ALVARADO
dormakaba Group

Compact Optical Turnstile
Argus V60

User Guide

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Contents

1 Information about this document

1.1 Content and purpose

This manual describes the sensor barrier Argus V60 from dormakaba.

This manual is part of the operating instructions according to the Machinery Directive 2006/42/EC.

This manual must be carefully read and understood before starting any work. Complying with all safety instructions and action steps provided in this manual is the basic prerequisite for safe working. The local accident prevention regulations and general safety conditions for the product's place of use also apply.

1.2 Target group

This document is intended for facility operators. The Facility operator definition [▸ 2.4.1] must be observed and the Facility operator's obligations [▸ 2.4.2] must be fulfilled.

1.3 Other applicable documents

Technical documentation

- Operating instructions, doc. no. 32928
- Installation manual, doc. no. 32929
- Service manual, doc. no. 32930

Unit-specific documents

- Project risk assessment, doc. no. 32931
- Expert inspection checklist, doc. no. 32932
- Test book, doc. no. 32933
- EC declaration of conformity, doc. no. 32934
- UKCA declaration of conformity, doc. no. 32993
- CB Scheme certificate Argus V60, doc. no. 32935
- Type examination certificate Argus V60, doc. no. 32936
- UL certificate, doc. no. 32937
- Replacement parts list Argus V60, doc. no. 32938

ETS22cc control unit

- Technical data sheet ETS22cc, doc. no. 31563
- Software manual (Service technician) Pavis3, doc. no. 31860
- Pavis online help, doc. no. 31889 (integrated into Pavis software)

Other documentation

- OPL01-05 operating panel installation manual, doc. no. 30078
- Sensor data sheets

Technical documentation for units with SafeRoute

- SafeRoute system description, doc. no. WN 059468 45532
- SafeRoute ESC system description, doc. no. 32735

Diagrams, electrical documentation, protocols

- Electrical documentation Argus V60, doc. no. 2040532404
- Project-specific drawings
- Project-specific electrical wiring diagrams and circuit diagrams

1.4 Document storage

This manual shall be kept by the natural or legal person who operates or owns the unit or has decisive power of disposal over its technical operation. Similarly, all supplementary documentation must be retained throughout the life of the product.

This document must be given to the facility operator.

1.5 Orientation in the document

This document contains the following features to help find specific topics:

- The table of contents at the beginning of the document offers an overview of all topics.
- The header contains the associated main section.
- Cross references indicate the number of the chapter in which additional information can be found in each case. Example [▸ 5.7].
- An index in alphabetical order is given at the end of the document.

1.6 Abbreviations

Unit-specific terms

CAN bus	Bus system (**C**ontroller **A**rea **N**etwork): for networking ETS components
IPC	**I**ndustrial **PC**
TSG	**T**oughened **s**afety **g**lass
PETG	**P**oly**e**thylene**t**erephtalate-**G**lycol
EMC	**E**lectro**m**agnetic **c**ompatibility
DIP	Switches that are located on boards and have a specific function depending on their position
IP	Protection class according to VDE 0710 DIN 40050 (**I**ngress **P**rotection)
MCBF[1]	**M**ean **C**ycles **B**etween **F**ailures
MTTF$_D$[1]	**M**ean **T**ime **T**o **F**ailure
MTBF[1]	**M**ean **T**ime **B**etween **F**ailures
OPL	**O**perating **P**anel
Pavis	Software for **P**arameterization and **Vis**ualization of ETS boards
XX dB	Unit noise emission
DBXXX	Passage width

Boards

ETS22cc	Control board (**E**lektronische **T**ür**s**teuerung or electronic door control, cc = **c**ommon **c**ontrol)
LVX2CAN	Processing board for light grid
ETS22LED	Lighting board (**E**lektronische **T**ürsteuerung, or electronic door control)
STV-ETS	Escape route board (**S**afeRoute **T**ürverriegelung, **E**lektronische **T**ürsteuerung – SafeRoute door locking, electronic door control)
ETS22cc	Control board (**E**lektronische **T**ürsteuerung or electronic door control, cc = common control)
ETS21io	Control board (**E**lektronische **T**ür**s**teuerung or electronic door control, io = **i**nput/**o**utput)
LVX2CAN-K3	Processing board

Escape route solution

SafeRoute	Escape route solution from dormakaba
DCW bus	Bus system (**D**orma **C**onnect and **W**ork): For networking SafeRoute components
SLI (Basic)	**S**afeRoute **Li**cense card (license level)
SCU	Emergency button board (**S**afeRoute **C**ontrol **U**nit)
SCU-AP	Emergency button with illuminated ring (**S**afeRoute **C**ontrol Unit - **A**uf**p**utz – surface-mounted)

Drive and locking device

RA10-M05	Drive and locking device
RA10	Tooth clutch (**R**ohr**a**ntrieb, or tubular drive)
M05	**M**otor

Companies/organizations

CENELEC	European Committee for Electrotechnical Standardization
CSA	**C**anadian **S**ecurities **A**dministrators organization for safety and performance standards as well as certification
FTA	**F**achverband **T**ürautomation (Association for Door Automation)
IEC	**I**nternational **E**lectrotechnical **C**ommission
ICS	**I**nternational **C**lassification for **S**tandards
ISO	**I**nternational **S**tandardization **O**rganization
UL	**U**nderwriters **L**aboratories (North American safety standards)
VDE	**V**erband **d**er **E**lektrotechnik (Association for Electrical, Electronic & Information Technology)

1.7 Change log

The most important changes to the previous versions are listed below:

Version	Updated	Brief description
Index -	01/2022	Document creation

1.8 Symbols used

1.8.1 Danger categories

DANGER

Describes an imminent danger resulting in serious injury or death.

WARNING

Describes a potentially dangerous situation that may result in serious injury or death.

CAUTION

Describes a potentially dangerous situation that may result in minor injury.

NOTICE

Describes a potentially damaging situation in which the product or something in its vicinity may be damaged or that could result in malfunction.

1.8.2 Symbols (manual)

The symbols shown can be found in the instruction manual.

Tips on usage and useful information

Cross references indicate the number of the chapter in which additional information can be found in each case. Example [▸2.2]

Action steps

✓ Requirement

1. Step 1

⇨ Intermediate result

2. Step 2

⇨ Result

1.8.3 Symbols (unit)

The symbols shown can be found on the unit.

The **electrical voltage** symbol is located on or next to components that can carry mains voltage.

The symbol **Main protective conductor connection** is located next to components that are a main protective conductor connection. According to ISO 7000/IEC 60417, register number 5019

The **ground connection** symbol is located next to components that are ground connections. According to ISO 7000/IEC 60417, register number 5017

The **equipotential bonding connection** symbol is located next to components that are an equipotential bonding connection. According to ISO 7000/IEC 60417, register number 5021

1.8.4 Symbols (identification plate)

The symbols shown can be found on the identification plate.

The **CE marking** is not a (certification) “seal”, but an administrative mark that expresses the unrestricted marketability of accordingly marked industrial products in the European Single Market.

The **UKCA marking** is not a (certification) “seal”, but an administrative mark that expresses the unrestricted marketability of accordingly marked industrial products in the United Kingdom's internal market.

CB The **IEC CB Scheme** (CB marking) is a multilateral agreement that facilitates market access for manufacturers of electrical and electronic products.

The **RCM marking** (new single compliance) indicates the device’s compliance with the ACMA technical standards for telecommunications, radio communications, EMC and EME.

The **EAC marking** certifies the conformity of a product with all requirements of the harmonised technical regulations of the Eurasian Economic Union.

The **UL markin**g certifies successful testing by UL.
Products/units with this symbol on their identification plate may be sold in the USA and Canada (UL file number E363956).

The **TÜV NORD CERT** mark certifies compliance with legal requirements and voluntary standards.

The unit may only be used at heights under 2000 m.

The unit must not be used in tropical climates.

2 Security

2.1 Intended use

The following intended uses are provided for the units in the standard version:

- The door system is used for access control and separating persons.
- Due to the design, unauthorized passage (e.g. climbing over, creeping under or passage together with a second person) can be made more difficult but never completely prevented. It is therefore essential that the unit be placed where security personnel can see it and access it, so that they can intervene in the event of unauthorized passage.
- After entry or exit authorisation has been granted, the individual can pass through the unit at a reduced pace.

Furthermore, the following intended uses are possible if the necessary measures defined in the chapter Optional components [▸ 3.5.2] are fulfilled.

- It is possible to pass through the door system with bulky items (= boxes, luggage, trolleys).
- The door system can be positioned in escape routes.
- Unauthorized passages are detected by the system and an alarm is triggered.

2.2 Improper use

Any intentional misuse which is not described in the chapter Intended use [▸ 2.1], which goes beyond this or which is performed without express approval from dormakaba is considered improper use.

Furthermore, all applications and installations that are not performed precisely in accordance with the specifications of this manual and its other applicable documents are considered improper uses. Deviations from this can be approved in writing by quality management after submittal of a risk assessment according to DIN EN ISO 10100 and after detailed technical clarification.

A few examples of improper use are listed below:

- The unit could be used in an emergency and escape route without the optionally available SafeRoute.
- The unit could be operated without the safety devices provided by the manufacturer.
- People could try to manipulate or circumvent the safety devices.
- The unit could be set up in an unmonitored area.
- Pedestrians may try to run through the unit.
- The unit could be used as a transport route even though the passage width is too narrow.

2.3 Reasonably foreseeable misuse

The following uses are considered to be reasonably foreseeable misuse:

- Unintentional misuse that is not described in the chapter Intended use [▸ 2.1]
- Unintentional misuse that goes beyond the use described in the chapter Intended use [▸ 2.1]
- Misuse that occurs without express approval from dormakaba

Small children and people who don't understand how to use the unit properly may only pass through the unit when accompanied by an individual who is responsible for them.

The supervisory staff are required to prevent all misuse and to inform the parents of children and infants of their duty of supervision and care and to prevent their children from playing in or on the unit. The supervisory staff must be briefed in such a way that foreseeable operating errors are reliably prevented by the gate personnel.

- Small children could crawl in the area of the unit.
- Small children could stride through the unit alone and/or unsupervised.
- Children could play inside the unit, either when at a standstill or when moving.
- Persons passing through the unit could increase the rotary speed by pushing open the door wing/crossbar (pushing open).
- Wheelchair users may want to pass through the unit, even though the passage width is too narrow.
- People passing through the unit could reduce or halt the rotary speed by holding the door wing/crossbar (holding open).
- Persons passing through the unit could increase the rotary speed by pushing against the door wing (pushing against).
- Children could hold onto the door wings/crossbars to pass through at the same time (e.g. “ride carousel”).
- Sensors may cause false alarms with respect to object detection due to external geometries (e.g. long ladders, skis, surfboards, etc.).
- False alarms could occur as a result of suspect behavior during authorised passage.
- Individuals may turn around within the unit during authorised passage.
- Individuals may leave objects behind in the corridor.
- Individuals may intentionally or unintentionally try to pass against the permitted direction of passage.

2.3.1 Facility operator behavior in the event of misuse

Consequences of misuse
Despite the low-energy drive, the coincidence of unfavorable influences may cause incidents that make it necessary for the supervising staff to intervene in order to clarify the situation.

In the event of misuse, it may be that individuals use their own kinetic energy to

- walk against the blocked door wing and collide with it,
- walk against the blocked door wing and trip,
- attempt to push themselves through between the closing doors, and get caught.

This type of misuse can in rare cases result in the pedestrian colliding with the closing door wing, and pushing it against the drive which is only pushing with minimal force. The door system must treat this movement as an attempt to break through. As a result, an alarm is triggered and the door wings are immediately stopped and blocked for 1 second. After this time has expired, the locking mechanism opens again. If the door wing is again moved against the motor direction, the door wings lock for 2 seconds and then open again. From the 3rd breakthrough attempt, the locking time is 4 seconds. This locking time is then applied to all further attempts to break through.

In addition to this setting, dormakaba can also parameterize other customer wishes.

Recommended action for the supervisory staff
- In these or similar incidents, keep calm and be aware of the situation.
- Calm anyone who has become stuck.
- The door drive itself creates such minor forces that an individual cannot be injured by the drive (provided that the drives have been properly checked and maintained).
- If necessary, disconnect the unit, or switch off the current to the unit.
- Where applicable, help to release entangled pieces of clothing or luggage without the use of force (while the unit or current to the unit is disconnected).

2.4 Role of facility operator

2.4.1 Facility operator definition

The facility operator is the person who operates the unit and all products installed in it for commercial or business purposes themselves or allows third parties to use it and carries the legal product responsibility for the safety of the users, personnel, or third parties during its operation, see Personnel qualification [▸ 2.5].

2.4.2 Facility operator's obligations

For every project, the facility operator must complete or commission a project risk assessment prior to ordering the unit. For details on project risk assessment see chapter Other applicable documents [▸ 1.3]

In addition to the safety instructions in this manual, the safety, occupational health and environmental protection regulations applicable for the unit’s area of use must be observed.

In the process, the following applies in particular:

- The facility operator must stay informed about the applicable occupational health and safety regulations and carry out a risk assessment to investigate additional hazards caused by the special working conditions at the unit’s place of use. They must implement the risk assessment in the form of operating instructions for the unit’s operation.
- For the unit’s entire period of use, the facility operator must ensure that the operating instructions they provide correspond to current regulations and adapt the operating instructions if necessary.
- The facility operator must ensure the unit’s safe accessibility.
- The facility operator must ensure that the safety equipment is always accessible.
- The facility operator must ensure that a unit suitable for use as an emergency exit is marked as such, if the unit is to be used as an emergency exit.
- The facility operator must commission dormakaba, or personnel trained to the specifications of dormakaba, to ensure that the tests from the expert checklist and the test book are carried out within the specified time intervals, see Personnel qualification [▸ 2.5].
- The facility operator must provide the personnel they have commissioned with all the information needed for the specific work.

Furthermore, the facility operator is responsible for ensuring that the unit and all products installed in it are always in perfect technical condition. Therefore the following applies:

- The facility operator must have all safety equipment checked for proper functionality and completeness at least once a year.
- The facility operator must ensure that the results of the locally required tests are entered into the test book.
- The facility operator must check the labelling for legibility and completeness and replace it if necessary.
- The facility operator must ensure that the maintenance plan of the unit is adhered to.
- The facility operator must ensure that the unit’s cleaning plan is adhered to.
- On completion of mounting, the facility operator was instructed by the unit’s manufacturer in its operation and function and has received a handover certificate thereof, which they confirmed with their signature.
- The facility operator must keep this manual, as well as all other applicable documents, throughout the unit’s service life, see Document storage [▸ 1.4].

2.5 Personnel qualification

WARNING

Risk of injury due to insufficient personnel qualification

Insufficiently qualified personnel are not able to assess the risks associated with handling the unit, and may expose themselves and others to the danger of severe injury, including death. If unqualified personnel work on the unit, or are located in the danger area of the unit, there are dangers that may cause severe injuries and significant property damages.

- All work in this manual must be carried out by personnel instructed by the facility operator.
- All work beyond that described in these manual must be carried out by dormakaba or by dormakaba trained personnel.
- All work in this manual must be carried out by dormakaba or by dormakaba trained personnel.
- Arrange for all work described in this manual to be carried out by dormakaba personnel or companies appointed by dormakaba.
- Keep insufficiently qualified personnel away from the danger areas.
- If anything is unclear, contact dormakaba.

Due to their qualifications, the personnel know the necessary personal protective equipment and wear it without being asked when carrying out the activities.

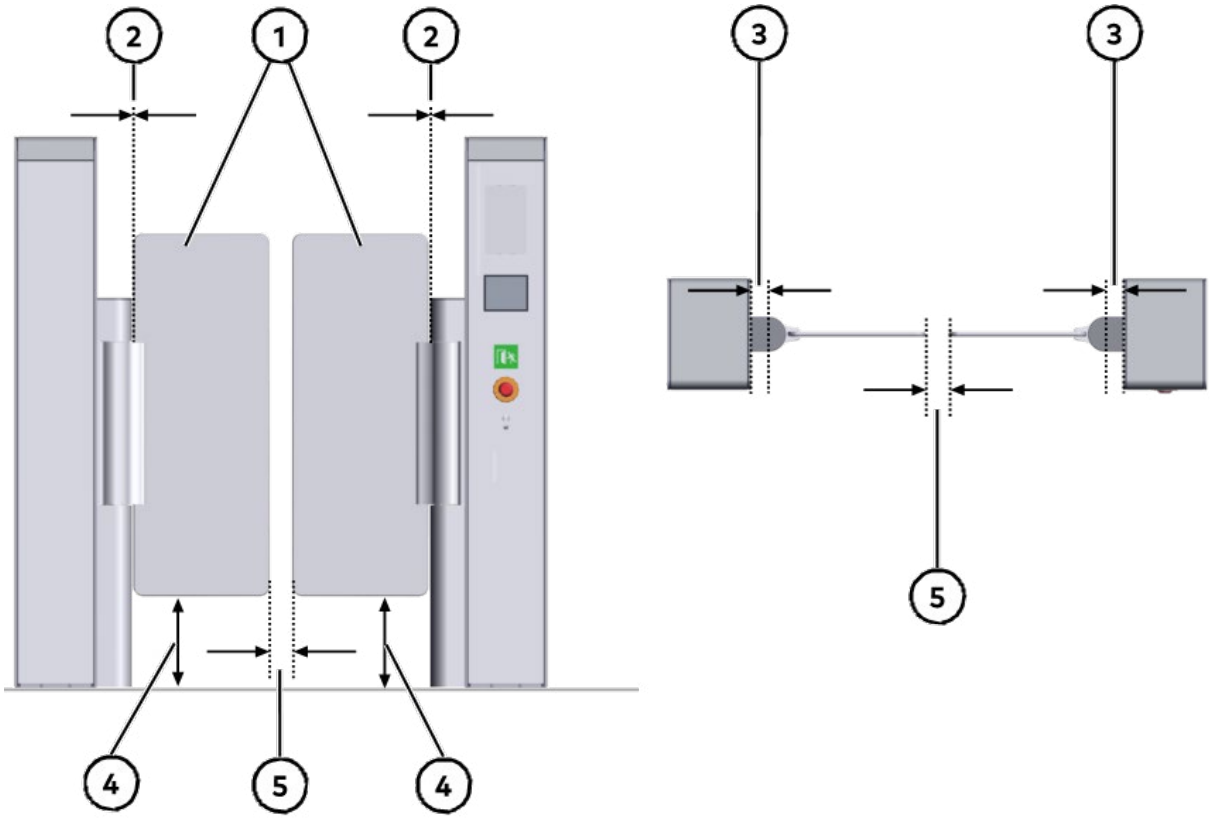
Logistics personnel
The logistics personnel's tasks are the correct storage, delivery and transport of the delivery. The logistics personnel have sufficient experience in handling lift trucks and have the necessary driving licenses to drive them. Furthermore, they know the regional and country-specific rules for the sorted separation and disposal of materials.

Operating personnel
The operating personnel's tasks are the operation and the control of the units' intended use. The operating personnel often work from a gate.

Cleaning personnel
The cleaning personnel's task is to clean the units from the outside. The cleaning personnel are familiar with all health and safety and environmental regulations that must be observed when handling the cleaning agents used.

2.6 Danger zones

This chapter uses a passage side to show the danger zones.
On the opposite passage side, these danger zones are mirror-inverted.
The impact of these danger zones is minimized by the Safety equipment [▸ 2.7]



1 Front edge of the door wing (main closing edge)
Type of danger Impact, crushing

2 Trapping point between the drive column and door wings
Type of danger Crushing

3 Fixed closing edge opposite the main closing edge (opposite closing edge)
Type of danger Crushing

4 Trapping point between the bottom edge of the door wing and the floor
Type of danger Crushing

5 Area between the door wings
Type of danger Crushing

2.7 Safety equipment

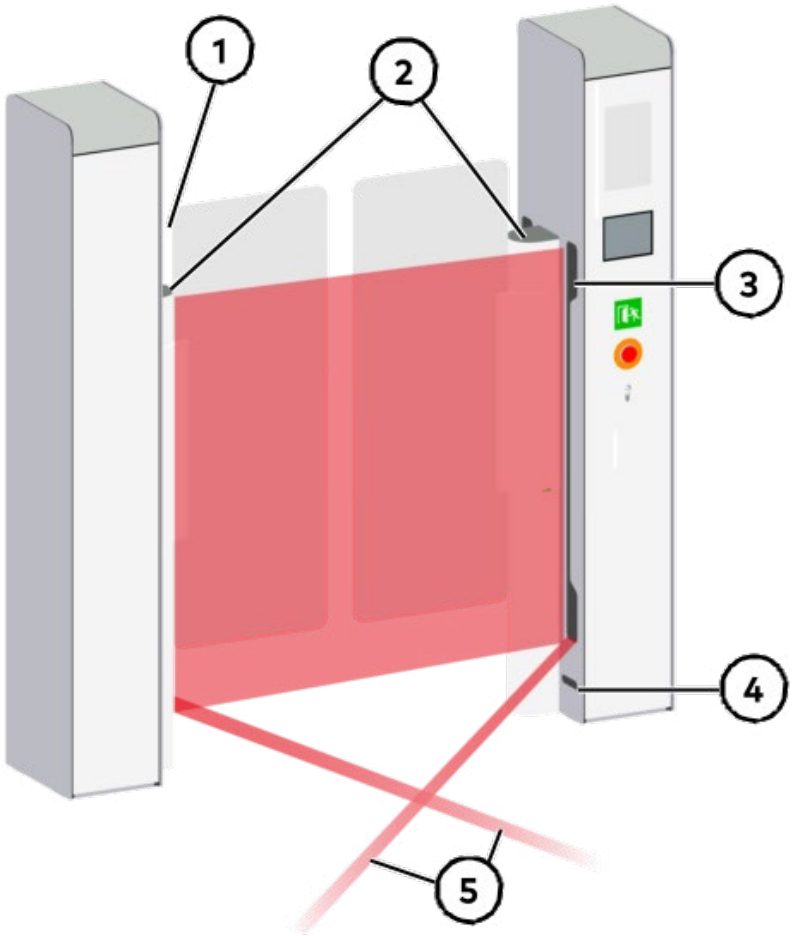
CAUTION

Risk of injury without adequate safety equipment

Inadequate safety equipment poses a risk of injury.

- Before order placement, a project risk assessment must take place, see Other applicable documents [▸ 1.3]. This will be used to determine the necessary safety equipment for the respective user group and minimise the residual risks to the greatest possible extent.

2.7.1 Argus V60 safety equipment



1 Safe distances
2 Low energy drives
3 Vertical sensor strips
4 Horizontal sensor strips
5 Presence sensors for the foot area

2.7.2 Security levels

The Argus V60 sensor barrier in the standard version monitors passage in one direction and offers security level 3.0. Optionally, the Argus V60 sensor barrier can monitor passage in both directions and thus offers security level 3.1.

The desired security level is determined during project planning and the Project risk assessment [▸ 2.7.5.1].

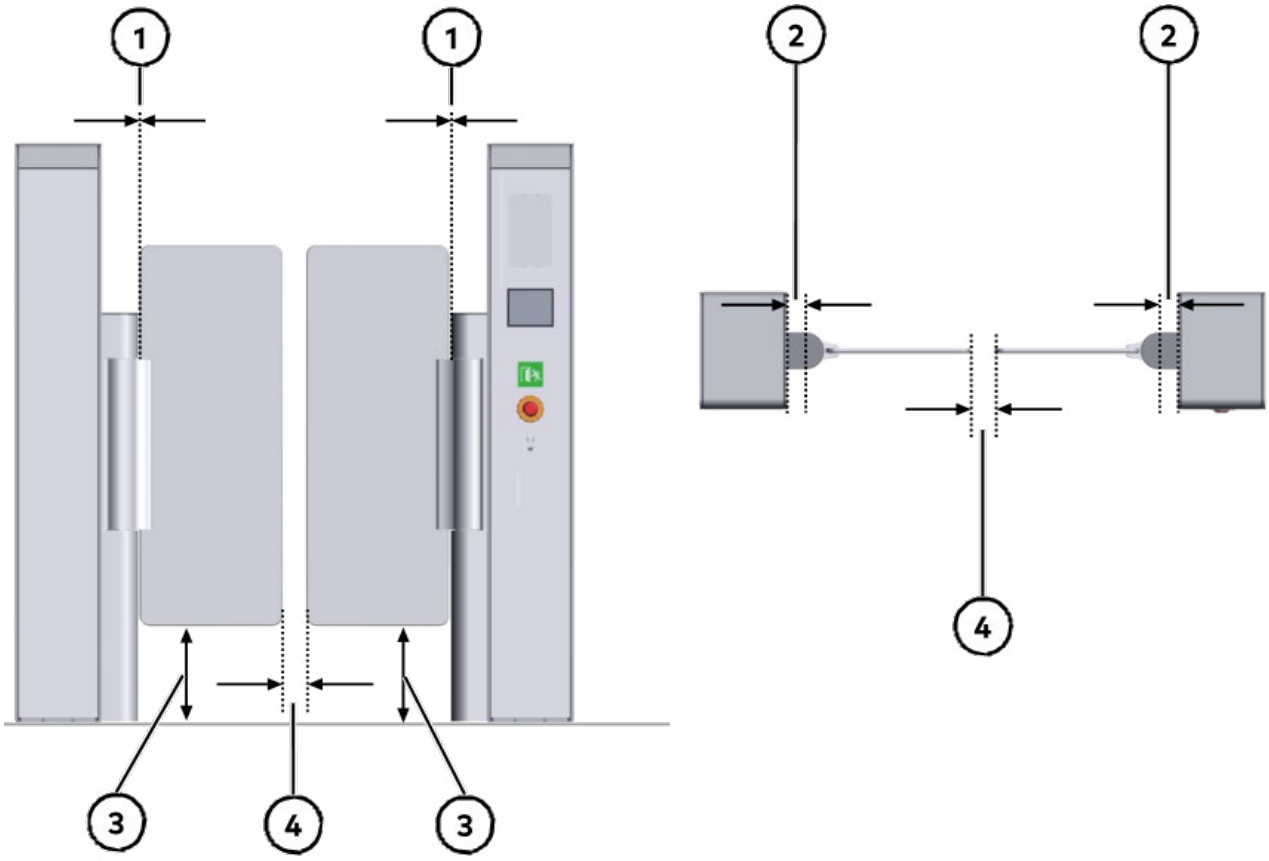
Based on Pavis, the input and output channels as well as the parameters of the unit can be set according to customer requirements. These settings allow Personal safety [▸ 2.7.3] and Object protection to be regulated within the current security level.

Security level	3.0 – unidirectional	3.1 – bidirectional
Vertical sensor strips	1× entrance side	2× entrance and exit side
Horizontal sensor strips	2× entrance and exit side	2× entrance and exit side
Presence sensors for the foot area	2 sensors for the entrance area and 2 sensors for the exit area	2 sensors for the entrance area and 2 sensors for the exit area

With security level 3.0, separation works in the entry direction. The direction of separation cannot be changed. In security level 3. 1, separation works both in the entry direction and in the exit direction.

2.7.3 Personal safety

2.7.3.1 Safe distances



1 Between drive cover and door wings: ≤ 5/16" [8 mm]

2 Between guiding element and door wing: ≥ 1" [25 mm]

3 Between door wing's bottom edge and floor: ≥ 7-1/8" [180 mm]

4 Between the door wings: ≥ 2" [50 mm]

2.7.3.2 Low-energy drive

The drive and locking device used is a low-energy drive. After the unit has been taught in, the following low-energy requirements are met:

- The static force while opening or closing is not greater than 67 N.
- The kinetic energy of the unit is not greater than 1.69 J (see formula in EN 16005).

2.7.3.3 Personal protection sensors

The sensors for personal protection consist of the horizontal sensor strip below the door wing and the presence sensors for the foot area.

The combined evaluation of these sensors prevents the door wings from closing while a person is passing through. The person is thereby protected from being hit or crushed. The door wings can only open or close when the protection sensor field is not occupied.

Door wings open/close at 'slow speed'. This corresponds to 30% of the permitted speed (critical speed).

2.7.4 Object protection

	Security level	Security level
Function		
Opposite-direction detection[2]	–	●
Tailgating detection	●[3]	●
Climb-over protection	–	–
Sneak-by guard	–	–
Passage with trolley	●	●
Night mode	●	●
Distance between people for separation[4]	0" [0 mm]	0" [0 mm]

Key
● = included in the standard o = optionally available – = not available
2 Opposite-direction detection using horizontal sensors
3 In unidirectional units, there is no exit tailgating
4 People with leg overlap are detected

Opposite-direction detection
The sensors detect people approaching the unit from both directions.

Tailgating detection
The vertical and horizontal sensor strips, in combination with the horizontal light grids and presence sensors for the foot area, offer the most reliable separation (security level 3). People standing closer than 30 cm to each other may not be detected until they are already passing through due to the unit's tight geometry.
In this case, however, the system generates an alarm message that allows the supervisory staff to intervene.

Climb-over protection
There is no sensor monitoring of the climb-over protection.
Climb-over protection is ensured by the unit's design in conjunction with the prescribed, monitored unit location.
Optionally available door leaf extensions can further improve the climb-over protection.

Sneak-by guard
There is no sensor monitoring of the sneak-by guard.
The sneak-by guard is ensured by the distance between the lower edge of the door wing and the floor.

Passage with trolley
The intelligent sensor system reliably distinguishes between people and any objects they are carrying, so that people can pass through the unit even with several trolleys. Depending on the unit's parameterisation and frequency of use, false messages cannot be completely ruled out.

2.7.5 Testing the safety equipment

2.7.5.1 Project risk assessment

For every project, the facility operator must complete or commission a project risk assessment prior to ordering the unit. For details on project risk assessment see chapter Other applicable documents [▸1.3]

2.7.5.2 Expert inspection and test book

Within the scope of EN 16005 and ASR A1.7 (valid only in Germany), an expert inspection must be carried out annually. dormakaba recommends that this be carried out as part of technical maintenance (min. once a year). To safeguard the safe operation of the unit throughout its useful life, dormakaba also requires an expert inspection to be performed beyond the aforementioned scope. The country-specific standards and guidelines must be observed beyond the aforementioned scope.

Expert inspections must only be carried out by experts. The initial expert inspection, known as the initial inspection, is carried out when the unit is commissioned. The results of this and all other inspections are documented in the test book.

Definition of an expert
An expert is someone who, on the basis of their specialist training and experience, has acquired extensive knowledge of the safe operation of automatic door systems as well as of the national and international regulations for personal safety, and continues to update this knowledge to reflect the state of the art.

Experts must be objective in their assessment of the operating safety of the door system.

Expert training (only valid for Germany)
Expert training must be carried out in accordance with the guidelines of the FTA, Part B, whereby prospective experts must attend and pass a course with a final written exam. This course can be completed at dormakaba or at any other training facility recognized by the FTA.

For required documents, see Other applicable documents [▸1.3]
- Expert inspection checklist
- Test book

Carrying out an expert inspection
1. Check the unit in accordance with the expert inspection checklist.
2. Enter the findings in the expert inspection checklist.
3. Fill in the **Recurring inspection and maintenance** table in the test book. The **Initial inspection prior to commissioning** table must be completed during the initial inspection.

Observe the following during the expert inspection
The expert must fill in an expert inspection checklist for each inspection and sign it.

The facility operator must countersign the expert inspection checklist. The signed expert inspection checklist serves as a record for the expert that the expert inspection was accepted.

The facility operator must make a copy of the signed expert inspection checklist and retain it together with the test book.

Retention period
The expert inspection checklist must be stored for at least one year until the next inspection.

Observe the following when documenting the expert inspection in the test book

- The test book serves as a record for expert inspections and maintenance.
  dormakaba recommends that an expert inspection is also carried out as part of maintenance.
- The facility operator must countersign all entries in the test book.
- The initial inspection must be documented in the test book.
- The result of each expert examination must be documented in the test book.
- The test book must be kept by the facility operator for the entire service life of the unit.
- The test book must be accessible to authorities at any time.

Identification of defects or deviations from the current state of the art

If defects or deviations from the current state of the art are identified during the expert inspection, the following measures must be taken:

- The expert shall request the facility operator to rectify any defects or deviations.
- The facility operator requests an estimate from the relevant dormakaba partner.
- In the event of serious defects, a note must be entered in the test book recommending that the unit be decommissioned. The unit must not be decommissioned unless the facility operator has given their express consent.

3 Product description

3.1 EC declaration of conformity

This chapter is only an extract from the fully declaration of conformity. This has the doc. no. 33004

dormakaba Deutschland GmbH
Nikolaus-Otto-Str. 1
77815 Bühl
Deutschland

hereby declares that the described product complies with the provisions of the listed EC Directive (s) and that the standards and/or technical specifications referred to below have been applied.

Directives:

2006/42/EG	Machinery Directive
2014/30/EU	EMC Directive
2011/65/EU	RoHS2 Directive

The technical documentation is available from the Product Compliance Manager at:
productcompliance.dach@dormakaba.com

Harmonised European standard, national rule:

DIN EN ISO 12100: 2011-03

DIN EN 16005: 2013-01 and Corrigendum 2015-10

DIN EN 60335-2-103: 2016-05

DIN EN ISO 13849-1: 2016-06

DIN EN ISO 13849-2: 2013-02

DIN EN 61000-6-2: 2005 and Corrigendum: 2011

DIN EN 61000-6-3: 2007 and A1: 2011

3.2 UKCA declaration of conformity

This chapter is only an extract from the fully declaration of conformity. This has the doc. no. 33005.

dormakaba Deutschland GmbH
Nikolaus-Otto-Str. 1
77815 Bühl
Germany

hereby declares that the described product complies with the provisions of the listed EC Directive (s) and that the standards and/or technical specifications referred to below have been applied.

Directives:
Supply of Machinery (Safety) Regulations 2008

Electromagnetic Compatibility Regulations 2016

RoHS, The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Regulation 2012

The technical documentation is available from the Product Compliance Manager at:
productcompliance.dach@dormakaba.com

Harmonised European standard, national rule:

DIN EN ISO 12100: 2011-03

DIN EN 16005: 2013-01 and Corrigendum 2015-10

DIN EN 60335-2-103: 2016-05

DIN EN ISO 13849-1: 2016-06

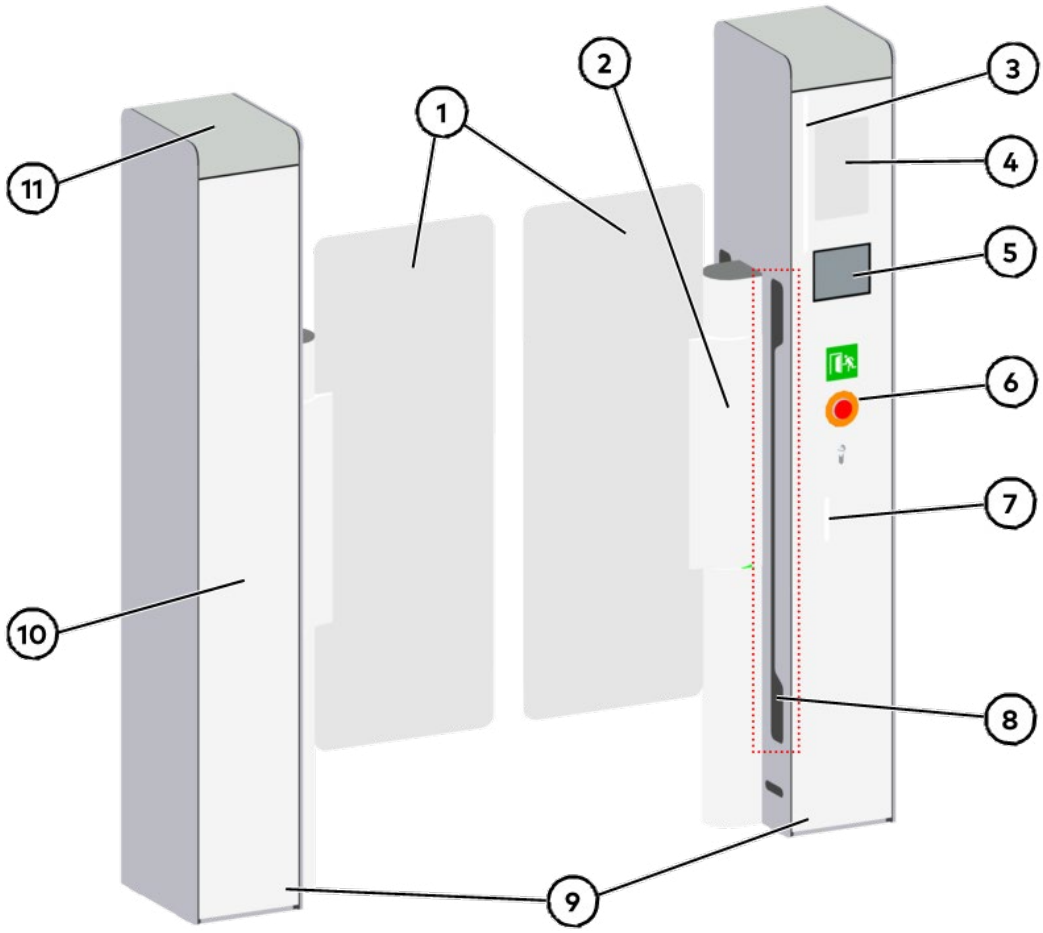
DIN EN ISO 13849-2: 2013-02

DIN EN 61000-6-2: 2005 and Corrigendum: 2011

DIN EN 61000-6-3: 2007 and A1: 2011

3.3 Overall view

3.3.1 Argus V60



1	Door wing	7	Status light (optional)
2	RA10-M05 drive and locking device	8	Sensor window
3	Chasing light (optional)	9	Cover, front
4	Card reader (optional)	10	Cover, side
5	Document reader (optional)	11	Cover
6	SafeRoute (optional)		

3.4 Equipment overview

Construction		
Technical data	See Technical specifications [▸ 3.8]	–
Dimensions of the product available if required	See Dimensions available if required [▸ 3.5.2.4]	o
Escape route option	See SafeRoute [▸ 3.5.2.5]	o
User Guidance		
Door wing lighting	See Door wing lighting [▸ 3.5.2.6.3]	o
Chasing light	See Chasing light [▸ 3.5.2.6.1]	o
Card reader lighting	See Card reader lighting [▸ 3.5.2.6.2]	o
Status display	See Status display [▸ 3.5.2.6.4]	o
Interfaces		
OPL-05	See OPL-05 operating panel [▸ 3.5.2.1]	o
Card reader	See Card reader [▸ 3.5.2.2]	o
Document reader	See Document reader [▸ 3.5.2.3]	o
Preparation of document reader		o
Sensors		
Opposite-direction detection	Using horizontal sensors, see Horizontal light grids [▸ 3.5.1.1.2]	o
Separation of persons	Using vertical sensors (unidirectional), see Vertical light grids	●
	Using vertical sensors (unidirectional), see Vertical light grids	–
Presence sensors for the foot area	See Presence sensors for the foot area	●

● = included in the standard o = optionally available – = not available

3.5 Components

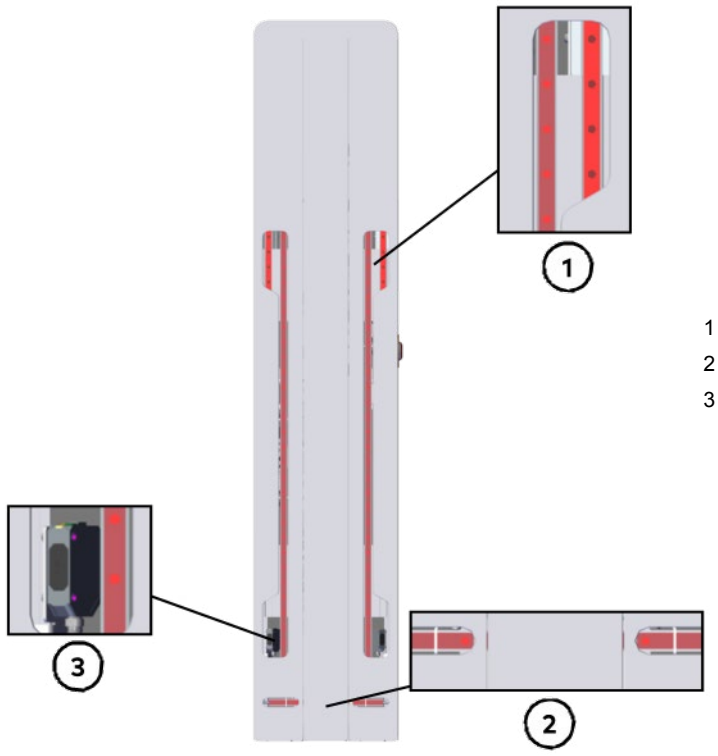
3.5.1 Standard components

3.5.1.1 Sensors

There are horizontal and vertical sensors aligned opposite each other on both sides of the passageway. This creates vertical and horizontal light grids for personal and property protection.

In **unidirectional** units, the vertical sensor strips are only installed on the entrance side of the drive and locking device.

In **bidirectional** units, the vertical sensor strips are installed on the entrance and exit sides of the drive and locking device.



1 Vertical sensor strip
2 Horizontal sensor strip
3 Presence sensors for the foot area

3.5.1.1.1 Vertical light grids

The vertical light grids are created by the vertical sensor strips, which are located in the two side elements as standard.

The vertical light grids are used for the opposite-direction detection and the separation of people. Due to the geometric arrangement, the detection of passages, additional persons, trolleys and opposite-direction movements is significantly improved. This significantly reduces the possibility of false alarms.

3.5.1.1.2 Horizontal light grids

For a description and components of the system, see Security level 1.

The horizontal light grids are standard and are created by the horizontal sensor strips located in the two side elements.

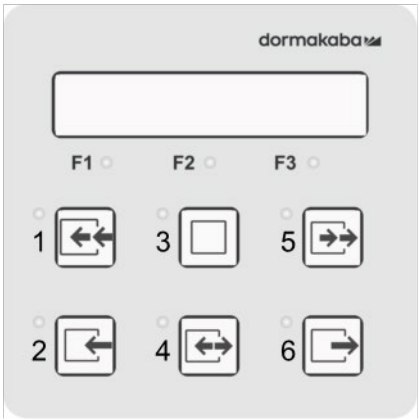
The horizontal light grids have the function of enforcing configurable protection behavior as long as a passerby is in the swinging area. For example, the door wings can be held in their current position or closed very slowly.

The horizontal light grids have the following **application limits**:

- Trolleys and luggage can be detected as additional persons. This may trigger false alarms.
- If the distance between people is < 12-1/2" [320 mm], two people may be identified as one person.

3.5.2 Optional components

3.5.2.1 OPL-05 operating panel



1. Continuous release entry button*
2. Single release entry button
3. Block button
4. General release button
5. Continuous release exit button*
6. Single release exit button

* This button can also trigger "permanently open" depending on the parameters set for the unit.

The keypad on the OPL-05 operating panel may be configured differently from the standard. For the assignment of the symbols on the keys, see chapter Operation modes [▸ 4.1].

3.5.2.2 Card reader

The card reader is clamped in a holder inside the unit and mounted behind glass with the dormakaba RFID symbol. Depending on unit's or the covers' choice of colors, dormakaba specifies black or white glass in the presetting. The card reader is thus protected and will show no traces of use on the surface.

The glass cover's color can be changed from black to white or from white to black.

The card reader's maximum possible size is 5-7/8" x 3-1/2" x 1-3/16" [150 mm x 90 mm x 30 mm].

The RFID symbol can be illuminated white-red-green if desired, see User guidance [▸ 3.5.2.6].

3.5.2.3 Document reader

The ATR200 document reader can read 1D-barcodes, e.g. EAN codes, and 2D barcodes, e.g. QR codes on smartphones/smartwatches/tablets or paper tickets.

3.5.2.4 Dimensions available if required

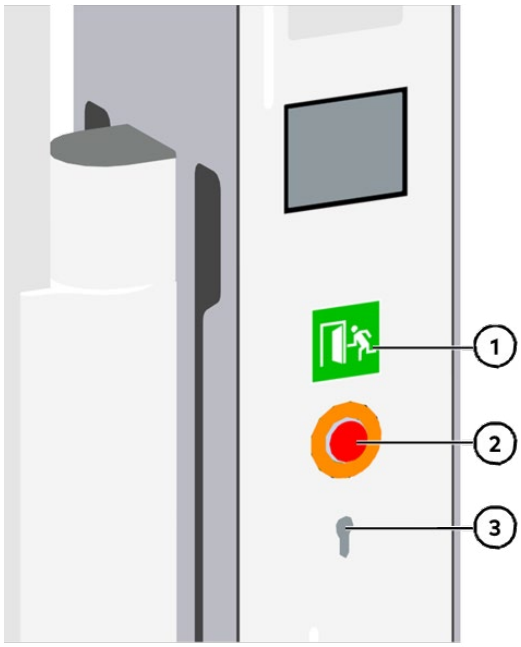
In addition to the dimensions given in the Technical specifications [▸ 3.7] chapter, the following optional dimensions are available.

Extended passage widths (sensor-monitored)	35-1/2" [900 mm] 36" [915 mm] 39-3/8" [1000 mm]
Extended passage widths (not sensor-monitored)	39-3/8" - 47-1/4" [1001 - 1200 mm]
Upper edge of door wing:	47-1/4" [1200 mm]

3.5.2.5 SafeRoute

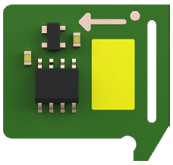
SafeRoute is the escape route solution from dormakaba

If necessary, the passage is released via the emergency button. The door wings are moved in the escape direction in the first 500 ms after triggering. The locking and the motor are then disconnected via the STV-ETS escape route board. The door wings are then freely movable.



1. The escape route symbol is an actively illuminated escape route sign in accordance with EN 13637. The escape route sign also meets the requirements of EltVTR.
2. The emergency button serves as the control and monitoring centre of the SafeRoute system and, in conjunction with the key switch, the electrical door lock and the license card, fulfils the requirements of DIN EN 13637 and EltVTR.
   The SafeRoute system's status is indicated by the illuminated ring located around the emergency button.
3. The key switch is used to reset an alarm.

All components of the SafeRoute system are connected via the DCW bus. This four-wire control cable is prepared ex works in the unit and also supplies the DCW components with power.



The "SLI Basic" license card is included with the escape route system in an envelope and must be inserted for commissioning.

The license card enables the control of up to 4 door locks and a total of 4 emergency buttons.

The "SLI Basic" license card is required for ESC products and can be recognized by its yellow color marking.

3.5.2.6 User guidance

Depending on the unit status, the user guidance lights up in the colors white, red and green as standard, but can be adapted for any project as needed.

The behavior of the optional accessories for user guidance is described in the chapter Operation modes and functions [▸ 4].

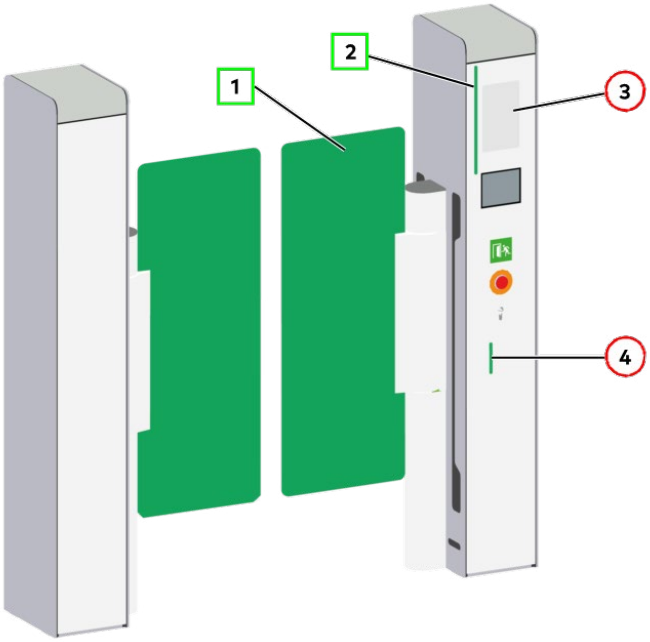
3.5.2.6 User guidance

Depending on the unit status, the user guidance lights up in the colors white, red and green as standard, but can be adapted for any project as needed.

The behavior of the optional accessories for user guidance is described in the chapter Operation modes and functions [▸ 4].

Overview of lighting installations for user guidance

In this overview, the standard installed components are marked with a red circle and the optionally available components with a green square.



1 Door wing lighting [▸ 3.5.2.6.3]
2 Chasing light [▸ 3.5.2.6.1]
3 Card reader lighting [▸ 3.5.2.6.2]
4 Status display [▸ 3.5.2.6.4]

In a passage with a glass element, only the door wing lighting can be selected on the side of the glass element for user guidance.

3.5.2.6.1 Chasing light

This lighting shows people passing the direction of movement.

The chasing light is created using lighting strips with chasing light and color change functions, which illuminate an area of 9-5/8" [245 mm].

3.5.2.6.2 Card reader lighting

Card reader illuminated white

- Card reader ready for operation

Card reader illuminated green

- Release accepted
- Card reader signals passage in this direction
- Card reader signals continuous release
- Card reader signals permanently open
- Unit released

Card reader illuminated red

- Card reader not ready for operation as it is currently operating in the opposite direction
- Unit blocked
- Unit malfunction

3.5.2.6.3 Door wing lighting

The door wing lighting is created by an LED strip that is attached to the door wing.

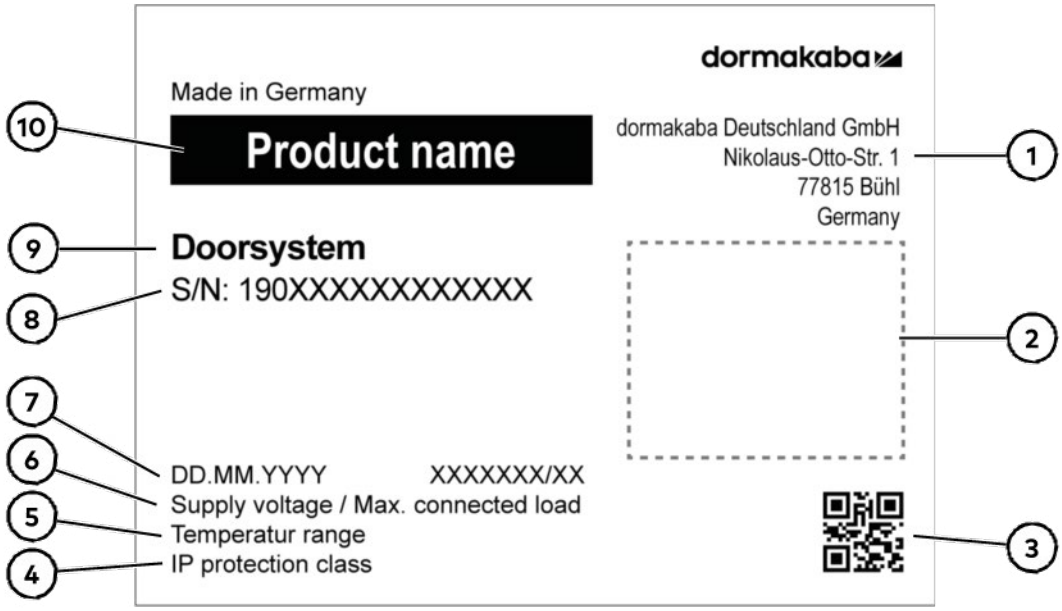
3.5.2.6.4 Status display

The status display shows whether the unit can be accessed.

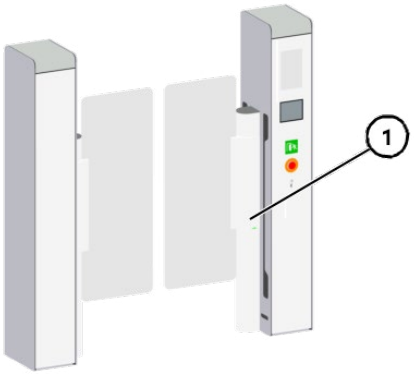
3.6 Identification label

The manufacturer dormakaba's identification plate has the following standardized structure. The basis for the labelling is the Machinery Directive with its national implementations as well as the Construction Products Regulation.

The stickers attached to the unit and the individual components must not be removed or damaged.



1 Manufacturer's address in full
2 Area for conformity and certification marks; see Symbols (identification plate) [▸ 1.8.4]
3 QR code to bring up the serial number
4 For the IP protection class, see Technical specifications [▸ 3.8]
5 For the temperature range, see Environmental conditions [▸ 3.7]
6 Supply voltage/max. connected load, see Technical specifications [▸ 3.8]
7 Production date
8 Serial number
9 Product type
10 Product name



The identification plate is affixed in the following places:

- Packing list
- Shipping papers
- Test book
- Unit, see figure:

The identification plate is mounted on the master side on the rear side of the swing tube, horizontally 3/4" [20 mm] above the lower end.

3.7 Environmental conditions

The environmental conditions result from the climate classification according to ICS and are thus based on IEC 721-3-3. The following environmental conditions must be observed when operating the installed unit in fixed, weather-protected areas.

Climate class	Description
3K4	Temperature and humidity are not regulated at the operating location. Temperature range: +5°C to +40°C

NOTICE

Impairment of unit functions under extreme conditions

Extreme conditions include high humidity, aggressive air (e.g. salty), extreme temperatures and dirt.

- A technical clarification must be implemented with dormakaba before order placement

3.8 Technical specifications

3.8.1 Argus V60

Power supply	AC 100-240 V / 50-60 Hz
Connected load[2]	300 VA
Power consumption[3]	25 W
IP protection class	IP 20
Noise emission < 70 dB(A), according to Directive 2006/42/EC	Measured values: 51.3 dB
Dimensions of the standard unit	
Passage width Overall width	25-1/2" [650 mm] 45-3/4" [1161 mm]
Width of one side element	7-1/8" [180 mm]
Housing height	47-1/4" [1200 mm]
Upper edge of door wing	39" [990 mm]
Weight of one side element	Approx. 88 lb [40 kg]
Frequency of passage	30 people/min.
Unit temperature range	RA10-M05
Drive and locking device	ETS22cc
Control unit	ETS22cc

2 Theoretical maximum consumption during operation with maximum permissible nominal load
3 Standardized cycle with 1,000 passes per day and standby operation in between

The unit's temperature range can be found in the Environmental conditions [▸ 3.7].

4 Operation modes and functions

4.1 Operation modes

4.1.1 Overview of operating modes

Symbol	Operating mode	Description
	Free priority	Free priority Access is released. The unit is accessible in both directions. The “Free priority” operating mode is given higher priority than “Block”. Use only to control the STV-ETS. The motor is controlled without monitoring for functional security.
	Block	**Passage blocked** The door wings block immediately or when they are in home position (depending on the parameter setting).
	General release	Door wings can be turned by hand.
	Continuous Release Entry	Sensors open the door wings in the entry direction and close them again after each passage.
	Continuous Release Exit	Sensors open the door wings in the exit direction and close them again after each passage.
	Single Release Entry	Door wings open for one passage only, in entry direction.
	Single Release Exit	Door wings open for one passage only, in exit direction.
	Permanently Open Entry	The door wings are permanently open in the entry direction.
	Permanently Open Exit	The door wings are permanently open in the exit direction.
	Maintenance Inside	The door wings open with Vmin in the parameterized direction and are then freely movable.
	Service outside	The door wings open with Vmin in the parameterized direction and are then freely movable.
	Cleaning Inside	The door wings open with Vmin in the parameterized direction and are then freely movable.
	Cleaning Outside	The door wings open with Vmin in the parameterized direction and are then freely movable.

4.1.2 Sequence of operating modes

The operating modes are explained using the example of a single unit with standard setting.
The unit's behavior depends on the parameter setting. This setting can be done by a service technician with Pavis3 according to customer requirements.

Key

Symbol	Explanation	Symbol	Explanation
	Green feet authorised person		**Alarm**
	Red feet Unauthorized person	OFF	**OFF** The lighting is off
	Card reader lights up green Unit can be passed through		**Static green light**
	Card reader lights up red Unit blocked		**Static green light** Active with continuous release
	Card reader lights up white Unit ready for operation		**Green chasing light** Unit can be passed through
	Green status light Unit ready for operation		**Static red light**
	Red status light Unit blocked		**Red flashing chasing light** Active when setting up after power is restored, blocking, malfunction.
			White static chasing light Unit is ready for operation

Unit ready for operation

User guidance			Unit	Comments
Reader lighting	Chasing light	Ambient lighting		
inside outside	inside outside	inside outside		The unit is in the home position.

Illuminated ring lighting

After commissioning the optional SafeRoute component, the illuminated ring lights up red. In this state, the Operation modes [▸ 4.1] and Functions [▸ 4.2] run as described.

This lighting means that the door system is locked from the escape route perspective.
The behavior of the illuminated ring is described in the chapter "Escape route function (SafeRoute)".

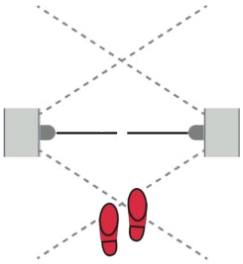
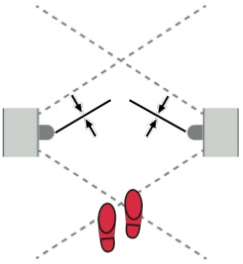
4.1.2.1 Block

WARNING

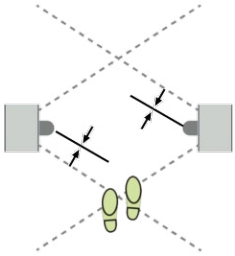
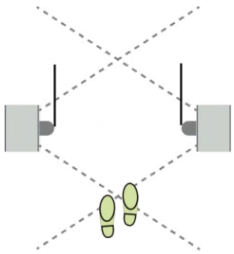
Risk of injury due to blocked blocking element

The blocking element is immediately stopped and locked in its current position by activating the **Block** operating mode. If someone passes through the Unit at that moment, they will collide with the blocking element. If the person is not warned, they may walk into the blocking element, or fall over it and injure themselves.

- Only activate the Block operating mode if the blocking element area is clear.
- If the Block operating mode is used to prevent unauthorized passage, operating staff must warn the person entering beforehand.
- The facility operator must train operating staff.

Symbol	User guidance			Unit	Comments
	Reader lighting	Chasing light	Ambient lighting		
	inside  outside 	inside  outside 	inside  outside 		Block in the home position: The door wings move to the home position and block.
					Immediate The door wings are blocked in their current position.

4.1.2.2 General release

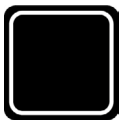
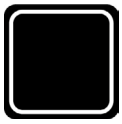
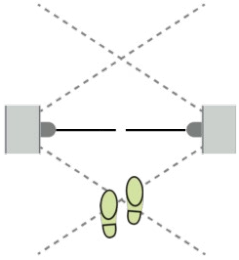
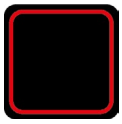
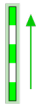
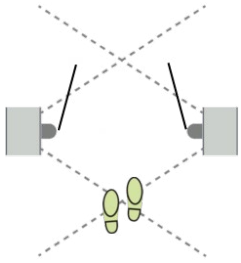
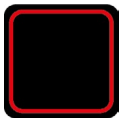
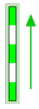
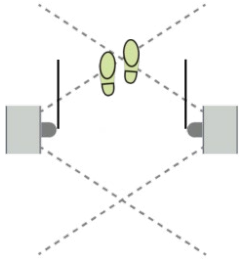
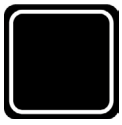
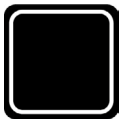
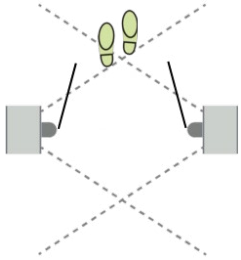
Symbol	User guidance			Unit	Comments
	Reader lighting	Chasing light	Ambient lighting		
	inside  outside 	inside  outside 	inside  outside 		Immediate general release Door wings can be manually opened outwards or inwards
					General release inwards/ outwards The door wings move inwards or outwards and are then released.

The sequence of the "General release" and "Free priority" operating modes is identical.
"Free priority" has the highest priority and overrides all other operating modes.

4.1.2.3 Single release entry/exit

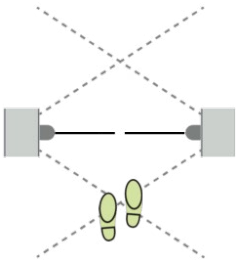
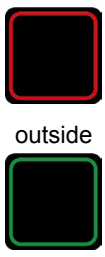
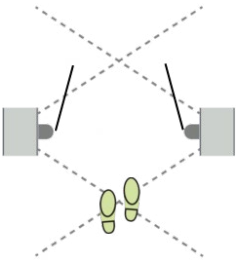
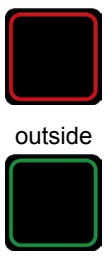
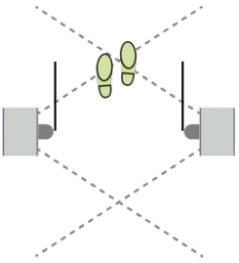
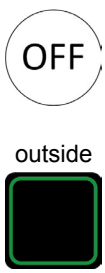
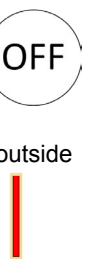
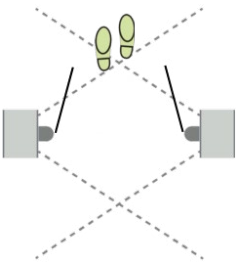
In Pavis3 different degrees of security level or separation can be set in the **Installation configuration** > “Security level” parameter tab or in the **Input** > “Operating mode” parameter tab.

NOTE For more information, see Pavis3 Online help.

Symbol	User guidance			Unit	Comments
	Reader lighting	Chasing light	Ambient lighting		
	inside  outside 	inside outside 	inside  outside 		Request a “Single release entry” via the card reader or document reader. If the “Single release exit” operating mode is selected, the process runs in the opposite direction.
	inside  outside 	inside outside 	inside  outside 		The door wings are opened immediately.
	inside  outside 	inside outside 	inside  outside 		
	inside  outside 	inside outside 	inside  outside 		The door wings are closed by a sensor or are time-controlled.

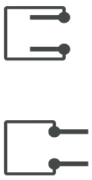
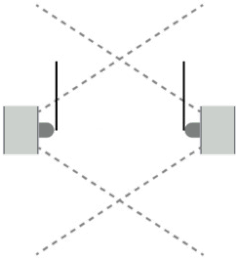
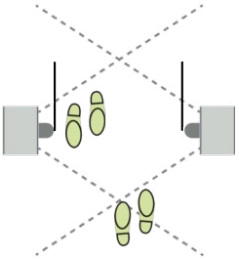
4.1.2.4 Continuous Release Entry/Exit

With continuous release, the opposite direction is monitored.

Symbol	User guidance			Unit	Comments
	Reader lighting	Chasing light	Ambient lighting		
					
					Door wings open in the selected direction.
					
					The door wings close.

4.1.2.5 Permanently open entry/exit

Direction monitoring is not performed for the **permanently open** function.

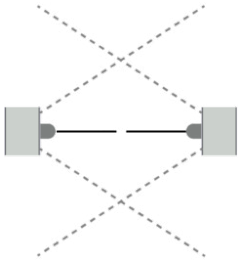
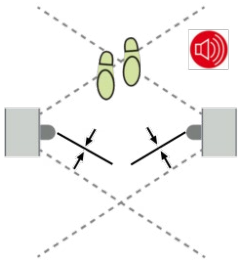
Symbol	User guidance			Unit	Comments
	Reader lighting	Chasing light	Ambient lighting		
	inside OFF outside	inside outside	inside outside		Door wings open in the selected direction.
	inside OFF outside	inside outside	inside outside		The door wings remain open. Passage is possible in both directions.

4.2 Functions

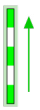
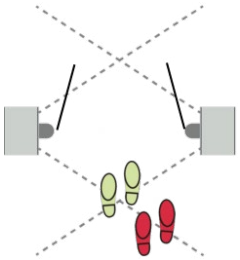
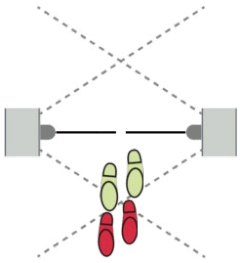
4.2.1 Function sequence

Based on Pavis, the input and output channels as well as the parameters of the unit can be set according to customer requirements. These settings allow Personal safety [▶ 2.7.3] and Object protection to be regulated within the current security level.

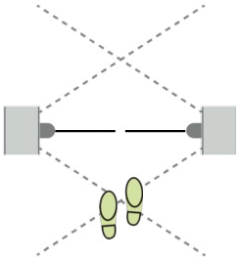
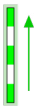
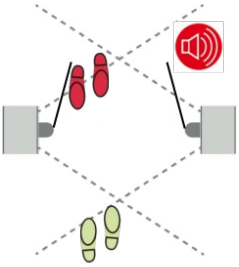
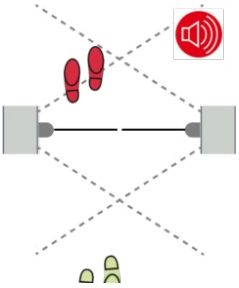
4.2.1.1 Emergency exit function (SafeRoute)

Illuminated ring	User guidance			Unit	Comments
	Card reader	Chasing light	Status light		
	inside  outside 	inside outside 	inside  outside 		The emergency button's red illuminated ring indicates that the SafeRoute system is ready for operation during normal operation. If an operating mode is selected, the user guidance lights up in accordance with the chapter Sequence of operating modes.
	inside  outside 	inside  outside 	inside  outside 		After the emergency button has been triggered, the following signals are given: • The illuminated ring lights up green • The two segments left and right flash yellow/green alternately • An alarm sounds The door wings are opened in the escape direction and can then move freely.

4.2.1.2 Tailgating

User guidance			Unit	Comments
Card reader	**Chasing light**	**Status light**		
inside  outside 	inside outside 	inside  outside 		Request a “Single release entry” via the card reader or document reader. **NOTE** If the “Single release exit” operating mode is selected, the process runs in the opposite direction.
inside  outside 	inside  outside 	inside  outside 		During the “Single Release Entry”, 1 person tries to pass through the unit by walking close behind the person already passing through. An alarm sounds until both persons have left the unit in the direction from which they came and the interlock has been cleared.

4.2.1.3 Opposite-direction detection

User guidance			Unit	Comments
Card reader	**Chasing light**	**Status light**		
inside  outside 	inside  outside 	inside  outside 		Request a “Single release entry” via the card reader or document reader. **NOTE** If the “Single release exit” operating mode is selected, the process runs in the opposite direction.
inside  outside 	inside outside 	inside  outside 		During the “Single Release Entry”, 1 person from the opposite direction tries to pass through the unit. An alarm sounds.
inside  outside 	inside  outside 	inside  outside 		The alarm sounds until both persons have left the unit in the direction from which they came and the interlock is cleared.

5 Delivery and transport

5.1 Safety during delivery and transport

DANGER

Risk of injury due to improper use of lift trucks!

Lift trucks are required to move or lift certain components.
Careless driving or falling components can lead to serious injuries.

- The logistics personnel transporting the components must be in possession of a valid driver's license to drive lift trucks, see Personnel qualification [▸ 2.5].
- During lifting work it must be ensured that the lift truck stands securely on a firm and level surface.
- Always take account of the components' centre of gravity during lifting work.
- The permitted lifting weight of a lift truck must never be exceeded.
- Lift trucks must be in perfect working order.
- No people should be under the lifted load during lifting work.

NOTICE

Property damage possible due to non-observance of stickers

The packaging of the delivery may contain stickers warning of proven property damages.

- If there are stickers on the packaging, they must be observed at all times.

5.2 Delivery and storage

By default, deliveries are delivered individually packaged on a pallet.

Other solutions are also possible depending on the project and customer requirements. These customer requirements must be agreed when ordering with the dormakaba contact.

5.3 Inspection on delivery

The scope of delivery is documented in one or more enclosed packing lists. The composition of the parts depends on the order.

Check the delivery for completeness and shipping damages upon receipt without delay.

For externally visible shipping damages or incompleteness, proceed as follows:

- Do not accept the delivery or accept it only conditionally.
- Note the extent of damage on the shipping documents or on the freight company's bill of lading.
- In case of incompleteness or shipping damages fill out the form "Complaint Incorrect Delivery", No. 30862 and send it to order management.

5.4 Transporting packages

1. Select a suitable lift truck for delivery.
2. Check the operability of all safety and transport equipment.
3. Define the transport route and remove possible obstacles.
4. Carefully transport the delivery while paying attention to the centre of gravity.

6 Maintenance

6.1 Safety during maintenance

WARNING

Risk of injury due to insufficient personnel qualification

Insufficiently qualified personnel are not able to assess the risks associated with handling the unit, and may expose themselves and others to the danger of severe injury, including death. If unqualified personnel work on the unit, or are located in the danger area of the unit, there are dangers that may cause severe injuries and significant property damages.

- Works detailed in this instruction manual may only be carried out by personnel employed by dormakaba or trained according to their specifications.
- Check Personnel qualification [▸ 2.5]!
- Keep insufficiently qualified personnel away from the danger areas.
- If anything is unclear, contact dormakaba

WARNING

Danger of injury due to work on the unit

Persons could try to pass through the unit while work is being carried out on it.

- Cordon off the unit before any work.

NOTICE

Property damage due to wrong spare parts

dormakaba uses the best possible components for every application. If any of these components need to be replaced, proceed as follows:

- Use original spare parts from dormakaba.
- If spare parts are used which are not original spare parts, their operational capability must be coordinated with dormakaba and approved in writing.

⇨ In all other cases the dormakaba warranty expires.

6.2 Maintenance procedure

Maintenance cycle
dormakaba recommends an annual maintenance of the units by a service technician, at the latest after 500,000 cycles.
If 500,000 cycles are exceeded, the unit signals this by beeping twice for each release. This double beep can only be deactivated after maintenance by resetting the maintenance counter.

1. Work through the maintenance plan.
2. After maintenance, order Cleaning [▸ 7] or carry it out yourself.
3. After maintenance and cleaning, dormakaba recommends that the protective devices be inspected by means of an Expert inspection and test book.

6.3 Facility operator maintenance plan

Activity	Interval	Comments	OK
Conduct a visual inspection for external damage.	monthly	In case of serious damage inform a service technician.	
Perform a visual inspection for sensor contamination.	weekly	Clean any sensors that are dirty, see Cleaning [▸ 7].	
Check the sequence of operating modes.	Annually	• See chapter Sequence of operating modes in the operating instructions. • Pay attention to the behavior of the lighting during the inspection	

All other maintenance activities must be carried out by a service technician and are described in the service manual.

7 Cleaning

7.1 Safety during maintenance

DANGER

Risk of electric shock if sensors are not disconnected from the mains power supply

There is a risk of electric shock if an active sensor comes into contact with moisture.

- Disconnect the sensors from the power supply before cleaning

WARNING

Risk of injury during cleaning tasks

Risk of slipping on wet floors during cleaning

- Pedestrians may not pass through the unit when it is being cleaned.

NOTICE

Damage to property caused by improper cleaning agent

Improper cleaning agent may damage the unit and cause the unit to malfunction.

- Use the Cleaning agents [▸ 7.2] recommended by dormakaba.

7.2 Cleaning agents

Recommendations for protecting the unit
- Apply cleaning agent with a cloth.
- Do not use abrasive cleaners.
- For polished surfaces, clean in the direction of polishing.
- Follow the instructions of the cleaning agent manufacturer

dormakaba recommends the following cleaning agents

Material	Cleaning agents
Stainless steel	E.g. E-NOX Shine from the company BIO-CIRCLE
Stainless steel, mirror polished	chloride-free glass cleaner, poss. acetone. Wear gloves when cleaning with acetone.
Aluminium, anodized	E.g. E-NOX Shine from the company BIO-CIRCLE
Plastic-coated surfaces or plastic surfaces	E.g. FT - Final Touch from the company BIO-CIRCLE
Steel, hot-dip galvanized	mild soapy water, then rinse thoroughly
Glass	E.g. FT - Final Touch from the company BIO-CIRCLE
Plexiglass/polycarbonate/PETG	anti-static synthetic cleaner and care

These cleaning agents cannot be obtained from dormakaba

7.3 Cleaning plan

The installation must be cleaned thoroughly at least once a year.
Depending on environmental factors, it may be necessary to clean the unit at shorter intervals.

Cleaning ensures that surfaces stay clean and no malfunctions arise from environmental factors.

By adherence to the intervals and proper execution of the cleaning work of the following cleaning plan, the product is protected in the best possible way:

The Cleaning agents [▸ 7.2] chapter lists the recommendations of dormakaba.

Cleaning tasks

Interval	Cleaning task
daily	• Check the general cleanliness of the unit and clean affected areas if necessary. • Clean the floor.
weekly	• Check the unit for external damage and, if necessary, inform the service technician. • Clean glass surfaces with glass cleaner. • Wipe metal surfaces with appropriate cleaning agents and a soft cleaning cloth. • Remove dirt from stainless steel so that no corrosion occurs due to contamination. • If necessary, clean built-in sensors.

8 Troubleshooting

8.1 Safety while troubleshooting

WARNING

Risk of injury due to insufficient personnel qualification

Insufficiently qualified personnel are not able to assess the risks associated with handling the unit, and may expose themselves and others to the danger of severe injury, including death. If unqualified personnel work on the unit, or are located in the danger area of the unit, there are dangers that may cause severe injuries and significant property damages.

- Works detailed in this instruction manual may only be carried out by personnel employed by dormakaba or trained according to their specifications.
- Check Personnel qualification [▸ 2.5]!
- Keep insufficiently qualified personnel away from the danger areas.
- If anything is unclear, contact dormakaba.

WARNING

Danger of injury due to work on the unit

Persons could try to pass through the unit while work is being carried out on it.

- Cordon off the unit before any work.

WARNING

Risk of injury caused by technical errors

Technical errors can result in uncontrolled movements of the unit. Faults on electrical units can also result in an electric shock.

- Maintenance work must only be performed by qualified technical personnel.

⇨ If unqualified personnel perform maintenance on the unit, or are located in the danger area of the unit, there are dangers that may cause severe injuries and significant property damage.

NOTICE

Potential forfeiture of warranty

Sensors must not be opened.

- Contact dormakaba for repairs.

8.2 Remedy a fault

8.2.1 Isolate malfunctions

To isolate the error, first speak with the responsible person on site.

The problem must be clearly defined to identify its cause(s).

Important questions

- Is the fault simply the result of an operating error (e.g. by untrained personnel)?
- Is it simply that the wrong operating mode has been selected (e.g. Block)?
- Is there an Improper use [▸ 2.2] or a Reasonably foreseeable misuse [▸ 2.3]?
- Was the Facility operator behavior in the event of misuse [▸ 2.3.1] appropriate?

In the event of an error, do not switch off or restart the unit.

In the event of a technical problem work through the chapters Checks by the facility operator [▸ 8.2.3] and Checks by the service technicians

8.2.2 Discussion with the person responsible on site

Meet with the person responsible on site and clarify the following:

1. Obtain a description of the incident.
   - ⇨ Is there a video (surveillance camera)?
   - ⇨ Can the affected person be asked?
2. Ask whether the unit was used improperly before the error occurred.
3. Analyze from which locations in the building the unit can be operated, e.g. gate keeper's OPL, OPL in the security control centre, fire alarm system or hazard alert system.
4. If OPLs are available, find out what the OPLs are and were displaying.
5. Establish whether technicians for other systems have worked on the unit.
6. Ask whether the error has occurred before and what was identified as the cause.

8.2.3 Checks by the facility operator

The facility operator must perform the following checks:

1. Check whether any external damage to the unit can be detected.
2. Check what the signal units indicate.
3. Check whether external influences are negatively affecting the unit, e.g.:
   - Is the sensor system disturbed by sunlight?
   - Is there liquid on or in the unit?
   - Is a glass facade or mirrored surface causing reflections?

8.3 Status and error displays on the SafeRoute system’s illuminated ring

The SafeRoute system’s status and error displays are displayed on the emergency button’s illuminated ring.

8.4 SafeRoute status and error displays

Reset SafeRoute

1. Turn the key on the key switch to the right and hold it in this position.
2. Press the emergency button for 1 second and then release it.
3. Return the key to the middle position.

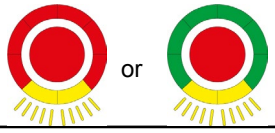
⇨ The SafeRoute system is ready for operation again, which is indicated by the emergency button's red illuminated ring.

If a fire alarm has been triggered, no reset of the SafeRoute system is required. The fire alarm is cancelled as soon as the signal (e.g. from a smoke detector) is no longer present.

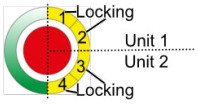
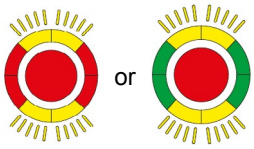
LED display during normal operation

LED display	Door status	Description
	The door lock is activated.	That is the regular operating status.
	The door lock is permanently unlocked.	Reset SafeRoute, see description above.

LED display in case of malfunction or maintenance

LED display	Door status	Description
 (no display)	Power supply missing or emergency button defective.	Switch on the voltage. If the LED display does not change, call a service technician.
 or	maintenance required **red-yellow**: door locked **green-yellow**: door unlocked	Call a service technician.

LED display in case of alarm

LED display	Door status	Description
	Door-open alarm One yellow LED per lock. In the example 4 locks are connected.	Reset SafeRoute, see description above.
	Emergency button pressed	Reset SafeRoute, see description above.
	Alarm system triggered	After resetting the fire alarm system or the smoke switch, this alarm triggering is automatically reset.
	Sabotage alarm triggered red-yellow: door locked green-yellow: door unlocked	In the ESC environment, the sabotage alarm is deactivated by default (service switch for sabotage alarm suppression in position S) and is not used. If the sabotage alarm is activated, proceed as follows: Check all connected devices' housings for correct screw connections and tighten them correctly if necessary. Reset SafeRoute, see description above. If the alarm persists, call the service technician.

All other errors must be eliminated by a service technician and are described in the service manual.

9 Disposal

9.1 Safety during disassembly and disposal

DANGER

Risk of injury due to improper use of lift trucks!

Lift trucks are required to move or lift certain components.

Careless driving or falling components can lead to serious injuries.

- The logistics personnel transporting the components must be in possession of a valid driver's license to drive lift trucks, see Personnel qualification [▸ 2.5].
- During lifting work it must be ensured that the lift truck stands securely on a firm and level surface.
- Always take account of the components' centre of gravity during lifting work.
- The permitted lifting weight of a lift truck must never be exceeded.
- Lift trucks must be in perfect working order.
- No people should be under the lifted load during lifting work.

WARNING

Risk of injury due to insufficient personnel qualification

Insufficiently qualified personnel are not able to assess the risks associated with handling the unit, and may expose themselves and others to the danger of severe injury, including death. If unqualified personnel work on the unit, or are located in the danger area of the unit, there are dangers that may cause severe injuries and significant property damages.

- Works detailed in this instruction manual may only be carried out by personnel employed by dormakaba or trained according to their specifications.
- Check Personnel qualification [▸ 2.5]!
- Keep insufficiently qualified personnel away from the danger areas.
- If anything is unclear, contact dormakaba.

9.2 Disposal of packaging

All packaging materials used are environmentally friendly, recyclable and separated by type.

- Packaging materials must be disposed of in an environmentally friendly manner.
- Please consult with local waste management companies.

9.3 Disposal of old units

Disassembly of the unit may only be carried out by suitably qualified personnel.

dormakaba Deutschland GmbH units are fully recyclable.

The regional and country-specific disposal regulations apply.

- Separate all materials by type according to the following criteria:
  - Steel
  - Stainless steel
  - Aluminium
  - Glass
  - Electrical and electronic components

All parts must be disposed of by certified waste removal companies.

9.4 Dispose of batteries

Do not dispose of batteries in domestic waste!

Used batteries must be returned to a disposal system in accordance with the relevant national and local regulations.

The batteries must be fully discharged prior to disposal.

Index of keywords

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