

Operating Instructions
for Automatic Sliding Doors
SLIDEDOOR Win Drive 2201

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1 Regarding these Instructions

Addressee/Status

These Instructions address the system operator and the users of an automatic TORMAX door system and assume that the system was installed and tested by qualified professionals and is ready for use.

Area of Application

This document is applicable for sliding doors with TORMAX automatic door operator of type:

SLIDEDOOR Win Drive 2201

Explanation of Symbols

In these instructions we have marked all positions which concern your safety with this symbol.



This symbol warns of electrical voltage.



Text passages in grey background must be absolutely observed for sound operation of the system! Disregard may cause material damage.



Operating functions that are marked by the accompanying symbol correspond to the basic settings; however, the fitter can reprogram them.



This symbol marks optional components, which are not **installed in all systems**.

Symbols for Operating Modes



Operating mode OFF



Operating mode AUTO



Operating mode AUTORED



Operating mode EXIT



Operating mode OPEN

Languages

These instructions are available in different languages. Please ask your TORMAX dealer.

Applicable Documents

In the system test manual, checks are listed that must be performed on periodic examination of the system (see also section 5.1). The location of the test manual is at the respective door system.

System test book: T-879 e

2 Safety

2.1 General Safety and Accident Prevention Regulations



Prior to commissioning of the door, the operating instructions – in particular the following safety-relevant instructions – must be read with great care and observed!

Specially emphasized notes within the instructions must be observed in any case (for an explanation of symbols see chapter 1)!

Use for Intended Purpose

The TORMAX operator is designed and built according to the current state of technology as well as the recognized safety-relevant rules and is intended exclusively for the deployment in conjunction with automatic interior and exterior doors for use by people.

Without additional protective measures, operators with protective class IP 22 may be installed only within – i.e. at the inside of – buildings.

Any other use, or any use exceeding this aim, is deemed as not used for its intended purpose and may cause personal injuries to the user or a third party. The manufacturer will not be liable for damages resulting from such uses; the risk will be borne entirely by the system operator of the door system.

Fundamental Safety Measures – Professional Conduct



Operate the system only in a technically sound condition. Eliminate faults, which may impair the safety, immediately through a qualified professional. Until then the system must remain shut down.

Applicable Regulations

The operating, service and maintenance conditions required by the manufacturer must be observed.

In addition to the operating instructions, the relevant legal regulations as well as safety-technical and work-medical regulations for accident prevention and environment protection of the country in which the door system is operated, are also applicable.

Arbitrary changes to the system will exempt the manufacturer from any liability for damage resulting from this.

2.2 Organizational Measures

Doors are to be operated and maintained in such a way that the safety of the user, maintenance personnel and third persons is ensured at all times.



If faults occur on the safety facilities (e.g. photocells used for monitoring the closing range), these may not be made inoperative for continued use of the door.

Performing Work on a TORMAX Door System

Whoever operates, checks and maintains doors must have the necessary instructions (operating instructions) available.

Personnel assigned to activities at the system must have read and understood the operating instructions beforehand.

Mechanical and electrical work on the door system and the control system may be carried out only by our qualified personnel or by specialists after consultation with our qualified personnel.

For all other people it is prohibited to perform any repair or modification work on the system.

Labels

Labels on doors and switching devices must be well readable, easily understandable and durable.

Information necessary for the protection of people (designation of escape routes) and for maintenance must be provided in form of corresponding signs and labels.

2.3 Safety Facilities

In accordance with an accomplished risk analysis, TORMAX allows for corresponding safety facilities in conjunction with the control system for this operator type for the protection of people and damage prevention to property. These facilities must correspond to the current state of technology and comply with the Machinery Directive 98/37/EC, the CEN and CENELEC standards as well as the corresponding state-specific regulations.

TORMAX allows for the installation of max. 2 self-monitoring light beams in the doorframe or 2 presence sensors for optimal safety.

Functional Principle

Each interruption of a safety device (e.g. light beam) leads to the immediate reversal of a closing motion, or prevents it, and initiates a renewed opening. The door remains open as long as the object remains in the doorframe. On closed door, the external safety facility has no effect. The external safety facility is actively tested before the beginning of a closing cycle. On failure of the test, the door remains open.



Electronic Reversing

During the opening and closing cycles the door motion is monitored. If the door hits an obstacle during the closing motion, the control system detects that situation and the door reverses immediately, remains steady during the hold-open time of safety facilities (0,5 s) and closes thereafter with a maximum speed of 19 cm/s.

After 5 closing attempts, the door stops at the obstacle and switches to free wheeling. The fault no. 3 is displayed. The system can be put back in operation through RESET or operating mode changes. The fault indication is then cancelled.

If the door hits an obstacle during the *opening motion*, the control system detects that situation and the door stops immediately, remains steady during 5 sec. and closes thereafter again if no activator responds.

After 5 opening attempts with a maximum speed of 19 cm/s, the door stops at the obstacle and switches to free wheeling. The fault no. 3 is displayed. The system can be put back in operation through RESET or operating mode changes. The fault indication is then cancelled

3 Operation

There are 3 basic configurations to operate the system.

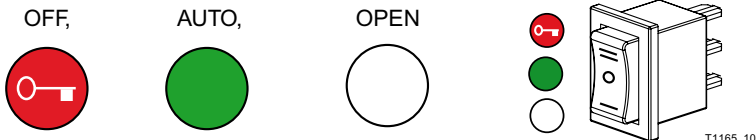
3.1 Commissioning with Power Switch ◆

- After switching on mains, the door performs a calibration run; it opens and closes with low speed. Thereafter the door is operational and opens in operating mode AUTO.

3.2 Commissioning with 3-Positions Operating Mode Switch ◆

- After switching on mains, the door performs a calibration run; it opens and closes with low speed.

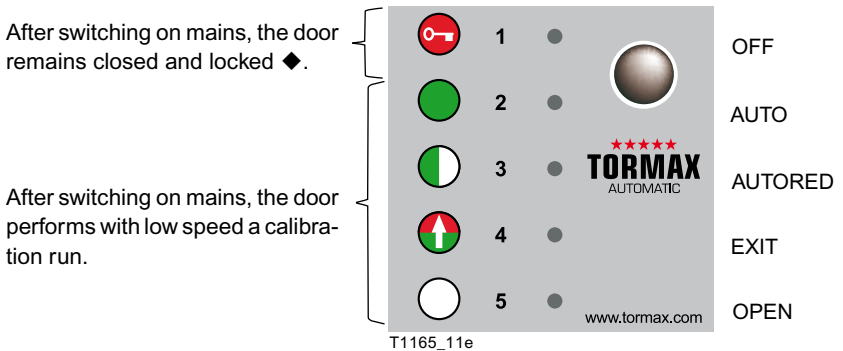
With the operating-mode switch ◆, one of the 3 standard operating modes can be selected: OFF, AUTO, OPEN



In operating mode OFF the door remains closed and locked.

3.3 Commissioning with Control Panel ♦

The last programmed operating mode is stored even after a power break down and is operational again after power is restored.



Re-commissioning

If a door is taken out of operation for a longer period, it is to be checked in accordance with section 5.2 before returning it to service and repaired if necessary so that the safety of people is ensured at all times.

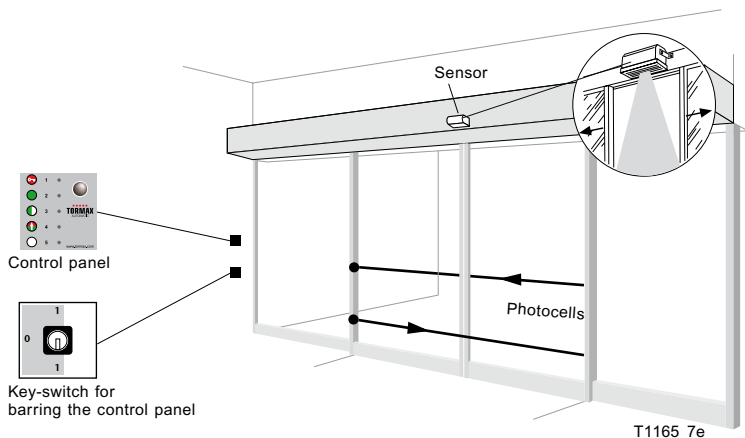
3.4 Function at Normal Operation

The TORMAX door operator ensures the automatic opening and closing of the door. By selecting different operating modes on the control panel, the system operator can affect the behaviour of the door.

Activation

The activation of the door occurs through the opening activator; automatically or manually:

- Automatically through sensors ♦, motion detectors ♦, contact mats ♦ etc.
- Manually through buttons ♦, key switch ♦, manual switches ♦ etc.



Function with Standard Operating Mode AUTO

If an opening activator is triggered, the door opens, waits for the hold-open time to elapse and closes thereafter again.

If the motion detector or light beam / light scanner detects a person while the door is open, it remains open. If a person moves into the range of the motion detector when the door is closing, it opens immediately again.

The door system may only be operated if all safety-relevant facilities (see section 2.3) are available and functional.

3.5 Decommissioning

Monitoring Facility

The TORMAX processor based control system monitors numerous functions of the door and indicates faults at the control panel ◆ (see Trouble Shooting chapter 6). If safety relevant faults occur, the control unit switches automatically to operating mode MANUAL.

Taking the System Out of Service in Case of Fault

Doors are to be taken out of service if faults or other deficiencies occur which impair the safety of people. Faults and deficiencies must be eliminated at once! Decommissioning is carried out by switching off mains supply or by selecting operating mode MANUAL.



Doors may only be released again for use if the fault is repaired or the danger eliminated (e.g. set to operating mode OPEN or separate the drive unit from mains supply). For emergency-exit doors it must be ensured that these can be used for escape at any time.

Damage

Structural components and markings that do not ensure the required safety any longer because of wear or tear, are to be replaced or repaired by a qualified TORMAX dealer.

3.6 Operation on Power Failure



On mains supply failure the door is brought to standstill; afterwards the door leaves are freely mobile. On too high manual acceleration the door is automatically decelerated.

Mechanical Emergency Opening ◆

A mechanical energy storage (spring package) mounted in the operator ensures that the door leaves open in case of a power failure (emergency opening).

Electrical Emergency Power Supply (Battery Module) ◆

The battery backup system guarantees one of the following functions after a power failure. A function has been programmed by the fitter according to specifications.

- Immediate emergency opening excepting operating modes OFF and MANUAL
- Immediate unlocking and emergency opening excepting operating mode MANUAL
- Immediate emergency closing. Wake-up function activated through key switch with one opening cycle.
- Continued operation according to selected operating mode for about 10 to 90 min, depending on the use of the door and charge state of the batteries.
- Wake-up function activated through key switch with one opening cycle.

The capacity of the batteries is sufficient for up to 50 opening cycles. After discharging the batteries the emergency power supply is switched off automatically.

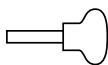
On power recovery, the system switches immediately to mains supply and the battery is recharged.

3.7 Manual Operation of the Lock

In operating mode MANUAL or if the system is without current.

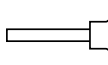
Manual locking mechanism with manual door closing

1. Push manual operation button
2. Close door manually until the lock latches



Manual unlocking mechanism with manual door opening

1. Pull manual operation button
2. Open door manually



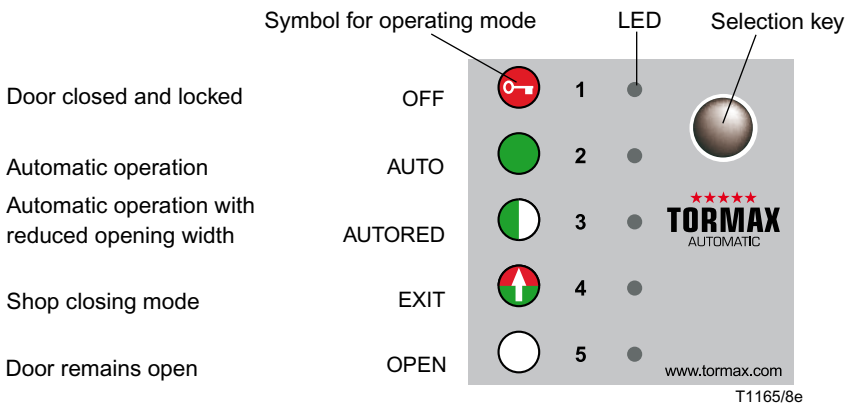
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4 Using the Control Panel ◆

One device for the operation of the system is the TORMAX control panel ◆ with the following options:

- Selection of the operating mode → section 4.1
- Control-panel lock ◆ → section 4.2
- Operating mode MANUAL / Restart → section 4.1
- Fault indication (flashing light emitting diode LED) → chapter 6

Operating Modes



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4.1 Operating Modes



Operating Mode OFF

In operating mode OFF, the doors are closed and locked (◆). The activators inside and outside as well as the external safety facilities are switched to inactive. The door can be opened only through the key switch ◆. After switching to operating mode OFF, the door closes as soon as there is nobody in the range of the activators or safety facilities anymore. The activator inside is observed during a further 10 s, so that the area can be left after switching to operating mode OFF. LED 1 (operating mode OFF) flashes until the door is closed and correctly locked.



Operating Mode AUTO

In operating mode AUTO, the door opens through the activators inside and outside over the whole opening width and closes after the set hold-open time. The door is always unlocked in operating mode AUTO. The key switch ◆ is also enabled.



Operating Mode AUTORED

In operating mode AUTORED, the door opens through the activators inside and outside to the reduced opening width set by the fitter. The door is always unlocked in operating mode AUTORED. The key switch ◆ is also enabled and opens also to the reduced opening width.

On cross traffic (activators inside and outside emit an opening impulse within 0.5 s from the start of an opening cycle), the door opens to the full opening width.



Operating Mode EXIT

In operating mode EXIT, the door opens only through the activator at the inside. The key switch is also enabled. The door is always unlocked in operating mode EXIT. The activator outside is not observed when the door is open. The opening width depends on the previously set operating mode AUTO or AUTORED.



Operating Mode OPEN

The door opens and remains open. The opening width depends on the previously set operating mode AUTO or AUTORED.

Operating Mode MANUAL / Restart

The door leaves can be shifted manually.

The function Manual Operation is suitable cleaning the door leaves and the floor guide or for taking the system out of service in case of failure.

With the control panel, the function Manual Operation can be activated by pressing any control panel key for at least 5 seconds. In manual operation, all LEDs are flashing. The function MANUAL can be reset by briefly pressing the panel key. At the same time, a Restart with software reset and subsequent calibration run is initiated.

4.2 Control Panel Lock ◆

With an external key switch ◆, the control panel ◆ can be protected against abuse. When the panel lock is activated through the key, the current settings remain frozen. Any operation of the control panel is inhibited.

5 Maintenance



- The competence of personnel engaged in maintenance work must be defined clearly.
- Keep hands or other body-parts away from moving parts.

Spare parts must comply with the technical requirements defined by the manufacturer. Original spare parts must be used exclusively.

5.1 Periodic Maintenance

Maintenance Interval

The maintenance interval is determined under consideration of the frequency of use of the system. However, a qualified professional must perform maintenance at least once a year.

Requirements Concerning Maintenance Personnel

Qualified professionals are persons who have adequate knowledge in the discipline of power operated doors based on their vocational training and experience and who are acquainted with the applicable accident prevention regulations, guidelines and generally recognized rules of that technology to such an extent that they can appraise the safe working condition of power operated doors. These persons include for example professionals of the manufacturing or supplying company and experienced professionals of the system operator.

Qualified professionals have to submit their expertise objectively from the point of view of accident prevention and must not be influenced by other, e.g. financial, demands.

Maintenance work on electrical parts and cables must be performed by an electrical fitter who must work in accordance with the relevant regulations.



On all work, a clear separation must be created between mains supply and drive system; either by unplugging the mains connector or through securing the main system switch in the OFF position.

Extent of Maintenance Work

The extent of maintenance work is shown in the *system test* book.

The inspection results are to be entered into the system test book by the qualified professional together with date and signature.

5.2 Inspections by the System Operator

Extent of Inspection



The system operator of an automatic door system must check the proper functioning of the automatic door system and the safety facilities periodically, at least once every 3 months. Thus, an early recognition of functional faults, or of mutations to the system that might diminish safety, is ensured.

If deficiencies are found during the periodic checks, ensure that these are repaired immediately by an authorized TORMAX dealer (see address at back of these instructions).



When performing these checks, please consider also the possibility of a malfunctioning system! Body parts must not be used for functional tests if insufficient space is available; suitable objects made from wood, rubber or similar material should be used instead.

The maintenance work to be performed by the operator requires only a minimum of time but is essential for a safe and faultless functioning of the system.

Maintenance work by the system operator includes:

Checking the Opening Activators

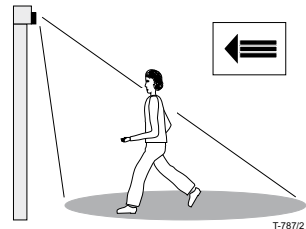
If an operating-mode switch ◆ or a control panel ◆ is installed:

- Select operating mode AUTO.

Automatic Opening Activators (radar systems ◆, infrared sensors ◆, contact mats ◆ etc.)

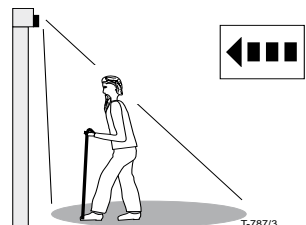
Check:

- Walk through the door in an ordinary way.
→ The door must open and close after the set hold-open time.



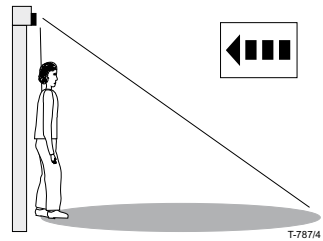
Check:

- Approach the door and pass through it slowly (older persons) with a short pause (approx. 5 sec.) before arriving at the door:
→ The door must open normally also on a slow approach. The door must not close too early.



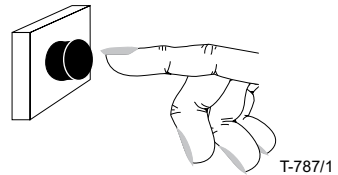
Check:

- “Sneak” up to the door, i.e. walk slowly alongside the door:
→ The door must open.



Manual Opening Activators (Push-Buttons ♦, Key switches ♦ etc.)

- Operate the corresponding activator briefly:
→ The door must open and close again after the set hold-open time.



- Operate the activator for approx. 20 seconds:
→ The door must open and remain open. When the activator is no longer activated, the door must close after the hold-open time has elapsed..

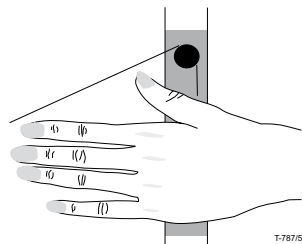
Checking the Safety Facilities

The safety facilities have a higher priority than the activators; this aspect is to be considered and tested with the following checks..

Light Beams ♦, Light Scanners ♦

Check:

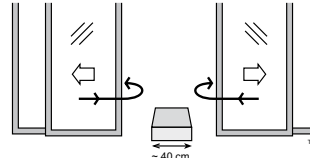
- Interrupt the light beam by hand:
→ An already open door must not close. If the door is performing a closing motion, it must reopen immediately.



Electronic Reversing

Check:

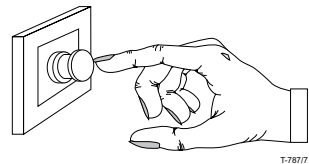
- Place an obstacle (sponge-rubber block or similar) between the door leaves (ensure that the light beams or light scanners are not interrupted): → When the door encounters an obstacle, it reopens, and when the hold-open time of safety facilities (0.5 s) has elapsed, the door closes with a max. speed of 19 cm/s. After 5 closing attempts, the door stops at the obstacle and switches to free wheeling. The fault is displayed. The system can be reactivated through RESET or by changing the operating mode.



Push Button ◆ for Operating Mode MANUAL

Check:

- Activate the MANUAL push button ◆:
→ The door is switched to operating mode MANUAL; the door leaves can be moved manually. If the system is equipped with a mechanical emergency opening facility ◆, the door leaves will open.
- Reset the MANUAL push button:
→ The door reacts the same way as on power-on.



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Mechanical Emergency Opening Facility ◆

Check:

- Simulate a mains failure: disconnect mains plug or switch-off main system switch
→ the door leaves should open.

Electrical Emergency Opening Facility ◆

Check:

- Simulate a mains failure: disconnect mains plug or switch-off main system switch
→ the door behaves as programmed for emergency power supply (see section 3.6).



Manual Disengagement ◆

Check:

- Switch system to operating mode MANUAL or disconnect mains.
- Check if lock can be unlocked and locked.
- Reset operating mode MANUAL or switch on mains.

Inspecting the System for Traces of Excessive Wear

Check:

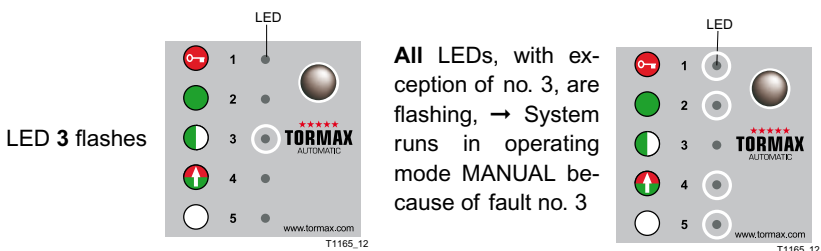
- Check the door system visually for recognizable external damage and defect.
- Check for unusual noises during motion.

6 Trouble Shooting

Diagnosis through control panel ♦

System faults are indicated by flashing LEDs on the control panel. Either only one LED flashes or – if the system has automatically been put into operating mode MANUAL – operating mode MANUAL is indicated. The fault number corresponds to the only LED **not** flashing

Example: Indication of fault no. 3



LED	Group of faults	Behaviour	Cause	Trouble shooting
1	Lock	<ul style="list-style-type: none"> • Door does not lock. • Door does not unlock and stays closed. 	<ul style="list-style-type: none"> • Lock latch stuck or defective. 	<ul style="list-style-type: none"> • Move lock latch manually. Free manual disengagement by turning button ccw for about 90 °. • If no success, or fault occurs repeatedly call TORMAX service.
2	Interface RS232 to control panel	<ul style="list-style-type: none"> • Operating mode cannot be changed. • No display on the control panel. 	<ul style="list-style-type: none"> • Connection from the control unit to the control panel interrupted 	<ul style="list-style-type: none"> • Call TORMAX service.
3	Safety facility	<ul style="list-style-type: none"> • Door remains open or • Door stops at the obstacle and leaves can be moved freely. 	<ul style="list-style-type: none"> • Photocell or safety sensor have been active for more than 5 min, or safety test is negative. • Reversing has been triggered 5 times in a row. 	<ul style="list-style-type: none"> • Clean photocells. Remove objects in the door range. • Change operating mode (= RESET with calibration run) • If no success, or fault occurs repeatedly call TORMAX service.
4	Activators	<ul style="list-style-type: none"> • Door remains open. 	<ul style="list-style-type: none"> • Activator inside/ outside or key switch has been active for more than 5 min. • Emergency OPEN/ CLOSE is active. 	<ul style="list-style-type: none"> • Reset key switch (Emergency OPEN/ CLOSE). • If no success, or fault occurs repeatedly call TORMAX service.
5	System	<ul style="list-style-type: none"> • Door stops and leaves can be moved freely. 	<ul style="list-style-type: none"> • Internal system fault. 	<ul style="list-style-type: none"> • Change operating mode (= RESET with calibration run) • If no success, or fault occurs repeatedly call TORMAX service..
All	No fault	<ul style="list-style-type: none"> • Door stops and leaves can be moved freely. 	<ul style="list-style-type: none"> • Operating mode MANUAL 	<ul style="list-style-type: none"> • Reset operating mode switch MANUAL or change operating mode on control panel.
No display		<ul style="list-style-type: none"> • No reaction of the door and leaves can be moved freely. 	<ul style="list-style-type: none"> • Mains supply interrupted. • Emergency power supply switched off. • Drive is overheated. 	<ul style="list-style-type: none"> • Switch on mains → main fuse • Wait for 15 min. till drive has cooled down. • If no success, call TORMAX service.

7 Additional Notes

7.1 Technical Data

Mains supply:	1 x 230 V AC / 1 x 115 V AC
Frequency:	50/60 Hz
Protective class:	IP 22
Power consumption:	160 VA
Ambient temperature range:	-15 °C bis +50 °C
Designation of drive:	CE
Equivalent continuous sound pressure level:	≤ 70 dB(A)
Sensor + lock supply:	24 VDC/1,0 A
Application category:	2 2 12 2 0 2 01234 0 (DIN V 18650: 2003)

7.2 Warranty

Deliberate or malicious damaging and contamination of system parts, as well as alterations of the drive or control system, activators and control elements by a third party, will result in the loss of all warranty!

7.3 Options

The following options are available, among others: control panel, operating-mode switch, mechanical emergency opening facility, lock, key switch, safety facilities, various activators and sensor – please ask your TORMAX dealer.

7.4 Disposal

At the end of its useful lifetime, this system is to be disassembled professionally and is to be disposed of according to the relevant national regulations. We recommend you contact a company specializing in waste disposal.



When disassembling the mechanical emergency opening facility, there is a potential hazard from the pre-tensioned spring. When disassembling the battery module, there is a potential hazard from acid!

Contents subject to technical changes!

★★★★★
TORMAX Your First Choice for Door Automation
AUTOMATIC

TORMAX SLIDEDOOR

TORMAX SWINGDOOR

TORMAX FOLDDOOR

TORMAX REVOLVEDOOR

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Repairs and service:

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