ALVARADO
dormakaba Group

# Compact Optical Turnstile
# Argus V60

## Installation Instructions

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# 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 assembling technicians. Qualifications and tasks can be found in the chapter Personnel qualification [▸ 2.1]

## 1.3 Other applicable documents

This document and all other applicable documents can be downloaded from the extranet (https://www.dormakaba.com/extranet-emea-en/downloads) after successful login.

**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 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.

## 1.5 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)

## 1.6 Change log

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

| Version | Updated | Brief description |
|---|---|---|
| Index - | 01/2022 | Document creation |

## 1.7 Symbols used

### 1.7.1 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.

### 1.7.2 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

### 1.7.3 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

### 1.7.4 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 harmonized 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 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.

- 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.

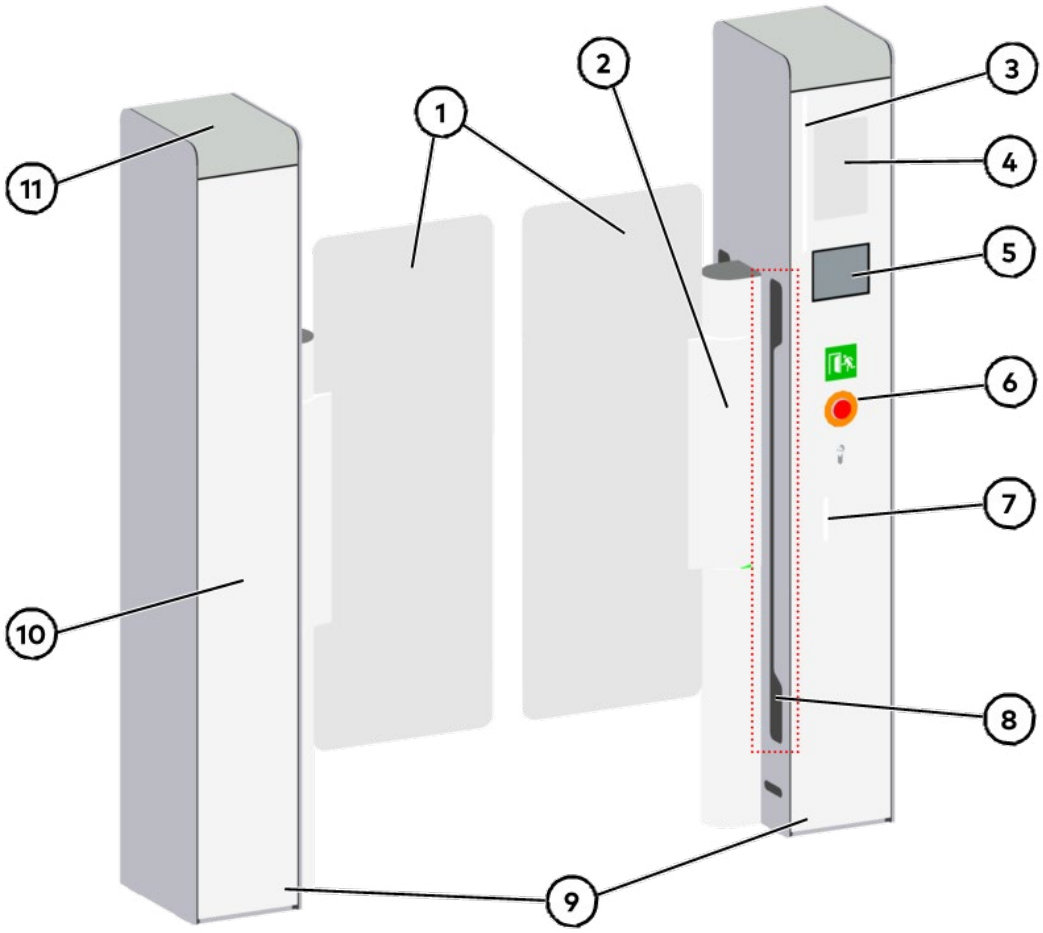
**Assembling technician**

An assembling technician's tasks are the mounting, disassembly and disposal of units. Due to their technical training or several years of professional experience, they have the necessary working techniques and know all applicable standards and laws in the field and are familiar with the application of mounting instructions.

# 3 Product description

## 3.1 Overall view

### 3.1.1 Argus V60

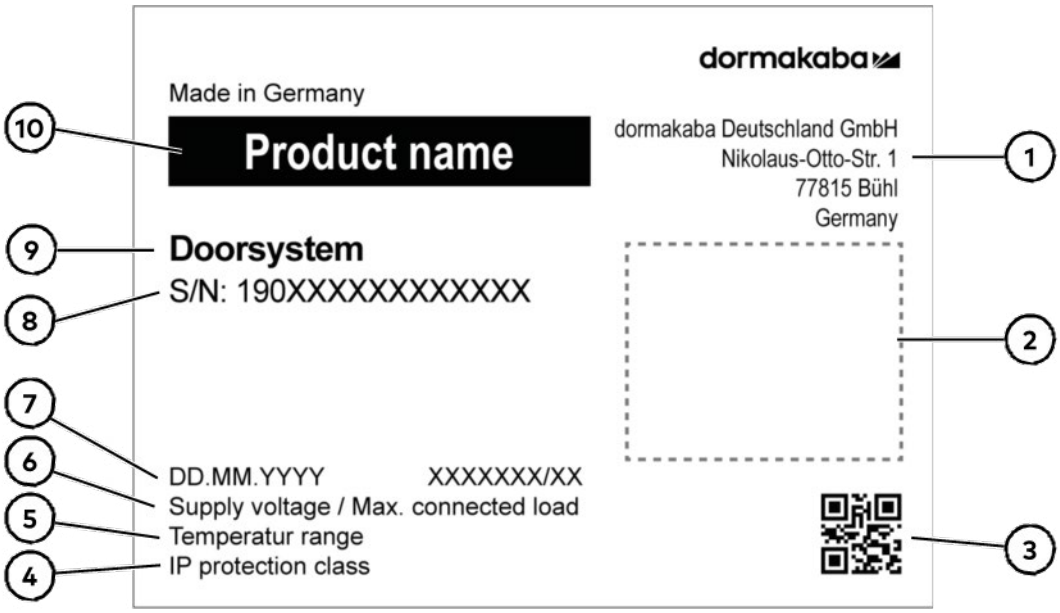



| | | | |
|---|---|---|---|
| 1 | Moving barrier | 7 | Status light (optional) |
| 2 | RA10-M05 drive and locking device | 8 | Sensor window |
| 3 | Chasing light (optional) | 9 | Cover, front |
| 4 | Card reader (optional) | 10 | Cover, side |
| 5 | Document reader (optional) | 11 | Cover |
| 6 | SafeRoute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

## 3.2 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.

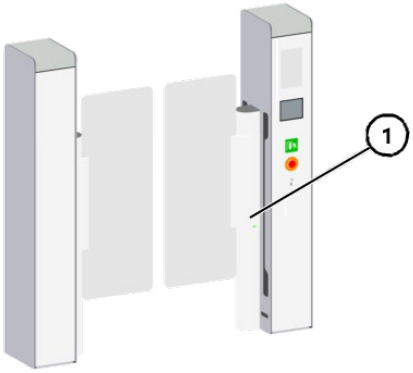



1 Manufacturer's address in full
2 Area for conformity and certification marks; see Symbols (identification plate) [▸ 1.7.4]
3 QR code to bring up the serial number
4 For the IP protection class, see Technical specifications [▸ 3.4]
5 For the temperature range, see Environmental conditions [▸ 3.3]
6 Supply voltage/max. connected load, see Technical specifications [▸ 3.4]
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.



## 3.3 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.<br>Temperature range: +41 to +104°F [+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

## 3.4 Technical specifications

### 3.4.1 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),**<br>according to Directive 2006/42/EC | Measured values: 51.3 dB |
| **Dimensions of the standard unit** | |
| Passage width<br>Overall width | 25-1/2" [650 mm]<br>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

# 4 Delivery and transport

## 4.1 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 [▸ 2.1].
- 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.

## 4.2 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.

## 4.3 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.

## 4.4 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.

# 5 Mounting

## 5.1 Safety during mounting

**DANGER**

**Risk of injury through inadequate stability of the unit**

Unauthorized fixing materials may cause the unit to be unstable. This may result in crushing or may cause unit components to tip over onto people

- Only use authorised fixing materials..

**DANGER**

**Risk of crushing, cutting and collision due to heavy and sharp components**

Improper use of tools and aids and failure to observe the safety precautions as well as the obligation to wear PPE protective equipment may lead to dangerous situations.

Machines or components may tip over or fall off the transport vehicle if in an unstable position, and may fall if incorrect or insufficient slings are used.

- Only appropriate, tested and certified lifting gear and slings, particularly chains and special hoists, must be used.
- Only trained, authorised employees may be used for transport work.
- The facility operator must supervise the correct use of the lifting gear and monitor the wearing of PPE.

**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 [▸ 2.1]!
- Keep insufficiently qualified personnel away from the danger areas.
- If anything is unclear, contact dormakaba.

**NOTICE**

**Possible material damage due to loosened connections**

Transport may have slackened or completely loosened connections.

- Check all connections when mounting.

## 5.2 Requirements for mounting

**Required personnel**
Two people are needed to assemble the unit.

### 5.2.1 Requirements of the installation location

- The Environmental conditions [▸ 3.3] must be maintained.
- No steps or sill must be located directly in front of and after the unit.
- There must be no floor heating or similar installations in the floor which could be damaged when drilling.

### 5.2.2 Requirements for the floor

**WARNING**

**Risk of fire caused by technical errors**

Technical errors within the unit could lead to a fire that could spread to the surrounding area.

- The unit must be placed on a flame-retardant floor.

#### 5.2.2.1 Check floor properties

Do not lay any heating coils or supply cables in the area of fixing holes.
**Flooring properties (example)**


1. Finished floor level
2. Floor covering
3. Moisture barrier
4. Floor screed
5. Footfall sound insulation
6. Concrete floor
7. Sub floor level

**CAUTION**

**Danger of injury and possible material damage**

The unit will not be stable or functional if it is installed on a floor that cannot support dowels. Further Danger zones may arise and the unit may be damaged.

If a fixing anchor or shear connector can be rotated or pulled out when tightening the fastening, then the floor does not have the required stability (i.e. it cannot be dowelled), or the drill hole has not been cleaned of drilling dust before the use of compound mortar.

The required stability can be achieved by using longer threaded rods glued into the sub floor level with compound mortar.

#### 5.2.2.2 Check floor evenness

The difference between the highest and lowest point of the floor must not exceed 1/8" [3 mm] per meter of unit length/width. If this prerequisite is not fulfilled, Align unit [▸ 5.3.3].

## 5.2.3 Tools and auxiliary materials

Parameterization requires Pavis3 in the latest version and with a valid license.

**Clamping tool (on a terminal strip)**

### Standard tools

- Percussion drill
- Masonry drill set
- Spirit level
- Folding rule 2 m
- Screwdriver set
- Clamping tool (Wago), see diagram opposite
- Open-end spanner set
- Hexagon screw spanner set
- Wire stripper
- Crimpers for wire end sleeves and cable connectors
- Side cutters
- Measuring cup
- Bucket 25 l
- Drill whisk

**Multimeter**

### Special tools

- Multimeter, see adjacent graphic
- Glass suction cups
- 3 m levelling staff (for aligning a unit)
- Level (for aligning several units)
- Insulation and loop resistance meter
- Computer with Pavis3 for parameterization, updating the program and troubleshooting

**Blow pump**

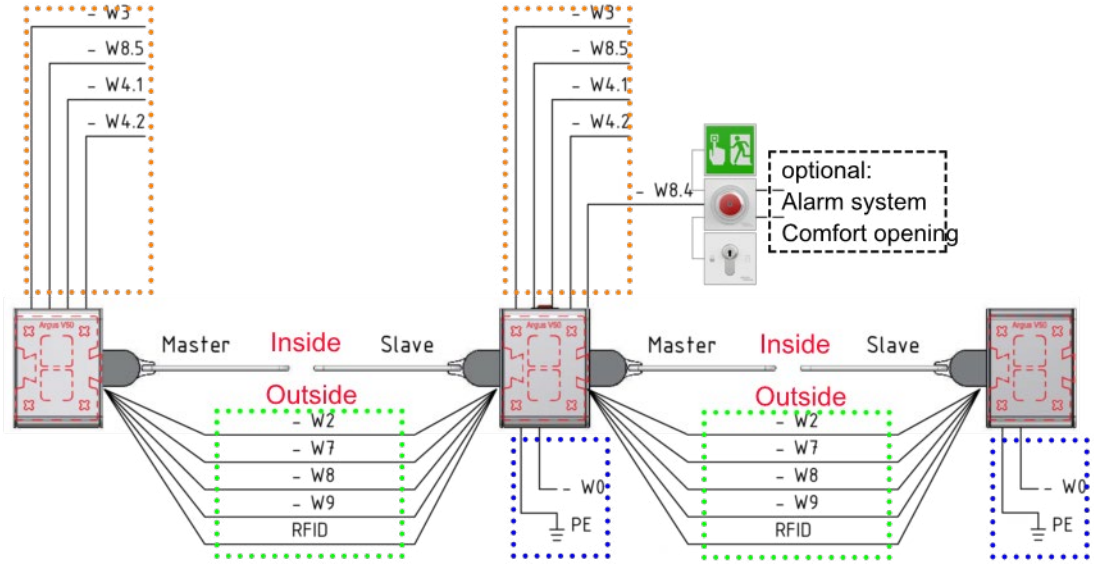
### Auxiliary materials

- Cable ties
- Blow pump with hose, see illustration opposite (for blowing out the bore hole when the unit is mounted on finished floor level with shear connectors)
- Round wire brush (for cleaning the boreholes when the unit is mounted on finished floor level with shear connectors)
- Contact film (for applying the shield)
- Underlay plates (for aligning the units before mounting, supplied)
- Marking templates (if the unit is glued to the finished floor, optional)

## 5.3 Preparatory work

### 5.3.1 Lay conduits

The cables and conduits must be positioned and laid according to the site plan before the foundation is poured.




| Designation | Line type | Function |
|---|---|---|
| On-site cables (blue area) | | |
| -W0 | | Mains connection |
| PE | | Equipotential bonding |
| Cables inside the unit (green area)<br>**NOTE** These cables are laid together in an empty M40 conduit. | | |
| -W2 | 1/8"x 1/16" [3 x 1.5 mm]², shielded | Power supply master ETS22 cc |
| -W7 | 3/16"x 1/64" [5 x 0.25 mm}², shielded | Sensor strip receiver |
| -W8 | 1/16"x 1/16"x 1/64" [2 x 2 x 0.34 mm]², shielded | TMS bus |
| -W9 | 1/16"x 1/16"x 1/64" [2 x 2 x 0.34 mm]², shielded | ETS22 CAN bus |
| RFID | | Cables to be specified by the customer<br>Reader, access control system |
| Cables for building services engineering (orange area) | | |
| -W3 | 1/16"x 1/16"x 1/64" [2 x 2 x 0.34 mm]², shielded | Operating panel (OPL) |
| -W8.5 | 1/16"x 1/16"x 1/64" [2 x 2 x 0.34 mm]², shielded | DCW bus |
| -W4.1 | | Control of the reader system |
| -W4.2 | | Message to customer |
| Line for SafeRoute | | |
| W8.4 | | DCW bus to the emergency switchboard |

An alarm system, e.g. a fire alarm system or a smoke detector, can optionally be connected to the emergency button with illuminated ring.

**Notes about cabling**

- The cables are laid in conduits. This makes it easier to carry out future changes/expansions.
- Only use cables with approval for the respective substrate/wall.
- Observe national requirements.
- Use flexible lines.
- Shorten excessively long lines before connecting them.
- Place the cable shielding on both sides of the metal tongue both of the control cabinet and the drive and locking device.

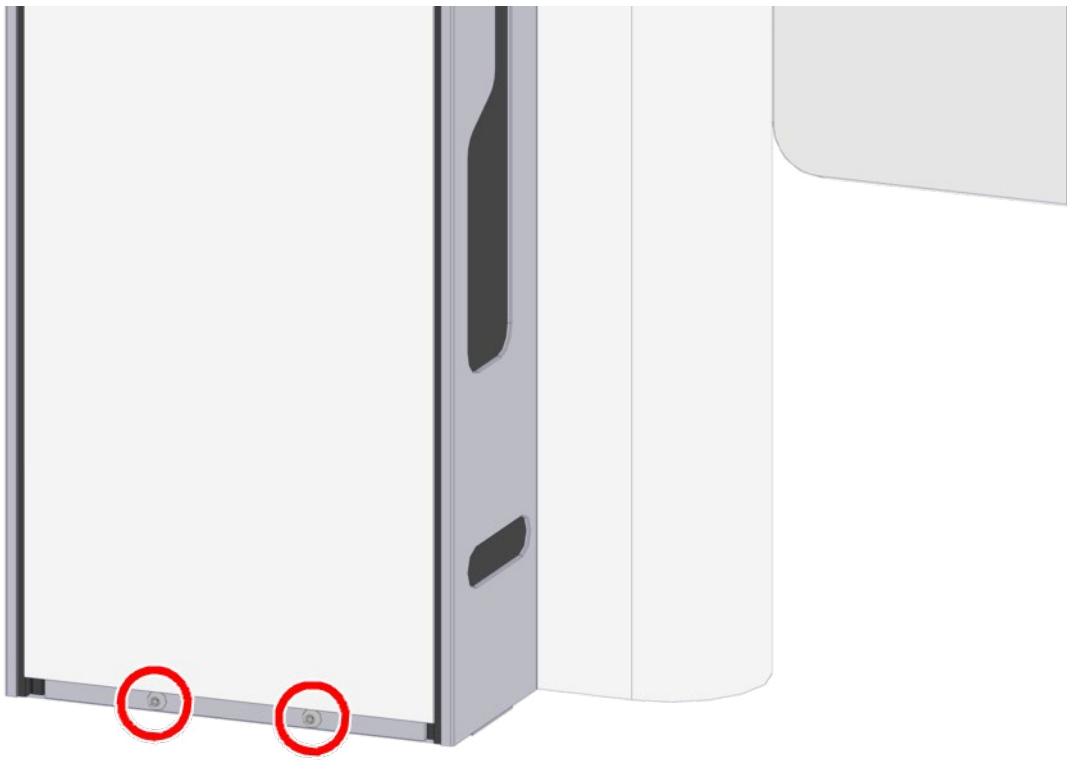
**NOTICE**

**Unit malfunction**

If lines for the power supply and communication lines are mixed up, the unit may malfunction.

- 1 conduit for the power supply
- 1 conduit for the communication lines

### 5.3.2 Dismantle covers

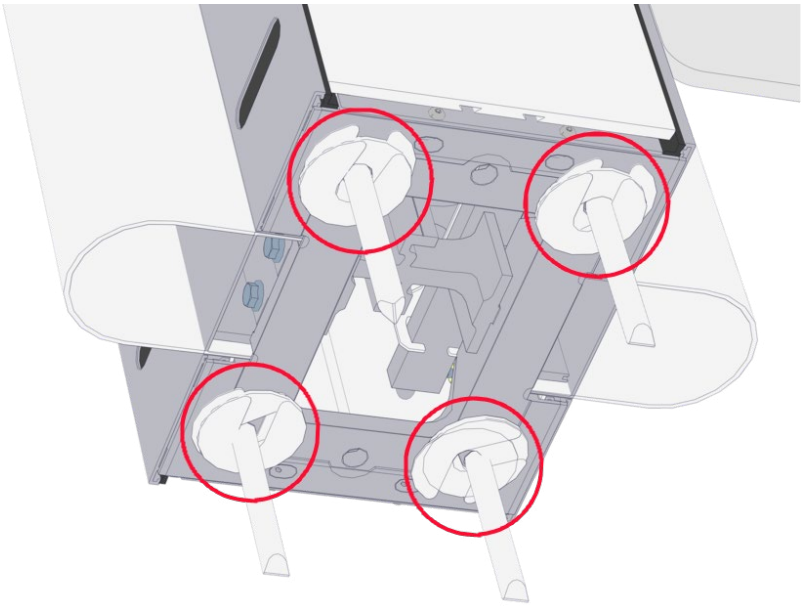


1 Remove the two lower screws from the front cover of the side element.
2 Attach a glass suction cup to the front cover of the side element.
3 Slide the cover up.
4 If there is a card reader, document reader, status light or SafeRoute, disconnect the connected cables.
5 Tip the cover out.
6 Carry out the same steps on the opposite side.

### 5.3.3 Align unit

Units must be aligned if a deviation has been detected in the chapter Check floor evenness [▸ 5.2.2.2].

Use the supplied underlay plates to align the unit if the ground is uneven.



#### 5.3.3.1 Align single unit

For the alignment of a single unit, a 3 m long aiming stake, a spirit level and a yardstick are required.

1. Mark the mounting points on the floor.
2. Using the aiming stake and spirit level, mark the highest point.
3. Starting from this point, align the unit and underlay it with underlay plates.
4. Fix the unit to the floor.
5. Check the alignment and correct it if necessary.
6. Close any gaps present with a material that will retain its elasticity.

#### 5.3.3.2 Align multiple or special units

A levelling device is required for the alignment of multiple or special units.

1. Mark the mounting points on the floor.
2. Determine the highest point using the level.
3. Using the level, determine the differences in height for each unit and each fixing point and enter these into the installation plan.
4. Start the installation on the left in the direction of the passage.
5. Set up all subsequent units and use the underlay plates to position them evenly with one another. Check visually at each fixing point whether an underlay is necessary.
6. Check the horizontal and vertical positions and distances between the side elements and align them if necessary.
7. Fix the units to the floor.
8. While fixing, check the alignment of each unit and correct it if necessary.
9. If required, close the gaps between the finished floor level and the units with round cord.
10. Seal any gaps with permanently elastic sealing material.

## 5.4 Mount the unit on the floor

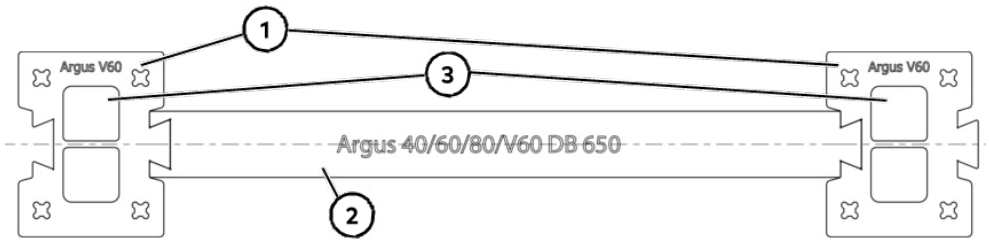
During mounting, make sure that the installed sensors' receivers and transmitters are in the correct position in relation to each other and that persons can be detected correctly.

The unit can be mounted according to one of the following installation variants.

- Mount unit on finished floor level with shear connectors [▸ 5.4.1]
- Affix the unit to the finished floor [▸ 5.4.2]

### 5.4.1 Mount unit on finished floor level with shear connectors

**Marking templates**

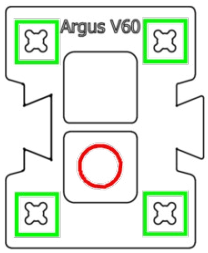



The holes for the shear connectors can be marked in advance with the optionally available marking templates (1).
The passage width is defined by the marking template connectors (2).
The side elements are wired to each other and on site through the recesses (3) in the marking templates.

✓ The Requirements for mounting [▸ 5.2] have been met.

✓ The Preparatory work [▸ 5.3] has been completed.

1. Position a side element and mark the drill holes (see drilling plan).
2. Set the side element aside.
3. Drill the holes according to the manufacturer's instructions.
4. Affix all 4 shear connectors (1) according to the manufacturer's instructions.
5. Position floor rubber.
6. Place the side element with the power supply unit over the on-site empty conduit of the mains connection, see red circle.




On these schematic illustrations, a red circle shows the on-site empty conduit for the mains connection and a green square marks the fixing point. The illustration on the left shows the supporting structures for mounting on sub floor level. The illustration on the right shows the side element in the area where the mains connection is inserted at an angle from the bottom.

7. Pull the conduit through the bottom opening of the post on the power supply side into the unit.
   The connection is described in the service manual.
8. Align the side element horizontally and vertically.
   To do this, place the supplied underlay plated on the finished floor level as required.
9. Screw the side element into place.
10. Mount the second side element in the same way.

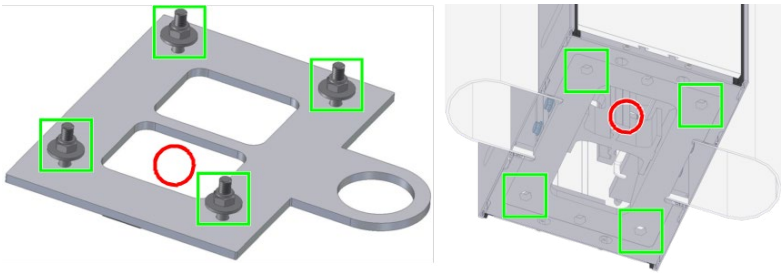
When installing the second side element, make sure that the installed sensors' receiver and transmitter are in the same position relative to one another. Otherwise, errors will occur when detecting people.

### 5.4.2 Affix the unit to the finished floor

1. Clean the finished floor.

Apply a 1/16" [2 mm] thick layer of adhesive (item. no. 191 111 69) to the adhesive plate.
Under the adhesive plate there are spacers (3) with a height of 1/16" [2 mm], which ensure an adhesive gap of 1/16" [2 mm].

2. Glue the adhesive plate onto the finished floor.
3. Place the side element with the power supply unit over the on-site empty conduit of the mains connection (2).



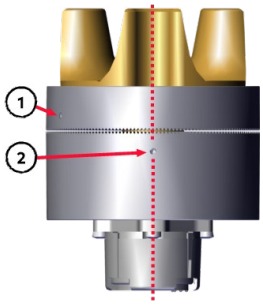
On these schematic illustrations, a red circle shows the on-site empty conduit for the mains connection and a green square marks the fixing point.
The illustration on the left shows the supporting structures for mounting on sub floor level.
The illustration on the right shows the side element in the area where the mains connection is inserted at an angle from the bottom.

4. Pull the conduit through the bottom opening of the post on the power supply side into the unit.
The connection is described in the service manual.
5. Align the side element horizontally and vertically.
To do this, place the supplied underlay plates on the adhesive plate as required.
6. Screw the side element to the 4 threaded bolts (1).
7. Mount the second side element in the same way.

When installing the second side element, make sure that the installed sensors' receiver and transmitter are in the same position relative to one another. Otherwise, errors will occur when detecting people.

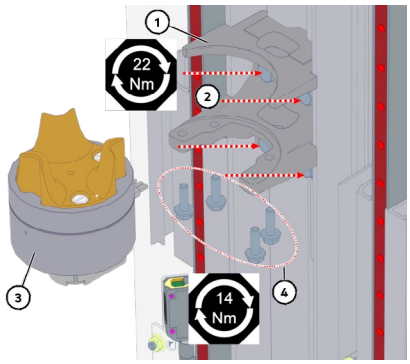
## 5.5 Mount components

### 5.5.1 Mount moving barrier



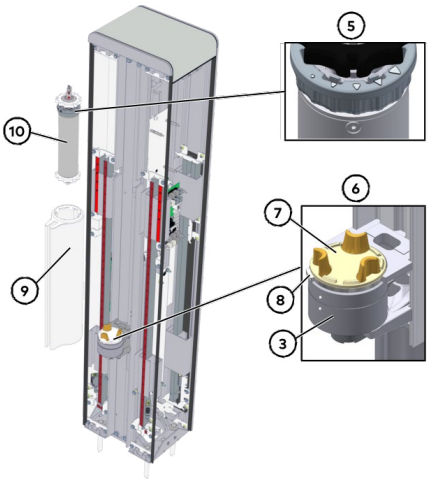

**Align the RA10 tooth clutch**

1. Place the zero point (1) and 0° axis mark (2) on top of each other.
   ⇨ The zero point of the rotary encoder and the mechanical zero point are located on one axis.
2. Mount the moving barrier so that the zero point regularly crosses the 0° axis.
   ⇨ The zero point crosses the 0° axis regularly regardless of whether the moving barrier is moving in both directions.



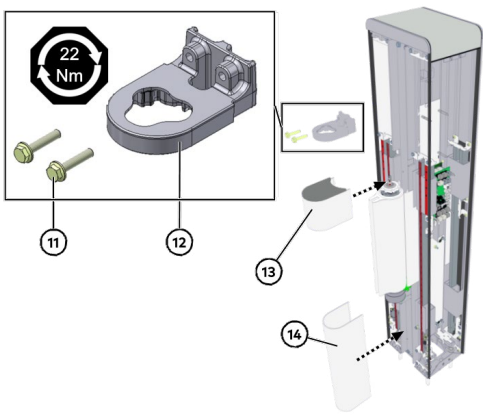

**Mount lower bracket**

1. Mount the lower bracket (1) to the aluminium profile with 4 hexagon screws (2) with 22 Nm.
2. Secure the aligned RA10 tooth clutch (3) with 4 M5x12 (4) hexagon bolts.
3. Mount the lower cover (14) and position it at the very bottom.
4. Clip the finger protection profiles directly over them.
5. Remove the lower cover again.




**Mounting the swivel tube with the moving barrier**

1. Insert the new M05 drive (10) into the swing tube (9). Insert the end shield (5) in the position where there is no radial play.
2. Position the stainless-steel plate (8) on the RA10 tooth clutch.
3. Position the plastic part (7) on the stainless-steel plate.
4. Position the swing tube with the inserted M05 drive on the tooth clutch.




**Mount torque support**

1. Mount the torque arm (12) with the two hexagon head screws (11).
2. Connect the plugs of the rotary encoder, motor, and gear coupling to the ETS22cc control board according to the electrical documentation.
3. Mount the top and bottom covers (13 and 14) of the drive and locking device.

### 5.5.2 Mounting the covers

1 If there is a card reader, document reader, status light or SafeRoute, connect the cables.

2 Insert the post cover diagonally from below into the base frame and tilt the hook inside into the eyelet of the upper cover.

3 Attach the two lower screws of the post cover.

⇨ The two covers of the side element are mounted one side at a time. Carry out the same steps on the opposite side.

# 6 Disposal

## 6.1 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 [▸ 2.1].
- 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 [▸ 2.1]!
- Keep insufficiently qualified personnel away from the danger areas.
- If anything is unclear, contact dormakaba.

## 6.2 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.

## 6.3 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.

## 6.4 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.

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## Notes


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