User manual DFA 127 IN

automatic door systems – this is record!

record.group

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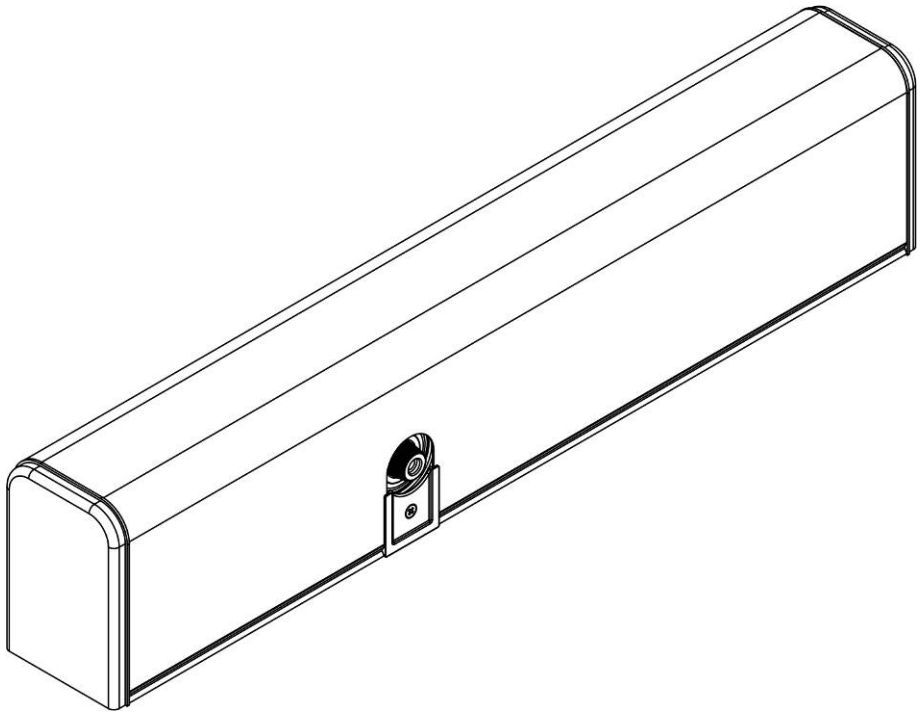
1 General

These operating instructions are intended for the operator of the DFA IN (herein after referred to as DFA). The operator is the person responsible for the technical maintenance of this door system.
These instructions describe the use of the DFA swing door operator. They form the basis for satisfactory functioning.
These operating instructions should be read by the door operator before commissioning and the safety instructions observed!
It is recommended to keep these operating instructions close to the automatic door.



2 Product identification

For an exact identification please read the following data on the type plate, which is located on the inside of the casing or on the drive unit:

Example:

Type:

Serial number:

Year of manufacture:

Mains connection:

Power consumption:

Identification:

2.1 Manufacturer agtatec ag

agtatec ag

Allmendstrasse 24

CH – 8320 Fehraltorf

Switzerland

Phone: +41 44 954 91 91

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2.2 Document identification

Name:	BAL_DFA_IN_EN_2V0_REC_102-127109515
Article number:	102-127109515
Version:	V2.0

3 Description of the equipment

The DFA IN (invers) is a compact, self-monitoring, microprocessor-controlled swing door operator (abbreviated to DFA). With its many special and additional functions, it is suitable for a very wide application spectrum. The path of every door movement is controlled by the microprocessor, which evaluates the current door position, the door speed and the final position at every instant and precisely calculates the optimum motion. This makes the familiar end-stops, jerky braking actions, creep speeds etc. unnecessary. Safety is also additionally increased by the use of a redundant force limitation.

4 Important information

4.1 Copyright

The copyright of the instructions remain at:
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It is prohibited to reproduce, distribute or use the manuals for purpose of competition without the written authorization of agtatec ag.
Violation of the here stated copyrights will be prosecuted and fined with compensation of damage.
Subject can change without prior notice.
Differences between product and manual are thereby possible.

4.2 Target group

For better readability only the masculine form of pronouns is used in these documents. Nevertheless, these instructions also apply for feminine specialists.
These instructions are intended for the qualified and authorized fitter, start-up engineer and operator of the automatic door.
Before installing and commissioning a swing door operator, read the manuals and in particular all safety instructions.

4.3 Storage of the manual

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

5 Safety instructions

5.1 Presentation of warning signs

Various symbols are used in this guide for easier understanding:

NOTICE

Useful advice and information to ensure correct and efficient workflow of the system.

IMPORTANT

Specific details which are essential for trouble-free operation of the system.

IMPORTANT

Important details which must be read for proper function of the system.

⚠ CAUTION

Against a potential hazardous situation that can lead to minor personal injury and property damage.

⚠ WARNING

Against a latent hazardous situation that can lead to severe injuries or death and cause substantial property damage.

⚠ DANGER

Against an imminent hazardous situation that can lead to severe injury or death.

⚠ DANGER

Against an imminent or latent hazardous situation that could lead to electric shock and cause serious injury or death.

5.2 General safety and accident prevention regulations

⚠ WARNING

Unexpected OPEN/CLOSE of the doors

- Bruises and contusions through the door leaf

➢ Generally no safety devices (sensors) may be dismantled or put out of service.

⚠ CAUTION

Unexpected OPEN/CLOSE of the doors

- Bruises and contusions through the door leaf

➢ No objects must be placed within the opening zone/path of the swing door! The safeguard against crushing and shearing strains at the side edge must be provided by the manufacturer.

⚠ CAUTION

Unexpected OPEN/CLOSE of the doors

- Bruises and contusions through the door leaf, or damages

➢ The safety devices (sensors) are switched off during the learning cycle (which must only be performed by trained personnel)! Before initiating the learning cycle, it must therefore be ensured that no persons or objects are situated in the danger zone of the moving door leaves during operation.

5.3 Product safety

5.3.1 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.

5.3.2 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.

5.4 Danger zones

5.4.1 Security- and surveillance equipment

The passages of the plant are monitored by sensors. It is important that they work faultlessly and are under no circumstances set out of service.

5.4.2 Danger warnings on the product

If necessary, the country specific regulations have to be adhered to.

5.4.3 Qualifications, skills and training of staff

Mechanic	Technical training with very good electrical and mechanical skills Site experience
Commissioning employees Service employees	Technical training with very good electrical and mechanical skills Experience in field service

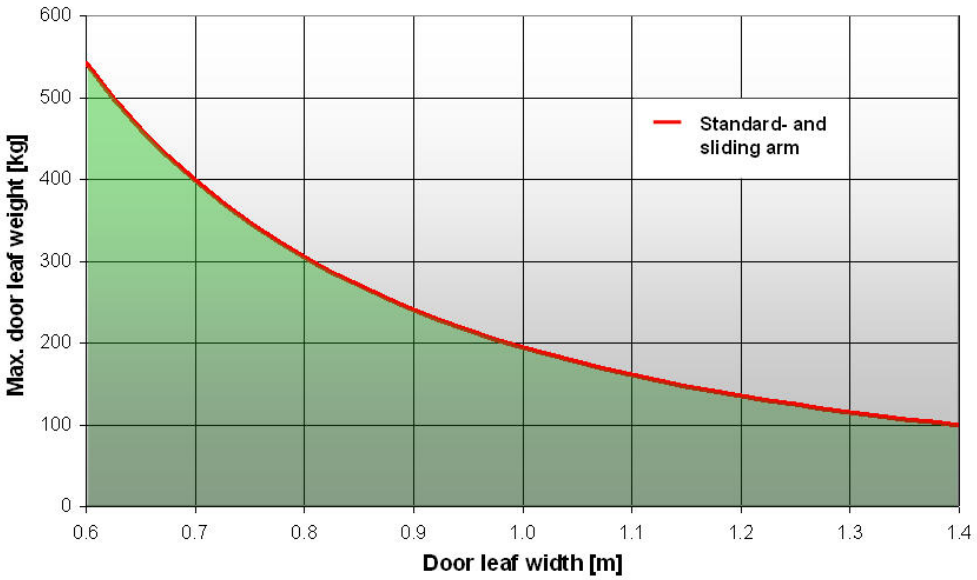
5.4.4 Reconstructions and changes to the product

Unauthorized modifications to the installation will release the manufacturer from all liability for any resulting damage.

6 Technical Data

Dimensions:	Operator 600 x 85 x 124 mm (wxhxd)
Operating voltage:	230VAC, 50/60 Hz
Power consumption:	Standby 13 W, rated power 67 W
Max. torque:	50 Nm
Mass inertia:	65 kgm^2
Opening angle:	adjustable from 70° to 115°
Time delay:	Adjustable from 0 to 60 seconds (40 steps)
Opening speed:	Adjustable from 3 to 20 seconds (40 steps)
Closing speed:	Adjustable from 5 to 20 seconds (40 steps)
Noise emission:	< 45 dB
Protection class:	IP20
Environment conditions	
Temperature range:	-15° C to +50° C
Humidity range:	up to 85% relative humidity, non-condensing

6.1 Door leaf weights and door widths



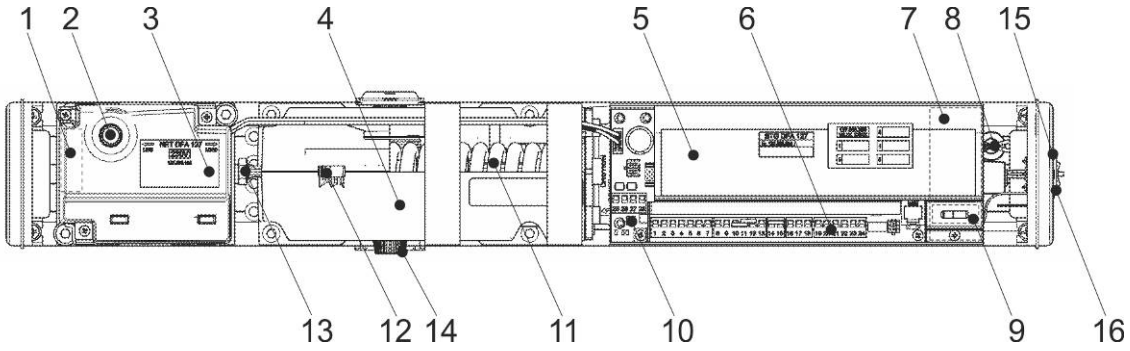
The curves are calculated using the following formula:

J=1/3 x m x b^2

Standard arms:	J max. 65 kgm^2	Key:	J = mass moment of inertia kgm^2
Slide arms:	J max. 65 kgm^2		m = door leaf weight in kg
			b = door leaf width in m

7 Construction and Function

7.1 Construction



Key:

1	Mains connection terminals	9	Slide switch in rotation direction
2	Fine-wire fuse	10	Multifunctional switch on STG
3	NET power supply	11	Closing spring
4	ATM drive unit	12	Vision panel, adjust. spring tension
5	STG control unit	13	Adjusting screw for spring tension
6	STG connection terminals	14	Connectors for arms (both sides)
7	Motor print MOT	15	Standard switch BDI
8	ATE drive unit terminals	16	Status signal and Reset button

7.2 Components

The DFA is part of an electronic swing door, and it comprises the following main components:

Control: Intelligent, self-learning, microprocessor-regulated control system

Drive module: Low-maintenance DC drive motor with electrical distance measurement and integrated thermo protection circuit, electromagnetic brake, and a spring gearbox with adjustable spring tension.

Power supply: Compact 230V power supply with integrated input filter.

Control unit: With a simple mechanical control unit and/or with a more convenient, programmable electric control unit BDE-D

Arm types: Power transmission to the door leaf by use of standard arm pushing or sliding arm pulling / pushing

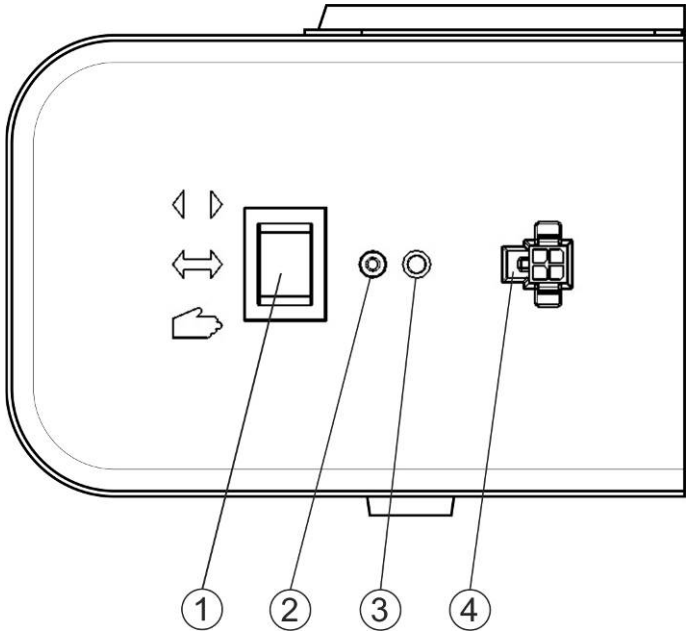
Locking (optional): Possibility on site to connect an electrical door opener (24 VDC)

Sensors: Aesthetic actuating and self-monitoring safety elements with adjustable sensitivity ensure optimum, smooth, and reliable operation of the door system

7.3 Functions

The DFA 127 IN with inverse functionality has been designed to close without electrical power. It can be easily closed by hand and opens using the energy stored in the spring, with the motion damped by the motor acting as a generator.
Escape route door openers of the type 331 and 332 can be used to keep the door shut without electrical power. (Escape and rescue route doors have to open without electrical power.)
If the door drive runs on AC power, opening and closing motions are motor assisted. Thereby, the door can be halted both at opened and at closed position (electromagnetic brake).
Nevertheless, that does not make the door resistant against brake-ins. The inverse door drive does allow neither manual operation nor touch control. The door can be opened by hand and is assisted by spring tension. But the door has to be pushed against this spring tension for closing. An electrical lock is necessary to keep the door shut, but it will release the door in case of an alarm or in case of a power failure.
In standard operation mode "automatic mode" the door opens due to an actuating device (e.g., radar motion detector) triggered by approaching persons or objects. After the door open time has passed, the door closes unless a new opening impulse ensues.
In operation mode "locked" the door can only be opened by triggering an optional key pivot contact (SSK). After the SSK door open time has passed, the door closes unless a new opening impulse ensues.
The following functions are provided exclusively for the safety of the user:
Collision detection: If the door strikes an obstacle while **opening,** it stops immediately and stores the position of the impact. During the time delay, the drive briefly tries to reach the open position. Once the time delay has expired, the door closes, and, when next opened, the door passes the impact position very carefully in slow mode. This prevents a further violent impact.
Reversing: If the door strikes an obstacle when **closing,** it is reopened immediately. The obstacle's position is saved to the door drive, and the position is approached slowly during the next closure.

8 Mech. control elements and indication



① Mechanical BDI with 3 positions (control toggle switch)

② Reset button

③ Status display

④ Connector for Service- and Flashprogrammer FPC 902

8.1 Mechanical BDI (control toggle switch)

The following operational modes can be set up with the 3-position toggle switch:

Manual operation:

With an inverse drive manually opening and manually closing are **not available**.
The door can be easily opened by hand, but it must then be closed again by hand. The door is only held in position if the bolt can latch into an electrical lock. The connected actuating devices are no longer taken into account.

Automatic:

The door opens and closes automatically through the activation of an activation device

Continuously open:

The door opens and remains in the open position. If an obstacle is encountered while opening, the DFA will attempt 5 times within a few seconds to bring the door to the set open position. If the obstacle is still present, the current position will be accepted as the continuously-open position (Status 9 *Opening unsuccessful* is displayed).
By factory default setting, the mechanical BDI is always active. If an additional electronic BDE-D is connected, the operating mode will be set at the highest priority by a defined priority structure in the BDE-D.
The priority and the code shown in the following table apply to the operating mode, whereby BDE1 (S1) and BDE2 (S2) represent the two STG input terminals (→ J7/1 + J7/2, Print BDE-M) for the mechanical BDE:
(L = interruption or 0V, H = +24V)

Mechanical BDI (toggle switch)		Electronic BDE-D	
BDE2 (S2)	**BDE1 (S1)**	**Function**	**Priority** (1=highest)
		Locked	1
		One-Way	2
L	H	Continuously open	3
H	L	Manual*	4
L	L	Automatic	5

* No manual mode available for inverse drives
The BDE-D indicates the current operating mode.
If an operating mode that has no current priority is set on the BDE-D, status message 62 is displayed.

8.2 Reset-Button

If this button is pressed for at least 5 sec. a reset of the control unit is carried out. After the reset, the status display LED lights up permanently.

8.3 Status indication

- Remains off if no fault is present
- Blinks if a fault is present (see chapter *Status and fault signals BDE-D*)
- Lights up continuously during a reset

9 Operating instructions

9.1 Controls on the STG

General

The STG operates with an active HIGH level, i.e. a +24 V level must be applied to activate a function.
Safety inputs are activated during interruptions.
The signal ground (0V) is connected to the protective earth.

Jumpers

J13:	CAN line termination
J14:	Master / Slave
	Jumper at position M1 for master (factory setting)
	Jumper at position S1 for salve

LED's

LD1:	(red)	Control LED for push-button operation (S1)
LD2:	(green)	+35V
		Off during power failure
LD3:	(green)	+24V
		Lights up if +24V is present.
		Caution: in the event of a power failure a processor reset takes place 1 second after this LED goes out.

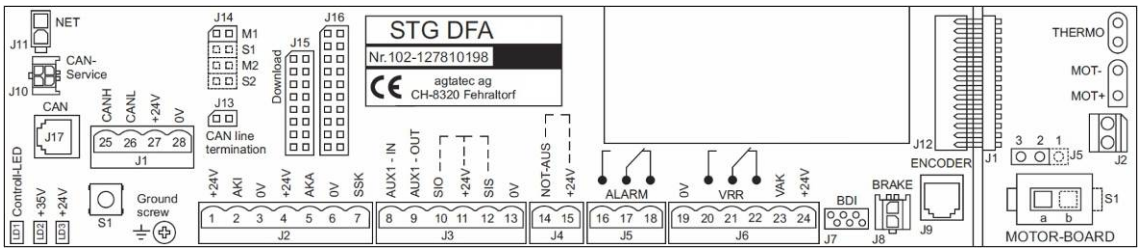
Key (S1)

This is a multifunctional key (MF).

IMPORTANT

The use of this switch is reserved exclusively for trained and authorized persons.

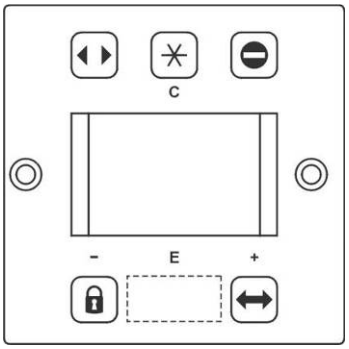
View of the control unit STG



9.2 Electronic controller BDE-D (Option)

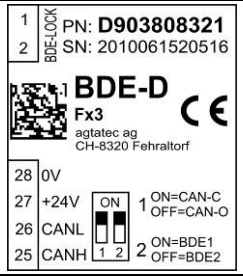
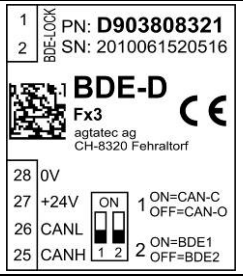
IMPORTANT

The following listed functions can only be checked after learning of running parameters or after learning of CAN-sensors.
At the same time the addressing of CAN-sensors will be checked.



The BDE-D electronic controller is an easily operated input and output device for the control and adjustment of door operators. Logically arranged pushbuttons allow intuitive operation and navigation through the operator specific menu. The LCD with backlight shows data and information about the door status with symbols and text messages.
Additional information can be found in the BDE-D manual.

9.2.1 Adressing of the electronic controller

Installation with 1 BDE-D	Installation with 2 BDE-D
	
BDE 1 **with Bus termination** (rear face)	BDE 2 **without Bus termination** (rear face)

9.2.2 Operating modes and behavior of the door during input signals

Table of signals (X marks a release reaction)
Explanation of the abbreviations see chapter *Abbreviations*

Automatic / AUTO

Normal operation. The door opens and closes automatically, by triggering of an activation device.

	CLOSED	OPENING	OPEN	CLOSING
AKI	X	X	X	X
AKA	X	X	X	X
SSK	X	X	X	X
SIO		X	X	X
SIS			X	X

Manual operation / HAND

The normally used Opening and Closing operating mode, is not possible with the inverse drive.
The door can be easily opened by hand, but it must then be closed again by hand. The door is only held in position if the bolt can latch into an electrical lock. The connected actuating devices are no longer taken into account.

One-Way traffic / EXIT

In the One-Way traffic mode, people cannot enter the room from the outside, but can leave it from the inside.

	CLOSED	OPENING	OPEN	CLOSING
AKI	X	X	X	X
AKA*		X	X	X
SSK	X	X	X	X
SIO		X	X	X
SIS			X	X

* AKA is active as safety device while closing

Continuously open / OPEN

The door is opened and stays open. If an obstruction stands in the way while opening, the operator tries another five times within a few seconds to bring the door to the target position. Should the obstruction remain, the current position is then validated as the continuously open position.

Locked

The locking is activated in the Locked operation mode.

	CLOSED	OPENING	OPEN	CLOSING
AKI		X	X	X
AKA		X	X	X
SSK	X	X	X	X
SIO		X	X	X
SIS			X	X

OFF OFF

This operation mode is used in the USA. The drive is in manual operation mode (without configuration). Certain controlling functions are disabled. Functions, such as "Setting Parameters" and "Flash-Update" continue running.

	CLOSED	OPENING	OPEN	CLOSING
AKI				
AKA				
SSK	X	X	X	X
SIO				
SIS				
BODYG			X	X
RAILB			X	X

E RESET (hidden button between the buttons and)

After pressing the E button for approx. 5 seconds, this status message appears on the display:

Press the button E again to reset the operator.

10 Configurations

10.1 Description of parameters

W = Factory settings: **Basic drive** (FP)

PARAMETER	W	Comment
DRIVING CYCLE		
→ Closing speed	18	Driving speed when closing the door. 0 = lowest speed 40 = highest speed ▪ The maximum reachable speed depends on the driven distance (door width) and the acceleration setting.
→ Opening speed	36	Driving speed of the opening door. 0 = lowest speed 40 = highest speed ▪ The maximum speed reachable depends upon the opening angle and the acceleration setting. ▪ DIN: > 1.5 s <4 s
TIME DELAYS OPEN		
→ Time delay open	2	Determines the minimum time for which a door stays open after it has been opened by a type AKA, AKI or automatic triggering signal. 0..20 = 0 to 20 seconds, 1 s increments 21..40 = 22 to 60 seconds, 2 s increments ▪ The hold-open time starts only after all trigger and safety signals have been made in the closing direction.
→ Time delay SSK	5	Determines the minimum time for which a door stays open after it has been opened by a type SSK triggering signal. 0..20 = 0 to 20 seconds, increments 1 s 21..40 = 22 to 60 seconds, increments 2 s ▪ The hold-open time starts only after all trigger and safety signals have been made in the closing direction.

NOTICE

The open duration can be reduced when sensors are used which keep the door open, for example, *Time delay*.

DRIVE		
→ Opening angle	35	The opening angle is read during the learning cycle and corresponds to the value 40. 0 = minimum opening angle 40 = maximum opening angle ▪ **DIN**: min. 95°

11 Door care and maintenance instructions

11.1 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 twice 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 authorization 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.

11.2 Preparations for maintenance and service

In order to work efficiently, the special tools and aids listed below are necessary:

- Flash programming device FPC with actual software
- BDE-D control unit (on the door)
- Installation and commissioning instructions
- Spare parts selection

11.3 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.

11.4 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 **twice a year** – a technical inspection by a skilled service technician or an authorized 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 authorized 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.

11.5 Logbook

IMPORTANT

The following example of a logbook is just a pattern.
According to local regulations such a logbook must be attached to the door installation and all interventions and recurrent controls must be recorded in it.

Date	Error description / status-no.	Troubleshooting / maintenance / recurrent controls	Repairs / replacements	Service technician signature

IMPORTANT

Spare parts change plan recommendation is attached in the annex or can also be requested at your after-sales center.

11.5.1 General information

Manufacturer – Information	
Name:	
Street:	
City:	
Telephone:	
Fax:	
E-Mail:	

Distributor – Information	
Name:	
Street:	
City:	
Telephone:	
Fax:	
E-Mail:	

Location of system installation (Project information)	
Name:	
Street:	
City:	
Telephone:	
Fax:	
E-Mail:	

System – Information	
Conf. serial – No.:	
System – Type:	
System – Installation date:	

11.5.2 Operator duties

According to principles for inspecting automatic door systems, in particular according to case law of safety obligations, automatic door systems must be inspected by a qualified technician before commissioning and thereafter according to the manufacturer recommendation. It is particularly important for the protection of people, to observe and to comply with the requirements for public access facilities! The operator is responsible to fulfill the duties required for the door system.

Task	To be conducted by	Time of implementation	Entry in log book required
Maintenance and cleaning	Operator	Weekly or if required	No
Function and safety check	Operator	Monthly	No
Regular maintenance	Technical expert	1 × per year, or according to country specific directives and regulations	Yes
Regular testing (inspection)	Technical expert	1 × per year, or according to country specific directives and regulations	Yes
Regular testing (inspection) for door systems in escape route	Technical expert	2 × per year, or according to country specific directives and regulations	Yes

11.5.3 Commissioned technician

Technicians are people:

- that on the basis of their technical training, knowledge, experience and work, perform their assigned test properly and identify and evaluate potential hazards.
- that have sufficient knowledge in the field of automatic door systems, relevant national safety regulations, accident prevention regulations, directives and generally recognized technical regulations, so they can judge the secure working condition of automatic door systems.
  These people include, for example, technicians from the manufacturing or supplying company, relevantly experienced, trained personnel authorized by the manufacturer or other persons with appropriate expertise.

Experts must submit their assessment objectively from the standpoint of personal and operational safety without being influenced by other requirements, such as i.e. economic circumstances.

11.5.4 Legal requirement

NOTICE

According to valid guidelines (EN16005 / DIN 18650 / Machinery directive) at the time of commissioning, automatic door systems must be inspected before commissioning and then according to the manufacturer's instructions, however at least once a year, by a qualified technician.

Particular observation of this special regulation is required for personal safety.

11.5.5 Extent of the inspection

The inspection is performed according the inspection instructions of the manufacturer. The result of the inspection is documented in a "check list" and noted in the inspection logbook.
The inspection is generally performed at the same time as the maintenance of the system.
During the inspection, it must be verified, that no changes were made to the system since the last inspection and whether the current safety requirements suffice.

11.5.6 Requirements for documentation

Extent, results and dates of the periodic inspections, must be documented and kept by the operator in an Inspection- and Maintenance log book.
The contractor / operator must be informed of the results in writing.
The contractor / operator requires the inspection report (check list) for proof that the periodic inspection was performed and/or as documentation for construction authorities or accident and liability insurances, etc.

11.6 Recommended and planned spare- and wear parts

Spare part/Wear part	Interval
Slide shoe	3 years
Lever hub	3 years
Ball joint axle	If wear is detected
Support ring for lever hub	If wear is detected
MS Stop	If wear is detected
Cable transmission	If wear is detected
Actuator flap (fire doors only)	If wear is detected
Traction group ATG	If wear is detected
Power supply NET	If wear is detected
Control unit STG	Breakdown/Failure
Control panel BDE	Breakdown/Failure
Others	Breakdown/Failure

NOTICE

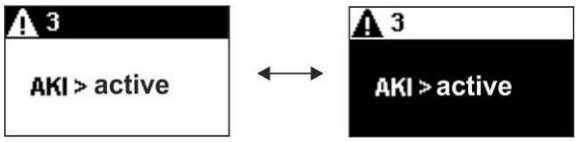
Depending on the version of the door installed, not all the listed spare and wear parts are installed.

12 Conduct during malfunctions

12.1 Detail description of status indications

General

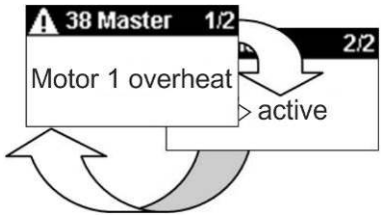
In case of an irregularity, the display changes automatically from operation mode level to error display. Depending on the control unit connected BDE-E or BDE-M various indications are given.



When using an electronic BDE-D

The background color changes between normal/invers every 2 seconds. Several errors can be displayed (e.g. 1/2 means: Error No. 1 of total 2 errors).

E



E

Temporary return to main display for 4 seconds after browsing through error displays.

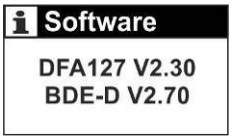
Status notifications with a „W“ are warnings. In this case, the error relay does not switch. The status can be reset by several means according to the detailed description.

A status can usually be deleted by pressing the key E for 5 seconds (= reset). This triggers a restart in the control unit.

Information about the operator system, like e.g. the software version, can be read out of the BDE-D main display by pressing the same key once again (for two seconds).
Telephone number, fault and maintenance are only displayed, when this function has been activated by the service technician.
If the cause of the fault has not been eliminated, however, the status message will re-appear if the fault occurs again.
The following list gives the causes of faults in decreasing probability. The fault at the bottom of the list has the smallest probability of occurring in the STG.

Press key about 2 seconds

E

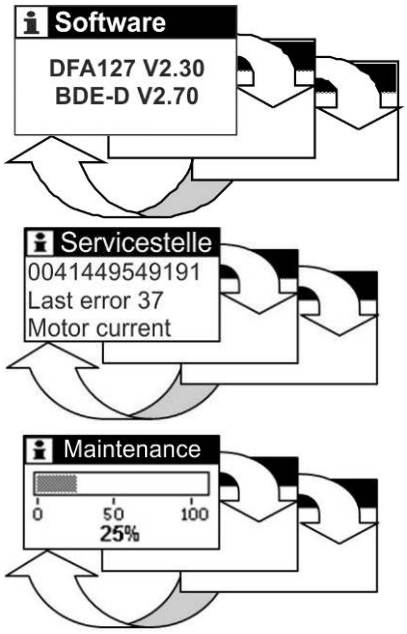


Browse through informations by tapping the key

E

E

E



Back to main display by pressing the key or automatically after 20 seconds.

NOTICE

You will find the detailed description of the error numbers and remedial actions in Book B8A 102-020401150.

13 Taking out of service and disposal

13.1 Taking out of service

When the swing door operator is discontinued or taken out of service, it has to be disconnected from the power supply and if available, the battery should be plugged out.

NOTICE

After every temporary discontinuation, a new commissioning has to be carried out.

13.2 Dismantling and disposal

IMPORTANT

All machine parts must be sorted by type of material and disposed of according to local regulations and guidelines.

The automatic door mainly consists of the following materials:

Aluminum:

- Linking profiles
- Gearbox
- Door wing profiles and side profiles
- Various profiles and small parts
- Drive panel

Steel / iron parts:

- Stainless steel casing
- Floor panel
- Box recess for floor installation
- Optional spacer or reinforcement profiles
- Gear components, springs
- Various small parts like fittings, covers, linking parts, etc.

Glass:

- Door wings and side panels

Various electronic and electromechanical components:

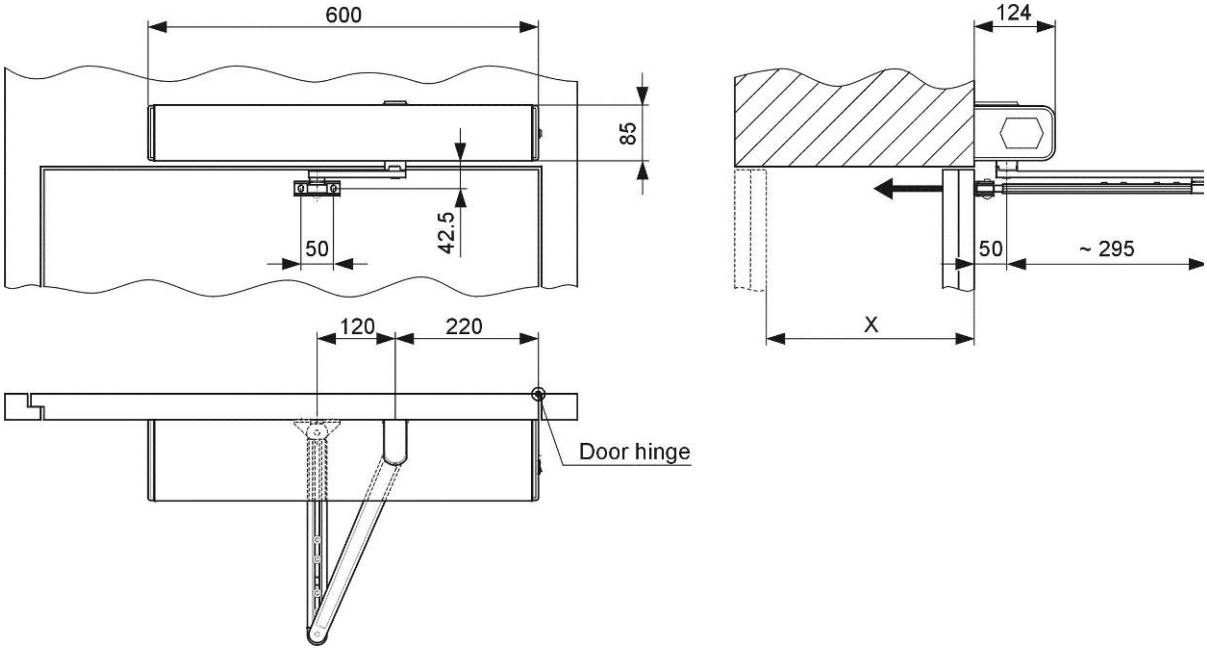
- Sensors, control and operator components
- Lead batteries and nickel-cadmium rechargeable batteries

Various plastics:

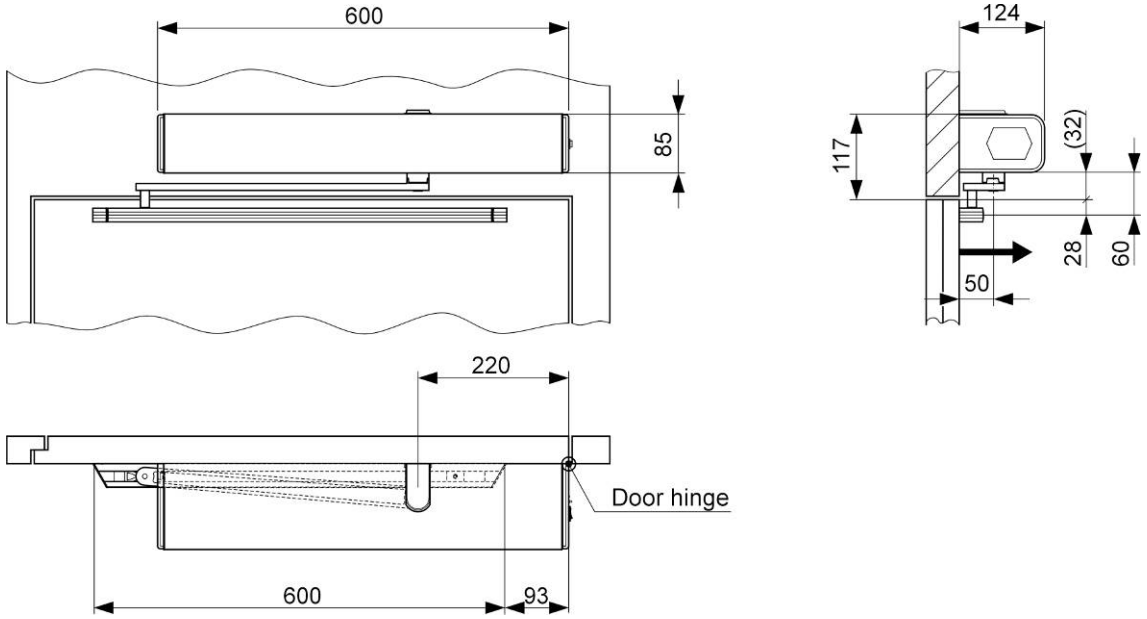
- Rollers
- Cable clips, coupling and linking parts
- Sealing profiles
- Casing of electromechanical components and sensors

14 Drawings

14.1 Drive with standard arm



14.2 Slide arm pulling



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