Operating Instructions
for automatic swing doors with
TORMAX control system TCP 52, TCP 52 LC
SWINGDOOR Drive TDA, TDM
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1 Introduction

Addressee/Status
These instructions are directed at the system operator and user of an automatic TORMAX door system and it is presumed that the system was installed and tested by professional persons, i.e. that it is ready for operation.

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

SWINGDOOR Drive TDA
SWINGDOOR Drive TDM

Explanation of Symbols
In these instructions, we have designated all positions concerning your safety with this symbol.

⚠️ This symbol warns of electrical voltage.

Text passages with a background in grey mark all positions that are relevant for a sound functioning of the system. Non-adherence can cause material damage.

◆ This symbol denotes optional components which do not form part of all systems.

Symbols for Operating Modes

Operating mode OFF

Operating mode AUTO

Operating mode OPEN

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

Applicable Documents
Please refer also to the System Test Book which contains a list of checks that need to be performed during the periodic maintenance (see also section 4.1). The System Test Book is located at the corresponding door system.

System Test Book International: T-895 e
2 Safety

2.1 General Safety and Accident Prevention Directions

General Safety Instruction
Before beginning installation or start-up, read and follow these information that is being described on this page. Damage to the unit and personal injury may result if these instructions were not carefully followed.

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 via the plastic end side knockout that is close to the input power supply terminals. 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.

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.

Please read the operating instructions – especially the following safety notes – carefully prior to commissioning of the door system and adhere to them!
Observe specially marked notes in these instructions in any case (refer to chapter 1 for an explanation of symbols!).

**Use for Intended Purpose**

The TORMAX operator has been designed and constructed according to the current state of technology and the recognized safety related regulations. It is intended exclusively for the deployment in conjunction with automatic interior and exterior doors (without wind loads) for use by people e.g. in hospitals, homes for the elderly, shopping centres, office buildings and large-scale enterprises. Operators conforming to protective class IP 22 may only be installed at the inside of buildings if no other protective measures are provided.

Any other use, or any use exceeding this aim, is determined to be not 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.

**Basic Safety Measures - Appropriate Behavior**

Use system only in a technically sound condition. Ensure that faults which could diminish safety are eliminated immediately by professionals.

**Relevant Regulations**

The operating, maintenance and service conditions are to be maintained as directed by the manufacturer.

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.

Unauthorized alterations to the system exempt the manufacturer from any liability for resulting damage.

**2.2 Organizational Measures**

**General**

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

If faults occur on safety facilities (e.g. sensor system), these must not be disabled for further use of the door.

**Servicing TORMAX Door Systems**

Any person operating, checking and maintaining doors must be in possession of the necessary instructions (including operating instructions).

Personnel entrusted with work on the system must have read and understood the operating instructions.
Mechanical and electrical work on the door system and the control system may only be performed by TORMAX professionals or by other professionals after having consulted TORMAX professionals.

All other persons are prohibited from performing any repair work or changes to the system.

**Designations**

Designations on doors and electrical devices must be well readable, intelligible and of high durability.

Escape routes must be designated if this information is required for the safety of people.

### 2.3 Safety Facilities

In accordance with the results of a safety analysis, TORMAX allows for the connection of safety facilities for the protection of people and equipment on the control system of this operator model. These facilities must be designed according to the current state of technology and must comply with the guiding rules for machines 98/392/EG, the standards of CEN (European Committee for Standardization) and CENELEC (European Committee for Standardization of Electrotechnics) as well as the corresponding national regulations.

**Electronic Reversing**

A sensitive electronic circuit monitors the door movements during the opening and closing actions. If the door hits an obstacle during closing, it opens again and closes after the hold-open time has elapsed. If the door hits an obstacle during opening, it stops for a short period and closes afterwards. When the sensor receives an opening impulse, the door opens with reduced speed.

On leaving the production facility, it is standard that reversing is switched-on in the opening direction and that “Push-and-Go” actively functions in the closing direction. By deactivating “Push-and-Go”, reversing automatically becomes active in the closing direction too.

Should user safety be ensured through other measures, the service engineer can deactivate the installation to allow reversing for special uses; ie. for the opening and/or closing directions, singularly or together.

**Safety Light Beam(s)**

Every interruption of a light beam results in the immediate termination of a closing motion or prevents such a motion. If the closing motion has commenced, the door opens again, waits until the hold-open time has elapsed and closes afterwards.
Safety Contact Strip (In Closing Direction) ◆
The activation of the safety contact strip leads to the immediate termination of the closing motion. The door opens again, waits for the hold-open time to elapse, and closes afterwards.

Safety Contact Strip (In Opening Direction) ◆
The activation of the safety contact strip leads to the immediate termination of the opening motion. The door stops for a short period and closes afterwards. When the sensor receives an opening impulse, the door opens with reduced speed. The door opens on the next opening impulse but only if the safety contact strip is no longer active.

Sensor Systems ◆
Safety Reflective Light Scanners ◆
The sensor systems and the light scanners must also safely recognize static (not moving) objects in the danger area. If persons or objects appear in the danger area then a dangerous door movement is immediately terminated, or prevented. Another motion can occur only on a new impulse and when the danger area is clear.

Safety Contact Mat ◆
The safety contact mat has the same functionality as the safety sensor system.
3 Operation

3.1 Commissioning

Switching On

- Switch-on mains supply (mains plug or main system switch).

Systems with Built-In Control Panel

- Select operating mode AUTO with panel key (T).
  ➞ The middle (green) LED is illuminated.

Control panel TDA “PANECO”

TDA Systems with External Control Panel

- Select operating mode AUTO with UP/DOWN keys.
  ➞ The corresponding LED is illuminated.

Re-Commissioning

If the door has not been operated for a longer period, it must be checked prior to re-commissioning according to section 4.2 and repaired if necessary so that the safety of people is ensured at all times.

3.2 Normal Operation

The TORMAX door operator ensures the automatic opening and closing of the door. The door opens electro-mechanically when an impulse is received and closes with spring force and/or motor support. By selecting an appropriate operating mode on the control panel, the behavior of the door can be influenced.
Opening Activators
The initiation of the door occurs automatically through motion sensors – including direction-sensitive sensors – or manually through the “Push-and-Go” function, push-buttons, key switches, code switches, radio transmitters etc.

Operating Modes
By repeatedly pressing the panel key on the built-in panel, or the keys UP/DOWN on an external panel ◆, one of the 3 or 5 following operating modes can be selected, respectively: OFF, (MANUAL), AUTO, (EXIT), OPEN.

Standard Operating Mode AUTO
During commissioning, one of the following control functions was enabled by the installation fitter:

“Push-and-Go”
When the door is moved manually, the response is the same as for an opening command: it opens automatically, waits until the hold-open time has elapsed and closes afterwards again.

Time Control
If the door receives an opening command from an activator, it opens and waits for the hold-open time to elapse before closing again.

Step Control ◆
If the door receives an opening command from a manual activator, it opens and remains open. It re-closes immediately on a second impulse.

Combination ◆
A combination of the above control modes is also possible, for example by performing a step-control function with a manual activator and a time-control function with a motion detector.

Operating Mode OFF
Systems without Door Lock ◆
All activators and the function “Push-and-Go” are inactive. The door behaves like a door with an ordinary door closer.

Systems with Door Lock ◆
The door locks. Except for the key switch, all activators are inactive as well as the function “Push-and-Go”. The system behaves like a door with an ordinary door closer.

Operating Mode OPEN
The operator opens the door motor-driven and keeps it open. If the OPEN position is changed by force, the door remains in this new position until it is opened or closed the normal way.
The door may remain open for an indefinite time.
Operating Mode EXIT

The operating mode EXIT is available only with the external panel (with TDA). It serves for the door operation before shop closing. The activators on the outside of the shop are inactive.

Operating Mode MANUAL

The operating mode MANUAL is available only with the external panel (with TDA). The door is free for movement and not locked, the unit works like an ordinary door closer.

Safety Facilities

The door systems may only be operated when all safety-relevant facilities are installed and functional!

Shutdown in Case of Fault

Doors are to be taken out of operation when faults or other deficiencies occur that may diminish the safety of people. Please ensure that faults and deficiencies are eliminated in due course!

- Doors may only be released for normal use when the fault is eliminated (repaired) or the danger is removed (operating mode OFF).
- It must be ensured at all times that doors serving as emergency exits can be used for escape.
- On fire protection doors, it must be ensured that the door closes correctly each time it is opened. Fire protection doors may under no circumstances be blocked in the open position by means of a wedge or a similar device.

Damage

Components and marks that no longer guarantee the required safety due to wear or tear are to be replaced or repaired by a qualified TORMAX dealer.

3.3 Duty on Power Failure

Power Failure

On power failure, the door operator behaves like an ordinary door closer.

The automatic door can be opened manually without any readjustment. The processor controlled closing motion is performed by means of the built-in closing spring.

If the door is jammed in the OPEN position when there is no power supply, it is necessary to prevent the door from automatically switching back on (isolate the door from the mains supply). On mains recovery, the electronic control unit performs a software reset.
Battery Module

The emergency power supply permits continual operation of our automatic doors during a limited time. On power recovery, the system switches immediately back to mains operation and the batteries are recharged again. For more detailed information see Operating Instructions of your battery module.

3.4 “Teach-In”

If required, – e.g. on architectural changes – the following basic adjustments of the door can be adjusted by means of the function “Teach-In”:

– Opening speed
– Opening angle
– Hold-open time

⚠️ Teach-In must only be carried out by an expert.

• Select operating mode OFF.
• Remove drive cover.
• Locate the small grey key (Soft-Key) in front of the lower printed circuit board of the TCP-52 control system.

The door must be in the CLOSED position!

• Press the Soft-Key briefly:
  → A brief humming sound is emitted. Moving lights (LEDs) at the panel signal the “Teach-In” mode.
• → Again a brief humming sound is emitted.
• Move door manually with the desired speed to the OPEN position and wait in the OPEN position:
  → A brief humming sound is emitted.
• Wait for the desired hold-open time and commence closing movement:
  → A brief humming sound is emitted.
• Wait until door is in the CLOSED position:
  → A brief humming sound is emitted.
• Press Soft-Key briefly to transfer parameters:
  ➞ A brief humming sound confirms registration.
The operator returns to the previously active operating mode
(e.g. OFF, AUTO, OPEN).

• Reinstall drive cover.

• Select operating mode.

If the steps take longer than 30 seconds each (except the adjustment of the
hold-open time), the control system returns to the previously active operating
mode (e.g. OFF, AUTO, OPEN).

3.5 Panic Fittings

Reset
If a panic fitting has been disconnected, proceed as follows:

• Disconnect the operator from mains (installation switch, mains plug).
• Reset the panic fittings as per drawings below.
• Switch on and select operating mode AUTO.

Standard Arm

Parallel Arm

Roller Lever
4 Maintenance

- The responsibilities of maintenance personnel must be clearly defined.
- Keep hands and other body parts away from moving devices.

Spare parts must comply with the technical requirements of the manufacturer. Use exclusively original spare parts.

4.1 Periodic Maintenance

Maintenance Interval

The maintenance interval is determined under consideration of the frequency of use of the system. However, checking and maintenance must be performed at least once a year by a professional.

Requirements Concerning Maintenance Personnel

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.

Professionals have to submit their expertise objectively from the point of view of accident prevention and not influenced by other, e.g. financial, perspectives.

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

For 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 professional together with date and signature.
4.2 Inspections by the System Operator

Extent of Inspection

The inspection must be performed periodically, but not less than once every 3 months. The system operator of an automatic door must check the proper functioning of the automatic door system and of the safety facilities as well periodically, but not less than once every 3 months. Thus, an early recognition of functional faults, or of mutations to the system that diminish safety, is ensured.

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

When performing these checks, please consider also the possibility of incorrect actions by the 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 system operator requires only a minimum of time but is essential for a safe and faultless functioning of the system.

This work includes:

Inspection of the Opening Activators

If a operating mode switch 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 should open in time and close again after the set hold-open time.

Check:

- Approach and pass through the door slowly (older persons) with a short pause (approx. 5 sec.) before arriving at the door: → The door should open normally also on a slow approach. The door should not close too early.
Inspection of the Manual Opening Activators (Push-Buttons ◆, Key switches ◆ etc.)

Check on time-control system

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

- Operate the activator for approx. 20 seconds:
  ➞ The door should open and remain open. When the maintained impulse is no longer active, the door should close after the hold-open time has elapsed.

Check on step-control system:

- Operate the corresponding activator:
  ➞ The door should open (close) and remain in the open position (closed position) until the activator is reactivated.

Inspection of the Safety Facilities

Please keep in mind that the safety facilities have a higher priority than the activators. This aspect is to be considered and tested during the following checks.

Electronic Reversing

(if reversing has been deactivated by the fitter, this check can be omitted)

Check:

- Place an obstacle first within the opening and then within the closing range of the door:
  ➞ When the door hits the obstacle during the opening motion it should stop for a short period and close again.
  ➞ When the door hits the obstacle during the closing motion, the door reopens, waits for the safety time to elapse and tries to close again.
Safety Facilities in Opening- and Closing Direction
(safety sensor strip ◆ etc.)

Check:
• Place an obstacle in the swing area of the door:
  → The door reverses at the obstacle.

Safety Facility for the Swing Area
(reflective light scanner ◆, safety mat ◆ etc.)

Check:
• Activate safety mat with closed door:
  → The door should remain closed.
• Activate safety mat with open door:
  → The door should remain open

Commenced movements will not be interrupted by the safety facilities for the swing area.

Panic Fitting ◆
Check:
• Separate operator from mains supply (main system switch, mains plug), or select operating mode OFF with the mode selector ◆.
• Trigger panic fitting. (reset as per section 3.4).

Inspection of the Door for Traces of Extensive Wear
Check:
• Check the door system visually from the outside for recognizable damage and deficiencies.
• Check whether unusual noises can be heard during the motional sequence.
5  Trouble-Shooting

The microprocessor control system TCP performs a self-diagnosis continually and displays faults by means of periodically flashing combinations of LEDs on the control panel. For fault analysis and fault removal proceed according to the following fault diagrams.

5.1  Fault Diagram 1

[Flowchart diagram]

Check control panel

Is any device on the panel illuminated? Yes / No

Display flashes temporarily? Yes / No

Can you change the operating mode? Yes / No

Electric mains interruption or fuse blown or only on external panel ◆ Code lock is active → enter code

Display is flashing:
1. Interrupt mains briefly
2. Fault occurs again: see fault diagnosis diagram 2

Panel lock ◆ or code lock ◆ is active

Door system or auxiliary devices faulty
5.2 Fault Diagram 2

Built-in Panel

External Panel

On the external panel, only the LEDs OFF, AUTO and OPEN are active by default.

Fault Codes

1. General fault, processor fault, no movement:
   → Contact TORMAX dealer and request service.

2. Reversing mode, safety facilities active:
   → Wait until door has closed/opened
   → Check if there are any obstacles in the swing area of the door
   → Interrupt mains supply and check door for easiness of movement
   → Contact TORMAX dealer and request service.

3. Battery operation due to mains failure:
   → Await mains recovery.

4. Lock fault, burglary alarm:
   → Operate lock manually or with key switch, respectively
   → Contact TORMAX dealer and request service.

5. Activator or safety facility faulty
   → Contact TORMAX dealer and request service.
6  Additional Notes

6.1  Technical Data

Mains supply: 1 x 230 V AC (198–264 V)  
1 x 115 V AC (108–125 V)

Frequency: 50/60 Hz

Protective class: IP 20

Power consumption: Max. 160 W

Ambient temperature range: –20 °C to +40 °C

Designation of drive: CE

Equivalent continuous sound level: ≤70 dB(A)

6.2  Warranty

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

6.3  Options

Among others, the following options are available: Electromagnetic lock, key switch, safety facilities, various activators and sensors – please ask your TORMAX dealer.

6.4  Disposal

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

While dismantling the drive unit watch the pretensioned spring!

Contents subject to technical changes!