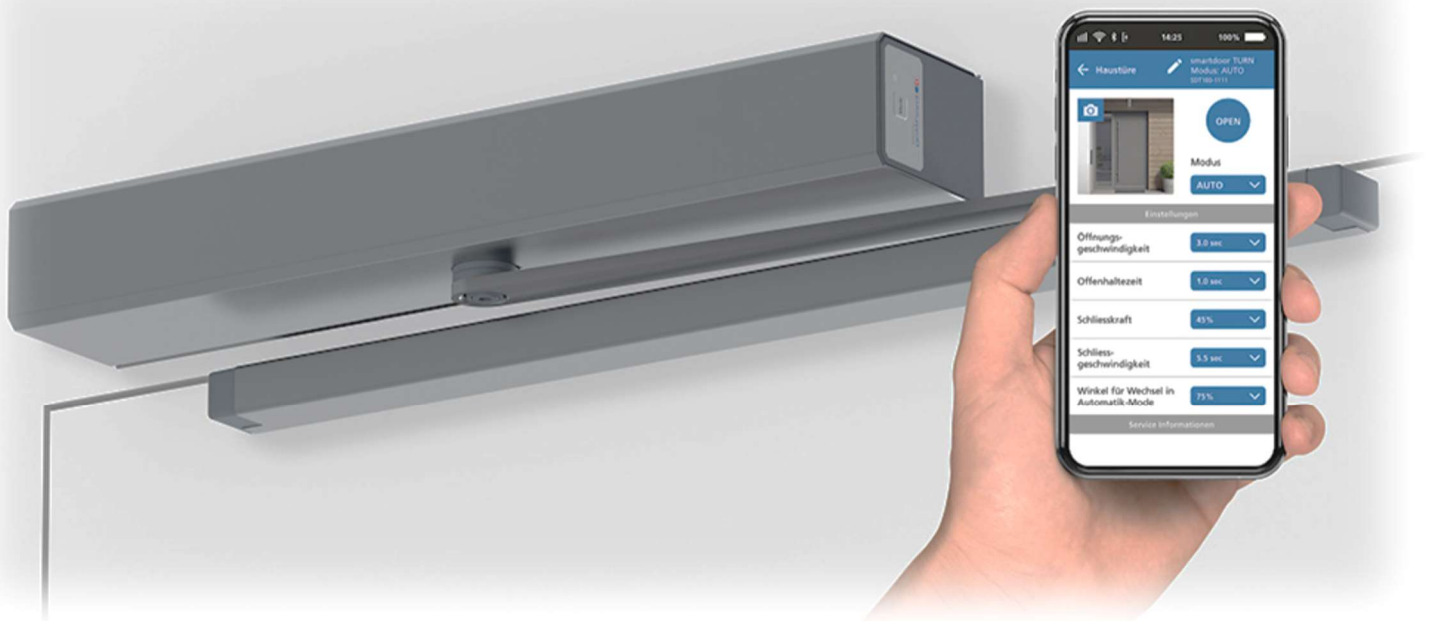


Operating Instructions

Quick Guide



Swing Door Operator

smartdoor TURN T100

Language: English



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1 General information

1.1 Product identification

For precise identification the type plate attached to the control module is marked with the following details:

Company name: Gotthard 3 Mechatronic Solutions AG
 Gotthardstrasse 3
 CH – 5630 Muri (AG)

Type: smartdoor TURN T100

Serial number: e.g. 0100-01-01-01-20-0000-0535

Reference number: 301010a (AC-version)
 301011 (DC-version)

Year of manufacture: e.g. 2020

Mains connection: e.g. 100-240 V, 50/60 Hz

Power consumption: 41 W

Rated load: 30 Nm

Admissible temperature range: -15 °C to +50 °C

Classified according to DIN 18650-1:

1	2	3	4	5	6	7	8
1	2	1	2*	2.3	0		2

* Self-closing in combination with a battery

Installation firm: (place holder for installation firm sticker)

Photographic example:

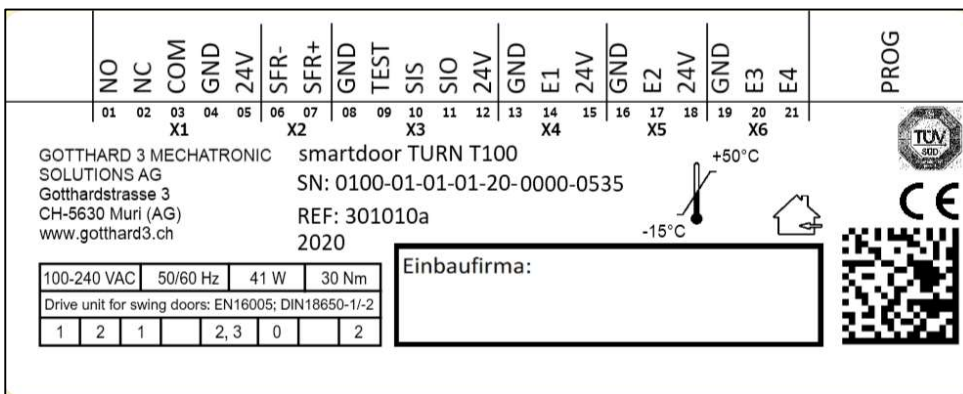


Figure 1: Product identification

1.2 Product overview

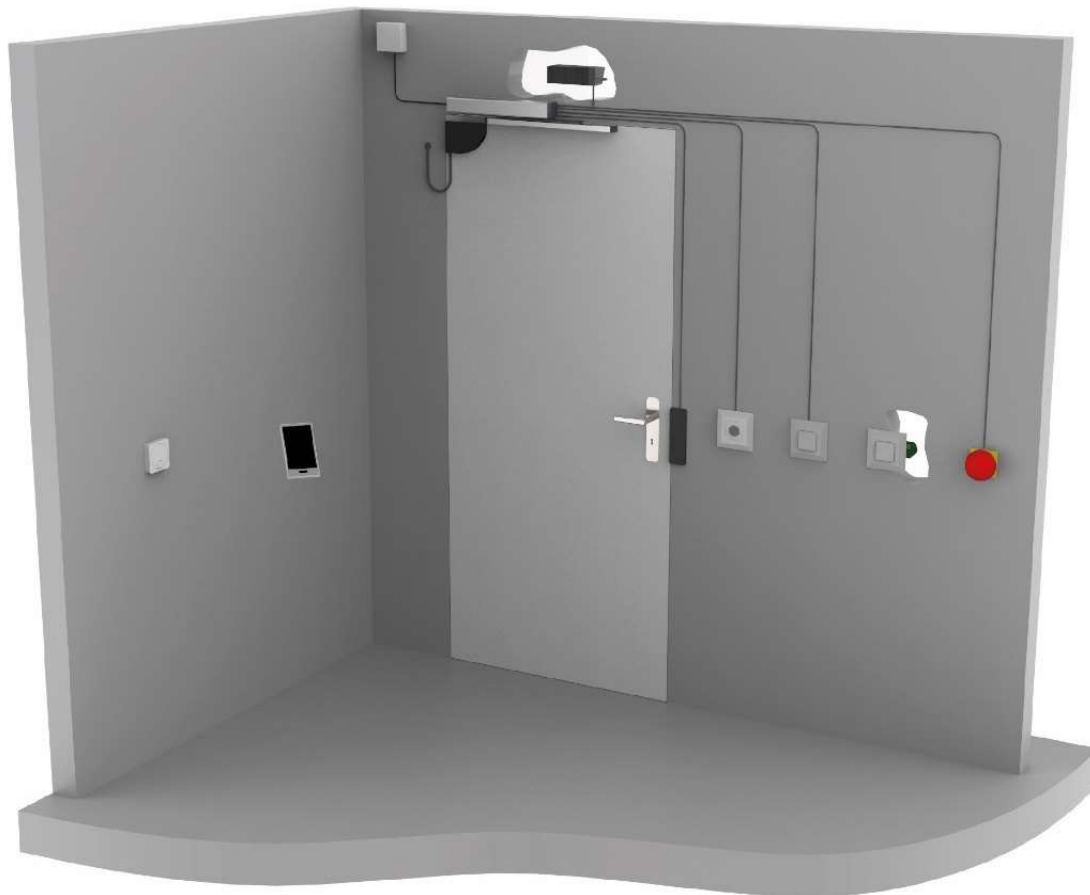


Figure 2: Product overview

1.2.1 The basic module

The new EN 16005 standard defines the LOW-ENERGY operating mode and allows a door operator to operate without safety elements without danger of injury. The smartdoor TURN targets precisely this application. With its Auto-Learning function it automatically calculates the necessary door parameters and makes easy work of commissioning. No safety elements are required.

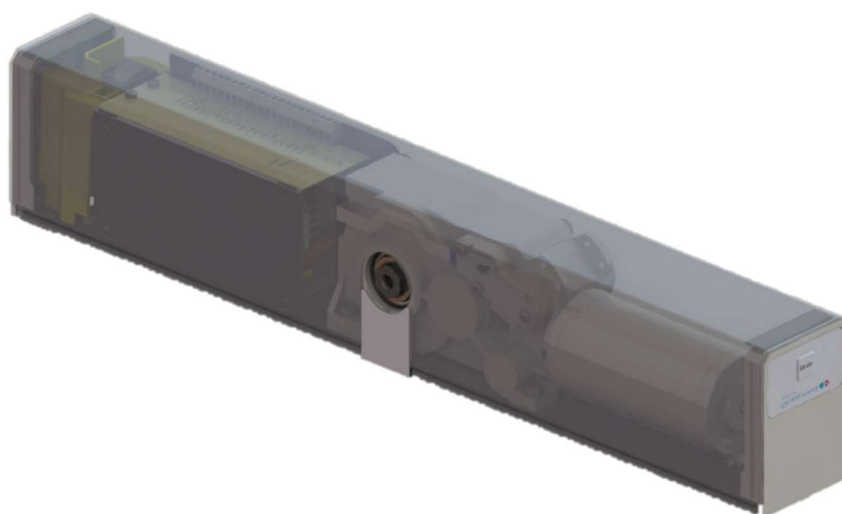


Figure 3: smartdoor TURN T100 basic module

1.2.2 The linkage

The smartdoor TURN can be fitted with the following linkage types:

- Sliding linkage
- Scissor linkage

The linkage types and their uses are described in chapter 3.3 Linkage types.

1.2.3 The operating elements

The smartdoor TURN can be fitted with the following elements:

- smartdoor Bluetooth button which opens the smartdoor TURN and can switch between the operating modes
- Standard switch, which opens the smartdoor TURN or can switch between the operating modes with the smartdoor Bluetooth module
- smartdoor APP which can open the smartdoor TURN, switch between the operating modes and change parameters
- Wired standard switch which can open the smartdoor TURN
- Wired radar which can open the smartdoor TURN

A separate function can be assigned to each button e.g. as opening contact (Day + Night), opening contact (Day), or mode switch



Figure 4: Operating element examples

If there is an additional switch for disabled persons to activate the drive, a pictogram needs to be applied to the button in accordance with EN 16005 Appendix D - picture D.1.

1.2.4 The safety elements

If you want to connect safety elements then the smartdoor TURN offers as standard a connection strip for all standard safety elements.

The smartdoor TURN can be fitted with the following safety elements:

- Presence sensors which control the swing range of the door in the opening direction (SIO)
- Presence sensors which control the swing range of the door in the closing direction (SIS)
- All standard motor locks and electric door openers (working current, static current)
- Key switches, rotary switches or timers, to switch between day and night mode



Figure 5: Examples of safety elements

1.2.5 The drive module

This 1.7 kg, extremely compact power pack can supply a drive-side torque of over 30 Nm and is practically silent. So that a driven door can also be actuated easily by hand (even without electricity), its internal efficiency on both sides has been corresponding optimised. The sensor system, integrated into the gearbox, allows a rapid and optimum reaction of the control system to external influences. (detection of obstacles, wind pressure etc.)

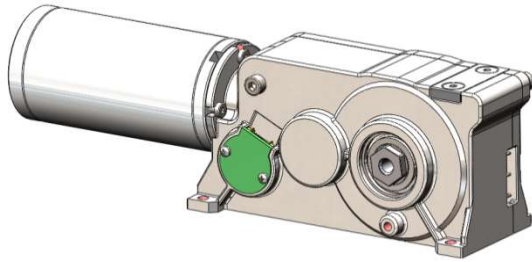


Figure 6: Drive module

In the $\pm 15^\circ$ range a mechanical reset torque is generated internally such that the door can be held in the closed position without motor power. Thus, in the currentless state the door behaves like a self-closing drawer.

The closing torque is symmetrically present in both directions of rotation. For this reason, a swing door is held mechanically in the middle position, even in the currentless state.

1.2.6 The control module

The control module incorporates the control system, the connecting terminals and the power supply.

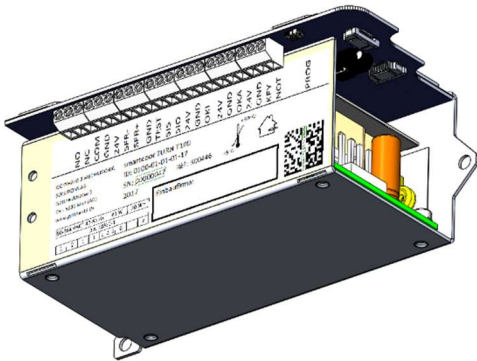


Figure 7: Control module

The control module automatically learns (Auto-Learning) the correct direction of rotation and the closing characteristic and saves this with system-related standard and limit values.

All possible connection options and the entire kinematic (lever systems, mass of the door leaf, limit positions etc.) are detected and tested by the control module before each door opening.

1.2.7 The communication module

The smartdoor TURN has a communication module, which permits a switch-over of the operating mode and communication with other devices. The communication module allows rapid switching from Automatic mode to Continuously Open and back. An existing error can also be manually acknowledged and the hold-open time set.



Figure 8: Communication module

More operating modes can be activated as required with the Service Tool. The communication module is responsible for the communication with the smartdoor Bluetooth button, Bluetooth modules, smartdoor APP and the Service Tool.

1.2.8 The smartdoor Service Tool

The smartdoor Service Tool can be used by the service technician on a Windows Notebook to carry out a wide range of adjustments after mechanical installation. This includes the following:

- Setting the parameters
- Activation of Bluetooth devices
- Saving and loading of parameter recipes
- Auto-Learning
- Managing and loading firmware
- Status overview for controlled commissioning of external equipment

The Service Tool is only for trained specialist personnel. A detailed description of the smartdoor Service Tool is provided in a separate handbook.

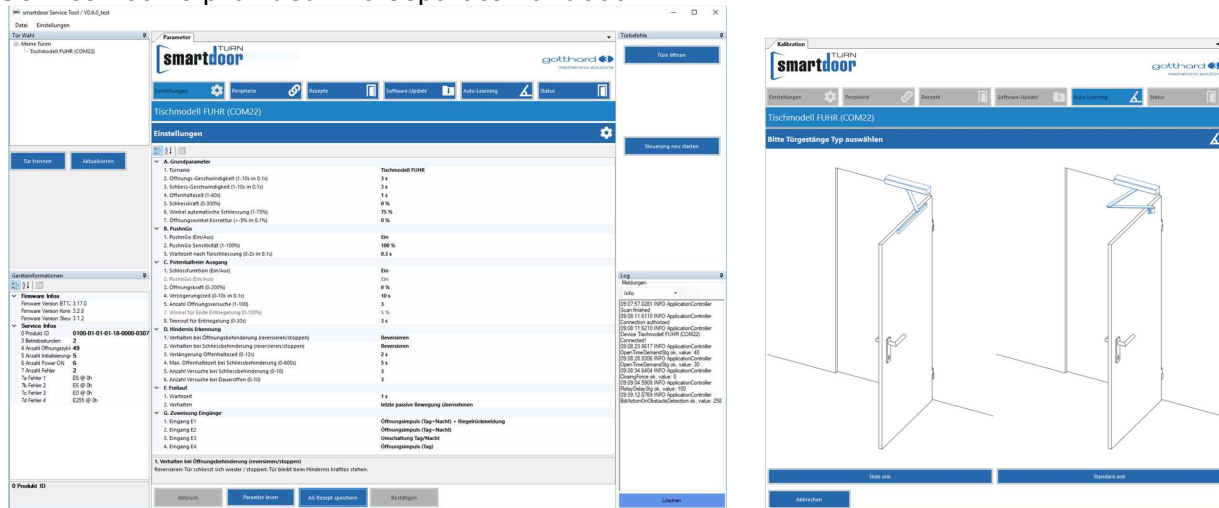


Figure 9: smartdoor Service Tool

1.2.9 The smartdoor APP

The smartdoor TURN can be operated and adjusted using the smartdoor APP. A detailed description of the smartdoor APP can be found in chapter 7.5 smartdoor APP .



Figure 10: smartdoor APP

2 Safety

2.1 Symbols and display of warnings

Various symbols are used in these operating instructions for easier understanding:



NOTICE

Tips and information, which help you work correctly and efficiently.



CAUTION

Important note, when materials are damaged or the function can be affected.



WARNING

Important note, when materials are damaged or the function can be affected.

2.2 State-of-the-art and applied standards

The system complies with the state-of-the-art and accredited safety technology rules. It has been developed, constructed and produced in compliance with the following standards:

- Machinery Directive 2006/42/EC
- Household and similar electrical appliances. Safety. EN 60335-1
- Particular requirements for drives for gates, doors and windows EN 60335-2-103 (where applicable)
- Power operated pedestrian doorsets. Safety in use. Requirements and test methods. EN 16005.
- Doors, gates and windows - Product standard, performance characteristics - Fire and / or smoke protection properties EN 16034.
- Safety-related parts of control systems EN ISO 13849
13849-1:2016 (General design principles), category 2 PL c
13849-2:2016 (Validation)
- Electromagnetic compatibility (EMC) EN61000
Part 6-2: Generic standards – Immunity for industrial environments
Part 6-3: Generic standards – Emission standard for residential, commercial and light-industrial environments



NOTICE

Partly completed machinery in the sense of the EC directive 2006/42/EC is only designed to be installed in or combined with other machinery or in other partly

completed machinery or systems to form a machine in the sense of the above directive.



WARNING

This product may not be operated until it has been determined that the whole machine / system in which it has been installed, corresponds to the provisions of the above EC directive.

In the event of any alteration of the product without the manufacturer's approval, this declaration loses its validity.



NOTICE

The installer and operator must jointly carry out a risk assessment during the planning of the system.

Encoding systems for automatic doors (DIN 18650)

<p>1 – swing door operator 2 – Sliding door operator 3 – Swing/sliding door operator 4 – Folding door operator 5 – Revolving door drive</p>	Drive type	1
<p>1 – 200,000 test cycles at min. 1200 cycles/24 h 2 – 500,000 test cycles at min. 2400 cycles/24 h 3 – 1,000,000 test cycles at min. 4000 cycles/24 h</p>	Durability of the drive	2
<p>1 – Swing door 2 – Sliding door 3 – Swing/sliding door 4 – Folding door 5 – Revolving door</p>	Door leaf type	3
<p>0 – Not suitable as fire door 1 – Suitable as smoke-protection door 2* – Suitable as fire door 3 – Suitable as fire door & smoke-protection door</p>	Suitability as fire door	4
<p>1 – Force limit 2 – Connection for external safety systems 3 – Low energy</p>	Safety devices on the drive	5
<p>0 – No particular requirements 1 – In escape routes with a break-out fitting 2 – In escape routes without a break-out fitting 3 – For self-closing fire doors with break-out fitting 4 – For self-closing fire doors without a break-out fitting</p>	Special requirements of drive/functions and installation	6
<p>0 – No safety devices 1 – With adequately dimensioned safety distances 2 – With protection against crushing, shearing and trapping of fingers 3 – With built-in break-out fitting unit 4 – With presence sensor</p>	Safety on the automatic door system	7
<p>1 – No specifications 2 – from -15 °C to +50 °C 3 – from -15 °C to +75 °C 4 – Temperature range in accordance with the manufacturer's details</p>	Ambient temperatures	8

* Self-closing in combination with a battery

Table 1: Encoding systems for automatic doors

Nos. 1, 2, 5, 6, 8 relate to the drives.

Nos. 3, 4, 7 relate to the complete door systems

2.3 Intended use

The smartdoor TURN T100 is an electromechanical swing door operator and is designed exclusively for opening and closing swing doors for standard use in public and private dry interiors and standard door heights.

Any other use is considered as improper use. The manufacturer is not liable for damage resulting from improper use; the risk in this case lies entirely with the operator.

The smartdoor TURN T100 may be used on escape and rescue routes and on fire doors. Intended use of equipment also includes compliance with the manufacturer's operating instructions and regular care and maintenance.

2.4 Limitation of liability

Manipulation or modification of the parameters of the automatic door, unless performed by an authorised service technician, exempts the manufacturer from liability for any resulting damage. Modifications of the parameters may only be carried out by qualified personnel.

Installation is at one's own risk and must take place in accordance with operating instructions. The manufacturer accepts no responsibility for non-compliance.

Assembly, commissioning, inspection, maintenance and repair work on the system must be conducted according to the check lists. The chapter on commissioning (See chapter 5.3 Auto-Learning function) and the maintenance checklist (see inspection book) may be helpful here.

Children may not clean, play with or use the product.

2.5 User group

The swing door operator can be used by children from 8 years and above, elderly and frail users and persons with disabilities or with lack of experience and knowledge when these are supervised or have been instructed in relation to the safe use of the appliances and understand the resulting dangers.

Otherwise, the swing door operator should only be used when the risk assessment for the user indicates a low risk.

2.6 Risk

There are risks of shearing and crushing from the various closing edges and the linkage on automatic doors. To avoid this danger there should be no items in the opening area of the swing door. The securing of crushing and shearing points on secondary closing edges must be guaranteed by the door manufacturer.

The danger point on the secondary closing edge on each swing door (including manually operated) is generally recognised by all users of a door. It cannot be influenced by the manufacturer.

2.7 Misuse

Foreseeable misuse is any use other than as described in these operating instructions. This includes:

- mechanical or electrical bypassing
- The use of other than original parts
- Conversions, modifications and manipulations
- Non-compliance with the instructions



NOTICE

The manufacturer stated in this report is only the manufacturer of a drive and not the manufacturer of the final machinery.

The **operator** is responsible for the operation of automatic door systems and for regular maintenance and safety inspections.
The "Operator checks" checklist can be helpful for this (see inspection book).

6 Operating mode

The smartdoor TURN knows the following operating modes:

- Automatic: All operating and safety elements are active
- Continuously open: The door remains open until the operating mode is changed
- Initialisation: The door travels to the closed position and is locked
- Auto-Learning: The door operator is in this operating status during the Auto-Learning process
- System error: In the event of a system error the door operator switches to this operating status

Trigger for MODE switch-over (trip command)

- MODE button on the communication module
- smartdoor Bluetooth push button
- smartdoor Bluetooth module
- smartdoor APP
- Service Tool

A detailed description of the switch-over of the operating mode is given in chapter 7.4.1 Switch-over of the operating mode.

6.1 Automatic operating mode (LED: green)

In this operating mode the door opens under all the trip commands listed below within the pre-set opening time, remains open for the pre-set hold-open time and then closes within the preset closing time.

Trigger for door opening (trip command)

- Push&Go
- smartdoor Bluetooth push button
- smartdoor Bluetooth module
- smartdoor APP
- Input E1, E2, E3 or E4: Opening pulse (Day+Night)
- Input E1, E2, E3 or E4: Opening pulse (Day + Night) + lock feedback
- Input E1, E2, E3 or E4: Opening pulse (Day)

Functionality

- Push&Go function, with wind gust detection
- Low-energy
- Closing sequence control for 2-leaf doors
- Airlock: two or more successive, mutually interlocked doors
- Automatic detection of safety elements
- Adaptive opening speed (vandalism protection)
- Situational obstacle detection when opening/closing
- Unpowered closing torque in the closed position

Configuration and operation by smartdoor APP

- Open
- Operating mode selection
- Hold-open time
- Opening time (>3 seconds)
- Closing time (>3 seconds)
- Closing force (<67 N)
- Angle correction OPEN position

Push&Go or gust

The door differentiates between a Push&Go pulse and wind gust.

The door has a sensitive Push&Go response so that children or elderly people can operate the door in this way. You can adjust the sensitivity of the Push&Go pulse via the Service Tool.

A static wind pressure or wind gust is detected and does not cause the door to open. In the holding version "Door handle with disabled latch" the door operator can, if required, ensure the closed position with a current feed to the soft lock.

A static wind pressure or wind gust is also detected at closure and activates an automatic, incremental increase of the closing force.

Adaptive opening speed

During opening, the door responds to pressure or pulling by the operator such that the door operator surrenders the door control to the operator. As soon as the interaction by the operator is interrupted, the door re-assumes control.

Obstacle detection

There is differentiation between obstacles when opening and obstacles when closing. In the shear and crushing point area, the obstacle detection is more sensitive than in other positions.

Behaviour - obstacle when opening

The behaviour in the case of an obstacle when opening can be set using the Service Tool.

Settings:

Behaviour in the case of an obstacle: stop or reverse

Number of attempts: 0-10

Behaviour - obstacle when closing

The behaviour in the case of an obstacle when closing can be set using the Service Tool.

Settings:

Behaviour in the case of an obstacle: stop or reverse

Extension of the hold-open time and maximum hold-open time

Number of attempts: 0-10

6.2 Operating mode - continuously open (LED: flashing green)

The door opens and remains open until the operating mode changes or the door is closed with a Push&Go.

Trigger for door opening (trip command):

- MODE button
- smartdoor Bluetooth push button
- smartdoor Bluetooth module
- smartdoor APP

Functionality

- Continuously open

6.3 Operating status initialisation (LED: flashing orange)

At initialisation, no operating mode is active. All operating and safety elements are deactivated.

Trigger

- Power-ON
- Automatic troubleshooting
- Press and hold MODE button for 5 seconds

Functionality

- The initialisation is indicated by 3 short beeps.
The drive then starts to move to its closed position.
Once reached, the drive acknowledges all impending errors and switches to the last selected operating mode.



NOTICE

If the door operator was in Continuously Open MODE before a power failure, the Continuously Open MODE is restored at Power-ON after successful initialisation.

6.4 Auto-Learning operating status (LED: flashing red/orange)

There is no active operating mode in the Auto-Learning function. All operating and safety elements are deactivated.

Trigger

- Service Tool
- After Power ON press and hold down the PROG key for 5 seconds

Functionality

- The Auto-Learning function is described in chapter 5.3 Auto-Learning function.

6.5 System error operating status (LED: flashing red)

In the case of a system error no operating mode is active. All operating and safety elements are deactivated.

Trigger

- None

Functionality

- None

7 Operation

7.1 Main switch

In order to actuate the main switch the housing is removed. The main switch is located on the opposite side of the MODE push button and is easily accessible on the top (see Figure 34: Main switch).

With the main switch the connection voltage and all further auxiliary voltages within of the door operator are switched off.

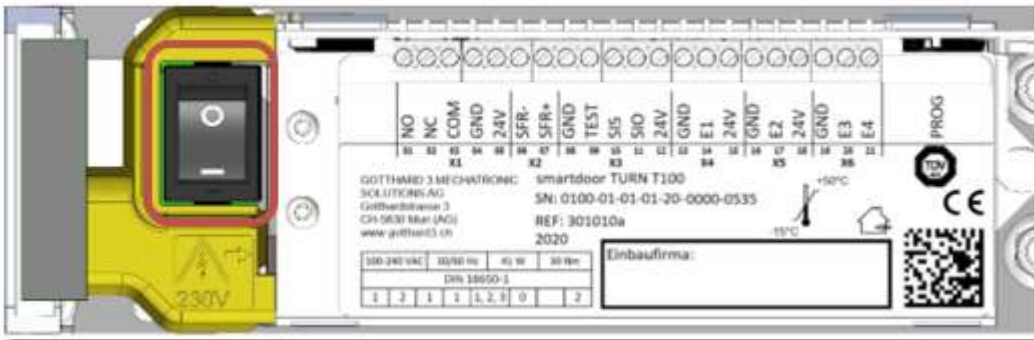


Figure 34: Main switch



WARNING

Only after switching off the main switch may an expert work with an open door operator.

7.2 Setting the hold-open time

The hold-open time can be set using the MODE key of the communication module or the smartdoor APP (see chapter 7.5.5 Door control).

The hold-open time must be set to between 5 and 10 seconds.

7.2.1 Process

- 1 With the MODE button switch to the Continuously Open operating mode (see 7.4.1 Switch-over of the operating mode)
- 2 Door opens and remains in the open position
- 3 Press MODE push button for 5 seconds until a long beep sounds
- 4 Wait for the desired hold-open time. You will hear a beep sounded at second intervals
- 5 Press and release MODE push button after the desired hold-open time
- 6 Door closes and the programming is concluded

7.3 Manual RESET of an error

In the event of an error the door remains in the current state, switches to system error operating mode and indicates this with 10 beeps and a red flashing LED. In this state, all operating and safety elements are deactivated.

If an error cannot be automatically remedied by the door operator (see chapter 5.2 Automatic troubleshooting function), press and hold the MODE key (5 seconds) until a RESET is carried out.

In this case the drive switches to initialisation MODE and starts to approach its closed position. Once here, the drive acknowledges the error, switches to the last selected operating mode and is once more ready for operation.

If the error remains, call an expert technician.

7.3.1 Process

Press MODE button for 5 seconds until 1 long beep sounds, then release the MODE button. This carries out a RESET.

7.4 Switching over the operating mode

The smartdoor TURN knows the following operating modes:

- Automatic: All operating and safety elements are active
- Continuously open: The door remains open until the operating mode is changed
- Initialisation: Operating status during initialisation
- Auto-Learning: Operating status during the Auto-Learning function
- System error: Operating status during which a system error applies

7.4.1 Switch-over of the operating mode

You can switch between the operating modes of the smartdoor TURN using the MODE button on the communication module, the smartdoor Bluetooth push button, the smartdoor Bluetooth module or the smartdoor APP. This means it is possible to switch quickly from Automatic mode to Continuously Open and back.



Figure 35: Switch-over operating mode

More operating modes can be activated as required with the smartdoor APP. Switching over the operating mode means that the released operating modes are actuated in turn. In this case the LED lights up with the respectively selected operating mode.

The prevailing operating mode is always displayed. In this case the LED is lit in the corresponding colour of the operating mode:

- Automatic: green
- Continuously open: flashing green
- Initialisation: flashing orange (not available)
- Auto-Learning: flashing red/orange (not available)
- System error: flashing red (not available)

If the MODE button is actuated one more time the operating mode switches to the next state. The LED is lit in the corresponding colour. The MODE button is actuated until the desired operating mode is set.

7.5 smartdoor APP

With the smartdoor APP, the owner of smartdoor door operators can correspondingly adjust the most important parameters according to their requirements.

In the process, the limit values are automatically adapted to the door configuration. It is therefore for example not possible to set the opening or closing speed faster than the value specified in LOW ENERGY.



NOTICE

No personal data or values are stored in the smartdoor APP



7.5.1 Symbols

The following symbols are used in the smartdoor APP:

Button:		Active		Inactive
Command:		On		Off
Menu:				
Bluetooth connection:		Active		Inactive
Editing:		Active		Inactive
Value display:		adjustable		Display only
Selection:				
Clear:				
Disabled:				

Table 11: smartdoor APP symbols

7.5.2 Main menu - My doors

This screen is displayed when you start the APP. It contains a list of all connected door operators.

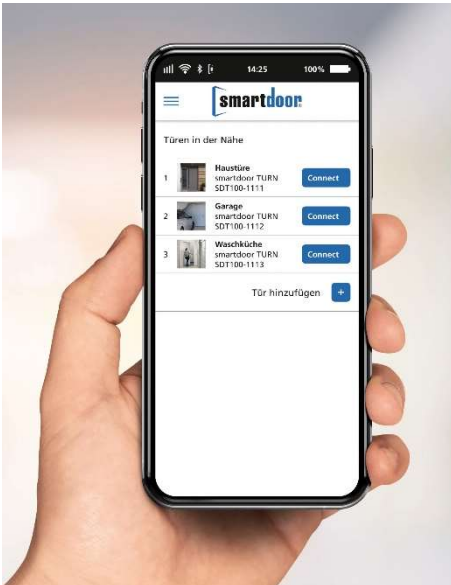


Figure 36: Main menu – My Doors screen

7.5.3 Connect new door operator in the APP

The "Add door" command in the "My Doors" screen takes you automatically to your smartphone's Bluetooth menu in order to pair the two devices via the Bluetooth-connection.

- 1 In the "My Doors" screen, select the "Add door" command
- 2 You are automatically taken to the smartphone's Bluetooth menu and a search is made for new Bluetooth devices. These are typically shown in list form.
- 3 Press the BLUETOOTH button on the door operator (see chapter 4.5.1.1 Addition of Bluetooth operating elements) to display the smartdoor door operator for 15 seconds for the other Bluetooth devices.
- 4 The smartdoor door operator appears in the scan list with its unique serial number, which is printed on the type plate.
If within 15 seconds this does not happen, repeat step 3 or, if necessary, switch the Bluetooth service off and on again on your smartphone.
- 5 Select the smartdoor door operator in the Bluetooth scan list to pair it with your smartphone.
- 6 Switch in your smartphone back to the smartdoor APP. In the "My Doors" screen, the door operator is now shown in the list.



NOTICE

If this door operator is connected to the APP for the first time, operation with the smartphone is NOT enabled. A password must be entered first.

7.5.4 Password for release of a smartphone

The password is requested the first time you connect with the smartdoor door operator.

- 1 In the "My Doors" screen, select the "CONNECT" command for the corresponding door
- 2 A pop-up screen appears, in which you need to enter the password. Press "Confirm" to check the password.
- 3 If the password is correct, "Door Control" appears on the screen. If not, click on "My Doors" to return to the main menu.

7.5.5 Door control

The "Door Control" screen is divided into three sections. The door operator can be used to adapt the most important settings to your own preferences and call up information.

First section:

- The door can be opened with the "OPEN" button.
- A MODE switch-over can be triggered.
- A photo can be added to the door for better recognition.

Second section "Settings":

In this case the most important settings can be adapted to customer requirements. In the process, the limit values are automatically adapted to the door configuration. It is therefore for example not possible to set the opening or closing speed faster than the value specified in LOW ENERGY.

Third section "Service information":

The most important information is displayed here.

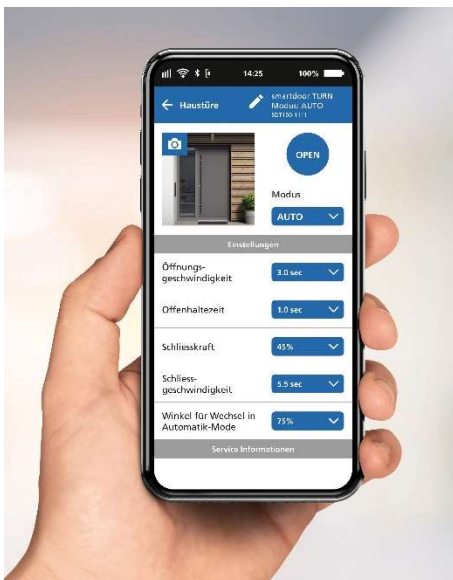


Figure 37: Door control screen

7.5.6 User manual / FAQ

In this screen the user manual and other helpful documents are displayed. For this an APP which can display PDF documents must have been installed on the smartphone. The most recent versions of the documents are always shown. The prerequisite for this is an active Internet connection.

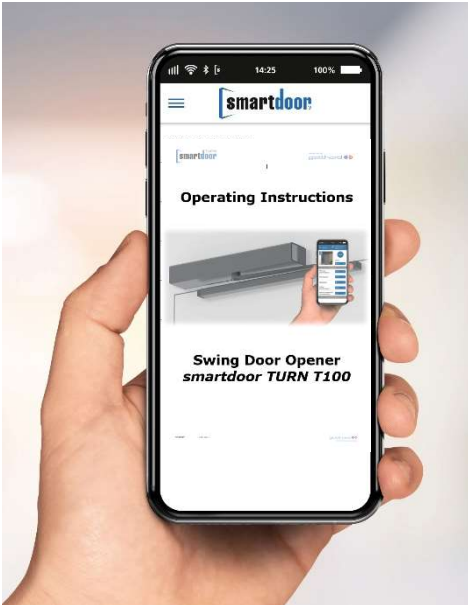


Figure 38: User manual / FAQ screen

8 Service

8.1 Care / operator checks

8.1.1 Switch off

Switching off is explained in chapter "7.1 Main switch".

8.1.2 Checks

The operator must carry out checks 1x monthly or if an error occurs or in the event of abnormal noises.

In this case the following functions must be checked:

- Make sure that the automatic operating mode is switched on.
 - Open with all connected operating elements
 - If safety elements are connected, these trip during opening (SIO) or closing (SIS), so that the door stops.

8.1.3 Care

Only clean the product when the supply voltage is disconnected. Use a damp cloth and standard commercial cleaning agent.



NOTICE

The operator can use the corresponding "Operator checks" checklist (see inspection book) for product checking.



WARNING

If an error occurs, the door operator must be switched off and customer service immediately informed.

8.2 Maintenance / inspection by trained specialist personnel

When safety elements are connected, annual services must be carried out by trained specialist personnel.

Only then can it be ensured that potential errors or risks are detected in good time and the operator is informed accordingly.



NOTICE

Specialist personnel carry out the maintenance corresponding to the "Service" checklist (see inspection book).

9 Troubleshooting

9.1 Reset

In the event of an error the door remains in the current state which is indicated by a continuous beep.

If an error cannot be automatically remedied by the door operator (see chapter 5.2 Automatic troubleshooting function), press and hold the MODE key (approx. 10 seconds) until a RESET is carried out.

If the error remains, call an expert technician.

9.1.1 Process

Press MODE button for 10 seconds until 1 long beep sounds, then release the MODE button. This carries out a RESET.



Figure 39: Press the MODE button 10 seconds to carry out a RESET

10 Technical data

Service life

- Service life min. 500,000 cycles, 2400 cycles/day

Mechanical data

- Drive dimensions single leaf 400 x 52 x 72 mm (W x H x D)
- Closing force in accordance with EN 1154 EN3 (Sliding linkage)
EN4 (Scissor linkage)
- Max. torque 30 Nm
- Weight without linkage 2.4 kg
- Noise < 30 dB
- Opening angle adjustable, max. 115°
- Max. drive speed 40° per second
- Range of Closing function (unpowered) 5-15°
- Motor damping in front of the end stop 5-15°
- Hold-open time 5-10 seconds

Electrical data

- LOW-ENERGY drive according to EN 16005
- Suitable in fire for doors according to EN 16034
- Classification of self-closing in case of fire C5 *
* in combination with battery, tested with 500,000 test cycles
- Connection voltage AC version: 100-240 VAC, 50/60 Hz
DC version: 22-28 VDC, 6 A
- Power supply for external sensors/devices 24 VDC, 0.8 A
- Power consumption, rated power 41 W
- Power consumption, standby < 1 W
- Protection class IP20

Ambient conditions

- Temperature range -15 °C to +50 °C
- Relative humidity < 85 %, non-condensing

Assembly data

- Width of the door leaf 600 - 1200 mm (sliding linkage)
600 - 1200 mm (scissor linkage)
- Door weight Max. 100 kg (sliding linkage)
Max. 120 kg (scissor linkage)

10.1 Area of use and opening times in LOW-ENERGY operation

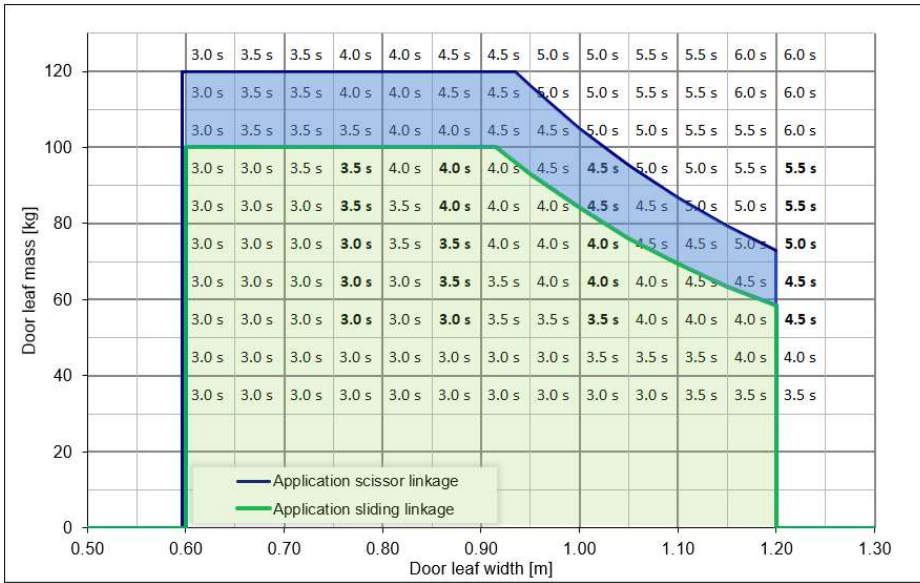


Table 12: Area of use and opening times in LOW-ENERGY operation

11 Appendix

11.1 Connecting terminals

X1.01	NO	Programmable relay	Output: NO
X1.02	NC		Output: NC
X1.03	COM		Input: COM with 0-125 VAC/DC, 1 A
X1.04	GND		GND ¹⁾
X1.05	24 V		VDC 1: Short-circuit-proof
X2.06	(DIO)	Freely programmable in / output	Inverted signal of DIO
X2.07	DIO		Digital I/O
X3.08	GND	Safety elements	GND ¹⁾
X3.09	TEST		Output: Test signal +24 VDC
X3.10	SIS		Input: Safety when closing
X3.11	SIO		Input: Safety when opening
X3.12	24 V		VDC 2: Not short-circuit-proof
X4.13	GND	Function is set via Service Tool. Default: Opening pulse (Day+Night)	GND ¹⁾
X4.14	E1		Input 1: Floating contact
X4.15	24 V		VDC 3: Short-circuit-proof
X5.16	GND	Function is set via Service Tool. Default: Opening pulse (Day+Night)	GND ¹⁾
X5.17	E2		Input 2: Floating contact
X5.18	24 V		VDC 4: Short-circuit-proof
X6.19	GND		GND ¹⁾
X6.20	E3	Function is set via Service Tool. Default: Day/Night switch-over	Input 3: Floating contact
X6.21	E4	Function is set via Service Tool. Default: Opening pulse (Day)	Input 4: Floating contact

¹⁾ All GND have the same potential

Table 13: Connecting terminals

11.3 Display LED and system error

11.3.1 Communication module

MODE LED	Beep signal	Description
Flashing orange	1x short, 3x long	Initialisation after Power-ON or after a RESET
green	-	MODE: Automatic
flashing green	-	MODE: Continuously open
flashing green/blue	-	Hold-open time is set
flashing red	10x short	System error
flashing red/orange	-	Auto-Learning
red/green/blue running light	-	Firmware update – communication module

Table 15: Display MODE LED

System LED	Beep signal	Description
off	-	Communication module is inactive
green	-	Communication module is active
flashing green	-	Initialisation after Power-ON or after a RESET or firmware update communication module is active

Table 16: Display system LED

Bluetooth LED	Beep signal	Description
off	-	Bluetooth is inactive
blue	-	Bluetooth is active
flashing blue	-	Bluetooth classic scan-mode active
flashing blue (rapid)	-	Bluetooth classic and BLE scan-mode active or firmware update communication module is active

Table 17: Display Bluetooth LED

11.3.2 Control module

Door LED	Beep signal	Description
off	-	Door is closed
yellow	-	Door is open (from opening angle 5 %)

Table 18: Display Door LED

Firmware LED	Beep signal	Description
off	-	Normal
flashing blue (rapid)	-	Error in firmware update, control module For troubleshooting, restart the drive with Power OFF / Power ON. The control system then starts in bootloader and waits for the firmware update.

Table 19: Display firmware LED

System LED	Beep signal	Description
off	-	Normal
flashing red	-	Initialisation after Power-ON

		or after a RESET
flashing red (rapid)	-	Firmware update, control module active
flashing red	10x short	System error see Table 21: System error

Table 20: Display system LED

System error	Description	Remedy
Display in smartdoor APP or Service Tool		
001	Short circuit detection in the 5 V-feed to the communication module	Communication module wire, board or connection defect
002	EEPROM Read/Write error detection	Control hardware defect (I2C, I/O-Expander, EEPROM)
003	I2C Bus error detection	Control hardware defect (I2C, I/O-Expander, EEPROM)
004	Encoder signal outside the tolerances, invalid	Encoder wire, board or connection defect
005	Current measurement offset too large	Control hardware defect
006	Expected current not measured	Motor wire or connection defect
007	12 V-feed for voltage modulation of drive cannot be controlled	Control hardware defect
008	Safety parameter comparison check invalid	Error RAM access in safety parameters Drive Power-OFF / Power-ON
009	Safety variable comparison check invalid	Error RAM access in safety variables
010	Error detection in speed monitoring	FW error, should not occur
011		
012	Auto-Learning: Error detection during door-mass detection	Door was blocked during Auto-Learning Execute Auto-Learning again.
013	Auto-Learning: LOW ENERGY speed invalid	Door was blocked during Auto-Learning Execute Auto-Learning again.
014	Auto-Learning: Error detection when fixing door linkage	Door not fixed correctly in Auto-Learning step 7. Execute Auto-Learning again.
015	Reserve	

201	IEC 60730 safety library: Tests Program Counter register for stuck at bits	Drive Power-OFF / Power-ON
202	IEC 60730 safety library: CPU core register tests	Drive Power-OFF / Power-ON
203	IEC 60730 safety library: Stack pointer corruption Detection	Drive Power-OFF / Power-ON
204	IEC 60730 safety library: Stack pointer corruption detected	Drive Power-OFF / Power-ON
205	IEC 60730 safety library: Illegal or invalid Instruction Detection	Drive Power-OFF / Power-ON
206	IEC 60730: Comparison Safety-Code invalid	Error RAM access in Safety-CODE / FLASH defect Drive Power-OFF / Power-ON

Table 21: System error

11.4 Construction Planner Template – Object overview

Construction planner: smartdoor TURN T100 - object overview

Company:

Commission:

Object:

Contact:

effective distances:
to ceiling:mm
dimension x:mm
dimension y:mm
dimension z:mm

min. 54
min. 55
172/52
z

- door operator
- door lintel
- door leaf
- hinge side
- opposite hinge

Configuration:

- DIN left
- DIN right
- latch clip
- colour: alu black white RAL:
- axle extension: 7 15 30mm
-
-
-
-
-
-

Application:

- WC door
- passage door
- office door
- entrance door
- other

Option:

- wall button
- radar
- presence sensor
- electric door opener
- motor lock
- door stopper
- closing sequence

Option:

- hinge/entrance opposite hinge
- E:.....
- E:.....
- SSO
- SSC
- floor / sliding linkage / wall
-

linkage type

linkage type	scissor (max. 120kg)	sliding (max. 100kg)
intel assembly	angle: max.110° lintel: -20/+200mm	angle: max.100° lintel: -20/+80mm
hinge		angle: max.110° overf.: -80/+80mm
opp. hinge		angle: max.80° overf.: 0/+60mm
door leaf assembly	angle: max.100° overf.: -20/+100mm	angle: max.100° overf.: 0/+60mm

For leaf mounting:
Minimum distance door leaf - wall: 72mm; effective distance:mm

Bauplaner smartdoor TURN T100 - Übersicht Objekt

Swing Door Operator

smartdoor TURN T100

311012_smartdoor_TURN_T100_Bauplaner.vsd

gotthard mechatronic solutions

Blatt 1/2

02.03.2021

Peter Kupferschmid

EN-English

11.8 Auto-Learning function

