

Technical information / Planning document

Sliding gate operator PULL T24, -T24speed



Fields of application:

- For all cantilever and rail driven sliding gates.

PULL T24, -T24speed features

- Programmable control panel accessible from exterior with illuminated display in english
- Direct connection of 8,2 kOhm contact barriers (safety sensing edges (2-channels)
- Adjustable soft stop (no loss of force even with reduced revolution speed)
- Three operating modes (impulse, automatic and dead man)
- Adjustable partial opening
- Built in control board in separate housing
- Safety system ARS (automatic reversal system)
- Self locking worm gear
- Emergency release, lockable with profile half cylinder (3 keys included) - changeable, thus incorporation into an existing house key system is possible.
- Backup battery can be integrated (optional)
- 24V motor
- Drive unit (gearbox unit) made of steel and runs in an oil bath
- Worm gear and worm wheel made of tempered steel
- Permanently selflearning force
- Current consumption in standby is minimal thanks to switch-mode power supply



Green safe



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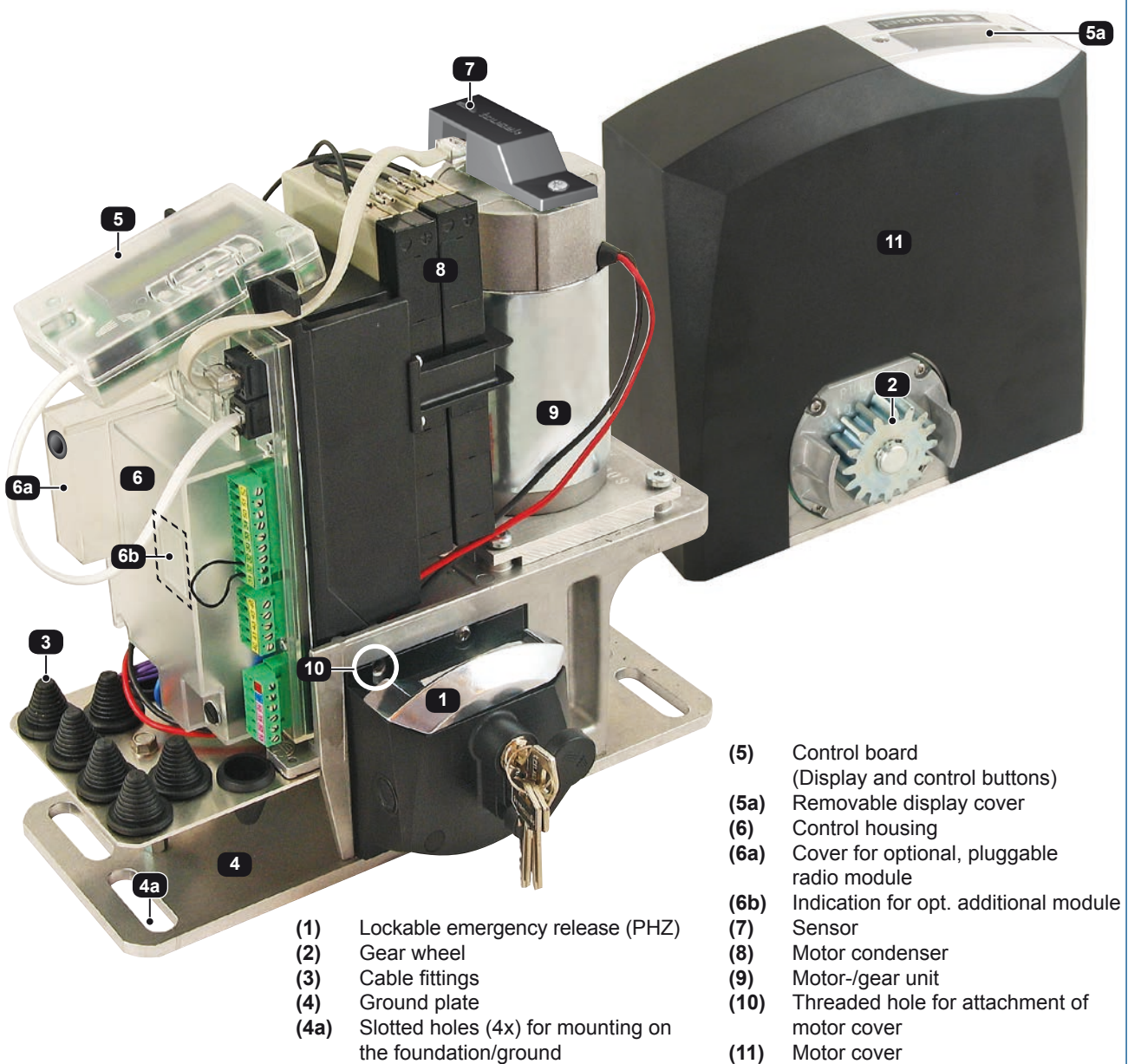
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G A T E A U T O M A T I O N



Sliding gate operator PULL T24, -T24speed



Technical data

Sliding gate operator PULL-	T24	T24speed		T24	T24speed
Control board	intégrée		Max. drive distance	30m	
Power supply	230Va.c. 50Hz		Duty cycle (S3 mode)	40–80%	
Motor tension	24V d.c.		Ambient temperature	-20° +40°C	
Max. current consumption (excl. equipment)	1A		Protection class	IP44	
Gear wheel	Z16M4	Z20M4	Speed sensor	■	■
Max. gate weight	600kg	400kg	Article number	11110540	11110550
Speed	13m/min	16m/min			
Torque	20Nm				
Optional equipment	pluggable receiver • additional module for courtyard lamp/control lamp • additional module for evaluation of gate status • bracket with cap rail included • radio transmission system TX 310 • inductive system TX 400i				

*** at low temperatures or with rough running gates a reduction in speed is possible depending on system used (24V DC motor)!**

Motor selection by using a spring scale	T5	T8	T10	T15	T24	T24speed
Attach the spring scale to the gate at approx. the height of the rack. Then pull horizontally and without rocking at motor speed. Compare the max. detected tractive force with the guide values listed on the right.	up to 20kg	up to 30kg	up to 40kg	up to 60kg	up to 25kg	up to 20kg

Main layer	Sub layer	Settings/adjustments
button/switches	impulse button	<input type="radio"/> OPEN/STOP/CLOSE <input type="radio"/> OPEN/CLOSE/OPEN <input type="radio"/> OPEN <input type="radio"/> DEAD MAN
	pedestrian button	<input type="radio"/> OPEN/STOP/CLOSE <input type="radio"/> OPEN/CLOSE/OPEN <input type="radio"/> OPEN <input type="radio"/> Impulse OPEN <input type="radio"/> DEAD MAN ¹⁾
<p>*) if impulse button is set to DEADMAN, then the pedestrian and close button are also set automatically to DEADMAN mode. (not selectable under „pedest.- button“)</p>		
safety	photocell	<input type="radio"/> active <input type="radio"/> not active
	main safety edge	<input type="radio"/> active <input type="radio"/> radio edge TX <input type="radio"/> TX 400 <input type="radio"/> not active
	side safety edge	<input type="radio"/> active <input type="radio"/> radio edge TX <input type="radio"/> TX 400 <input type="radio"/> not active
	photoc.-function	<input type="radio"/> when closing reverse <input type="radio"/> stop - after release open <input type="radio"/> during close stop, then close
	PHC-pause time	<input type="radio"/> no influence of photocell <input type="radio"/> abort of pause time <input type="radio"/> re-start of pause time <input type="radio"/> immediate close after opening
	PHC-self test	<input type="radio"/> active <input type="radio"/> not active
motor	max. force	<input type="radio"/> 50...100% [increment 5] <input type="radio"/> = 100%
	ARS-response time	<input type="radio"/> 0,15...0,95s [increment 0,05] <input type="radio"/> = 0,50s
	speed	<input type="radio"/> 55...100% [increment 5] <input type="radio"/> = 100%
	soft stop way	<input type="radio"/> 0...2m [increment 0,1] <input type="radio"/> = 0,5m
	soft speed	<input type="radio"/> 10...50% [increment 5] <input type="radio"/> = 40%
	limit position OPEN	<input type="radio"/> 0...-30 [increment 1] <input type="radio"/> = -5
	limit position CLOSE	<input type="radio"/> 0...-30 [increment 1] <input type="radio"/> = -5
operating mode	impulse mode	<input type="radio"/> stop, start of pause time <input type="radio"/> impulse suppression when opening <input type="radio"/> pause time extension
	opening direction	<input type="radio"/> <<<- left <input type="radio"/> ->>> right
	operating mode	<input type="radio"/> impulse mode <input type="radio"/> aut. close 1...255s [increment 1]
	partial opening	<input type="radio"/> 10...100% [increment 1] <input type="radio"/> = 30%
	automatic mode	<input type="radio"/> complete/partial opening <input type="radio"/> only complete opening <input type="radio"/> only partial opening
	pause time logic	<input type="radio"/> no influence <input type="radio"/> always open in automatic mode
lights/lamps	prewarning OPEN	<input type="radio"/> OFF, 1...30s <input type="radio"/> = OFF
	prewarning CLOSE	<input type="radio"/> OFF, 1...30s <input type="radio"/> = OFF
	additional module	<input type="radio"/> yard/control light <input type="radio"/> status display 1 <input type="radio"/> status display 2
	courtyard light ¹⁾	<input type="radio"/> OFF, 5...950s <input type="radio"/> = OFF
	control lamp ¹⁾	<input type="radio"/> illuminates when opening/closing <input type="radio"/> blinks slowly / illuminates / blinks <input type="radio"/> illuminates in open position
diagnosis	status display	status display of all inputs
	delete position	<input type="radio"/> NO <input type="radio"/> YES
	factory setting	<input type="radio"/> NO <input type="radio"/> YES
	software version	show software version
	serial number	show serial number
	protocol	show protocol notes
	status sensor	show sensor

Note: some adjustments regarding function or operating logic can only be executed if gate is closed and if the display shows „ready“.



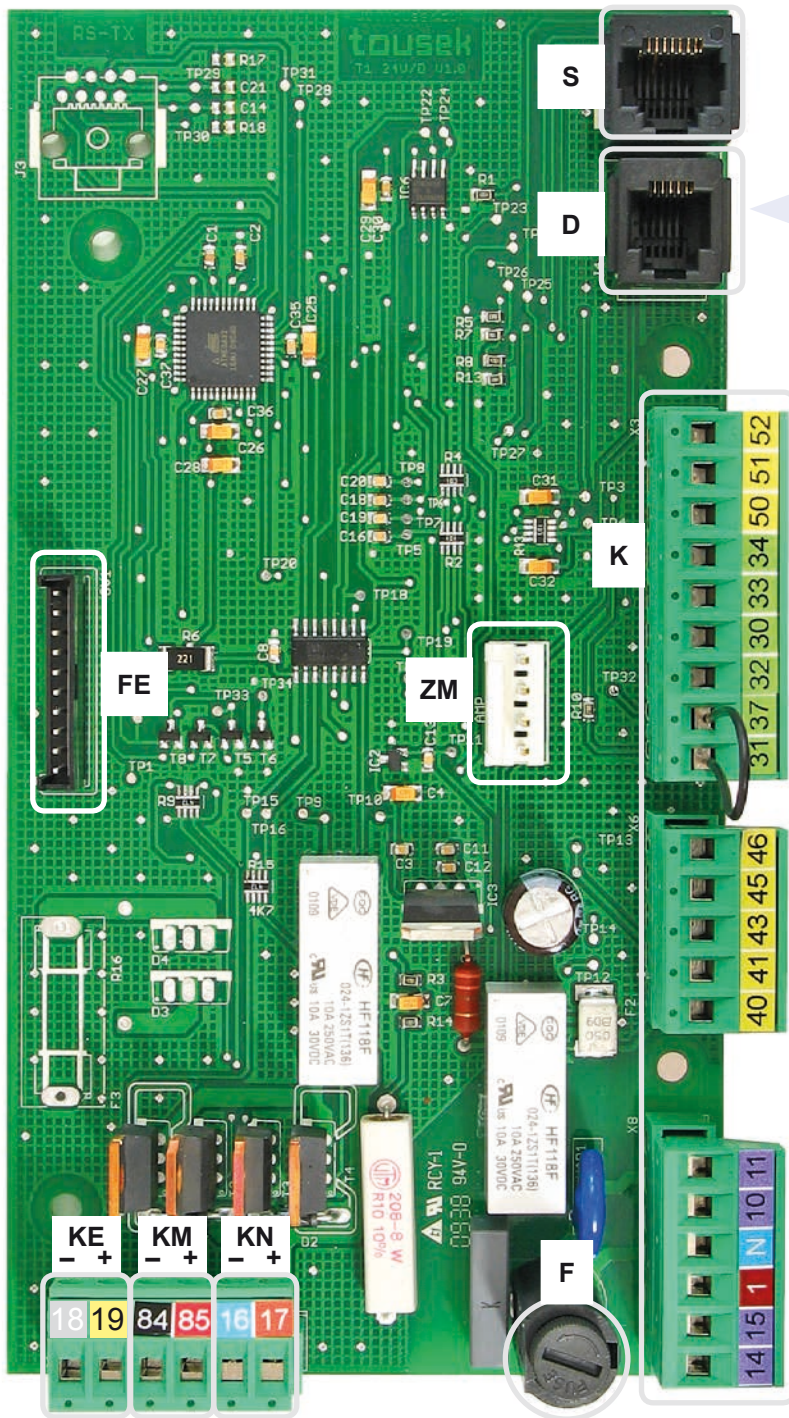
¹⁾ The menu points courtyard lamp and control lamp will only appear on display if in menu „Additional module“ courtyard lamp/control lamp is selected.

ESC

ENTER

integr. control board for sliders PULL T24, -T24speed

Overview of the control unit



Important

The optional „tousek-connect“ or the „tousek service interface“ must be connected with socket (D)!



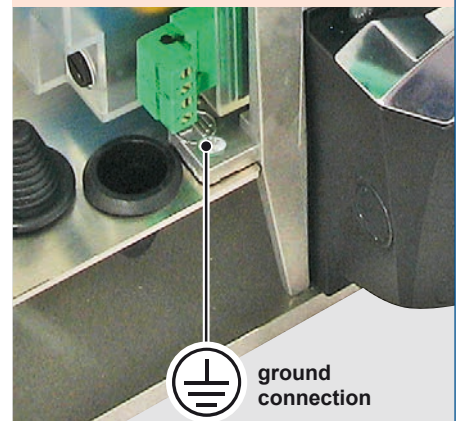
Attention

During connection, adjustment and maintenance works please take care, that the electronic circuit board won't be damaged by moisture (rain).



Grounding

The grounding connection is made on the operator housing with the designated grounding screw!



Elements of control board

- (K) Terminal blocks
- (KE) Connector for battery 24Vd.c. (optional)
- (KM) Motor clamps
- (KN) Power supply low tension 24Vd.c.
- (S) Sensor plug
- (D) Display plug
- (FE) Slot for optional radio receiver
- (ZM) Connection slot for optional module
- (F) Safety fuse T 4A



Attention

- 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

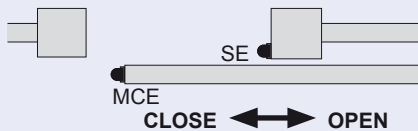


- The product is not suitable for installation in explosion-hazardous areas.
- An all-pole disconnecting mains switch with a contact opening gap of min. 3 mm has to be foreseen. The gate facility has to be secured according to the valid safety regulations!
- **IMPORTANT:** The control lines (buttons, radio, photocells, etc.) have to be laid separately from the 230V lines (supply line, motors, signal lamp).



Safety sensing edges

Function main safety sensing edge (MCE):
Safety during closing
Function side safety sensing edges (SE):
Safety during opening



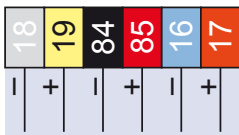
If no stop switch is connected, terminals 31/37 have to be wire-bridged.

battery connection 24Vd.c. (optional)

motor 24V

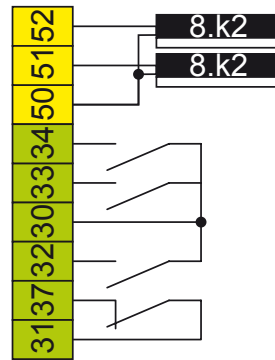
Connection block supply and supply max. 24Vd.c., 5W (accessory)

grey
yellow
black
red
blue
orange

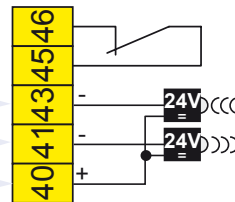


Terminals 40/41 and 40/43 in gate position CLOSE (ready for use) are in eco mode (= without tension).

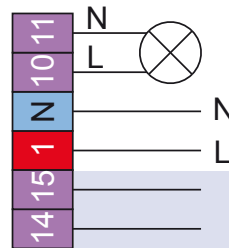
Important: no external accessories are allowed on these terminals!



8.k2 Main safety sensing edge
8.k2 Side safety sensing edge
common contact safety edge
Pedestrian-switch
CLOSE-switch
common
Impulse-switch
STOP-contact



Contact for photocell
Common PHC-contact
Power supply photocell receiver
Power supply photocell transmitter
common photocell



signal lamp
230V, 100W
power supply 230V a.c.
violet input switch-mode power supply
violet 230V a.c.

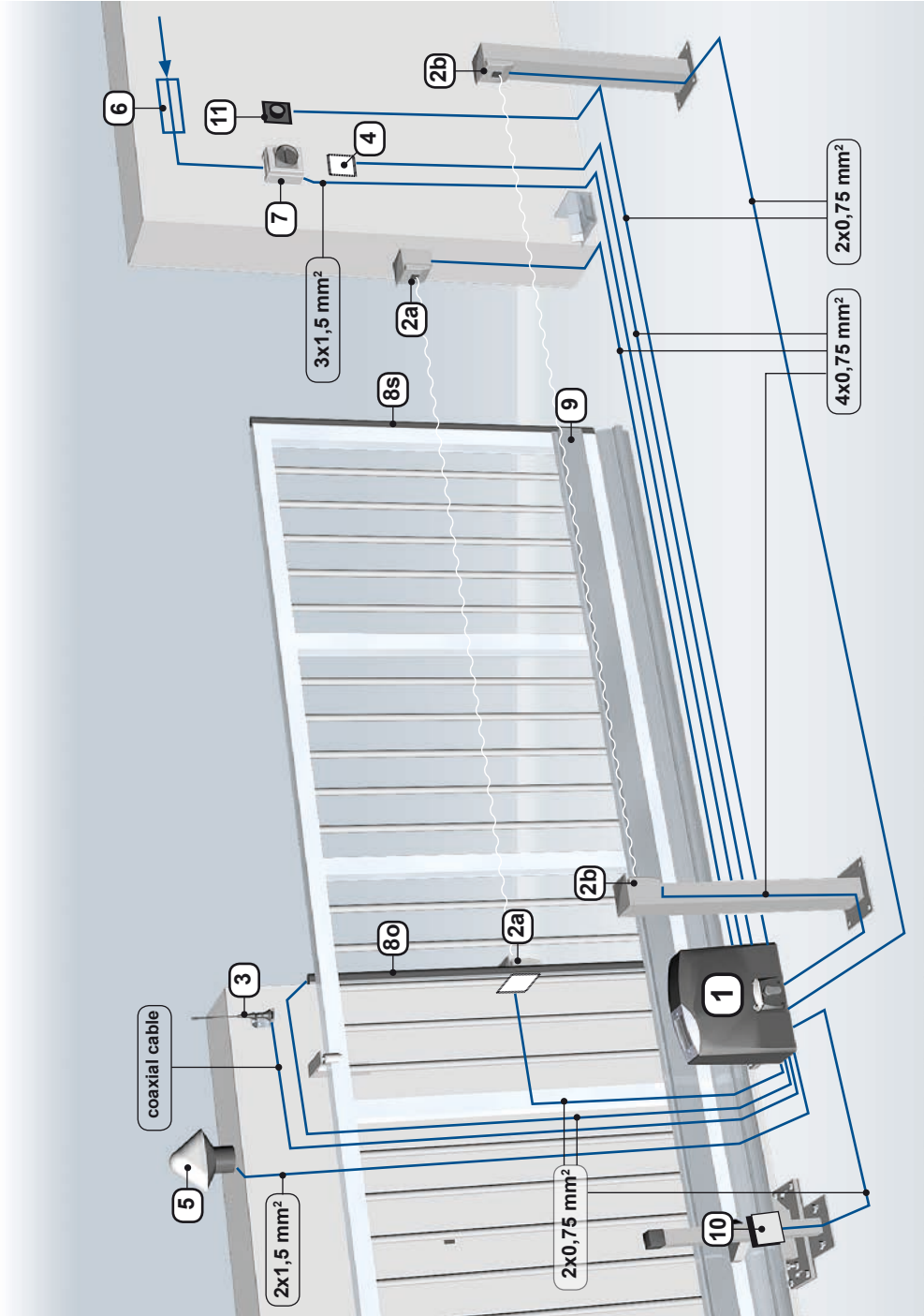
p r e - w i r e d



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!

- 1 operator TOUSEK PULL T24, -T24speed
- 2 a - outer photocell / b - inner photocell
- 3 antenna for built-in radio receiver
- 4 key-operated contact switch
- 5 signal flashing light
- 6 fuse 12A

- 7 main switch 16 A
- Note: An all-pole disconnecting main switch with a contact opening-gap of minimum 3 mm has to be foreseen.
- 8 safety sensing edge
- 9 power supply system TX100 for moving gate components. When using other power supply system (e.g. TX200i)
- 10 connection socket
- 11 stop momentary contact switch



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.

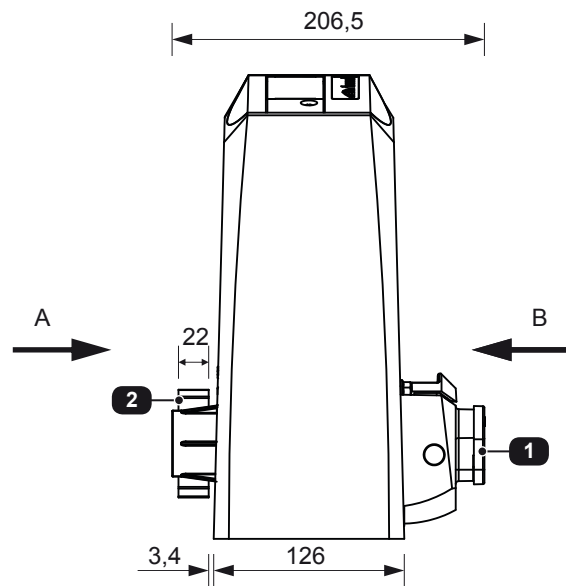
The Tousek Ges.m.b.H. cannot be held responsible for any consequences resulting from disregard of applying standards and laws during installation or operation of the gate facility.

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.

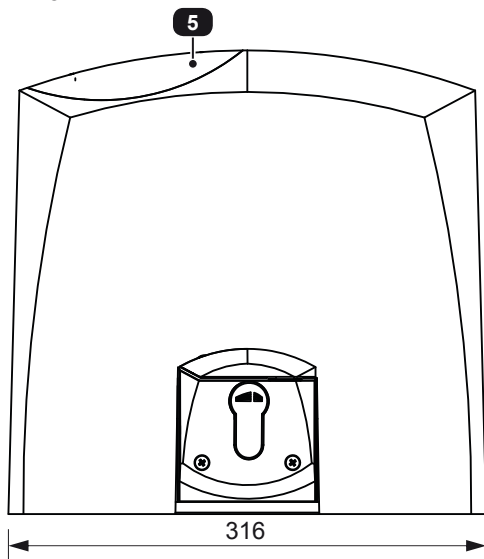
• Dimensions in mm

- (1) lockable emergency release (euro standard cylinder)
- (2) gear wheel
- (3) cable entrance
- (4) ground plate
- (4a) slotted holes (4x) for mounting on foundation
- (5) display for programming

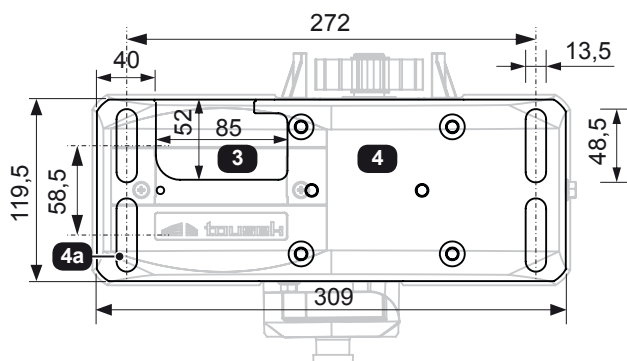
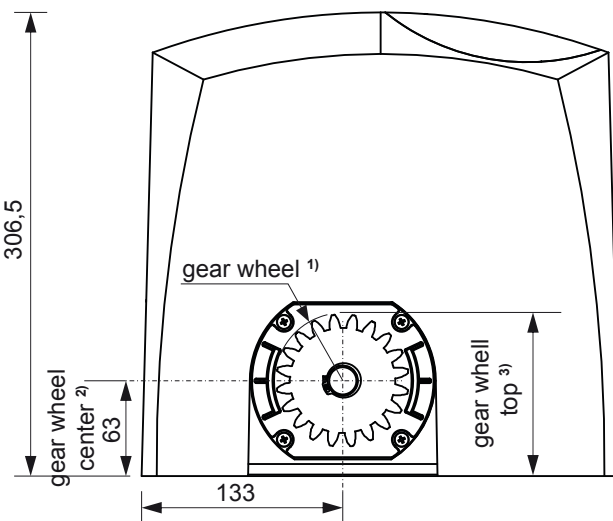
PULL	-T24	-T24speed
¹⁾ gear wheel	Z16M4, r36	Z20M4, r44
²⁾ gear wheel center	63	
³⁾ gear wheel top	99	107



View B:

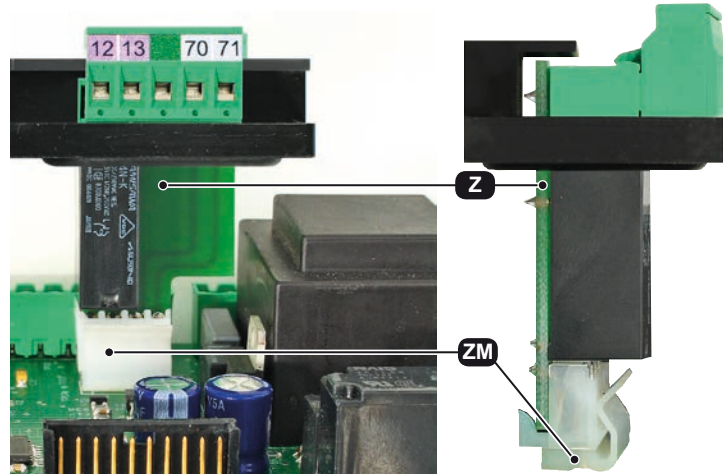
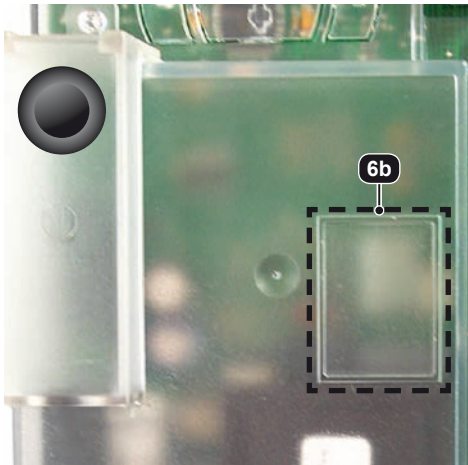


View A:



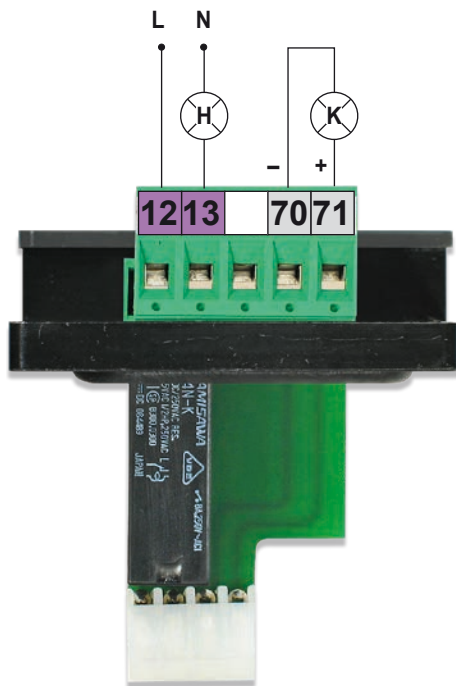
We reserve the right to change dimensions and technical specifications without prior notice.

- The use of one of the additional modules is optional.
- 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 status can be evaluated in two ways (see menu point „Additional module“).
- Contact load: **24Va.c./d.c., max. 10W**

