

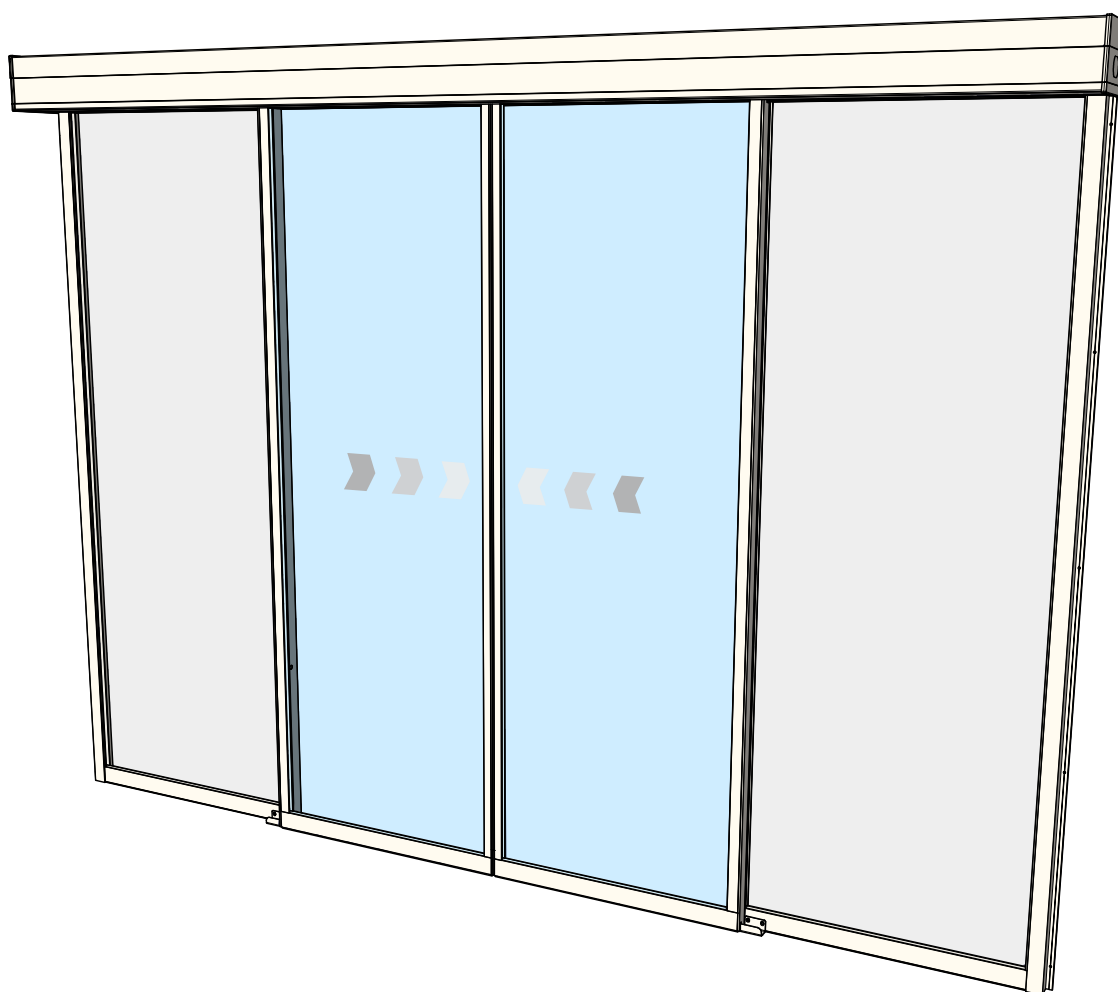
# User manual

## Sliding doors

### ASSA ABLOY SL600

**ASSA ABLOY**  
Entrance Systems

Experience a safer  
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Original instructions

**Document identification**

Article number: 102-020110469  
Version: 2.8  
Publication date: 2024-11-18

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## List of Abbreviations

<b>AIR</b>	<b>RED</b>
Presence detector	Redundant drive (2 motors) for doors in escape routes.
<b>AIS</b>	<b>RIC</b>
Motion- and presence detector	Safety sensor
<b>CO48</b>	<b>SIO</b>
Opening system with mechanical energy storage in case of power failure, intended for France.	Open security
<b>DMS</b>	<b>SSK</b>
Digital Mode Selector	Key pivot contact
<b>DMS-D</b>	<b>STA</b>
Digital Mode Selector with Display	Sliding door drive
<b>DMS-M</b>	<b>STM</b>
Digital Mode Selector mechanical	Control module
<b>DMS-V</b>	<b>TOS</b>
Digital Mode Selector with key switch	Total opening system
<b>D-STA</b>	<b>TSA</b>
Double leaf sliding door operator	Telescopic sliding door drive
<b>D-TSA</b>	<b>VRR</b>
Double leaf telescopic sliding door operator	Locking device
<b>E-STA</b>	
Single leaf sliding door operator	
<b>E-TSA</b>	
Single leaf telescopic door operator	
<b>FEM</b>	
Extension module	
<b>LED</b>	
Light emitting diode	
<b>MPV</b>	
Multipoint locking device	
<b>PE</b>	
Protective earth	
<b>RAD</b>	
Motion sensor	

# 1 Safety

## 1.1 Presentation of warning signs



### DANGER

Warning against an imminent or latent hazardous situation that can lead to electric shock and cause serious injury or death.



### DANGER

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



### WARNING

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



### CAUTION

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



### NOTICE

Useful advice and information to make sure of a correct and efficient workflow of the system.

## 1.2 General hazards

The following section lists hazards that can be caused by the system even when used as intended.

To reduce the risk of malfunction, damage to property or injury to persons and to avoid dangerous situations, the safety instructions listed here must be observed.

The specific safety instructions in the other sections of this manual must also be observed.



### DANGER

#### Electric Shock!

In case of contact with live parts, there is an immediate danger to life due to electric shock. Damage to or removal of the insulation or individual components can be life-threatening.

- Before starting work (cleaning, maintenance, replacement) on active parts of electrical systems and equipment, ensure that all poles are voltage free and that this is maintained for the duration of the work.
- Keep moisture away from live parts. This can lead to a short circuit.
- Never bridge fuses or put them out of operation.
- Do not connect the power supply until all work has been completed.
- Have work on the electrical system performed by qualified personnel only.



## DANGER

### Serious or fatal injuries!

If safety devices of the fire protection system do not function properly, there is a risk of serious or fatal injuries.

- Never disconnect the fire protection system from the power supply overnight.
- Do not disassemble, put out of operation or manipulate safety devices.
- Do not remove safety instructions on the system.
- Never block, hold open or otherwise prevent fire doors from closing.
- Have inspection, service and maintenance of the fire protection system carried out in accordance with locally applicable regulations or according to a maintenance contract.
- Have the fire protection system checked and maintained according to the state of the art.



## WARNING

### Serious injuries and major material damage.

Incorrect mounting can lead to serious injuries and/or cause major material damage.

- Observe and comply with all important instructions regarding safe assembly.



## CAUTION

### Risk of malfunctions, material damage or injuries!

Improper settings can lead to malfunctions, material damage or injuries.

- Do not disconnect the system from the power supply overnight.
- Settings should only be made by personnel qualified to do so.
- Do not disassemble, put out of operation or manipulate safety devices.
- Have faults rectified by specialist personnel or by personnel qualified to do so.
- Have service and maintenance carried out according to locally applicable regulations or according to a maintenance contract.



## CAUTION

### Risk of malfunctions, material damage or injuries!

Insufficient or inattentive cleaning or care of the system can lead to malfunctions, material damage or injuries.

- Check the sensors regularly for dirt and clean them if necessary.
- Regularly remove dirt accumulations in the floor rail or under the floor mat.
- Keep the system free from snow and ice.
- Do not use aggressive or caustic cleaning agents.
- Use road salt or loose chippings only conditionally.
- Lay the floor mat without folds and flush with the floor.
- Equipment required for cleaning purposes such as ladders or similar must not be leaned on or attached to the system.



## CAUTION

### Risk of material damage or injuries!

The door can open, close or turn unexpectedly. This may result in material damage or injuries.

- No persons may be present in the opening area of the system.
- Ensure that moving objects such as flags or parts of plants do not enter the detection range of the sensors.
- Do not make any settings on the control unit when the system is in use.
- Have faults rectified immediately by specialist or personnel qualified to do so.
- Remove objects from the opening area.
- Do not disassemble, put out of operation or manipulate safety devices.
- Do not rush through a closing system.



## CAUTION

### Risk of bruising and severing of limbs!

If the system moves, careless behaviour can lead to serious injuries to limbs or severance of limbs.

- Do not reach in when parts of the system are moving.
- Keep a distance when parts of the system move.
- Do not bump into or touch the system when it is moving.
- Do not open or remove protective covers during operation.
- Do not permanently remove covers from the system.
- Only carry out inspection, service, maintenance and cleaning when the system is stationary and switched off.



## CAUTION

### Risk of material damage or injuries!

If safety devices are not functioning, manipulated or put out of operation, there is a risk of material damage or injuries that can lead to death.

- Never disable or manipulate safety devices.
- Have inspection, service and maintenance of the safety devices carried out according to local regulations or according to a maintenance contract.



## CAUTION

### Risk of malfunctions, material damage or injuries!

If unauthorised persons use the system, there is a risk of malfunction, material damage or injuries.

- Children under 8 years of age may only use the system under supervision.
- Children must not play, clean or maintain the system.
- Persons with limited physical, sensory or mental abilities as well as persons with insufficient knowledge or experience may only use the system under supervision or must have received and understood instructions to do so.



## NOTICE

**The country-specific regulations must be observed and complied with.**



**NOTICE**

To avoid malfunctions, moving objects such as flags or parts of plants must not be allowed to enter the detection range of the sensors.

**NOTICE**

The installation must be inspected during the function and safety check for imbalance and signs of wear or damage to cables, springs and fastening parts.

The equipment must NOT be used if repair or adjustment work needs to be carried out.

**NOTICE**

Before work can be started, persons must be barred from the system and the danger area.

### 1.3 Electronic equipment reception interference

The equipment can generate and use radio frequency energy. If the equipment is not installed and used properly it can cause interference to radio, television reception or other radio frequency type systems.

If other equipment does not fully comply with immunity requirements, interference may occur. There is no guarantee that interference will not occur in a particular installation.

If the equipment causes interference to radio or television reception, try to correct the interference:

1. Turn the equipment ON and OFF to determine interference.
2. Reorient the receiving antenna.
3. Move the receiver with respect to the equipment.
4. Move the receiver away from the equipment.
5. Connect the receiver into a different outlet so that equipment and receiver are on different branch circuits.
6. Make sure that protective earth (PE) is connected.

If necessary, consult the dealer or an experienced electronics technician for additional suggestions.

### 1.4 State of technology

**NOTICE**

Installation, commissioning, inspection, and maintenance must only be done by approved technicians. We recommend you to have a service agreement.

Record the work in the check list and give it to the customer for safe keeping.

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

Danger can occur if you do not use the system as intended.

## 1.5 Personal protective equipment

Use personal protective equipment to protect persons from adverse effects on the health. Personnel must wear personal protective equipment during the various work activities on and with the system.

Depending on the place of work and the working environment, the protective equipment varies and must be adapted to the situation. In addition to the protective equipment for specific work, the work site can require other protective equipment (for example a harness).

In hygiene-protected areas, special or additional requirements of personal protective equipment can be necessary. These requirements must be thought of when choosing personal protective equipment. If there is any uncertainty regarding the choice of personal protective equipment, the safety officer must be consulted at the place of work.

Personal protective equipment is explained below:



Hearing protection protects the hearing from noise. As a rule of thumb, mandatory to use hearing protection when a normal conversation with other people is no longer possible.



The head protection protects against falling and flying parts and materials. The head protection also protects the head from bumping into hard objects.



Protective goggles protect the eyes from flying parts, dust, splinters or splashes.



Protective gloves protect the hands from friction, abrasions, punctures, or serious injury and from burning caused by contact with hot surfaces.



Safety shoes protect the feet from crushing, falling parts and slipping on surfaces. The puncture resistance of the shoes ensures, that pointy objects do not penetrate the foot.



The high-visibility vest makes the personnel stand out and easily seen. With improved visibility and attention, the high-visibility vest protects personnel in busy work areas from collisions with vehicles.

## 1.6 Product liability

To guarantee a reliable and trouble-free operation of the system, only use parts that the manufacturer recommends. The manufacturer declines any liability for damages as a result of unapproved modifications to the system or the use of parts that are not permitted.

Refer to regulations, the responsibility of the owner or caretaker of the equipment are as follows:

- That the equipment operates correctly, so that it gives sufficient protection in regard to safety and health.
- That someone with documented competence in the equipment and in applicable regulations operates and regularly maintains, inspects, and services the equipment.
- That the provided Service log book and Site acceptance test and risk assessment are kept available for maintenance and service records.
- That the inspection covers the emergency opening function (when applicable).
- That the closing force is appropriate for the system size on fire-approved systems (when applicable).

## 1.7 Spare parts and liability

Reliable and trouble-free operation of the door is only guaranteed when using parts that were recommended by the manufacturer. The manufacturer declines any liability for damages resulting from unauthorized modifications to the door or the use of parts that are not permitted.

## 2 Safety inspection according to EN 16005

EN 16005 describes, similar to the German DIN 18650, the requirements and test methods for the safety in use of automatic doors. It is a supporting standard for the EN 16361 product standard.

EN 16005 applies to automatic sliding, folding, swing and revolving doors. It does not apply to high-speed doors (Speedcord).

We recommend that you obtain and apply your country-specific version of EN 16005.

### 2.1 Terms and definitions

Term according to DIN EN 16005	Description
Powered pedestrian door	Door for pedestrian passage only with one or more leaves that is moved, at least in one direction, by an external energy supply (e.g. electrically) or by means of stored energy.
Revolving door	Powered pedestrian door with one or more leaves connected to a common vertical axis of rotation within an enclosure.
Sliding swing door	Powered pedestrian door with a pivot point, through which the leaves are pushed sideways and can simultaneously perform rotational movement.
Swing door	Powered pedestrian door with a leaf which is hinged or pivoted at one side which opens both ways.
Folding doors	Door with two or more interconnected hinged leaves, whereby one side of a leaf is hinged or pivoted from the upright frame part.
Sliding doors	Powered pedestrian door with one or more leaves, which moves horizontally and parallel in its guides to the adjoining construction.
Powered pedestrian door with low energy drive	Powered pedestrian door with limited kinetic energy.
Pivot fitting (Break-Out)	System whereby door leaves and/or side screens can be pushed open manually in the direction of escape.
Monitoring system	System that checks and verifies the correct functioning of another system and in the event of any malfunctioning of that system switches the powered door to a selected safe mode of operation.
Activator - impulse generator	Means by which the power operation of the door is started.
Cycle	Movement consisting of an opening and closing movement. For revolving doors, a cycle means a passage.
Lintel	Horizontal structural member spanning an opening at its head to carry a load above the opening.
Side screen	Fixed construction that can be part of a powered pedestrian door assembly.
Track	Component or assembly designed to guide or support a door leaf when it moves.
Leading mullion - front post	Door mullion at the first point at which a leaf of a powered revolving door passes the curved screens.
Trailing mullion - trailing post	Door mullion at the last point at which a leaf of a revolving door passes the curved screens.
Fire door	A generic term used in this standard EN 16005 for fire resistance doors and/or smoke control doors. For complete definition of Fire Resisting Doors and Smoke Control Doors see EN 14600.
Main closing edge	Edge of a door leaf, whose distance from the parallel opposing closing edge or opposing surface determines the usable open width.

Term according to DIN EN 16005	Description
Opposing / counter closing edge	Closing edge formed by the main closing edge of opposing closing leaf, a fixed edge or a surface, against which the leaf moves (i.e. frame, floor).
Secondary closing edge	Every other closing edge of the door leaf, which is not the main or opposing closing edge.

2.2 Protection when closing the sliding door



NOTICE

EN 16005 requires that a person is detected on both sides of the door and over the entire passage area of the door.

The reference body used for the settings (700x300x200 mm) must be captured at any point of a base surface, with the width of the passage and a distance of 200 mm on each side of the door axis.



On doors in escape routes and at emergency exits, a RAD 290 or RIC 290 combination sensor (performance level "d") must be used on the inside.

The sensors must be set correctly during commissioning.

See also:

102-290110920 – Assembly and adjustment instructions RIC 290

102-290110206 – Assembly and adjustment instructions RAD 290

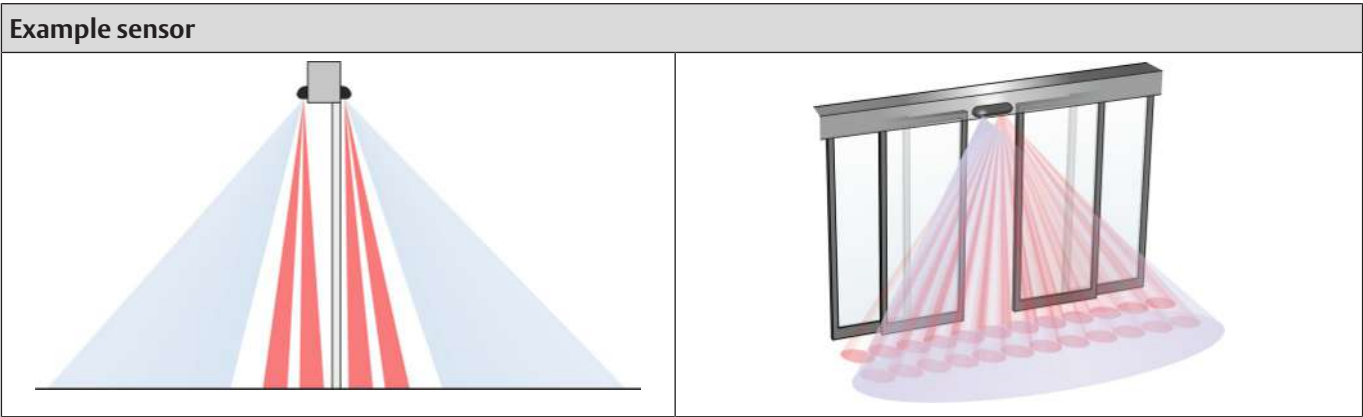


NOTICE

An AIR 290 combi sensor (Performance Level "c") does not meet the 1,500 mm requirement and is therefore not approved.

The ELS light barriers and the ZLP-ELS are no longer required.

Reference body		
	1 Combination sensor RIC 290 or RAD 290 on the inside and outside of the door is sufficient if it can cover the entire passage area of the door.	
	Detailed information can be found in the installation and adjustment instructions RIC 290 / No. 102-290110920.	



NOTICE

For technical reasons, alternative sensors are used in some installations.

2.3

Reduced protection when closing the sliding door

NOTICE

The following precautions must be taken by the operating company to mitigate hazards and residual risks:

- Only use the system in accordance with its intended use.
- The operating company is responsible for ensuring that only trained users and trained operators may use the system.
- To avoid the risk of malfunctions, material damage or personal injuries and to avoid dangerous situations, the safety instructions specified in the instructions must be heeded.

NOTICE

The user group and the safety concept derived from it is subdivided into three classes. The sensor technology on the door will be configured based on this selected class. On handover to the operating company, the reduced sensor technology and system behavior must be explained.

Unrestricted user group, public area	Restricted user group, partly public area	Restricted instructed user group, non-public area
<ul style="list-style-type: none"><li>• Use of optoelectronic protective equipment (sensor technology).</li></ul>	<ul style="list-style-type: none"><li>• Use of optoelectronic protective equipment (reduced sensor technology).</li><li>• Integrated force limitation.</li></ul>	<ul style="list-style-type: none"><li>• Integrated force limitation.</li></ul>

2.4

Protection when opening the sliding door

EN 16005 covers also personal safety during the opening cycle.

Depending on the situation, the danger point can be safeguarded as follows while opening:

- by finishing profiles and safety distances
- by protective screens
- by presence sensing device
- by limitation of leaf force

2.4.1 DIN aluminium finishing profiles



NOTICE

The version with rubber end profiles is not EN 16005 compliant with regard to the max. 8 mm spacing.

	<ul style="list-style-type: none"><li>• DIN aluminum end profiles + safety distances</li><li>• DIN aluminum end profiles</li></ul> See Book B1 „General Information“ 102-020401130
--	--

Example D-STA 32 mm with side screen and cladding

Version DIN aluminum end profiles (P1752)	Version rubber end profiles (P1760)

2.4.2 Safety distances



NOTICE

If safety clearances or distances of < 8 mm cannot be maintained, the use of a pivoting or sliding protective screen is a suitable measure.

The safety distances during the opening cycle must be observed.

There must be a safety distance Y between the secondary closing edge (rear edge of the door leaf) and the adjacent parts of the environment. This is dependent on the distance X between the front of the door leaf and the fixed side screen (see Fig. a).

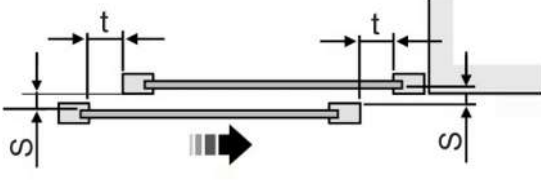

In this case, the risk of bumping and crushing the bodies is not considered relevant and no further protection is needed.

For telescopic doors, the reference leaf for the measurement is the leaf closest to the adjacent part of the surrounding area.

- If  $X \leq 100 \text{ mm}$  then  $Y \geq 200 \text{ mm}$
- If  $100 \text{ mm} < X \leq 150 \text{ mm}$  then  $Y \geq 500 \text{ mm}$
- If  $X > 150 \text{ mm}$ , then the door leaf opening movement must be secured.

Figure a) Protection against crushing	Figure c) Distance from the front of the door leaf

Technical protective measures, with regard to hazards from shearing and retraction are considered to be in place during the opening cycle at the hazardous points, if the safety distances shown in Fig. b) and Fig. d) are observed.

	
<p>If <math>S \leq 8 \text{ mm}</math> then <math>t \leq 0 \text{ mm}</math>          If <math>S &gt; 8 \text{ mm}</math> then <math>t \geq 25 \text{ mm}</math>          Figure b) Protection against shearing and retraction</p>	<p><math>S \leq 8 \text{ mm} \rightarrow Y \leq 0 \text{ mm}</math>  <math>S &gt; 8 \text{ mm} \rightarrow Y \geq 25 \text{ mm}</math>          Fig. d) Finger guard (retracting)</p>

### 2.4.3 Protective screen

See Book B5 „Options“ 102-020401134.

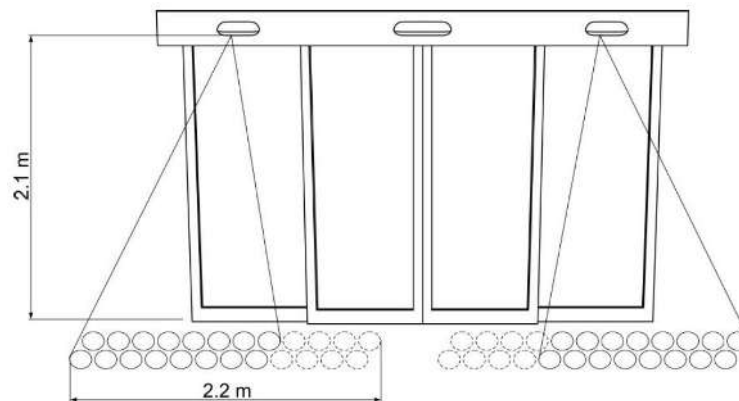
This is the safest solution for protection, especially since EN 16005 recommends avoiding any contact between the user and the door, if a large proportion of users are elderly people, people with reduced mobility or small children.

When using a protective screen:

- The DIN aluminum end profiles are not necessary and the rubber sealing profiles can also be used.

### 2.4.4 Presence sensing device

The AIS 290 presence sensor monitors the secondary closing edge of the door and detects persons or objects in the opening area of the door leaves.



If a person is in the area of the secondary closing edge, this is detected by the sensor, which leads to a reduced opening speed of the door leaf. As a result, people may approach the door at undiminished speed without realizing that the door leaves open slowly and therefore run into the door leaves and could injure themselves.

Suitable would be a protective leaf solution.



Alternatives to AIS 290



NOTICE

For technical reasons, alternative sensors are used in some installations.



NOTICE

Only products authorized according to EN 13849-1:2006, Performance Level „c“ may be used!

Examples:

- IRIS ON (BEA)
- OA-AXIS T (OPTEX)
- PrimeScan (Bircher-Reglomat)
- Ixio-DT3, Ixio-ST (BEA)

The wiring takes place on the programmable inputs of the STM or on the FEM 0 with parameterization of the SIO function.

Book B7 „Commissioning“ 102-020401136, Chapter STM 20, STM 20 DUO, STM 21, STM 22 DUO with combi-sensors produced by third-party“ includes a table detailing the connections and settings.

2.5 General and additional requirements

2.5.1 Detection zone for sensor activation

Care must be taken to provide a sufficient number of automatic release devices (sensors) for the various door types at the correct locations.

The detection zone must not be less than 1,500 mm away in the direction of escape for doors for escape and rescue routes, and if possible 1,000 mm for all other doors. Measured from the center of the opening width of the door. The detection area must cover at least the entire opening width of the door.



NOTICE

An AIR 290 combi sensor does not meet the 1'500 mm requirement and is therefore not approved.



On doors in escape routes and at emergency exits, a RAD 290 or RIC 290 combination sensor (performance level "d") must be used on the inside.

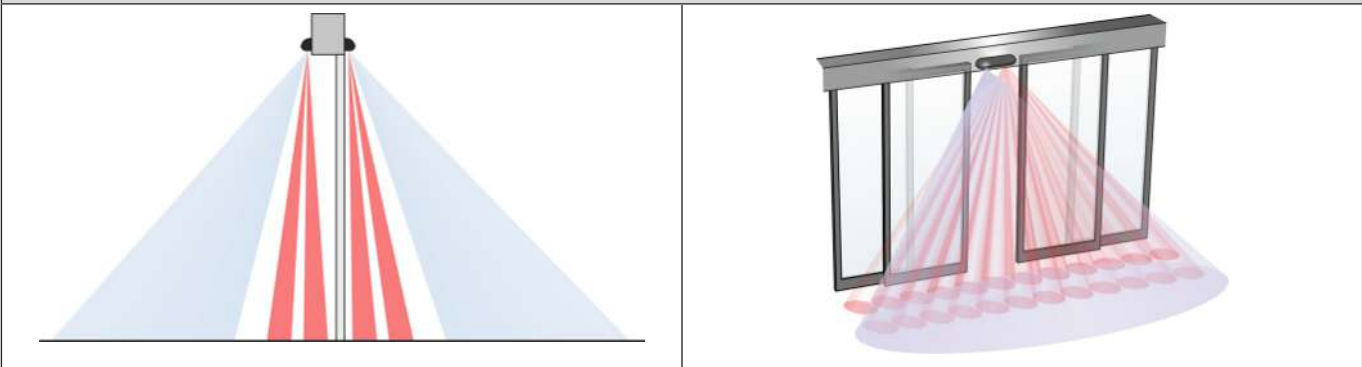
The sensors must be set correctly during commissioning.

See also:

102-290110920 – Assembly and adjustment instructions RIC 290

102-290110206 – Assembly and adjustment instructions RAD 290

Example sensors




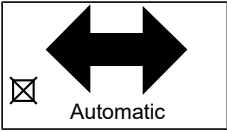



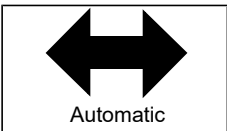



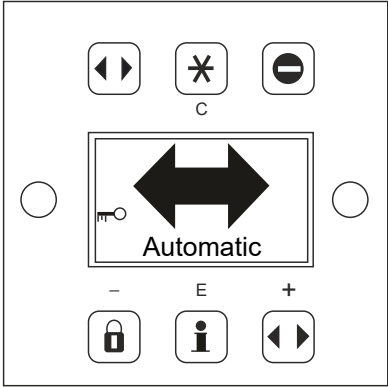
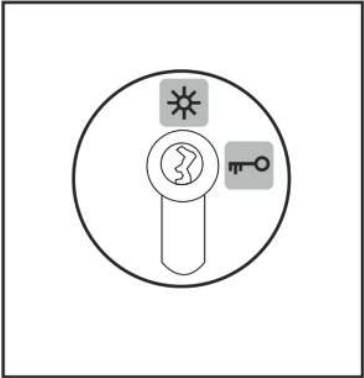
2.5.2 Additional requirements for doorsets in escape routes and emergency exits

If an operating mode selector switch is used, the operating mode must be clearly identified and marked on it.

If the operating mode "Locked" is possible, the operating mode must be protected, e.g. by an access code or a key, so that changes can only be made by authorized personnel.

**It is the responsibility of the operator of the automatic door with escape route function, to lock the control unit in the "Automatic" mode while the building is in use.**

Example:				
Locking the control unit				
Key sequence			Display	Description
<div>E</div> <div></div>	<div></div>	<div></div>	<div></div>	<ul style="list-style-type: none"><li>Unwanted manipulation of the control unit is made more difficult.</li><li>The control panel is locked.</li><li>The locked state of the DMS-D is shown on the display.</li></ul>
Unlocking the control unit				
<div>E</div> <div></div>	<div></div>	<div></div>	<div></div>	<ul style="list-style-type: none"><li>Free selection of operating modes and special functions is guaranteed</li></ul>
<div></div>	Use the System 20 RED with additional operating unit DMS-V (night interlock with key switch).			

DMS-D	DMS-V
<div></div>	<div></div>


2.5.3 Signage

Transparent door leaves or leaf surfaces must be clearly identifiable, e.g. by permanent marking, suitable labelling or use of coloured materials.



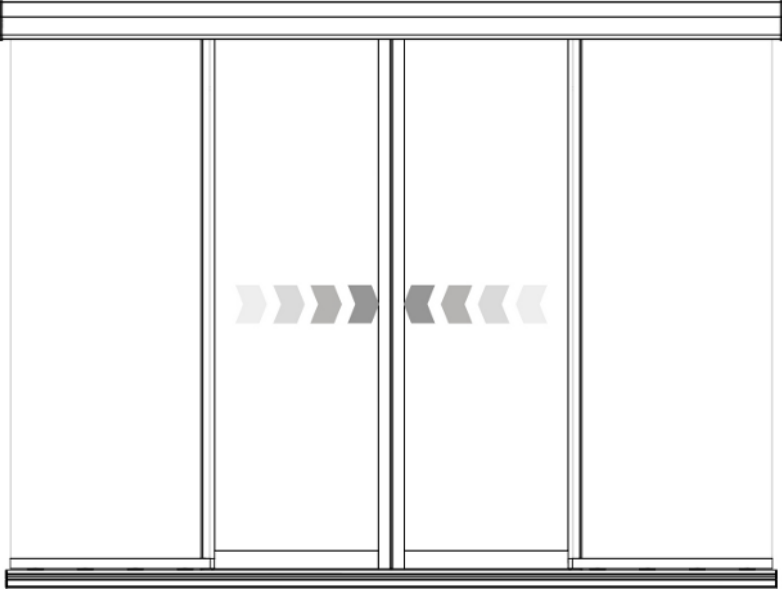
NOTICE

If the operator of the door does not want visible glass marking, he must confirm this in writing to the installer!



Apply adhesive tape or labelling.


Example:



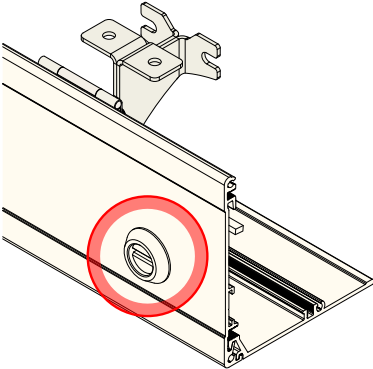
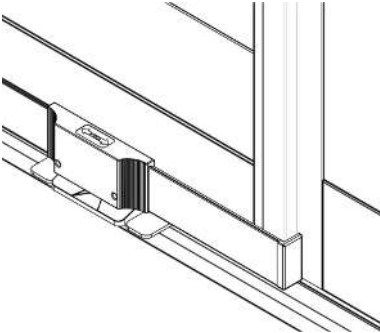
2.5.4 Guards

Protective measures such as housings, covers, enclosures or fixed protective leaves must be designed in such a way that:

- Persons cannot reach danger points located at a height of up to 2.5 m above the upper edge of the floor.
- They can be removed or opened only with the help of a tool.



This requirement is achieved by securing the casing or protective leaf.

Example securing cladding	Example securing protective leaf
	

### 2.5.5 Guards RC2

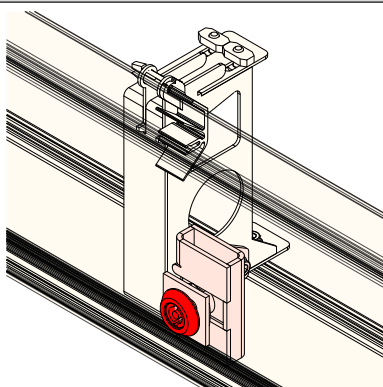
Protective measures such as housings, covers, enclosures or fixed protective leaves must be designed in such a way that:

- persons cannot reach danger points located at a height of up to 2.5 m above the upper edge of the floor;
- they can be removed or opened only with the help of a tool.

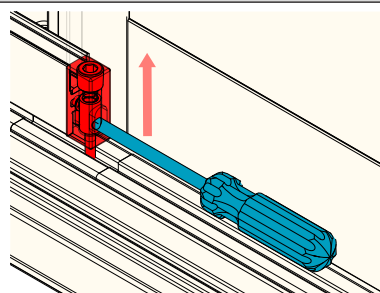


This requirement is achieved by securing the casing or protective leaf.

**Example securing cladding**



**Example securing protective leaf**



### 2.5.6 Commissioning and information for use

1. After commissioning, the operator must be instructed.
2. He shall be provided with operating instructions including instructions for routine maintenance.
3. The recommended minimum frequency of maintenance and checking of safety functions is 1x per year and must be performed by authorized and trained persons.
4. Furthermore, it is required that the maintenance is recorded in an inspection book, which is handed over to the operator.



The specialist must inform the operator about the necessity of maintenance and checking the safety functions and show him the benefit of a maintenance contract.  
Hand over the inspection book or deposit it in the drive.

## 3 General information

### 3.1 Purpose and use of the instructions

These instructions are an integral part of the system and enable efficient and safe handling of the system. In order to ensure proper functioning, the instructions must be accessible at all times and kept in the immediate area of the system.

Although only the male form has been chosen for reasons of better legibility, the information refers to members of both sexes.

The operator must have read and understood the manual before starting any work. The basic requirement for safe working is to follow the safety instructions and the handling instructions. In addition, the local regulations and safety rules apply.

The manual can be handed over in extracts to instructed personnel who are familiar with the operation of the system.

The illustrations are for basic understanding and may differ from the actual presentation. Specific representations are contained in the drawings.



#### NOTICE

**A replacement of the instructions is available from the supplier or on the website.**

#### 3.1.1 Application range



#### NOTICE

**System 20 includes the following door drives for which these instructions apply.**

STA / TSA 20 or 21 or 22, Thermcord, Safecord

### 3.2 Manufacturer

ASSA ABLOY Entrance Systems  
Box 131  
SE-261 22 Landskrona  
Sweden  
Phone: +46 10 4747 000

### 3.3 Product identification

The nameplate located on the door provides accurate identification of the product.

### 3.4 Target groups



#### WARNING

**Risk of injury if the personnel are not approved.**

If unapproved personnel work on the system or are in the danger zone of the system, dangers can occur. Severe injuries and substantial material damages can be the consequence.

- Only approved personnel must carry out work on the system.
- Keep unapproved personnel away from danger areas.

This manual is intended for the target groups listed below:

- The person who is responsible for the technical maintenance of this system.
- The person who operates the system every day and has been instructed.

## 3.5 Terms and definitions

Term	Definition
Approved personnel	<p>Authorised personnel are entitled to perform the following work:</p> <ul style="list-style-type: none"> <li>• Disassembly</li> <li>• Assembly</li> <li>• Commissioning</li> <li>• Operation</li> <li>• Audit</li> <li>• Maintenance</li> <li>• Troubleshooting</li> <li>• Decommissioning</li> </ul> <p>The approved personnel have several years of professional experience in the technical field, for example, as mechanics or machine fitters.</p> <p>The approved personnel are aware of the residual risks arising from the installation site and, due to their professional training, knowledge, and experience, can carry out the work assigned to them and to independently identify and avoid possible danger points.</p>
Approved representative	The approved representative takes over certain parts of the manufacturer's obligations about fulfilling the requirements of the Machinery Directive. In particular, the approved representative can also place the system on the market and/or sign EC declarations of incorporation.
Life phases	All phases of the system's condition and use are referred to as life phases. This applies from the time the system leaves the factory until it is disposed of.
Manufacturer	The manufacturer is whoever designs and/or builds machinery or incomplete machinery under the scope of the Machinery Directive.
Personnel	All persons who carry out activities on and with the system are referred to as personnel. Personnel can be, for example, the operator, the cleaning staff, or the security staff. The personnel meet the personnel qualifications required by the manufacturer.
Service technician	Experts and specialists or representatives approved by the manufacturer to perform commissioning, maintenance, and servicing.
System	<p>The term is used in these instructions as a synonym for the product. Door operators, revolving doors, sliding doors, gates, and so on are referred to as a system.</p> <p>If information in these instructions refers to a specific type, this is shown accordingly in the text.</p>
System operator	The respective owner is referred to as the system operator, regardless of whether they operate the system as the owner or pass it on to third parties.
User	Users are all the persons who use the system.

## 4 Description

### 4.1 Intended purpose of use

The system is designed exclusively for use as a pedestrian passage. The installation must 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.

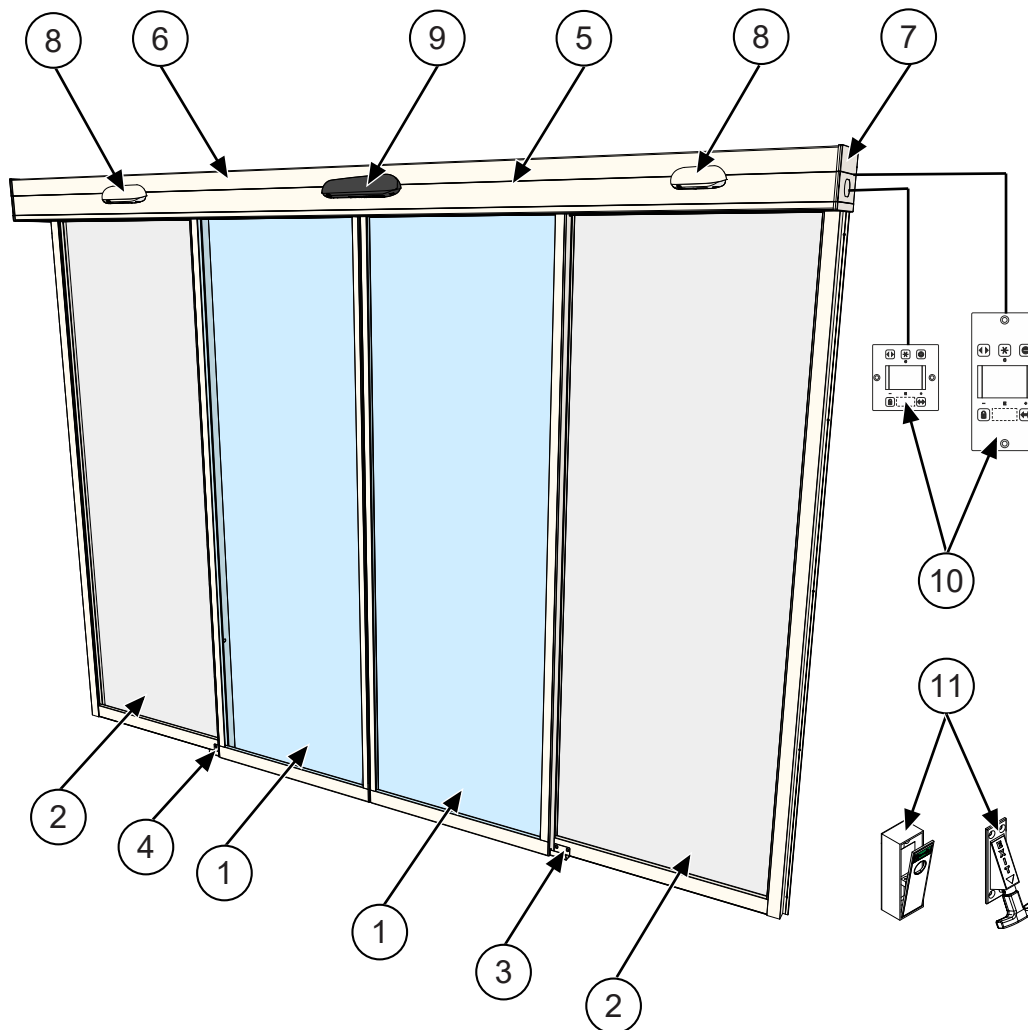
Interventions in or alterations to the installation performed by non-approved maintenance technicians exclude the manufacturer's liability for consequential damages.



### NOTICE

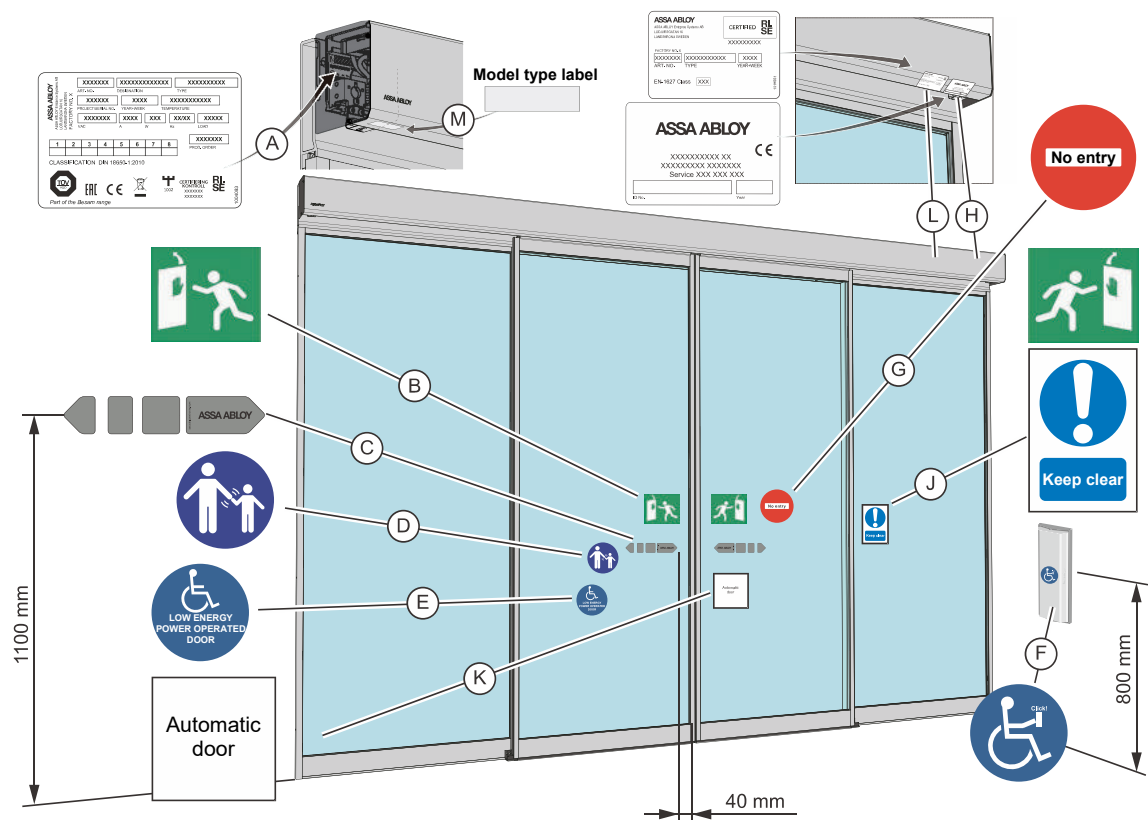
**The operation of an automatic door in combination with a wicket door must only take place if the latter is in a secured position.**

### 4.2 Overview illustration



Item	Description
1	Sliding door leaf STA20 left/right
2	Side panel STA20 left/right
3	Door leaf guide 20 right
4	Door leaf guide 20 left
5	Drive components STA20
6	Casing STA20
7	End Cap
8	Sensor AIS290
9	Combi Sensor RIC290
10	DMS-D Digital Mode Selector with Display
11	Manual unlocking HE/HEI

4.3 Signage



Label	Description	Requirement?
Check that all required signages are applied and intact. Mandatory indicates that the signage is required by European directives and equivalent national legislation outside the European Union.		
A	Product label	Mandatory
B	Emergency break-out	Mandatory if approved for escape route.
C	Company door sticker	Mandatory, if applicable to highlight the presence of the glass (applied to all moving glass sections).



Label	Description	Requirement?
D	Supervision of children	Mandatory according to national regulations. Recommended, if the risk analysis shows usage by children (applied to both sides of the door).
E	Operator designed for persons with disabilities	Recommended, if applicable (applied to both sides of the door).
F	Activation by people with disabilities	Recommended, if applicable.
G	No entry, identifying one-way traffic	Mandatory in GB and US, if applicable. Not included in the product.
H	Local product label	Mandatory if per national legislation.
J	Keep clear	Mandatory in GB, if applicable. Not included in the product.
K	Automatic door	Mandatory in GB, if applicable. Not included in the product.
L	Burglary resistant label	Mandatory if it is a burglary resistant system.
M	Model type label	Mandatory

## 4.4 Function description

The operator works electromechanically.

The motor, control unit, transmission – and optional emergency unit and electromechanical locking device – are all assembled in a support beam with an integrated cover. The motor and gear box transmit movement to the door leaves by means of a toothed belt. The door leaf is fitted to a door adapter/carriage wheel fitting and hangs on a sliding track. The guiding at the bottom is carried out by means of floor guides, (Full Break-Out) or Side Panel Guides (Fixed Side Panels).

When an OPENING IMPULSE is received by the control unit, the motor starts and transmits movement to the door leaves, which move to the open position.

The closing starts when no OPENING IMPULSE is received and the HOLD OPEN TIME has expired.

The operator's user can select different modes of operation if a mode selector is installed.

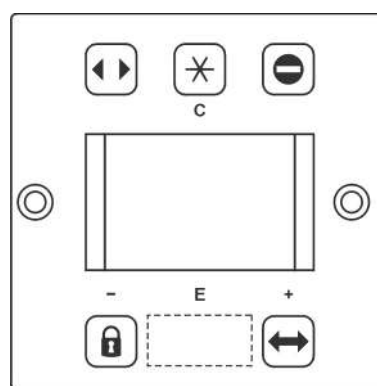
### 4.4.1 DMS-D Description

The DMS-D Digital Mode Selector with Display is a convenient input and output unit for operating and programming control units in our door operators.

Logically arranged buttons allow intuitive operation of the door and navigation through the operator-specific menu structure. The LCD display with backlighting provides details and information on the door status using symbols and plain text.

There is a choice of several languages, which increases user-friendliness on the one hand and facilitates service interventions on the other.

The connection to the control units is made via the CAN bus.



### 4.4.2 DMS-M Description

The DMS-M Digital Mode Selector mechanical operating unit is equipped with a key switch. This key switch can be used to set the various operating modes. The key switch can be removed in any position.

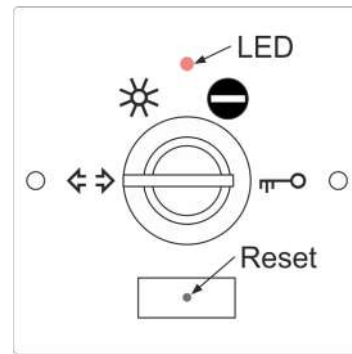
#### Operating display:

- The LED lights up when mains or battery voltage is present.

#### Perform reset:

- This hidden button is operated by means of an approx. 25 mm long paper clip.
- For this purpose, there is a small hole in the middle of the logo.

If the key is pressed for approx. 5 seconds, the controller is restarted (software reset). The saved settings are retained.



### 4.4.3 DMS-V Description



#### NOTICE

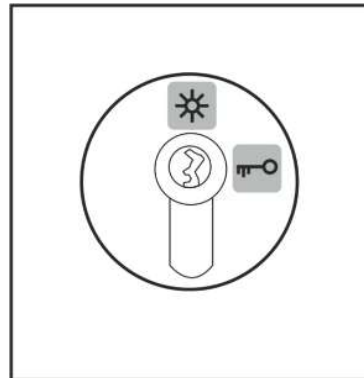
The locking of an escape route door is not permitted. The function of an escape route door would no longer be possible.

In order to prevent accidental locking of the doors during the use of the building, the choice of the operating mode for emergency exits must be protected according to the standard DIN EN 16005.

It is the responsibility of the operator of the automatic door with escape route function to lock the control unit in the "Automatic" position while the building is in use.

The DMS-D Digital Mode Selector can be effectively protected against unauthorized adjustment of the operating mode via an external operating lock.

If the "Locked" operating mode is present, it must be protected with a key switch so that only authorized personnel can set a different operating mode.



## 4.5 TOS installations - for escape and emergency routes

### 4.5.1 Description

A TOS (Total Opening System) installation is an automatic sliding door, which can if necessary, be swiveled out by 90° when pushing from the inside towards the outside.

For safety reasons, an optional night locking device precludes unauthorized opening, as well as swiveling out door leaves and side leaves. If using a TOS installation on escape and emergency routes, safety features are monitored by micro-switches.

### 4.5.2 Application range

TOS installations have a wide range of applications. Due to the possibility of swiveling out door leaves and side leaves, this system is particularly appropriate in the following cases:

- escape and emergency routes, considering country-specific safety regulations
- exhibition halls, which are meant to house bulky items (e.g. cars)
- normal pedestrian doorways

## 5 Options

The system complies with all applicable safety regulations, but it is possible to enhance the safety and comfort with the add-ons.

Contact the local ASSA ABLOY company for a detailed description.

Possible Options are as follows:

- Different Locking Systems
- CO48
- Extended Functions Modules
- Different Batteries / Accumulators
- Operator Casings with different heights
- Fanlights
- Protective Screens
- IoT Gateway 2.0
- Etc.

For details on the different options, please refer to Book 5 / 102-020401134

6 Specification

6.1 General technical data



NOTICE

Load capacity for lintel installations

The standard guidelines for load capacities on lintel installations can be found in the corresponding chapter.



NOTICE

3 carriages required for door weight per leaf > 90 kg  
4 carriages required for door weight per leaf > 125 kg

6.2 Power supply data

	Product line 20		Product line 21		Product line 22
	Standard	RED / DUO	Standard	RED	Standard
Mains voltage	100-240 VAC	100-240 VAC	230 VAC	100-240 VAC	230 VAC
Rated power	90 W	90 W	85 W	90 W	120 W
Fuse protection	4 AT	4 AT	3,15 AT	4 AT	3,15 AT
Standby power consumption*	approx. 25 W for all				

\* including sensors, control unit and locking device

6.3 Door opening speed

Door opening speed		
for max. 75% of authorized door weight	D-STA	E-STA
	D-TSA	E-TSA
	0.7 m 1 sec.	0.7 m 1.5 sec.


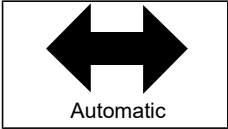

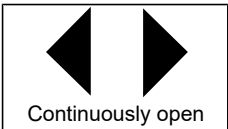
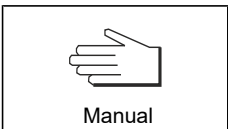

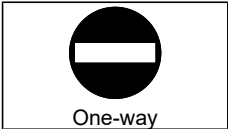




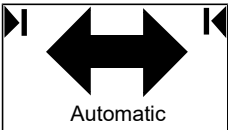
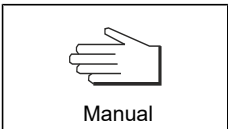


## 7 Operation

### 7.1 Operation modes and key functions (DMS-D)

The keys on the Digital Mode Selector DMS-D, are used to set the door system operation modes in the main menu. The parameters of the door system are set in the sub menu.

The key functions are divided into main menu and sub menu.

#### Main menu

Key	Name	Operation	Function	Display on LCD
	Automatic key	Press key 1 x	Automatic operation via sensors.	
	Continuously open key	Press key 1 x	For sliding door operator and swing door operator: Continuously open, sensors disabled.	
		Press key 2 x or hold it down for 2 seconds	For sliding door operator: Manual operation.	
	One-way key	Press key 1 x	Passage only possible from one direction.	
	Locking key	Press key 1 x	Door closed, sensors disabled.	
		Press key again	The door opens again, closes, and locks again. Can be opened with a key (optional).	
	Star key	Press key 1 x	For sliding door operator: Reduced opening width.	
		Press key 1 x	For swing door operator: Manual operation.	
	Menu key	Restart control device: Press key for 5 seconds Restart hardware DMS: press key for 12 seconds	Access to parameter menu. Enable control lock. Restart control device. Restart hardware DMS-D.	

Sub menu

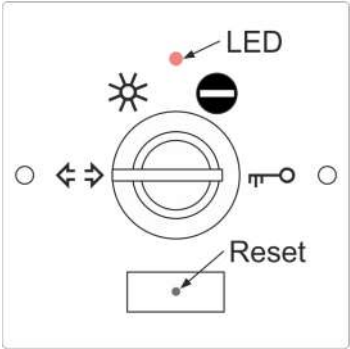


NOTICE

The system automatically returns to the main menu 3 minutes after the last entry.

Key	Name	Operation	Function	Display on LCD
<div>E</div> <div></div>	Enter key	Press key 1 x to go to the next sub menu.	Select menu item, confirm entry.	<div>Opening speed</div> <div><div></div></div> <div>0 10 20 30 40</div>
<div>+</div> <div></div>	Plus key	Press key 1 x to go down.	Navigates downwards in the menu.	<div>Parameter</div> <div><div>Driving cycle</div><div>Time delay open</div><div>Operator</div></div>
		Press key 1 x to increase the value.	Move the slide control to the right to increase the value.	<div>Closing speed</div> <div><div></div></div> <div>0 10 20 30 40</div>
<div>-</div> <div></div>	Minus key	Press key 1 x to go up.	Navigates upwards in the menu.	<div>Parameter</div> <div><div>Driving cycle</div><div>Time delay open</div><div>Operator</div></div>
		Press key 1 x to reduce the value.	Move the slide control to the left to reduce the value.	<div>Closing speed</div> <div><div></div></div> <div>0 10 20 30 40</div>
<div></div> <div>C</div>	Clear key	Press key 1 x to go to the previous menu.	Leave the menu item without saving.	<div>Parameter</div> <div><div>Driving cycle</div><div>Time delay open</div><div>Operator</div></div>

7.2 Operation modes (DMS-M)







The DMS-M Digital Mode Selector mechanical operating unit is equipped with a key switch. This key switch can be used to set the various operating modes. The key switch can be removed in any position.

**Operating display:**

- The LED lights up when mains or battery voltage is present.

**Perform Reset:**

- This hidden button is operated by means of an approx. 25 mm long paper clip.
- For this purpose, there is a small hole in the middle of the logo.
- If the key is pressed for approx. 5 seconds, the controller is restarted (software reset). The saved settings are retained.

Key	Operating mode	Function
	Automatic mode with total opening width.	This operating mode corresponds to standard operation. Activation of a triggering device (e.g., RIC 290, RAD 290) opens the door. After the hold-open time has elapsed, the door closes again.
	Continuously open and manual operation.	Door opens and remains in the open position. It can then be moved manually.
	One-Way	The door opens only by activating the triggering element located on the inside of the door, or by an optional key switch contact (SSK).
	Locked	<p>The door is automatically locked after it has been closed. Only with the key switch contact (SSK) can an opening be triggered with the last valid opening width.</p> <p><b>Caution:</b></p> <p>In the event of <b>interrupted power</b>, door opening in the locked state, without an additional battery or without manual release, is no longer guaranteed!</p>

7.3 Locking/unlocking the control unit via the keypad



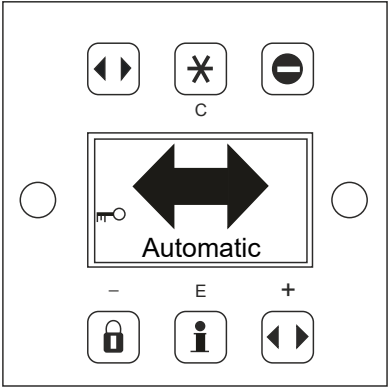
NOTICE




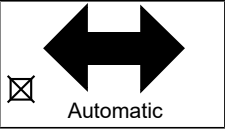
The locking of an escape route door is not permitted. The function of an escape route door would no longer be possible.

In order to prevent accidental locking of the doors during the use of the building, the choice of the operating mode for emergency exits must be protected according to the standard DIN EN 16005.




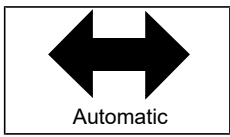
It is the responsibility of the operator of the automatic door with escape route function to lock the control unit in the "Automatic" position while the building is in use.

If the "Locked" operating mode is present, it must be protected with an access code so that only authorized personnel can set another operating mode.



Locking the control unit				
Key sequence			Display	Description
				<ul style="list-style-type: none"><li>• The control panel is locked.</li><li>• The locked state of the DMS-D is shown on the display.</li><li>• Unwanted manipulation of the control unit is made more difficult.</li></ul>



Unlocking the control unit				
Key sequence			Display	Description
				<ul style="list-style-type: none"><li>• The control panel is unlocked.</li><li>• The unlocked state of the DMS-D is shown on the display.</li><li>• Free selection of operating modes and special functions is possible.</li></ul>



NOTICE

The system remains in the previously selected operating mode.

7.4 Locking the control unit with a key (option)



NOTICE

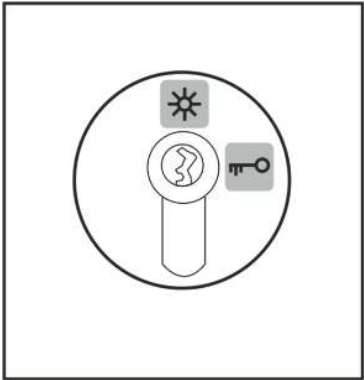
The locking of an escape route door is not permitted. The function of an escape route door would no longer be possible.

In order to prevent accidental locking of the doors during the use of the building, the choice of the operating mode for emergency exits must be protected according to the standard DIN EN 16005.

It is the responsibility of the operator of the automatic door with escape route function to lock the control unit in the "Automatic" position while the building is in use.

The DMS-D operating unit can be effectively protected against unauthorized adjustment of the operating mode via an external operating lock.

If the "Locked" operating mode is present, it must be protected with a key switch so that only authorized personnel can set a different operating mode.



## 8 Inspection and maintenance

Regular inspection and maintenance of the system by trained personnel, authorized by the manufacturer is the best guarantee for a long lifetime and trouble-free, safe operation.

The inspections and maintenance are required on the basis of the respective legal requirements and the manufacturer's interval specifications.

### 8.1 Functions and safety check

#### 8.1.1 General remarks



#### DANGER

##### Electric Shock!

In case of contact with live parts, there is an immediate danger to life due to electric shock. Damage to or removal of the insulation or individual components can be life-threatening.

- Before starting work (cleaning, maintenance, replacement) on active parts of electrical systems and equipment, ensure that all poles are voltage free and that this is maintained for the duration of the work.
- Keep moisture away from live parts. This can lead to a short circuit.
- Never bridge fuses or put them out of operation.
- Do not connect the power supply until all work has been completed.
- Have work on the electrical system performed by qualified personnel only.



#### NOTICE

**Specific inspections and maintenance may only be carried out by a specialist or a person trained for this purpose. The authorization of these persons is carried out exclusively by the manufacturer. The scope, result and time of the periodic inspections and maintenance must be recorded in an inspection book and a checklist. These documents must be kept by the operator.**



#### NOTICE

**The testing and/or servicing interval according to the manufacturer's specification is at least 1 to 2 times a year.**



#### NOTICE

**The recommended and planned spare and wear parts can be requested from your service centre.**

According to current legislation, the operator of an automatic door system is responsible for its maintenance and safety.

With the care of the installation by the operator, accidents or defects can be avoided.

#### Testing

Type of test	Action
Visual inspection	Check door leaves, guides, bearings, limiting devices, sensors, and the securing of crushing and shearing points for damage.
Mechanical inspection	Check fastenings for tight fit.
Safety check (exit and escape routes)	Check sensors, safety devices, and monitoring devices for tight fit and damage.

Type of test	Action
Function testing	Check functioning of switches, operators, controllers, power or energy storage devices, and sensors. Also check the adjustment of the safety devices and the setting of all movement sequences including the end points.
Test run	Final overall review is carried out.

### Servicing

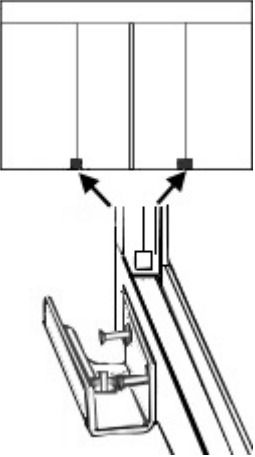
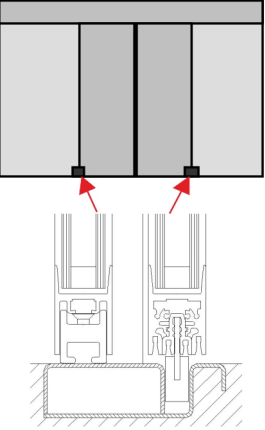
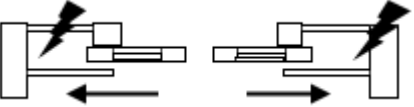
Type of servicing	Action
Adjustment and cleaning	Clean and adjust bearings, sliding points, and power transmission. Check relevant fastening screws and retighten if necessary.

For documentation and information purposes, the testing and servicing work as well as the condition of the system are recorded in a test log book. The test log book must be kept for at least one year or until the next testing/servicing.

#### 8.1.2 Monthly inspection work to be carried out by the operating company

Monthly control and maintenance of individual elements by the operator requires little time and serves the reliable function, increased service life and operational safety of the system.

Test / inspection	Procedure	Expected result
Motion detector	<ul style="list-style-type: none"> <li>Approach the door at normal speed (from the inside and outside).</li> <li>If necessary, clean the sensors (motion detectors), in particular the external sensor(s).</li> <li>Note that steaming up of the sensor, for instance due to warm, moist indoor air escaping and condensing on the colder external motion sensor, can prevent the door from closing. Therefore, ensure that the indoor air is dehumidified or wipe the external sensor dry if necessary.</li> </ul>	<ul style="list-style-type: none"> <li>The sensor must cover the entire passage width.</li> <li>Door opening takes place at an early stage and at an appropriate speed, so that unhindered passage is possible.</li> </ul>
Door leaf / side panels	<ul style="list-style-type: none"> <li>Check the condition of the panes.</li> <li>Check the condition of the gaskets / profiles.</li> </ul>	<ul style="list-style-type: none"> <li>No damaged panes.</li> <li>No gaskets torn out (energy loss).</li> <li>The door is the "business card" of your company. Make sure it is in perfect condition.</li> </ul>

Test / inspection	Procedure	Expected result
<p>Door leaf guides</p> 	<ul style="list-style-type: none"> <li>• Check the door leaf guides.</li> <li>• Under certain circumstances, these may be damaged by bumping (e.g. by shopping carts).</li> <li>• Door leaf guides can show exceptional signs of wear due to intensive operation as well as exposure to dirt.</li> </ul>	<ul style="list-style-type: none"> <li>• Door leaf must be properly guided.</li> <li>• Lower as well as vertical door profiles do not show any scratch marks.</li> <li>• Door leaf guide must not develop any unusual noises when opening/closing.</li> </ul>
<p>Continuous floor guide</p> 	<ul style="list-style-type: none"> <li>• Set the door to manual mode (see chapter "Selecting special functions").</li> <li>• Clean all guides from dirt, cigarette butts, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• The door leaf must be properly guided.</li> <li>• The movement of the door must not be hindered by dirt.</li> </ul>
<p>Drive casing</p>	<ul style="list-style-type: none"> <li>• Check the fastening of the drive casing.</li> </ul>	<ul style="list-style-type: none"> <li>• It must be completely closed and engage securely in the hinges.</li> </ul>
<p>Protective leaf (optional - depending on country regulations)</p> 	<ul style="list-style-type: none"> <li>• Check the mechanical condition of the protective leaf.</li> <li>• In particular, check the closing mechanism.</li> </ul>	<ul style="list-style-type: none"> <li>• A protective leaf is to prevent all crushing and shearing points.</li> </ul>

## 8.2 Operator duties

Personal protection requires compliance with the standards and guidelines for publicly accessible facilities. The system operator is responsible for carrying out testing and servicing.



### NOTICE

**According to EN 16005 / DIN 18650, the system must be inspected by an expert before initial commissioning and subsequently according to the manufacturer's instructions or at least once a year**



### NOTICE

**The installation must be inspected during the function and safety check for imbalance and signs of wear or damage to cables, springs and fastening parts.**

**The equipment must NOT be used if repair or adjustment work needs to be carried out.**



### CAUTION

**Risk of malfunctions, material damage or injuries!**

Insufficient or inattentive cleaning or care of the system can lead to malfunctions, material damage or injuries.

- Check the sensors regularly for dirt and clean them if necessary.
- Regularly remove dirt accumulations in the floor rail or under the floor mat.
- Keep the system free from snow and ice.
- Do not use aggressive or caustic cleaning agents.
- Use road salt or loose chippings only conditionally.
- Lay the floor mat without folds and flush with the floor.
- Equipment required for cleaning purposes such as ladders or similar must not be leaned on or attached to the system.

#### Tasks system operator

Task	Personnel	Time of implementation	Entry in the inspection book
Maintenance and cleaning of the sensors for safety and triggering	System operator	Weekly, or as required	No
Function and safety check	System operator	Monthly	No
Function test for fire doors	System operator	Monthly, or according to country-specific standards and guidelines	No

### Tasks of qualified person

The inspection is carried out according to the manufacturer's test instructions.

The inspection usually takes place at the same time as the maintenance of the system.

The inspection also checks whether no changes have been made to the system since the last inspection and whether it meets the current safety requirements.

Task	Personnel	Time of implementation	Entry in the inspection book
Acceptance test	Qualified person	After assembly of the door system ready for operation	Yes
Servicing	Qualified person	1 x annually, or according to country-specific standards and guidelines	Yes
Test (inspection)	Qualified person	1 x annually, or according to country-specific standards and guidelines	Yes
Test (inspection) for door systems in escape routes	Qualified person	2 x annually, or according to country-specific standards and guidelines	Yes
Testing of fire doors	Qualified person	1 x annually, or according to country-specific standards and guidelines	Yes
Testing (inspection) for fire doors	Qualified person	1 x annually, or according to country-specific standards and guidelines	Yes
Servicing for fire doors	Qualified person	1 x annually, or according to country-specific standards and guidelines	Yes

## 8.3 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.

## 8.4 Logbook

Extent, results and dates of the periodic inspections, must be documented and kept by the operator in an Inspection- and Maintenance logbook.

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.



### NOTICE

The following example of a logbook serves only as a template.

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	Defects corrected / Parts replaced	Service technician signature

## 8.5 Maintenance and regular inspection

A safety inspection must be carried out before initial start-up and as required, as well as in accordance with the applicable regulations – **but at least twice a year**. We recommend having maintenance carried out at the same time.

A safety-related inspection must be performed by a competent service technician or an authorized partner.

Maintenance due is displayed on the DMS-D Digital Mode Selector with Display, if this function has been activated. The interval for the output of this message is defined by the number of opening cycles and/or after a certain operating time has elapsed.

**We recommend concluding a service agreement with the service center responsible for your area.**



### NOTICE



A list of the recommended and planned spare and wear parts can either be seen in the appendix or can be requested from your service center.

## 8.6 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.

## 8.7 Recommended and planned spare- and wear parts



### NOTICE

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

Spare part/Wear part	Interval
* CO48 (Silicon or Rubber) * Mechanical power storage device for escape routes in France	1 year
* Pulley CO48	3 years
Battery	3 years
Antistatic brush	3 years
Door leaf guide (plastic)	3 years
Guiding pad	3 years
Safety blocking ball (TOS Break-out system)	5 years
Pulley	In case of wear
Gear belt	In case of wear
Roller, wheel	In case of wear
Counter wheel	In case of wear
Track	In case of wear
Carriage + Track + Rubber damping profile	In case of wear
Belt clamp	In case of wear
Hinge (plastic) for cladding height 200 mm	In case of wear
Locking device (VRR)	In case of wear
Motor	In case of wear
Leaf central seal	In case of wear
Lateral sealing profile	In case of wear
Floor guide rail	In case of wear
Light barrier	In case of wear
Control	In case of failure
Control unit	In case of failure
BBGV Green break glass housing	In case of failure
Others	In case of failure

## 8.8 Conclusion and reporting

- Fill out all documents, in particular, list defects in the Check list of the Inspection book.
- The customer / operator must be verbally informed of any defects.
- Obtain signature from the customer / operator and service technician (expert).
- Submit the documents to the customer / operator after the on-site acceptance inspection.
- Hand over the keys for the control units.



## 8.9 Service - Checklist

This work instruction defines the procedure for service and maintenance work at the customer's site.



### DANGER

#### Dangerous electrical voltage!

- Risk of death by electric shock
  - ⇒ Do not touch the drive system when the system is turned on.
  - ⇒ Do not spray water into the drive.

No.	Listing of professional maintenance work according to the manufacturer:
1.	Cleaning the drive parts, such as rails, rollers, locks, etc.
2.	Checking the hinges on the drive casing.
3.	Checking the smooth movement of the moving parts.
4.	Adjusting the toothed belt tension.
5.	Adjustment of the door leaves (ground clearance), mechanical and optical control.
6.	Check the protective screen for function and damage (chipped glass edges) as well as for safety, check and readjust, repair or replace if necessary.
7.	Adjusting the counter wheels of the carriages.
8.	Check the running rails, replace immediately if damaged.
9.	Manual and electrical check of the locking device (smooth running of the electromagnets or motor and gears).
10.	Check and adjust emergency opening device or emergency closing device (retighten Bowden cable if necessary).
11.	Visual inspection (tightness, acid crusts) and function test. 5 complete motion cycles of the emergency battery assembly. The battery cells must be replaced for safety reasons if the function test is not passed or the battery cells are older than 4 years.
12.	Check tightness of the drive unit (ATE).
13.	Checking and, if necessary, tightening all cable and plug connections in the drive.
14.	Check that cables are laid according to regulations, take corrective measures if necessary.
15.	Connection of the external software tool.
16.	Check the existing software version of the system control and update if necessary. (The software is constantly updated to meet the latest guidelines and regulations, as well as any new comfort requirements).
17.	Reading out the history (door cycles, error and warning messages) and, in the event of anomalies, preventively searching for causes and taking action.
18.	Control of the individual parameters of the door settings (e.g. hold-open time after key contact, etc.) and, if necessary, new coordination with the customer.
19.	Readjusting the door movement sequences (acceleration, travel speeds, transitions, braking speed).
20.	If required (e.g. if borderline high closing speed is desired), measurement of the dynamic closing forces at the main closing edge with suitable force gauge.
21.	Check door in automatic mode for noiseless running.
22.	Check rubber seals for condition, adjust, replace if necessary.

No.	Listing of professional maintenance work according to the manufacturer:
23.	Check that the anti-static copper or carbon fiber brushes are intact and serving their purpose (grounding). Replace brushes if necessary.
24.	Test the function of the release and safety devices and, if desired, adapt them to the customer's requirements (without violating the safety criteria specified by the regulations).
25.	Checking of (on-site) mounted peripheral devices (e.g. key switch, card reader, time switch, alarm contacts, door monitoring contacts etc.) for function (as far as possible), safety and professional mounting.
26.	Check floor guides/floor rails for mechanical damage, clean, replace if necessary. Check and adjust any floor brushes that may be present and replace if necessary.
27.	Checking the entire system and the relevant environment according to the standard at the time of installation and according to current standards and laws (AStV, AMVO).
28.	Document deviations and/or current recommendations on the work ticket or fill out warnings document.
29.	Review the inspection book (if available). Correct any deficiencies listed there if possible.
30.	Enter the annual safety inspection according to the Work Equipment Ordinance (AMVO) §8.
31.	Renewal of the annual inspection sticker.
32.	Train or retrain operating personnel as required (especially the procedure for manual emergency opening and emergency closing). Hand over the operating instructions on special customer request.
33.	Entry in the plant journal.
34.	Internal control of the maintenance work tickets in relation to identified defects or customer requests.
35.	If applicable, communication with the customer in this regard and possible offer for improvement measures or rectification of defects.
If the door system is equipped with pivoting door leaves and possibly pivoting side panels, the following additional maintenance work must be performed.	
36.	Checking all screws on door leaves and side panels.
37.	Check ball catches on sliding leaves and side panels, readjust, replace if necessary.
38.	Check panic lock knob (rotary knob) for easy movement.
39.	Check for any obstacles in the swivel range.
40.	Clean floor rail.
41.	Check and clean the floor lock (if present) for ease of movement and seating of the striking plate.

## 9 Troubleshooting

### 9.1 Behavior in event of faults

In the event of an irregularity or malfunction, different displays are shown depending on the connected control unit.



#### NOTICE

**If malfunctions that endanger the safety of individuals occur, the system must be turned off. It may not be turned back on until the problem has been resolved by a professional and the danger no longer exists.**



#### NOTICE

**If the system performs a slow opening or closing movement, this may be a deliberate, automatic redundancy test (self-test).**

#### 9.1.1 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.

#### 9.1.2 Resetting the control unit

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.



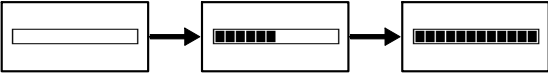
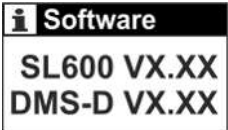
Key	Selection	Display
<div>E</div> <div></div>		Press > 5 seconds
<div></div> <div>C</div>	No	<div>No</div> <div>Reset control?</div> <div>Yes</div>
<div>E</div> <div></div>	Yes	

- Restart of the installation is performed.
- 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 center **stating the error message**.

9.1.3 Control unit DMS-D does not react

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

Proceed as follows:

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

- After resetting, the DMS is again operational.
- If this is not the case, please inform our service center.

9.2 Error display and troubleshooting




NOTICE

Information regarding display texts, status and fault numbers can be found in the book B8A / 102-020401152.

9.3 DMS-D Possible troubleshooting

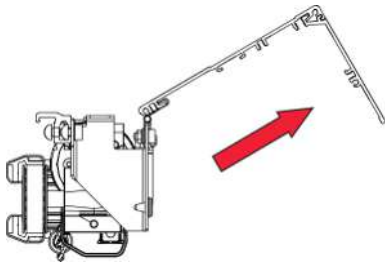
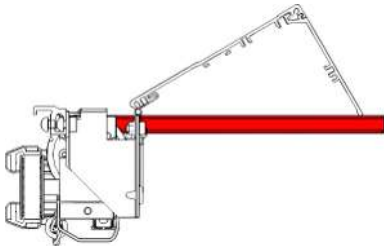
- Due to the status display, malfunctions can be partially remedied by the user himself.
- If you are not sure, contact the responsible service center.
- Before calling, note the information that can be seen on the display of the DMS-D Digital Mode Selector. This information gives the technician important information for possible troubleshooting.
- If several status messages are active at the same time, they are numbered:  
e.g. error 1 / 2.
- Pressing the E-key permits to navigate from one error message to the next one.

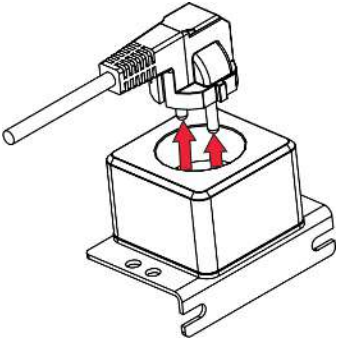
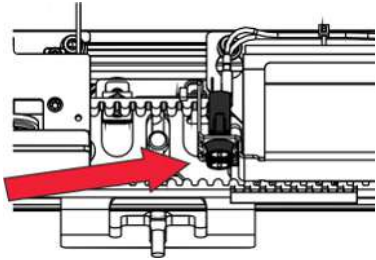
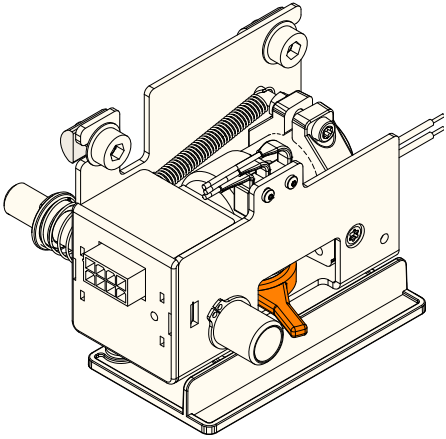
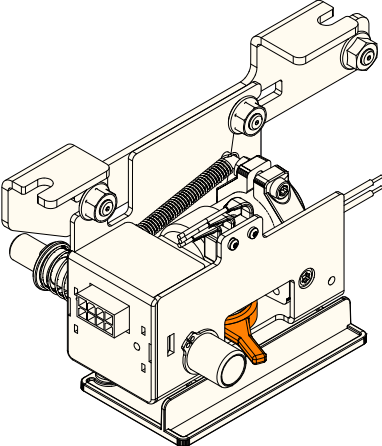
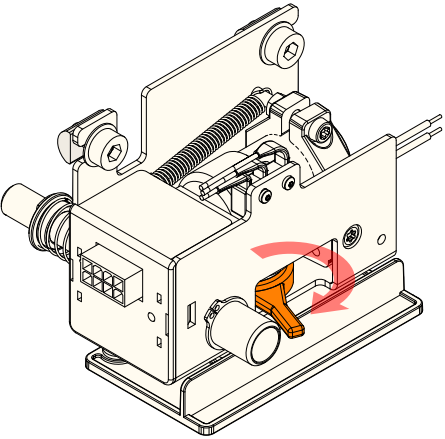
Example:

Which information?	Procedure	How displayed? (Example)
Status text and number	It is automatically displayed on the DMS-D.	<div><div><div>⚠ 3</div><div>AKI &gt; active</div></div><div><div>⚠ 3</div><div>AKI &gt; active</div></div></div>
Software-Versions	Press the following button on the DMS-D for 2 seconds. <div>E</div> <div></div>	<div><div>Software</div><div>SL600 VX.XX</div><div>DMS-D VX.XX</div></div>

9.4 Manual opening (without manual unlocking device)

Initial situation: The door is in closed position and locked in de-energized state.

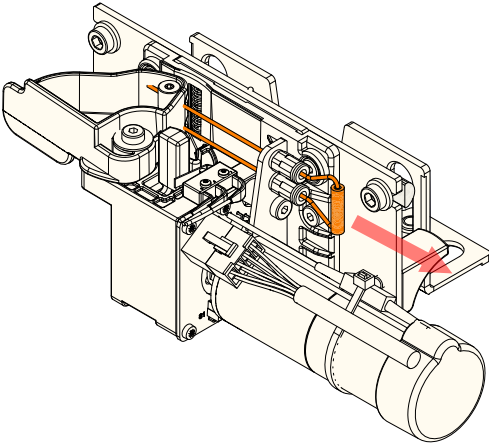
Example: Sequence of manual opening	
<ul style="list-style-type: none"><li>• Open the drive casing (swing open).</li></ul> <p><b>Note:</b> If you pull near the hinges, it makes it easier to open the casing.</p>	
<ul style="list-style-type: none"><li>• Fold out the red support to fix the drive cover in the open position.</li></ul>	

<b>Example: Sequence of manual opening</b>	
<ul style="list-style-type: none"><li>• Disconnect the equipment from the power supply.</li><li>• The socket is located under the drive casing.</li></ul>	
<b>For systems with integrated emergency battery:</b> <ul style="list-style-type: none"><li>• In addition, unscrew the battery fuses.</li><li>• The battery is located under the drive casing.</li></ul>	
<p><b>Locking System 20</b></p>  <p>The lock is provided with an unlocking lever.</p>	<p><b>Locking System 20-200</b></p>  <p>The lock is provided with an unlocking lever.</p>
<ul style="list-style-type: none"><li>• Actuate the lever clockwise.</li><li>• The door unlocks and can be pushed open manually.</li></ul>	

**Example: Sequence of manual opening**

- Pull strongly on the rope loop.
- The door unlocks and can be pushed open manually.

**Multipoint locking (MPV)**




The lock is provided with a rope loop.

- Close the drive cover by applying a strong pressure in the area of the hinges.

9.5 Manual closing


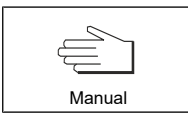


**Initial situation:** Power supply is present. Door remains blocked in open position.



**NOTICE**

Depending on the type of fault, the procedure for closing the door manually varies. Follow the steps described below.

9.5.1 Manual closing - Step 1

Key	Function	Display	Description
	Manual mode		<ul style="list-style-type: none"><li>• Press key 2 x in succession.</li><li>• The door can be closed or opened manually.</li></ul> <p><b>Makeshift door operation</b> (e.g. at low outside temperature)</p>
	Locked		<ul style="list-style-type: none"><li>• <b>Night locking</b></li><li>• Press <i>additionally</i> the “Locked” key.</li><li>• Push the door manually to the closed position.</li><li>• Door is closed and locked (if locking device is present).</li></ul> <p><b>Notify service center.</b> (Phone number is shown on the display)</p>

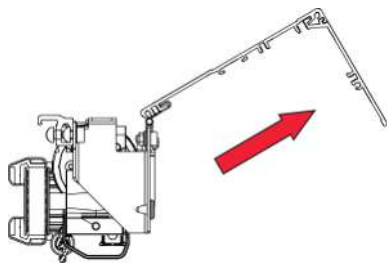
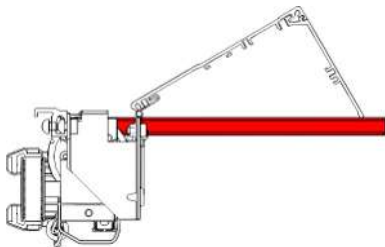
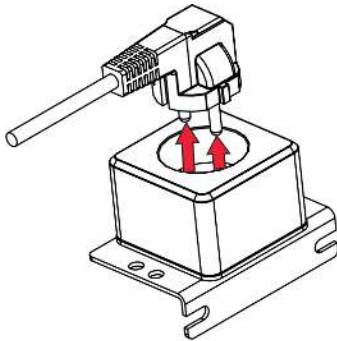
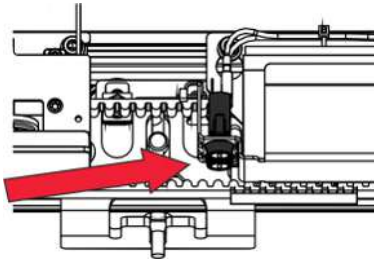
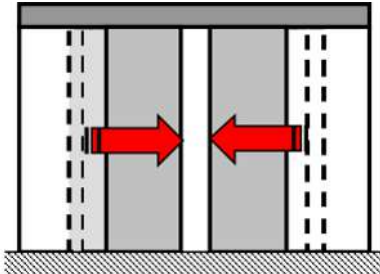


**NOTICE**

If the door still cannot be operated and locked manually, perform the steps described below.

## 9.5.2 Manual closing - step 2

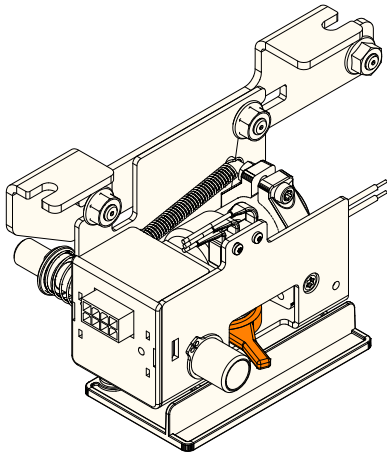
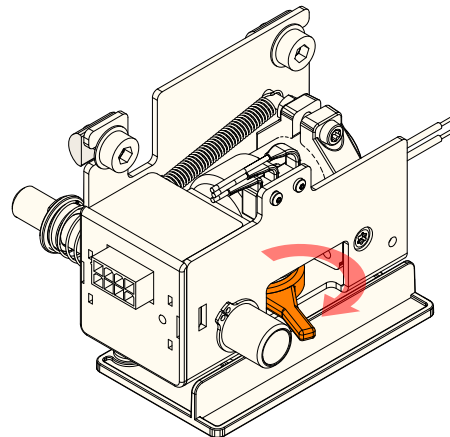
If the attempts to close and lock the door described under "step 1" have remained unsuccessful, it indicates a severe failure. Please proceed as follows:

<b>Example: Sequence of manual closing</b>	
<ul style="list-style-type: none"> <li>Set the door in manual mode with the control unit (see chapter "Manual closing - step 1").</li> <li>Open the drive casing (swing open).</li> </ul> <p><b>Note:</b> If you pull near the hinges, it helps open the casing.</p>	
<ul style="list-style-type: none"> <li>Fold out the red support to fix the drive cover in the open position.</li> </ul>	
<ul style="list-style-type: none"> <li>Disconnect the equipment from the power supply.</li> <li>The socket is located under the drive casing.</li> </ul>	
<p><b>For systems with integrated emergency battery:</b></p> <ul style="list-style-type: none"> <li>In addition, unscrew the battery fuses.</li> <li>The battery is located under the drive casing.</li> </ul>	
<ul style="list-style-type: none"> <li>Push the door manually to the closed position.</li> </ul>	



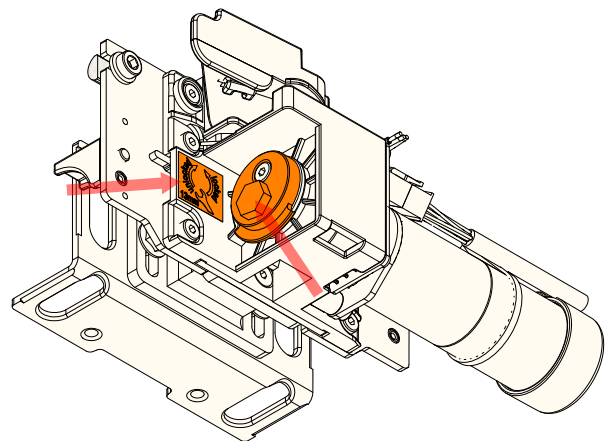
**Example: Sequence of manual closing**

- Operate the release lever clockwise and hold it in this position so that the door can close completely.
- The door locks as soon as you release the unlocking lever.

**Locking System 20-200****Locking System 20**

- Turn with a 13 mm hexagon wrench the hexagon bolt as shown on the picture.
- Check manually if the door is really locked.
- Leaving the building is only possible through a secondary exit.

**Notify service center**  
(Phone number is shown on the display)



## 9.6 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.

## 9.7 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).

## 9.8 Emergency opening in case of power failure with a back-up battery (optional)

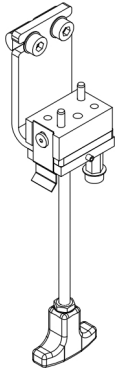
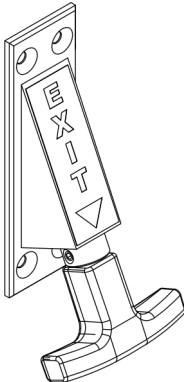
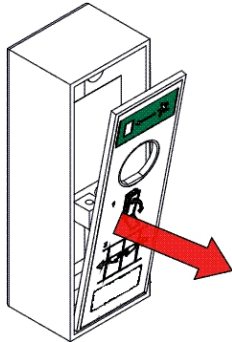
- If a back-up battery is fitted and parametrized as “Battery operation”, all functions of the automatic door will continue to be available.
- In case of a power failure, emergency opening is ensured by a back-up battery that opens the door once (except if the program is set to “Locked”).
- The number of door openings depends mainly on door weight and the battery's charging state.
- The last door operation in case of a weak battery (insufficient capacity) is selectable: “Open” or “Close”.
- If the door is in the “Locked” state, it can be unlocked by means of the key switch/push button (optional).

## 9.9 Emergency operating using Bowden cable (Option)

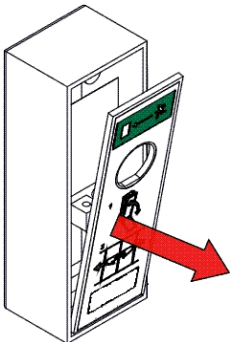
This device, available in several versions, is mounted inside and/or outside, and allows the unlocking of the door according to the procedure below.

### 9.9.1 Available versions

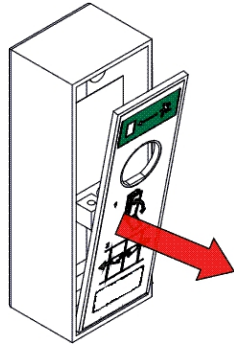
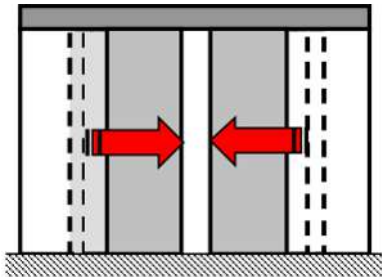
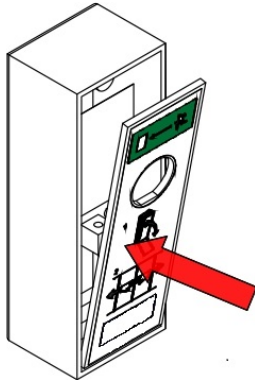
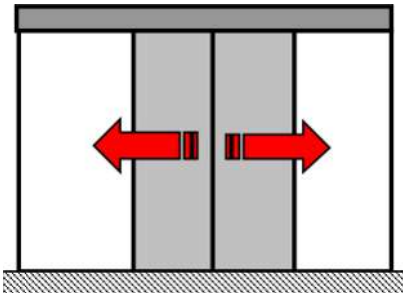
The available versions are illustrated below. They are basically identical in their function.

102-020808512	102-020808757	102-014102000
		

### 9.9.2 Procedure for an emergency opening

Emergency opening	
<ul style="list-style-type: none"><li>• Open the unlocking flap.</li><li>• Pulling the unlocking flap downwards unlocks the door.</li><li>• Display on the DMS-D. → Error No. 31 / Emergency stop</li><li>• The door can be slid open by hand.</li></ul>	

9.9.3 Closing and locking the door

Procedure for closing and locking the door	
<ul style="list-style-type: none"><li>• Activate the emergency opening.</li><li>• This causes the locking device to be unlocked.</li></ul>	
<ul style="list-style-type: none"><li>• Slide the door manually into the closed position.</li><li>• Keep the door leaves in the closed position.</li></ul>	
<ul style="list-style-type: none"><li>• Close the unlocking flap.</li><li>• The door is now locked.</li></ul>	
<ul style="list-style-type: none"><li>• Check manually if the door is really locked.</li></ul>	



**NOTICE**  
Same procedure for the other operating elements.

## 10 Taking out of service and disposal

### 10.1 Decommissioning



#### NOTICE

**After each temporary shutdown a new commissioning must be carried out.**

When the system is taken out of service:

1. Disconnect the system from the mains supply.
2. Unplug from any existing battery.

### 10.2 Dismantling and disposal



#### NOTICE

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



#### NOTICE

**The door systems can be completely disassembled in reverse order.**

The installation mainly consists of the following materials:

Aluminum:

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

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 leaves and side panels

Various electronic and electromechanical components:

- Sensors, control, and operator components
- Batteries and rechargeable batteries

Various plastics:

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

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