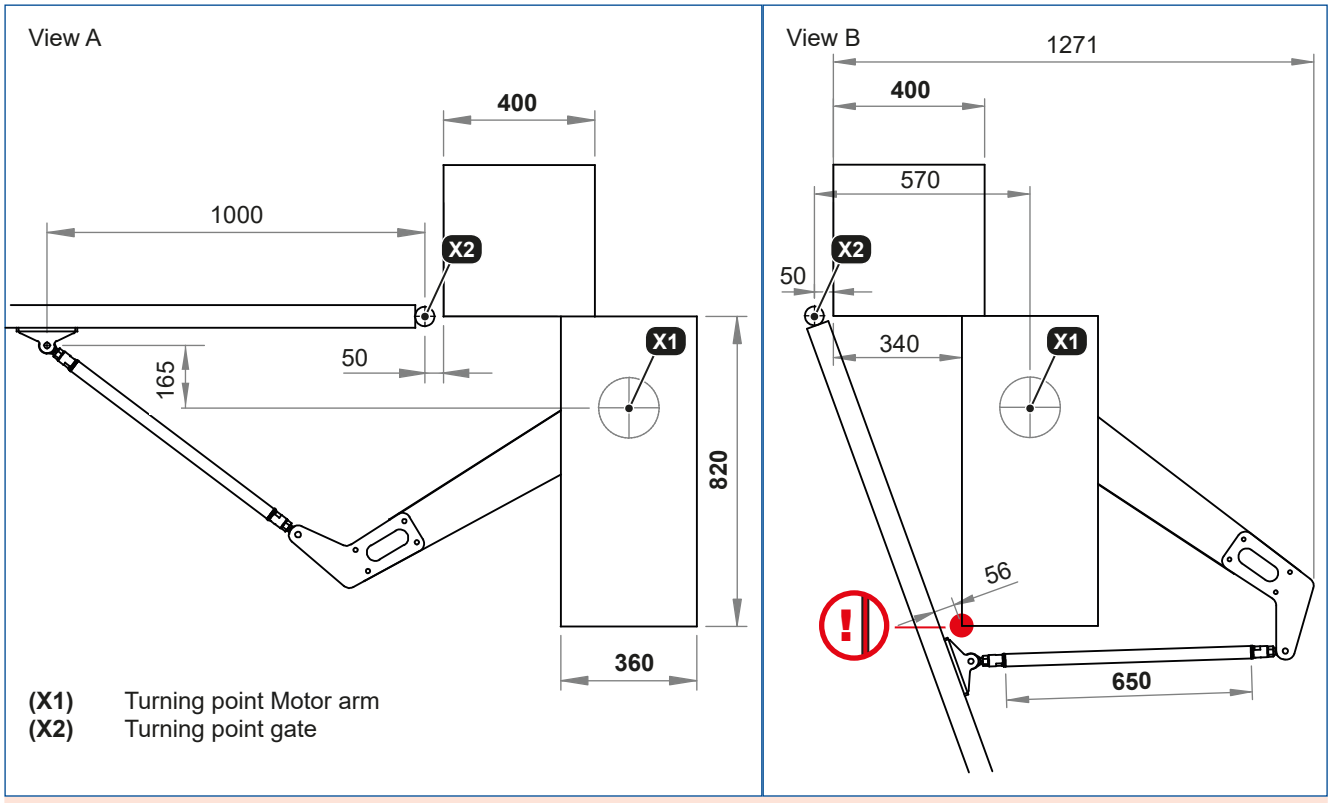
Mounting example 2: entrance width = 6m, opening angle 110°

- Maße in mm



View A
Gate closed

View B
Gate opened to the inside110°



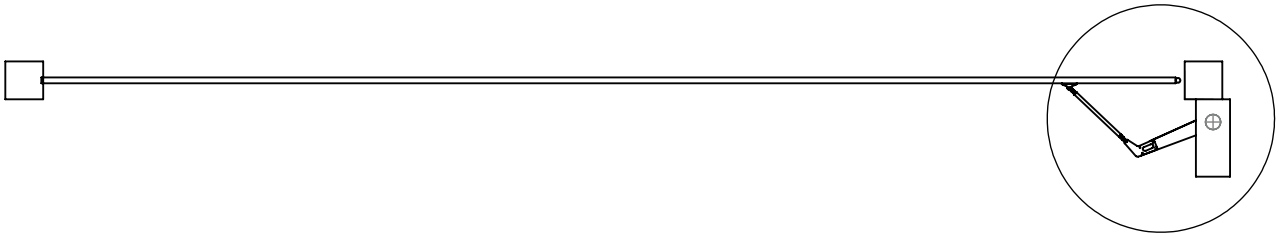
(X1) Turning point Motor arm
(X2) Turning point gate

Neither the gate nor the motor arm may be restriced in the movement. Also provide the necessary sppace for safety edges. These are used to safeguard danger spots and must be planned in such way that they can not be triggered by the gate or the motor arm.

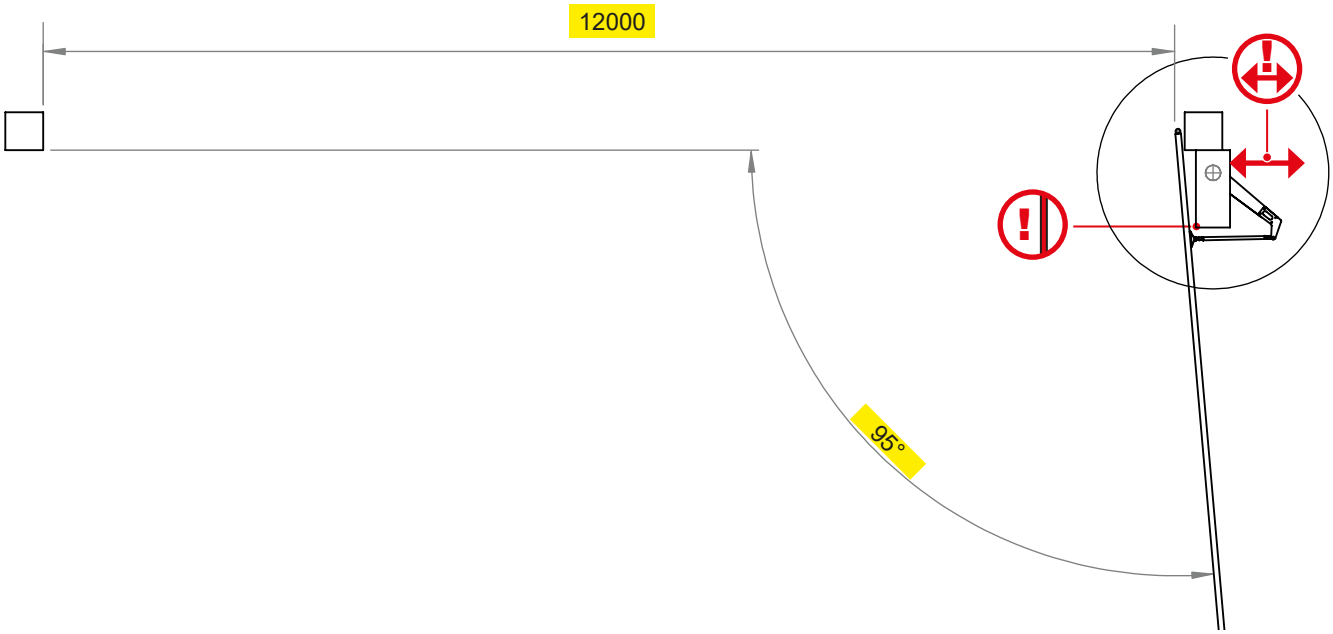
Mounting example 3: entrance width = 12m, opening angle 95°

- Maße in mm

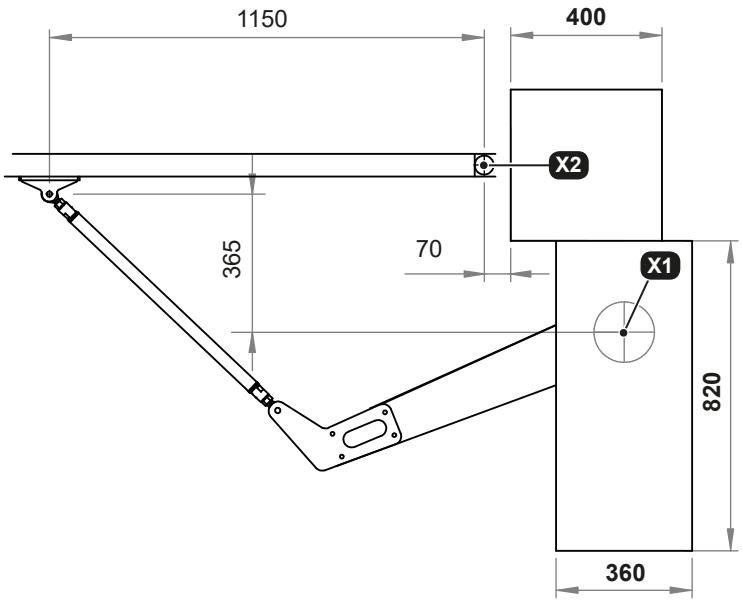
View A
Gate closed



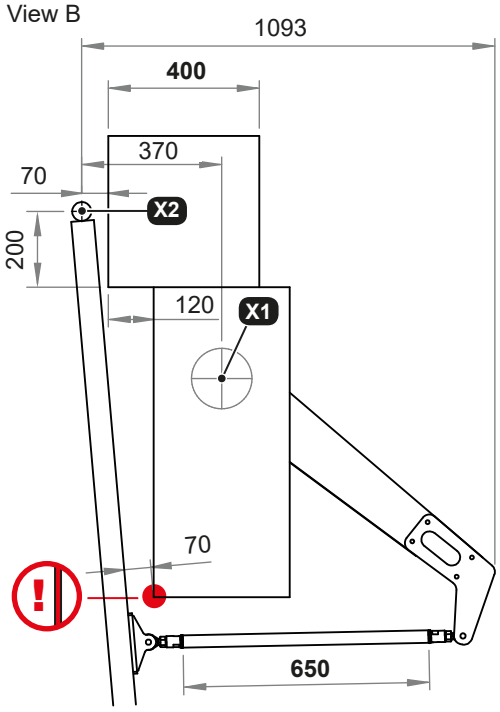
View B
Gate opened to the inside 95°



View A



View B



(X1) Turning point Motor arm
(X2) Turning point gate

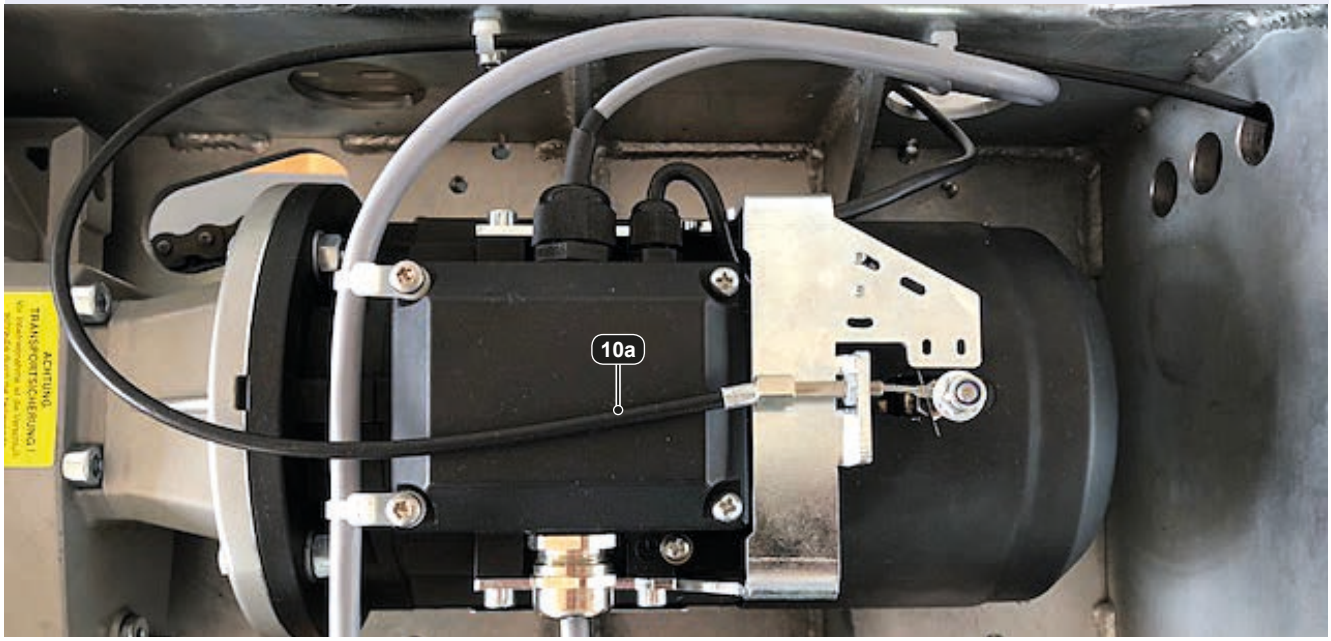
Neither the gate nor the motor arm may be restriced in the movement. Also provide the necessary sppace for safety edges. These are used to safeguard danger spots and must be planned in such way that they can not be triggered by the gate or the motor arm.

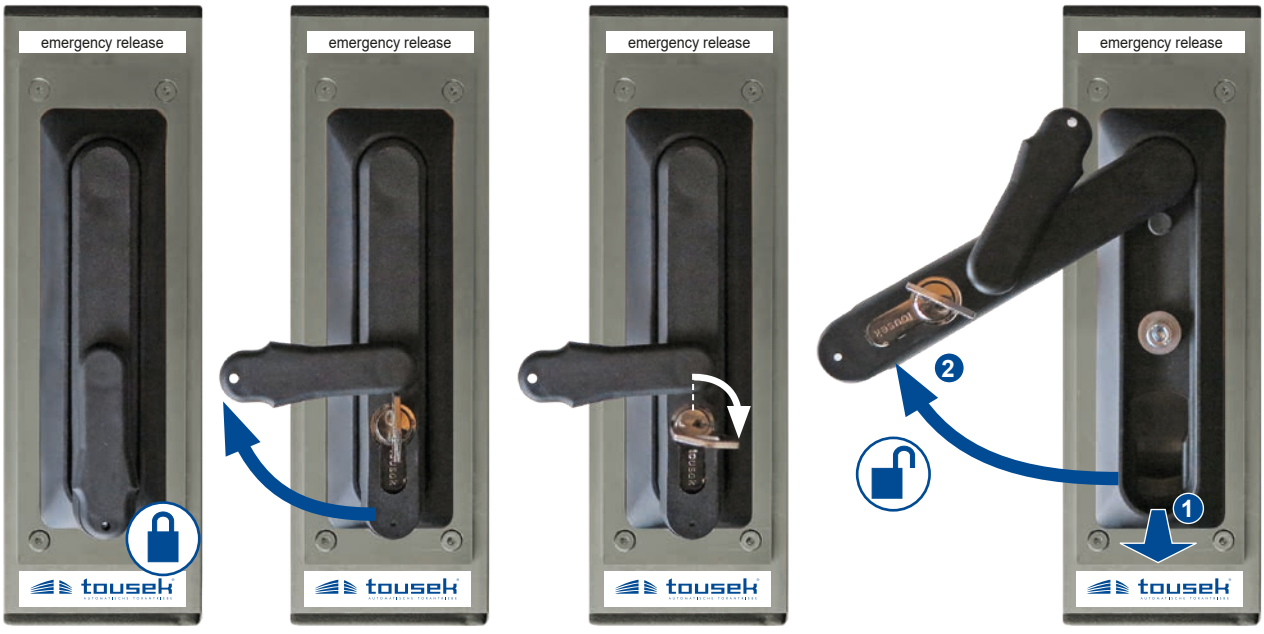
Emergency release in case of power failure (note for the user)

Should a defect or power failure occur, the operator can be unlocked by an emergency release lever, which is mounted near the operator, via a bowden cable **(10a)**. The Bowden cable should be shortened to the required length.

IMPORTANT: Before the emergency unlocking, the drive must be disconnected from the power supply - switch off the main switch!

- For emergency unlocking, pull the lock cover slightly forward and turn it to the side, insert the key and turn it to the right as shown.
- Now lift the release lever at the bottom 1 and turn it to the left 2.
- The operator is now unlocked and the gate can be moved by hand.
- To lock the operator again return the lever to its original position. After locking and removing the key return the lock cover.





Warning

- **Before taking off the control cover, the mains switch must be turned off!**
- **If the control is power supplied, its inner part is under tension.**
- **In order to avoid electrical strokes, the safety regulations have to be kept.**
- **The device may only be connected by trained professionals.**
- **The product is not suitable for installation in explosion-hazardous areas.**
- **An all-pole disconnecting mains switch with a contact opening gap of min. 3 mm has to be foreseen. The gate facility has to be secured according to the valid safety regulations!**
- **IMPORTANT: The control lines (sensor, buttons, radio, photocells, etc.) have to be laid separately from the 230V lines (supply line, motors, signal lamp).**

To ensure a perfect operation, an all-current-sensitive residual current circuit breaker type B must be used!

DANGER NOTES - Use of frequency converter

- **Read this manual carefully before installing and using the converter. Installation, ajdustment, repair and maintenance have to be made by professional staff.**

> The non-compliance of the following instructions leads to death or perilous injuries !!!

LOOK UP TO CONTINUOUS EARTHING

- An oxidated cooling element can form a confining layer to the mounting plate. Take implicitly the suggested earthing connections into account!

ACCIDENTAL USE OF DEVICE

- **Read this manual carefully before installing and using the converter**.
- Adjustment of parameter settings have to be done by trained professionals.

DANGER OF ELECTRIC SHOCK OR ELECTRIC ARC AND EXPLOSION

- **Read this manual carefully before installing and using the converter. Installation, ajdustment, repair and maintenance have to be made by professinal staff.**
- The user is responsible for the compliance of all relevant international and national electrotechnical rules/requirements regarding the protection earthing of all devices.
- Numerous components of the frequency converter, including the printed circuits boards, are being supplied through the mains voltage. DO NOT TOUCH ! Only use electrically isolated tools.
- **Do NOT touch non** shielded elements or bolt connections at terminals with mains voltage on
- **DO NOT short-out** the clamps PA/+ and PC/- or the DC-Bus-condensers.
- Before maintenance of converter:
  - Cut off any power supply (also external of control device).
  - Put a warning signboard with „DO NOT TURN ON“ onto the power switch or circuit breaker.
  - Lock the power switch or circuit breaker in open position.
  - WAIT 15 MINUTES so that the PC-Bus-condensers can discharge.
  - Measure the voltage supply of DC-Busses between clamps PA/+ and PCI-, to make sure that the voltage is under 42 Vd.c. The LED´s of converter can not show whether there is no DC-bus supply.
  - Should the DC-Bus-condensers not fully discharge please contact manufacturer. Do not try to repair yourself.
- Mount all covers and before switching on the supply or before starting and stopping the converter.

3.1 Control ST REX and motor control ST REX smart

Set jumpers J1/2 (1-wing/2-wings) in the ST REX and **Jumper JF** (left-/right-operator) in the ST REX smart according to your door situation!

Control ST REX in housing IP 54

(ST) **Control ST REX** with display and four programming buttons **+, -, ENTER and ESC**

(Z1) Terminal blocks of the ST REX

(J1/2) Jumper for number of gate leaves:

J1/2	number of gate leaves
□■□ 1 2	1
□■■ 1 2	2

Motor control ST REX smart in housing IP 54

(STS) **Motor control ST REX smart**

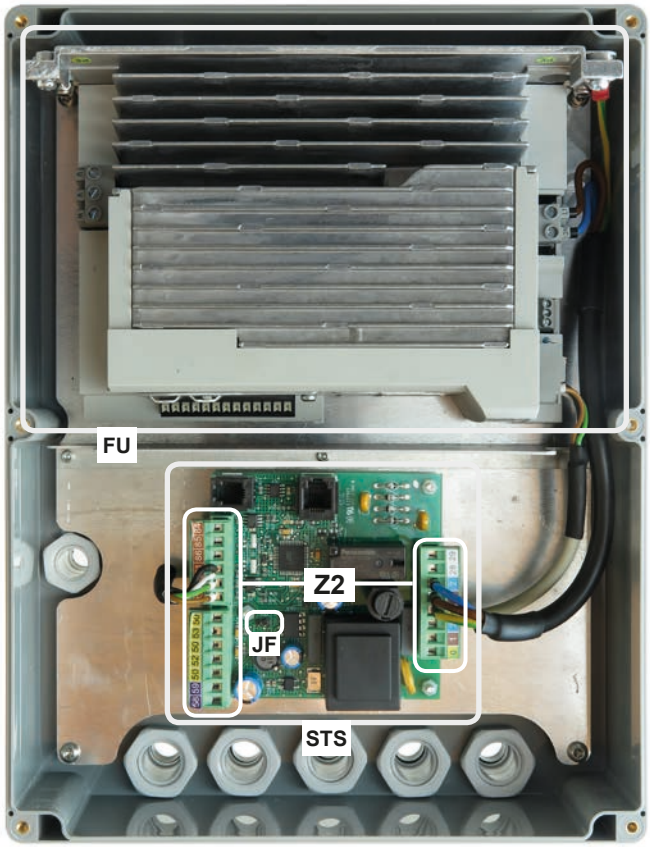
(Z2) Terminal blocks of the ST REX smart

(JF) Jumper **JF** for door leaf selection LEFT / RIGHT:

left INSIDE right

JF	gate leaf	
■■	used:	LEFT
□□	not used:	RIGHT

(FU) Frequency converter



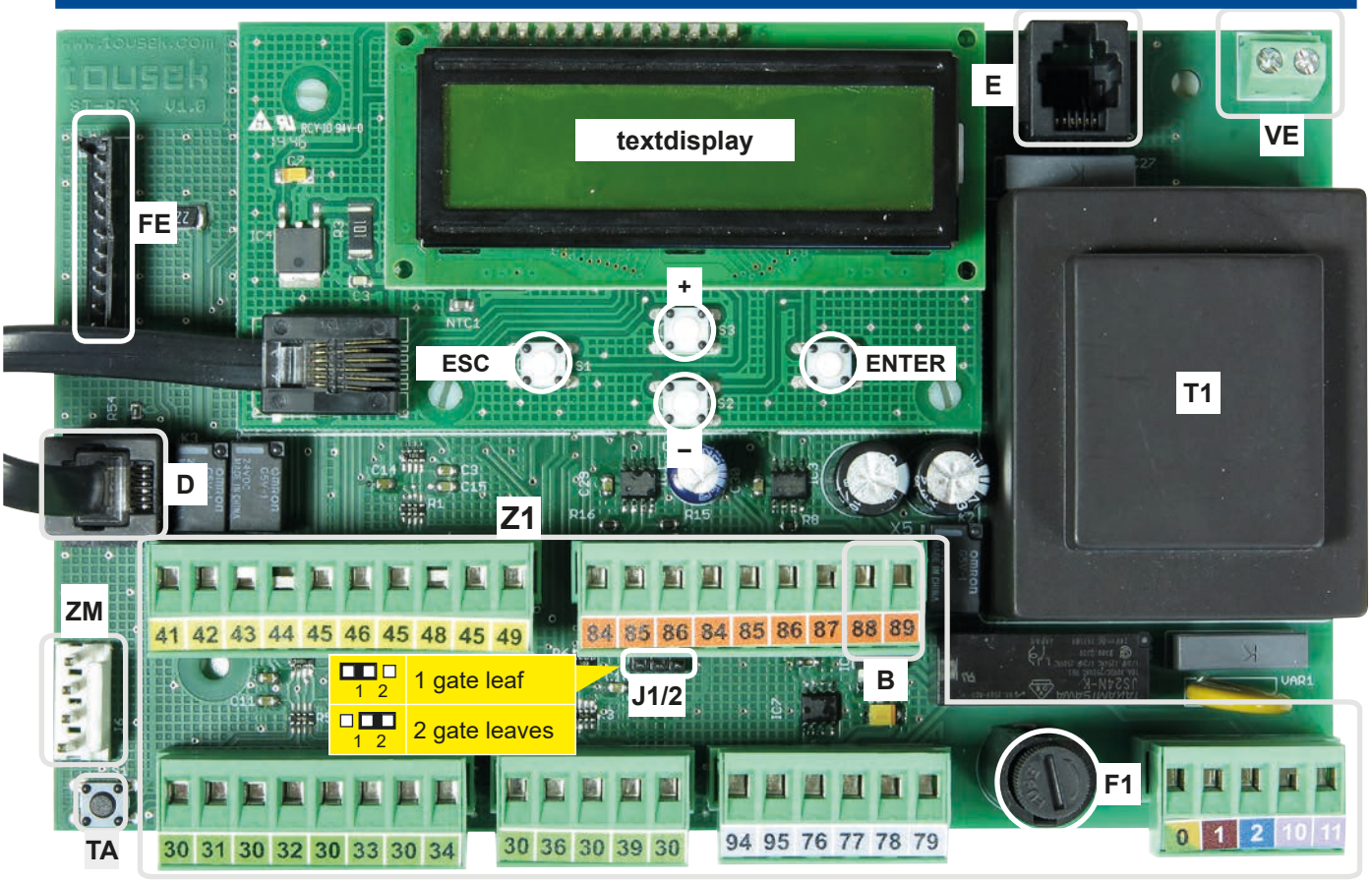
Note

The operation of a 2-leaves swing gate requires for the second leaf an additional motor control ST REX smart **(STS)** incl. frequency converter **(FU).**

IMPORTANT !

The factory setting of the frequency converter (FU) must not be changed!
In case of changes the warranty will be automatically not longer valid !

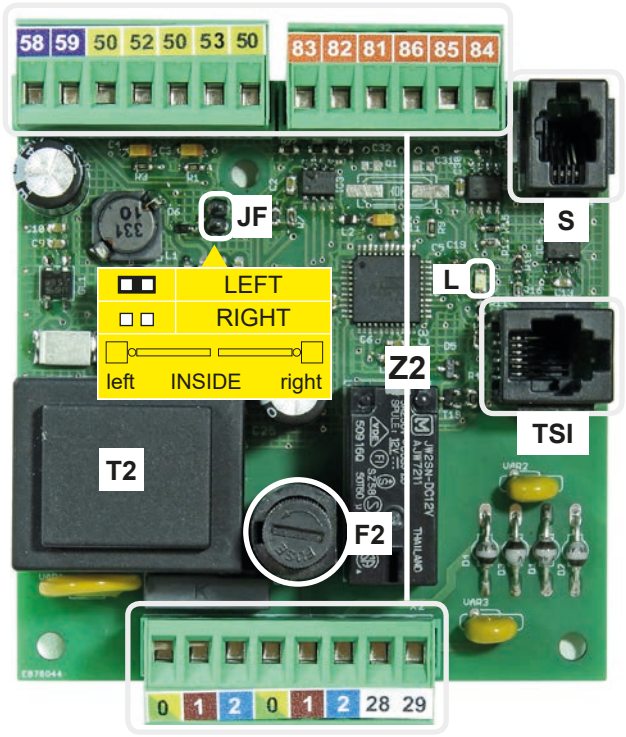
3.2 Control board ST REX and ST REX smart



Elements of the main control board ST REX

(Z1) Terminal blocks ST REX
(B) Bus Terminals (88/89)
Connection with optional traffic light control STA 11
(TA) additional pulse button (corresponding to **Z1**: Kl 30/32)
(D) Display connection (with programming buttons +, -, ESC, ENTER) or TSI connection (optional service interface)
(E) Connection socket for optional electric lock module/motor bolt module
(VE) 230Va.c. for magnetic clamp module
(FE) Slot for optional radio receiver
(ZM) Slot for optional additional module
(Courtyard / control light or gate status display)
(F1) Fuse 4A T
(T1) transformer

(J1/2) Jumper for defining the number of leaves



Connection ST REX / ST REX smart

The ST REX is connected to the ST REX smart motor control unit by means of a bus cable, via the terminals 84/85/86!

Components of the motor control unit ST REX smart

(Z2) Terminal blocks ST REX smart
(S) Connector for sensor
(TSI) TSI connector (optional service interface)
(T2) Transformer
(F2) Fuse 2A T

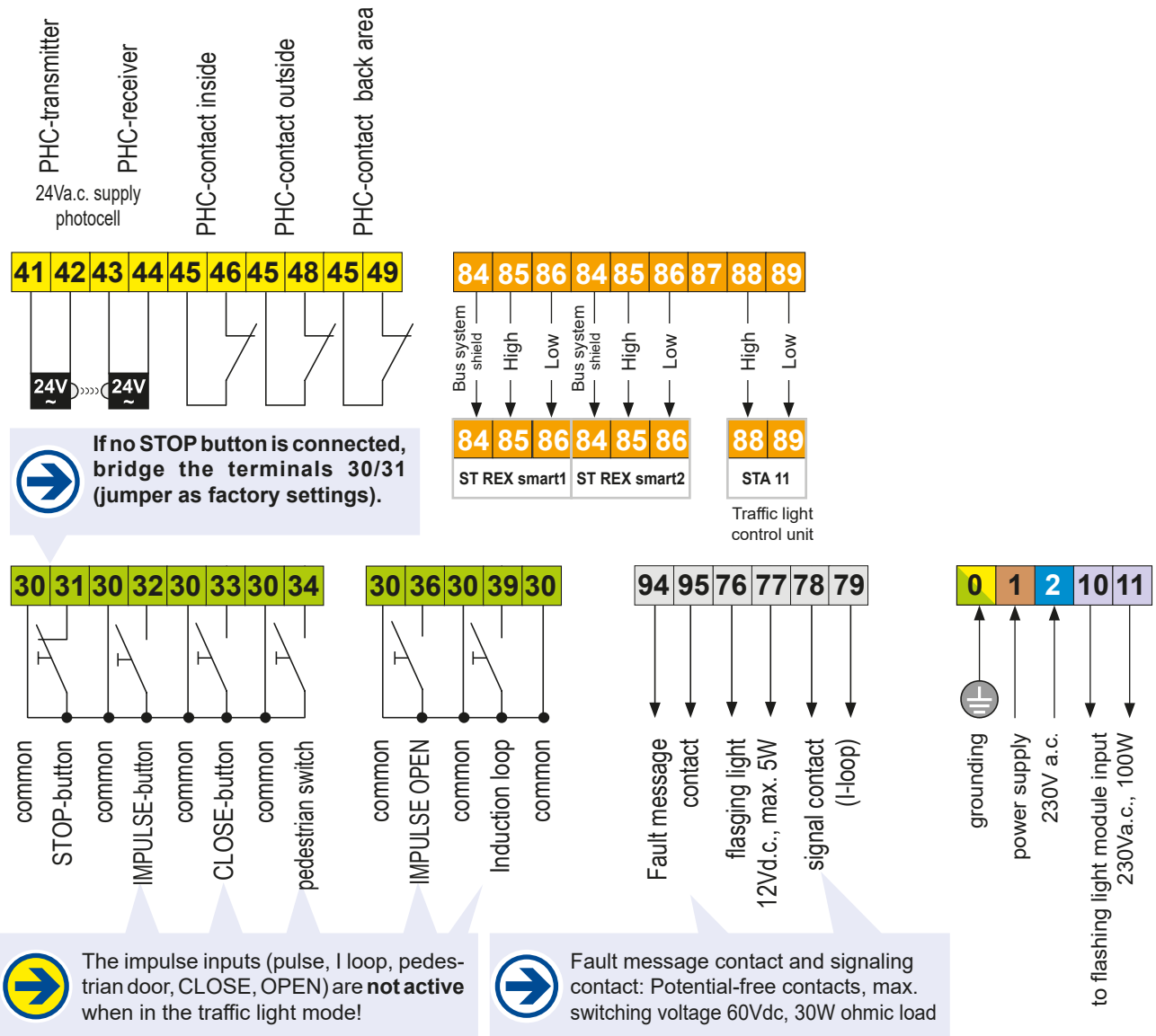
(L) LED: lights up when connected to ST REX
(JF) Jumper: defines LEFT / RIGHT gate leaf

Attention

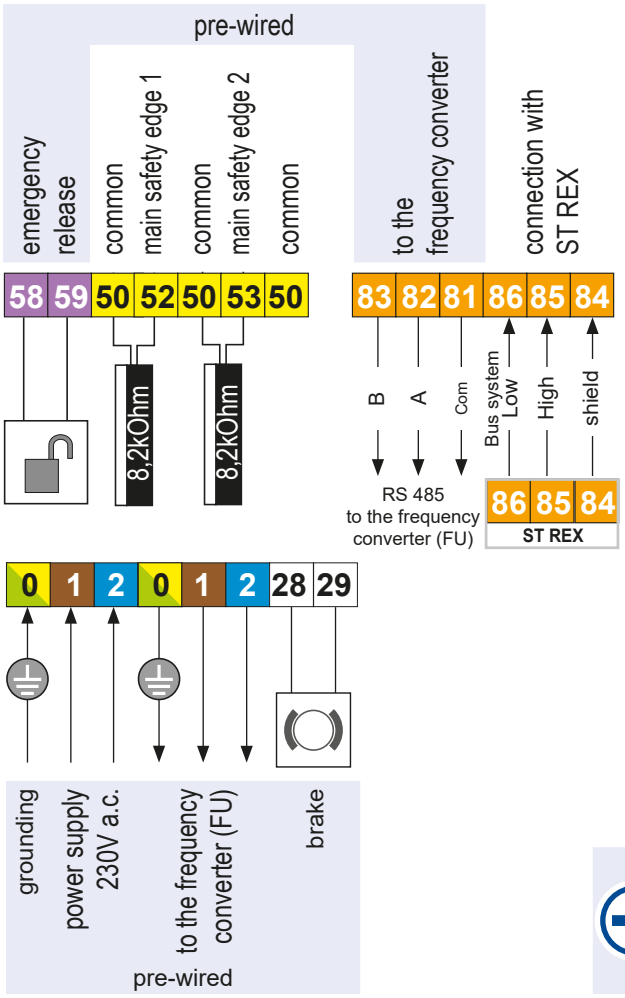
During connection, adjustment and maintenance works please take care, that the electronic circuit board won´t be damaged by moisture (rain).

3.3 Terminal assignment ST REX (Z1)

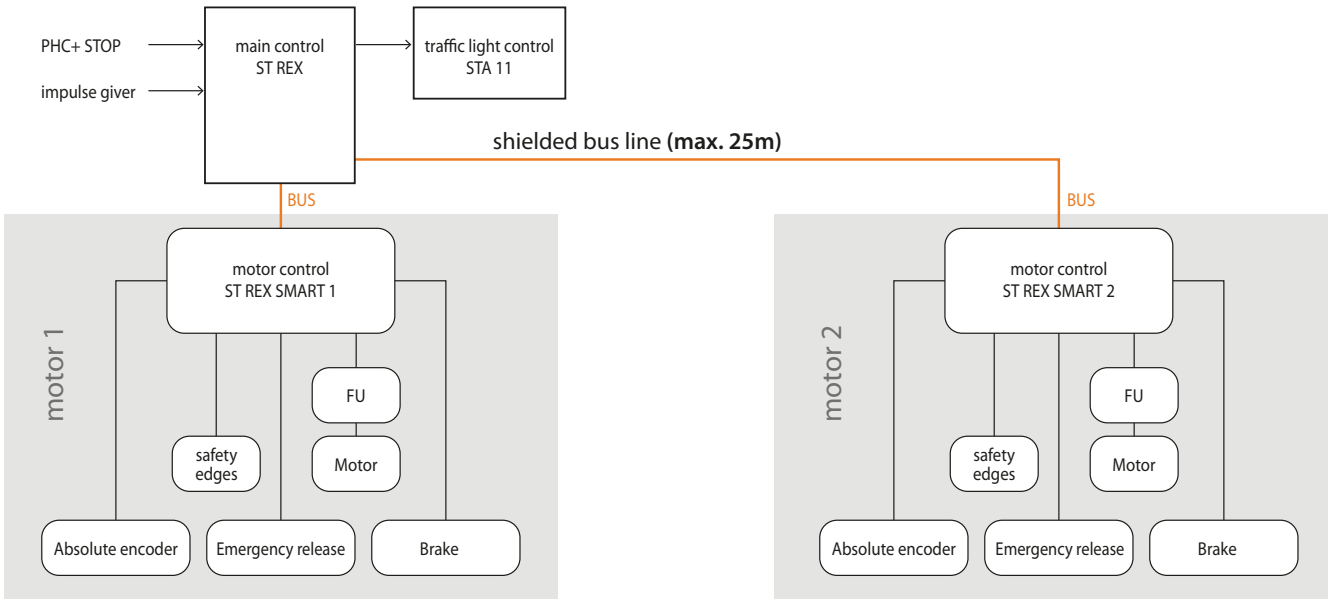
REX Force



The stop input has no emergency stop function! - In order to ensure the emergency stop function, provide the supply line with an all-pole disconnecting emergency stop switch, that locks after actuation!



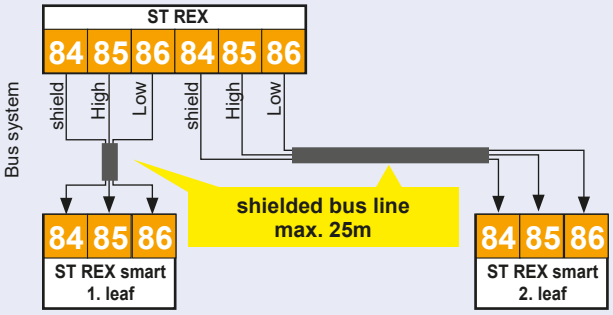
For a second gate leaf a bus cable must connect the second ST REX smart motor control unit to the ST REX ! page 18



Bus cables to the engine control units ST REX smart

- The main control unit ST REX must be connected with a shielded bus line to the engine control unit ST REX smart (terminals 84 → 84, 85 → 85 and 86 → 86).

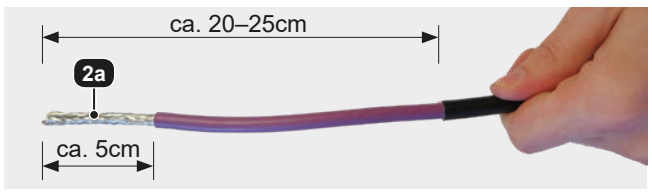
  Cable type: e.g. PVC control cable for grounding (in ground hose) CAN-BUS earth 1 x 2 x 0,5mm² or equivalent.
- **The max. cable length of the bus cables is 25m.**

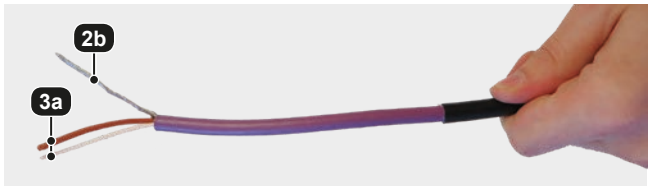


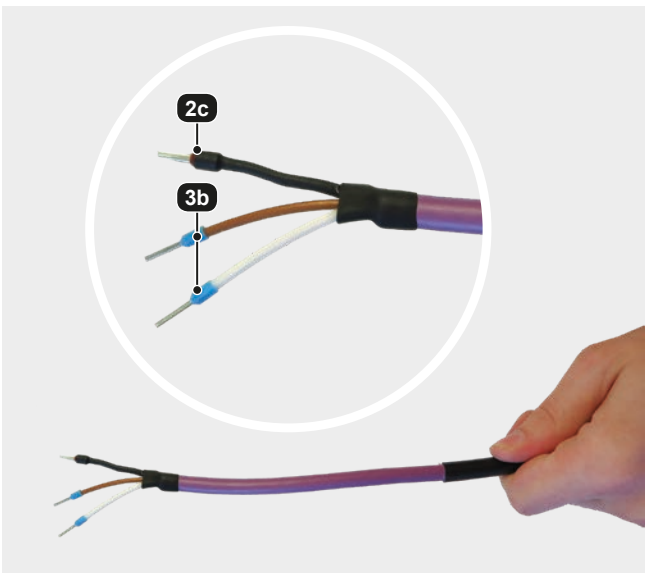
Prepare the cable for the connection

Prepare the cable for the connection between ST REX and ST REX smart on the opposite leaf:

- Shorten the cable and the cable reserve to the required length.
- Remove the outer jacket **(1)** at both ends without damaging the underlying jacket: **approx. 20-25cm**
- Remove the inner mantle at both ends without damaging the screen **(2a)**: **approx. 5cm**
- Unbundle and twist the shield **(2b)**.
- Remove plastic sheathing and plastic core at the end of the line **(3a)**.
- Provide the shield **(2c)** with end splice and insulate with shrink tube.
- Provide cables with end splice **(3b)**.
- Make the connection (see above / page 16, 17).





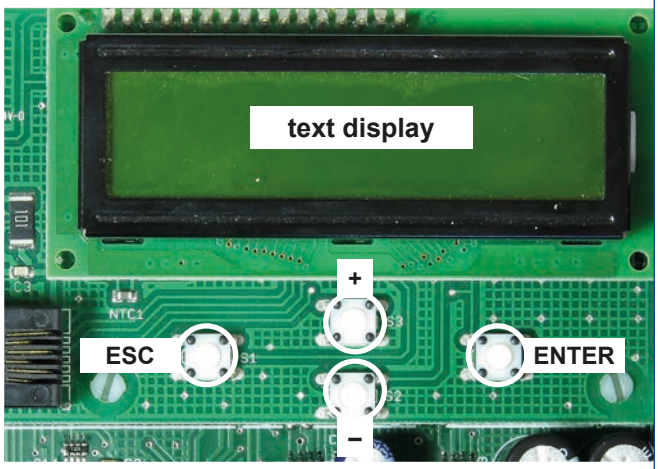


Programming buttons

Adjustments - overview

- The adjustment (programming) of the operating parameters is carried out with four programming buttons and the display.
- Before starting the programming, please choose the language. Use the buttons **+** or **-** to choose menu language and confirm with **ENTER.**
- **Note: Language selection can also be chosen by pressing the ESC button for 5s, from any position in menu**.

- The text display informs about behaviour, chosen menus and adjustment of different settings.
- The programming of the control is carried out with the help of four buttons **(+, -, ENTER und ESC).**
- Scrolling through the available menu points (up/down) or the adjustment of a parameter (value increase/decrease) is carried out with buttons **+** and **–**.. **AUTO-COUNT:** when holding one of the buttons the value changes automatically.
- When pressing the **ENTER**-button a confirmation for entering the shown menu point, resp. for accepting the shown value of a parameter is given.
- When pressing the **ESC**-button you return to the superior menu point. Possibly changed adjustments of a parameter are rejected with this button (the former values will remain).



- **AUTO-EXIT:** if no button is pressed during 1 min. then the menu switches automatically to the “ready” menu (wihtout saving changed parameters)

Programming menu

Adjustments - overview

- The program menu is divided into „POSITIONING“ „BASIC SETTINGS” and „ MENU CONTROL”

G Positioning

⊙ **Automatic:** the final positions are determined automatically, i.e. the positions, where the gate gets stopped by the mechanical stops, are learned as final positions.

○ **Manually:** the gate is manually brought to the desired OPEN and CLOSED position. These two positions are confirmed as end positions by giving an impulse (radio, button).

The selection of the positioning mode (automatically or manually) takes place at the beginning of the programming process. Afterwards this menu point gets hidden and can be selected either by resetting to factory settings or by deleting positions.

BASIC SETTINGS

- **When entering the programming of the control unit for the first time you will see the BASIC SETTINGS after POSITIONING**. *(see page 36).*
- Here the necessary adjustments for the use of the operator/gate can be set quickly.
- For advanced settings/programming please choose the menu point „menu control”.

MENU CONTROL

- For futher programming you will reach immediatly the MENU (CONTROL) (Basis settings are skipped)
- The menu control includes all kinds of settings.

The different menu points are indicated as follows:

○ = selectable settings ⊙ = factory settings ➲ = status display

G shows the menu points which are in the “ BASIC SETTINGS”

positioning		⊙ automatically ○ manually	Will disappear after entering, again selectable either after resetting or by deleting the positions.
Basic settings	G identifies the menu items contained in the BASIC SETTING.		

main layer		sub layer	settings/adjustments	
buttons/switches → page 22		**impulse button**	⊙ OPEN/STOP/CLOSE ○ OPEN/CLOSE/OPEN ○ OPEN ○ DEADMAN	***) if impulse button is set on DEADMAN, then the pedestrian and close button are also set automatically on DEADMAN mode. (not selectable under „pedest.-button“)**
		pedestr. opening	⊙ OPEN/STOP/CLOSE ○ OPEN/CLOSE/OPEN ○ OPEN ○ DEADMAN *)	
		ILD channel *(ILD = Induction loop detector)*	⊙ impulse OPEN ○ security ○ attendence	○ security ⊙ attendence
photocells → page 24	G	**inner photocell** *(PHC = photocell)*	⊙ active ○ not active	
	G	**outer photocell**	⊙ active ○ not active	
	G	**back area photoc.**	⊙ active ○ not active	
		ILD/PHC function inside	⊙ during closing reverse ○ stop, opens after release ○ during opening stop-then open	
		ILD/PHC function outside	⊙ during closing reverse ○ stop, opens after release	
		ILD/PHC pause time	⊙ no influence of photocell/ ISD ○ cancel pause time ○ re-start pause time ○ immediate closing after opening	
		PHC-self test	⊙ active ○ not active	
safety edge → page 26	G	**safety edge LL1** *(LL=left leaf)*	○ not active ○ opening active ○ closing active ⊙ opening / closing	
	G	**safety edge LL2**	○ not active ○ opening active ○ closing active ⊙ opening / closing	
	G	**safety edge RL1** *(RL= right leaf)*	○ not active ○ opening active ○ closing active ⊙ opening / closing	
	G	**safety edge RF2**	○ not active ○ opening active ○ closing active ⊙ opening / closing	
		SE- status display	➲ status display of the closing edges	
left leaf → page 28	G	**motor left**	⊙ motor ON ○ motor OFF	NO left motor > select motor OFF
	G	**delay left leaf** *(D= delay)*	⊙ opening delay ○ closing delay	
	G	**time delay left**	○ OFF, 1...25s [increment 1] ⊙ = 2s	
		speed OPEN	○ 30...100% [increment 5] ⊙ = 100%	
		speed CLOSE	○ 30...100% [increment 5] ⊙ = 80%	
		soft stop speed	○ 25...75% [increment 5] ⊙ = 50%	
		soft stop OPEN	○ OFF, 0,1...5s [increment 0,1] ⊙ = 2s	
		soft stop CLOSE	○ OFF, 0,1...5s [increment 0,1] ⊙ = 2s	
right leaf → page 28	G	**motor right**	⊙ motor ON ○ motor OFF	NO right motor > select motor OFF
	G	**delay right leaf** *(D= delay)*	○ opening delay ⊙ closing delay	
	G	**time delay right**	○ OFF, 1...25s [increment 1] ⊙ = 2s	
		speed OPEN	○ 30...100% [increment 5] ⊙ = 100%	
		speed CLOSE	○ 30...100% [increment 5] ⊙ = 80%	
		soft stop speed	○ 25...75% [increment 5] ⊙ = 50%	
		soft stop OPEN	○ OFF, 0,1...5s [increment 0,1] ⊙ = 2s	
		soft stop CLOSE	○ OFF, 0,1...5s [increment 0,1] ⊙ = 2s	

ESC **ENTER**

control unit for operator REX Force

- Menu item appears when traffic light is **active.**
- Menu item appears if traffic light is **not active.**
- when unmarked it appears always

main layer	sub layer	settings/adjustments
operating mode page 29	**impulse logic**	⊙ stop, start of pause time ○ impulse suppressioning when opening ○ pause time extension
	G **operating mode**	⊙ impulse mode ○ 1...255s automatic close [increment 1]
	pedestr. opening	○ 25...100% [increment 1] ⊙ = 100%
	automatic mode	⊙ complete / pedestrian opening ○ only complete opening ○ only pedestrian opening
	pause time logic	⊙ no influence ○ permanent ON
	acceleration time	○ 1,0...9,9s [increment 0,1] ⊙ = 3s
	lighting 10 sec	⊙ not active ○ active
light/ lamps Seite 30	**prewarning OPEN**	○ OFF, 1...25s ⊙ = OFF
	prewarning CLOSE	○ OFF, 1...25s ⊙ = OFF
	court yard light [1]	○ OFF, 5...950s [increment 1] ⊙ = OFF
	control light [1]	⊙ active during open and close ○ blinks slowly / active / blinks ○ active in open position
	green phase	○ 5...120s [increment 1] ⊙ = 20s
	clearance time	○ 1...60s [increment 1] ⊙ = 5s
	traffic light gate CLOSE	⊙ red light OFF ○ permanent RED
	traffic light logic	⊙ green on both sides ○ green on one side
peripherals page 31	**traffic light**	⊙ not active ○ active The traffic light functions settings are only displayed if activated
	locking	⊙ magnetic clamp ○ electric drop
	reverse stroke Reverse stroke only with activated electric drop!	⊙ OFF ○ 0,1...8s [increment 0,1]
	delay magnetic clamp	⊙ OFF ○ 0,1...1s [increment 0,1]
	electric drop	○ OPEN and CLOSE ○ OPEN only ⊙ CLOSE only
	additional module	⊙ court. / control lamp ○ gate status display 1 ○ gate status display 2
diagnosis page 35	**status display**	➲ state display of all inputs
	delete positions	⊙ NO ○ YES
	factory settings	⊙ NO ○ YES
	software version	➲ show software version
	serial number	➲ show serial number
	protocol	➲ show protocol notes
	satus sensor	➲ show the sensor data of both wings

[1] **The menu items „Light“ and „Control lights“ appear only when the additional module at the menu item „courtyard/ control lamp“ is selected.**

Hinweis: Some changes in the functionality or operating logic are not accepted until the gate is closed and the word „Ready“ appears on the display.

ESC ENTER

control unit for operator REX Force

Warning

- **Before taking off the control cover, the mains switch must be turned off!**
- **If the control is power supplied, its inner part is under tension.**
- **In order to avoid electrical strokes, the safety regulations have to be kept.**
- **The device may only be connected by trained professionals.**
- **The product is not suitable for installation in explosion-hazardous areas.**
- **An all-pole disconnecting mains switch with a contact opening gap of min. 3 mm has to be foreseen. The gate facility has to be secured according to the valid safety regulations!**
- **IMPORTANT: The control lines (sensor, buttons, radio, photocells, etc.) have to be laid separately from the 230V lines (supply line, motors, signal lamp).**

The different menu points are indicated as follows:

○ = selectable setting ⊙ = factory settings ➲ = status display

G shows the menu points which are in the " BASIC SETTINGS"

- A general status display of all inputs can be found in the menu DIAGNOSIS / STATUS DISPLAY

Buttons / switches

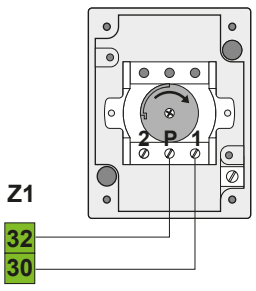
As impulse-, pedestrian-, close- and impulse-OPEN buttons pushbuttons or key switches as well as external radio receivers with potential free make contacts can be used. **As stop switch a break contact has to be used!**

In traffic light mode the impulse-, pedestrian-, close- and impulse-OPEN buttons are without any function.

impulse button (NO contact,terminals Z1: 30/32)

⊙ **OPEN/ STOP / CLOSE** (factory setting): After giving a command via impulse switch the motor starts an opening or closing movement. If the impulse switch is pressed again during this movement, the motor stops. With the next command, the motor drives in the opposite direction of the last gate movement.

○ **OPEN / CLOSE / OPEN impulse repetition:** After giving a command via impulse switch the motor starts an opening or closing movement. If the impulse switch gets pressed again during this movement, the motor reverses



Impulse switch
(e.g key switch EPZ 1-2T)

- **In this operation mode it is not possible to stop the motor with the impulse switch – it always travels until reaching an end position. (Opened or closed position).**
- **for the function OPEN/CLOSE/OPEN we strongly suggest the installation of a photocell!**

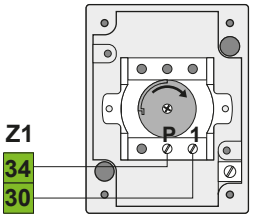
○ **OPEN:** It is only possible to give an opening command by using the impulse switch. Closing the gate with the impulse switch is not possible.

○ **DEAD-MAN:** The motor opens as long as the impulse switch is pressed – closing the gate with the impulse switch is not possible. As soon as the switch is released, the gate stops. If hold to run operating mode is selected, **the radio receiver slot (FE) is set out of order for reasons of safety.**

IMPORTANT: Do not start the commissioning process in dead man mode.
If desired, select this mode only after commissioning.

pedestrian opening (pedestrian button: NO contact, terminals. **Z1:** 30/34)

⊙ **OPEN/ STOP / CLOSE:**
After giving a command from the pedestrian opening button the motor starts with an opening or closing movement. If the button gets pressed again during this movement, the motor stops. With the next command the motor drives in the opposite direction.



pedestrian opening button
(e.g. key switch EPZ 1-1T)

○ **OPEN / CLOSE / OPEN:**
After giving a command from the pedestrian button the motor starts an opening or closing movement. If the button gets pressed again during this movement, the motor reverses.

- **In this operation mode it is not possible to stop the motor with the pedestrian button –the gate always travels up to the end position. (Opened or closed position).**
- **For the function OPEN/CLOSE/OPEN we strongly suggest the installation of a photocell!**

○ **OPEN:** It is only possible to give an opening command by using the impulse switch. Closing the gate with the impulse switch is not possible.

○ **DEAD-MAN:** The motor opens as long as the impulse switch is pressed – closing the gate with the impulse switch is not possible. As soon as the switch is released, the gate stops. If hold to run operating mode is selected, **the radio receiver slot (FE) is set out of order for reasons of safety.**

The DEAD-MAN cannot be selected actively but it gets automatically selected when the pulse button is set to TOTMANN.

ILD channel (N.O. contact, terminals **Z1:** 30/39)

⊙ **impulse OPEN ( ):** When driving on the induction loop, the gate opens.

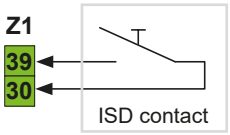
○ **security:** When driving on the induction loop, the setting selected under „ISD/PHC-function“ (*page* 25) is effective.

○ **attendence:** Via a potential free closing contact (terminals **Z1:** 78/79), the approach to the induction loop can be evaluated.

An optionally available induction loop detector forwards the signals of an induction loop via a potential-free switching contact to the terminals Z1: 30/39.

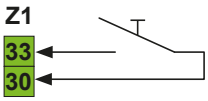
Further information *corresponding ISD manual.*

In traffic light mode only 2 functions are active: ○ security and ⊙ attendence.



CLOSE-button (N.O. contact, terminals **Z1:** 30/33)

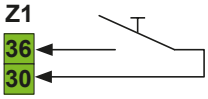
- A command with the CLOSE-switch engages closing of gate. In deadman mode the gate closes as long as the CLOSE-switch is pressed/switched. As soon as switch is released the gate movement stops.



CLOSE-button

Impulse OPEN (N.O. contact, terminals **Z1:** 30/36)

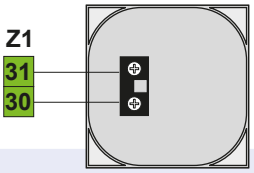
- With this button only the opening of the gate is possible.



Impulse OPEN button

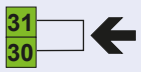
STOP-switch (N.C. contact, terminals **Z1:** 30/31)

- when pressing the stop switch the gate stops in any desired position.



STOP-button
(e.g. switch KDT-1N)

Als Stopp-Taster ist ein Öffnungskontakt zu verwenden.
Wird kein STOPP-Taster angeschlossen, so sind die Klemmen Z1: 30/31 zu brücken.



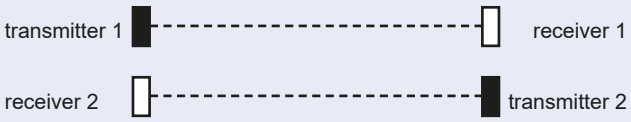
The stop input has no emergency stop function! - In order to ensure the emergency stop function, provide the supply line with an all-pole disconnecting emergency stop switch, that locks after actuation!

Important: Photocells notes

- **The control unit ST REX has a power supply connection for a 24V a.c. photocell (PHC): supply PHC-transmitter: terminals: 41/42 / supply PHC-receiver: terminals: 43/44**
  Note: in „gate closed“ position the terminals: 41/42 are being switched into energy saving mode (no current) (only, if no TX 310 system is used) !
- **The contact has to be closed when using powered and positioned photocells (opening contact). Connection of the photocell contact: inside: terminals 45/46, outside: terminals 45/48, back area: terminals 45/49**
- **When using two pairs of photocells please do not install both photocell transmitters/receivers on the same side (to eleminate interference between both) !**

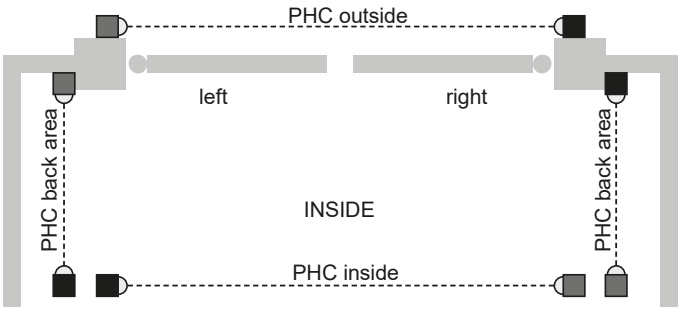
  Exception: photocells with SYNC function allow the installation of both photocell transmitters/receivers on the same side without causing interference to each other.

Standard:



With SYNC-function:

- **Photocell self-test function:** The control unit has a monitoring function for the connected photocells. A test is triggered by each impulse and will be checked if the receiver of the photocell responds to the signal from the photocell transmitter. If there is no communication between the photocell receiver and transmitter the control unit responds with an error.
  The deactivation of the self-test function is only allowed if the safety installations correspond to the category 3 !
- The exact function of the photocells depend on the programming of the control unit.
  Photocell function please *see menu point **photocells** | ILD/PHC function inside (outside) or ILD/PHC pause time*
- ***you will find detailed information in the corresponding photocell manual.***



G inner photocell (contact: terminals **Z1:** 45/46) — Safety

- ⊙ **active:** to be selected, if the inner photocell should be triggered.
- ○ **not active:** to be selected, if the inner photocell should not be triggered.

G outer photocell (contact: terminals **Z1:** 45/48) — Safety

- ⊙ **active:** to be selected, if the outer photocell should be triggered.
- ○ **not active:** to be selected, if the outer photocell should not be triggered.

G back area photoc. (contact: terminals **Z1:** 45/49) — Safety

- ⊙ **not active:** no monitoring by PHC-back area.
- ○ **active:** To be selected, if the back area of the gate has to be protected by a photocell during the opening movement. An interruption of the photocell during the opening movement causes the motor to get stopped and remain stopped as long as the photocell is interrupted. After releasing the photocell, the gate opens.

ILD/PHC function inside (concerning terminals Z1: 45/46)

Safety

- ⊙ **during closing reverse:** if the safety device is triggered **during closing** the gate reverses (opens).
- ○ **stop, opens after release:** if the safety device is triggered during **opening or closing** the motor stops until the device is released. Then the gate opens.
- ○ **during opening stop-then open:** if the safety device is triggered **during opening** the motor stops until the device is released. Then the gate opens.

In automatic mode the gate closes as soon as the pause time has run out. In impulse operation another closing command has to be given.

ILD/PHC function outside (concerning terminals Z1: 45/48)

Safety

- ⊙ **during closing reverse:** if the safety device is triggered **during closing** the gate reverses (opens).
- ○ **stop, opens after release:** if the safety device is triggered during **opening or closing** the motor stops until the device is released. Then the gate opens.

In automatic mode the gate closes as soon as the pause time has run out. In impulse operation another closing command has to be given.

ILD/PHC pause time (concerning terminals Z1: 45/46 + Kl. Z1: 45/48)

Safety

- ⊙ **no influence of photocell/ ISD:** the safety device has no influence on pause time in automatic mode.
- ○ **cancel pause time:** if the safety device is triggered **during the pause time** the pause time will be reduced, it means the door closes after release of the safety device.
- ○ **re-start pause time:** if the safety device is triggered **during the pause time (automatic mode)**, the pause time will be restarted (as set). After the elapsed pause time the door closes.
- ○ **immediate closing after opening:** if the safety device is triggered **during opening or in open position**, the door immediate closes after the open position has been reached and the safety device has been released.

In traffic light mode only the adjustments „no inluence“ and „immediate closing after opening“ are available.

PHC- self test

Safety

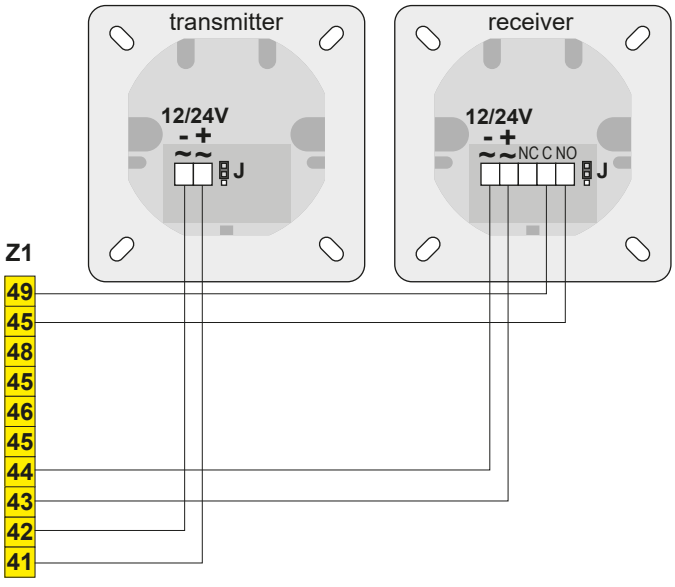
- ⊙ **active:** photocell self-test is executed with an opening impulse (switch, button) in gate position „closed“.
- ○ **not active:** photocell self-test is not executed.

Attention

- **The photocell self-test can only be deactivated by selecting „not active“.**
- **The deactivation of the self-test function is only permitted if the safety installations correspond to the category 3 !**

Photocell - connection examples

Back area photocell Tousek LS 26 as safety device

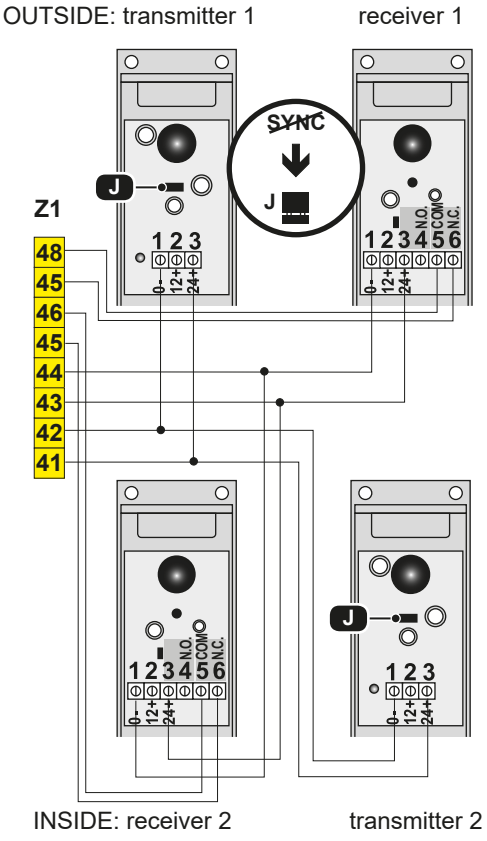


Important

- **Jumper J of transmitter and receiver has to be adjusted in the same way.**

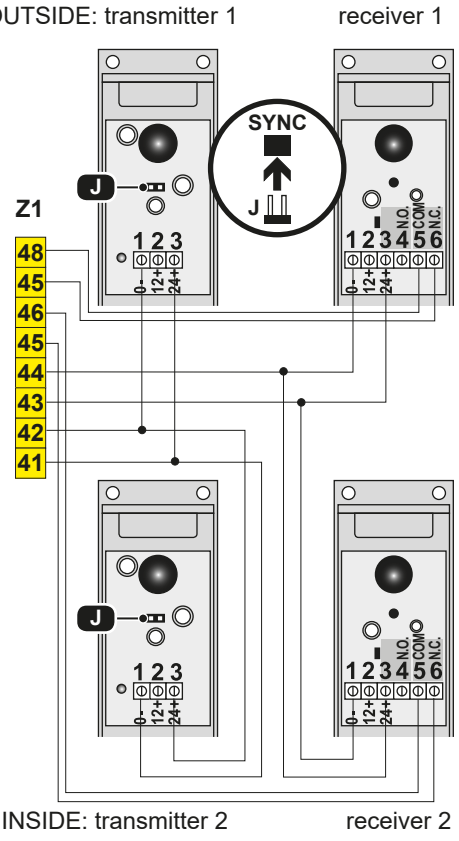
Inner + outer photocell Tousek LS 41 / LS 180 as safety device

Using two pairs of photocells with deactivated SYNC-function, please do not install both photocell transmitters/receivers on the same side (to eleminate interference between both)!



Inner + outer photocell Tousek LS 41 / LS 180 as safety device with active SYNC-function

To activate the SYNC-function, the plug-in bridges (J) in both photocell transmitters have to be removed.

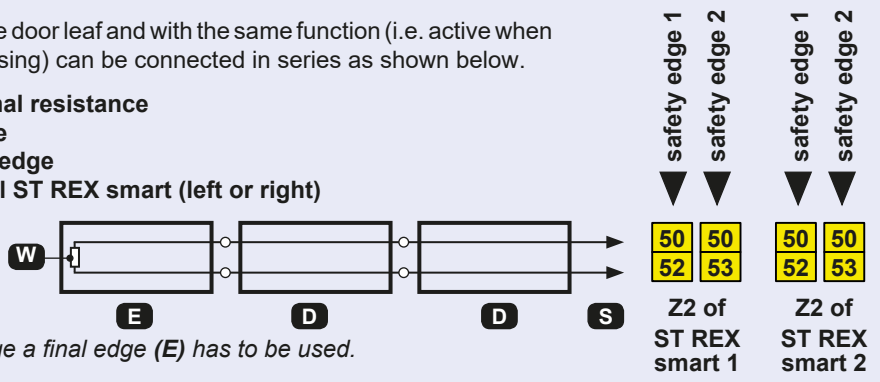


Safety sensing edges

- **OBSTACLE DETECTION:** When a contact strip is triggered/activated then a change of direction is effected for 1s. After that the gate stops.
- Activation of the safety edges for the **left motor control ST REX smart** in menu point:
  „safety edges | safety edge LL1“ (t. **Z2:** 50/52) or **„safety edges | safety edge LL2“** (t. **Z2:** 50/53)
  and for the **right motor control ST REX smart (Jumper JF** not set = right / set = left**):**
  „safety edges | safety edge RL1“ (t. **Z2:** 50/52) or **„safety edges | safety edge RL2“** (t. **Z2:** 50/53)
- Safety sensing edges on the same door leaf and with the same function (i.e. active when opening, closing or opening / closing) can be connected in series as shown below.

Example:

W	**8,2kΩ final resistance**
E	**final edge**
D	**passage edge**
S	**to control ST REX smart (left or right)**



*When connecting one safety edge a final edge **(E)** has to be used.*

Important

- **After giving the impulse to automatically program the end positions, no other impulse must be given. Also the safety devices mustn´t be triggered. This would lead to an interruption of the programming process.**
- **Therefore, the mechanical stops must be set so that the existing contact strips cannot be triggered.**

G safety edge LL1 (terminals **Z2** (left): 50/52 and Jumper **JF = set**)

Safety edges

- ⊙ **not active:** 8,2kΩ **safety edge 1, left leaf** should not be evaluated.
- ○ **opening active:** 8,2kΩ **safety edge 1, left leaf** should be evaluated **at opening.**
- ○ **closing active:** 8,2kΩ **safety edge 1, left leaf** should be evaluated **at closing.**
- ○ **opening / closing:** 8,2kΩ **safety edge 1, left leaf** should be evaluated **at opening and closing.**

G safety edge LL2 (terminals **Z2** (left): 50/53 and Jumper **JF = set**)

Safety edges

- ⊙ **not active:** 8,2kΩ **safety edge 2, left leaf** should not be evaluated.
- ○ **opening active:** 8,2kΩ **safety edge 2, left leaf** should be evaluated **at opening.**
- ○ **closing active:** 8,2kΩ **safety edge 2, left leaf** should be evaluated **at closing.**
- ○ **opening / closing:** 8,2kΩ **safety edge 2, left leaf** should be evaluated **at opening and closing.**

G safety edge RL1 (terminals **Z2** (right): 50/52 and Jumper **JF = not set**)

Safety edges

- ⊙ **not active:** 8,2kΩ **safety edge 1, right leaf** should not be evaluated.
- ○ **opening active:** 8,2kΩ **safety edge 1, right leaf** should be evaluated **at opening.**
- ○ **closing active:** 8,2kΩ **safety edge 1, right leaf** should be evaluated **at closing.**
- ○ **opening / closing:** 8,2kΩ **safety edge 1, right leaf** should be evaluated **at opening and closing.**

G safety edge RL2 (terminals **Z2** (right): 50/53 and Jumper **JF = not set**)

Safety edges

- ⊙ **not active:** 8,2kΩ **safety edge 2, right leaf** should not be evaluated.
- ○ **opening active:** 8,2kΩ **safety edge 2, right leaf** should be evaluated **at opening.**
- ○ **closing active:** 8,2kΩ **safety edge 2, right leaf** should be evaluated **at closing.**
- ○ **opening / closing:** 8,2kΩ **safety edge 2, right leaf** should be evaluated **at opening and closing.**

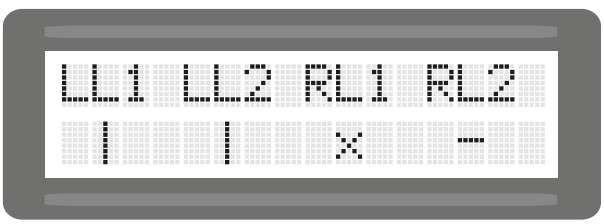
SE-status display

Safety edges

➲ Status dsplay of safety sensing edges **LL1** left leaf (1) **RL1** right leaf (1)
LL2 left leaf (2) **RL2** right leaf (2)

- status: not triggered
- status: triggered
- status: contact strip not connected or defect
- status: contact strip deactivated in menu

e.g.



Left leaf

G motor left

⊙ **Motor ON**

○ **Motor OFF:** no left motor.

G delay left leaf

⊙ **opening delay:** the left leaf opens after the adjusted delay time.

○ **closing delay**: the left leaf closes after the adjusted delay time.

G time delay left ⊙ 2s (factory settiing)

○ **OFF, 1–25s adjustable [increment 1]:** indicates the delay time at opening or closing.

speed OPEN ⊙ 100% (factory settiing)

○ **30–100% adjustable [increment 5]:** determines the speed of motor in opening direction.

speed CLOSE ⊙ 80% (factory settiing)

○ **30–100% adjustable [increment 5]:** determines the speed of motor in closing direction.

soft stop speed ⊙ 50% (factory settiing)

○ **25–75% adjustable [increment 5]:** determines the speed during soft run. If the entered value for soft speed is higher than normal speed the value will be rejected and automatically set to a value that is 5% below the set value for normal speed.

soft stop OPEN ⊙ 2s (factory settiing)

○ **OFF, 0,1–5s adjustable [increment 0,1]:** determines soft stop time in opening direction.

soft stop CLOSE ⊙ 2s (factory settiing)

○ **OFF, 0,1–5s adjustable [increment 0,1]:** determines soft stop time in closing direction.

Right leaf

G motor right

⊙ **Motor ON**

○ **Motor OFF:** no right motor.

G delay right leaf

○ **opening delay:** the right leaf opens after the adjusted delay time.

⊙ **closing delay**: the right leaf closes after the adjusted delay time.

G time delay right ⊙ 2s (factory settiing)

○ **OFF, 1–25s adjustable [increment 1]:** indicates the delay time at opening or closing.

speed OPEN ⊙ 100% (factory settiing)

○ **30–100% adjustable [increment 5]:** determines the speed of motor in opening direction.

speed CLOSE ⊙ 80% (factory settiing)

○ **30–100% adjustable [increment 5]:** determines the speed of motor in closing direction.

soft stop speed ⊙ 50% (factory settiing)

○ **25–75% adjustable [increment 5]:** determines the speed during soft run. If the entered value for soft speed is higher than normal speed the value will be rejected and automatically set to a value that is 5% below the set value for normal speed.

soft stop OPEN ⊙ 2s (factory settiing)

○ **OFF, 0,1–5s adjustable [increment 0,1]:** determines soft stop time in opening direction.

soft stop CLOSE ⊙ 2s (factory settiing)

○ **OFF, 0,1–5s adjustable [increment 0,1]:** determines soft stop time in closing direction.

Attention

With speed adjustment the valid safety regulations and standards have to be strictly followed (Kinetische Energie) !

impulse logic

⊙ **stop, start of pause time:** An impulse during the opening movement stops the gate and starts pause time in automatic operation. When the pause time has run out, the gate closes automatically.

○ **impulse suppressioning when opening:** Commands received during the opening movement are suppressed, commands during closing are accepted.

➔ **In traffic light mode automatically „impulse suppressioning when opening“ is active.**

○ **pause time extension:** A command during pause time restarts the pause time. If this menu point is chosen, an impulse suppression during opening is active at the same time.

G operating mode

⊙ **impulse mode:** Impulse through impulse switch/button or CLOSE-button to start closing of gate.

○ **1–255s automatic close adjustable [increment 1]:** gate closes automatically after the adjusted pause time.

pedestr. opening ⊙ 100% (factory setting)

○ **25–100% adjustable [increment 1]:** value defines the partial opening based on the total opening.

➔ **In traffic light mode this setting has no influence.**

This adjustment is ONLY adopted in CLOSED-position.

automatic mode

⊙ **complete / pedestrian opening:** either with complete as well as partial opening, the gate closes automatically after the adjusted pause time.

○ **only complete opening:** only after complete opening, the gate closes automatically after the adjusted pause time.

➔ **In traffic light mode automatically „only complete opening“ is active.**

○ **only pedestrian opening:** only after partial opening the gate closes automatically after the the adjusted pause time.

pause time logic

⊙ **no influence**

➔ **In traffic light mode automatically „no influnce“ is active.**

○ **permanent ON:** if this function is activated, the control unit goes from automatic mode into impulse mode **with activated pause time through impulse in open gate position** for this cycle , hence if gate is open then an impulse will end the automatic mode - the gate remains open. Only the next impulse will close the gate and the control unit goes back to automatic mode. With this function e.g. the entrance to a company site can remain open during the day (1st impulse in gate open position) and closed in the evening (2nd impulse). The control board switches back to automatic mode (autom. opening and closing of gate).

acceleration time ⊙ 3s (factory setting)

⊙ **1,0–9,9s adjustable [increment 0,1]:** Time of motor acceleration from 0 to „speed OPEN (CLOSE)“

lighting 10s (terminals **Z1:** 10/11)

⊙ **not active**

○ **active:** lighting output (terminals **Z1:** 10/11) is active, e.g. for lighting of the gate for the duration of the movement + 10 seconds.

Warning

- **Before connection works please turn off the main power switch !**
- **pay attention to the safety rules !**

prewarning OPEN (Signal lamp: terminals **Z1:** 10/11)

Licht / Leuchten

⊙ **OFF**

○ **1–25s adjustable:** Before each opening movement the signal lamp/ flashing light is activated for the adjusted time.

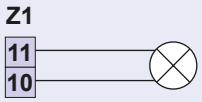
prewarning CLOSE (Signal lamp: t. **Z1:** 10/11)

⊙ **OFF**

○ **1–25s adjustable:** Before each closing movement the signal lamp/ flashing light is activated for the adjusted time.

Signal lamp

- a signal lamp can be connected to the terminals **Z1:** 10/11 (**230V, max. 100W**).



The following two menu points can only be selected if the menu point „peripherals | additional module“ is adjusted to „courtyard-/control lamp“.

court yard light (*Description add. modules ➔ page 34*)

Light / lamps

⊙ **OFF**

○ **5–950s adjustable:** at the courtyard lamp output an external lamp can be connected (e.g. garden lamp), which can be turned on for each opening command for the duration of adjusted time.

control light (*Description add. modules ➔ page 34*)

Light / lamps

⊙ **active during open and close:** The pilot lamp output is activated during opening- and closing movement.

○ **blinks slowly / active / blinks:** The pilot lamp output is activated as follows: During opening the pilot lamp flashes slowly. During pause time, in opened position or when the gate stops it is illuminated. During the closing movement it flashes rapidly. If the gate is closed, the pilot lamp expires.

○ **active in open position:** Pilot lamp is illuminated as soon as the gate has reached end position open.

green phase ⊙ 20s (factory setting)

Light / lamps

○ **5–120s adjustable [increment 1]:** duration of green phase.

clearance time ⊙ 5s (factory setting)

Light / lamps

○ **1–60s adjustable [increment 1]:** time to leave the traffic light intermediate area.

traffic light gate CLOSE

Light / lamps

⊙ **red light OFF:** red traffic light does not illuminate in closed position.

○ **permanent RED:** red traffic light illuminates also in closed position.

traffic light logic

Light / lamps

⊙ **green on both sides:** both traffic lights illuminate GREEN in open position, regardless of which side has been given the green request.

○ **green on one side:** only the traffic light illuminates GREEN in open position, from the side from where the green request has been requested.

traffic light

⊙ **not active**

○ **active:** Traffic light function active

- With the optional traffic light control unit, that has to be connected to the bus terminals (B): **term. Z1: 88, 89** (*page 41)*, you can implement a traffic light operation mode.
- **Note: The functions and settings relevant for the traffic light operation are displayed in the menu only after selecting "active"** → *see*
- Connection of the traffic light → see instruction manual of the traffic light control unit.

Valid for the traffic light mode:

- **The inputs of the pulse buttons of the drive control have no function and the impulse emission is only possible via traffic light board!**
- **When using a radio receiver and the traffic light mode, the receiver is not to be plugged into the slot of the control unit, but into the slot of the traffic light control!** *page 45*

locking

⊙ **magnetic clamp:** locking with optional magnetic clamp module.

○ **electric drop:** locking with additional electric drop module.

reverse stroke (only with activated electric drop)

⊙ **not active**

○ **0,5–8s adjustable:** If the function is activated, a short closing movement is first initiated after an impulse with the button or the radio remote control is given. Then the electric drop switches and the gate opens (serves to relax the latch before unlocking). If the electric drop function is not activated, the reversal stroke will not be executed.

delay magnetic clamp

⊙ **OFF**

○ **0,1–1s adjustable:** Time for releasing the magnetic clamp before the gate movement.

electric drop

⊙ **OPEN and CLOSE:** locking with an electric drop in both end positions of the gate.

○ **OPEN only:** locking with an electric drop only in the gate open position.

○ **CLOSE only:** locking with an electric drop only in the gate closed position.

additional module

⊙ **court. / control lamp:** Fades in the menu points „courtyard lamp" and „control lamp" for adjustment (if not selected, these menu points will not be shown on the display).

○ **gate status display 1:** with the two potential-free signal contacts K1 and K2, the gate end positions (limits) can be evaluated.

○ **gate status display 2:** with the two potential-free signal contacts K1 and K2, the gate end positions (limits), the gate movement as well as a gate stop outside of the end positions can be evaluated:

		Function	K1	K2
Gate status display	1	Gate in CLOSE-Position	1	0
		Gate in OPEN-Position	0	1
	2	Gate in CLOSE-Position	0	0
		Gate opens or closes	0	1
		Gate stopped or fault (Gate not in end position)	1	0
		Gate in OPEN-position	1	1

0 = signal contact open, 1= signal contact closed

Only if an additional module is installed you can carry out one of these adjustments (courtyard-/control hence gate status 1 or 2).

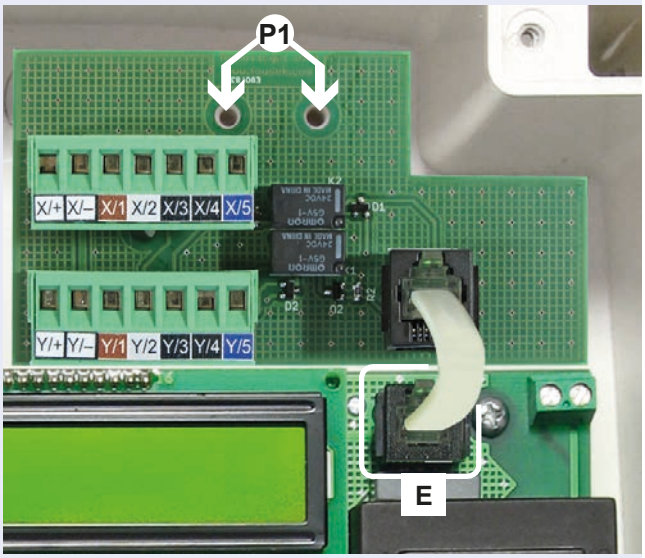
WARNING: • **Before connection works the main switch has to be turned off !**
• **Follow safety instructions!** *(page 13)*

optional motor lock module

- In order to connect the motor lock SAFELOCK to the control unit it needs an optional modul and a motor control unit. If needed then for double leaf swing gate also two motor locks can be connected. Thereby the terminal block is labelled with **„X“** for the first bolt and with **„Y“** for the second bolt.

Modul connection

- **ATTENTION: Turn off the power supply!**
- Insert the modul into the control unit as shown on the picture and fix it at the position **(P1)** with bolts.
- Connect the modul to the control unit with RJ-plug connection **(E).**
- Carry out the connections on the modul clamps **„X“, „Y“** and on the motor control unit clamps as shown on the picture.
- After succesful connection the motor lock operation need to be activated in the control unit menu („peripherials/locking“ and „peripherials/motor lock“)



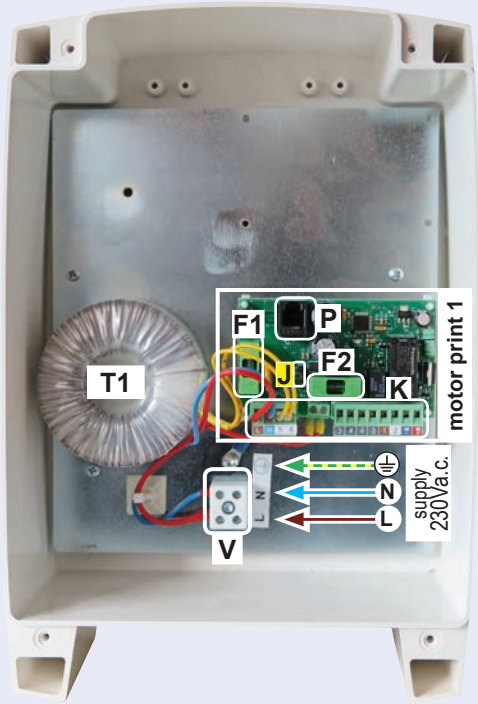
ST REX with integrated motor lock modul

Dropbolt control unit

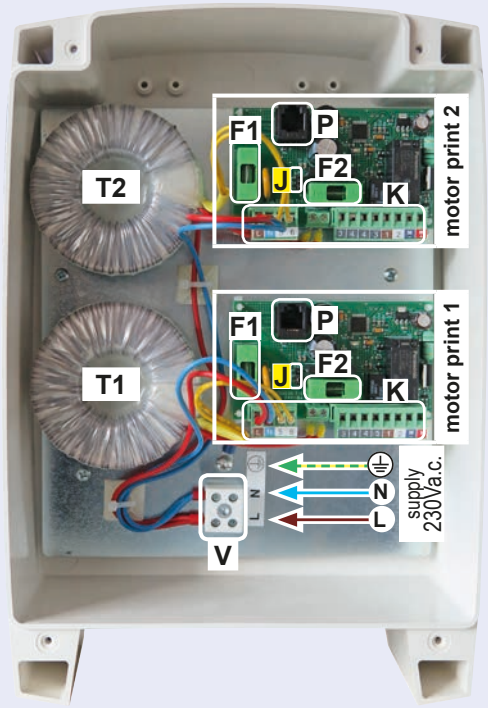
(P) programming slot
(F1) fuse 0,25A T
(F2) fuse 4A T
(T1) transformer 1
(T2) transformer 2
(K) terminals
(V) 230Va.c. supply terminals
(J) Jumper

Jumper **J**	motor print
T	**„T“** with tousek control units ST 51, ST 61, ST REX
T	**„Π“** with foreign control units

SAFELOCK-control unit with 1 motor print:
suitable for 1 dropbolt
connection motor print: with „X“-terminal block

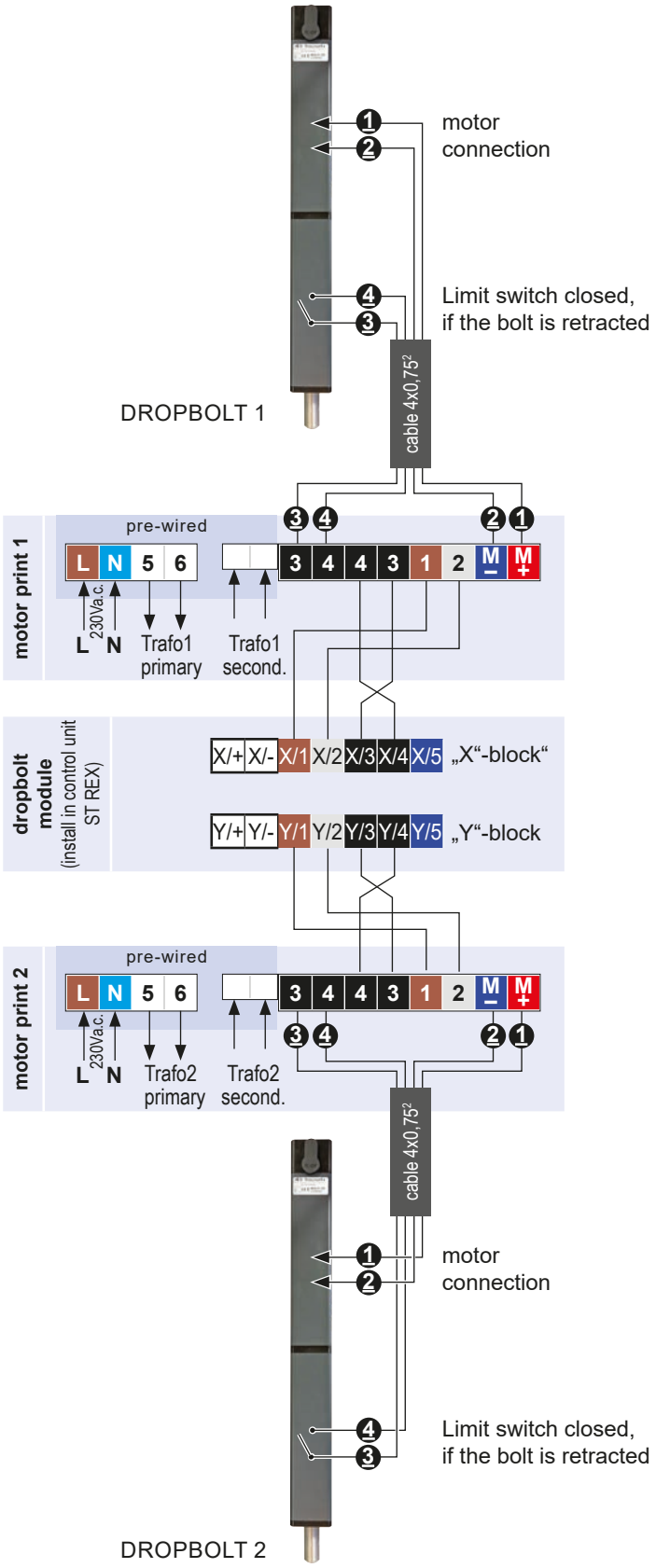


SAFELOCK-control unit with 2 motor prints:
suitable for 2 dropbolts
connection motor print 1: with „X“-terminal block
connection motor print 2: with „Y“-terminal block



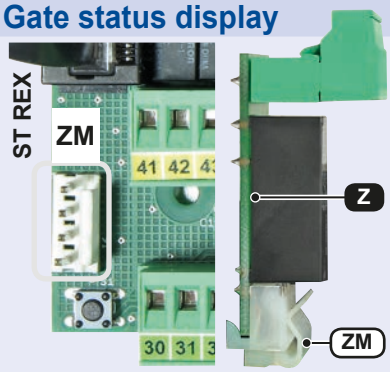
Connection

Wire the terminal block **(K)** of the dropbolt´s printed circuit board as shown on the picture::
on one hand wire it with the module, which is connected to the operator´s control unit:
- for 1 dropbolt: wire only with the terminal block „X“ - for 2 dropbolts wire with terminal blocks „X“+“Y“
on the other hand wire it with the dropbolt via connection cable 4 x 0,75² (motor connection and limit switch) .
Strictly note the numbering **1 – 4** of the connection cable´s wires for a proper connection.
Carry out the 230V a.c. power supply connection on terminal block **(V)** and the earthing connection on the earthing screw.



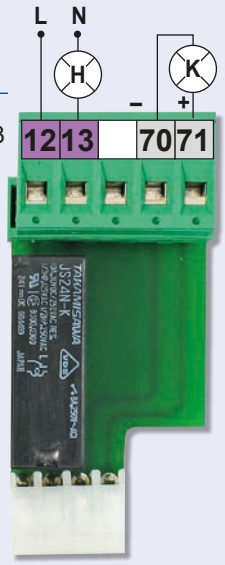
optional module Courtyard lamp/Control lamp or Gate status display

- **Turn off power supply before plugging in the additional module!**
- Depending on which device, e.g. a **courtyard-/Control lamp** is chosen or **evaluation of gate status** should be effected, the corresponding module **(Z)** has to be plugged to the according slot/plug **(ZM)** of control board.
- Additionally the corresponding value has to be selected in menu point „Additional module“.



Additional module Courtyard lamp/ Control lamp

- On the terminals 12/13 a Courtyard lamp **(H)** can be connected: **230V, max. 100W**
- On the terminals 70/71 a control lamp **(K)** can be connected: **24Vd.c., max. 2W**

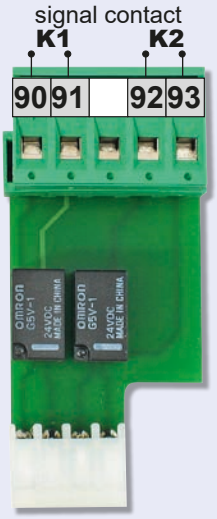


Additional module Gate status display

- with potential free signal contacts K1 (Kl. 90/91) and K2 (Kl. 92/93) the gate staturs can be evaluated in two ways (see menu point „Additional module“).
- Contact load: **24Va.c./d.c., max. 10W**

		Function	K1	K2
Gate status display	1	Gate in CLOSE-Position	1	0
		Gate in OPEN-Position	0	1
	2	Gate in CLOSE-Position	0	0
		Gate opens or closes	0	1
		Gate stopped or fault (Gate not in end position)	1	0
		Gate in OPEN-position	1	1

signal contact: 0 = open, 1= closed



status display

➲ **Status display** for inputs as photocell, safety sensing edges, stop button, impulse switch ....

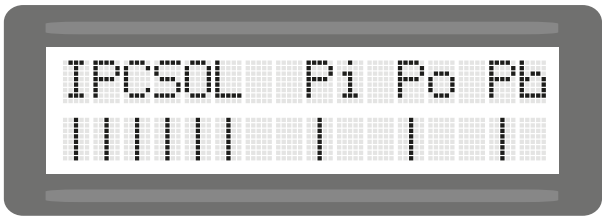
I	impulse button
P	pedestrian entry
C	CLOSE-button
S	STOP-button
O	OPEN-button
L	induction loop
Pi	inner photocell
Po	outer photocell
Pb	back area photocell

Status: not triggered

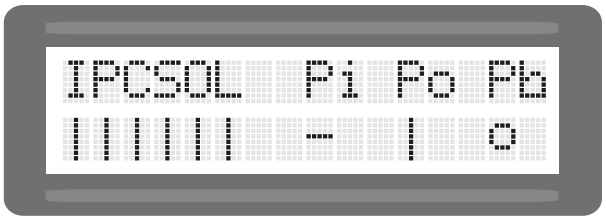
Status: triggered

Status: deactivated in menu

e.g.



All inputs okay.



Inner photocell is triggered.
Photocell back area is deactivated in the menu.
All other inputs are ok.

delete position

⊙ **NO:** does not delete the end positions “gate closed” and “gate open”

○ **YES:** the determined end positions are beeing deleted.
Note: the end positions will be determined after new impulse.

The mechanical stops have to be placed so that possibly existing safety contact edges can not be triggered, as this would lead to an error message.

factory setting

⊙ **NO:** no reset back to factory settings

○ **YES:** reset back to factory settings

Note: The factory settings of the single menu points are marked with ⊙ in this manual.

software version

➲ **shows the software version on display**

serial number

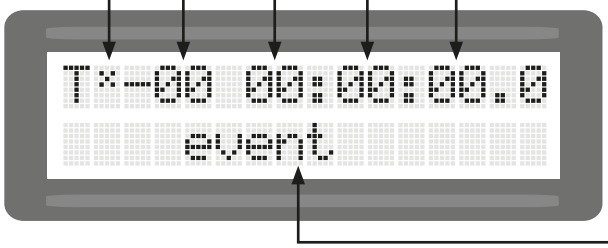
➲ **shows the serial number on display**

protocol

➲ **shows the protocol list on display:** all events that take place are protocolled in this list.
with the buttons **+** and **-** the single events can be seen:

With * the protocol beginning
hence the end is shown

Time since the last event:
DAYS HOURS : MINUTES : SECONDS



Type of event

status Sensor

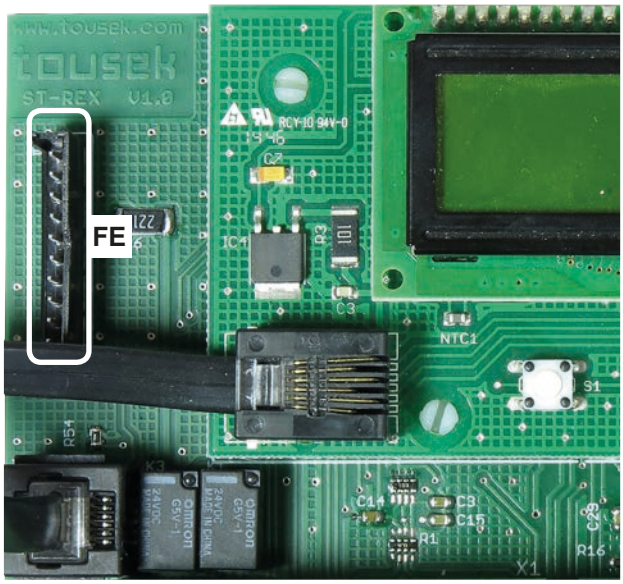
➲ **shows the sensordata**

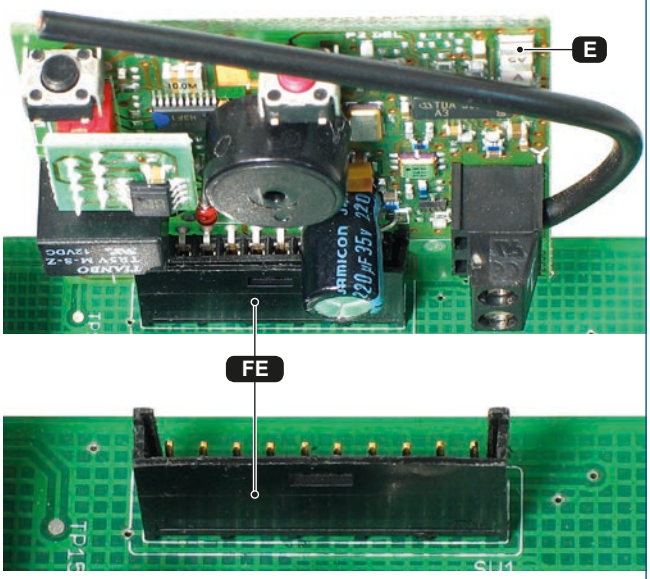
4. Connecting the receiver ST REX

- **Disconnect the power supply.**
- Plug-in the receiver printed circuit board **(E) RS433/868-STN1 (1 channel) or RS433/868-STN2 (2 channels)** into the corresponding slot **(FE)** as shown in the picture.
- For range extension an external antenna FK433 or FK868 can be connected.

Important

- **With the use of the 2-channel-receiver the second channel takes over the function of the pedestrian entry mode switch.**
- For programming of receiver please ***see manual for radio receiver.***





IMPORTANT: When using a radio receiver in traffic light mode, the receiver is not to plugged into the slot of the ST REX, **but into the slot of the traffic light control!** *page 45*

Danger: Before commissioning check again the mechanical door construction and the gate limit stops which are absolutely necessary for safety.

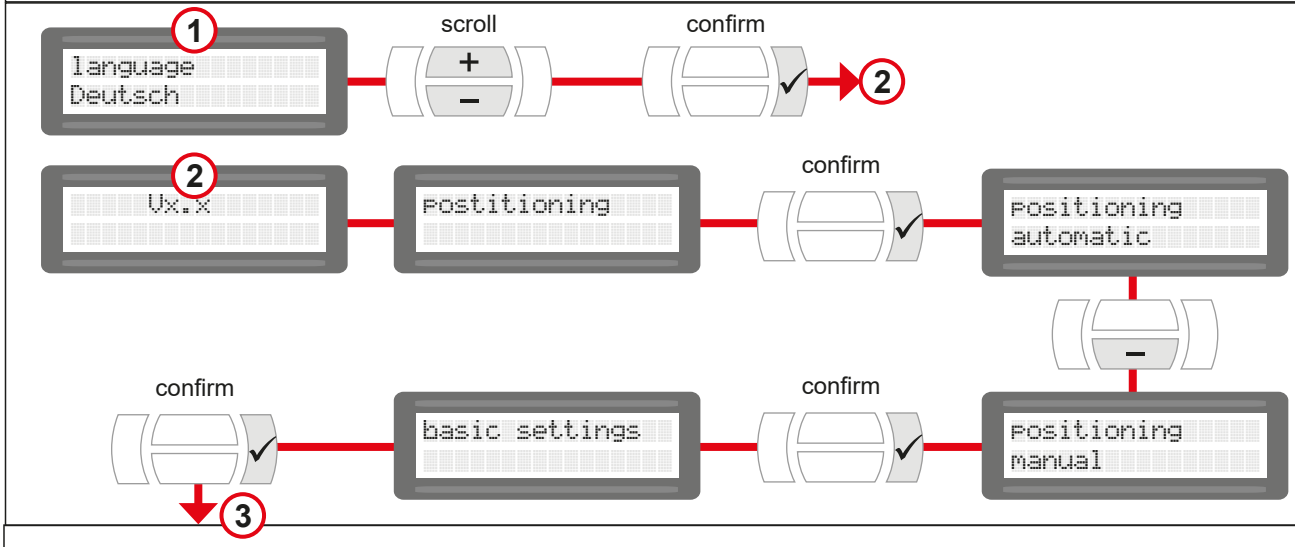
5. Putting into operation

important: preparation works

- All electrical installations (control panels, safety devices ...) have to be made in full conformity with the applying rules and laws.
  Attention: if no stop switch is connected then the terminals 30/31 have to be bridged.
- **The mechanical limits have to be placed so that contact edges are not triggered, as this would lead to an error message.**
- For automatic positioning: Unlock emergency release of operator and set gate to half-opened position. Then lock the operator again.
- Switch on the operator (correct connection necessary).
- **Important:** Putting into operation in Impulse mode (standard setting) and not in dead man mode.
- During initial operation the choice of language is made first, afterwards the choice of **Gate positioning**: „**automatic**“ or „**manual**“ and finally in the „**Basic settings**” the adjustment of the most important operator settings. After the successfull system test the detection of limit positions of gate is performed automatically or manually.
- **After giving the impulse to automatically program the end positions, no other impulse must be given. Also the safety devices mustn´t be triggered. This would lead to an interruption of the programming process.**

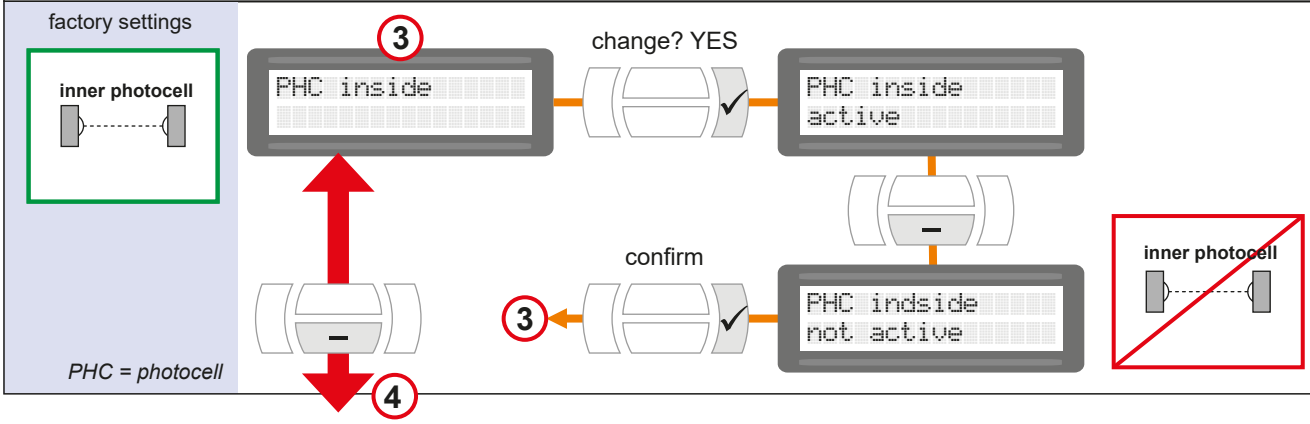
LANGUAGE SELECTION and POSITIONIG

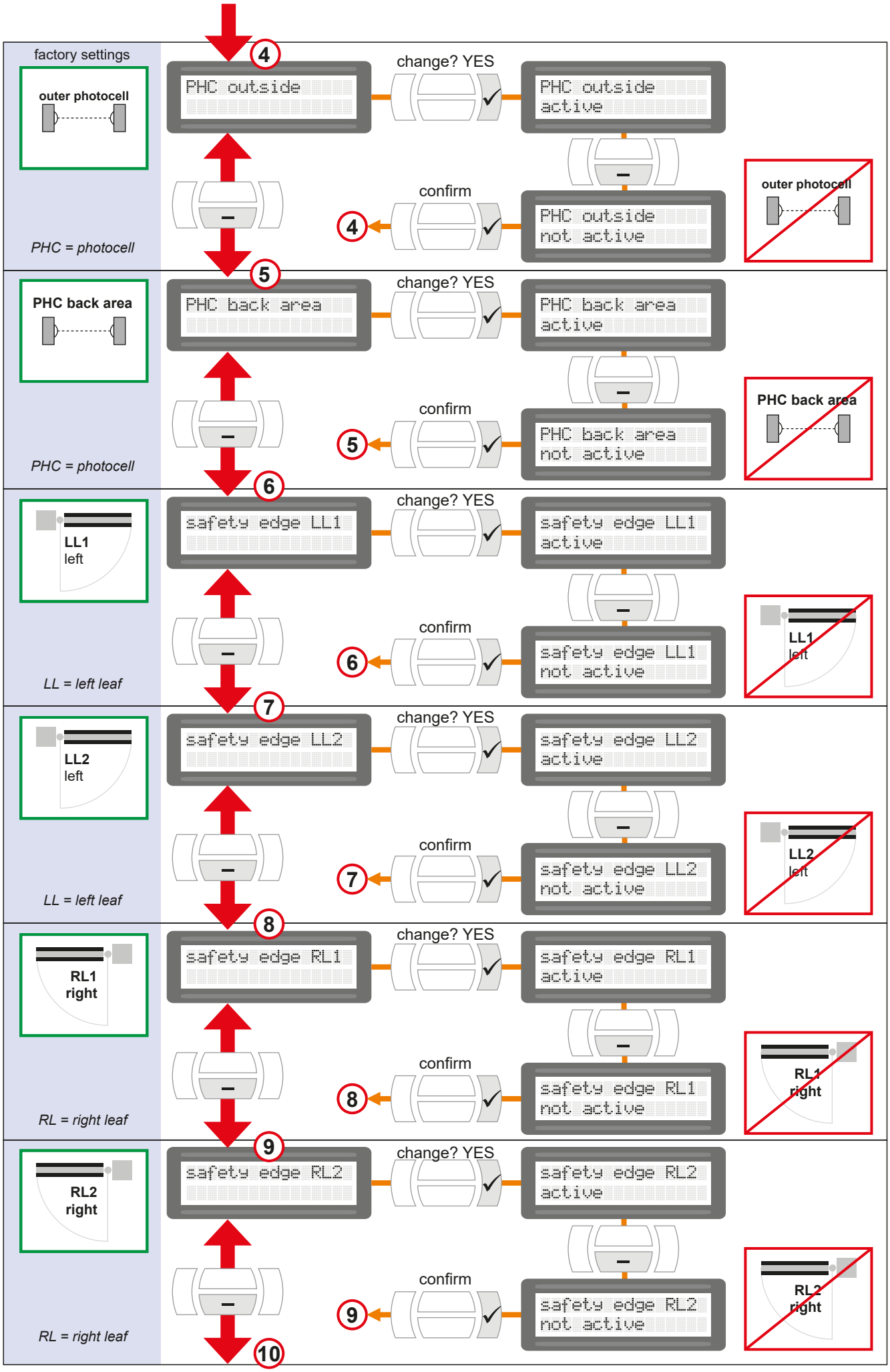
- **Can be selected during initial operation (hence after reset to factory settings).**
- Language selection can be also c**hosen by pressing the ESC button (↵) for 5s**, from any position in menu.

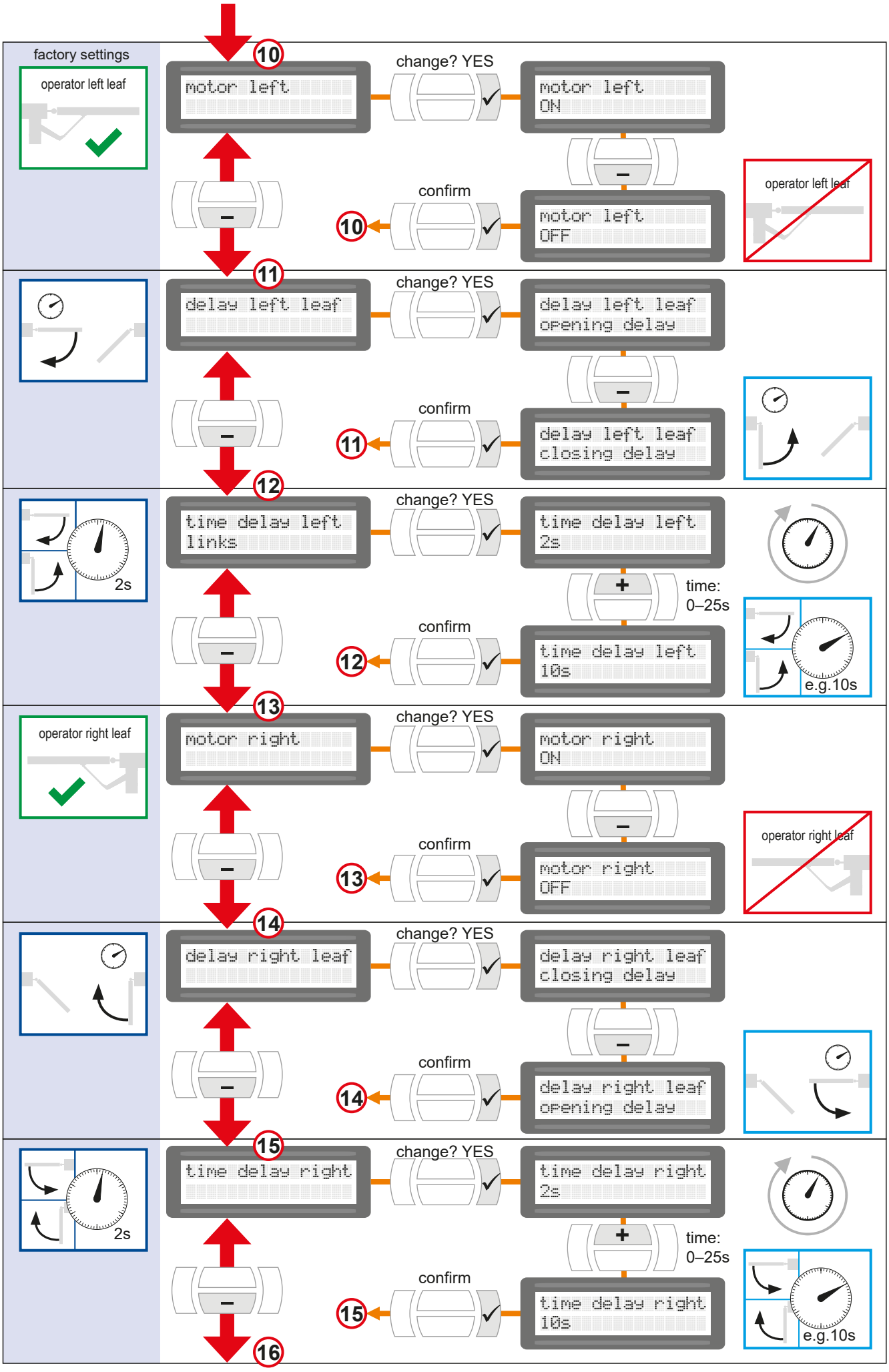


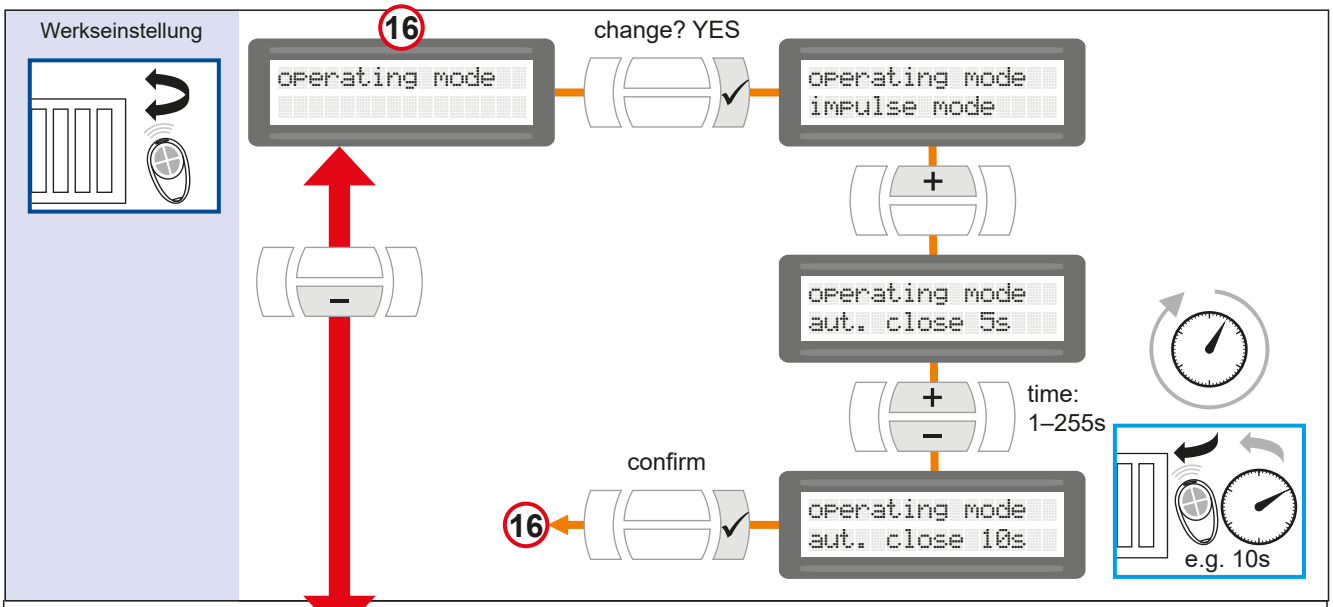
BASIC SETTINGS

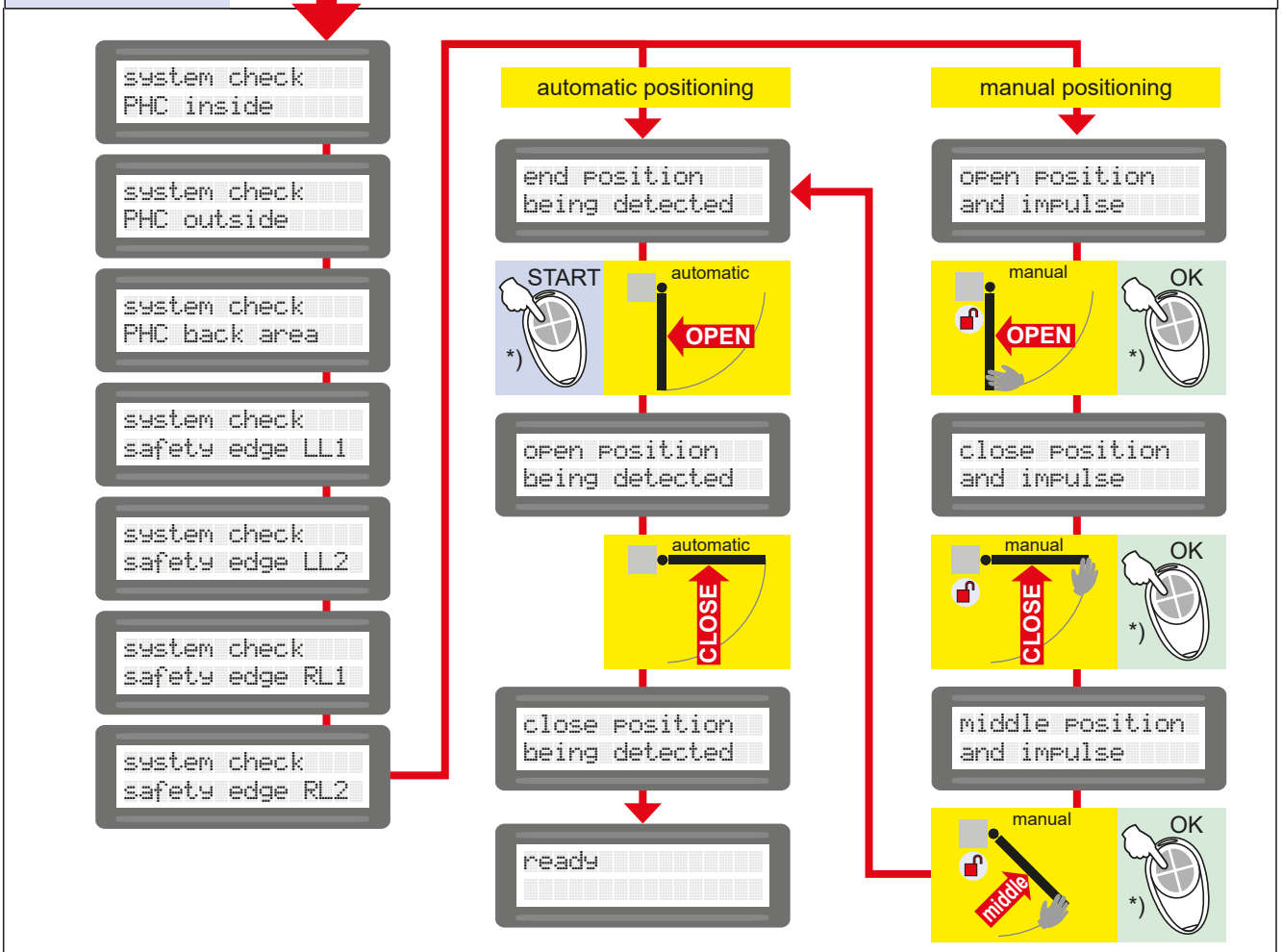
- **For setting the most important adjustments for initial operation of motor.**
- **Can be selected during initial operation (hence when restoring the factory setting).**
- **All safety devices are activated when leaving factory** *(page 20).*
- **The next programming adjustments are made in THE MAIN SETTINGS MENU** *(page 19).*




factory settings
outer photocell
PHC = photocell
4
PHC outside
change? YES
PHC outside active
confirm
4
PHC outside not active
outer photocell
PHC back area
5
PHC back area
change? YES
PHC back area active
confirm
5
PHC back area not active
PHC back area
PHC = photocell
6
safety edge LL1
change? YES
safety edge LL1 active
confirm
6
safety edge LL1 not active
LL1 left
LL = left leaf
7
safety edge LL2
change? YES
safety edge LL2 active
confirm
7
safety edge LL2 not active
LL2 left
LL = left leaf
8
safety edge RL1
change? YES
safety edge RL1 active
confirm
8
safety edge RL1 not active
RL1 right
RL = right leaf
9
safety edge RL2
change? YES
safety edge RL2 active
confirm
9
safety edge RL2 not active
RL2 right
RL = right leaf
10


factory settings
operator left leaf
10
motor left
change? YES
motor left
ON
confirm
10
motor left
OFF
operator left leaf
11
delay left leaf
change? YES
delay left leaf
opening delay
confirm
11
delay left leaf
closing delay
12
time delay left
links
change? YES
time delay left
2s
time:
0–25s
confirm
12
time delay left
10s
2s
e.g.10s
operator right leaf
13
motor right
change? YES
motor right
ON
confirm
13
motor right
OFF
operator right leaf
14
delay right leaf
change? YES
delay right leaf
closing delay
confirm
14
delay right leaf
opening delay
15
time delay right
change? YES
time delay right
2s
time:
0–25s
confirm
15
time delay right
10s
2s
e.g.10s
16





*) Impulse with impulse button or transmitter.
After giving the impulse to **automatically program** the end positions, no other impulse must be given. Also the safety devices mustn´t be triggered. This would lead to an interruption of the programming process.

important

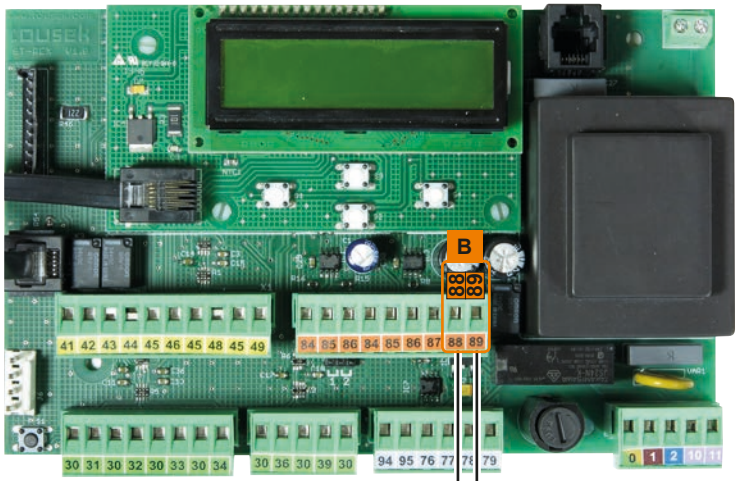
- **The gate system (1- or 2-leaf) must be reflected in the settings of the main menu!**
- **Factory settings: Operation of a 2-leaf swing gate, left and right operator are in the main menu switched on: „⊙ „Motor ON“.**
- **IMPORTANT for a single-leaf gate system:**
  - Jumper J1/2 in the control board ST REX must be set on „1“ (instead of „2“)
  - In the main menu only the drive of the actually existing gate wing remain activated, the other one must be deactivated! *(in the main menu: left (right) leaf / motor / „motor OFF“)*

Traffic light control board STA 11

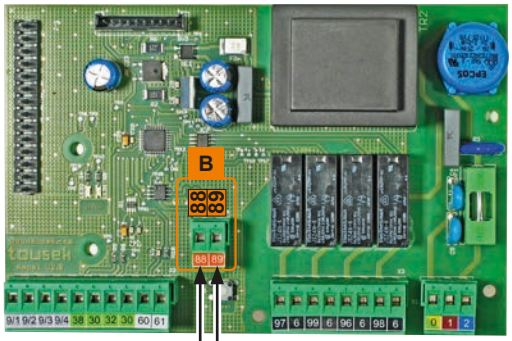
- Connection possibility of two impulse switches or induction loops for Green request and two Red/Green traffic lights 230V, 60W (inside and outside).
- Connection slots for optional radio receiver and induction loop detector
- CE

Traffic light control board STA 11 in plastic housing IP 54 (210 x 310 x 125mm)

control ST REX



traffic light control STA 11



Bus Low
Bus High

General

- To implement traffic light function the control unit STA 11 has to be connected with the operator control unit ST REX via bus system.

Valid for the traffic light mode:

- **The inputs of the pulse buttons of the ST REX have no function and the impulse emission is only possible via traffic light board** *page 44–46 (I-loops, pulse button, radio)*!
- **When using a radio receiver in traffic light mode, the receiver is not to plugged into the slot of the ST REX, but into the slot of the traffic light control!!**

Technical data

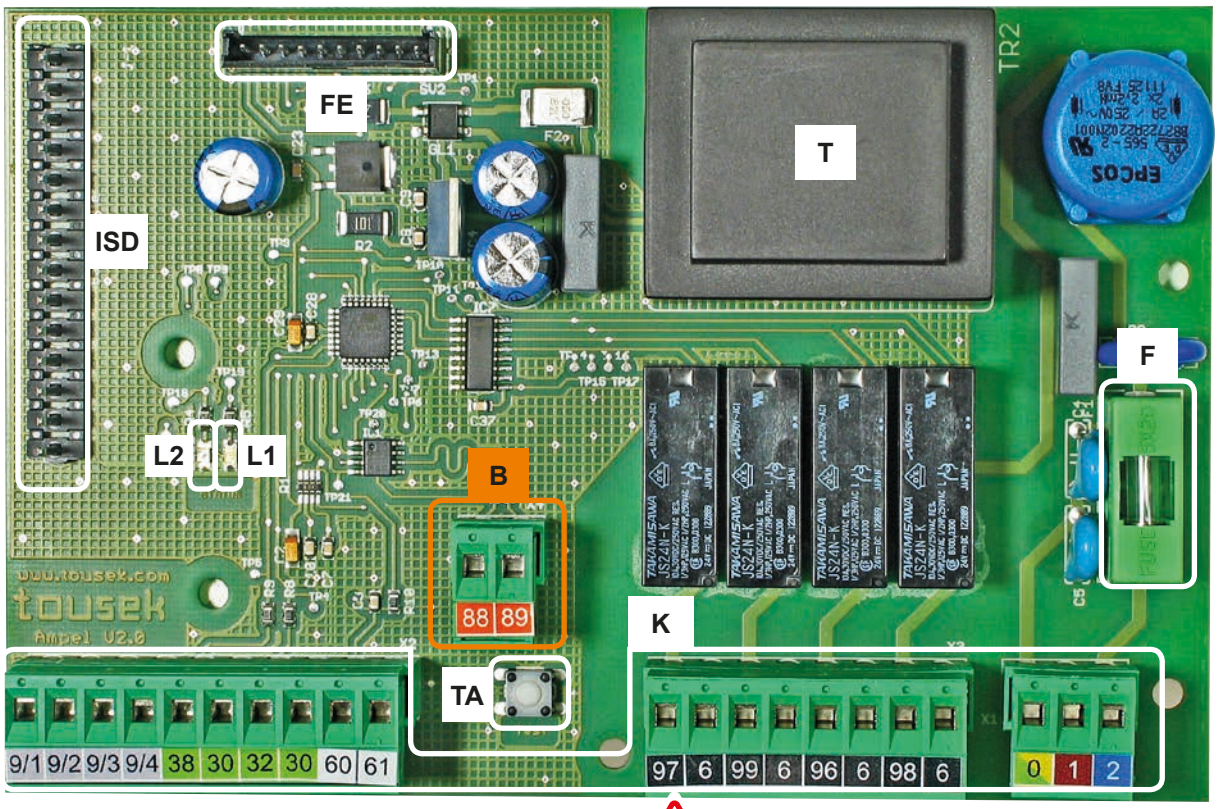
Traffic light control board STA 11 in plastic housing IP 54 (210 x 310 x 125mm)	
Power supply	230Va.c., +6/-10%, 50Hz
Relay load Red/Green traffic light	230V, max. 60W
Article no.	12120370
Optional equipment	induction loop detector ISD 6 (2-channels) • pluggable receiver

Function

At the terminals of the traffic light controller separate impulse generators can be connected for „inside“ and „outside“.
The programming of the traffic light control is done in the progrmming menu of the connected operator control board. These relate to the function of the duration of the green phase and the clearance time, the traffic light at the door position „closed“ (whether or continuous red) and the traffic light system logic.
Depending on how the „traffic light logic“ was adjusted, after completion of command processing and gate opening, either the side, which has given the order, or both sides receive the green light. Vehicles can therefore only drive in one direction or both directions entering the gate area. Furthermore, the traffic light controller has the capacity to store incoming transit needs and to work at the end of the current cycle.

Functional sequence				Traffic light (command giving side)	Traffic light (counter side)
1	**Gate closed** Continuous red function adjustable via operator control board	selectable	**no continuous red**	OFF	OFF
			continuous red	RED	RED
2	**opening command (INSIDE or OUTSIDE)**			RED	RED
	Prewarning OPEN is being started (= red traffic light warning and possibly signal light warning before opening the door), duration adjustable via gate automation control board				
	> Gate opens after the prewarning time.				
3	**Gate open (limit position reached)** traffic light logic, adjustable via operator control board	selectable	**both sides Green**	GREEN	GREEN
			one side Green	GREEN	RED
4	**Green phase is started** ⓘ Duration is adjustable through operator control board				
5	**Clearance time is started (= time to exit the traffic light intermediary region)** **Duration of adjustable drive control**			RED	RED
	> Gate closes after clearance time, cycle starts again (→ 1) • if during the closing procedure an impulse is generated, so the gate opens immediately, and the green phase begins when the opening is completed.				
ⓘ	• If a further order from one side is given with traffic light logic „both sides Green“ during the green phase/clearance time is given, then the green phase is restarted. • If a further order from the same side is given with traffic light logic „one side Green“ during the green phase/clearance time, then a restart of the green phase for this side is effected. • If a further order from the counter side is given with traffic light logic „one side Green“during the green phase/clearance time, then the barrier remains after the green phase/clearance time open and the Green display changes to the counter side.				

ⓘ **When the stop button is triggered, the gate stops moving and only opens again with command by either side.**

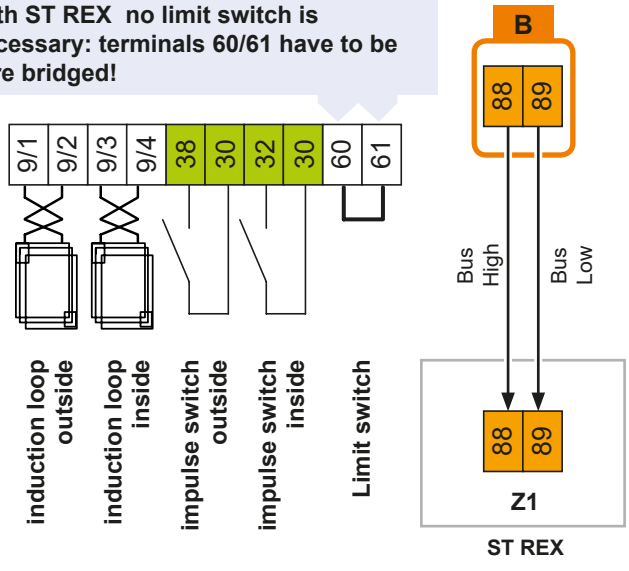


Components of traffic light control board

- **(K)** Terminals
- **(B)** Bus terminals (connection with operator control unit)
- **(TA)** Test button (switches all traffic lights on)
- **(L 1)** green LED: Status OK
- **(L 2)** red LED: error (message on the display of the drive control)
- **(T)** Transformer
- **(ISD)** Slot for optional induction loop detector (p. 46) (command)
- **(FE)** Slot for optional radio receiver (p. 45)
- **(F)** fuse 3,15A T

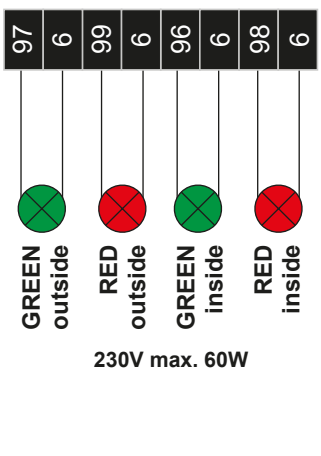
For connection, adjustment and maintenance works ensure that the electronics are not damaged by moisture (rain).

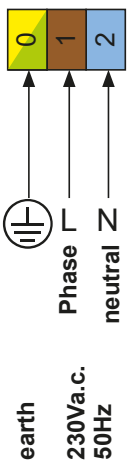
With ST REX no limit switch is necessary: terminals 60/61 have to be wire bridged!



Warning

- **Before opening the control housing please switch off necessarily the main switch!**
- **In-supplied control inside the unit is powered.**
- **the safety regulations to prevent electrical shock have to be respected.**
- **The unit is designed to be connected by qualified personnel.**
- **The device must not be used in hazardous areas!**
- **A pole disconnecting main switch with a min. contact gap of 3mm has to be provided. The system must be protected in each case in accordance with applicable safety regulations!**
- **IMPORTANT: The control lines (buttons, radio remote control, light barriers, etc.) have to be separated from the 230 lines (supply, motor, signal light) to relocate**





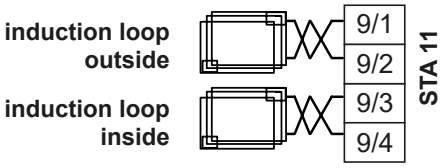
Induction loops

- **For the use of induction loops (for Green/Opening command) the I-loop slot (ISD) of the traffic light board STA 11 has to be equipped with an optional avalaible I-loop detector ISD 6 (2-channels).** *(page 46)*

Induction loop input (outside: term. 9/1+9/2, inside: term.9/3+9/4)

Connections

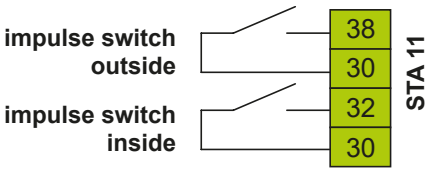
- For the connection of induction loops to give an impulse to the green request.
- With the 2-channel I-loop detector ISD 6 both loops (inside/outside) can be evaluated.



Impulse switch (outside: term. 38/30, inside: term. 32/30)

Connections

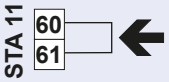
- For the connection of impulse switches on the inside and outside to give an impulse for the green request. **The impulse is also possible via an optional, plug-in radio receiver.**
- The green switching for one or both sides is dependent on the adjustment of the traffic light logic of the operator control board *(see according manual)*.



Limit switch input (term. 60/61)

Connections

Important



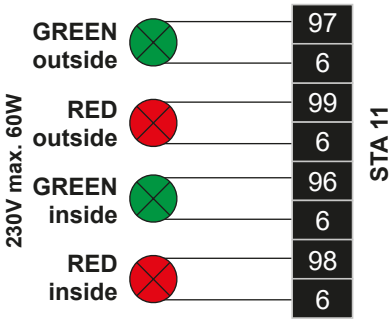
With the control unit ST REX no limit switch connection at the traffic control unit STA 11 is necessary, **instead the terminals 60/61 must be wire bridged!**

Traffic light outputs

outside: GREEN: term. 97/6, RED: term. 99/6
inside: GREEN: term. 96/6, RED: term. 98/6)

Connections

- on the described terminals Red/Green traffic lights **(230V max. 60W)** can be connected for inside and outside location.



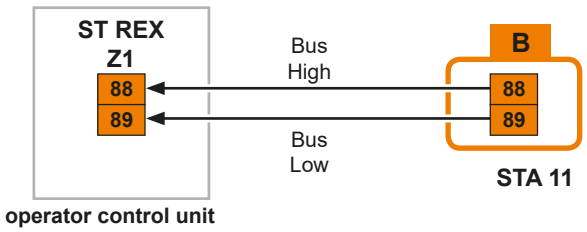
Connection traffic light board with operator control board (term. 88/89)

Connections

- Via the bus system *(see pic.)* the traffic light control board is connected with the operator control board.

Important

- **Max. cable length between automation and traffic light control is 25m.**
- **Cable type e.g.: shielded control cable YSLY 2 x 1mm² oder gleichwertig.**



Adjustments

- **The functions of the traffic light control is determined by the settings of the connected operator control board. These relate to the duration of the green phase and the clearance time, the traffic light at the closed door position (whether or continuous red) and the traffic light logic (both sides / one side green).**

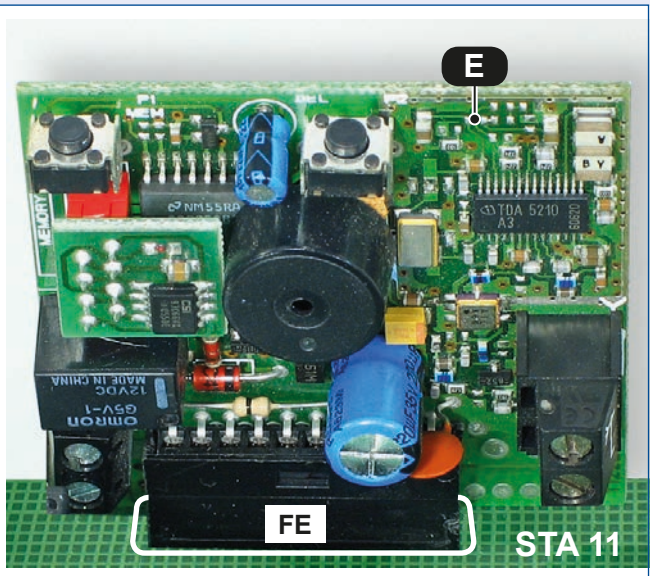
Important

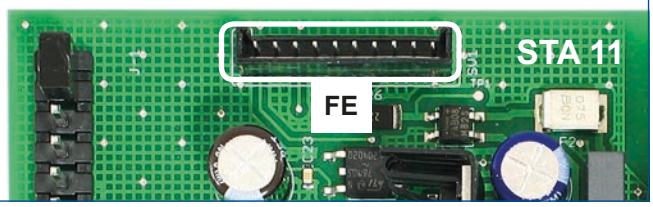
- **When using a radio receiver in traffic light mode, the receiver is not to plugged into the slot of the ST REX, but into the slot of the traffic light control STA 11 !**

- **Disconnect the power supply.**
- Open traffic light control housing
- Plug-in the receiver printed circuit board **(E) RS433/868-STN1 (1 channel) or RS433/868-STN2 (2 channels)** into the corresponding slot **(FE)** as shown in the picture.
- For range extension an external antenna FK433 or FK868 can be connected.

Important

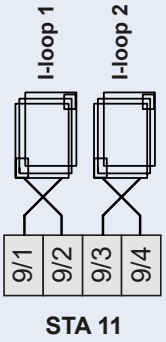
- **With the use of the 2-channel-receiver the first channel takes over the function of the impulse button outside and the second the function of the impulse button inside.**
- For programming of receiver please ***see manual for radio receiver.***





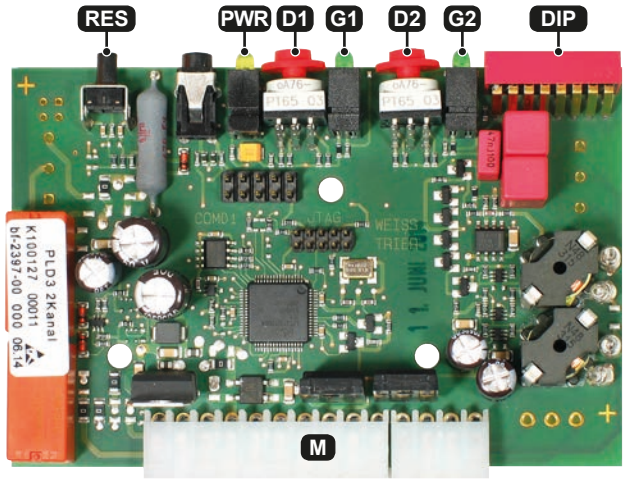
Important

- The device is for plugging onto a compact control board. The compact control board has to be built into a separate housing with IP54-insulation.
- After each device setting a readjustment is carried out automatically. After a change in the frequency (DIP switch 1: OFF / ON) the Reset-button (RES) has to be pressed.
- **Special notes for loop:** The safe function of the device depends essentially on the correct technical installation and of the laying of the loop wire, as these are the sensors of the device. The loop should not be mechanically loaded or moved. The loop feed line has to be twisted for **approx. 20 to 50 times per meter** and separated from any voltage carrying lines.
- With the 2 channel induction loop detector ISD 6 both loops can be evaluated (the green / open request inside and outside can be realised).
- The loop connection has to be made to **terminals 9/1-9/2 (= loop 1) and 9/3-9/4 (= loop 2).**
- *Detailed informations can be found in the corresponding manual.*



Mounting and installation

Switch off the power supply. open the control board housing and plug the I-loop detector onto the connection slot as shown on picture.

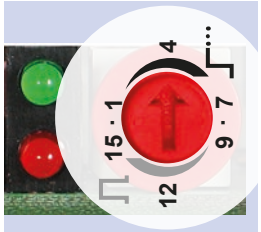


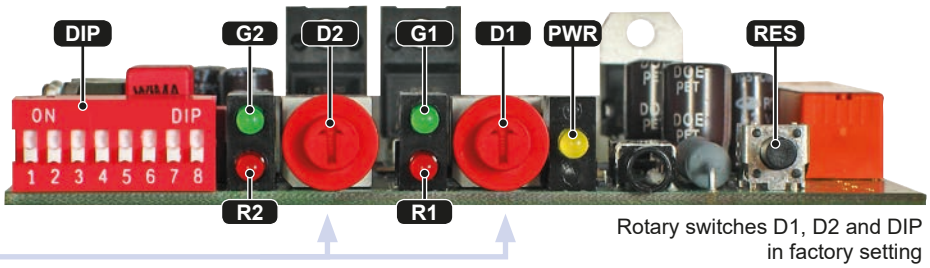
- All detector settings can be made easily with the rotary switches **(D1)** for channel 1 and **(D2)** for channel 2 as well a s the DIP-switches **(DIP)**. *see corresponding manual.*

Factory settings (DIP1–DIP8 = OFF, D1 and D2 = 4).

LED´s	for channel	display
G1 (green)	1	detection
G2 (green)	2	
R1 (red)	1	defective
R2 (red)	2	
PWR (yellow)	blinking when adjusting / power	

DIP DIP-switch
RES Reset-button
M Molex bar
D1 rotary switch channel 1
D2 rotary switch channel 2

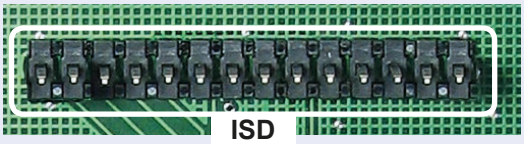


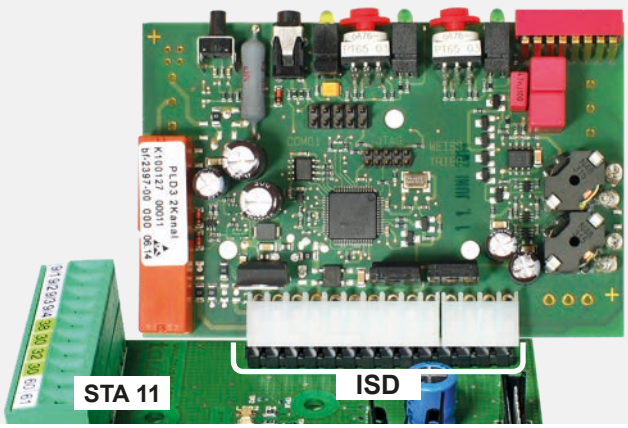


Rotary switches D1, D2 and DIP in factory setting

The Reset button **(RES)** has 2 functions which can be activated via the different duration of the key pressure:
- **Adjustment:** short key pressure (< 2s), Initialization of all activated loop channels.
- **Reset:** average duration of the key press (> 2s), reset the detector, subsequent initialization of all channels.

Insert the board of the induction loop detector on the slot **(ISD)** of the traffic light control unit **STA 11**.

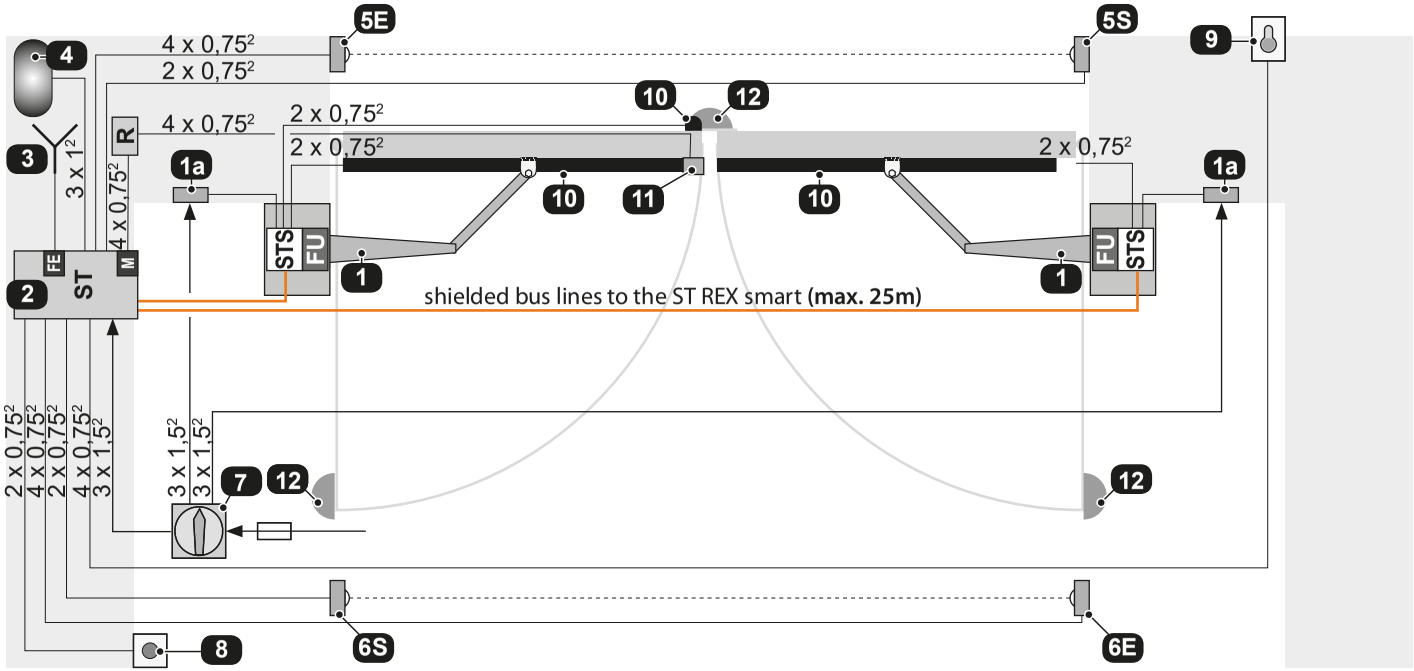




error	possible reason	solution
display: „Stop-switch triggered“	stop-button not connected or not bridged	Stop-button connect or bridge → use status display for help
display: „PHC inside triggered“	concerned photocell interrupted	check correct connection hence remove obstacle → use status dispaly for help
display: „PHC outside triggered“		
display: „PHC back area triggered“		
display: „safety edge LL1 triggered“	concerned safety edge interrupted or hot-wired	check correct connection hence remove obstacle → use status dispaly for help
display: „safety edge LL2 triggered“		
display: „safety edge RL1 triggered“		
display: „safety edge RL2 triggered“		
display: „PHi ON negative“ „PHi OFF negative“	concerned photocell interrupted or hot-wired	check correct connection hence remove obstacle → use status dispaly for help
display: „PHa ON negative“ „PHa OFF negative“		
display: „PHb ON negative“ „PHb OFF negative“		
display: „left sensor triggered“	no communication with absolute-sensor	check correct connection → use status dispaly for help
display: „right sensor triggered“		
display: „searching motor L...“	no connection to the affected ST REX smart control board	check correct connection of the bus system → check status LED on the ST REX smart control board check correct addressing from the ST REX smart control board → Jumper on ST REX smart
display: „searching motor R..“		
display: „FC error left“	no connection between ST REX smart and frequency converter	check correct connection of the FC → check for BUS-RDY and BUS-ERR
display: „FC error right“		
display: „search traffic light“ (only when traffic light is activated)	no connection to the traffic light control board STA11	check correct connection of the traffic light control board → check status LED´s on the STA11
No reaction when giving an impulse	no line voltage hence safety fuse broken	check line voltage as well as safety fuses.
	error of transmitter/control device/ impulse button, e.g. transmitter not programmed	check transmitter/control device, e.g. program transmitter and check battery
Entry to control menu not possible	Duration command is present (Impulse-, pedestrian button)	Check the commander teminals → see status display

8. Cable plan

1 operator Tousek REX - each with integrated moto control ST REX smart **(STS)** incl. frequency converter **(FU)**
1a connection box
2 Control ST REX **(ST),** optional: with module for electric drop **(M),** plugable receiver **(FE)**
3 external antenna (for increased range) connection with coaxial cable
4 signal light
5 external fotocell
6 internal fotocell (**T:** transmitter, **R:** receiver)
7 main power switch
Note: An all-pole disconnecting main switch with a contact opening-gap of minimum 3 mm has to be foreseen.
8 pushbutton momentary contact switch
9 key-operated momentary contact switch
10 safety sensing edges
11 electric drop (with necessary control **(R)**)
12 floor stops



NOTE concerning cable laying

The electric cables have to be laid in insulating sleeves which are suitable for underground usage. The insulating sleeves have to be lead into the inner of the operator housing.

230 V cables and control lines have to be laid in separate sleeves.

Only double-insulated cables, which are suitable for underground usage (e.g. E-YY-J) may be used.

In case that special regulations require another type of cable, cables according to these regulations have to be used.

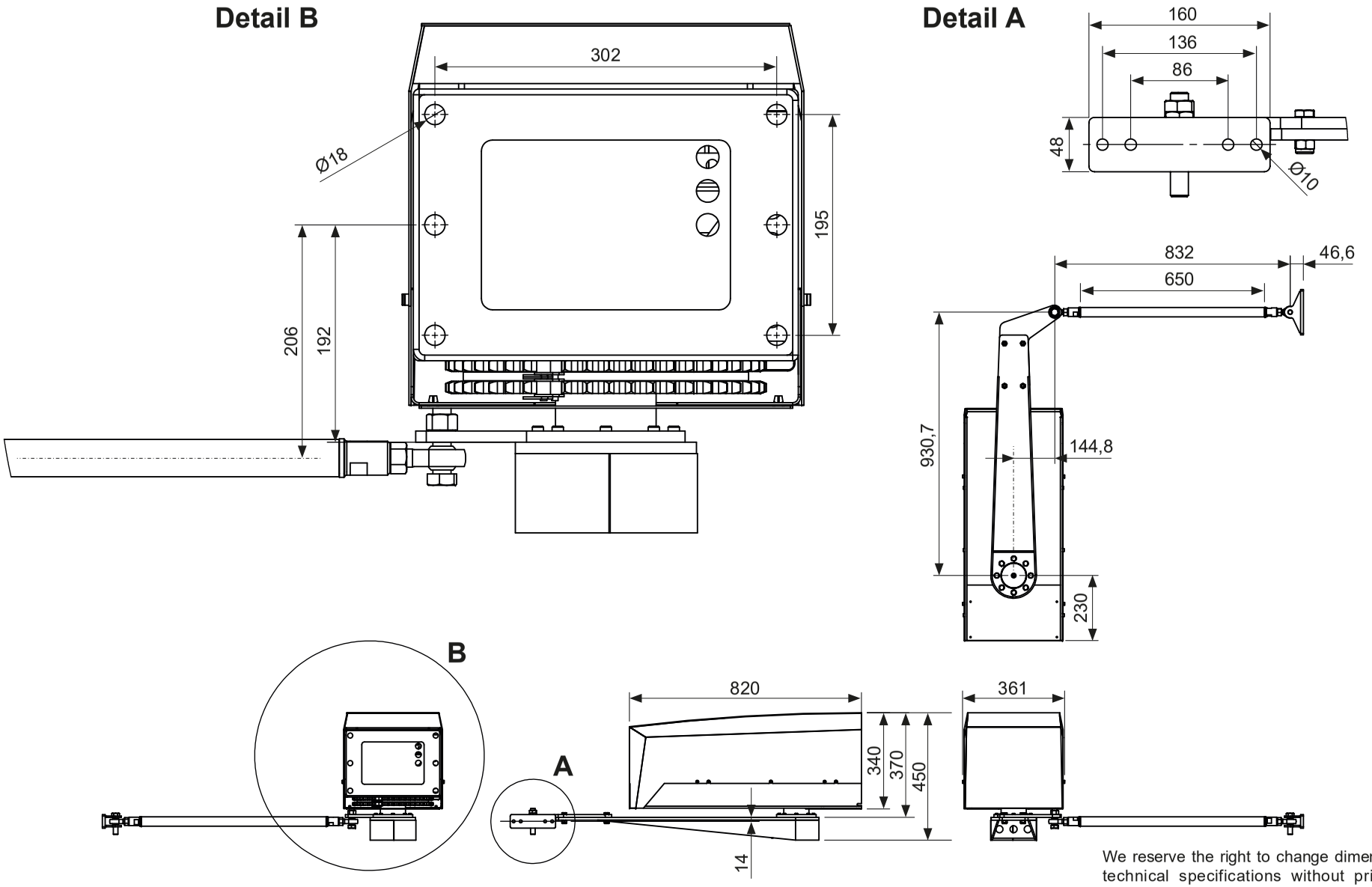
SAFETY NOTE

Please be aware that the beside picture is only a symbolic sample illustration of a gate facility and may therefore not show all safety devices required for your specific application.
To achieve an optimum safety level at your gate facility, please make sure that all safety components and accessories which - according to the applying safety rules and laws - are required in your particular case (e.g. photocells, induction loops, sensing edges, signal lamps, traffic lights, mains- and emergency power off switches etc.) are properly installed, operated, and serviced.
In this context please follow the EU Machine Directive, accident prevention rules and laws, as well as applying EU- and national standards in force at the time of installation and operation of the gate facility.
The Tousek Ges.m.b.H. cannot be held responsible for any consequences resulting from disregard of applying standards and laws during installation or operation of the gate facility.

The 0,75mm² control lines are shown without ground lead. In order to facilitate connections we recommend using flexible wires and not using thicker wires for the control lines.

9. Dimensioned drawing

- Dimensions in mm

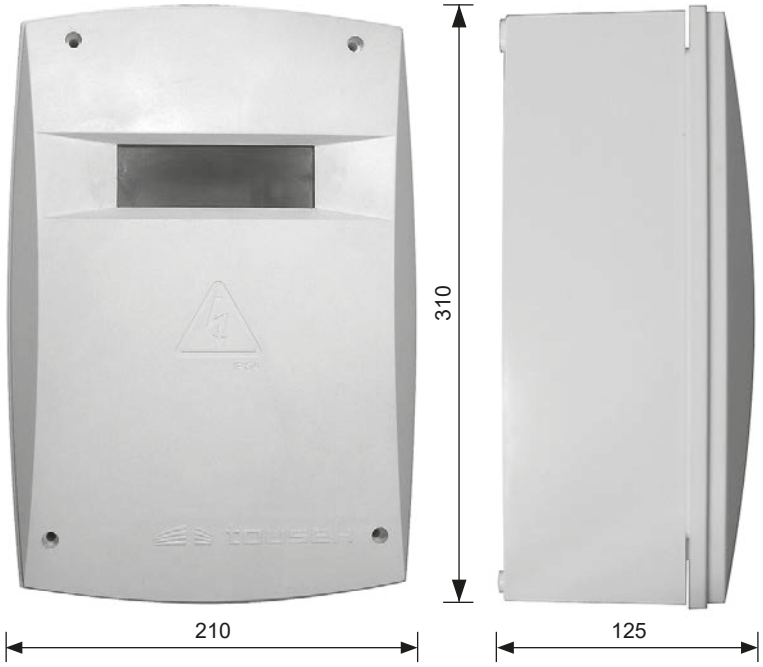


We reserve the right to change dimensions and technical specifications without prior notice.

10. Dimensioned drawing control housing IP54

- Dimensions in mm

control housing ST REX



back side

We reserve the right to change dimensions and technical specifications without prior notice.

11. Maintenance plan for operator REX Force

Maintenance work may only be carried out by qualified specialist personnel.

ATTENTION: Switch off the power before working on the operator! Depending on the intensity of use the following maintenance work must be carried out 1-4 times per year:

- Check the attachment of the operator housing and the door console.
- Check of the cain; if necessary retighten the chain (*page 6)* and lubricate with chain spray.
- Check and adjustment of the end positions open/closed.
- Functional check of the emergency release, *page 12, transmission cable **(10a)***
- Check the gearbox for leaks.
- Check the fixing screws of the motor/gearbox for a tight fit.
- Control of the door arm: - Correct fit of the seat on the main shaft
  - Firm seat of the mounting screws
- Control of force setting in the control unit.
- Control of all safety equipment and accessories.
- **The chain should be renewed approx. every 200.000 cycles (at the latest every 2 years)!**

Declaration of incorporation

In compliance with EC Machine Directive 2006/42/EC, Annex II B for the installation of an incomplete machine.

We hereby declare that the following product, as well as its version, put by us into circulation, complies with the essential requirements of the Machinery Directive (2006/42/EC), due to its design and type of construction.

The validity of this declaration will cease in case of any unauthorized modifications to the products.

The product:

Swing gate operator REX Force

is developed, designed and manufactured in accordance with:

Machinery Directive 2006/42/EG
Low Voltage directive 2014/35/EU
Electromagnetic compatibility 2014/30/EU

Applied and used standards and specifications:

EN ISO 13849-1, PL-„c“, Cat 2
EN 60335-1 as applicable
EN 60335-2-103
EN 61000-6-3
EN 61000-6-2

Following requirements of Annex I of the EC Directive 2006/42/EC are met:

1.1.2, 1.1.3, 1.1.5, 1.2.1, 1.2.2, 1.2.3, 1.2.6, 1.3.2, 1.3.4, 1.3.7, 1.5.1, 1.5.4, 1.5.6, 1.5.8, 1.7

The relevant technical documentation is compiled in accordance with Annex VII, Part B of the EC Machinery Directive 2006/42/EC.

We undertake to submit it in electronic form and within a reasonable time to the market surveillance authorities in response to a duly substantiated request.

TOUSEK Ges.m.b.H., A1230 Wien, Zetschegasse 1, Austria

is authorized to compile the technical documentation.

The incomplete machine cannot be put into service, until it is determined that the machine, into which the incomplete machine has to be inserted, complies with the the Machine Directive 2006/42/EC.

Eduard Tousek, CEO

Vienna, 30. 08. 2018

EC Declaration of Conformity

In compliance with EC Machine Directive 2006/42/EC, Annex II, Part 1 A.

When the described operators are connected to a gate they form a machine in the sense of the EC Machine Directive.

Relevant EU directives:

Construction Products Directive 89/106/EWG
Machinery Directive 2006/42/EG
Low Voltage directive 2014/35/EU
Electromagnetic compatibility 2014/30/EU

We hereby declare that the following product, in the version put by us into circulation, complies with the essential requirements of the Directives mentioned above. The validity of this declaration will cease in case of any unauthorized modifications to the products.

Product:

_____

Gate description

_____

Motor description

The incomplete machine cannot be put into service, until it is determined that the machine, into which the incomplete machine has to be inserted, complies with the the Machine Directive 2006/42/EC.

_____

Installation company

_____

Address, ZIP code, Place

_____

Date/ Signature

Motor number (Type plate): _____

Other components:

www.tousek.com

tousek PRODUCTS

- sliding gate operators
- cantilever systems
- swing gate operators
- garage door operators
- folding door operators
- traffic barriers
- electronic controls
- radio remote controls
- key operated switches
- access control
- safety devices
- accessories

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info@tousek.cz

your service partner:

tousek
E_REX-Force_01
30. 07. 2019

We reserve the right to change dimensions and/or technical specifications without prior notice. Claims resulting from misprints or errors cannot be accepted.

STAATLICH AUSGEZEICHNETES UNTERNEHMEN