record K 31 V + H + SU / K 41 V + H + SU

User manual

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Translation of the original manual

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List of changes

Change	Location
Complete revision of all Sections and content	Entire document
New Section structure	Entire document
Revision of all graphics	Entire document

1 Safety

1.1 Presentation of warning signs

Various symbols are used in this guide for easier understanding:

NOTICE

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

IMPORTANT

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

IMPORTANT

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

CAUTION

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

WARNING

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

DANGER

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

DANGER

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

1.2 Intended purpose of use

The system is designed exclusively for use as a pedestrian passage. The installation must only occur in dry areas. If there are deviations then proper waterproofing and water drains will be required on site.

Any other application or use beyond this purpose is not considered to be an intended purpose. The manufacturer bears no liability for any resulting damage; the operator alone shall bear the associated risk.

The intended purpose also includes observation of the operating conditions specified by the manufacturer, in addition to regular care, maintenance and repair.

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

NOTICE

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

1.3 General hazards

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

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

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

IMPORTANT

The country-specific regulations must be observed and complied with!

WARNING

Serious injuries and major property damage.

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

a) Observe and comply with all important instructions regarding safe assembly.

IMPORTANT

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

NOTICE

The installation must be inspected during the function and safety check for imbalance and signs of wear or damage to cables, springs and fastening parts.
The equipment must NOT be used if repair or adjustment work needs to be carried out.

NOTICE

Checking, repairs, service, maintenance and cleaning may only be carried out when the system is at a standstill and switched off. Before work can be started, persons must be barred from the system and the danger area.

CAUTION

Risk of malfunctions, material damage or injury due to improper settings!

a) Improper settings can lead to malfunctions, material damage or personal injury.

⇨ Do not disconnect the system from the power supply overnight.

⇨ Settings should only be made by personnel qualified to do so.

⇨ Do not disassemble, put out of operation or manipulate safety devices.

⇨ Have faults rectified by specialist personnel or by personnel qualified to do so.

⇨ Have service and maintenance carried out according to locally applicable regulations or according to a maintenance contract.

CAUTION

Risk of malfunctions, material damage or injuries due to insufficient or missing cleaning or care!

a) Insufficient or inattentive cleaning or care of the system can lead to malfunctions, damage to property or injury to persons.

⇨ Check the sensors regularly for dirt and clean them if necessary.

⇨ Regularly remove dirt accumulations in the floor rail or under the floor mat.

⇨ Keep the system free from snow and ice.

⇨ Do not use aggressive or caustic cleaning agents.

⇨ Use road salt or loose chippings only conditionally.

⇨ Lay the floor mat without folds and flush with the floor.

⇨ Equipment required for cleaning purposes such as ladders or similar must not be leaned on or attached to the system.

CAUTION

Risk of material damage or injury due to unforeseen opening, closing or turning of the door!

a) The door can open, close or turn unexpectedly. This may result in damage to property or injury to persons.

⇨ No persons may be present in the opening area of the system.

⇨ Ensure that moving objects such as flags or parts of plants do not enter the detection range of the sensors.

⇨ Do not make any settings on the control unit when the system is in use.

⇨ Have faults rectified immediately by specialist or personnel qualified to do so.

⇨ Remove objects from the opening area.

⇨ Do not disassemble, put out of operation or manipulate safety devices.

⇨ Do not rush through a closing system.

CAUTION

Risk of bruising and severing of limbs!

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

⇨ Do not reach in when parts of the system are moving.

⇨ Keep a distance when parts of the system move.

⇨ Do not bump into or touch the system when it is moving.

⇨ Do not open or remove protective covers during operation.

⇨ Do not permanently remove covers from the system.

⇨ Only carry out inspection, service, maintenance and cleaning when the system is stationary and switched off.

CAUTION

Danger of material damage or injury due to non-functioning safety devices!

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

⇨ Never disable or manipulate safety devices.

⇨ Have inspection, service and maintenance of the safety devices carried out according to local regulations or according to a maintenance contract.

CAUTION

Danger of malfunctions, damage to property or risk of injury if used by unauthorised persons!

a) If unauthorised persons use the system, there is a risk of malfunction, damage to property or injury to persons.

⇨ Children under 8 years of age may only use the system under supervision.

⇨ Children must not play, clean or maintain the system.

⇨ Persons with limited physical, sensory or mental abilities as well as persons with insufficient knowledge or experience may only use the system under supervision or must have received and understood instructions to do so.

DANGER

Danger to life due to electric current!

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

⇨ Before starting work (cleaning, maintenance, replacement) on active parts of electrical systems and equipment, ensure that all poles are voltage free and that this is maintained for the duration of the work.

⇨ Keep moisture away from live parts. This can lead to a short circuit.

⇨ Never bridge fuses or put them out of operation.

⇨ Do not connect the power supply until all work has been completed.

⇨ Have work on the electrical system performed by qualified personnel only.

DANGER

Danger to life due to non-functioning safety devices of the fire protection system!

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

⇨ Never disconnect the fire protection system from the power supply overnight.

⇨ Do not disassemble, put out of operation or manipulate safety devices.

⇨ Do not remove safety instructions on the system.

⇨ Never block, hold open or otherwise prevent fire doors from closing.

⇨ Have inspection, service and maintenance of the fire protection system carried out in accordance with locally applicable regulations or according to a maintenance contract.

⇨ Have the fire protection system checked and maintained according to the state of the art.

1.4 State of technology

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

Nevertheless, danger may arise if not used as intended.

IMPORTANT

Installation, commissioning, inspection, maintenance and repair work may only be conducted by qualified, trained and authorized technicians.
After commissioning or repair work, fill in the check list and give it to the customer for safe keeping.
We recommend obtaining a service agreement.

1.5 Personal protective equipment

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

Personal protective equipment is explained below:

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

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

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

Protective gloves are designed to protect hands from friction, abrasions, punctures or serious injury and from burning caused by contacting hot surfaces.

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

The high-visibility vest is used to make the personnel stand out and therefore to be seen. With improved visibility and attention, the high-visibility vest protects personnel in busy work areas from collisions with vehicles.

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

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

1.6 Spare parts and liability

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

2 General information

2.1 Purpose and use of the instructions

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

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

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

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

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

2.2 Copyright

Subject can change without prior notice.

Differences between product and manual are thereby possible.

2.3 Product identification

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

2.4 Manufacturer BLASI GmbH

BLASI GmbH Automatic Door Systems

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D-77972 Mahlberg

Germany

Telephone: +49 7822-893-0

Fax: +49 7822-893-119

2.5 Target groups

CAUTION

Risk of injury if personnel are insufficiently qualified!

If unqualified personnel work on the system or are in the danger zone of the system, dangers may arise which can cause serious injuries and considerable damage to property.

a) All work must be carried out by qualified personnel only.

b) Keep unqualified personnel away from danger areas.

This operating manual is intended for the target groups listed below:

– Operating entity of the system:
the person who is responsible for the technical maintenance of this system

– Operator of the system:
the person who operates the system every day and has been suitably instructed

2.6 Definition of terms

Term:	Explanation:
System	The term is also used in these instructions as a synonym for the product. Door operators, revolving doors, sliding doors, etc. are referred to as a system. If information in these instructions refers to a specific type, this is shown accordingly in the text.
User	Users are all persons who use the system.
System operator	The respective owner is referred to as the system operator, regardless of whether they operate the system as the owner or pass it on to third parties.
Authorized representative	The authorized representative takes over certain parts of the manufacturer's obligations with regard to fulfilling the requirements of the Machinery Directive. In particular, the authorized representative may also place the system on the market and/or sign EC declarations of incorporation.
Qualified personnel	Qualified personnel are authorized and appropriately trained to perform the following work: – Disassembly, Assembly, Commissioning, Operation, Audit, Maintenance, Troubleshooting, Decommissioning The qualified personnel have several years of professional experience in the technical field, e.g. as mechanics or machine fitters. The qualified personnel are aware of the residual risks arising from the installation site and, due to their professional training, knowledge and experience, are able to carry out the work assigned to them and to independently identify and avoid possible danger points.
Manufacturer	The manufacturer is whoever designs and/or builds machinery or incomplete machinery under the scope of the Machinery Directive.
Life phases	All phases of the system's condition and use are referred to as life phases. This applies from the time the system leaves the factory until it is disposed of.
Personnel	All persons who carry out activities on and with the system are referred to as personnel. Personnel can be, for example, the operator, the cleaning staff, or the security staff. The personnel meet the personnel qualifications required by the manufacturer.
Service technician	Experts and specialists or representative authorized by the manufacturer to perform commissioning, maintenance and servicing.

3 Description

3.1 Description of the full and/or semi-automatic door

The door has a full automatic, microprocessor-controlled drive system. A built in error analyser detects malfunctions as well as activated security sensors.

With a fully automatic door in AUTOMATIC operating mode, people are detected by the motion sensor which activates the turnstile to start rotating at walking speed. After the last person is detected, the turnstile will reduce speed shortly before reaching the start position and then come to a standstill.

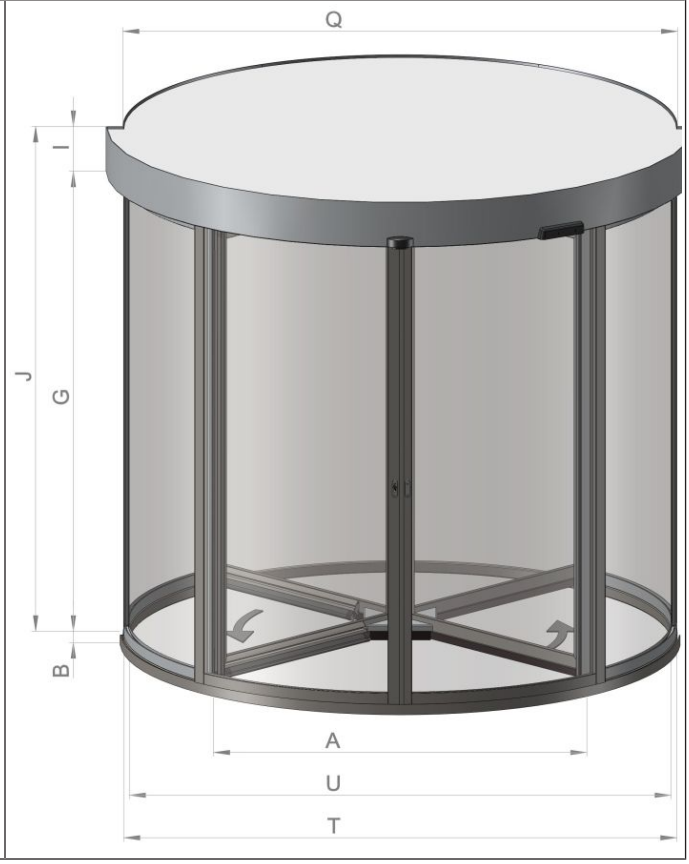
In the CONTINUOUS operating mode, the turnstile rotates permanently at slow speed. When people are detected by the motion detectors, the turnstile accelerates to walking speed. After the last person is detected the turnstile reduces speed shortly before the start position and switches back to slow rotation speed.

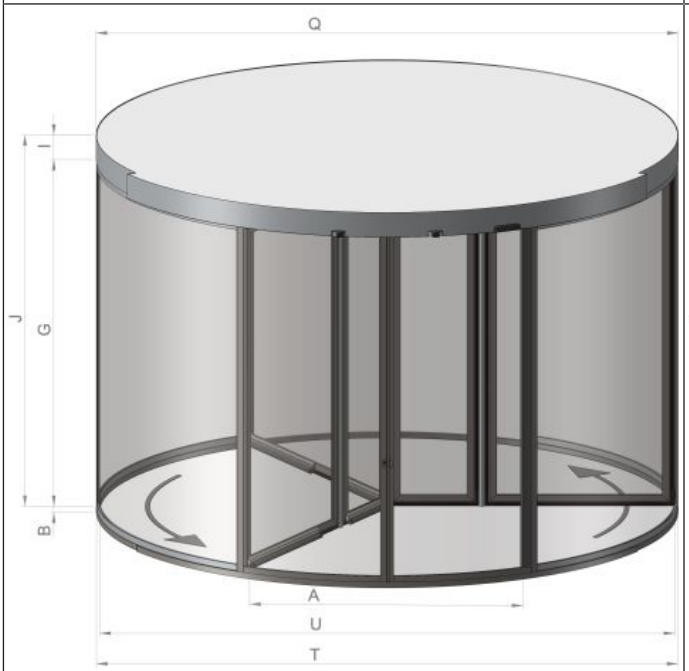
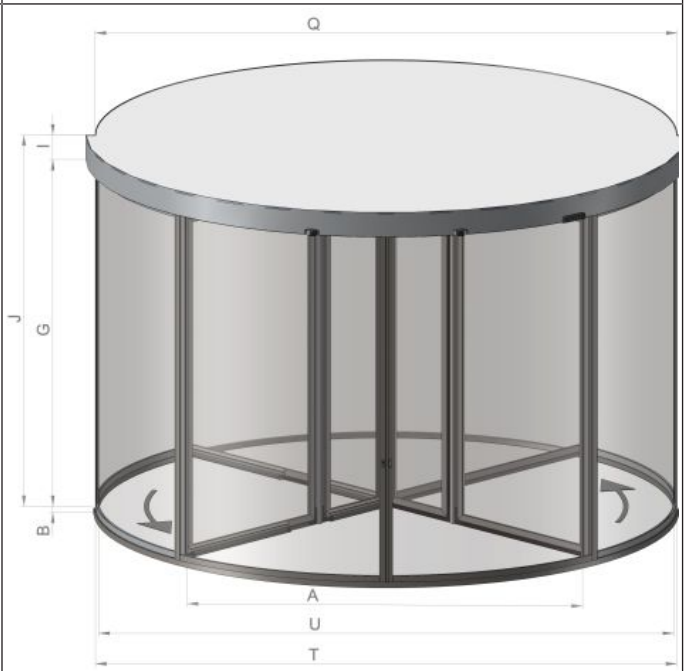
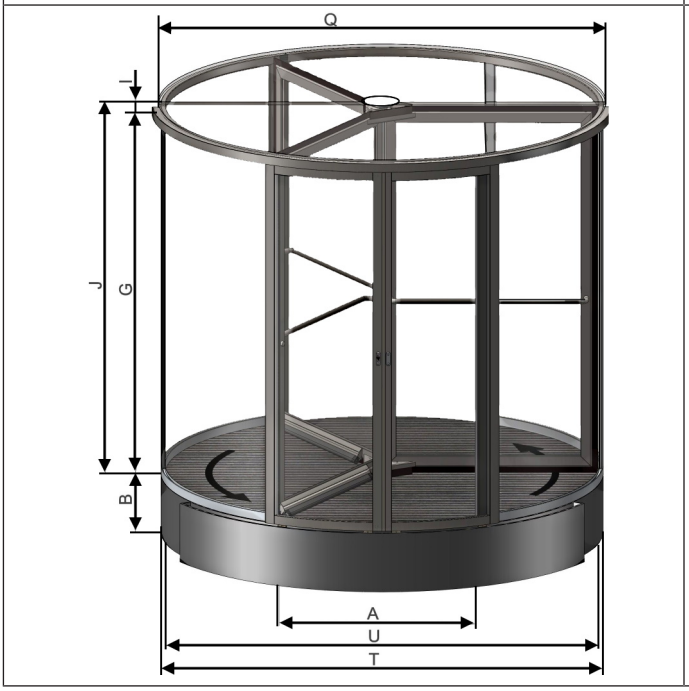
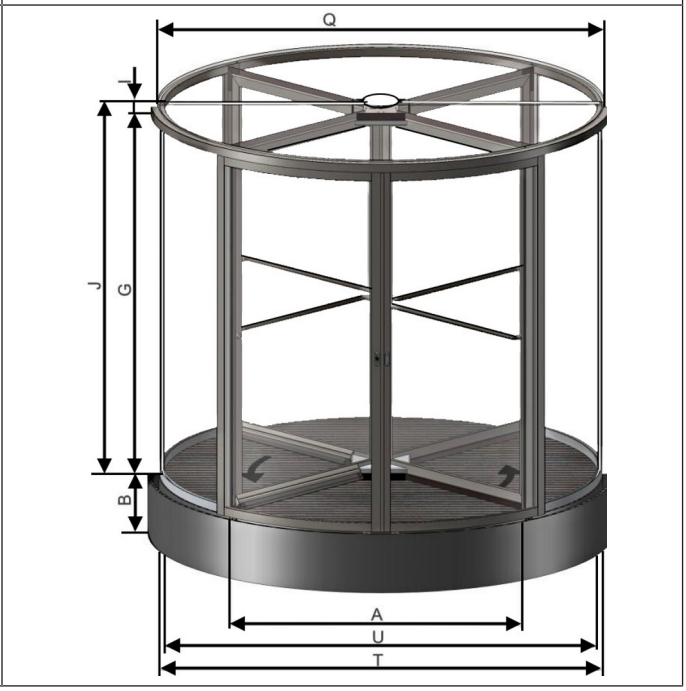
In MANUAL operating mode the turnstile can be rotated freely, with the exception of a subfloor system with a transmission drive.

With a semi-automatic door (without motion detectors), the system can be started by briefly pushing the turnstile. If the turnstile is no longer pushed, the turnstile reduces speed shortly before the start position and comes to a standstill.

Safety sensors prevent hazardous movement and slow or stop the turnstile in time. The operating status or system error is displayed on the optional IBS system display. This IBS system display can also be used to set basic door parameters.

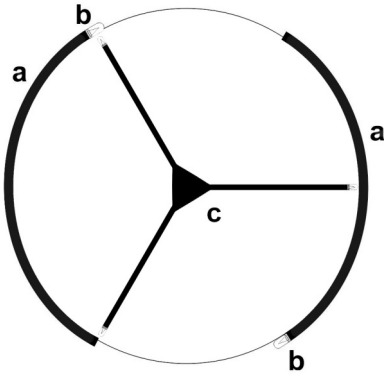
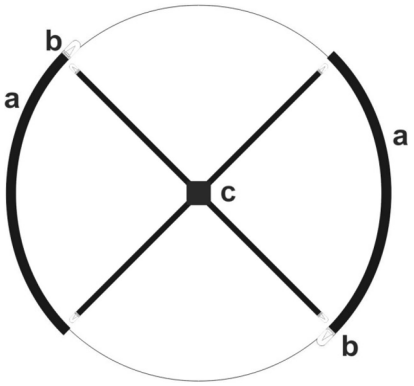
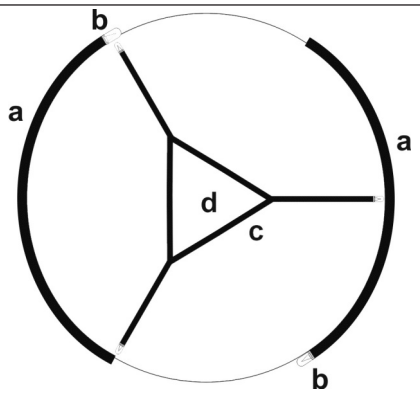
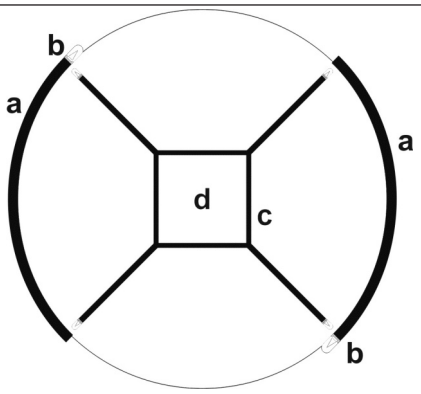
3.2 Graphical display K31 / K41

K31-V/NMA with central drive	K41-V/NMA with central drive
	

K31-V/NMA with external rotor drive	K41-V/NMA with external rotor drive
	
K31-V/SU/NMA	K41-V/SU/NMA
	

Abbreviation	Description		
A	Passage width	B	Floor ring height
G	Passage height	I	Cladding height
J	Total height	Q	Total diameter
T	Exterior diameter	U	Interior diameter

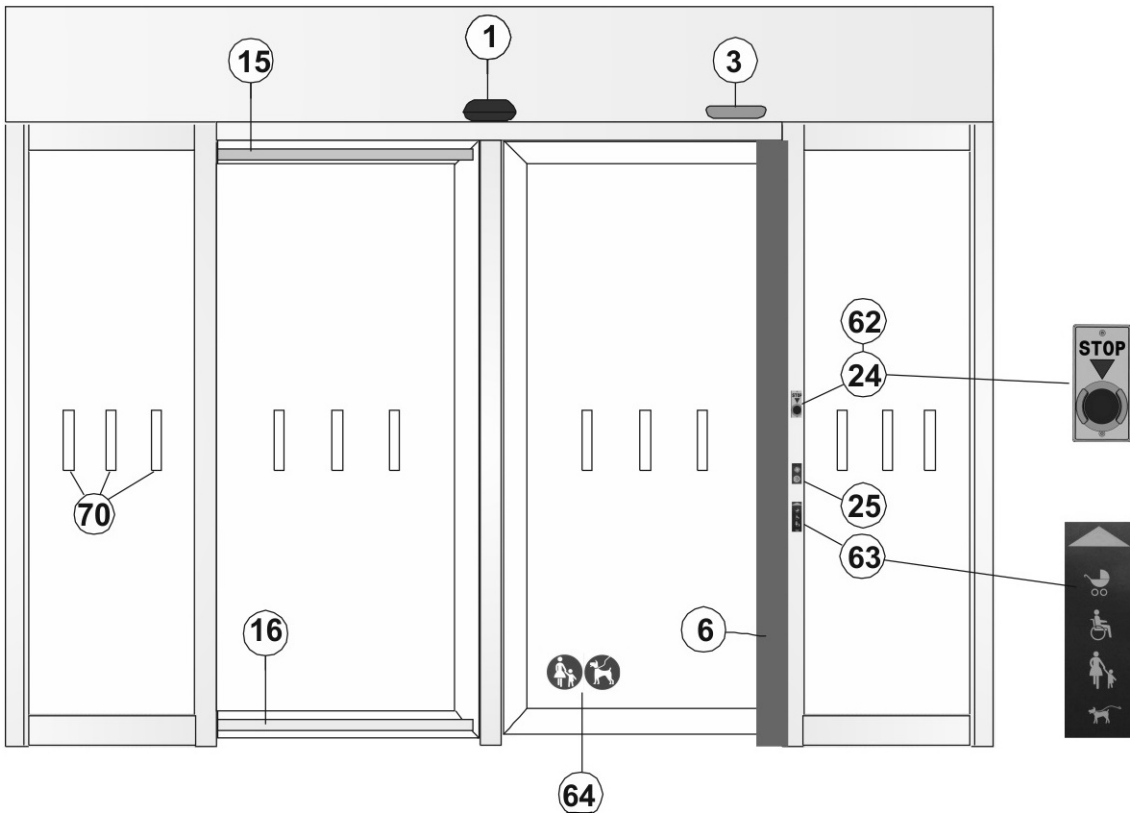
3.3 Main mechanical components

K3x	K4x
	
K3x-VI	**K4x-VI**
	

	Description
a	**Drum wall** Curved, fixed aluminum frame for supporting curved glass or paneling.
b	**Drum wall edge** Fixed structure made of vertical frame profiling for accommodating control units.
c	**Rotation unit turnstile** Rotating inner part of the revolving door.
d	**Display case** Show case in the centre of the rotation unit.

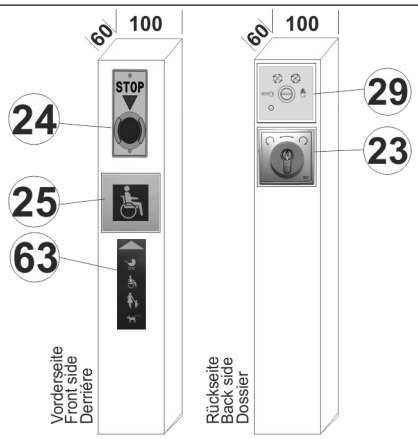
3.4 Safety features and control elements K31 / K41

INTERIOR VIEW in the closed position

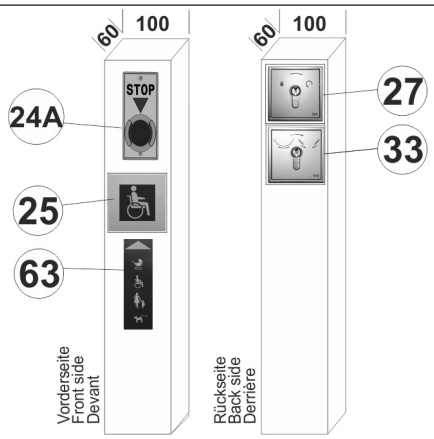


Operating element variations available

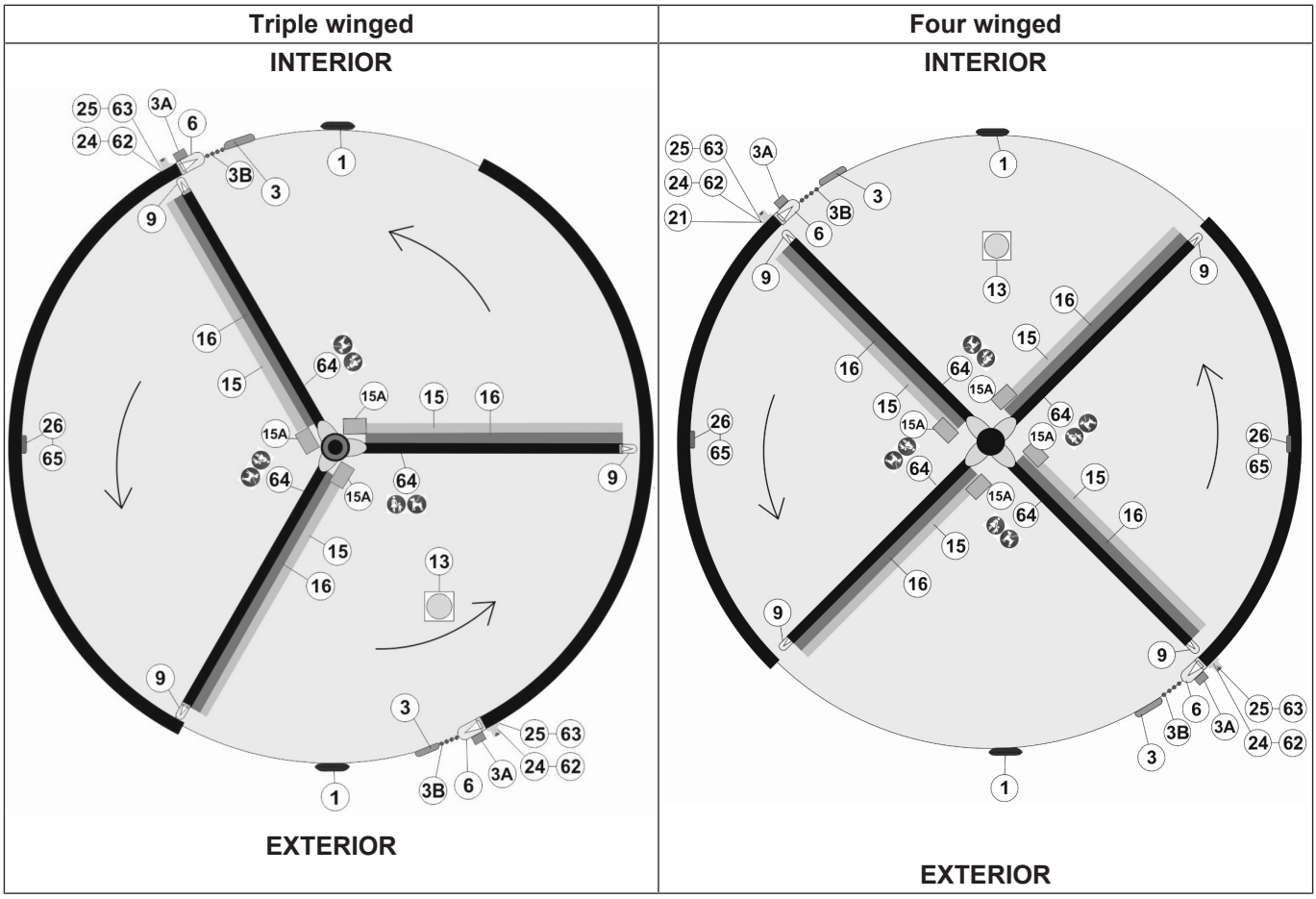
INTERIOR column



EXTERIOR column



Wall installation



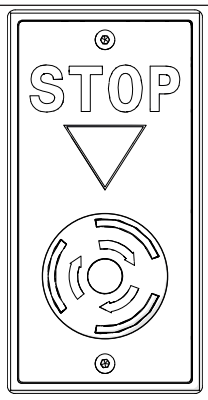
3.4.1 Legend for safety features and control elements

Pos. No.	Components
1	Motion detector canopy or floor installation (AKI / AKA)
2	Vertical forward sensor radial protective sliding wing (OP-VLS)
3, 3A, 3B	Vertical sensors drum edges (OP-VSS)
4	Horizontal heel protection light barrier SLOW (OP-HSR)
5	Horizontal heel protection light barrier STOP (OP-HSR)
6	Vertical safety strips drum edges (SL-TRK)
7	Vertical safety strip radial protective sliding wing (SL-RSF)
8	Vertical safety strip radial fixed wing (SL-VSR)
9	Vertical safety strips turnstile wings (SL-VSR)
10	Radial protective sliding wing (RSF)
11	Power storage (rubber rope)
12	Surveillance contact radial protective sliding wing (UW-RSF)
13	Rotor lock
14	Radial protective sliding wing lock
15, 15A	Sensors turnstile wings (OP-VSR)
16	Horizontal heel protection safety strips (SL-FES)

17	Foot protection sensor radial protective sliding wing
18	Vertical light barriers drum edges
19	Monitoring contact night shield (UW-NAS)
20	Main power switch (UW-HAS)
21	Control unit BDE-D-KTA
22	Key-operated switch BDE-V
23	Key-operated emergency switch
24	Emergency stop switch
25	Disabled person button
26	Start button
27	Key pivot contact
28	Contact mat blocked segment
29	Key-operated switch
30	Sliding door drive STA 20
31	Sliding door control unit BDE-D-STA
32	Traffic light red / green (alternatively in the standing column)
33	Turn key switch night shield
34	Light barriers pivot wing joints
35	Emergency open button
36	Contact mat exit direction
37	Contact mat entrance direction
38	On-site code card reader (1x interior and 1x exterior)
39	Horizontal sensor strip (opening and closing side)
40	Lock mechanism status indicator VRM rotor
41	Door position indicator TPA rotor
42	Lock mechanism status indicator VRM radial protective sliding wing
43	Door position indicator TPA radial protective sliding wing
44	Drive gear box (subfloor)
45	Safety sensors (shearing edge / crushing edge)
46	Electromagnetic lock with bolt contact
47	Turnstile lock
48	“Open position” night shield wing
49	FPC service outlet
50	Lighting
51	Combination sensors

60	Plastic manufacturer's logo
61	System nameplate
62	Sticker STOP
63	Sticker Baby carriage / Wheel chair / Mother + Child / Dog
64	Sticker Mother + Child/ Dog
65	Sticker START
66	Sticker Maximum weight
67	Sticker “Opening service trap”
70	Glass label (example) Labelling the glass surface reduces the danger of collision. Transparent wings or wing surfaces must be must be clearly visible, for example, by permanent labelling, appropriate markings or use of coloured materials. Stickers, sandblasting, dyeing or etching can be used for labelling. Quantity and design are determined separately.
71	Brush seals The door wing frames of the rotation unit are sealed all around with interchangeable brush strips to prevent drafts.
72	Canopy Encircling canopy panels made of bent aluminum sheets. The entire drive system and controls are located behind the canopy panels. The ceiling panels are part of the turnstile unit and are lined with concentric cut aluminum panels, which can be removed for inspection.
73	External control box
74	Deadman button

3.5 Emergency stop button



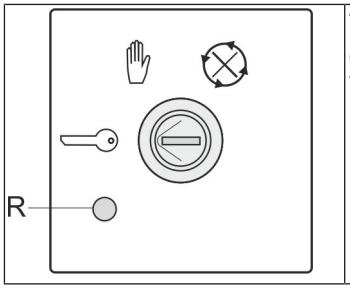
When the emergency stop button is pushed the rotating turnstile is stopped immediately, the turnstile is released and can be rotated manually.

After resetting the emergency stop button, the preset operating mode will continue.

NOTICE

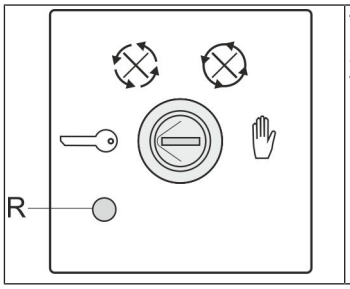
The turnstile cannot be turned manually on a subfloor door with a geared motor!

3.6 Semi-automatic key-operated switch



The operating modes LOCKED, MANUAL and AUTOMATIC can be set with the key-operated switch.
The RESET button (R) is also integrated in the key-operated switch and after pressing it the door control will be reinitialized.

3.7 Fully automatic key-operated switch



The operating modes LOCKED, AUTOMATIC, CONTINUOUS and MANUAL can be set with the key-operated switch.
The RESET button (R) is also integrated in the key-operated switch and after pressing it the door control will be reinitialized.

3.8 Information on motion detectors

NOTICE

Moving objects, i.e. loose poster or plants that move in the detection area can trigger an unintentional startup.

Motion detectors are installed on each access side of the door (see “Safety and operating components legend”).
These motion detectors detect moving persons. If for example, the detection field of a motion detector is entered in the AUTOMATIC operating mode, the turnstile will start to rotate from the start position. If the detection field is entered in the CONTINUOUS operating mode, (slow speed) the turnstile will accelerate from slow speed to walking speed.

3.9 Vertical safety sensors or light barriers drum edge

The danger zones on the access sides of the system are secured with vertical safety sensors radiating to the ground or with vertical light barriers, between the rotating turnstile wings and the fixed drum wall edges.

These safety sensors or light barriers are only activated when the rotating turnstile wing approaches the drum wall edge by approx. 40 degrees (danger zone). When a safety sensor is activated or a light barrier is interrupted inside the danger zone, the turnstile either stops immediately or switches to slow speed depending on how the parameters have been set on the door control. The stop setting will be held as long as the safety sensor or light barrier is activated. The slow speed setting remains active until the turnstile reaches the home position. Then the turnstile will accelerate and resume until another safety sensor or light barrier is activated. If the safety sensors are no longer activated or the light barrier is no longer interrupted, the turnstile will accelerate and continue at the preset speed.

3.10 Information on safety strips

CAUTION

Risk of destruction Safety edge

a) Personal injury and damage to property due to malfunctions on the safety edge

⇨ Do not use pointed or sharp-edged objects when working on the safety edge.

⇨ Do not use aggressive cleaning agents such as mineral oils or petrol when working on the safety edge.

NOTICE

On the drum wall edges of the system and on the lower and outer turnstile profiles of the turnstile wings, vertical and horizontal safety bars made of soft rubber are mounted in the direction of rotation. When a safety bar is actuated, the turnstile stops turning immediately. When the safety bar is no longer actuated, the turnstile resumes turning.

3.11 Horizontal and vertical safety strips

Vertical and horizontal safety strips (see “Safety and operating components legend”) made of soft rubber are installed on the drum wall edges of the system and on the outside lower turnstile profiles of the turnstile in the direction of rotation. When a safety strip is activated, the rotating turnstile is stopped immediately.

When the safety strip is no longer activated, the turnstile automatically resumes rotation.

3.12 Overview of the door parameters

Software versions	K30_121 / K40_121
Door types	K31-V/xx + K31-H/xx / K41-V/xx + K41-H/xx

MP	Description	Default setting	Setting range			
02	Acceleration time	08	00.. 15			
03	Crawl distance	10	01.. 255			
04	Crawl speed	08	05.. 20 [%]			
05	Slow speed	30	10.. 100 [%]			
06	Fast speed	60	10.. 100 [%]			
07	Over current	100	10.. 100 [%]			
08	Emergency stop brake time	05	00.. 15			
09	Activation point drum sensor	90	00.. 255 [drum edge-0..90°]			
10	Drum edge sensor	1	**Sensor type**	**Output**		**Value**
			Test low active	NO		0
			Test low active	NC		1
			Test high active	NO		2
			Test high active	NC		3
			No test	NO		4
			No test	NC		5
11	Starting angle	00	00 [man. Start OFF] 01..255 [00..45°]]			
12	Brake time - crawl speed sensor	08	00..15			
13	Drum deactivation sensor	00	00..255 [drum edge - 0..90°]			
14	Turnstile released in OFF	00	0 [OFF] 01..20 [sec.]			
15	Lock type	2	**Type**	**Without power**	***VRM**	**Value**
			monostable	CLOSED	yes	0
			monostable	OPEN	yes	1
			monostable	CLOSED	no	2
			monostable	OPEN	no	3
16	Sensor type crawl	1	**Sensor type**	**Output**		**Value**
			Test low active	NO		0
			Test low active	NC		1
			No test	NO		2
			No test	NC		3

MP	Description	Default set-ting	Setting range
17	Emergency-Stop-Module	1	0…1 [without .. with]
18	Number of rotating segments	3 / 4	1 …4 [1/3.… 4/3 rotations, 90°..480°]
19	Lock delay time	0	0 … 20 [sec.] only works for semi-automatic-MP10>0
20	Drum sensor function	0	0 … 1 [stop .. crawl]
21	Release emergency stop	0	0 … 1 [manual .. automatic]
22	Permanently locked	0	00..1 [Off .. On]

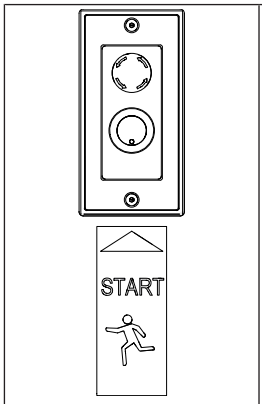
*VRM = lock mechanism status indicator

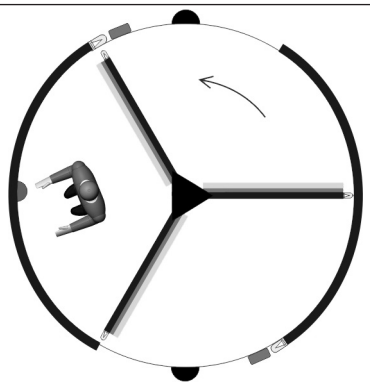
4 Options

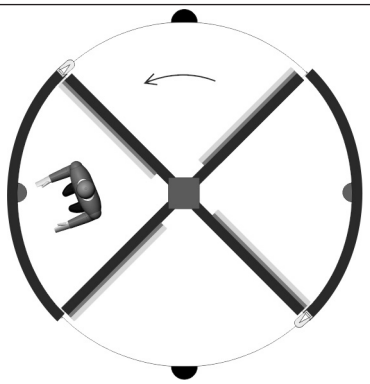
4.1 Start button

IMPORTANT

In the LOCKED mode, the start button function is disabled after 10 minutes.

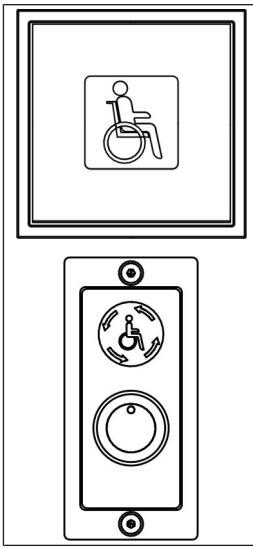






After pressing the start button the turnstile starts and turns one complete rotation to prevent confinement. The start button does not work during a power failure.

4.2 Disabled button



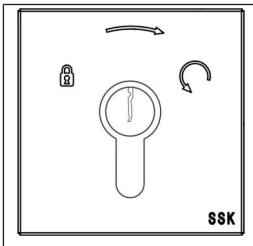
If the disabled button is pressed in the AUTOMATIC or ONEWAY operating mode, the turnstile will start and rotate 360° plus an additional segment, at slow speed.
The motion detectors (if available) will be disabled during this time.

In the operating mode CONTINOUS the turnstile rotates a slow speed. If a disabled button is pressed, the slow speed will be maintained.

NOTICE

If the detection area of a motion detector is entered without pressing a disabled button, the turnstile will accelerate to walking speed.

4.3 Key pivot contact (SSK)



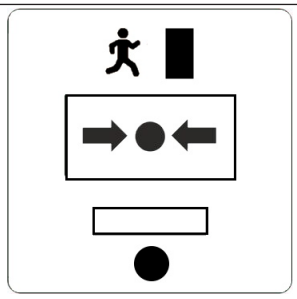
When the key pivot contact is activated (see “Safety and operating components legend”), the turnstile starts and rotates a minimum of 360° in all operating modes except for MANUAL mode.

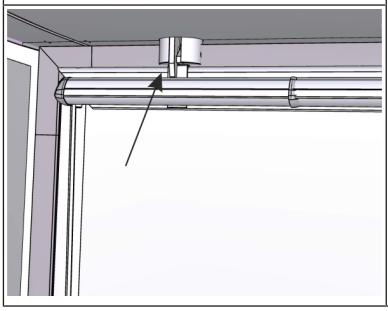
In the MANUAL mode or when the emergency stop switch is activated, the turnstile can only be rotated manually, with the exception of subfloor system with a geared drive.

In the LOCKED mode the turnstile will automatically lock again (if an electric lock is available).

Or – on-site code card reader (CKL)

4.4 Emergency open button (pivot wing)





After pressing the emergency open button (pivot wing), (see “Safety and operating components legend”)

the turnstile immediately comes to a stop. The pivot wing stopper latches are released (see arrow).

The pivot wings are released and can be folded back manually.

To restore normal operation of the system, the emergency open button must be reset first.

When the emergency open button is reset, then all the pivot wings must be manually rotated to their original position. The pivot wing stopper latches will hold the pivot wings in their original position (see arrow).

To start the AUTOMATIC operating mode, the door control must be renormalized.

To release the restart lock, turn the key-operated switch briefly to the LOCKED position and then back to the AUTOMATIC operating mode.

The turnstile will start to calibrate, whereby the turnstile will go around 1-2 complete rotations at slow speed. After the calibration is complete the door is operational again.

4.5 Key emergency operation button

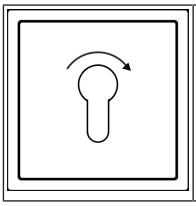
WARNING

There is a risk of entrapment and entanglement, causing injury

Activated safety sensors or safety strips are ignored during emergency operation.

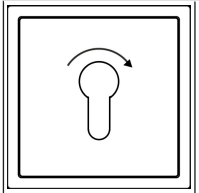
This can lead to personal injury or property damage due to carelessness. In a hazardous situation, press the emergency stop button immediately.

The operator must always maintain visual contact to the door from the key emergency operation button!



If the operation of the door is prevented for example, by a defective sensor, the turnstile can still be rotated to a desired position, in the direction of rotation by an authorized person, via the key emergency operation button (see “Safety and operating components legend”).

Function: triggers a rotation at reduced speed. It can ignore safety sensors. The emergency stop button remains the overriding function.

Key	Operating mode	Function
 activated	emergency operation	– As long as the key emergency operation button is turned and held in the direction of the arrow, the turnstile will rotate and stop in the home position (locked position) automatically (deadman function). – When the key emergency operation button is released, the turnstile will stop in its current position.

4.6 Light switch

The lighting can be or is connected to an on-site light switch or controlled by the building control system to be switched OFF or ON.

4.7 Forward sensors turnstile wing

Forward sensors, which are integrated in the ceiling or mounted directly on the turnstile wing frame, secure the hazardous area in front along the vertical edge of the turnstile wing down to the floor. The sensors function continuously during rotation. When activated, rotation of the turnstile is stopped. When the sensors are no longer activated, the turnstile will continue to rotate.

4.8 Vertical sensors strips drum walking area

Co-rotating, vertical sensors, radiating to the floor, are mounted on top of the turnstile wings and/or on top of the turnstile centre part. They secure the danger zone from approx. 12-20 cm in front of each turnstile wing to the turnstile centre. When a safety sensor is activated within the danger zone, the turnstile will switch to slow speed or stop depending on parameterization. Slow speed is maintained until a horizontal or vertical electric safety strip on the turnstile is activated. Then the turnstile will stop. When the electric safety strip is no longer activated and no safety sensors are activated, the turnstile will start and accelerate to the preset walking speed.

4.9 Vertical multifunctional sensors drum walking area

Co-rotating, vertical sensors, radiating to the floor, are mounted on top of the rotating wings. They secure the danger zone from approx. 15 -20 cm in front of each turnstile wing to the turnstile centre. If a person is detected within approx. 2/3 of the width of the rotating wing while the turnstile is rotating, the turnstile will immediately stop. The turnstile will also stop immediately if a person is detected in the central area within approx. 1/3 of the width of the rotating wing while the turnstile is rotating. If there are no people or objects etc., within the detection area of the sensors, the turnstile will start again and accelerate to walking speed.

4.10 Horizontal-pivot wing hinge light barrier (stop)

Co-rotating, horizontal light barriers, radiating to the floor, are mounted (see pos. no. 34 “Safety and operating components legend”) on the bottom along the pivot wing joints.

They secure the danger zone between the floor and each pivot wing joint construction. If a light barrier is activated while the turnstile is in motion, the turnstile will stop immediately. If there are no more people or objects etc., within the detection area of the light barriers, the turnstile will start again and accelerate to walking speed.

4.11 Air curtain control

Direct ventilation to the interior via an air duct built into the doorway.

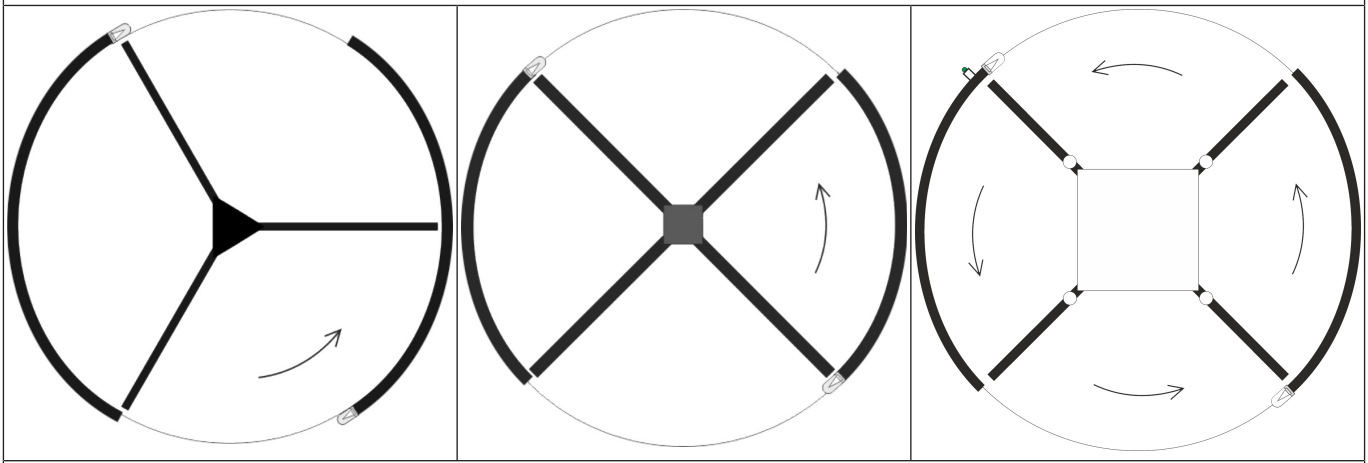
The air curtain is controlled by a potential-free door contact that triggers once the turnstile starts to rotate.

4.12 Foldable turnstile wings and/or foldable drum walls

The system may be equipped with foldable turnstile wings and/or, in the case of a three wing system, with foldable drum walls. If a turnstile wing and/or a drum walls have been manually folded open, the system control will be signalized of its status via a monitoring contact. Rotation would simultaneously stop immediately and the system control will turn off. In order to return to operation, all the turnstile wings and/or drum walls must be manually placed back to their original position. Then the turnstile will start again and resume in the preset operating mode.

Home positions K31 / K41

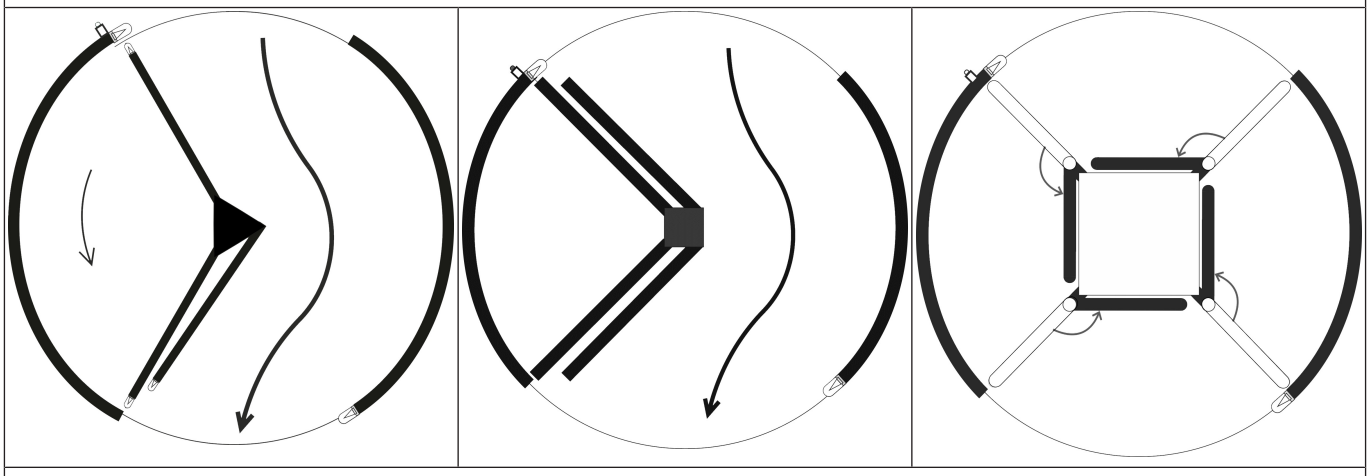
Interior



Exterior

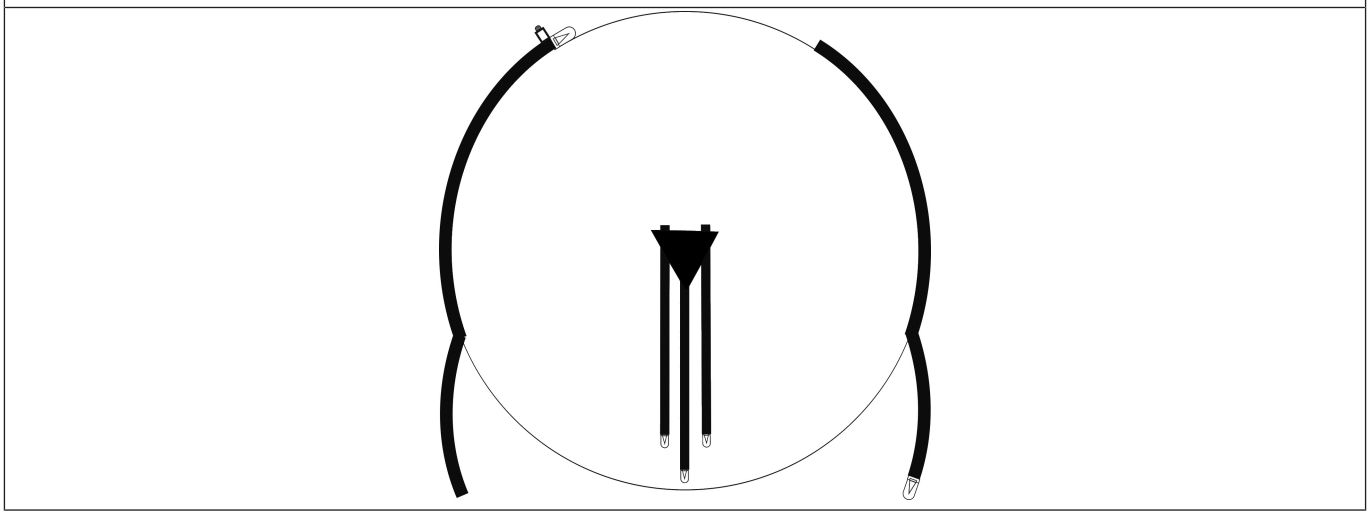
Folded positions K31 / K41

Interior



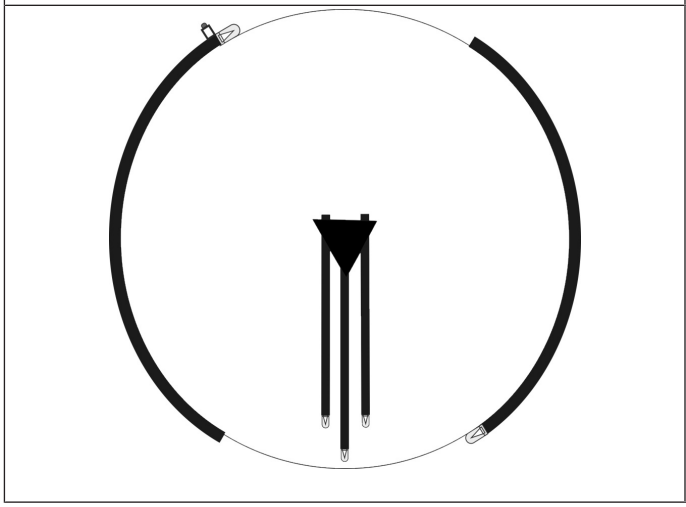
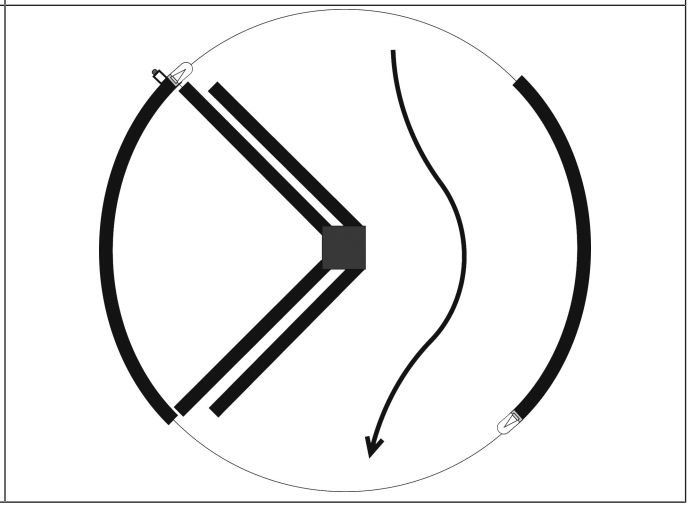
Exterior

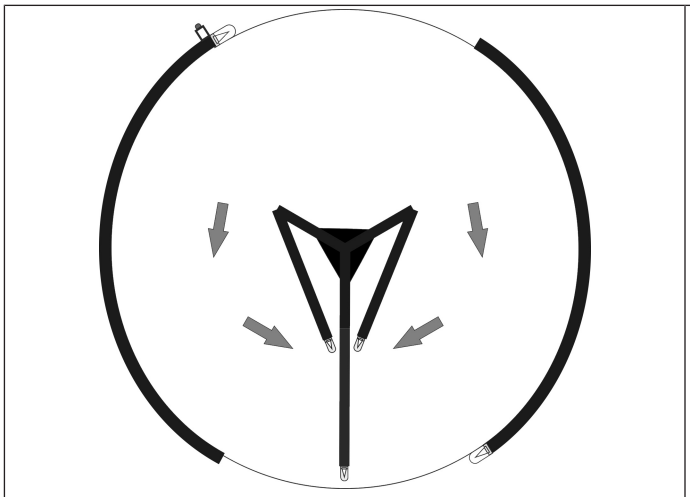
Folded drum walls K31



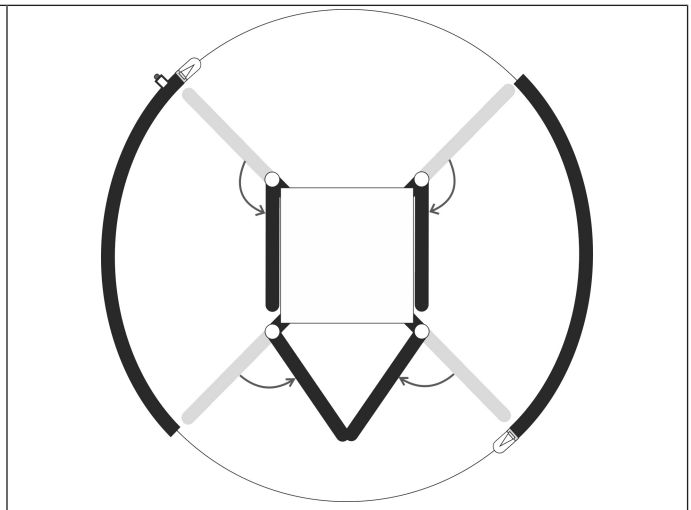
4.13 Pivot wing button K31 / K41 (break out)

When the button is activated, the turnstile rotates to the home position (see left graphic), in all operating modes. The holding magnet then releases the respective pivot wing. The pivot wing can now be manually folded back (see graphic example). This allows for faster passage through the system. After resetting the switch, all pivot wings must be manually reengaged to their original position. The turnstile starts automatically and resumes in the preset operating mode.

Folded positions K31 with break out	**Folded positions K41 with break out**
Interior	Interior
	



Exterior



Exterior

4.14 Lock mechanism status indicator and door position indicator

Signal contacts (potential-free NO contacts maximum contact load 24 volt AC/DC/0.3 amps) for indicating the locked state of the turnstile and / or night shield. The position of the night shield wing can also be indicated.

In some countries (VdS) tested signal contacts (potential-free NO contacts, tested according to VdS class C, maximum contact load 24 volt AC/DC/0.3 amps) are required according to the German Property Insurers Association. These are then suitable for use in certified alarm systems.

4.15 Over current, blocking and heavy starting detection

Over current detection

If the turnstile is rubbing hard on the floor surface or runs into an obstacle and blocks, without activating any security devices, this is considered over current. The door control will shut the drive down. The message [08] is shown on the optional IBS –Display. The door system will attempt to restart in the preselected speed after 2 seconds.

Blocking detection

Blocking detection: If the turnstile does not move when attempting a restart after an over current detection, this is considered blocking. After a total of 10 unsuccessful consecutive start attempts without rotation (blocking) the door will come to a standstill. The optional IBS-Display will switch from [08] to the message [25]. The door can be started again by normalizing.

Heavy starting detection

Heavy starting detection: If the turnstile only moves gradually when attempting a restart after an over current detection, this is considered heavy starting. After a total of 30 unsuccessful consecutive start attempts with gradual rotation (heavy starting), the door will come to a standstill. The optional IBS-Display will switch from [08] to the message [26]. The door can be started again by normalizing.

Overload counter

If there is no overload for a duration of approx. 3 sec. after the door starts, (error [08]), the overload counter resets. The overload counter is also reset, when error release [25] or [26] occurs.

4.16 Night shield

NOTICE

The door is equipped with a night shield located on the exterior entrance.
If it is manually pushed out of the open position while rotating, the turnstile will immediately stop for safety reasons.
For safety reasons, the automatic mode only functions if the night shield is completely open.
During a power failure, the status of the night shield remains LOCKED or UNLOCKED.

4.16.1 Manual night shield

Night shield with mechanical bar-bolt lock or hook bolt lock

The night shield can be locked and unlocked with profile cylinder locks integrated in the door frames. If the night shield is in locked position, then it must be unlocked and completely pushed open manually.

Then the operating mode of the door can be selected.

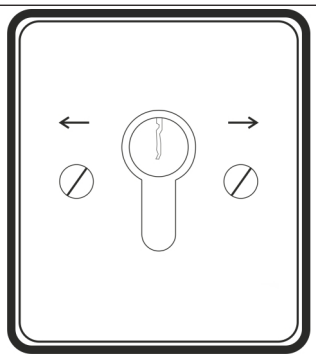
4.16.2 Night shield – Deadman function

NOTICE

To avoid crushing hazard, the operator must have a clear view of the night shield during the OPENING and CLOSING process.

NOTICE

If the night shield is manually locked (i.e. with a bar-bolt lock) then it must be verified first, that the night shield wings have been manually released, prior to activating the turn key switch.



Switch example

Opening process: if the turn key switch is turned to the right (see arrow direction) and held, the night shield will opened. If the night shield is locked electrically, it will be unlocked simultaneously. The opening process will stop immediately once the turn key switch is no longer being turned or held. The opening process will resume once the turn key switch is turned to the right again (see arrow direction) and held.

Closing process: if the turn key switch is turned to the left (see arrow direction) and held, the night shield will closed. The closing process will stop immediately once the turn key switch is no longer being turned or held. If the night shield is locked electrically, then it will lock automatically in the closed position.

Collision detection: if the night shield wing strikes an obstacle during the closing or opening process, the night shield will stop. Turning and holding the turn key switch again will start the next closing or opening process.

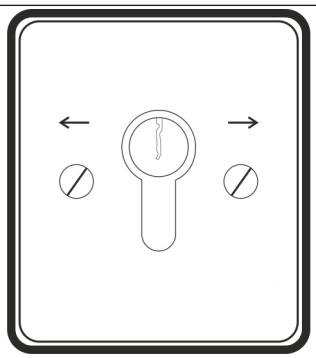
4.16.3 Semi-automatic night shield

NOTICE

To avoid crushing hazard, the operator must have a clear view of the night shield during the OPENING and CLOSING process.

NOTICE

If the night shield is manually locked (i.e. with a bar-bolt lock) then it must be verified first, that the night shield wings have been manually released, prior to activating the turn key switch.

 Switch example	Semi-automatic night shield drive with electric lock The night shield is closed and electrically locked (if available). By turning the turn key switch to the right briefly (see arrow direction), the night shield will unlock and open in all operating modes of the revolving door. The turnstile can only be started when the night shield is completely opened. By turning the turn key switch to the left briefly (see arrow direction), the night shield will close and lock in all operating modes of the revolving door. The opening or closing process can be switch to the opposite direction by turning the turn key switch to the other side. Securing sensors: if the detection area of the security sensors is entered during the closing process, the night shield will open (reverse) immediately. If no security sensors are activated the night shield will close and lock automatically. Collision detection: if the night shield wing strikes an obstacle during the opening or closing process, the night shield will stop and remain at a standstill. The next attempt to open or close will start from the obstruction area at slow speed.

4.16.4 Fully automatic night shield

It is operated with a door open button, or a turn key switch, or an on-site code card reader.

CAUTION

Night shield crushing danger

a) Fingers or hands getting crushed, sheared or pulled in

⇨ To avoid crushing, the operator must have a clear view of the night shield during the OPENING and CLOSING process.

Fully automatic night shield drive with electric lock:

Place the door in the LOCKED operating mode.

The night shield is closed and electrically locked.

By pressing the door open button, or using the turn key switch or on-site code card reader, the night shield will unlock and open up completely.

Once the night shield is completely opened, the turnstile will start, turn one complete rotation at slow speed and come to a standstill in the home position.

Then the night shield closes again automatically and locks.

In the operating modes AUTOMATIC, CONTINUOUS and MANUAL, the night shield unlocks itself, opens automatically and remains open. If switched to the LOCKED operating mode, the night shield closes again automatically.

Security sensors: if the detection area of the security sensors is entered during the closing process, the night shield will open (reverse) immediately. If no security sensors are activated the night shield will close and lock automatically.

Collision detection: if the night shield wing strikes an obstacle during the closing process, the night shield will stop and open again. The next attempt to close will start from the obstruction area at slow speed.

The night shield will also stop, if its wing strikes and obstacle during the opening process. The next attempt to open will start at slow speed.

4.17 Turnstile lock mechanisms

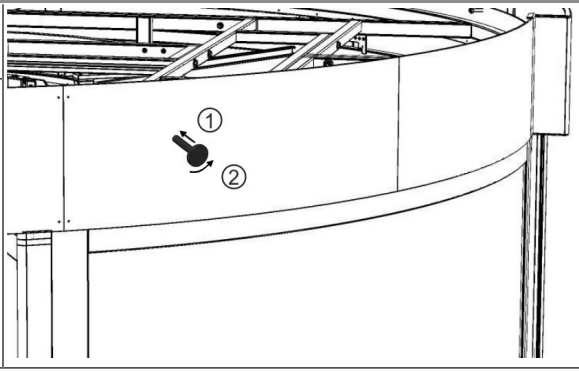
4.17.1 Electric lock

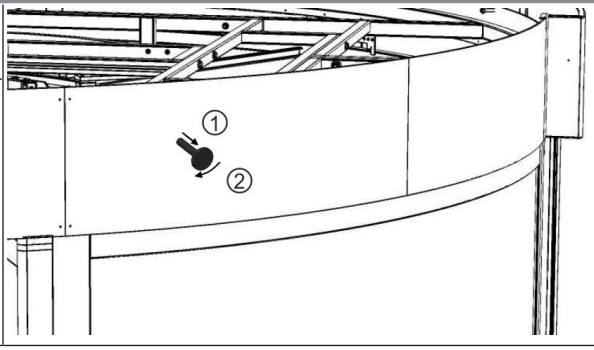
The system is equipped with an electric lock (currentless unlocked). In the LOCKED operating mode, the turnstile is automatically locked via the electric lock in the start position (locked position). During a power failure the turnstile is released and can be rotated freely.

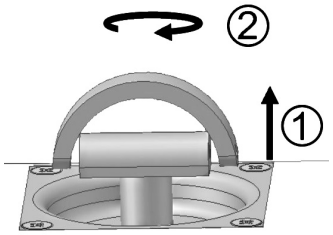
The system is equipped with an electric lock (currentless locked). In the LOCKED operating mode the turnstile is automatically locked in the start position (locked position) and unlocked when another operating mode is selected.

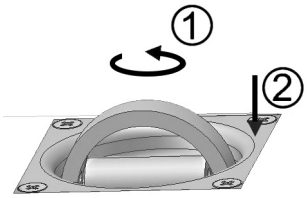
Unlocking is only possible by pulling the manual release pin (Bowden cable) in the drum canopy, or by pulling the handle on the side of the system on subfloor systems with a timing belt drive (see steps below).

Please follow the steps below:

Unlock turnstile	
① Pull pin	
② Turn pin to the right until it stops and let go.	

Lock turnstile	
① Turn pin to the left	
② Release the pin and it will retract. Rotate the turnstile slowly into the start position (locked position) from the exterior until you hear the lock snap into place. Test the turnstile lock, the turnstile should no longer rotate.	

Unlock the turnstile on the side of the system on the bottom	
① Pull handle	
② Turn the handle to the right until it stops and then let go.	

Lock the turnstile on the side of the system on the bottom	
① Turn the handle to the left	
② Release the handle and it will retract downward.	

4.17.2 Turnstile bar-bolt lock

The turnstile can be locked with a bar-bolt lock, integrated in the door frame profile. By rotating the profile cylinder together with the ceiling construction, and/or additionally with a fitted socket integrated in the floor.

4.17.3 Turnstile bar-bolt lock with limit switch (option)

A limit switch which prevents the turnstile from starting is used to lock the profile cylinder bar bolt lock because the door control is turned off for safety reasons.

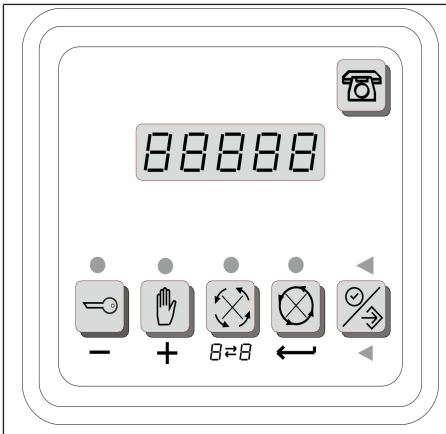
4.17.4 Turnstile corner lock

The turnstile can be locked with a corner lock, at the bottom of the door frame profile. By rotating the integrated profile cylinder with a fitted socked integrated in the floor.

4.18 Battery emergency power supply

The charge level of the integrated battery is permanently monitored. If a discharge is determined, the message [17] will be shown on the optional IBS-System display.

4.19 IBS-System display (service)



The optional IBS-System display is a microprocessor-controlled display and programming unit, which can be set or display special functions and door parameters. Thanks to an integrated system analyser the respective code will be shown in the display when a safety device is activated or a system failure occurs. Only the last code will be displayed. The display reading can be deleted by pressing any key. Then the display shows [-----].

When you push the telephone key a scroll text showing the customer service centre telephone number is displayed until another key is pushed.

After the power supply is turned on, the numbers [0] to [4] will show one after another in the display, indicating data transfer between the IBS and the door control. Then the display shows [-----]. The IBS-System display is now in basic mode. The mode of the key-operated switch is shown by a round green LED above the respective operation key. Selecting the program mode is done by using the shift key, whereby the current mode is displayed by a green or a yellow triangle LED.

Keys / Display / LED	Significance	Function
	Telephone key	Customer support phone number
	Basic mode	LOCKED mode
	Program mode	Down key
	Basic mode	MANUAL mode
	Program mode	Up key
	Basic mode	AUTOMATIC mode
	Program mode	Cursor control
	Basic mode	CONTINUOUS ROTATION mode
	Program mode	Input confirmation ENTER
	Shift key	Basic mode / program mode
	Display	Menu number display, parameter value, system failure or operating mode
	Green LED (circle)	Operating mode display
	Green LED (triangle)	Basic mode display
	Yellow LED (triangle)	Program mode

NOTICE

It is not possible to switch the operating modes LOCKED / MANUAL / AUTOMATIC / CONTINUOUS ROTATION with the IBS system display.

5 Specifications

5.1 Electrical specifications of the system H+V+ST+SU

Mains voltage:	220-240 V / 115 V
Frequency:	50-60Hz
Mains fuse:	16A circuit breaker with tripping characteristic C or K
Power consumption:	max. 300 VA
Additionally per slave control:	approx. 250 VA
Control voltage:	24 V DC (extra low voltage)
Motor voltage:	58 V (pulsed)
Fuse in the control:	TA4
Safety class:	1
Degree of protection:	IP 20
Safety class for subfloor systems:	3
Degree of protection for subfloor systems:	IP 54 (subfloor)

An additional external upstream RCD circuit breaker In = 30mA (FI circuit breaker) must be installed on subfloor systems provided by the customer.

5.2 Electrical lighting specifications

High-Power LED-Spots	
Mains connection Transformer	100-240 VAC
Frequency	50-60 Hz
Secondary transformer power	120 W
Output per luminaire/illuminant	4.5 W
Protection class / Insulation class	2
Transformer Degree of protection	IP 67

NOTICE

The power connection must be installed by a licensed electrician.
The power must be able to be shut off via a main switch or residual current circuit breaker (on-site).

5.3 Environmental conditions

Temperature range	From -15 to +50° C
Humidity range	Up to 85% rel. humidity, not condensing

6 Operation

6.1 System operating modes

NOTICE

The operating modes for the fully and semi automatic doors can be selected using the key-operated switch.

6.1.1 LOCKED operating mode “semi and fully automatic doors”

	The system is turned off. If the operating mode is switched to the LOCKED position while the turnstile is rotating, it will continue to rotate until it has reached the start position (locked position). In the start position the turnstile is electromagnetically locked by an integrated motor brake.

6.1.2 MANUAL operating mode “semi and fully automatic doors”

	If the operating mode is switched to MANUAL, the turnstile will automatically rotate to the next start position, come to a standstill and can then be rotated manually. When the turnstile is switched to the LOCKED operating mode from any position, it will resume to the start position (locked position). When switched to AUTOMATIC it will resume to the next start position.

NOTICE

In the case of a subfloor system with a geared drive, the turnstile can not be rotated manually in MANUAL mode!

6.1.3 AUTOMATIC operating mode

	**AUTOMATIC operating mode “semi automatic doors”** If the operating mode is switched to AUTOMATIC, the turnstile will automatically rotate to the next start position. The turnstile starts with a manually push and rotates at walking speed to the configured start position. Shortly before reaching the start position the turnstile will reduce speed and then come to a standstill.
	**AUTOMATIC operating mode “fully automatic doors”** If the operating mode is switched to AUTOMATIC, the turnstile will automatically rotate to the next start position. As soon as the detection field of a motion detector is entered, the turnstile starts to rotate at a pre-adjusted walking speed. If no further motion is detected, the turnstile rotates back to the start position and comes to a standstill.

6.1.4 CONTINUOUS operating mode “fully automatic doors”

	If switched to the CONTINUOUS operating mode, the turnstile will rotate permanently at slow speed. The turnstile accelerates to walking speed as soon as a person enters the detection field of the motion detectors. If no further motion is detected, the turnstile rotates back to the start position and then resumes slow rotation speed.

6.2 Normalizing and calibrating with the key-operated switch

6.2.1 Reset button

Reset / reboot / calibration of the door control

In order to eliminate malfunctions, there is a reset button integrated on the front of the key-operated switch. Press the reset button for less than 2 second and the door control will initialize.

Press for up to 5 seconds, the door control will normalize and then start the calibration process automatically. Once the calibration is complete, the door is operational again.

6.2.2 Initialization / Activation of the restart lock with the reset button

Once the power is turned off the initialization process automatically starts. For security reasons an electronic restart lock is activated. Pressing the reset button (less than 2 seconds) on the key-operated switch will also start the initialization program.

6.2.3 Normalization – Cancel the restart lock with the key-operated switch

Before the turnstile can start, the restart lock must be disabled by normalization. To do this, turn the key-operated switch from AUTOMATIC to LOCKED and back again. The turnstile will start at slow speed and “search” for the home position. The direction of rotation must not be hindered! The door is then ready for use.

6.2.4 Calibrate - Position the turnstile with the reset button

Calibration is required for the exact positioning of the turnstile. If the reset button on the key-operated switch is pushed for longer than five seconds, calibration will start regardless in of the operating mode. Like with initialization, the entire processor system will be reset. In doing so, the turnstile will rotate 1-2 times at crawl speed. After that the calibration process is complete the door is ready for use.

6.3 Normalizing and calibrating with the IBS system display

6.3.1 Initialization – activation of the restart lock when power returns

Once the power is turned off the initialization process automatically starts. For security reasons an electronic restart lock is activated. The message [06] is shown on the optional IBS display. This initialization can also be manually activated by briefly, simultaneously pressing the following buttons  ,  , and  on the IBS system display. You can also press the reset button briefly in the key-operated switch to start the initialization program.

6.3.2 Normalization - Cancel the restart lock

The message [06] is shown on the optional IBS display. Before the turnstile can start, the restart lock must be disabled by normalizing. To do so, turn the key-operated switch from AUTOMATIC to LOCKED and back again. The turnstile will start on slow speed and “search” for the home position (locked position). The IBS system display will change from [06] to this display "-----". The door is then ready for use.

6.3.3 Calibrate – turnstile positioning

Calibration is required for the exact positioning of the turnstile. If the reset button on the key-operated switch is pushed for longer than five seconds, the calibration process will be activated in every operation mode. As with initialization, this will reset the entire processor system. During this time the turnstile will rotate approx. 1-2 rotations at crawl speed. After the calibration process is complete the revolving door is ready for use. The calibration process can also be activated by simultaneously pressing the following buttons  ,  and  on the optional IBS system display for longer than 5 seconds.

7 Malfunctions

7.1 Notice power shutdown

NOTICE

A trouble free operating door is only guaranteed with a continuous supply of power. Therefore, never disconnect the power supply!

If the main power supply is disconnected, the door control will have to be normalized first after switching the power back on. To do so, turn the key-operated switch from AUTOMATIC to LOCKED and back again.

Now the door is operational again.

7.2 Conduct during malfunctions

IMPORTANT

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

7.3 Possible troubleshooting

NOTICE

Some malfunctions can be rectified by the operator themselves (see troubleshooting tips). If the tips do not resolve the problem, please contact your local service centre.
Before calling, please note the information shown on the optional IBS system display. This information provides the technician with important information for troubleshooting.

7.4 Tips on troubleshooting

To eliminate malfunctions, it is necessary to disable the electronic restart lock on the door control through normalization. For this, turn the key-operated switch from LOCKED to AUTOMATIC operating mode and back again. The turnstile will start at slow speed and “search” for the home position. Then the door is operational again.

Malfunctions and their causes, as well as possible solutions which can be performed by the operator, are listed below. If the solutions listed are not successful, the operator must disconnect the main power supply and call the service centre.

Malfunctions	Causes	Solutions
Turnstile is blocked, can not be electrically unlocked	– Lock does not open – Lock is jammed in the lock latch – Lock is defective	– Switch to MANUAL operating mode and shake turnstile briefly

Door does not function or turnstile rotates irregularly	– Press emergency stop button – Cable break – Short circuit – No power supply or restart lock is activated – Over current pressure control activated. Excessive friction on the turnstile wing sealing brushes between the floor and the drum wall – Obstacle in the rotation area – Geared motor damage – Door control defective – Electric safety strips activated – Safety sensors activated by a person or object – Foreign object jammed – Safety sensors surface is dirty – Pivot wing (if available) is not engaged properly in the locking device – Night shield is not completely open – Night shield limit switch is defective – Control is defective	– Reset emergency stop button – Check power supply, call electrician if necessary! – Eliminate floor inequalities, if necessary remove the dirt accumulated under the mat – Remove obstacles – Check electric safety strips for damages, clean surface with soapy water – Remove foreign objects

7.5 Troubleshooting per IBS-Display

The system control must be reinitialised and normalised after every error. This means that the reset button on the key control switch must be pressed for approx. 1 second. Then the key control switch must be turned from AUTOMATIC to LOCKED operating mode and back again. Then select the desired operating mode.

If the remedies are unsuccessful, the operator must disconnect the system from the mains supply and request service.

IBS code number	Operating and error status	Causes	Solutions
	Standard operation	No error	-
	Lock does not open	– Lock is jammed in the lock latch	– Manually rotate the turnstile slightly to the left or right – Activate manual release – Select MANUAL operation
	Lock does not close	– System error or defective lock	– Rotate the turnstile manually to the locked position (lock must click into the locking device)
	Rotating sensor CRAWL activated	– Person or object is detected – Dirty sensor lens – Not adjusted properly – Floor reflection	– Clean lens – Adjust according to manufacturer's specifications – Dry floor

	Emergency open button activated	– Emergency open button activated – Cable break – Short circuit	– Reset emergency open button
	Emergency stop button activated	– Emergency stop button activated – Cable break – Short circuit	– Reset emergency stop button
	Restart lock activated	– Power failure – Loose connection in power plug	– Initialize with reset button – Normalize with key-operated switch
	System error # 01	– Power failure – Loose connection in power plug	– Check power supply – Initialize with reset button – Normalize with key-operated switch
	Over current	– Excessive friction between the floor and the drum wall from the brush seals on the turnstile wings – Obstruction in rotation area – Motor gearbox damage	– Eliminate floor elevations – Remove dirt from under floor mat – Remove obstruction
	Horizontal or vertical electric safety strips on turnstile activated	– Person activated safety strip – Foreign object jammed – Dirty surfacet	– Remove foreign object and check safety strip for damage – Clean surface with soapy water
	Vertical safety strip drum edge activated	– Person activated safety strip – Foreign object jammed – Dirty surface	– Remove foreign object and check safety strip for damage – Clean surface with soapy water
	Pivot wing opened or night shield not completely opened	– Wing is not properly engaged in the latch – Night shield is not completely opened – End switch / night shield defective – Cable break	– Fold wing back to original position – Open the night shield completely
	Drum edge sensor activated	– Sensor activated by person / object – Dirty sensor lens – Not adjusted properly – Floor reflection	– Clean lens – Adjust according to manufacturer's specification – Dry floor
	Power failure	– No power	– Check power supply – Activate manual release

	Speed control defective	– Encoder is defective – Signal path is interrupted – Short circuit track A and B interchanged	-
	Lock disengaged	– 24 V DC interrupted – VRM-contact connection disturbed	– Activate emergency stop button – Activate manual release
	TA4- power amplifier defective	– Hardware defect – Motor damage – Short / ground short to motor cable	-
	TA4- battery empty	– Power failure – Defective battery – Battery polarity reversed – TA4-charging circuit is defective	-
	Sensor drum edge defective	– TA4-Test signal is not correct – Internal sensor test is negative	-
	Enter service code	-	-
	IBS does not respond	– IBS communication error – IBS / TA4 defective	-
	Not in use	-	-
	Rotation sensor defective	– TTA4-Test signal is not correct – Internal sensor test is negative	-
	EMERGENCY STOP module does not respond	– Monitoring is defective – EMERGENCY STOP module is defective	-
	Motor relay does not respond	– Motor short circuit – Contacts stuck	-
	Turnstile blocked	– See error code [08]	– See error code [08]
	Turnstile rotates difficultly (startup overload)	– See error code [08]	– See error code [08]

7.6 Function during power failure

CAUTION

Danger of people being trapped inside the turnstile.

Visual inspection, check if people have been trapped inside.

If the system is not equipped with an electric turnstile lock, rotational movement will stop immediately during a power failure, and the turnstile can be rotated freely.

NOTICE

The turnstile can not be rotated manually during a power failure on a subfloor system with a geared drive!

The key emergency operation button or start button (if available) have no function.

Note: The charging status of the emergency power supply (battery) is permanently monitored.

NOTICE

An emergency operation is only possible for a certain bridging period with an external (not included) or an integrated UPS (uninterruptible power sub-supply).

If the system is equipped with an electric turnstile lock (unlocked currentless), then the turnstile is unlocked in all operating modes and can be rotated freely, with the exception of subfloor systems with a geared motor.

If the system is equipped with an electric turnstile lock (locked currentless), then the turnstile is locked in the LOCKED operating mode.

In MANUAL operating mode, the turnstile can be manually rotated to the starting position (locked position), except for subfloor systems with a geared motor, whereby a bolt is engaged in the electric turnstile lock. The turnstile is locked. There is a danger of being trapped inside during this rotation process!

In the AUTOMATIC and CONTINUOUS operating modes, the turnstile rotates at slow speed to the next segment position during a power failure using the internal emergency power supply. This is to allow someone inside the turnstile to exit the current segment they are in. Then the system control shuts off. The start button (if available) no longer functions!

A locked turnstile can only be released by having a second person press the manual release (Bowden cable)!

7.6.1 Function of the pivot wing holding magnets during a power failure

In the operating modes LOCKED and MANUAL, the turnstile remains in its current position during a power failure and is turned off.
In the operating modes AUTOMATIC and CONTINUOUS, the turnstile the turnstile rotates at slow speed to the next segment position during a power failure using the internal emergency power supply and then shuts off.
The holding magnet stoppers are released and the pivot wings can be folded back manually in all modes.

7.7 Function when power is restored

After the power is restored an electronic restart lock is activated. In order to return to AUTOMATIC or CONTINUOUS operating mode, the door control needs to be normalized.

To normalize, turn the key-operated switch briefly from AUTOMATIC to the LOCKED position and then back again. The turnstile will start and “search” for the start position (locked position) at slow speed. Then the door is operational again.

7.7.1 Function of the pivot wing holding magnets when power is restored

All pivot wings have to be folded back to their original position so that they are securely held by the holding magnet stoppers.
After the power is restored an electronic restart lock is activated. In order to return to AUTOMATIC operating mode, the door control needs to be normalized. To normalize, turn the key-operated switch briefly from AUTOMATIC to the LOCKED position and then back again. The turnstile will start and “search” for the start position (locked position) at slow speed. Then the door is operational again.

8 Inspection and maintenance

Regular inspection and maintenance of the system by trained and authorized personal from the manufacturer, is the best guarantee for long life and trouble-free secure operation.

These control and maintenance operations are required at regular intervals, following the manufacturer's instructions and the relevant legal requirements.

8.1 General remarks

DANGER

Danger to life due to electric current!

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

⇨ Before starting work (cleaning, maintenance, replacement) on active parts of electrical systems and equipment, ensure that all poles are voltage free and that this is maintained for the duration of the work.

⇨ Keep moisture away from live parts. This can lead to a short circuit.

⇨ Never bridge fuses or put them out of operation.

⇨ Do not connect the power supply until all work has been completed.

⇨ Have work on the electrical system performed by qualified personnel only.

IMPORTANT

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

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

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

Testing

Type of test	Action
Visual inspection	Check door leaves, guides, bearings, limiting devices, sensors, and the securing of crushing and shearing points for damage.
Mechanical inspection	Check fastenings for tight fit.
Safety check (exit and escape routes)	Check sensors, safety devices, and monitoring devices for tight fit and damage.
Function testing	Check functioning of switches, operators, controllers, power or energy storage devices, and sensors. Also check the adjustment of the safety devices and the setting of all movement sequences including the end points.

Servicing

Type of servicing	Action
Adjustment and cleaning	Clean and adjust bearings, sliding points, and power transmission.

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

IMPORTANT

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

IMPORTANT

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

8.2 Monthly inspection procedures

Monthly tests and inspections of the individual components are performed by the operator mainly to prevent accidents caused by improper handling of the system. Depending on the model of door, we recommend the following inspections steps.

Pos.- Nr	Test / Inspection	Procedure	Expected results
1	Function test motion detectors	– Select the AUTOMATIC operating mode. – When the turnstile comes to a standstill, enter into the detection area of the motion detector. – Conduct this test from the interior and exterior.	– The turnstile must start to rotate in time.
6, 9, 16	Visual inspection of all safety strips	– Select the MANUAL operating mode. – Visually inspect all safety strips.	– The safety strips must not have any mechanical damage and they must be installed correctly and firmly over the entire length.
24	Function test emergency stop button	– Start the turnstile rotating in AUTOMATIC operating mode. – Press the emergency stop button. – Reset the emergency stop button.	– The turnstile must stop immediately. – After resetting the turnstile will start again.
26	Function test start button	– Turn the key-operated switch to the LOCKED position and wait for the turnstile to stop. Remember in which segment the start button is located. – The examiner enters into the locked segment and waits for the turnstile come to a standstill and lock. Then presses the start button.	– After pressing the start button, the turnstile starts, completes one full rotation and stops in the home position (locked position) and locks again. The examiner can now exit the door.

IMPORTANT

Caution: risk of entrapment!
When conducting this test, a second person must be present to press the manual release in case the other person gets trapped inside a segment of the door.

	Function test locked mode	– Select LOCKED operating mode. Do not enter the door! – Verify whether the turnstile is locked by trying to push it manually.	– The turnstile will lock securely.

23 optionally external	Function test key emergency operation button	– Place the door in the AUTOMATIC or CONTINUOUS operating mode. – Turn the key emergency operation button and hold in position.	– As long as the key emergency operation button is being turned and held, the turnstile will continue to rotate in the direction of rotation selected. – When the key emergency operation button is released, the preset operating mode will resume.
25	Function test disabled button	– Start the turnstile rotating in the AUTOMATIC operating mode. – Press the disabled button. – Conduct this test from the interior and exterior.	– The turnstile must reduce speed and continue to rotate at least 360° at reduced speed.
27 optionally external	Function test key pivot contact	– Select the LOCKED operating mode. – Briefly activate the key pivot contact.	– The turnstile will unlock, turn one complete rotation and lock again.
62, 63, 64, 65	Visual inspection of the instructions and labelling (buttons / switches)	– Verify that labels and instructions are present and legible.	– All warnings and instructions must be present, legible and firmly attached.
70	Visual inspection of glass labelling	– Verify that all glass labels are present.	– The glass labels must be present and attached firmly at eye level.
	Visual inspection of floor mats	– Inspect the floor mats for tripping hazards, unevenness, damages and dirt accumulation.	– The floor mat must be free from tripping hazards, unevenness, damages and dirt accumulation.

CAUTION

Risk of burning, hot surfaces!

a) Risk of burning hands when replacing components.

⇨ Allow components to cool for at least 5 minutes before replacement and wear safety gloves if necessary.

	Visual inspection of the lighting	– Check that the lamp is firmly seated and switch on the lighting.	– Lamps must be correctly mounted and functioning.

CAUTION

Burn hazard, hot surfaces!
Risk of burning the hands when replacing bulbs!
Allow to cool at least 5 minutes before replacing bulbs and, if necessary, wear protective gloves.

8.3 Cleaning and care

DANGER

Warning: risk of fatal electric shock!

a) Risk of death by electrocution

⇨ Do not touch the drive system while the main power is connected.

⇨ Do not spray water into the drive system.

NOTICE

Before cleaning, select MANUAL mode and also press the emergency stop button. Rinse cleaned surfaces with a clean, damp cloth.

IMPORTANT

Keep the system clean from dirt, leaves, snow and ice!

a) If heavily soiled, please contact a professional.

b) Do not use road salt or gravel in front of the entrance area or within the system.

c) We recommend that you impregnate the safety strips with water repellent care products.

IMPORTANT

Any other cleaning products, not mentioned here, should not be used!

What	Interval	Cleaning agent
General parts	Weekly	Damp cloth, neutral to low alkaline, wetting agent solution / vinegar diluted with water
Sensors / safety strips	Weekly	Synthetic cleaner
Floor mats	Weekly	Vacuum cleaner / carpet cleaner
Display cases	Weekly	Commercial glass cleaner

9 Taking out of service and disposal

9.1 Decommissioning

When shutting down or taking out of service, the system is disconnected from the mains supply and any existing battery is unplugged.

NOTICE

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

9.2 Dismantling and disposal

IMPORTANT

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

NOTICE

The door systems can be completely disassembled in reverse order.

The installation mainly consists of the following materials:

Aluminum:

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

Steel / iron parts:

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

Glass:

- Door wings and side panels

Various electronic and electromechanical components:

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

Various plastics:

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

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