

Instruction manual system 20 TOS

automatic door systems – this is record!



record.group

Table of contents

1	General	4
1.1	Target groups (User)	4
1.2	Door care.....	4
1.3	Maintenance and regular inspection	4
1.4	Application range TOS 20	5
2	Safety Instructions.....	6
2.1	State of technology.....	6
2.2	Intended purpose of use	6
2.3	General safety and accident prevention regulations.....	6
2.4	Control of safety devices.....	7
2.5	Storage of the manual	7
3	Operating instructions.....	8
3.1	Selection of operating modes (BDE-D)	8
3.2	Locking the door leaf and the swing-out side screen (TOS).....	9
3.2.1	Rotary switch and door leaf monitoring (optional).....	9
3.2.2	Possible error messages on the control panel.....	10
3.3	Selection of special functions.....	11
3.4	Locking the control panel with the keyboard.....	11
3.5	Locking the control unit with a key (option).....	12
4	Manual opening and closing in case of failure	13
4.1	Manual opening (without manual unlocking device)	13
4.2	Manual closing	14
4.2.1	Manual closing - step 1	15
4.2.2	Manual closing - step 2	15
5	Operating door in emergency	17
5.1	Emergency opening with current supply	17
5.2	Emergency opening in case of power failure with auxiliary battery (option).....	17
5.3	Emergency operating using Bowden cable (Option).....	17
5.3.1	Available versions	17
5.3.2	Procedure for an emergency opening.....	18
5.3.3	Closing and locking the door (TOS).....	18

Table of contents

6	Behaviour in event of faults	19
6.1	Display on the control unit.....	19
6.2	Possible troubleshooting	19
6.3	Resetting the control module	19
6.4	Control unit BDE-D does not react.....	20
7	Functions and safety check	21
7.1	General remarks.....	21
7.2	Power supply data product line 20.....	22
7.3	Environmental conditions	22
7.4	Monthly check-up list (TOS).....	22

1 General

1.1 Target groups (User)

This operating manual is intended for the target groups listed below:

- Operating entity of the system:
the person who is responsible for the technical maintenance of this system
- Operator of the system:
the person who operates the system every day and has been suitably instructed

The handling of the system is explained with the help of this operating manual. It forms the basis of fault-free working and gives instructions for the procedures to follow for rectifying any faults that may occur. Extracts of this document can also be made accessible to persons entrusted with the day-to-day operation of the system.

The operating entity of the system must read this operating manual before commissioning the system, and follow the safety instructions.



It is recommended that this document should be kept handy in the vicinity of the automatic system.

1.2 Door care

The entire system, including the sensors and safety devices, can be cleaned with a moist cloth and standard commercial cleaners (non-scouring, do not use any solvents). First test the cleaners on a hidden (not easily visible) place. Keep all guides free of dirt.



NOTICE

It is recommended that for carrying out this work, the operating mode  (Locked) or  (Continuously open) be used, so as to avoid possible injuries from unwanted door movements.

1.3 Maintenance and regular inspection

Prior to carrying out the first commissioning and if required as well as in accordance with the applicable regulations - however at least **once a year** – a technical inspection by a skilled service technician or an authorised partner must take place. We recommend performing maintenance at the same time.

Any due maintenance is indicated on the display of the BDE-D control unit. The interval for the edition of this message is determined by the number of opening cycles and/or the expiry of a defined operating period.

Regular maintenance and inspection of the automatic door by trained personnel authorised by the manufacturer provides the best guarantee for a long service life and an error-free operation.

We recommend the conclusion of a service contract with the respective service department in your region.



IMPORTANT

A listing of recommended spare parts is supplied in the annex and is also available on request at your service department.

1.4 Application range TOS 20



NOTICE

These instructions apply to the following drive of system 20:
TOS 20

2 Safety Instructions

The sliding door has been developed with state of the art technology and recognised technical safety regulations.

2.1 State of technology

This system was developed using state of the art technology and officially recognized technical safety regulations. The system, depending on its options and diameter, comply with the requirements of the Machine Guidelines 2006/42/EG as well as EN 16005 and DIN 18650 (D).

Nevertheless, danger may arise if not used as intended.

IMPORTANT



Installation, commissioning, inspection, maintenance and repair work may only be conducted by qualified, trained and authorized technicians.

After commissioning or repair work, fill in the check list and give it to the customer for safe keeping.

We recommend obtaining a service agreement.

2.2 Intended purpose of use

The system is designed exclusively for use as a pedestrian passage. The installation may only occur in dry areas. If there are deviations then proper waterproofing and water drains will be required on-site.

Any other application or use beyond this purpose is not considered to be an intended purpose. The manufacturer bears no liability for any resulting damage; the operator alone shall bear the associated risk.

The intended purpose also includes observation of the operating conditions specified by the manufacturer, in addition to regular care, maintenance and repair.

Interventions in or alterations to the installation performed by non-authorized maintenance technicians exclude the manufacturer's liability for consequential damages.

2.3 General safety and accident prevention regulations



IMPORTANT

When motion detectors are used, it must be ensured that no moving objects like flags, plants etc. can move into the detection area of the motion detectors.



IMPORTANT

To avoid malfunctions, the system must **NOT** be disconnected from the power overnight!



IMPORTANT

If an error occurs that could endanger personal safety, the system must be shut down immediately. It can only be put back into operation when the error has been rectified in a technically correct manner and the danger has been eliminated.



IMPORTANT

No safety devices (i.e. sensors, protective wings) may be removed or put out of service.

**⚠ CAUTION**

Operational malfunctions and danger of falling due to the accumulation of dirt under the floor mat

- Operational shutdowns, bruising, fractures
- The floor mat or the flooring must be level and firmly installed.
Accumulation of dirt under the floor mat must be removed **regularly**.

**⚠ CAUTION**

Unexpected OPENING / CLOSING / ROTATION

- Bruises and contusions from the door wings
- No persons or objects are allowed in the opening area of the door.
- No safety devices (sensors) should be removed or disabled.
- Do not rush through a door that is already closing.

2.4 Control of safety devices

Beside the maintenance carried out at regular intervals by a service technician or authorised person, it is recommended, for additional safety, that the operator regularly controls the essential elements of the door. You will find a check-list of the functions to be tested monthly at the end of this document.

2.5 Storage of the manual

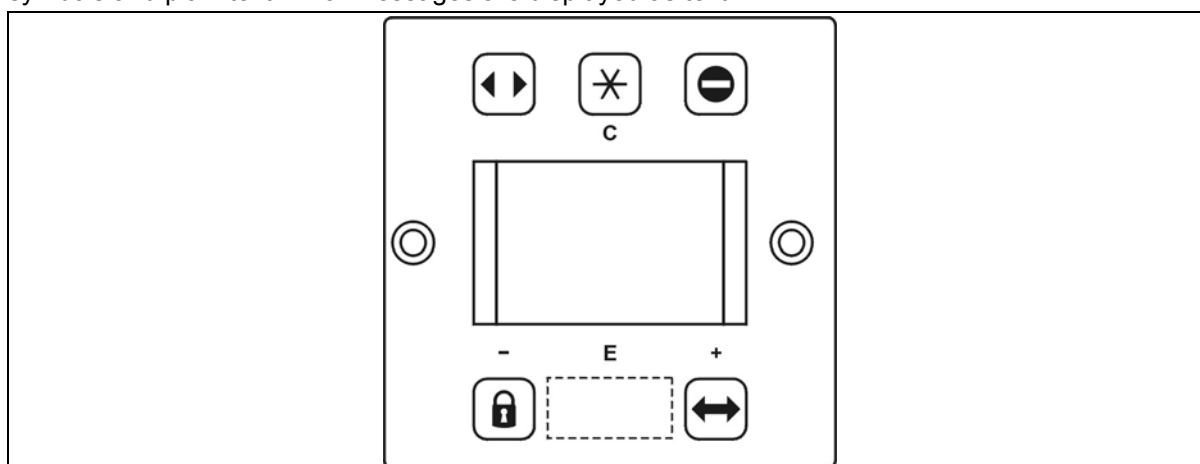
After the installation of the system, the instructions should be stored in an accessible and dry place.

3 Operating instructions

The electronic control unit with display (BDE-D) has been designed to operate the automatic sliding door installation.

3.1 Selection of operating modes (BDE-D)

The electronic control unit BDE-D is a user-friendly input/output module to control and customise (optional) the system operation. The backlit LCD display informs about the system status by means of symbols and plain text. Error messages are displayed as text.



Button	Operating mode	Symbol displayed	Function
	Automatic	 Automatic	<ul style="list-style-type: none"> Unobstructed access through the system in both directions Maximum opening with
	Continuously open	 Cont. open	<ul style="list-style-type: none"> System remains open until another operating mode is selected
	One-way	 One-Way	<ul style="list-style-type: none"> System opens only in one direction (e.g. for shop closing time)
	Locked	 Locked	<ul style="list-style-type: none"> System is closed and locked (if there is a locking device) System remains locked even in case of power failure
	Reduced opening width	 Automatic	<ul style="list-style-type: none"> Unobstructed access through the system in both directions Reduced opening width




NOTICE

The reduced opening width is also effective with operating modes (One-way) and (Continuously open).

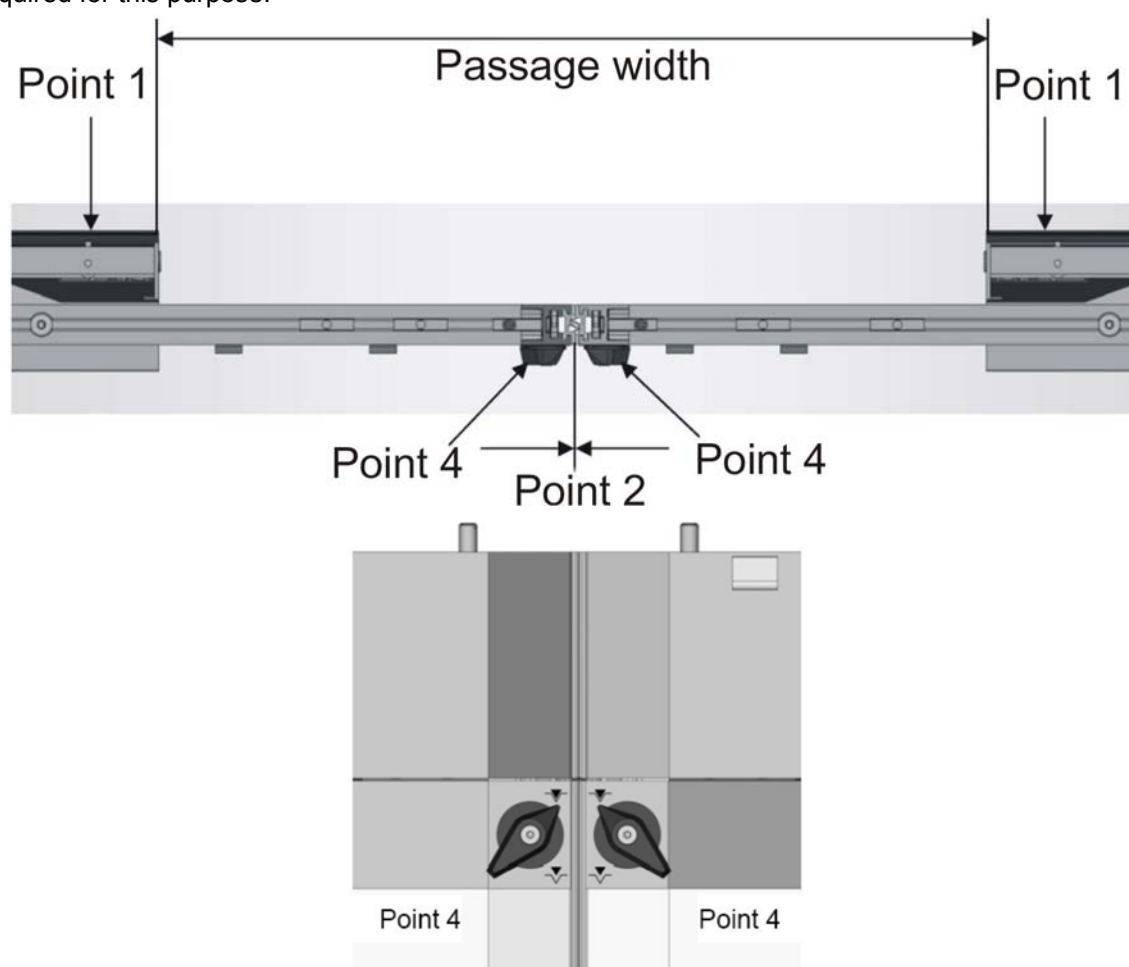
3.2 Locking the door leaf and the swing-out side screen (TOS)

In order to be able to guarantee the correct locking of the door leaf and the swing-out side screen, it is essential to meet the following points. Use mounting set 102-381641003.

1. The swing-out side screens must be completely pushed to the end stop.
2. The swing-out side screens must be completely closed (revolving and sliding movements).
3. Set the program switch on the control unit to the  locked position (causes the swing-out movement of the door leaf to be locked).
4. Turn both rotary switches (centre of door, above) to the closed position (causes the swing movement of the door leaf to be locked).

3.2.1 Rotary switch and door leaf monitoring (optional)

The door leaves and the rotary switches can be optionally monitored. The following assembly sets are required for this purpose:



MS Rotary switch and door leaf monitoring

102-016447000

MS FEM0 with 1000 mm cable

102-020808482

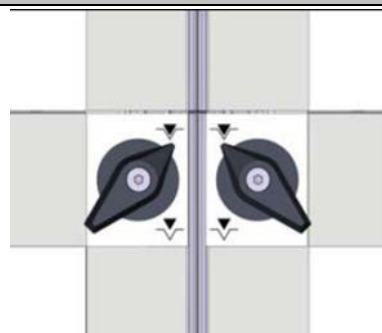
3.2.2 Possible error messages on the control panel

There are two operating modes that must be considered:

Operating mode "Locked"

If the operating mode is "Locked", the door leaves must be locked and they must not swing.

The rotary switches must be to the "Closed" position.



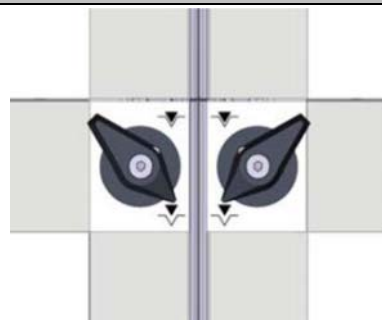
If the rotary switches are not in the correct position, an error message is displayed on the control panel:

No.	Displayed text	Type	Comments and possible remedial action
29	TOS not locked	TOS with DV	TOS not locked Rotary switches not at "Locked" position Set the rotary switches to the "Locked" position

Operating mode "Automatic"

If the operating mode is "Automatic" then in an emergency, the door leaves must swing, so that they can be opened.


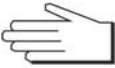

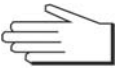


The rotary switches must be set to the "Open" position.










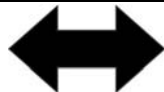
If the rotary switches are not in the correct position, an error message is displayed on the control panel:

No.	Displayed text	Type	Comments and possible remedial action
30	TOS locked	TOS with DV	Automatic operation TOS locked Door is in manual mode Set the rotary switches to the "Open" position

3.3 Selection of special functions

Key operation	Function	Display	Description
	Manual mode	 Manual	<ul style="list-style-type: none"> Press key twice System opens/stops on 2nd key stroke System can be operated manually Back to another operating mode <ul style="list-style-type: none"> Activation of the selected key (e.g. Automatic)
	Manual mode	 Manual	<ul style="list-style-type: none"> Press key for 2 seconds System can be operated manually Back to another operating mode <ul style="list-style-type: none"> Activation of the selected key (e.g. Automatic)
	Single opening	 Locked	<ul style="list-style-type: none"> System is closed and locked 1 keystroke unlocks the system (if available) An opening/closing cycle is performed Once closed, system locks again

3.4 Locking the control panel with the keyboard

Key sequence			Display	Description
Locking the control unit				
			 Automatic	<ul style="list-style-type: none"> Undesired manipulation of the control unit is hindered Panel is locked Locked status of the BDE-D is displayed
Unlocking the control unit				
			 Automatic	<ul style="list-style-type: none"> Free selection of operating modes and special functions is ensured

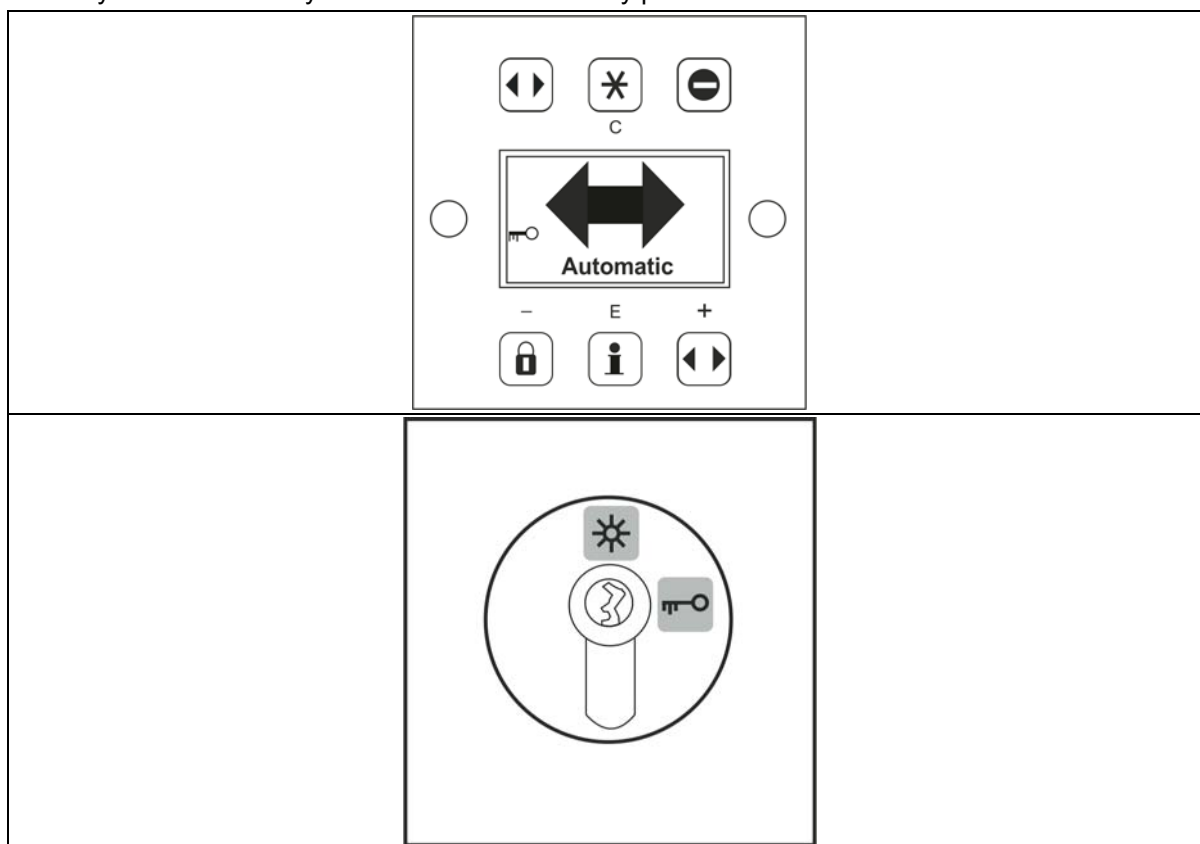


NOTICE

The installation remains in the mode of operation previously selected

3.5 Locking the control unit with a key (option)



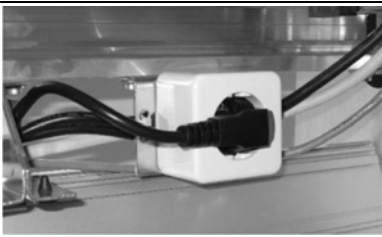
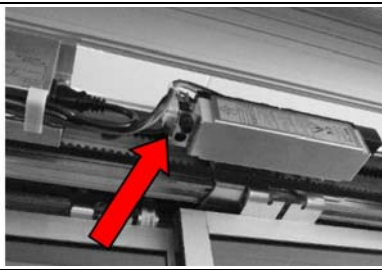
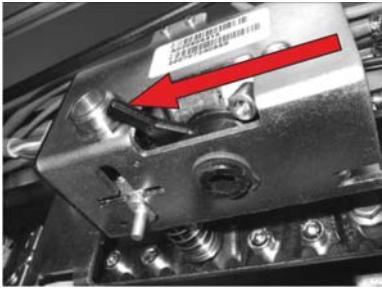
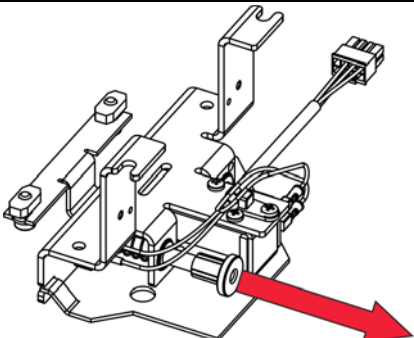
The control panel BDE-D can be efficiently protected against unauthorised changes of operating mode by an additional key switch. This one is usually placed near the BDE-D.

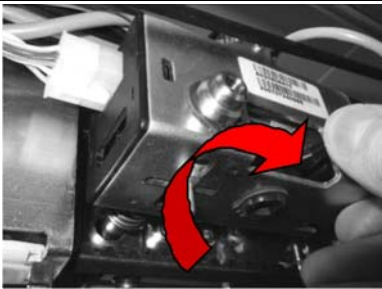
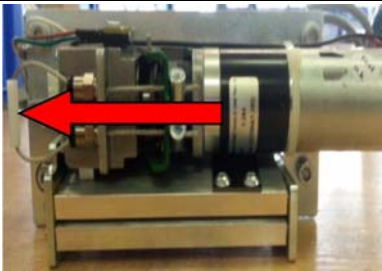


4 Manual opening and closing in case of failure

4.1 Manual opening (without manual unlocking device)

Initial situation: The door is disconnected from the mains, blocked in closed position and locked.

	<ul style="list-style-type: none"> Open the operator casing <p>Note: If you pull near the hinges, it will help open the casing</p>
	<ul style="list-style-type: none"> Swivel out the red holding bar in order to keep the casing in open position
	<ul style="list-style-type: none"> Disconnect the door from the power supply The socket is located under the operator casing
	<p>Installations with in-built emergency battery:</p> <ul style="list-style-type: none"> Unscrew additionally the battery fuse The battery is located under the operator casing
 <p>System 20</p>	 <p>System 20-200</p>
<ul style="list-style-type: none"> The locking system is provided with an unlocking lever 	<ul style="list-style-type: none"> The locking system is provided with an unlocking pin. By pulling, it unlocks the door.

	<ul style="list-style-type: none"> ▪ The door unlocks and can be pushed open by hand
<ul style="list-style-type: none"> ▪ Turn the lever clockwise 	
 <p>Rod locking mechanism MPV</p> <p>The locking system is provided with a rope loop</p>	<ul style="list-style-type: none"> ▪ Pull strongly on the rope loop ▪ The door unlocks and can be pushed open by hand
<ul style="list-style-type: none"> ▪ Close the casing with a strong pressure on the area of the hinges 	

4.2

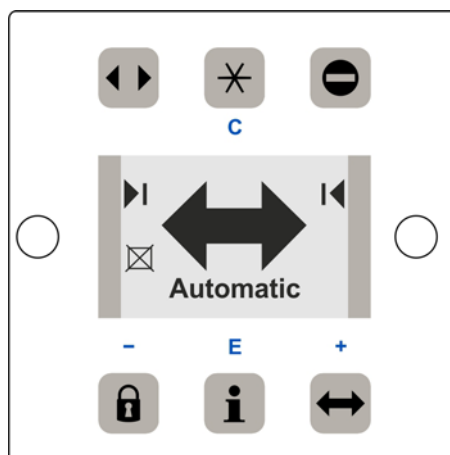
Manual closing

Initial situation: Electric power is supplied. Door remains blocked in open position.






NOTICE

Depending on the kind of failure, the procedure for a manual closing will be different. Please follow the steps described below.



4.2.1 Manual closing - step 1



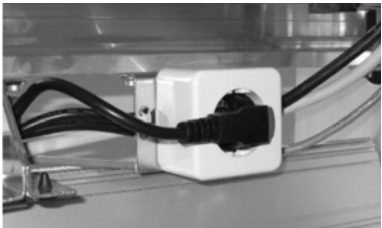
Key	Function	Display	Description
	Manual mode		<ul style="list-style-type: none"> Press key twice Door can be opened or closed by hand Temporary door operation (e.g. in case of low temperature outside)
	Locked	 Locked	<ul style="list-style-type: none"> Night locking Press <i>additionally</i> the locked key Slide the door by hand to the closed position Door is closed and locked (if applicable) Inform the service point (telephone number is displayed on the BDE-D)

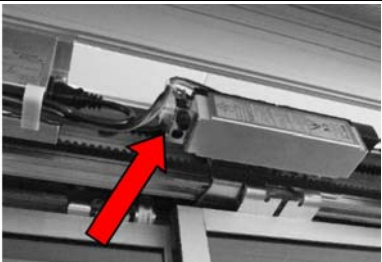
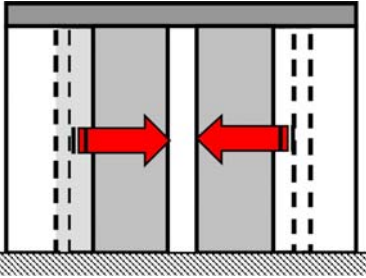

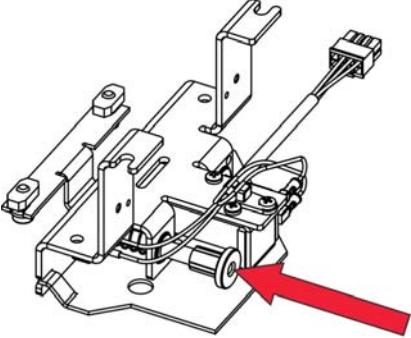
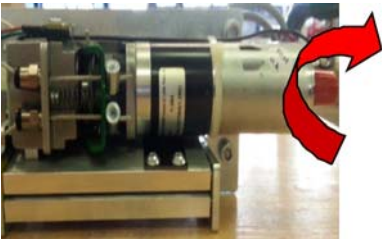
**NOTICE**

If the door can not be moved by hand and locked, please follow the steps described as follows.

4.2.2 Manual closing - step 2

If the attempts to close and lock the door described under "step 1" have remained unsuccessful, it indicates a severe failure. Please proceed as follows:

	<ul style="list-style-type: none"> Set the door in manual mode with the control unit (see chapter "Manual closing - step 1") Open the operator casing (swing open) <p>Note: If you pull near the hinges, it helps open the casing</p>
	<ul style="list-style-type: none"> Swivel out the red holding bar in order to keep the casing in open position
	<ul style="list-style-type: none"> Disconnect the installation from the power supply The socket is located under the operator casing

	<p>Installations with in-built emergency battery:</p> <ul style="list-style-type: none"> ▪ Unscrew additionally the battery fuse ▪ The battery is located under the operator casing
	<ul style="list-style-type: none"> ▪ Slide the door by hand to the closed position
 <p>System 20</p> <ul style="list-style-type: none"> ▪ Turn the unlocking lever clockwise and hold it in this position so that the door can close completely ▪ The door will lock as soon as you release the unlocking lever 	 <p>System 20-200</p> <ul style="list-style-type: none"> ▪ The door locks, if you push in the unlocking pin
 <p>Rod locking mechanism MPV</p>	<ul style="list-style-type: none"> ▪ Turn the red button clockwise until you feel resistance and cannot go on turning ▪ Manually check that the door is properly locked ▪ Leaving the building is only possible through a second exit <p>Inform the service point (telephone number is displayed on the BDE-D)</p>

5 Operating door in emergency

In accordance with country-specific safety regulations (concept of emergency exit, etc.) the doors are fitted with an emergency opening device.

5.1 Emergency opening with current supply

By activating the emergency opening switch (optional), which must be placed beside the installation, the door will open as long as the operating mode Locked has not been selected. In this operating mode the door will remain locked.

To re-start the installation, the emergency opening switch must be reset by hand, either through a rotation or a pulling (different procedures depending on the version of the switch).

5.2 Emergency opening in case of power failure with auxiliary battery (option)

- All functions of the door are sustained if a battery is available and parameterized as "battery operation".
- Emergency opening in case of power failure takes place via an auxiliary battery, which triggers a single opening of the door (except if function "Locked" has been selected)
- The number of openings depends essentially on the weight of the door leaves and the state of the battery.
- In case of low battery, the last movement is selectable – either opening or closing.
- Unlocking the door is still possible with the key-operated contact/switch (optional).

5.3 Emergency operating using Bowden cable (Option)

This device, available in several versions, is mounted inside and/or outside and allows the unlocking of the door, according to the procedure below.

5.3.1 Available versions

The available versions are illustrated below. They are basically identical in their function.



102-020808512



102-020808757



102-014102000

5.3.2 Procedure for an emergency opening

Emergency opening

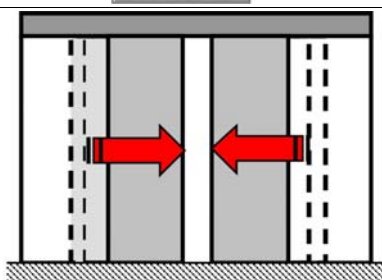


- Open the unlocking flap
- Pulling the unlocking flap downwards unlocks the door
- Display on the BDE-D
→ Error No. 31 / Emergency stop
- The door can be slid open by hand

5.3.3 Closing and locking the door (TOS)



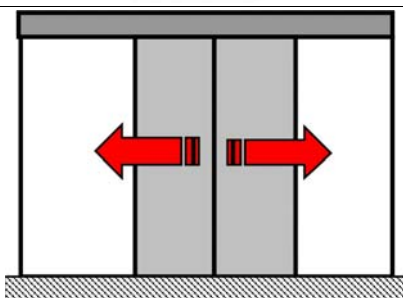
- Operate the emergency opening
- This causes the locking device to be unlocked



- Slide the door by hand to the closed position
- Keep the door leaves in the closed position



- Close the unlocking flap
- The door is now locked



- Check by hand if the door is really locked

**NOTICE**

Same procedure for the other actuators.
In case of an emergency, the door leaves can be swing-open if an MPV is installed instead of using the rotary switches.

6 Behaviour in event of faults

In case of a failure or error, depending on which control panel is connected, different messages are displayed

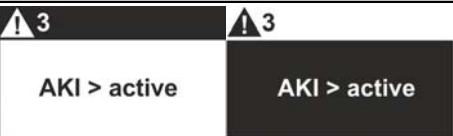

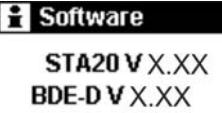
6.1 Display on the control unit

- Status messages are displayed with status number and text.
- The display changes alternately from white to black.
- After 10 seconds, the telephone number of the relevant service centre is alternately displayed.

6.2 Possible troubleshooting

- Based on the status display some errors can sometimes be eliminated
- If you are not sure, please contact the relevant service centre
- Before you call, write down the data displayed on the BDE-D. This information provides the technician with important informations for troubleshooting
- If several status messages are active at the same time, they are numbered: e.g. error 1 / 2
- Pressing the E-button permits to navigate from one error message to the next one




Example:

Which information?	Procedure	How displayed? (Example)
Status text and number	<ul style="list-style-type: none"> ▪ It is automatically displayed on the BDE-D 	
Software-Versions	<ul style="list-style-type: none"> ▪ Press the following button on the BDE-D for 2 seconds 	

6.3 Resetting the control module

In some cases, the malfunction may be remedied by restarting the control unit. Please proceed as described below.

- Make sure that the drive cladding is closed and that nobody is obstructing the system or approaching it, thereby triggering an opening of the system.



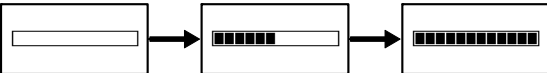
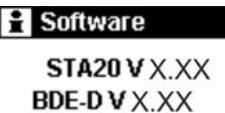
		Press > 5 seconds
	No	No
	Yes	Reset control?
		Yes

- The system will reset
- The first movement after a reset occurs at reduced speed
- If a fault is still displayed on the control unit after resetting, please contact our service centre, **starting the error message.**

6.4 Control unit BDE-D does not react

If the control panel does not react when the keys are pressed or if no message appears on the display, a reset of the control panel could eliminate the problem.

Proceed as follows:

RESET HARDWARE BDE-D	
	Press E key > 12 seconds
	Display without any message
	<p>Connecting to control unit....</p>  <p>Connection has been established (example)</p> 

- After resetting, the control panel is again operational
- If this is not the case, please inform our service centre

7 Functions and safety check

7.1 General remarks

According to the legal provision in force, the operating entity of the automatic door is responsible for its maintenance and for the user's safety, as soon as the installation has been handed over. The regular inspection of single elements by the operator requires little time investment and reinforces the prevention of accidents caused by an inappropriate use of the door.

Testing

As part of testing, visual and functional tests are conducted, ranging in particular over door leaves, guides, bearings, limiting devices, sensors as well as over safety at danger points due to crushing, shearing or drawing-in.

In addition, with door systems installed on escape routes, all the safety devices of the escape route function are controlled.

To provide the operator with documentation and information, the test result is recorded on a check list and must be kept in the logbook by the operator for at least **one year**.

Maintenance

During maintenance, bearings, sliding points and power transmission are cleaned and adjusted. Relevant fixing screws are controlled and retightened if necessary.

Then, functional testing is carried out for switching devices, drives, control units, force or energy storing devices or command controllers. The safety devices are adjusted and all the motion sequences including the final points are set.

A test run with final overall control of the door system is executed.

To provide the operator with documentation and information, the state of the door installation is recorded on a check list and must be kept in the logbook by the operator for at least **one year** until the next test / maintenance.



IMPORTANT

The test frequency is at least once a year according to the manufacturer's stipulations.

The maintenance frequency is at least once a year according to the manufacturer's recommendations.



IMPORTANT

A listing of recommended spare parts is supplied in the annex and is also available on request at your service department.



IMPORTANT

Tests and maintenance should only be carried out by a specialist or a person specifically trained for that. The authorisation of these persons exclusively lies with the manufacturer. Extent, results and time of the periodical inspection must be recorded in the logbook. These records must be kept by the operator.

7.2 Power supply data product line 20

Mains voltage	100 – 240 VAC, 50 / 60 Hz
Rated power	90 W

7.3 Environmental conditions

Temperature range	From -15 to +50° C
Humidity range	Up to 85% rel. humidity, not condensing

7.4 Monthly check-up list (TOS)

Test / Control	Procedure	Result expected
Motion detector	<ul style="list-style-type: none"> Walk at normal speed towards the door (from the inside and outside) 	<ul style="list-style-type: none"> The sensor must cover the whole width of passage The door opens in time and at an appropriate speed to allow unhampered passage through the doorway
Door leaves / Side screens	<ul style="list-style-type: none"> Verify the state of the glazing Verify the state of the seals / profiles 	<ul style="list-style-type: none"> No glass damage No seals torn off (energy loss) The door is the "visit card" of your company. Take care that it is maintained in a perfect condition
Operator casing	<ul style="list-style-type: none"> Check the attachment of the operator casing 	<ul style="list-style-type: none"> It must be completely closed and must correctly engage into the hinges
Swing-open movement	<ul style="list-style-type: none"> Operating mode "Locked" Rotary switches must be on "open" position or the MPV has to unlock in case of an emergency 	<ul style="list-style-type: none"> Unimpeded opening / swivelling of all door leaves

IMPORTANT



After unlocking, the swivelling lateral door leaves have to be pressed back completely into the end position.

The swivelling door leaves must be closed completely (swivelling and sliding movement).

No object should obstruct the swivelling range.

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