User Manual

FlipFlow TRIPLE

Manufacturer
record-USA
4324 Phil Hargett Court
Monroe, NC 28110, USA

Distributor
record-USA
4324 Phil Hargett Court
Monroe, NC 28110, USA

Table of contents

1 Regulations

1.1 Important safety instructions

⚠ DANGER

Serious injury or death

- Reduce the risk of serious injury or death.
- ➢ Read and follow all safety instructions.
- ➢ Only install a properly functioning and balanced door.
- ➢ Only operate the system when the service openings are closed.
- ➢ Do not connect the door operator to the power source until you have been instructed to do so.
- ➢ Instruct the end user in the operation of the manual emergency release.

⚠ DANGER

Serious injury or death from unattended children playing

- Reduce the risk of serious injury or death
- ➢ Never allow children to play near or inside the installation.
- ➢ Children may only use the installation under the supervision of an adult.

⚠ CAUTION

Unexpected OPENING / CLOSING of the installation

- Crushing and bruising due to the OPENING / CLOSING of the installation
- ➢ No persons or objects are allowed in the opening area of the door.
- ➢ No safety devices (sensors) should be removed or disabled.
- ➢ Do not rush through a door that is already closing.
- ➢ Always keep the moving system within sight until it is completely open/closed.

⚠ WARNING

Missing settings and maintenance of the system

- May cause serious injury or death
- ➢ Test the safety devices of the door at least once a day (see chapter „FlipFlow daily safety check“
- ➢ Keep the installation properly operating and balanced
- ➢ Call a record technician for service or have trained door systems technician make repairs to the installation
- ➢ Save these instructions

1.2 General safety and accident prevention regulations

NOTICE

This device was not intended to be used by persons (including children) with limited physical, sensory or mental abilities, or with the absence of experience and/or lack of knowledge, unless they are being supervised by a person responsible for their safety or received instruction on how to use the device.

Children should be supervised to ensure that they do not play with the device.

IMPORTANT

Do not allow children to play with the device or its regulating and/or control devices, including remote controls.

IMPORTANT

When using motion detectors, make sure that no moving objects such as flags, plants, etc. enter the detection areas of the motion detectors

IMPORTANT

In order to avoid malfunctions, the system must *NOT* be disconnected from the mains overnight!

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.

IMPORTANT

Safety devices (e.g. sensors, protective wings) must not be dismantled or put out of operation.

⚠ CAUTION

Malfunctions and risk of falling from debris gathering under the floor mat!

- Door breakdown, bruises, broken bones

➢ The floor mat or floor covering must be even and securely installed.

➢ Debris that gathers under the floor mat must be removed regularly.

⚠ CAUTION

Unexpected OPENING / CLOSING / ROTATION

- Bruises and contusions from the door wings/apron

➢ No persons or objects are allowed in the opening area of the door.

➢ No safety devices (sensors) should be removed or disabled.

➢ Do not rush through a door that is already closing.

DANGER

Electric shock

- Electric shock, burns, death.

➢ Disconnect the drive from the power supply during cleaning, maintenance and replacement of parts.

1.3 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.

1.4 Intervention rules on sites

Subject to general labor laws:

IMPORTANT

Before starting with inspection and maintenance, it is necessary to ensure that a side entrance can be used by third parties. It is highly recommended to have a pedestrian barrier around the complete door!

IMPORTANT

All repairs and service work must be performed by qualified personnel. Technicians must have good general technical knowledge and a good knowledge of the current standards and regulations.

IMPORTANT

Before starting work on the door, ensure that all equipment and tools are in good working order and conform to current safety standards.

⚠ CAUTION

The safety of all persons must be ensured!

IMPORTANT

Do not change the components of the automation system in any way.

NOTICE

Labeling and information must be visible to everyone.

NOTICE

Ensure regularly that all safety systems are in good working order.

2 Preparation advice

2.1 Necessary training

⚠ CAUTION

Only factory-trained and certified personnel may install a FlipFlow system.

The record training center fulfils all relevant training requirements needed (consultancy, inter-company training, customized training etc.) and puts their expertise at your service by offering its training catalogue.

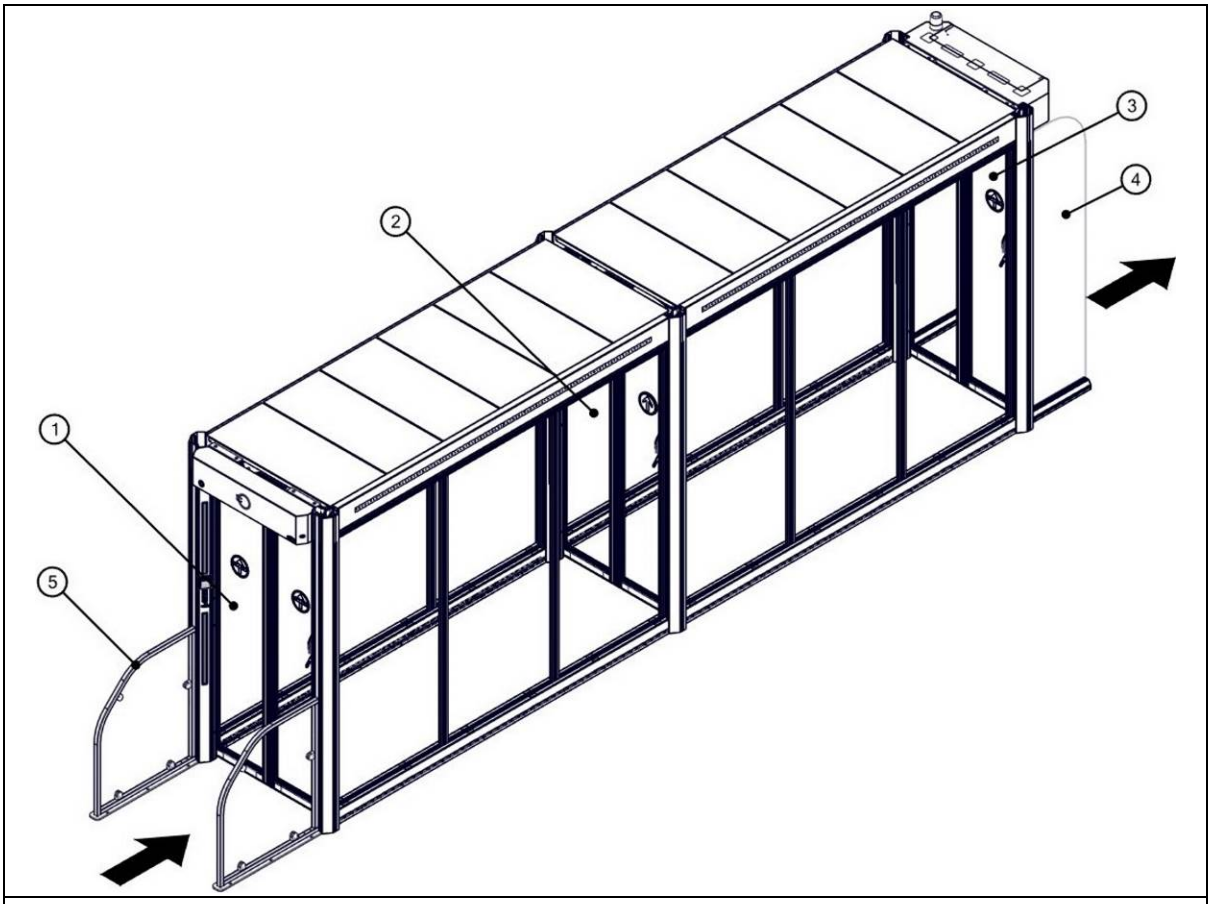
We offer a wide range of training that can be customized to meet your specific needs.

Training is described in detail in the training program, created especially for the FlipFlow.

We strongly advise taking a training course before installing the FlipFlow at a client's site in your region. Specific training also deals with maintenance of the anti-pass-back tunnel in order to reduce malfunctions and on-site servicing time. We recommend you attend this training course.

3 FlipFlow Triple description

3.1 General presentation



1 – Entrance door

2 – Middle door

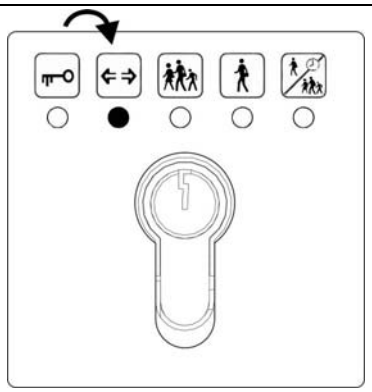
3 – Exit door

4 – Glazed protection panels (option)

5 – Tubular steel guide (option)

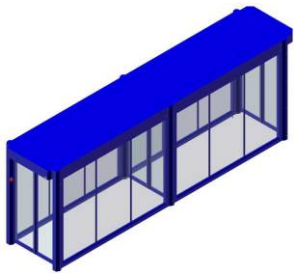
4 Description of use

4.1 How to operate the BDE-S control panel

 The BDE-S has a standard European half-cylinder.	The BDE-S is a 5 position, key operated control panel; simply insert the key and then turn until the desired selection corresponds with the indicator lit. Each rotation of the key changes which LED is lit.

5 Operating modes and functions

5.1 CLOSED and LOCKED operating mode



Also serves as a manual reset

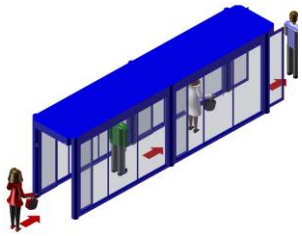
State of the FlipFlow

- Illumination is off
- Traffic lights and pictograms are red
- Doors are closed and locked

Configurable:

- Option to enable detection in tunnel, to open the exit door of the tunnel

5.2 OPEN operating mode



State of the FlipFlow

- Illumination is on
- Entrance door is open
- Middle door open
- Exit door is open
- Entrance traffic light is green
- Middle traffic light is green
- Exit traffic light is green
- Entrance pictogram is green
- Exit pictogram is red / green *1) depending on the configuration

IMPORTANT

In this mode, the level of security is compromised!

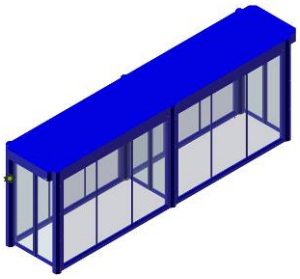
Configurable:

- Activation / deactivation of the sensors and walking detection

If the detection in the tunnel is deactivated, it is possible to cross in both directions without triggering an alarm. *1) → exit pictogram is green
If detection is activated, it is only possible to cross in the authorized direction without triggering an alarm. *1) → exit pictogram is red

5.3 FLOW operating mode

FLOW mode offers a wide variety of passage possibilities as nothing restricts the doors from opening simultaneously, while maintaining a certain level of security thanks to a very low response time of the anti-pass-back system.

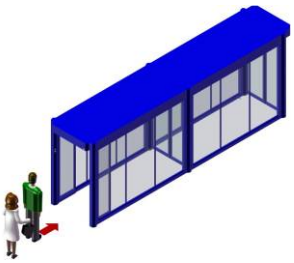


Initial state

- Lights are on
- Entrance door is closed
- Middle door is closed
- Exit door is closed
- Entrance traffic lights are green
- Entrance pictogram is green
- Exit pictogram is red

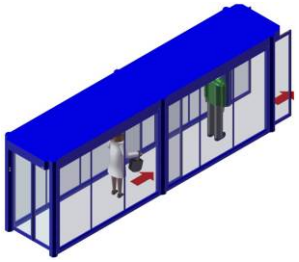
Configurable:

- Door and alarm timer delays
- Choice of reaction for errors or intrusion

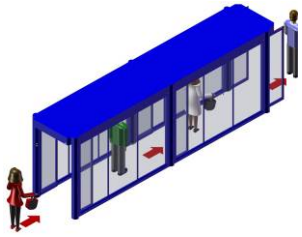


Cycle

- A passenger arrives in front of the entrance radar, the door opens.



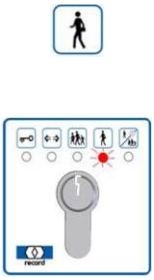
- The passenger enters the tunnel, the door closes again (if another passenger arrives, the door stays open).
- The passenger arrives in front of the middle door, the door opens.

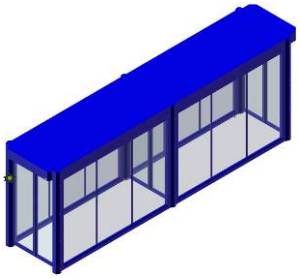


- The passenger arrives in front of the exit door, the door opens.
- The passenger exits the tunnel, the door closes again (if another passenger arrives, the door stays open).
- End of cycle

5.4 INTERLOCK operating mode

INTERLOCK mode has a lower passage variety than the FLOW mode but offers maximum security, even between two arrivals, a time where the number of passengers is low.



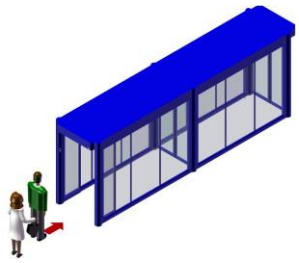


Initial state

- Lights are on
- Entrance door is closed
- Middle door is closed
- Exit door is closed
- Traffic lights are green
- Entrance pictogram is green
- Exit pictogram is red

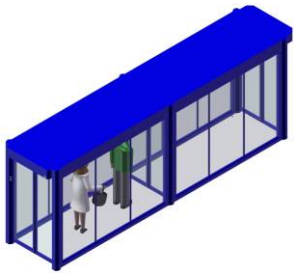
Configurable:

- Max. number of passengers admitted into the tunnel
- Door and alarm timer delays
- Traffic lights flashing mode

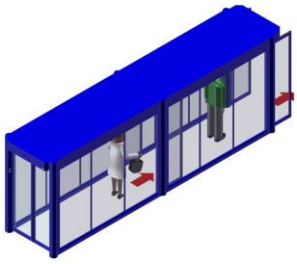


Cycle

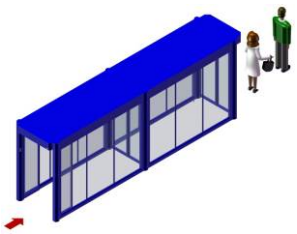
- A passenger arrives in front of the entrance radar, the door opens.



- The passenger enters the tunnel; the entrance door closes as long as nobody else enters within a configurable time and/or the number of passengers has reached a set value; once the decision to close the entrance door is made, the entrance traffic light turns red.
- The traffic lights on the middle and exit doors flash to indicate to the passenger to wait.



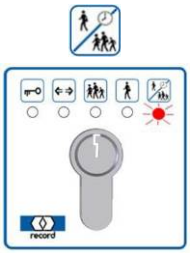
- The middle and exit doors open as soon as the entrance door is closed. Simultaneously, the middle and the exit door traffic lights turn green and the entrance door traffic lights start to flash.
- The tunnel empties, the middle and the exit doors closes again.

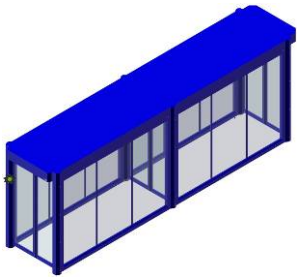


- In order to allow any passengers who are waiting to enter, the entrance door opens and closes again after an adjustable delay time. If another passenger enters the detection field of the tunnel, the FlipFlow returns to its normal cycle.
- End of the cycle

5.5 AUTO-FLOW / INTERLOCK operating mode

The automatic selection allows one to combine the advantages of both operating modes in relation to safety and the best passenger comfort. During low traffic periods (which present the highest risks), the FlipFlow switches to INTERLOCK mode to ensure a maximum level of security. When traffic intensifies (reducing the possibility of objects or people going back against the direction of flow), the FlipFlow adjusts its level of security to increase passage capacity and automatically switches to FLOW mode.



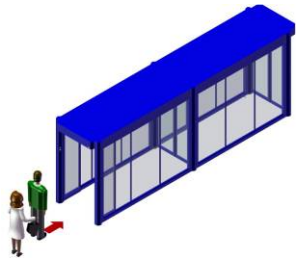


Initial state

- Illumination is on
- Entrance door is closed
- Middle door is closed
- Exit door is closed
- Traffic lights are green
- Entrance pictogram is green
- Exit pictogram is red
- FlipFlow in INTERLOCK mode

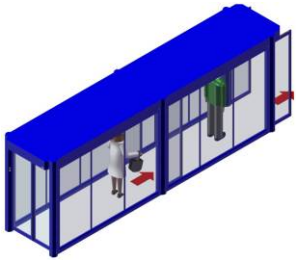
Configurable:

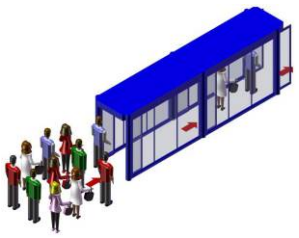
- Flow and Interlock mode parameters
- Flow - > Interlock threshold value
- Interlock - > Flow threshold value



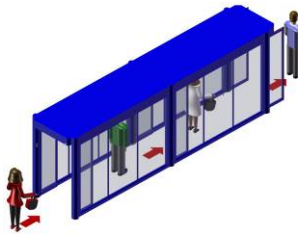
Cycle

- When passenger flow is low, the FlipFlow operates in INTERLOCK mode as described above.

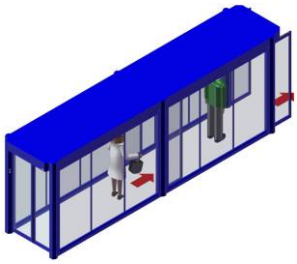




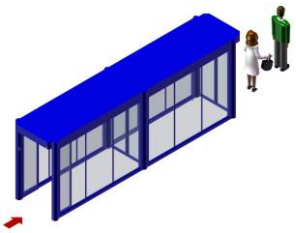
- If the number of passengers exceeds the preset threshold. The FlipFlow changes to FLOW mode and operates its cycle as described above.



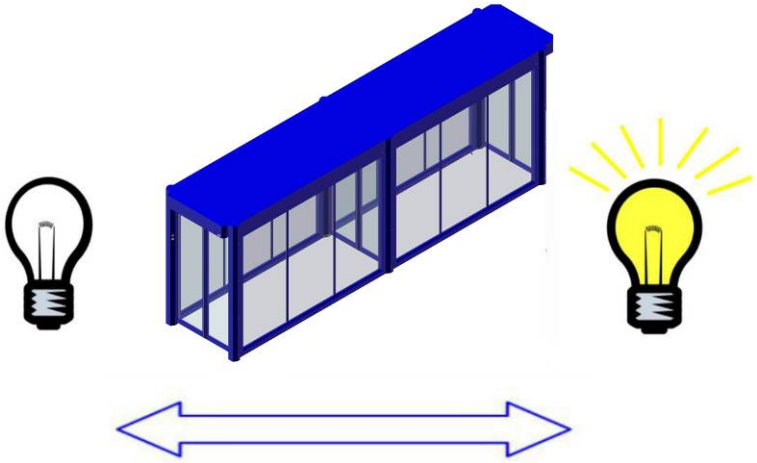
- The flow is greater than the fixed threshold level. The FlipFlow remains in FLOW mode and operates as previously described.



- The flow drops below the fixed threshold level. The FlipFlow changes back to INTERLOCK mode and operates as described above



5.6 POWERSAVE function



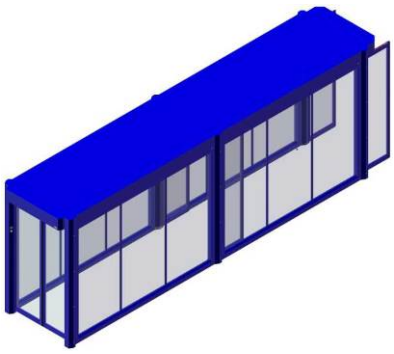
If the FlipFlow is not used for a certain time, the lights will turn off and automatically switch back on for the next cycle.

Configurable:

- Activation / deactivation of functions
- Setting the idle time delay

5.7 CLEANING mode

This mode allows the FlipFlow to be cleaned without triggering an alarm, and while maintaining the entrance door closed and locked (cleaning landside). When cleaning the airside, the exit door remains closed and locked! This mode is activated by a local switch on the FlipFlow. This switch is provided by the customer. The cleaning area is determined by the parameters, configurable with the Service Display.



State of the FlipFlow

- Illumination is on
- Traffic lights are off
- Entrance pictogram is red
- Exit pictogram is red
  - Cleaning landside:
- Entrance door is closed and locked
- Middle door is open
- Exit door is open
  - Info: for cleaning airside, exit door is closed and locked, middle and entrance doors are open

Configurable:

- Setting the cleaning time duration
- Setting the warning time duration
- Cleaning area

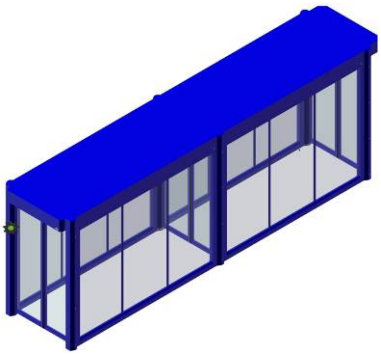
Exiting the cleaning mode

This mode can be exited in two ways:

- The service personnel deactivate this mode themselves before the set time expires and the FlipFlow goes back to the previously set operating mode.
- The Flipflow sends off an audible signal indicating that the time has expired, after a second time delay, the FlipFlow will prepare to close. If the tunnel is empty, it will go back to the previous operating mode, if not, the alarm will continue to sound until the service personnel has evacuated the tunnel.

5.8 TEST mode – alarm switched off

This function allows the FlipFlow operating modes to be tested without triggering an alarm (no alarm signal transmitted to the BMS). This function can be activated by turning the rotary button on the control panel. This function can be used in any operating mode of the FlipFlow. The FlipFlow then operates normally but without an alarm. The BMS is immediately informed that maintenance is in progress in this particular vestibule. A ringtone sounds at regular intervals as a reminder.

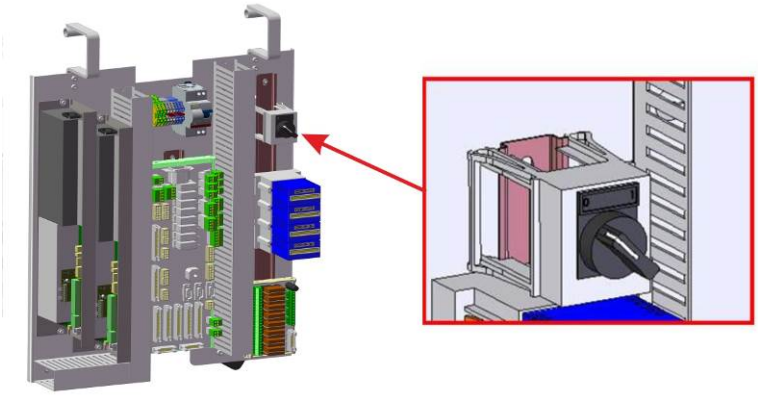


State of the FlipFlow

- Depending on the mode selected

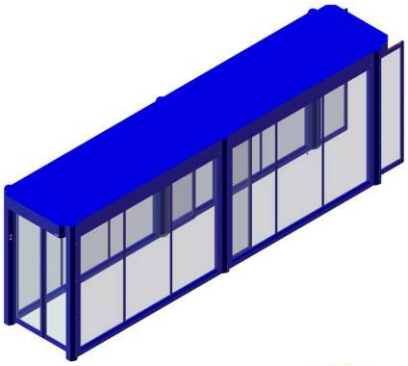
Configurable:

- Activate/deactivate surveillance
- Select operating mode parameters
- Options and overall operation



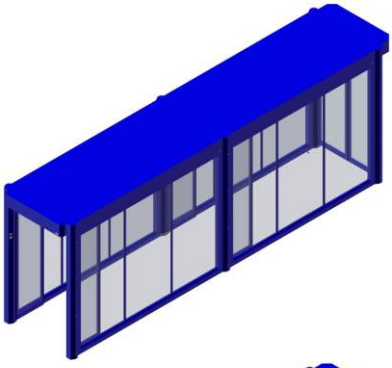
5.9 MAINTENACE mode

This operating mode allows the service technician access without triggering an alarm. This function can be activated with a local key switch provided by the customer.

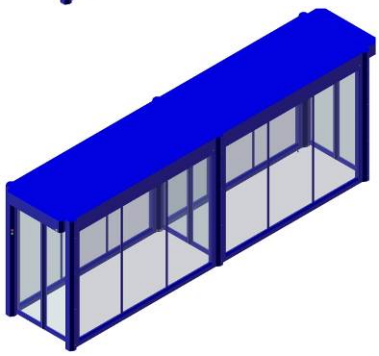


State of the FlipFlow

- Illumination is on
- Traffic lights are flashing red / green
- Entrance and exit pictograms are red



- Maintenance secure area (airside):
- Entrance door is open
- Middle door is open
- Exit door is closed and locked



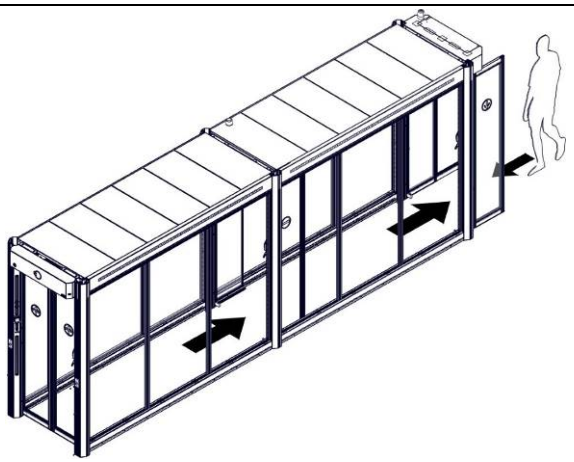
- Maintenance public area (landside):
- Entrance door is closed and locked
- Middle door is open
- Exit door is open

Configurable:

- Open side (air / land)
- Blink delay

5.10 Authorized access airside

When this function is activated, an authorized person is entitled to pass through the FlipFlow in the opposite direction. This function can be activated with a button or switch provided and installed by the customer or via the BMS (Building Management System).



State of the FlipFlow

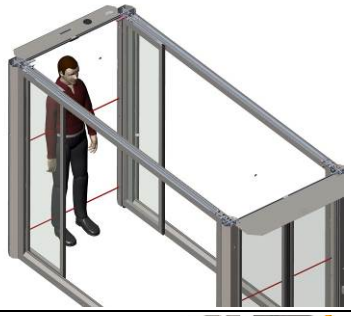
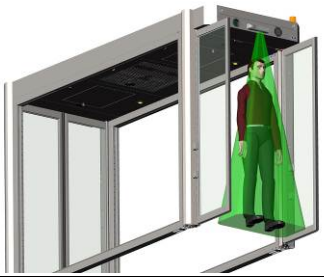
- Lights are on.
- LED-light is red.
- Entrance door pictogram is red.
- Exit door pictogram is green, if access is allowed .

Cycle:
If the tunnel is empty and closed, the middle door and the exit door are opened with this function, after the expiry of a timer or the detection of a person in tunnel 1, the middle door and the exit door are closed again. If there is still a person in tunnel 1, the entrance door is opened and the person can leave the tunnel, after which the entrance door closes again. If the tunnel is empty, the FlipFlow returns to its set operating mode.
If there is still a person in the tunnel or a new person has entered the tunnel, the exit door will open and the person must leave the system in the exit direction.

6 FlipFlow daily safety check

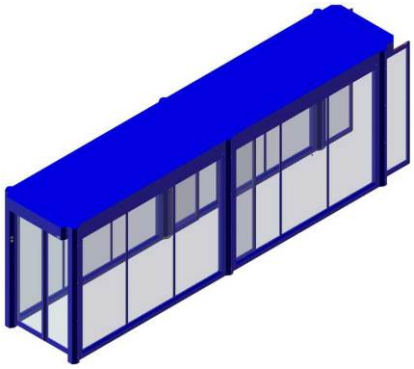
IMPORTANT

Please perform once per day the following safety check

Daily safety check	
1. Set the FlipFlow to "FLOW" mode.	
1. Approach the entry door and remain in the safety beam zone of the open door for 10 seconds. The door should not close.	
1. Move forward one step and remain between the door wings under the overhead door wing safety sensor for 5 seconds. The door should not close.	
1. Move forward and repeat step 2 and 3 for the middle and the exit door.	
1. Beware, at the exit door the door wing safety sensor is at the outside of the door header.	

7 Conduct during power failure (battery pack optional)

In the case of a power failure, the entrance door closes and locks, the middle and exit doors unlock and open. The FlipFlow remains in this position until the main power supply returns. This function is only possible with an optional battery pack.
Without the battery pack, the FlipFlow will stop in its current position and the doors can be opened manually.



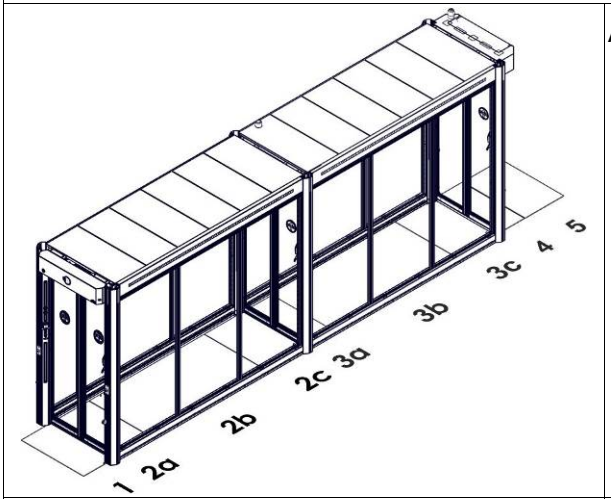
State of the FlipFlow

- Lights are off
- Entrance door traffic lights are red and exit green
- Entrance door is closed and locked
- Middle door is open
- Exit door is open
- Entrance pictogram is red
- Exit pictogram is red

8 Possible errors / alarms

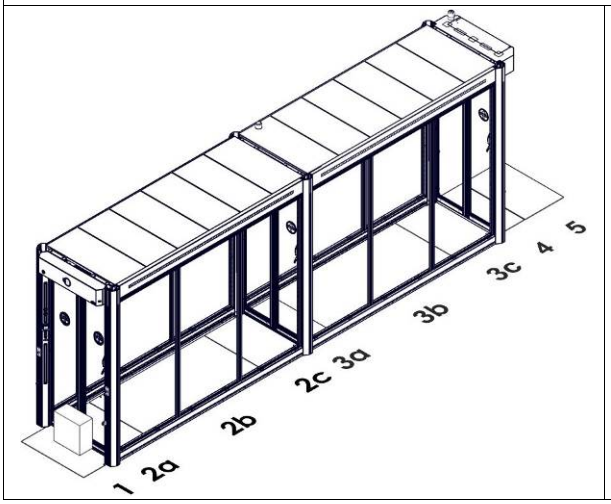
8.1 Wrong direction alarm

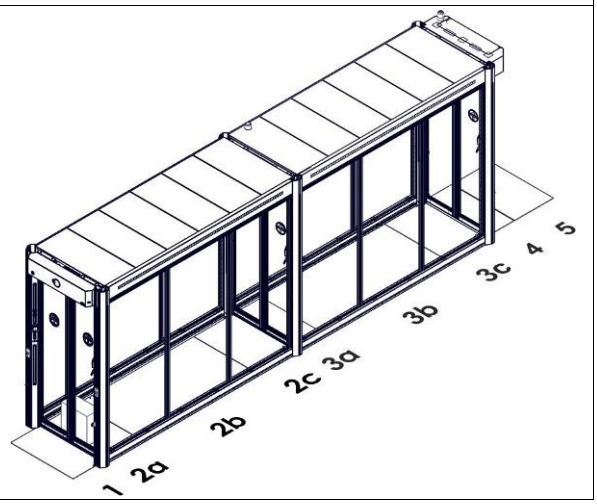
Below a list of situations which can set off a wrong direction alarm (=buzzer). Adjustable timers are implemented to manage the offset of these alarms.



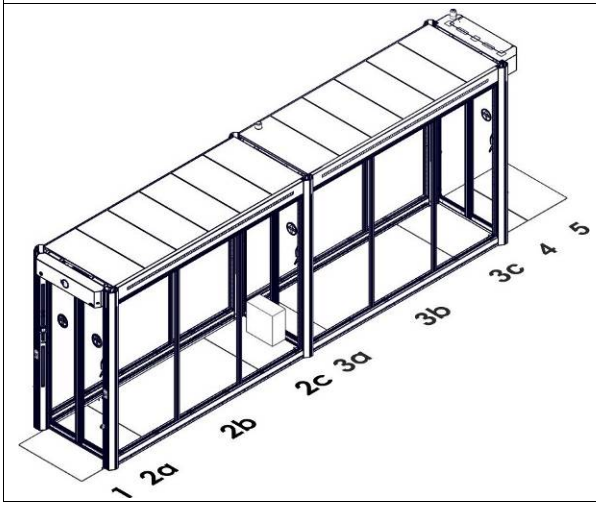
Areas "Alarm disturbance of the flow of persons"

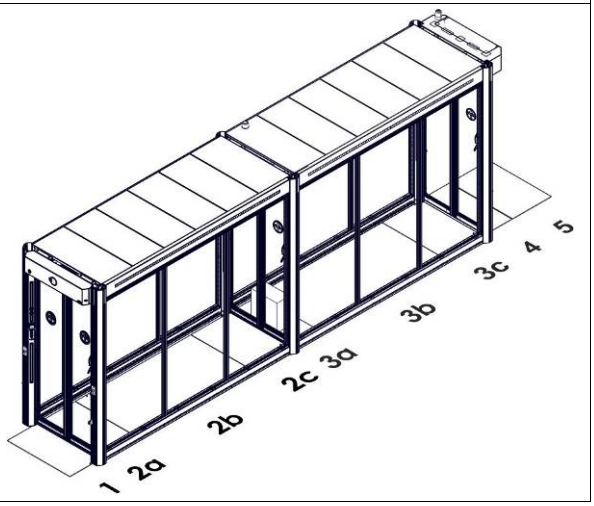
A person or object remains under the entrance door or in zone 2a, the entrance door closes.



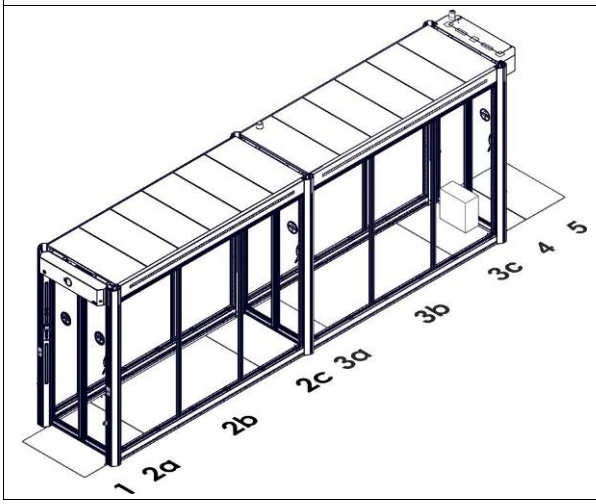


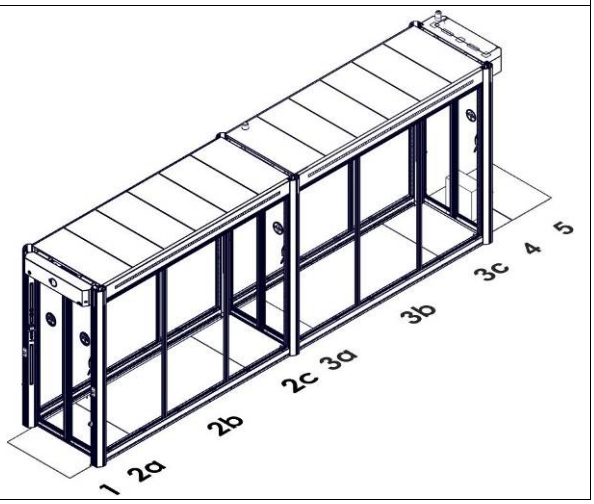
A person or object remains under the middle door or in zone 3a, the middle door closes.

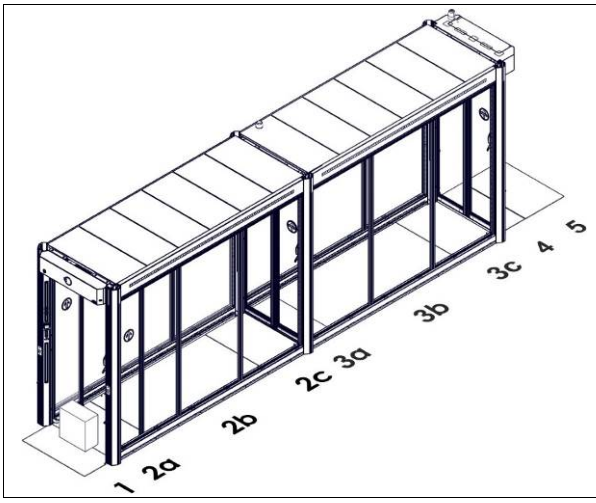




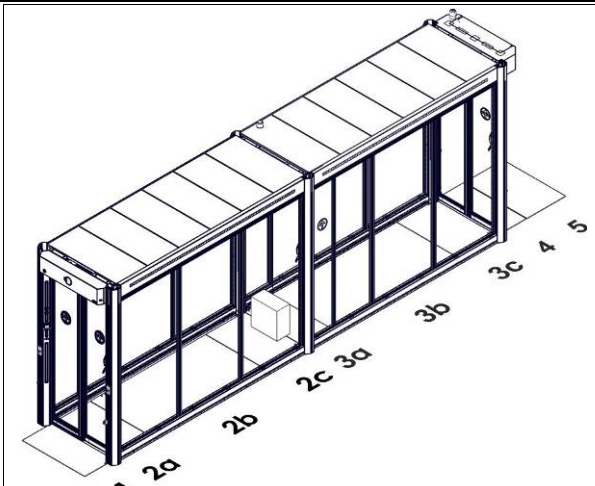
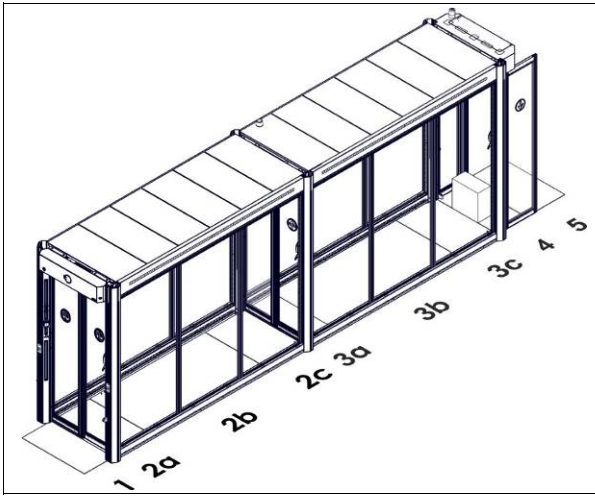
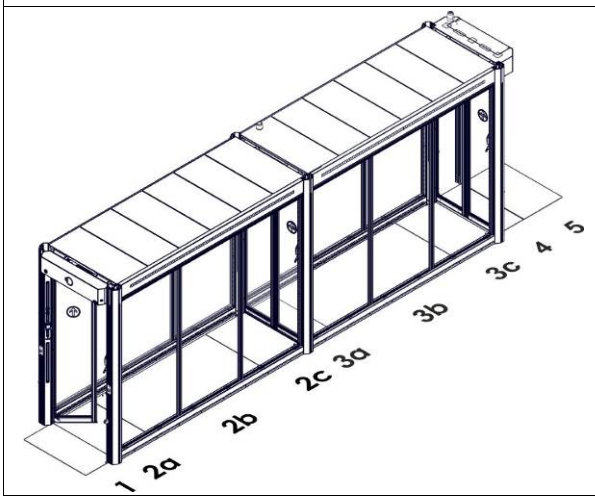
A person or object remains under the exit door or in zone 4, the exit door closes.

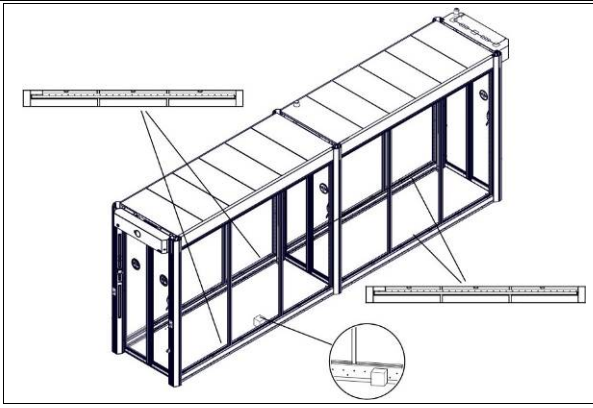
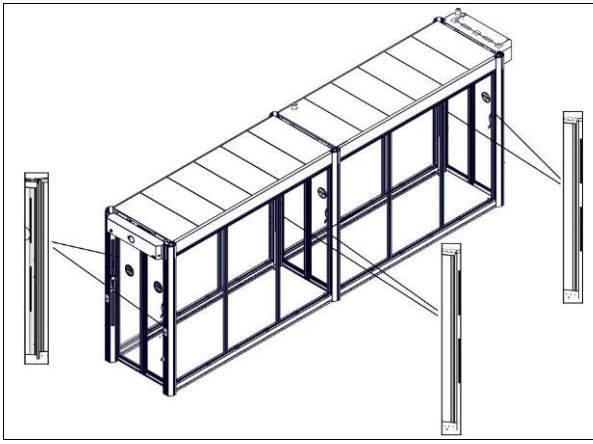
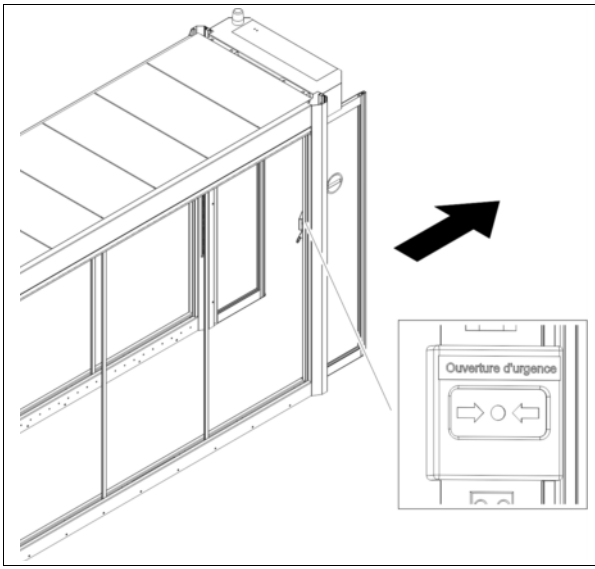


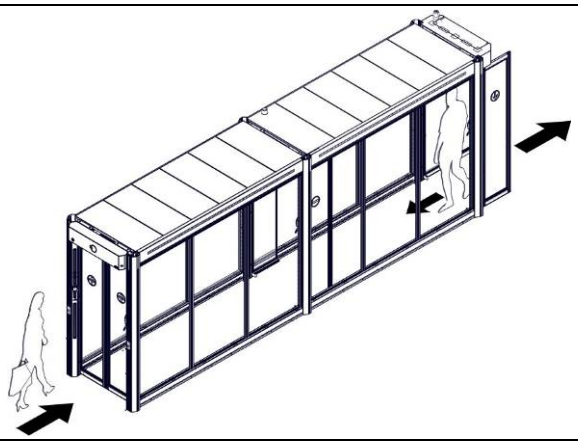




A person or object remains under the entrance door or in zone 2a, the entrance door opens.

	A person or object remains under the middle door or in zone 3a, the middle door opens.
	A person or object remains under the exit door or in zone 4, the exit door opens.
The entrance, middle and exit doors are no longer in their end positions.	
	▪ The entrance door does not open (or close) when it should. ▪ The middle door does not open (or close) when it should. ▪ The exit door does not open (or close) when it should.

	With this option, entrance door closed, a presence is detected on the floor.
	With this option, entrance door closed, a presence is detected on the wall or ceiling.
	With this option, activating of the emergency open button generates a technical alarm.

Example of the anti-pass-back system operation	
	A person crosses the threshold of the middle or exit door, an alarm is triggered and the entrance door closes (TOF-Sensor).

Configurable:

- Activation/deactivation of floor detection in FLOW mode

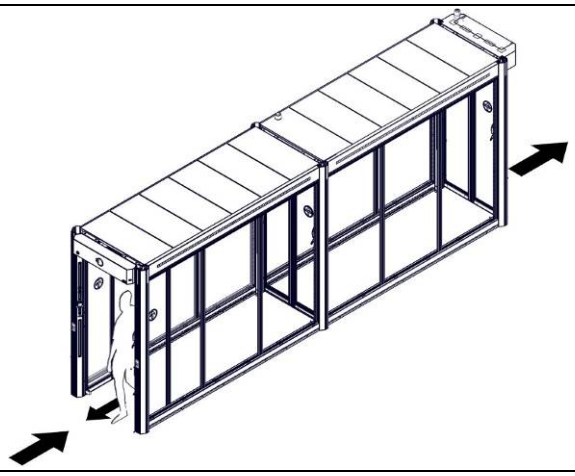
Configurable:

- Setting all timers relevant to triggering the alarms

8.2 Technical alarms

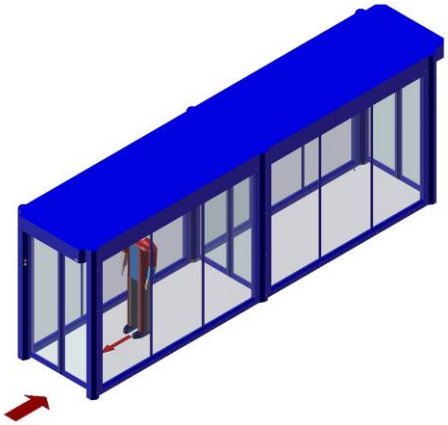
This alarm is triggered if a traffic flow interruption has lasted too long or if a technical error has been detected. A reset is required to deactivate this alarm. A ringtone sounds at regular intervals as a reminder.

8.3 Intrusion alarm

	This alarm is triggered when the wrong direction is detected or if the entrance door does not close within a reasonable time (see below). A reset is required to deactivate this alarm.

8.4 Anti-pass-back alarm

This alarm is triggered when the wrong direction is detected or if the entrance door does not close within a reasonable time (see below). A reset is required to deactivate this alarm.



Configurable:

- Timer settings
- Choice of reaction types

NOTICE

In order to limit the number of false intrusion alarms when the wrong direction is detected by the cameras and the entrance door is not closed, the FlipFlow will measure the time it takes to close the entrance door and compares it with referenced time:
If the closure time is less than the reference time, an anti-pass-back alarm is triggered.
If, on the other hand, the time is longer or equal to the reference time, an intrusion alarm is triggered.

NOTICE

This reference time has been preset in the factory using very precise closing speed data, so it is important not to modify it!

9 BMS information

It is possible to receive and transmit information to the FlipFlow BMS (Building Management System) via dry contact relays. A rotary dial for selecting the operating mode in each vestibule installed is also provided for controlling the FlipFlow from a distance.

9.1 Instructions sent from the BMS

An emergency opening command, with absolute priority.
An emergency close command, closes and locks the entrance door and opens the exit door, priority over operating modes.
Switches manually to FLOW mode if INTERLOCK mode has been selected locally and vice versa. This function depends on the passenger flow.

9.2 Information received by the BMS

An intrusion alarm has been detected.
An anti-pass-back alarm has been detected.
An object or a person has been located in the detection zone of the vestibule for a long period of time.
An object or a person has been located in the detection zone of presence and is blocking the passage, or a FlipFlow electrical component is defective.
Provides information about the position of the entrance door: closed or locked.
Indicates that there are no alarms, the FlipFlow is working properly: passengers can pass through.
Indicates that a person is working on the FlipFlow, or that it is in no alarm mode.
Indicates that the maintenance hatch is open.
Indicates that the emergency open button has been activated; requires a manual reset.
The FlipFlow is being cleaned.
Provides information about the position of the exit door: closed or locked.
Indicates the state of the power supply.
The FlipFlow is in FLOW mode.
The FlipFlow is in OPEN mode.
The FlipFlow is in LOCKED mode.
The FlipFlow is in INTERLOCK mode.

NOTICE

Configurable:

- Logic information (No/Nc)
- Information about the doors positions