



T-1050 e 8.99



Installation On Site

for Automatic Sliding Door

TXP STARDOR

Technology for Doors and Gates

Documentation TXP STARDOR

For installation and commissioning of this system, the instructions and data sheets listed below may be helpful; make sure you have these documents at hand before commencing the installation work!

- Product Information T-1004 e
- Dimensional Drawings LR 22A T3-374-09 to -12
for application
with STARLOCK LR 22A 3-hole T3-374-15 to -16
TR 24 T3-374-05 to -08
for door leaves assembly LR22A T3-368-05 to -07
- Components Assembly TXP T-1006 e
- Installation On Site TXP T-1050 e
- Assembly Instructions STARLOCK T-1015 e
- Assembly Instructions
Unhinging Protection ◆ T-1051 d/e/f
- Operating Instructions TEP, TXP, TSP, TLP T-787 e
- Wiring Diagram T-869 e
- TCP Manual T-900 e
- Automatic Configuration of
TEP, TSP, TXP without SERCOM T-1071 e
- Instructions for Rubber Spring T-1067 e
- System Test Book International: T-895 e

We are printing on environment-friendly paper bleached without chlorine.

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1 Regarding these Instructions

Addressee/Applicability

These operating instructions are applicable for automatic TORMAX door operators of type TXP STARDOR. They are directed at qualified installation fitters and contain all necessary instructions for the assembly of components. In this document, it is presumed that the system was preassembled as described in the document "Components Assembly".

All accessories such as cables, terminals, activators etc. are available as TORMAX parts (item numbers see TORMAX price list).

Explanation of Symbols



In these instructions, we have designated all points that concern your safety with this symbol.



This symbol warns of electrical voltage.



This symbol designates all paragraphs that need to be observed for sound operation of the system. Non-adherence may cause material damage.



This symbol designates all optional components that do not exist on all systems.

Useful notes regarding proceedings, tentative clarifications etc. are set in italics like in this text.

Languages

These instructions are available in various languages; please ask your TORMAX dealer for other language versions.

2 Safety

2.1 General Safety and Accident Prevention Regulations

General Safety Instructions



Prior to installation or commissioning, read and follow this information that is being described on this page—especially the following notes relating to safety—and adhere to them at all times! Damage to the unit and personal injury may result if these instructions were not carefully followed.

Pay particular attention to the specially marked notes in this manual (for an explanation of the symbols please refer to chapter 1)!

These products are Underwriters Laboratories, Inc. (UL) listed and cUL certified for the Canadian marketplace, and therefore comply with the requirements of the National Electrical Code (NEC) and the Canadian Electrical Code (CEC). Installations intended to meet UL and cUL requirements must be followed as described in the instruction provided herein. These are minimum standard requirements. Where local codes exceed these requirements, they must be followed as well.

Preventing General Hazards and Possible Damage to This Equipment

- Keep fingers away from all moving parts.
- Verify that the power selection switch is set to the correct voltage before start-up.
- The power supply cable (flexible cord) should be entered at the end side that is close to the input power supply plug. It should not be routed through doorways, window openings, walls, ceilings, floors, etc. The power supply cable (flexible cord) should not be attached or otherwise secured to the building structure. It should not also be concealed behind walls, etc.
- Never allow the power supply cable (flexible cord) to become entrapped in moving parts of the operator, door, or system.
- The power receptacle must be of the grounding-type. It is very important that the unit will be properly grounded.
- To reduce the risk of electrical shock, this equipment has a grounding-type plug that has a third grounding pin. This plug will only fit into a grounding-type outlet. If the plug does not fit into the outlet, contact a qualified electrician to install the proper outlet. Do not change the plug in any way.

Warnings of Dangerous Electrical Voltages or Current

- Be sure the electrical power is disconnected and locked-out when working on the operator unit.

- Install the electrical cables and power only after the mechanical installation to the unit is done.
- Turn on the power to the operator unit only after all internal cables are connected. Do not connect cables while the unit is powered.
- Always use appropriate tools for installation and repair.

Prior to commissioning or performing any work on the door system, the operating instructions for the TORMAX operator and the following safety directions should be studied with great care and must be observed!

In any case, please pay attention to the specially marked notes within this document (see chapter 1 for an explanation of symbols).

Correct Application

The TORMAX operator has been designed and manufactured according to the state-of-the-art engineering and the recognized safety related regulations and is intended exclusively for the operation of automatic TORMAX doors. Operators corresponding to IP 22 in the protective system may only be installed at the inside of buildings if no additional protective measures are provided.

Any other use is considered non-permissible and may result in injuries to the user or third parties. The manufacturer will not be liable for damages resulting from incorrect application. The risk of such non-permissible applications must be borne solely and entirely by the operator of the door system.

Relevant Instructions

The operating service and maintenance conditions specified by the manufacturer are to be observed. TORMAX drive units must only be maintained and repaired by trained specialists who are aware of any possible danger that may occur.

In addition to the operating instructions, the generally accepted legal and otherwise relevant rules relating to accident prevention, environmental protection and to occupational medicine—in the country where the door system is installed—are also applicable. The special guiding rules for sliding doors (e.g. European Standards Committee CEN) are to be adhered to. Further, the local government and industrial regulations shall apply.

The manufacturer is exempted from any liability for damages caused by unauthorized alterations of the system.

2.2 Organisational Measures

Requirements Relating to Installation Personnel

The Installation On Site may only be performed by trained personnel who have adequate knowledge in the discipline of power operated doors based on their vocational training and experience. They must be acquainted with the applicable national worker's protection rules, accident prevention regulations, guidelines and generally recognised rules of the technology to such an extent that they can appraise the safe working condition of power operated doors.

Experience/training in metal construction and fastening techniques are a condition of employment.

Qualified employees of the franchised dealer can make use of the training offered by Landert-Motoren AG (training courses), if desired.

Basic Safety Measures— Careful Behaviour



- Do not use the system in other than technically perfect condition. Make sure that faults which could impair safety are eliminated immediately.
- Keep fingers away from any moving components. Special caution is required in the region of the trolley heads.
- Use exclusively tools suitable for the respective work sequence. Ensure that the tools are in a sound condition.
- Electrical voltage/current: Disconnect the drive system from the mains supply before performing any work on electrical parts. Install cables after the mechanical installation work is complete. Connect mains supply only when all internal cables are connected.

3 Installation

Installation Options Dimensional Drawings



The system is to be installed according to the dimensional drawings listed below, depending on the kind of installation. To ensure a safe operation of the system, it is essential that these drawings be adhered to.

Installation on the Lintel

Profile	Fixed Leaf	Dimensional Drawings		
		EB 	ER 	EL
TR24	with 	T3-374-05	T3-374-07	T3-374-07
	without 	T3-374-06	T3-374-08	T3-374-08
LR 22A	with 	T3-374-09	T3-374-11	T3-374-11
	without 	T3-374-10	T3-374-12	T3-374-12
LR 22A 3-hole	with 	T3-374-15		
	without 	T3-374-16		

3.1 Installation of the System

Conditions

We assume, that the system was preassembled according to the descriptions in "Components Assembly".

- Select kind and number of fastening components (bolts, dowels and washers) according to the nature of the base material.

We recommend for...

Brick walls:	Hexagon screws or hexagon socket screws	DIN 931/33 (ISO 4014 or 4017) DIN 912
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Screw size: Ø 8,0 x L
Maximum distance between fastening screws: 40 cm

Aluminium: Self threading metal screws DIN 7504

Screw size: Ø 5,5 x L
Maximum distance between fastening screws: 40 cm

Wood: Wood screws DIN 571

Screw size: Ø 8,0 x L
Maximum distance between fastening screws: 40 cm



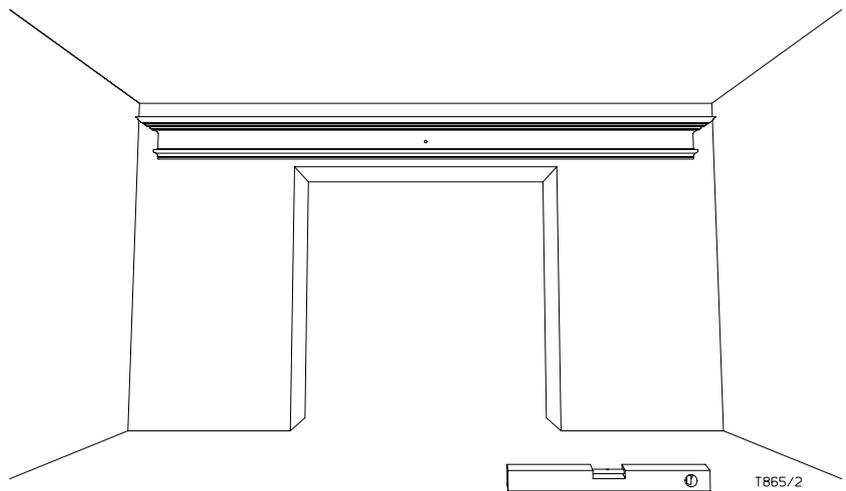
The maximum protrusion (screw-head and washer) must not be more than 6 mm.

Use only stainless steel screws.



Depending on the length and weight of the system, an assisting person may be required.

- Affix the system in the middle with *one* fastening screw and level out with spirit level.



- Mark positions of drilling holes on supporting structure. Remove system again.
- Now drill remaining holes and fasten system with screws (again, affix the system first with a screw in the middle).



3.2 Installation of the Fixed Leaves

For assembling the fixed leaves with profile system LR22A please refer to the dimensional drawing T3-368-07.

The leaves must be manufactured from materials that do not carry the risk of a potential injury on breakage (relating to glass, use for instance single sheet toughened glass or compound safety glass).

- Install fixed leaves with TORMAX profiles according to the applicable dimensional drawing (refer to paragraph 3.1).
- Mark crystal-clear leaves with TORMAX stickers so that they can be recognised by passers-by (safety).

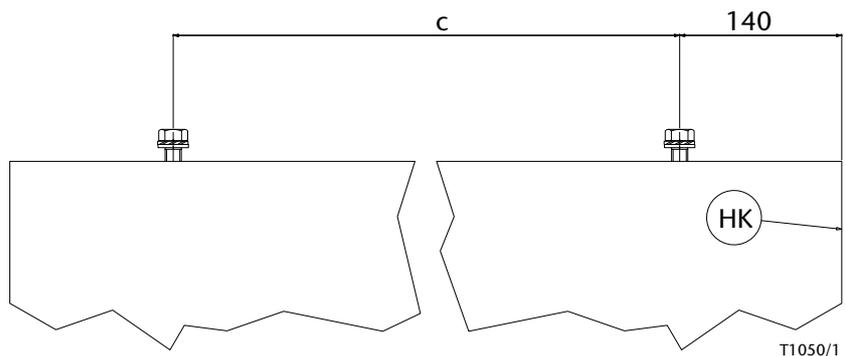
3.3 Installation of the Sliding Leaves

For assembling the sliding leaves with profile system LR22A please refer to the dimensional drawing T3-368-05 (T3-368-06 in combination with STARLOCK respectively).



Depending on the door weight, an assisting person may be required during installation.

- If not already done: Install door guide/floor guide ◆.
- Install suspension bolts according to the following drawing.

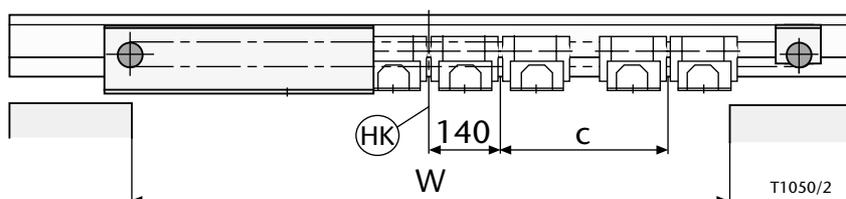


HK = Closing edge

For standard opening travel distances, the trolley head distance c can be taken from the following table. For intermediate distances, it can be calculated according to the following formula:

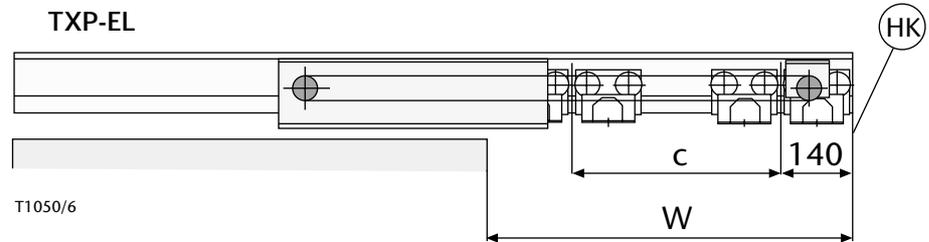
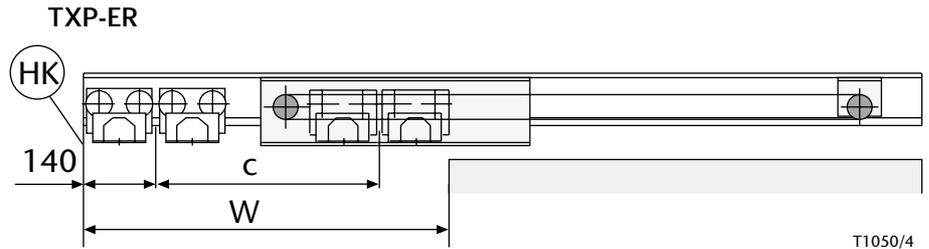
$$\text{For EB, ER und EL: } c = W/2 - 280$$

TXP-EB



Opening travel distance	W =	1100	1200	1300	1400	1500	1600	1700	1800	2000	2200	2400	2600	2800	3000
Trolley head distance	c =	280	320	370	420	470	520	570	620	710	820	920	1020	1120	1220

T1050/3e



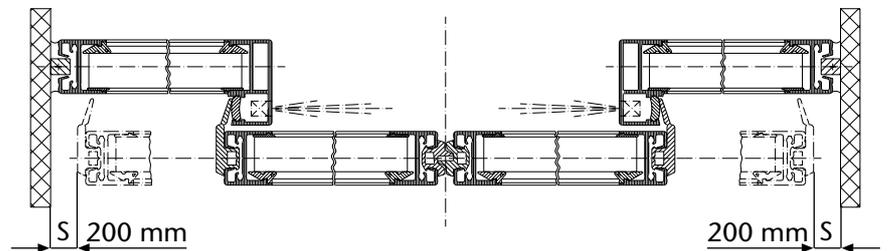
TXP-ER/EL

Opening travel distance	W =	700	800	900	1000	1100	1200	1400	1500	1600	1800	2000
Trolley head distance	c =	420	520	620	720	820	920	1120	1220	1320	1520	1720

T1050/5e

Safety

- Maintain safety distances between walls and door leaves according to national regulations (e.g. ZH 1/494, CEN: $S = 200$ mm).



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- If the door does not open automatically without energy supply: Install handles on the door leaves for manual operation. Make sure there are no pinching or shearing hazards!
- Mark crystal-clear leaves with stickers (TORMAX arrows) so that they can be recognised by passers-by (safety).

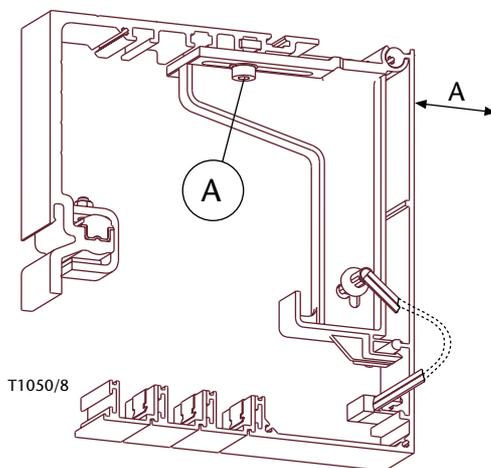
4 Mechanical Adjustments



For all work described here: remove mains plug or bring main system switch to the safe OFF-position!

Adjustment of Cladding

- For wide door leaves: Loosen bolt (A) and adjust cladding.



Alignment of Sliding Leaves

- Adjust the distance between the door shoe and the floor to approx. 7 mm (adjustment screw at the trolley heads).
- Align the sliding leaves; they must be closing in parallel and plumb.

Adjustment of Opening Width

In the open position, the closing edges of the sliding leaves must be flush with the edges of the fixed leaves (for sliding doors without fixed leaves: flush with the wall joining profile).

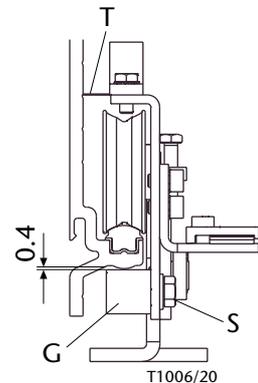
- If necessary: Correct opening travel distance (position of end stops).

Adjustment of Counter Roller

For the control system to work properly, it must be possible to move the door easily along its full opening travel distance.

- If necessary, adjust the counter rollers at the trolley heads:

Slide a thickness gauge of 0.4 mm between the counter roller (G) and the profile to determine the distance; tighten securing bolt (S).



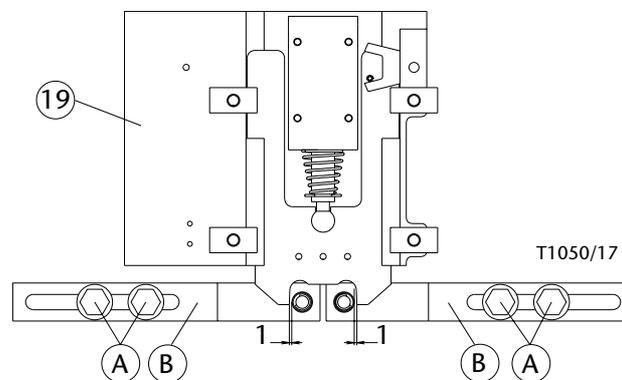
Adjustment of Lock ♦

The lock needs to be adjusted if the gap between latch and lock cam (at the trolley head) is not equal to 1 mm.



If the lock was correctly positioned during installation (according to the dimensions in the instructions "Components Assembly"), it must not in any case be shifted again for the following adjustments.

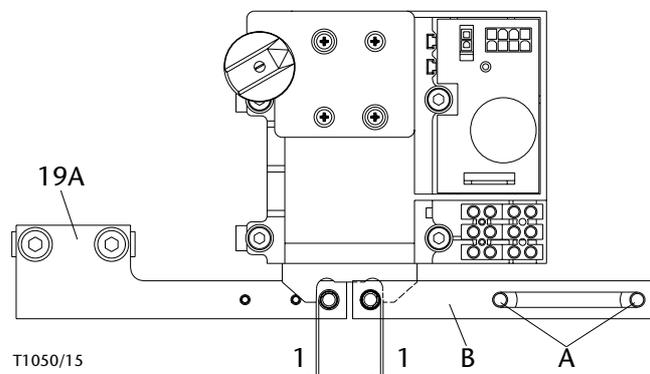
Lock 95 for TXP EB



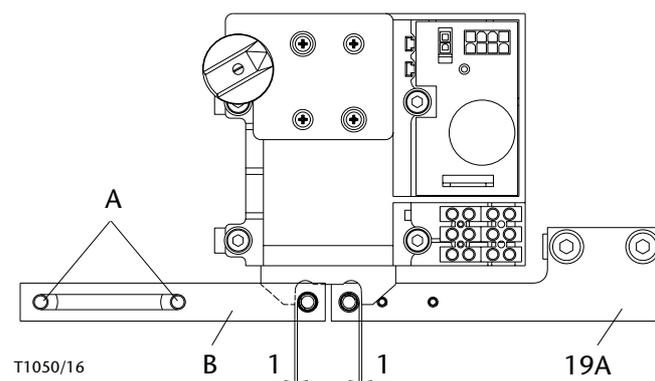
- Unhook rubber spring (emergency opening ♦).
- Bring lock (19) into position "unlocked".
- Close door leaves (slide them into the closed position).
- At the trolley heads, loosen bolts (A), then slide the lock cams (B) against each other until they come to a stop.
- Bring lock into the position "locked".
- Separate the lock cams (B) again by pulling them in opposite directions up to the end stops; then shift them back again by 1 mm.
- Retighten bolts (A).
- Hook rubber spring in place again (emergency opening ♦).

Lock 95 for TXP ER and EL

ER



EL



- Unhook rubber spring (emergency opening ♦).
- Bring lock into position "unlocked".
- Close door leave (slide it into the closed position).
- At the trolley head, loosen the lock cam (B) by means of bolts (A).
- Loosen the counter cam (19A) installed in the header profile as well.
- Shift lock cam (B) and counter cam (19A) against each other until they come to a stop.
- Bring lock into the position "locked".
- Separate lock cam (B) and counter lock (19A) again by pulling them in opposite directions up to the end stops; then shift them back again by 1 mm.
- Retighten bolts.
- Hook rubber spring in place again (emergency opening ♦).

5 Electrical Connections

Please consider wiring diagram T-869!

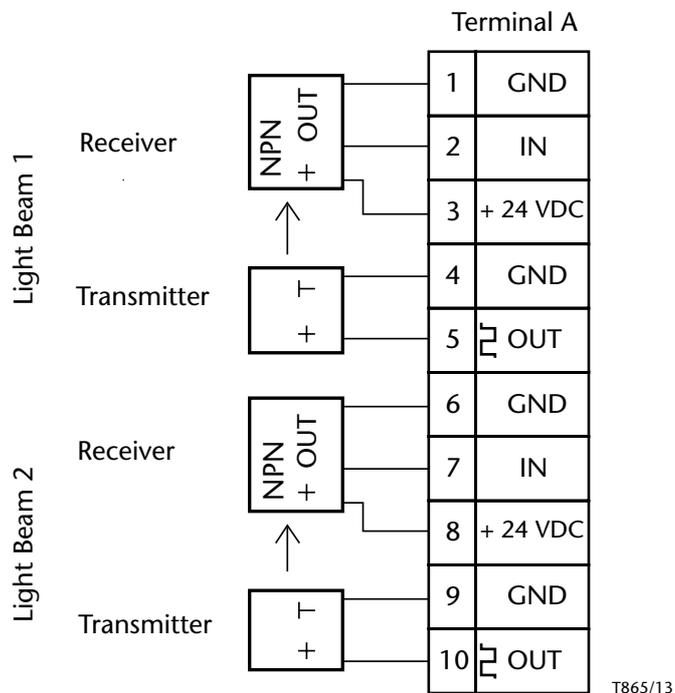


Prior to commencing any work described here, check that mains voltage is switched off.

Installation and Connection of Light Beams ♦ (self-checking)

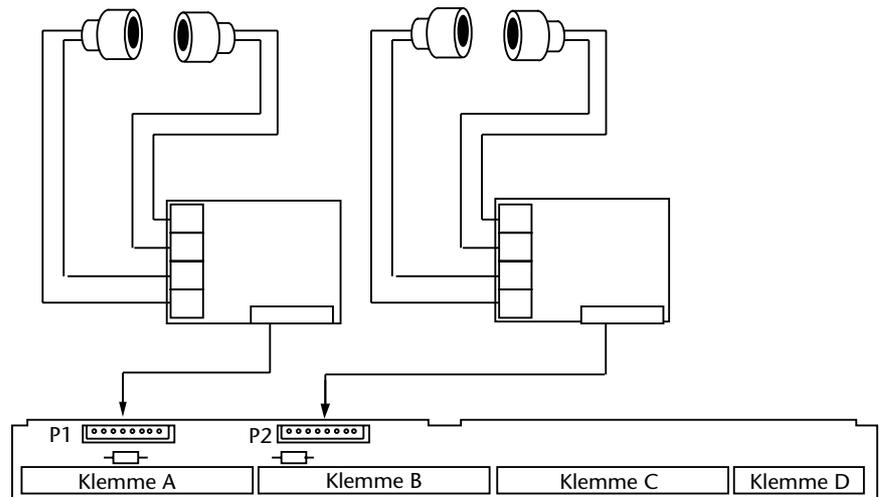
- Install light beam according to national regulations in the fixed leaf (or in the wall joining profile).
- Run cables inside the fixed leaf / wall joining profile upwards into the header profile.
- Connect standard light beams or button-type light beam according to the schematic diagram below.

Standard Light Beams



Button-Type Light Beams

- Carry out wiring, depending on the kind of the button-type light beam, in accordance with the enclosed schematic diagram.



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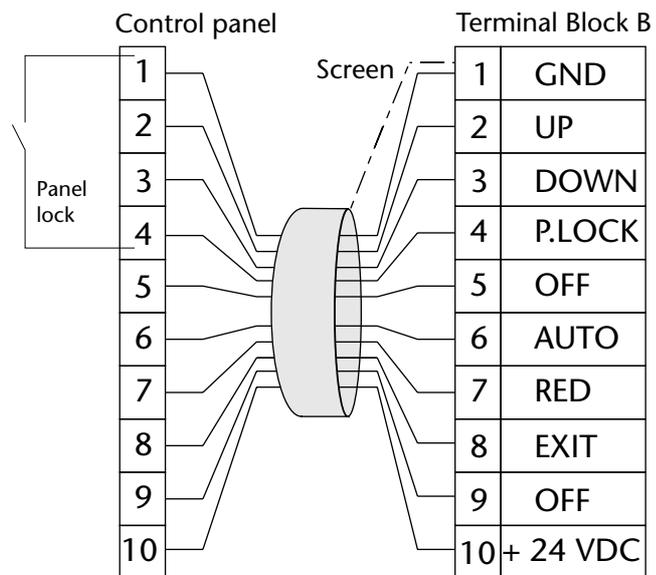
Terminal A cannot be used if button-type light beams are connected.

Installation / Connection of the Control Panel

- Install the control panel according to the contract order and connect it as shown in the schematic diagram below (use 10-core cable 0.34 mm²).



To avoid interference problems, a screened cable must be used for cables over 10 m in length and the screen must be connected to terminal B1 (GND).



T-865/14e

Panel Lock (Key Switch)

With the panel lock, the adjustment facilities of the control panel can be locked jointly or individually as with the service computer *TORMAX SERCOM*.

- Connect panel lock to the control panel between terminals 1 and 4.

Installation / Connection of the Activator ♦

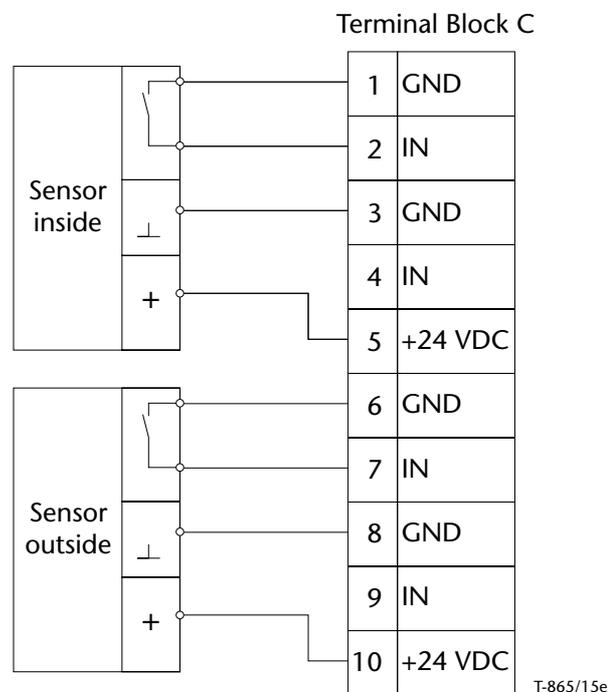
Standard activator

- Install the activators inside and outside according to the contract order.
- Connect the activator according to the following diagram.



Overall, a maximum load of 12 W may be connected to the 24 V power supply.

- Adjust detection field / scanning range of the activator.

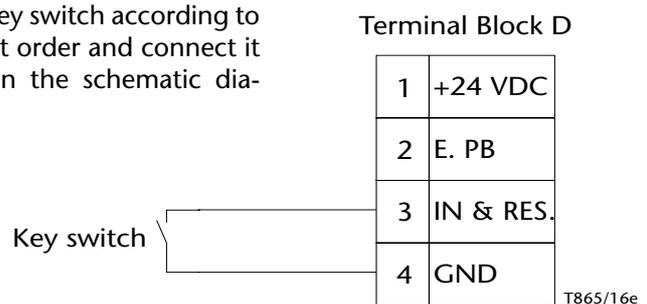


Key Switch ♦

The key-switch function is programmed to input D3 by default.

D3 is simultaneously used also for resetting the emergency-off function..

- Install the key switch according to the contract order and connect it as shown in the schematic diagram.



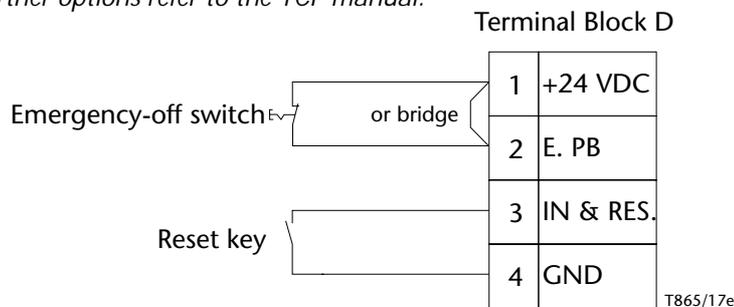
Emergency-Off Switch ◆ Reset Key ◆

- Install the emergency-off switch according to the contract order and connect it on D1/D2 in a fail-safe manner.



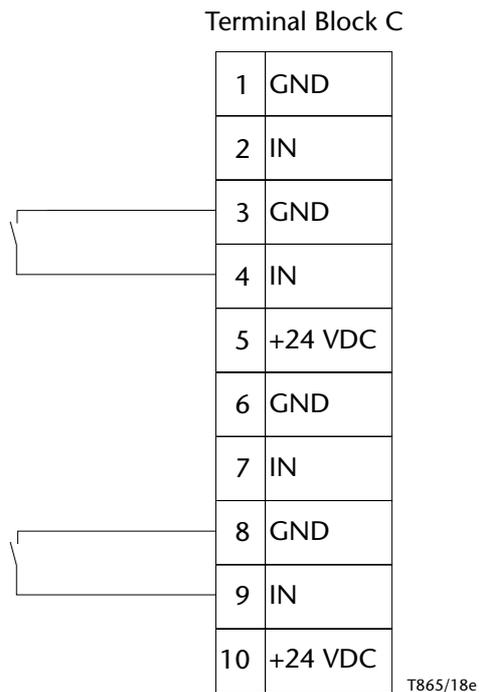
If no emergency-off switch is connected, D1/D2 must be short-circuited with a jumper.

By default, the emergency-off function is reset via control panel when switching to operating mode "OFF". It can also be reset via reset key connected to D3. For further options refer to the TCP manual.



Additional Inputs

On terminal C there are 2 additional inputs that are freely configurable with TORMAX SERCOM.

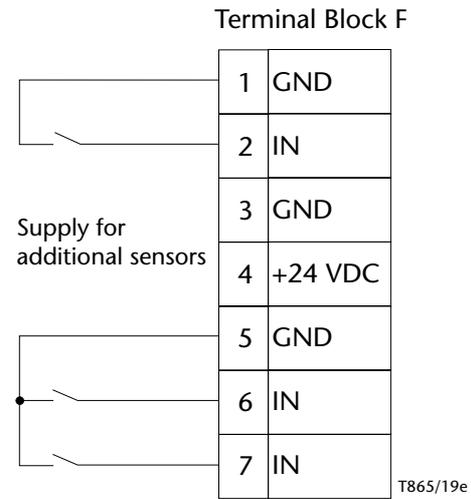


Further inputs can be gained through reprogramming of not connected inputs, e.g. input B4 or A7.

For a list of functions refer to the TCP manual.

Additional Inputs with I/O Module ◆

The I/O module is not part of the control system and must be ordered separately. Inputs F2, F6 and F7 are freely configurable with the service computer TORMAX SERCOM. For a list of functions refer to the TCP manual.



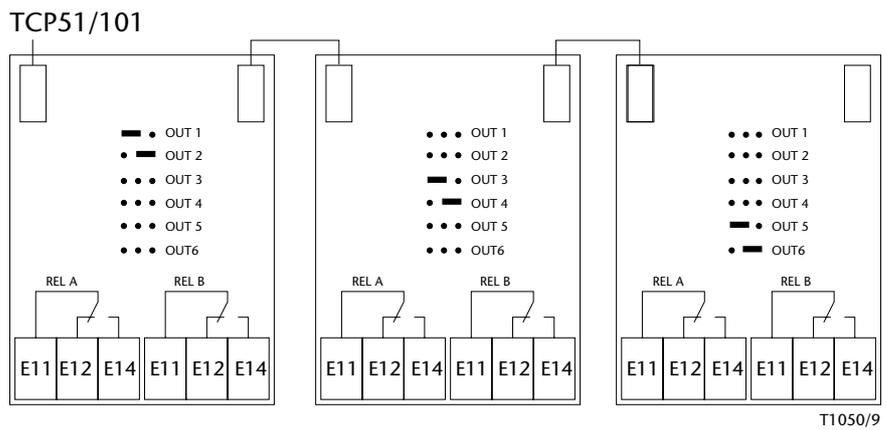
Relay Outputs with I/O Module ◆

Up to 3 modules can be connected serially. Hence, up to 6 relay outputs are available.

The outputs are freely programmable with the service computer TORMAX-SERCOM.

The relays are connected via code jumpers to the outputs OUT 1-6. For a list of functions refer to the TCP manual.

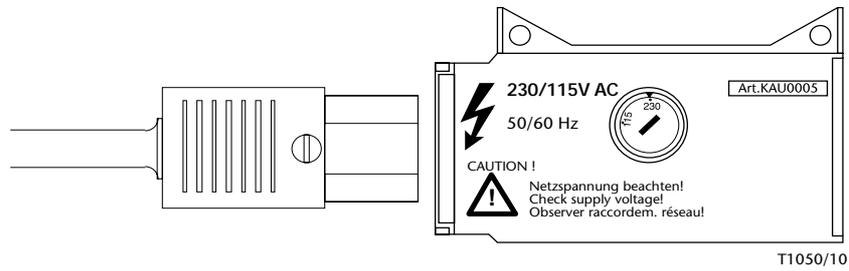
Maximum rating of the relay contacts: 42 VADC/10A (AC1).



Mains Connection

The cables for mains connection must be of type "PVC cable H05VV-F" or "Rubber hose cable H05RR-F".

Remove burrs from all feed-through holes for mains supply.



- Check if equipment voltage corresponds to mains voltage.
- When all work is complete and you have made sure that fingers are kept away from any moving parts: Connect equipment to a mains outlet.

6 Final Adjustments and Commissioning



Prior to commissioning of the door, please check if it can be moved easily along the whole opening width (see chapter 4).

Procedure with SERCOM

- Remove emergency-off jumper between 1-2 on terminal D. (no movements will be performed when the system is connected to mains).
- Switch on power supply.
- Program the system with SERCOM as follows:
 - Operator type
 - Basic adjustments (lock, light beams, rotating direction)
 - Force and speed limits according to regulation ZH1/494 and CEN
 - Controller settings
 - Options according to contract order.
- Replace the emergency-off jumper between 1-2 on terminal D.
- Select operating mode OFF (to reset the emergency-off function).
- Check if all operating modes are working properly.
- Check the adjustment range of sensors.
- Check safety facilities (light beams etc.).



After each change to the system (door weight, rubber spring, mechanical adjustment), a system reset must be performed by pressing any key at the control panel for 5 seconds or by interrupting the power to the system; otherwise, the proper operation of the door is not ensured.

Automatic Configuration

The basis adjustments of systems can be performed on site also without SERCOM. See document T-1071: Automatic Configuration TEP, TSP, TXP without SERCOM.

Commissioning

- Switch on power supply.
- Select operating mode "automatic operation" at the control panel → the door adjusts itself: First, a calibration run (creeping speed) is performed; after the third unhindered opening/closing motion, the adjustment of the door is complete.
- Afterwards, certain parameters can still be corrected manually via control panel by the system operator (see operating instructions).

For New Systems

For all TXP drive kits, the operator type TXP is already programmed at the factory.

- Perform any further programming steps via the SERCOM sliding door menu EM, version S2093 (see TCP manual T-900).

After Exchange of the Control System

Procedure on replacement of the control system in a repair case:



- Prior to any further programming step with the SERCOM menu DIRCOMM, enter the following code for operator type TXP:

P,1000,W,2,

Check Regulation ZH 1/494

Depending on how the system is equipped and the applicable regulations, the following safety-relevant adjustments need to be made:

Unsecured doors (no light beams)

Standard ZH 1/494 requires that the force at the closing edges of unsecured doors must not be more than 150 N because otherwise there might be pinching positions.



The driving force must be checked on site at low speed (calibration run) with a spring balance after completion of the installation. If necessary, it is to be reduced with SERCOM via DIRCOMM menu as follows:

Driving force in closing direction: P,955,W,x

Driving force in opening direction: P,945,W,x

x = Driving force in % (standard setting: x = 100)

min. = 30, max. = 100

Overrun Distance on Power Failure

Further, standard ZH 1/494 requires that, on a power outage, the overrun distance of a door leaf must not be more than 50 mm.

The table below is a summary of the admissible closing speed for a given door weight.

Door Leaf Weight kg		Speed m/s
1 Leaf	2 Leaves	
120	–	0,32
160	80	0,30
240	120	0,27
–	160	0,24
–	200	0,21

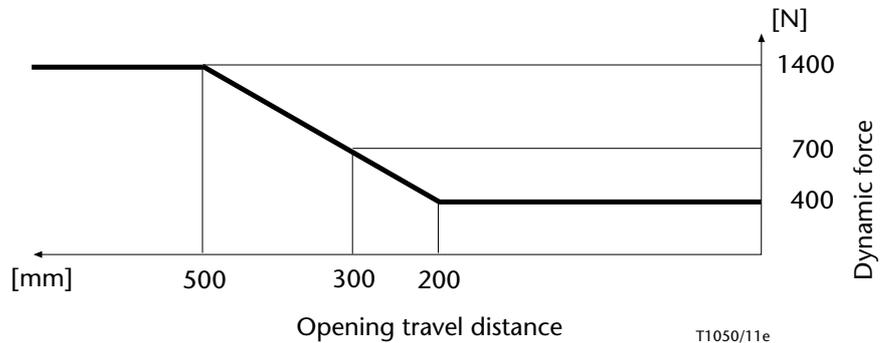


Dangerous kinetic energy levels develop on high weight and at high speed of door leaves.

**Check CEN-Regulation
(prEN 12650-1:1996)**

Speed limits for compliance with the CEN regulations

According to the CEN regulations, the maximum dynamic forces that can occur on impact with an obstacle are defined as shown in the following diagram:



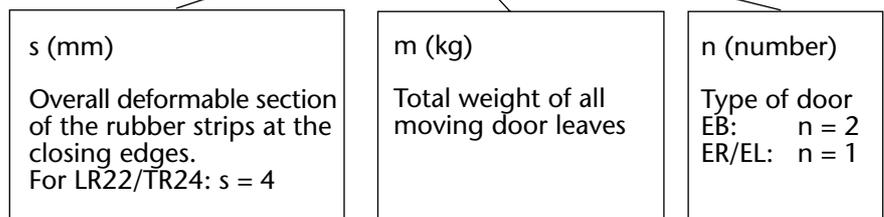
The maximum forces on impact must be reduced to the required level by way of reducing the closing speed appropriately: the force must drop below 150 N after 0.5 s.

After the system-specific values have been entered, the TCP control system is capable of calculating the maximum permitted closing speed in the individual segments of the closing cycle. Relevant is the total weight of all moving door leaves and the deformable section in total at the closing edges.

The compliance with the maximum permissible forces must be checked through measurements.

Activating the speed limit

DirCom Code: **S, 140,W,s,m,n,** Answer: S,140,w,s,m,n,b,v,



Example: S,140,W,4,120,2,

Deformable section 4 mm, door weight 2 x 60 kg, system EB

Deactivating the speed limit

Dircomm Code: S,140,W,0,

Answer: s,140,w,0,

Query

Dircomm Code: S,140,W,

Answer:: s,140,w,s,m,n,b,v,

Legend:

- s = entered deformable section in mm
- m = entered door leaf weight in kg
- n = entered door type, EB/EL/ER
- b = calculated braking distance in mm
- v = calculated closing speed Vc in cm/s.

Control Attack-Rate

If the drive vibrates during braking, the controller action setting can be adjusted downwards:

P,960,W,x,

x =control attack-rate: min = 100, max = 2500

7 Check List

After successful installation and commissioning of the system, the following points must be checked before handing the system over to the system operator:

Drive Unit

- All bolts tightened and secured
- Cables professionally installed. Cables do not touch any moving parts
- Screen of the control panel cable connected
- Counter roller adjusted
- Lock cam ◆ adjusted
- Belt tension checked
- Back gear V-belt rests correctly on pulleys

Door Construction

- Distance door shoe / floor approx. 7 mm
- Door leaves aligned
- In closed position: sealing is ensured at the rear edge and the closing edge
- Required opening width is maintained

Safety Regulations

The door system must comply with the applicable safety regulations.

- Safety distance at the rear edge of the door is maintained
- No jamming, squeezing or shearing positions
- Correct installation height of the light beams ◆ is maintained
- Correct operation of light beams ◆ checked
- Adjusted door speed or kinetic energy is permissible
- Reversing sensitivity checked
- Emergency-off function ◆ checked

Actuators ◆

- Magnitude of detection field is set to a reasonable value
- Range of the field is satisfactory
- The actuators cannot be evaded by under-creeping
- Passing along a side is not possible without being recognised
- Auxiliary actuators (key switch etc.) are working properly

Functions

- Desired operating modes are selectable via control panel
- Desired operating parameters are adjustable at the control panel
- Speed has been adjusted to a reasonable value
- Hold-open time has been adjusted
- Emergency-off ◆ checked (whole opening width)
- Manual disengagement inside/outside ◆ works properly
- Client requirements checked according to the contract order
- Configuration form has been completed and deposited in the door operator or data has been saved with TORMAX SERCOM.

General Appearance

- Paint damage repaired
- Electrical cables professionally laid
- No abnormal noise
- Motional sequence is good
- System is labelled (company sign with TORMAX service address)
- TORMAX arrows have been applied to glass leaves

8 Handing Over to the System Operator

Handing Over the Operating Instructions

Brief explanation of its contents, especially:

- Choices open to the system operator: Explain the control panel and its options.
- Duties of the system operator: Periodic checks of the system according to the list in the operating instructions or through a service contract with the TORMAX dealer.
- Information concerning country-specific standards that require periodic checks of the system by authorised qualified personnel.

Actions by the System Operator in Case of Faults

- Make observations regarding the fault. Note especially the flashing LED combination on the control panel.
- For fault recognition and any further actions consult the diagram in the operating instructions.
- When contacting the service department, pass on an accurate description of the fault.



Contents subject to technical changes!



meets all your requirements

TORMAX STARDOR

the unique sliding door

TORMAX TELDOR

the elegant telescopic sliding door

TORMAX PICDOR

the aesthetical angular sliding door

TORMAX COMDOR

the safe security door

TORMAX SWINGDOR

the innovative swing door

TORMAX FOLDOR

the space-saving folding door

TORMAX RONDOR

the exclusive curved door

TORMAX TORDOR

the practical revolving door

TORMAX SECDOR

the secure building entry system

TORMAX CARDOR

the convenient garage door operator

TORMAX FEUDOR

the reliable fire door operator

TORMAX GATEDOR

the versatile SERVAX industrial door operator

Manufacturer:

Consultation, sales, assembly
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