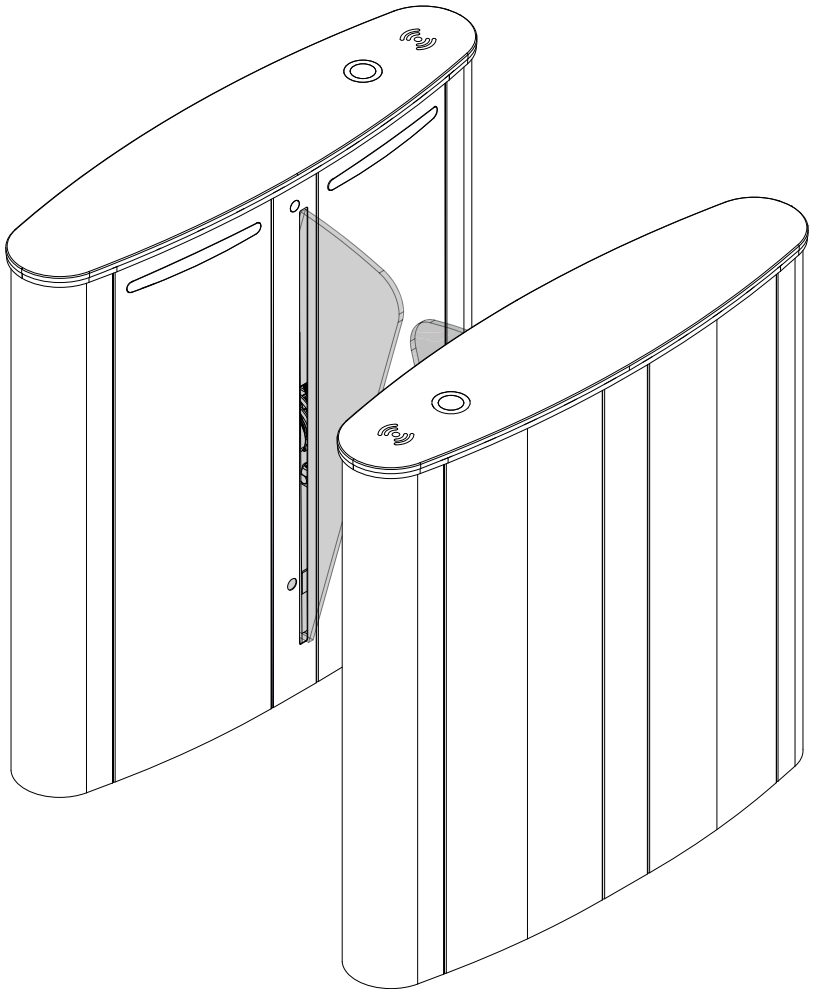
User manual

Security Entrance Control
ASSA ABLOY SG600

ASSA ABLOY
Entrance Systems

Experience a safer
and more open world



Original instructions

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Table of Contents

List of abbreviations

CE

Conformité Européene, which means European Conformity

COM

Serial Interface

DoC

Declaration of conformity

DoI

Declaration of incorporation

FFL

Finished floor level

IP

Ingress Protection, degree of protection against the penetration of water and dust. The first number indicates the protection against the penetration of dust ("0" = No protection "6" = Dustproof). The second number indicates the protection against the penetration of water ("0" = No protection "8" = "Protection against permanent submersion).

LED

Light emitting diode

PE

Protective earth

PLC

Programmable logic controller

RFID

Radio frequency identification

RS

Recommended standard

TCP / IP

Transmission Control Protocol / Internet Protocol

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 system can cause the hazards in this section even when it is 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. Save this manual for future reference.

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

DANGER

Electric current.

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

- Make sure that only approved personnel work on the electrical system.
- Make sure that all poles are voltage free and that this is maintained for the duration of the work.
- Disconnect all poles from voltage before you start the work (cleaning, maintenance, replacement) on active parts of the electrical systems and the equipment.
- Keep moisture away from live parts. This can lead to a short circuit.
- Do not bridge fuses or put them out of operation.
- Do not connect the power supply or a battery until all work has been completed.
- Do not use a damaged supply cord. Only the manufacturer, its service agent or a similarly qualified person is permitted to replace a damaged supply cord.

DANGER

Faulty connection of the mains power supply.

Risk of electric shock and property damage if the mains power supply to the system is not installed with a safe method.

- The mains power supply must be installed with protection (fuse, circuit breaker).
- An all-pole mains disconnection switch with isolating capabilities of Category III must be installed.
- All installation must be done correctly, refer to local regulations.

DANGER

Fire in an electronic system.

Risk of electric shock if you use a water-based fire extinguisher for a fire in an electrical system.

- Use a fire extinguisher of type carbon dioxide (CO_2) or ABC dry powder.

DANGER

Faulty safety devices of the fire protection system.

Danger to life if the safety devices of the fire protection system do not work. This can cause severe injuries or death.

- Do not disconnect the fire protection system from the power supply overnight.
- Do not disassemble, put out of operation, or manipulate the safety devices.
- Do not remove safety instructions from the system.
- Do not block, hold open, or otherwise prevent the fire doors from closing.
- Inspect and do a service and maintenance of the fire protection system.
- Always follow the local applicable regulations or the regulations in a maintenance contract.
- Examine and maintain the condition of the fire protection system.

DANGER

Faulty safety devices.

Risk of personal injuries that can lead to death or material damages if the safety devices are faulty, manipulated, or put out of operation.

- Make sure that all safety devices (breakouts, sensors, lock release, and so on) operate correctly.
- Do not disassemble, put out of operation, or manipulate the safety devices.
- Examine and perform service and maintenance of the safety devices.
- Always follow the local applicable regulations or the regulations in a maintenance contract.

DANGER

Moving system.

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

- Do not reach in when parts of the system move.
- Keep a distance when parts of the system move.
- Do not bump into or touch the system when it moves.
- Do not open or remove protective covers during operation.
- Do not permanently remove covers from the system.
- Only carry out inspection, service, maintenance, or cleaning when the system is stationary and the power is OFF.
- Danger points must be safeguarded up to a height of 2500 mm from the floor level.

WARNING

Maintenance and checks during operation.

Risk of personal injuries if the system is in operation during service and maintenance.

- Make sure that the power is OFF and that the system is stationary before you do checks, repairs, service, maintenance, and cleaning.
- Before you start the work, make sure that there are no persons in the system or in the close area of the system..

WARNING

Incorrect use and/or installation.

Incorrect use and/or installation can lead to severe injuries and/or cause substantial material damage.

- Read and obey all instructions regarding safe use and/or assembly.
- Make sure that all connection points between the door system and the building are sufficiently strong, even and level.
- Only use ASSA ABLOY approved components. Other components may have a negative effect on the safety of the system.

WARNING

Heavy parts.

Lifting the heavy parts can cause personal injuries.

- Always be at least two persons when you lift and handle the heavy parts. Refer to local regulations.
- Use the tools provided for lifting.

WARNING

Unapproved persons without supervision using the system.

Risk of personal injuries, malfunction, or material damage to the property if unapproved persons use the system.

- Infants and children under 8 years of age are not allowed to be within the opening area of the system without supervision of an adult.
- Children must not play, climb on, clean, or maintain the system or the fixed/remote controls.
- Children must not play with the system, the fixed controls, or the remote controls.
- Keep children away from the fixed controls and the remote controls.
- Persons with limited physical, sensory, or mental abilities can only use the system under supervision.
- Unapproved persons must have received and understood the instructions on how to use the system.

WARNING

Locked in persons in the building.

Risk of personal injuries and material damage.

- Before the system is set to locked, make sure that the locked area is empty and that no persons are locked in.

WARNING

The system can open, close, or turn unexpectedly.

Risk of material damage or personal injuries because of unforeseen opening, closing, or turning of the system.

- No persons can 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.
- Make sure that approved personnel immediately correct the errors.
- Remove objects from the opening area.
- Do not disassemble, put out of operation, or manipulate the safety devices.
- Do not dash through a closing system.

CAUTION

Incorrect settings.

Incorrect settings can lead to malfunctions, material damage, or personal injuries.

- Do not disconnect the system from the power supply overnight.
- Make sure that only approved personnel adjust the settings.
- Do not disassemble, put out of operation, or manipulate the safety devices.
- Make sure that only approved personnel correct errors.
- Follow locally applicable regulations, or make sure to have a maintenance contract for service and maintenance.

CAUTION

Insufficient cleaning or care.

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

- Examine the sensors regularly for dirt and clean them if necessary.
- Regularly remove dirt accumulations from the product and its close surroundings, for example the floor, in the floor rail, or under the floor mat.
- Keep the system free from moisture like water, snow and ice.
- Do not use aggressive or caustic cleaning agents.
- Use road salt or loose chippings only conditionally.
- Put the floor mat without folds and flush with the floor.
- Do not lean or attach equipment required for cleaning purposes, such as ladders or similar, to the system.

CAUTION

Imbalance and damaged parts.

Imbalance, wear, or damage to cables, springs, and fastening parts can cause material damages.

- Inspect the installation during the function- and safety check for imbalance and damaged parts.
- Do not use the equipment if repair or adjustment work needs to be carried out.

CAUTION

Product damage.

If the product packages are not properly stored the product this can lead to personal injuries, material damage or malfunction.

- Always store the packages indoors, in a dry condition at all times during transportation and reloading.
- The package has plastic tarpaulin around it and can be stored outdoors for a shorter while during installation, at the installation site.

NOTICE

Observe and comply with the country-specific regulations.

NOTICE

To prevent not wanted activations of the system, keep the area around the system clear. Moving objects such as flags or parts of plants must not be allowed to enter the detection range of the sensors.

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 diameter, comply with the requirements of the Machine Guidelines 2006/42/EG as well as EN 17352:2022.

Nevertheless, danger can occur if not used as intended.

1.5 Compliance information

This product complies with European directives, regulations and standard EN 17352:2022.

The CE marking on the product indicates conformity with European directives and regulations together with the Declaration of conformity (DoC) or the Declaration of incorporation (DoI), accompanying the product.

The full DoC and the full DoI is available for download on our website.

1.6 Personal protective equipment

Use personal protective equipment to protect persons from adverse effects on 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.

1.7 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).

1.8 Warranty

ASSA ABLOY warrants its products to be free from defects in material and workmanship under intended use and service for a warranty time of 12 months, beginning at time of delivery. This warranty extends only to the original buyer of the equipment.

ASSA ABLOY warrants that the software operates substantially in accordance with its functional descriptions and that it has been recorded on non-defective media.

The ASSA ABLOY warranty does not apply to:

- That the software is error-free or operates without interruption.
- General wear and tear on the system.
- Fuses, disposable batteries and glass damage.
- System deviations caused by installers other than ASSA ABLOY.
- System that has been altered or damaged by vandalism or misuse.
- System that has been additionally equipped with non ASSA ABLOY original branded parts and/or spare parts.
- Unnecessary visits due to poor client communication (system working when our technician arrives, reset, power discontinuation).
- Adjustments (closing and opening speed and also detection field radars) due to customer requests (excludes operational adjustments thought to create a hazard).
- Water damage.
- Adverse weather conditions.
- Any damage caused, directly or indirectly, by a circumstance beyond the control of the applicable company within ASSA ABLOY. Damages can be for example industrial dispute, fire, natural disaster, war, extensive military mobilization, insurrection, requisition, seizure, embargo, restrictions in the use of power, and defects or delays in deliveries by sub-contractors caused by any such circumstances.
- Non-compliance with the manufacturers care and the maintenance recommendations may void the warranty.
- ASSA ABLOY approved resellers must extend this warranty to the end-users only, but have no authority to extend a greater or different warranty on behalf of ASSA ABLOY.
- A service agreement with ASSA ABLOY helps to secure the availability of a fully operational system and gives priority at call-out, thus minimizing the time that the equipment is unusable.

2 General information

2.1 Terms and definitions

Term	Definition
Approved personnel	Authorised personnel are entitled to perform the following work: • Disassembly • Assembly • Commissioning • Operation • Audit • Maintenance • Troubleshooting • Decommissioning The approved personnel have several years of professional experience in the technical field, for example, as mechanics or machine fitters. 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.
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	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. If information in these instructions refers to a specific type, this is shown accordingly in the text.
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.

2.2 Purpose and use of the instructions

NOTICE

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

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.

Only the male form has been chosen for reasons of better legibility.

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.

2.3 Manufacturer

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

2.4 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 Description

3.1 Intended use of the product

The system is designed exclusively for use as a pedestrian passage. The installation must only occur in dry areas.

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 unapproved maintenance technicians exclude the manufacturer's liability for consequential damages.

3.2 Overview

The system is available in three versions: Primary unit, secondary unit and center unit. For a single corridor area, one primary unit and one secondary unit must be used. For passageways with two or more corridors, at least one center unit must be added to the configuration. Each center unit added to the configuration increases the number of corridors. The corridor directions of the systems are arranged so that passengers can pass their cards with their right hand.

Primary unit

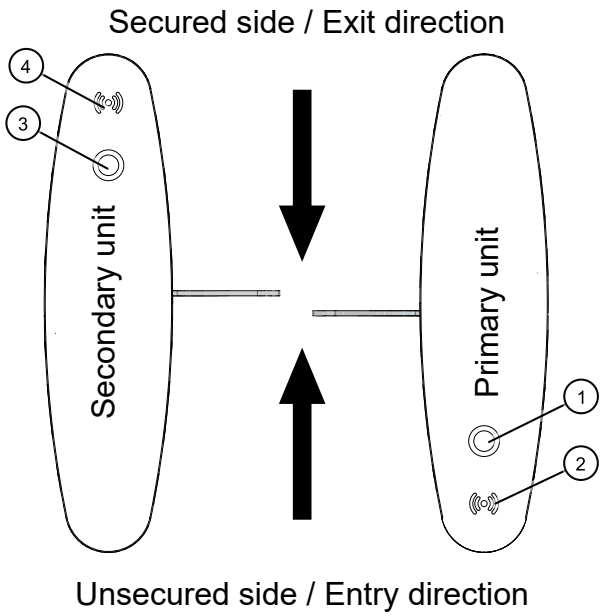
The components of the system are control cards, a 12V DC power supply, a 24V DC power supply, a motor, reception sensors, a card reader assembly slot a glass leaf and a power fuse. The upper part of the system consists of a dark grey glass table, ten shaped directional LEDs and lane lighting LEDs to illuminate the interior of the corridor.

Secondary unit

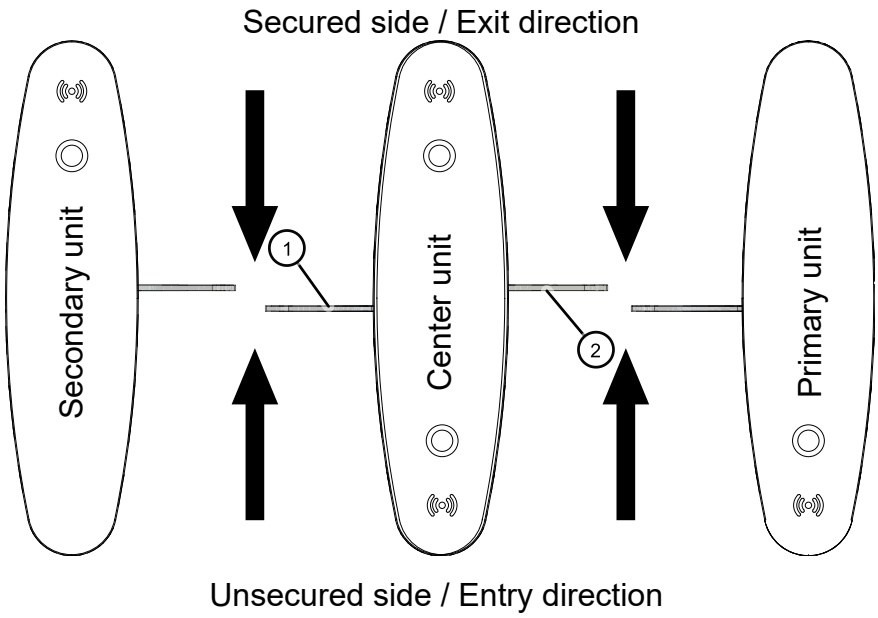
System components are a motor, gear sensors, a card reader assembly slot and a glass leaf that opens. The upper part of the system consists of a dark grey glass table, ten shaped directional LED and lane lighting LEDs that illuminate the corridor interior.

Center unit (for multiple corridor configuration)

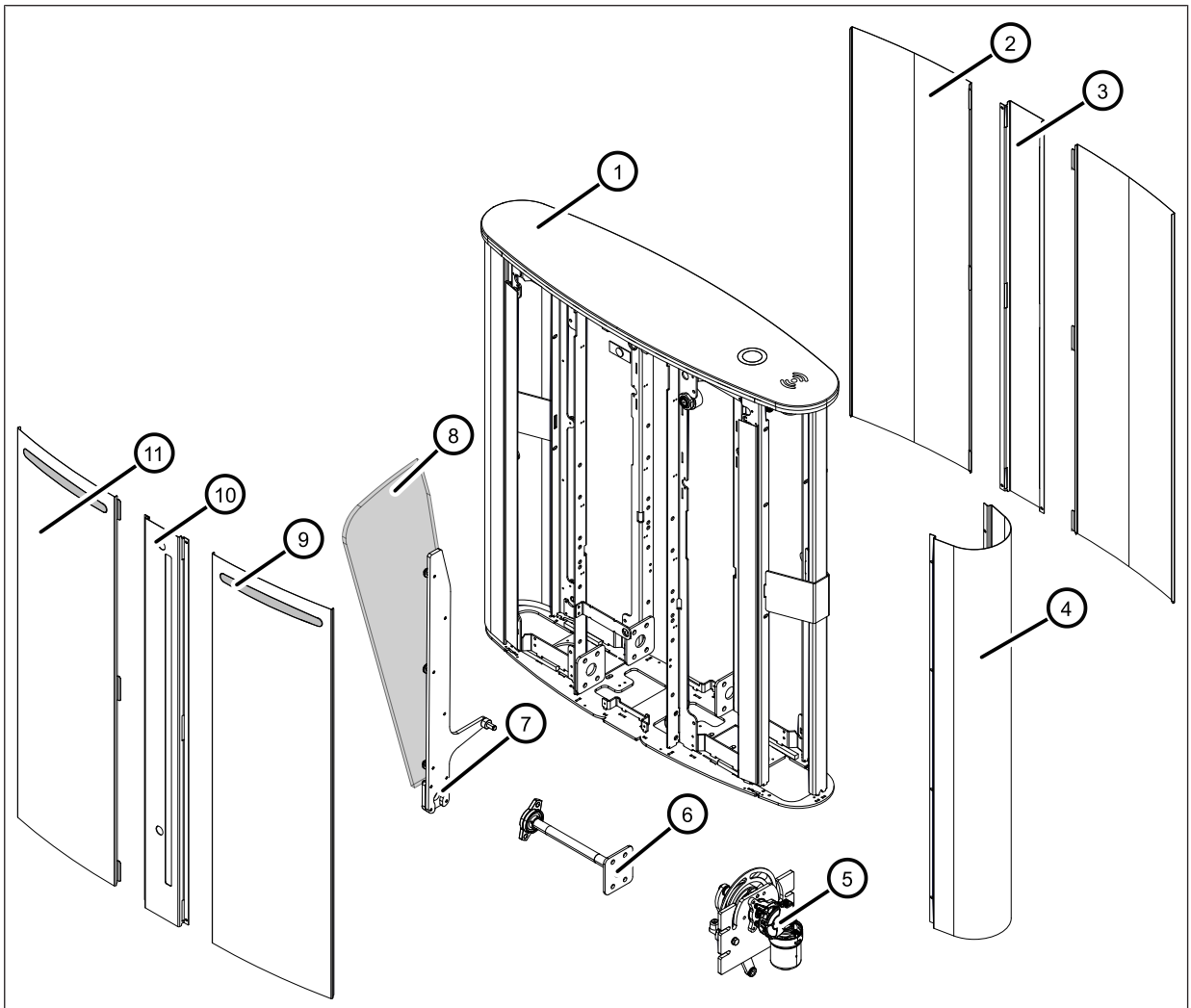
This consists of a primary unit and a secondary unit in a single system. It is used for multiple corridor configurations. The center unit consists of control cards, two motors, two power supply units, a 12V DC power supply unit, a 24V DC power supply unit, two opening glass leaves, two card reader assembly slots, a power fuse and receive and transmit sensors located on both sides of the system. The upper part of the system consists of a dark grey glass table, twenty shaped directional LEDs, one on the entrance side and one on the exit side and lane lighting LEDs to illuminate the interior of the corridor.



1	Entry direction LED indicator	3	Exit direction LED indicator
2	Entry card reader area	4	Exit card reader area

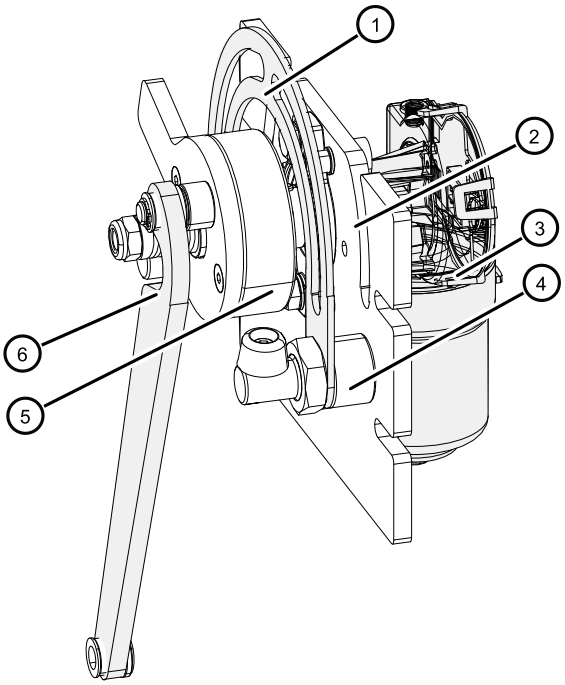


1	Primary leaf	2	Secondary leaf



1	Top glass	7	Leaf glass metal holder
2	Cover	8	Leaf glass
3	Central cover plate	9	Plexiglass
4	Flat front	10	Leaf sheet
5	Mechanism	11	Plexiglass cover
6	Bottom shaft		

Mechanism



1	Semi-circular sheet	4	Stopper post
2	Mechanism plate	5	Fiber coupling
3	Motor	6	Drive arm

3.3 Signage

CAUTION

Without marking on the moving leaf the glass pane is difficult to see.

Risk of personal injuries or material damages.

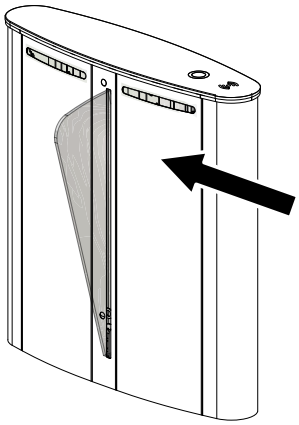
- It is a requirement in EN 17352 that the glass surface is clearly recognizable, for example with markings or stickers. Always place marking on the moving leaf.
- If the operator of the system does not want visible glass marking, the operator must confirm this in writing to the installer!

The signs must be attached from both the inside and the outside. To avoid malfunctions, there must be no signs or shading (for example smoked glass) in the detection range of the sensors.

Do a visual check that all necessary signage is applied and intact. Mandatory in the table indicates that the signage is mandatory by European directives and equivalent national legislation outside the European Union.

When the system is correctly installed and adjusted:

1. A product label, with the name and the serial number, is attached on the electronic board at the factory. Do a visual check that all necessary signage is applied and intact.



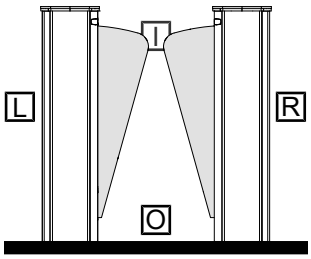
Exemplary position of the product label with the CE marking

2. If problems occur contact your ASSA ABLOY service representative.

3.4 Functional description

The definition of right (R) and left (L) is defined as viewed from the outside (O) to the inside (I). The inside (I) represents the area inside the building or the secure area. The Outside (O) represents the public area.

Entry cycle means the approved passage from the outside area (O) to the inside area (I). Exit cycle means the approved passage from the inside area (I) to the outside area (O).



Features:

- The barrier leaves are made of 8 -10 mm tempered glass, polycarbonate or acrylic.
- Galvanized coated steel frame and stainless steel housing panels.
- 10 mm tempered glass top lid.
- Illuminated indication pictograms.
- DC motor drive.
- Backup battery.

Functions and interface:

- Logic controlled interface, bi-directional operation.
- The entrance and the exit directions can be individually set as controlled, locked, or free before or after the installation.
- In control access mode, the access control system sends a release confirmation. The system opens the barrier leaves and lets one person access in the travel direction. After the passage of each person, the barrier leaves cause a blockage. The barrier leaves do not permit access in the entrance or the exit directions until the access control system sends a new release signal.
- After the release, the system closes the barrier leaves after an adjusted time if no transition or passage occurs.
- If people from both directions would like to pass through, the first person who activates the system takes precedence.

Multiple opening: An additional person is able to release the next passage cycle during an ongoing passage cycle in both directions. The system controller stores up to 255 releases and lets a corresponding number of individuals pass through.

- Relay outputs for counting passages in either direction.
- Modbus TCP / IP / RS 485 communication.
- Control for inputs and outputs through a potential-free contact.

Operation:

The system uses a motor to open and close the barrier leaves. The motors have an electric lock to prevent unauthorised entry.

To activate the system you can use a manual activator such as a push button or an automatic activator such as a card reader or biometric reader. It is also possible to activate the operator by simply walking along the lane (free exit or free entry). Once activated, the system will open and remain open for a set HOLD OPEN TIME (HOT) or until the authorised passage is completed. When the HOLD OPEN TIME has elapsed or the authorised person has completed the passage, the leaves will close. The system can be controlled using the optional touch panel or the optional push button panel.

Security:

- Tailgating and wrong way attempts will be blocked by the fast closing response of the leaves.
- Acoustic signal and fast closing response of the leaves can be set and combined in various ways.

Emergency and power cut:

In the event of an emergency, the system opens the barrier leaves (fail-safe). The system resets itself automatically when the emergency alarm stops or the power is switched back on. Cause of the backup battery (option), the system opens the barrier leaves once to keep the system open during the power-cut.

- The system has a maximum power consumption of 120W during operation and 12W during standby.
- No internal components, other than the power supply, carry high voltage. The internal voltage is 24/12V DC, depending on the model.

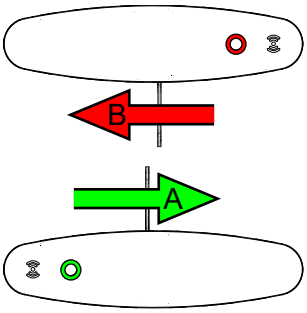
Access control integration:

- Any kind of access control system can control the system through dry contact or COM ports.
- Adjustable card reader and scanner area.
- Optional cuts on glass top is available for surface mount readers, reader holders and stands. Standard and custom designed posts for access controller integration can also have optional cuts.
- RFID icon positioned in the middle of reader installation area to indicate the card reader position clearly.
- LED lights indicate the operating status of the system in both directions. Red, green and blue indicator lights on both directions.
- An additional indicator on the top illuminates in red when the gate is locked. The indicator changes to green for confirmed passages or during free passage.

Direction LED indicator:

If the LED indicator is red, the passage is not available. When a card is read by the optional card reader, the LED indicator turns green, indicating that the corridor is now open.

In this example, direction A is open and therefore the LED indicator is green, while direction B is closed and therefore the LED indicator is red.

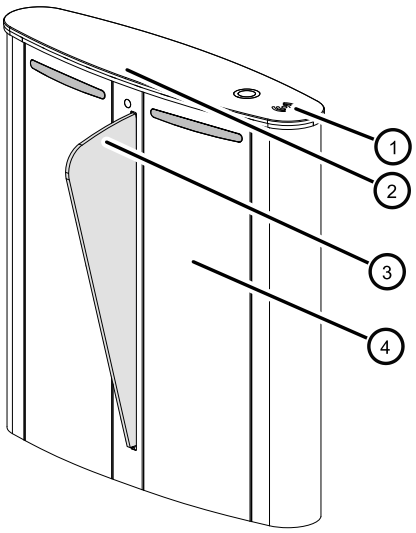


4 Options

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.

4.1 Location of options and accessories



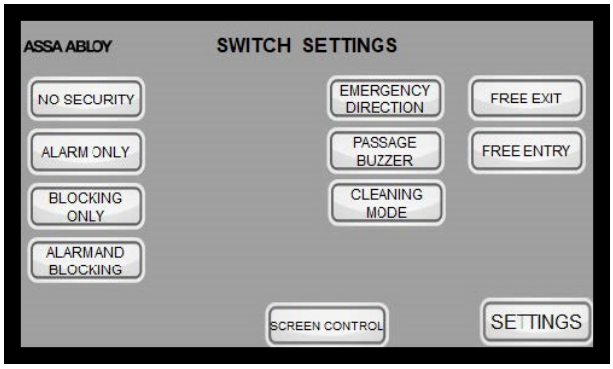
1	Reader bracket	3	Self-adhesive or engraved custom logo on leaves
2	Custom cut-off on top panel	4	Key switch for service / locking / override

Additional options

- Raised floor frame.
- Ramp plate.
- Remote control touch panel.
- Remote control button panel.
- Acrylic barrier leaves.
- Logo on glass and acrylic barrier leaves.
- Panels in stainless steel (black, bronze or gold).
- Card inserter.
- Access controller integration brackets on demand.

4.2 Remote control touch panel

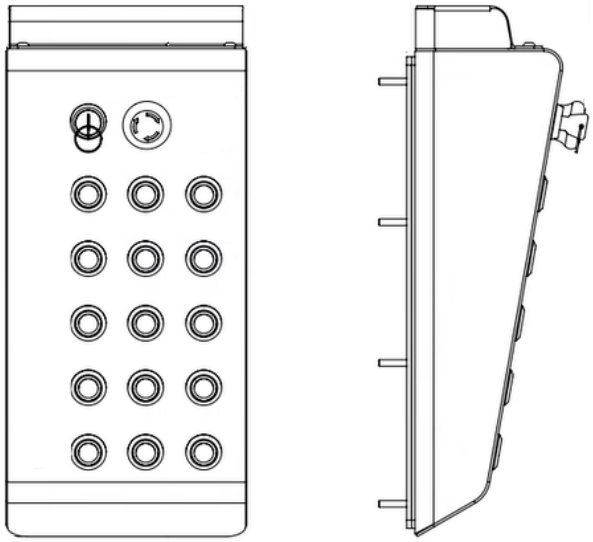
The remote control touch panel is an input and output unit for the operation and limited programming of the system, such as changing operating modes. The display shows information about the system with symbols and text.



Example

4.3 Remote control button panel

The remote control button panel is a unit for the operation of the system, such as changing operating modes.

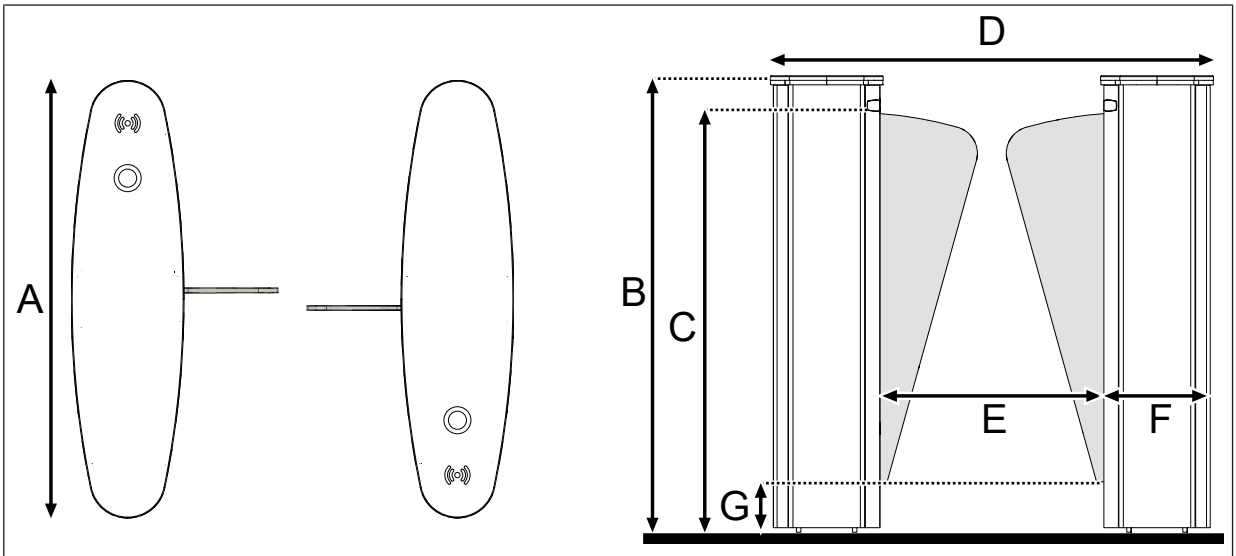


Example

5 Specifications

NOTICE

The dimensions are only approximate. The dimensions can be different, depending on the product variant and the options.



Total length (A):	971 mm	
Cabinet height (B):	998 mm	
Barrier leaf height to FFL (C):	916 mm	
Spacing between leaves and FFL(G):	101 mm	
Total width left system and right system (D):	1007 mm	1407 mm
Total width left system, center system and right system (D):	1760 mm	2160 mm
Clear passage width (E):	518 mm = 500 mm between top covers	918 mm = 900 mm between top covers
Cabinet width (F):	254 mm	
Spacing between leaves:	83 mm	
Weight per system:	85 kg	
Card reader maximum length (standard):	120 mm	
Card reader maximum length (optional):	170 mm	
Card reader maximum width:	100 mm	
Card reader maximum height:	60 mm	

Construction:	Steel
Frame:	Galvanized coated steel
Skin panels:	Stainless steel (Optional black, bronze or gold)
Top cover:	10 mm glass
Gate barrier leaf:	8 / 10 mm tempered glass / polycarbonate / acrylic
Side panels:	10 mm tempered glass

Mains voltage:	100-240 V AC
Frequency:	50-60 Hz
Control voltage:	24V DC (protective extra-low voltage)

Drive mechanism:	• 12V DC motor • Leaf motion sheet bar • Clutch assembly
Opening time /Closing time:	0.7 – 1.5 sec. (depends on leaf size)
Mean time between failures:	10.000.000
Communication:	• Modbus RS485

Temperature range - operating mode:	From -10° to +70° C
Temperature range - standby mode:	From 0° to +60° C
Humidity range:	From 15% to 95%
IP class:	IP 44

6 Inspection and maintenance

DANGER

Electric current.

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

- Make sure that only approved personnel work on the electrical system.
- Make sure that all poles are voltage free and that this is maintained for the duration of the work.
- Disconnect all poles from voltage before you start the work (cleaning, maintenance, replacement) on active parts of the electrical systems and the equipment.
- Keep moisture away from live parts. This can lead to a short circuit.
- Do not bridge fuses or put them out of operation.
- Do not connect the power supply or a battery until all work has been completed.
- Do not use a damaged supply cord. Only the manufacturer, its service agent or a similarly qualified person is permitted to replace a damaged supply cord.

CAUTION

Safety check necessary

Personal injuries or damages to the equipment can occur.

- Do not use the equipment if repair or adjustments are necessary.

Service and adjustments performed by your ASSA ABLOY approved representative makes sure that there is a safe and proper operation of your automatic system.

Remember to keep the Service Log Book and the Site Acceptance Test and Risk Assessment documents available. The Service log book and the Site acceptance test and risk assessment are used together.

It is important to record any maintenance operation.

Recommended minimum maintenance interval of once a year.

To help you fulfil the national and international requirements and to avoid malfunction and risk for injuries, perform a check of the following items:

- 6.1 Inspection on page 26
- Maintenance on page 27
- Signage on page 18

6.1 Inspection

6.1.1 Daily inspection

Test / inspection	Procedure	Expected result
Function	• Approach the system at normal speed, both from the inside and from the outside. • If available, check functions with the control units.	• Features and modes work.
Motion detector	• If necessary, clean the sensors (motion detectors), in particular the external sensor(s). • Make sure that the inside air is dehumidified. Steam or condense on the sensors can prevent the system from closing. Steam can come from warm moist inside air that condense on the external sensors. Wipe the external sensors dry if necessary.	• The sensor must cover the entire passage width. • System opening takes place at an early stage and at an appropriate speed, so that unhindered passage is possible.
Leaves / Panels / Covers	• Examine the condition of the parts.	• No damage.
Escape route	The law requires trained personnel to carry out these tests regularly. • Make sure that no object or function prevents the system from opening in the escape direction. • Make sure the escape route is clear for use. • If available, check the emergency alarm with the control units. • After deactivating the emergency alarm, allow the system to close and check that nothing is preventing the leaves from closing.	• Features and modes work.

6.1.2 Cleaning

Clean the product on a regular basis to maintain the optimum operation.

- Remove dust and dirt.
- Clean the surfaces three times/year with gentle (pH 5-9) non-polishing detergent and water.
- Use a soft non-abrasive sponge.
- Do not expose the product to alkalis. Both aluminium and glass are sensitive to alkalis.
- Do not clean with too much water. Operator, programme selector and sensor can be damaged and water can enter the profiles.
- Do not use detergents or abrasive additives.
- Do not scrub with materials like Scotch-brite, as this can cause mechanical damage.
- Document when the cleaning event.

6.2 Maintenance

6.2.1 Maintenance intervals

The table below shows the recommended interval in revolutions, when to replace parts during preventive maintenance. Talk to your ASSA ABLOY representative to learn more about our service offering.

Part	Revolutions	Action
Signage	If wear is detected.	Examine / Replace.
Covers	If wear is detected.	Examine / Replace.
Electrical components	In event of breakdown.	Examine / Replace.
Mechanical components	In event of breakdown.	Examine / Replace.

7 Troubleshooting

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 long exists.

NOTICE

The following list shows faults and their causes along with possible remedies that the operator can carry out. If the remedies are unsuccessful, the operator must disconnect the system from the mains supply and call for service.

Faults	Remedies	Causes
System without function.	• No mains supply. • Short circuit. • System control defective. • Motor damage. • PLC control defective. • Locking mechanism jammed.	• Examine the mains supply, call in a specialist if necessary. • Remove obstacle. • Call Service.
System does not perform the desired function.	• PLC control is defective or in an undefined state. • System control defective. • Fuse sensor defective or sensor triggered.	• Disconnect the system from the power supply and reconnect the power supply (Reset). • Remove the obstacle in the sensor's protection area. • Call Service.
Power failure.	• Fuse defective. • Main supply defective.	• Examine the fuse. • Examine the mains supply.

8 Taking out of service and disposal

8.1 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.

8.2 Dismantling and disposal

NOTICE

All parts must be separated, sorted by the type of material, and disposed of. Refer to local regulations and guidelines.

NOTICE

The systems can be completely disassembled in the reverse order.

The installation mainly consists of the following materials:

Metal components (aluminium, steel, and iron)

- Linking profiles, system leaf profiles, side profiles, various profiles, and reinforcement profiles.
- Gearbox, drive panel.
- Gear components and springs.
- Stainless steel casing, floor panel, and box recess for the floor installation.
- Various small parts like fittings, covers, optional spacers, and linking parts.

Glass

- Leaves and side panels.

Various electronic and electromechanical components

- Sensors.
- Control components and operator components.
- Batteries and rechargeable batteries.

Various plastics

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

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