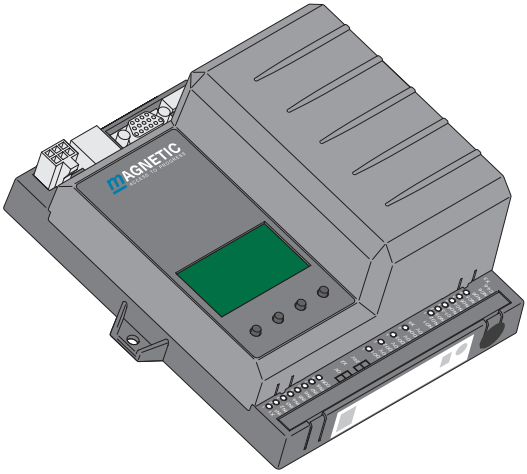
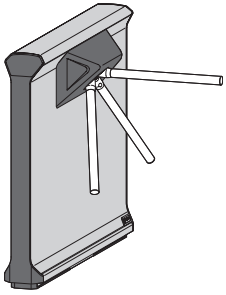
Description

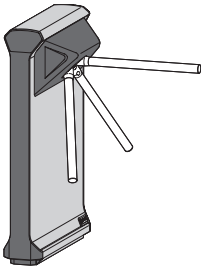
Turnstile mTripod

MHTM™ FlowMotion®

Control unit MGC mTripod







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Original description

This document is available as PDF in the Magnetic Autocontrol download area (www.magnetic-access.com). Authorisation is required for download.

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Contents

1 Notices on the document

1.1 Purpose and contents of this description

This document describes the control unit MGC from the programme versions listed below.

Software number (Software #) and software version (SW version) are displayed in the menu "Module info".

Designation	Software #	SW version
Gate Controller	4915.1006	2.2
MHP2 motor	4915.4003	1.5
Safety Controller	4915.3014	1.5
MGC.Connect	4910.5052	1.5

Table 1: Programme versions control unit MGC

IMPORTANT!

For information on design and function, for technical data, installation and mounting, electrical connection, commissioning and cleaning and maintenance, see the separate operating instructions "Turnstile MHTM™ FlowMotion® mTripod (Doc.ID: 5817,0026)".

1.2 Symbols and illustrations used in this document

1.2.1 Warning notes and notes

Warning notes are characterised by pictograms in these instructions. A warning note starts with a signal word that expresses the extent of the hazard.

It is absolutely essential to observe the warning notes and to proceed with caution in order to prevent accidents as well as personal injuries and property damage.

Warning notes

DANGER
 The signal word DANGER indicates an immediately dangerous situation, which leads to death or severe injuries if not avoided.

WARNING
 The signal word WARNING indicates a potentially dangerous situation, which can lead to death or severe injuries if not avoided.

CAUTION
 The signal word CAUTION indicates a potentially dangerous situation, which can lead to minor injuries if not avoided.

NOTICE
 The signal word NOTICE indicates a potentially harmful situation, which leads to property damage if not avoided.

Notes and recommendations

IMPORTANT!
The signal word IMPORTANT highlights useful notes and recommendations as well as information for an efficient and trouble-free operation.

1.3 Target group

1.3.1 Personnel – activities and qualifications

All work on the control unit may only be carried out by technicians and Magnetic MHTM™ FlowMotion® service experts with the following qualifications.

Designation	Qualification
Technician	› Has completed training as a systems mechanic, machinery technician, installation mechanic, installation technician or has comparable technical training. › Has completed training as an electrical safety expert. › Has additional knowledge and experience. › Knows the relevant technical terms and regulations. › Can evaluate the work assigned to him, recognise possible dangers and take appropriate safety measures.
Magnetic MHTM™ FlowMotion® service expert	› Meets all the requirements of the technician. › Trained and authorised by Magnetic.

Table 2: Qualification of the personnel – control unit MGC

2 Digital inputs, digital outputs and relay outputs

⚠ WARNING

Improper wiring and parameterisation of the control unit!

Improper wiring and parameterisation of the control unit can lead to undesired functions and thus to injuries.

› Only MHTM™ FlowMotion® service experts, skilled technicians or electrical safety experts may wire up and parameterise the control unit.

› The electrical connection of the signal transmitters to the IN1 to IN8 inputs must fit the parameterisation.

Parameterisation: ↗ Page 18, chapter 3.

2.1 Digital inputs

Definition of "Left" and "Right": ↗ Page 62, chapter 7.1.

By parameterising the inputs, you assign certain functions to the inputs. For example, if you parameterise the "Illumination off" function for input IN7, switch the illumination on and off via this input.

If the function is marked with "|", the input is inverted (closed-circuit principle). ↗ Page 54, chapter 6.3.3.

The following functions are assigned to the inputs as default settings:

Clamp	Description	Input function
IN1	Digital input 1	| Emergency open
IN2	Digital input 2	Open from left
IN3	Digital input 3	Open from right
IN4	Digital input 4	Random check function
IN5	Digital input 5	Confirm warnings
IN6	Digital input 6	Inhibit opening
IN7	Digital input 7	Illumination off
IN8	Digital input 8	| End switch drop arm

Table 3: Factory setting "Digital inputs"

Input function	Descriptions
–	Inputs that you assign this function "–" to are being deactivated.
| Emergency open	Emergency situation (closed-circuit principle) Connect fire brigade switches, emergency opening contacts, etc. to this input. This input has the highest priority. As soon as +24 V DC are applied to this input, the pedestrian gate is in operation. For turnstiles with the "Drop arm" option, the holding magnet for the drop-arm is released immediately in the event of a signal drop. The motor starts up briefly so that the drop arm can be released. For turnstiles without the "Drop arm" option, the passage is immediately enabled in both directions in the event of a signal drop. This input function is high priority to all other input functions.
Confirm warnings	Confirm warnings A pulse at this input confirms the "Warning" output function. The output is reactivated the next time a warning occurs. The number of the warning message remains stored in the event list until the control unit is rebooted.
Open from left	Validation for passage from left If the signal is present for longer than 3 seconds, permanent open is activated. "Permanent open" parameter: ↗ Page 46.
Open from right	Validation for passage from the right If the signal is present for longer than 3 seconds, permanent open is activated. "Permanent open" parameter: ↗ Page 46.
Inhibit opening	Lock pedestrian gate Use this input to lock the pedestrian gate in both passage directions. No opening signals are accepted anymore. Input IN1 "| Emergency open" remains superordinated. This means that the pedestrian gate can also be opened via input IN1 when the pedestrian gate is closed.
| Over-climb detection	Sensor connection for over-climb detection (Fail Safe) This input is used to connect a sensor such as a light barrier or a light button for detecting attempted climbing. As soon as 0 V is applied to this input and there is no release for a passage, the function is activated and the "Climbing/Crawling" output function is set.
| Under-crawl detection	Sensor connection for under-crawl detectionn (Fail Safe) This input is used to connect a sensor such as a light barrier or a light button for detecting attempted crawling. As soon as 0 V is applied to this input and there is no release for a passage, the function is activated and the "Climbing/Crawling" output function is set.

Input function	Descriptions
Random check function	Activate random check function, confirm hits As soon as +24 V DC are applied to this input, the random check function is activated. If a hit is generated, the hit can be confirmed with a 0 V pulse via this input. "Random check function" menu: ↗ Page 51, chapter 6.2.7. For this input to be effective, you must select the option "Counting" or "Random" for the parameter "Mode" in the "Random check function" menu.
Multi valid left	Multi validation for a passage from left Function when multiple signals are required to trigger a validation for a passage from left. A validation is triggered when a pulse is pending at all inputs with the function "Multi valid left". Pulses are deleted after 10 seconds. Example: Passage will not be granted until a face mask has been identified and the hands have been disinfected. In the example, you must parameterise two inputs with the function "Multi valid left".
Multi valid right	Multi validation for a passage from right Function when multiple signals are required to trigger a validation for a passage from right. A validation is triggered when a pulse is pending at all inputs with the function "Multi valid right". Pulses are deleted after 10 seconds. Example: Passage will not be granted until a face mask has been identified and the hands have been disinfected. In the example, you must parameterise two inputs with the function "Multi valid right".
Illumination off	Switching the illumination off and on As soon as +24 V DC are applied to this input, the outputs of the MFM01 plug-in module for floor illumination and frame illumination are switched off. If no voltage is applied at this input, the floor illumination and frame illumination are switched on.
| End switch drop arm	End switch drop arm released (only with "Drop arm" option) (Fail Safe) This input is used internally for the feedback signal of the energized drop-arm holding magnet. As soon as the feedback signal is missing, an error is generated.

Table 4: Function digital inputs

2.2 Digital outputs and relay outputs

Definition of "Left" and "Right": ↗ Page 62, chapter 7.1.

By parameterising the outputs, you assign certain functions to the outputs. For example, if you parameterise the "Buzzer/Siren (alarm)" function for output NO2, you must connect an acoustic signal transmitter to this output.

If the function is marked with "|", the output is inverted (closed-circuit principle). ↗ Page 54, chapter 6.3.3.

The following functions are assigned to the outputs as default settings:

Clamp	Description	Output function
DO1	Digital output 1	GED red left
DO2	Digital output 2	GED green left
DO3	Digital output 3	GED red right
DO4	Digital output 4	GED green right
NO1	Relay output 1	Random hit
NO2	Relay output 2	Buzzer/Siren (alarm)
NO3	Relay output 3	Climbing/Crawling
NO4/NC4	Relay output 4	Passage clear Left
NO5/NC5	Relay output 5	Passage clear Right
NO6/NC6	Relay output 6	Home position

Table 5: Factory setting digital outputs and relay outputs

NOTICE

Changing the assignment of the terminals DO1, DO2, DO3, DO4 and NO2 and the factory default functions!

By default, the terminals are wired for the listed factory setting. A change will cause the pedestrian gate to malfunction.

› Do not change the assignment of the listed terminals.

NOTICE

Malfunction due to excessive output current at terminal X2!

The maximum output current at terminal X2 is limited to 300 mA by a self-resetting fuse.

› Make sure that the maximum output current is not exceeded.

› If necessary, supply components such as other illumination with an additional power supply unit. The additional power supply unit must be installed outside the pedestrian gate.

Output function	Description
–	Outputs that you assign this function "–" to are deactivated.
| Error	When the control unit recognises any safety-relevant error or error, the output with this function is deactivated (closed-circuit principle). ↗ Page 73, chapter 8.6.
| Warning	When the control unit recognises any "Warning", the output with this function is deactivated (closed-circuit principle). ↗ Page 73, chapter 8.6.
Gate ready	Pedestrian gate is ready for operation This output is activated as soon and as long as the pedestrian gate is ready for operation.
Passage pulse left	Counter pulse for a passage from left When the blocking element reaches an end position in the passage direction from left, a counter pulse of 300 ms is output from this output. A counter pulse is also emitted in the "Permanent open" operating mode.
Passage pulse right	Counter pulse for a passage from right When the blocking element reaches an end position in the passage direction from right, a counter pulse of 300 ms is output from this output. A counter pulse is also emitted in the "Permanent open" operating mode.
Passage clear left	Display for the free passage from left When the passage from left is cleared, a permanent signal is output from this output. You can also use this output to lock a pulse encoder, e.g. a card reader, for passage from right if passage from left is cleared.
Passage clear right	Display for the free passage from right When the passage from right is cleared, a permanent signal is output from this output. You can also use this output to lock a pulse encoder, e.g. a card reader, for passage from left if passage from right is cleared.
Home position	Blocking element in Home position (Home Position) When the blocking element is in one of the end positions, a permanent signal is output.
Rotating from left	As long as the blocking element is turned from the left, a permanent signal is emitted via this output.
Rotating from right	As long as the blocking element is turned from the right, a permanent signal is emitted via this output.
Climbing/ Crawling	Climbing or crawling attempt detected This output is activated as soon as a climbing or a crawling attempt is detected. If an individual release or Permanent open is present, the output is not activated. After one passage, the sensors may continue to be occupied for approx. 1.5 seconds without triggering an alarm.

Output function	Description
Vandalism	The output is activated in the following cases: › A user tries to pass through the pedestrian gate without authorisation (validation). › A user is authorised for passage, but moves the blocking element against the released direction. › A user has first moved the blocking element correctly in the released direction, but then moves it back in the other direction with more than the motor force. The output remains activated until the blocking element is in an end position.
Buzzer/Siren (alarm)	Acoustic signal transmitter connection An acoustic signal transmitter is connected to this output. You can parameterise the events for which an acoustic signal is to be triggered via the "Buzzer/Siren" parameter in the "Signalling" menu.
Random hit	Hits of the random check function, signal transmitter The random check function generated a hit. You can connect a signal lamp or a siren to this output, for example. The passage remains blocked until the random hit / validation is confirmed with a 0 V pulse at the "Random check function" input.
Service mode active	Pedestrian gate in service mode As soon as the service mode is activated via the service switch on the MGC control unit, this output is activated. ↗ Page 43, chapter 5.9.
GED red left	Gate End Display connection Connect the GED red left to this output.
GED green left	Gate End Display connection Connect the GED green left to this output.
GED red right	Gate End Display connection Connect the GED red right to this output.
GED green right	Gate End Display connection Connect the GED green right to this output.

Table 6: Function digital outputs and relay outputs

2.3 Digital power outputs of the MFM01 plug-in modules

You can equip the control unit with up to 4 optional MFM01 plug-in modules.

Power outputs 60 V / 3 A are available via the optional MFM01 plug-in modules. The function is permanently assigned via the slot number.

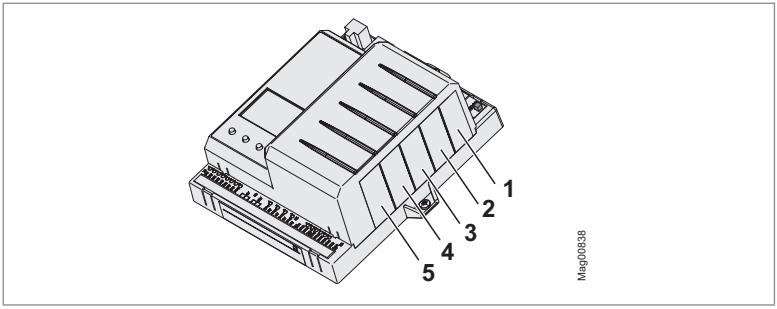


Fig. 1: Slot numbers

Slot number	Terminal plug-in module	LED plug-in module	Function
1	Locking unit / drop arm		
	1	Red	Locking magnet left
	2	Green	Locking magnet right
	3	Yellow	Drop arm
2	Passage right (frame illumination) / floor illumination		
	1	Red	Passage blocked right
	2	Green	Passage clear Right
	3	Yellow	Floor illumination
3	Passage left (frame illumination)		
	1	Red	Passage blocked left
	2	Green	Passage clear Left
	3	Yellow	Not usable
4	Drop arm / vandalism		
	1	Red	Drop arm
	2	Green	Not usable
	3	Yellow	Vandalism
5	Not usable		

Table 7: Functions for MFM01 plug-in modules

2.4 Illumination

You can order the mTripod turnstile with the following optional illuminations:

› Floor illumination
› Frame illumination

2.4.1 Floor illumination

For turnstiles with optional floor illumination, the floor illumination is connected to the output of the MFM01 plug-in module slot 2, OUT 3 by default.

You can switch the floor illumination on and off via the "Illumination off" input function.

2.4.2 Frame illumination

For turnstiles with optional frame illumination, the frame illumination is connected to the outputs of the MFM01 plug-in modules slot 2, OUT 1 and OUT 2 and slot 3, OUT 1 and OUT 2 by default.

You can switch the frame illumination on and off via the "Illumination off" input function.

The following conditions are signalled via the frame illumination:

Frame illumination left (slot 3)	**Frame illumination right (slot 2)**	**Description**
Red	Red	› The passage is blocked. Input function "Inhibit opening" activated.
Flashing red	Flashing red	› An obstacle has been detected. › Vandalism or fraud detected. › An error is present.
Green	Green	› Either no validations are pending or the passage is free in both passage directions.
Red	Green	› Passage from right to left expected or active.
Green	Red	› Passage from left to right expected or active.
Flashing yellow	Flashing yellow	› The pedestrian gate performs homing. › The home position is being aligned.

Table 8: Frame illumination signalling

3 Parameterising the mTripod

You have the following possibilities to parameterise the control unit MGC:

› Directly at the control unit MGC

› Via the "MGC.Connect" programme.

The "MGC.Connect" programme also allows you to test the function of the mTripod pedestrian gate.

3.1 Parameterisation directly at the control unit

The control unit can be accessed when the cover is dismounted.

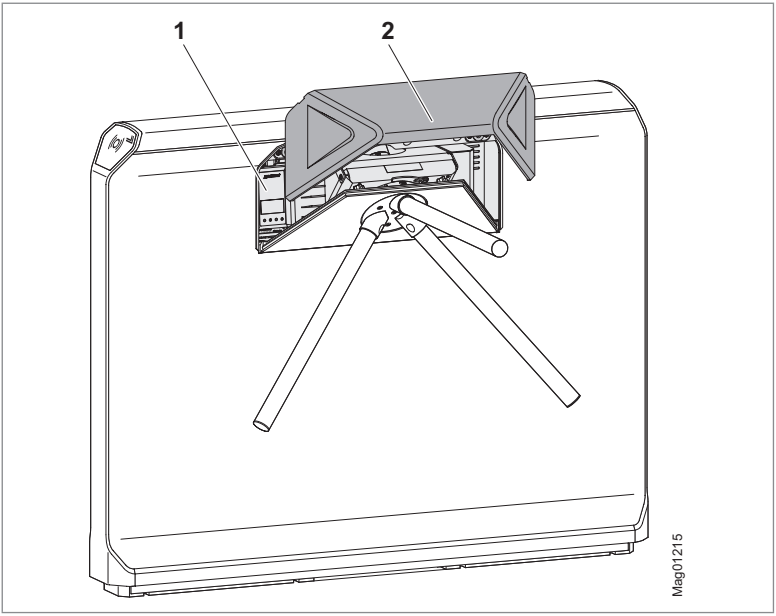


Fig. 2: Position of control unit MGC

1 Control unit MGC

2 Cover

IMPORTANT!

For access to the control unit, see separate operating instructions "Turnstile mTripod MHTM™ FlowMotion® (Doc.ID: 5817,0026)", chapter "Dismounting and mounting the cover".

3.2 Parameterisation via the "MGC.Connect" programme

The programme "MGC.Connect" is available on the Magnetic website in the download center. You can also download the programme with the programme for the Service Module SM01 "SM-Downloader".

Additionally required components:

› Laptop
› Magnetic Service Module "Service Module SM01"
› USB cable A plug to B plug
› RJ-45 patch cable, with a maximum length of 3 meters.

Additional options:

› Ethernet module EM01 for connection via Ethernet

System requirements laptop:

› Windows 10 or higher
› .NET Framework 4.5 or higher
› USB connection

3.2.1 Establishing the connection via service module SM01

1. Connect the SM01 service module to the RJ-45 socket of the MGC control unit.
2. Connect the Service Module SM01 to the laptop.
3. Start the "MGC.Connect" programme on the laptop.
   √ The MGC.Connect start view is displayed.
   √ The connection between MGC.Connect and the pedestrian gate is established.

√ When the connection is established, the symbol "Connection established" is displayed in the MGC.Connect header.

If the connection could not established, the connection settings may have been changed.

1. Open the "Configuration" window. To do so, click the "⚙" button in the header of the MGC.Connect programme. ↗ Page 22, chapter Fig. 5, pos. 1.

   √ The "Configuration" window is displayed:

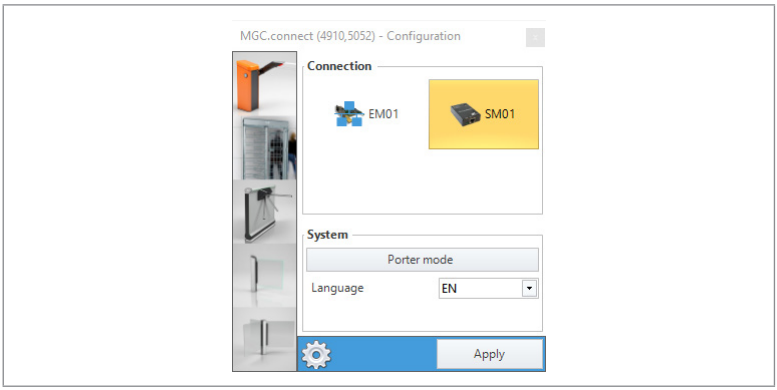


Fig. 3: "SM01 configuration" window

2. Select the connection "SM01".
3. Click the "Apply" button.

√ The connection between pedestrian gate and "MGC.Connect" programme is established.

3.2.2 Connection via Ethernet module EM01

Further information on the Ethernet module: Technical Manual "Ethernet Module" (Doc.ID: 5815,0001).

For pedestrian gates with the option "Ethernet module EM01", the Ethernet module is installed ex works.

1. Connect the EM01 Ethernet module to the customer's network via a customer-side network cable.
2. Check whether the LEDs on the EM01 Ethernet module are flashing. If the LEDs flash, the Ethernet module is connected correctly.
3. If necessary, set the IP address of the Ethernet module. DHCP is activated ex works. Note the IP address.
4. Start the "MGC.Connect" programme on the laptop.
   √ The MGC.Connect start view is displayed.
   √ The "Configuration" window is displayed:

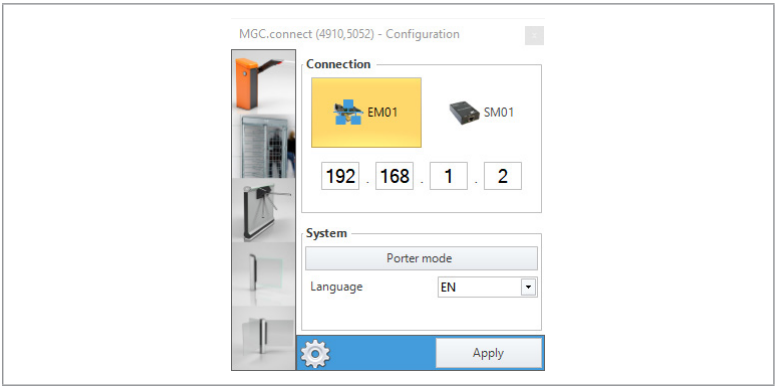


Fig. 4: "EM01 configuration" window

5. Select the connection "EM01".
6. Enter the previously noted IP address of the pedestrian gate.
7. Click the "Apply" button.

√ The connection between pedestrian gate and "MGC.Connect" programme is established.

3.2.3 Updating control unit MGC

IMPORTANT!
If necessary, download and update via the "SM-Downloader" programme.

4 Description of the "MGC.Connect" programme

4.1 Overview

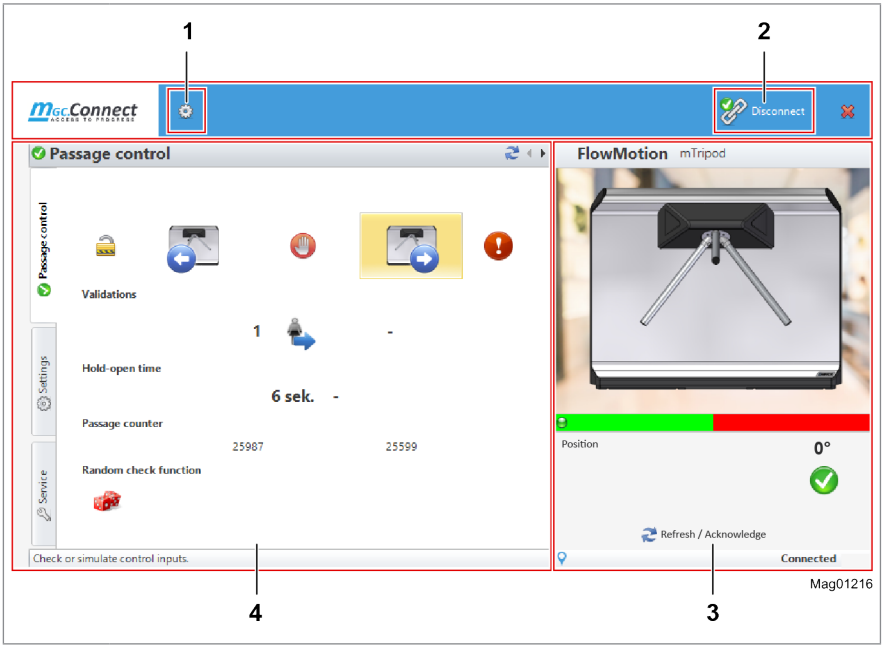


Fig. 5: Exemplary view "MGC.Connect"

1 Button to open the "Configuration" window
2 Button to disconnect or connect the connection
3 Status display of the pedestrian gate
4 Tabs and parameters

Button	Description
	No connection There is **no connection**between the pedestrian gate and the "MGC. Connect" programme. If the connection via the Service Module SM01 or via the Ethernet modul exists and you click on the "Connect" button, the connection is established.
	Connection is established The connection between pedestrian gate and "MGC.Connect" programme is currently being established.
	Connection available The pedestrian gate and the "MGC.Connect" programme are **connected**. If you click on the "Disconnect" button, the connection is interrupted.

Table 9: Description of the buttons "Connect" and "Disconnect"

4.2 Changing the menu language for MGC.Connect

By default, the MGC.Connect programme takes applies the language of the operating system.

You can change the menu language via the "Language" option in the "Configuration" window. Open the "Configuration" window with the "⚙" button in the header of the MGC.Connect programme. ↗ Page 22, Fig. 5, pos. 1.

The changes are only assumed after a programme restart.

4.3 Status display mTripod

The status display shows the current position of the blocking element, signals certain events and shows the current status of the pedestrian gate.

In the "Closed" position the value is 0°. When turning to the left, the value is negative. When turning to the right, the value is positive.

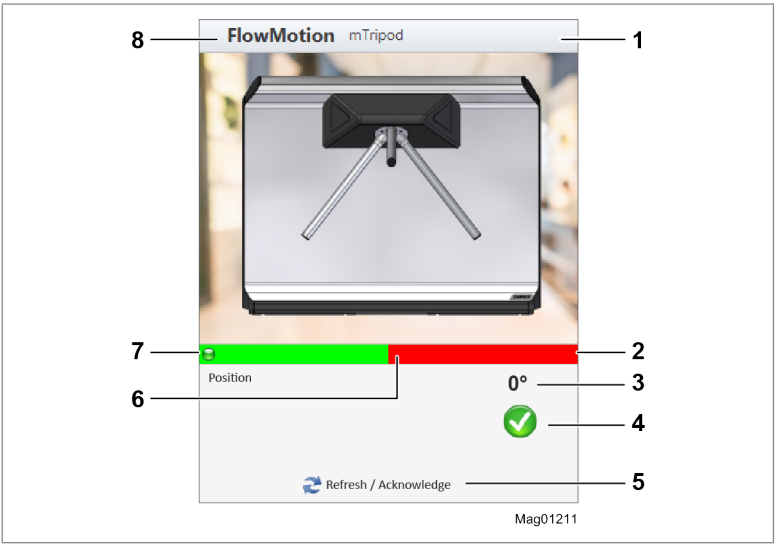


Fig. 6: Status display mTripod, example status "OK"

1 Display of symbols: ↗ Page 26, Table 10

2 Display of the current status of the output functions "GED red right" and "GED green right" depending in the parameterisation of the "GED mode right" parameter. If no LED symbol is displayed, the option "Off" has been set for the parameter "GED mode right". ↗ Page 49, chapter 6.2.6

3 Current position of the blocking element, "Closed" position is 0°

4 Current status of the pedestrian gate such as "OK", WARNING, ERROR

5 Refresh the event display and, if available, confirm the pending messages

6 The bars represent the optional frame illumination

7 Display of the current status of the output functions "GED red left" and "GED green left" depending in the parameterisation of the "GED mode left" parameter. If no LED symbol is displayed, the option "Off" has been set for the parameter "GED mode left". ↗ Page 49, chapter 6.2.6

8 Gate type, here e.g. mTripod

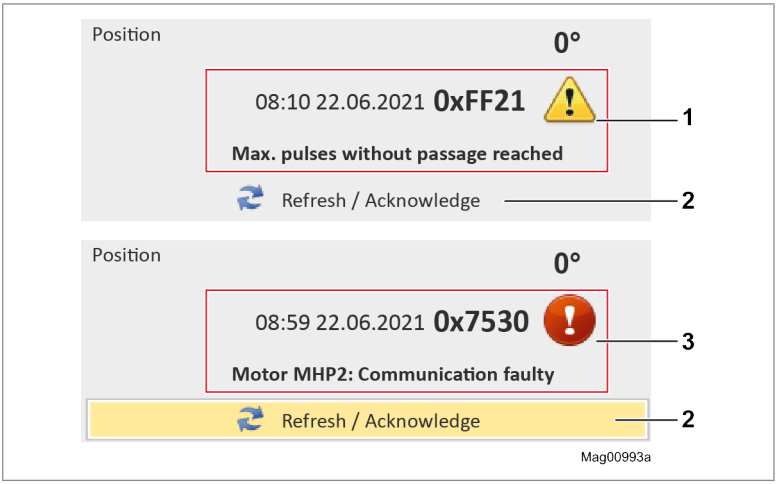


Fig. 7: Examples of event displays

1 Example of an event of the type WARNING

2 Confirm pending messages and update display

3 Example of an event of the type ERROR

Information on WARNING and ERROR: ↗ Page 73, chapter 8.6.

Symbol	Description
	OK No warning and no error is pending.
	WARNING A warning is pending. If you click the "Refresh / Acknowledge" button, the warning is confirmed and the display is refreshed.
	ERROR There is an error. After correcting the fault and a reset, you can acknowledge the fault and refresh the display via the "Refresh / Acknowledge" button. If several errors are pending at the same time, the next error is displayed after refreshing. In the "Service" tab, you can generate a current system report for the pedestrian gate. The system report contains an event log with additional information about a fault / message such as "Node name". ↗ Page 30, chapter 4.6.
	The pedestrian gate has detected an attempted vandalism.

Symbol	Description
	The "random check function" generated a hit.

Table 10: Status display – Description symbols

4.4 "Passage control" tab

Use the "Passage control" tab to test the behaviour of the pedestrian gate.

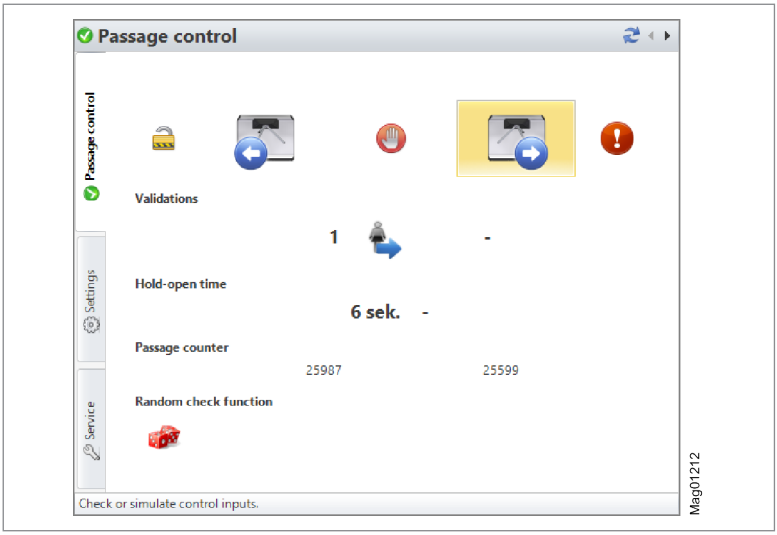


Fig. 8: "Passage control" tab

The view offers the following options.

Information about the input functions: ↗ Page 10, chapter 2.1.

Button / parameters	Description
	The permanent signal is deactivated. The 3 central buttons simulate pulse operation and you can test the respective input function by clicking on the button. The selected input function is automatically reset.
	The permanent signal is activated. The 3 central buttons are in hold mode. After you have selected an input function, this input function is held until you click the button again.
	Test input function "Open from left". Trigger a validation from left. A passage from left is possible.
	Test input function "Inhibit opening". Lock the pedestrian gate in both passage directions and delete validations. No opening signals are accepted anymore.
	Test input function "Open from right". Trigger a validation from right. A passage from right is possible.
	Test input function "Emergency open".
Validations	Display of pending validations.
Hold-open time	Display of the current hold-open time still available. If several validations are pending, the total hold-open time is not displayed. The hold-open time is counted down again from the set value with each validation. ↗ Page 46, chapter 6.2.1.
Passage counter	Display of the current counters.
Random check function 	Activate and test the "Random check function" function. ↗ Page 51, chapter 6.2.7.

Table 11: "Passage control" tab – Description buttons and parameters

4.5 "Settings" tab

The "Settings" tab encloses the sections: General, Signalling and Random check function.

Use the "Settings" tab to check and adjust the settings.

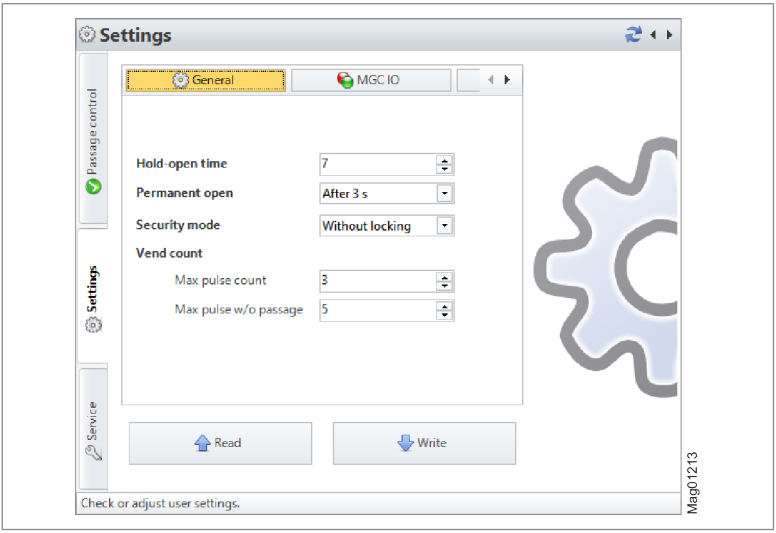


Fig. 9: "Settings" tab, "General" section

Button	Description
Read	Read current settings from the control unit MGC into the "MGC.Connect" programme.
Write	Transfer settings from the "MGC.Connect" programme to the control unit MGC.

Table 12: "Settings" tab – Description of buttons

"General" section

Parameter	Description
Hold-open time	"Hold-open time" parameter: ↗ Page 46
Permanent open	"Permanent open" parameter: ↗ Page 46
Security mode	"Security mode" parameter: ↗ Page 47
Vend count	"Vend count" menu: ↗ Page 48

Table 13: "Settings" tab – "General" section

"Signalling" section

Parameter	Description
Buzzer/Siren	"Buzzer/Siren" parameter: ↗ Page 49
Movement	"Signal move" parameter: ↗ Page 49
GED left	"GED mode left" parameter: ↗ Page 50
GED right	"GED mode right" parameter: ↗ Page 50

Table 14: "Settings" tab – "Signalling" section

"Random check function" section

Information about the "Random check function": ↗ Page 49, chapter 6.2.6.

Parameter	Description
Random mode	"Mode" parameter: ↗ Page 52
Hit range	"Hit range" parameter: ↗ Page 52
Count of hits	"Count of hits" parameter: ↗ Page 53
Delete validation	"Delete validation" parameter: ↗ Page 53
Direction	"Direction" parameter: ↗ Page 53

Table 15: "Settings" tab – "Random check function" section

4.6 "Service" tab

Use the "Service" tab to align the blocking element for the "Closed (0°)" position.

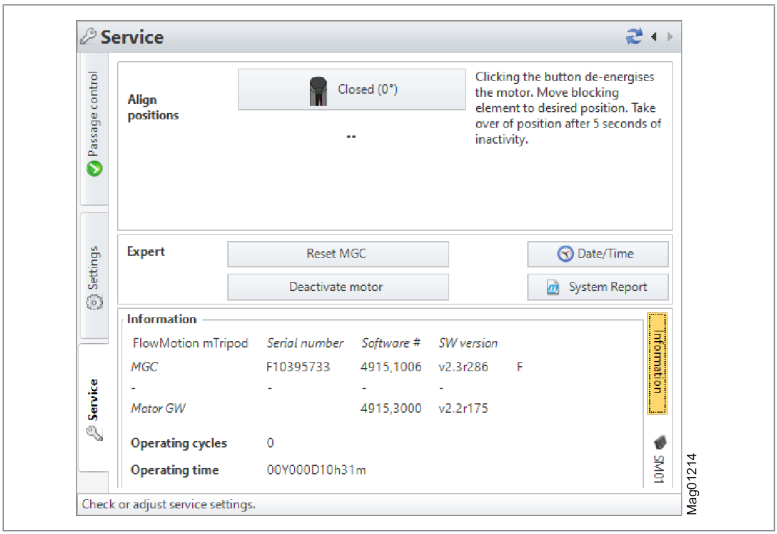


Fig. 10: "Service" tab – "Align positions" section

4.6.1 Align blocking element for the "Closed" position

Procedure

IMPORTANT!

After you have clicked the button, you have **10 seconds** to move the blocking element. The remaining time is displayed in the "Align positions" section.

1. Click the "Closed (0°)" button.
   √ The motor is de-energised.
   √ The Settings mode is activated and is signalled as follows:
   In the "MGC.Connect" programme, status display, below the product image, the bar flashes yellow. The optional frame illumination also flashes yellow.
2. Move the blocking element to the desired "Closed" position.
   √ After 5 seconds, the new position is accepted as the "Closed (0°)" position. The position corresponds to 0°.
   √ The mTripod pedestrian gate automatically switches to normal operation. If a buzzer is installed, a short tone will sound.

√ The "Closed" position is aligned.

4.6.2 Description of the buttons and parameters

Button / parameters	Description
Align positions	Set position "Closed (0°)". The set position "Closed (0°)" corresponds to 0°. After you have clicked the button, you have 10 seconds to move the blocking element. The remaining time is displayed in the "Align positions" section.
Experte - Deactivate motor	Disconnect the motor from mains. You can move the blocking element freely and check the current position of the blocking element in the status display. The "Closed" position is 0°.
Experte - Reset MGC	Perform reset.
System report	Open the current system report. You can save the system report. The system report includes various information, the current parameterisation of the inputs and outputs, an event list (event log) and the current parameter settings.
Date/Time	Set the date and time.
Information	Display of serial number, software # and software versions
Operating cycles	Display of the current cycle counter reading of the pedestrian gate. The counter reading cannot be changed.
Operating time	Displays the operating hours counter. The operating hours counter records the time, during which the pedestrian gate is supplied with electrical power.

Table 16: "Service" tab – Description buttons and parameters

5 Parameterisation directly at the control unit MGC

5.1 Changing menu language

The default setting in the MGC control unit is the menu language "English".

Change the menu language as follows:

The operational view is displayed.

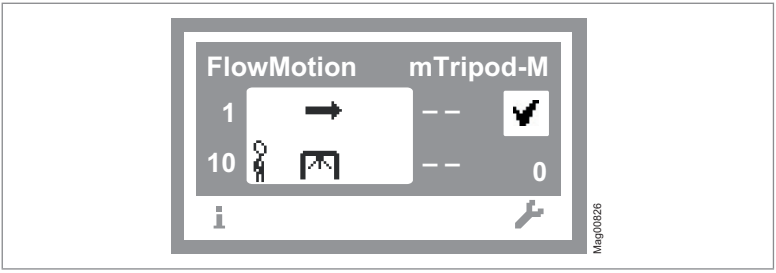


Fig. 11: Example "Operational view"

1. Press right operating button «».

2. Access to parameterisation can be password-protected. If password protection was activated, you are asked to enter a password.

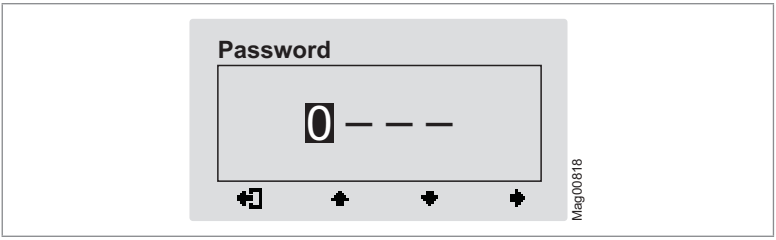


Fig. 12: "Enter password" view

3. The "Main menu" menu is displayed. The "Settings" menu has a dark background and is thus selected.

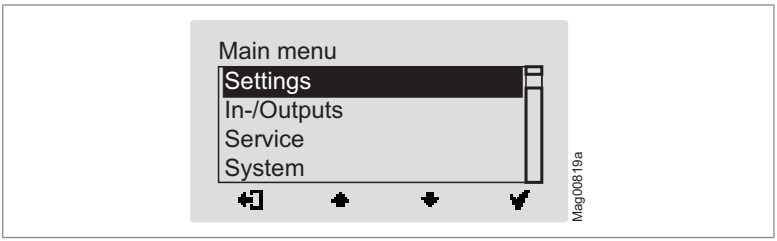


Fig. 13: "Main menu – Settings" view

4. Select the "System" menu with the two middle buttons «▲», «▼».

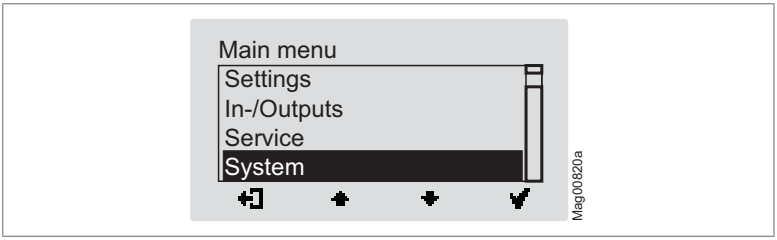


Fig. 14: "Main menu – System" view

5. Confirm selection with the right control button «✓». The following view is displayed. The menu "Language" is chosen.

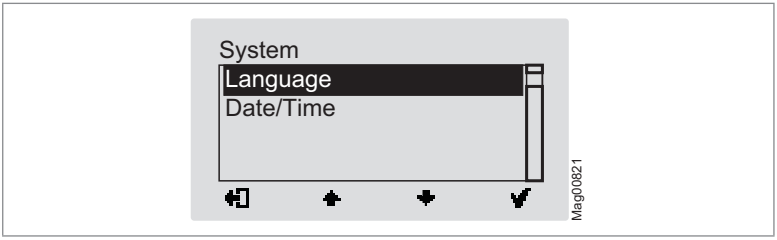


Fig. 15: "Language" view

6. Confirm selection with the right button «✓». The following view is displayed. The menu language "English" is chosen.

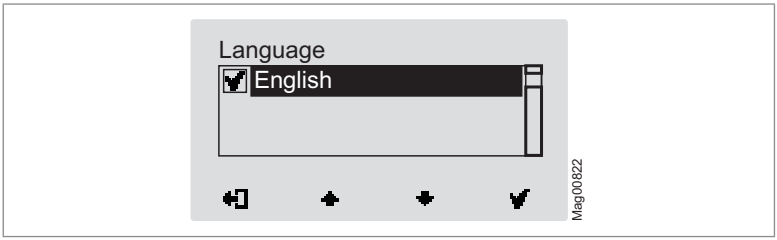


Fig. 16: "Language – English" view

7. Select the language "German" with the two middle buttons «✥», «✥». The language "German" has a dark background.

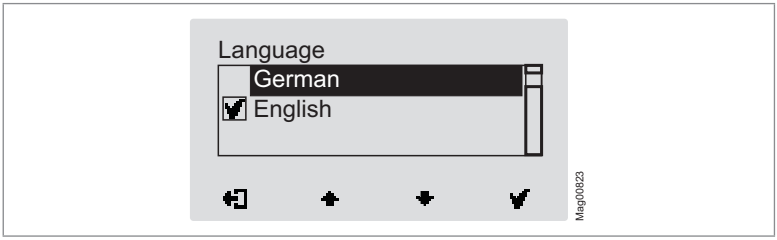


Fig. 17: "Language – German" view

8. Use the right button «✓» to select the new menu language. Your selection is marked with the symbol «☑».

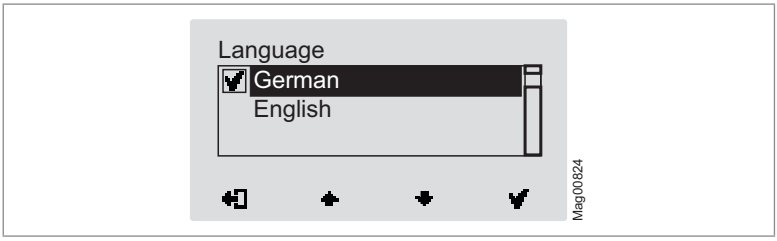


Fig. 18: "Language – German, step 2" view

9. Use the left button «⇦» to leave the "Language" menu. The safety prompt "Save changes?" appears.

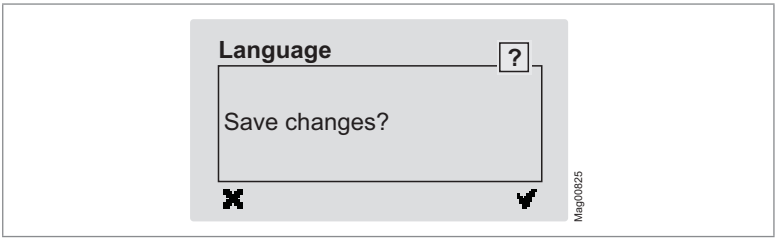


Fig. 19: "Safety prompt – Save changes?" view

10. Push the left button «✘» if you do not want to save the changes. The menu language "English" remains active.
11. Confirm safety prompt with the right button «✔». The new menu language "German" is activated. The following view is displayed:

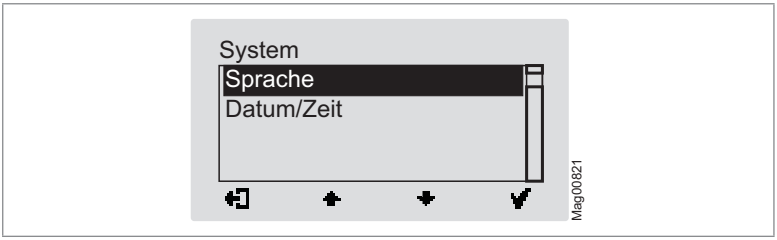


Fig. 20: View "System" menu – Menu language "German" is activated

12. Press the left button «⇦» repeatedly until the operational view is displayed again. ↗ Page 32, Fig. 11.

5.2 Entering password

You need to enter a password in the following cases:

› You would like to change parameters in the control unit and the password protection was activated.

› You would like to restore the parameters to factory settings.

If a password is required, the following view is displayed:

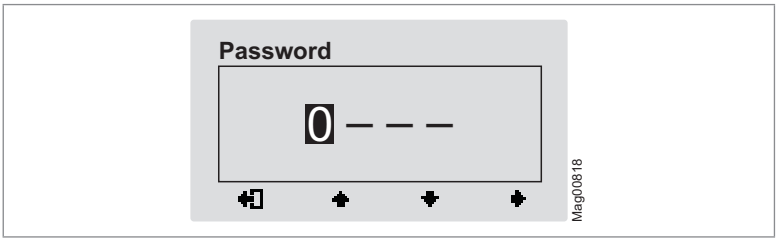


Fig. 21: "Password" view

1. Use the two middle buttons «▲», «▼» to enter the first digit of the password.
2. Use the right button «►» to select the second digit of the password. The following view is displayed:

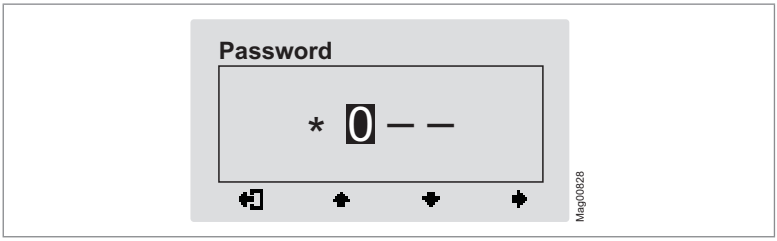


Fig. 22: "Enter second digit of the password" view

3. Use the two middle buttons «▲», «▼» to enter the second digit of the password.
4. Use the right button «►» to select the third digit of the password.
5. Use the two middle buttons «▲», «▼» to enter the third digit of the password.

6. Use the right button «» to select the fourth digit of the password. The following view is displayed:

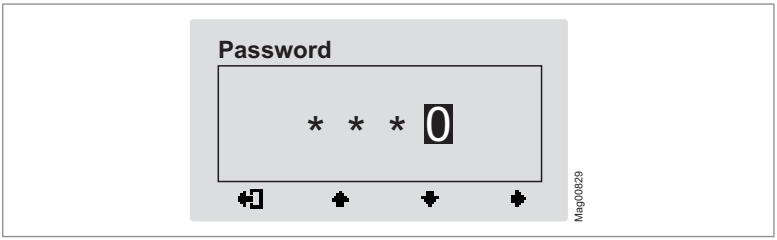


Fig. 23: "Enter fourth digit of the password" view

7. Use the two middle buttons «», «» to enter the fourth digit of the password.
8. Confirm the password with the right control button «».

5.3 Control unit elements

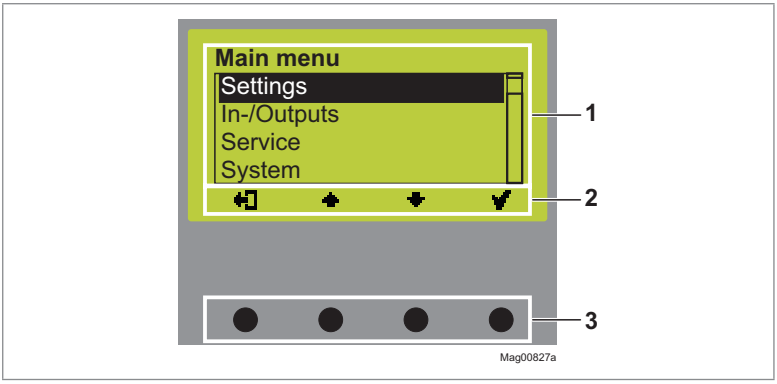


Fig. 24: Control unit MGC elements

1 Menu
2 Current function of the 4 control buttons
3 Control buttons

5.4 Displays of the control unit

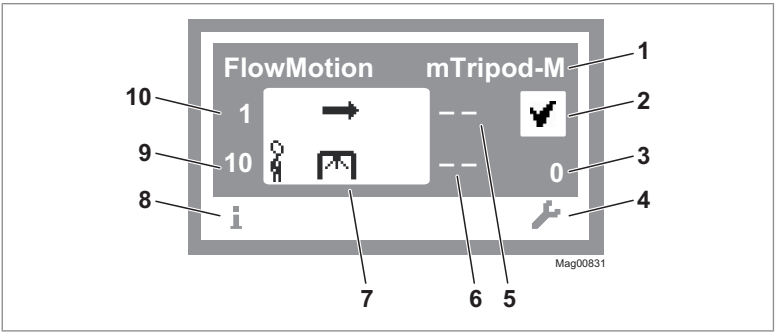


Fig. 25: Example "Operational view"

1 Type pedestrian gate, here mTripod electromotive
2 Status display, here ready for operation
3 Angle of rotation, here 0
4 Current function of the right control button, here accessing menu "Main menu"
5 Validations (validation pulses) for passage from right, here blocked
6 Hold-open time for passage from right, here blocked
7 Operating display, here passage from left is released
8 Current function of the left control button, here accessing menu "Information"
9 Hold-open time for passage from left, here 10 seconds
10 Validations (validation pulses) for passage from left, here 1

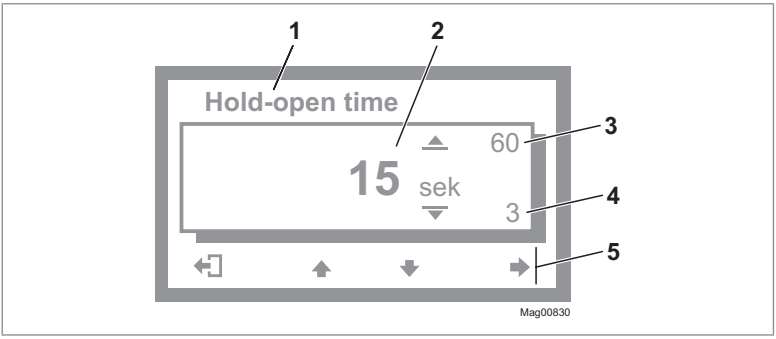


Fig. 26: Example "Screen Change Value"

1 Parameter
2 Current value
3 Possible upper value
4 Possible lower value
5 Current functions of the control buttons

5.5 Symbols in the display

5.5.1 Control button functions

The control unit is equipped with 4 control buttons. The function of the control buttons change depending on the current view in the display. The current functions are shown in the display.

Function	Description
	› Access "Information" menu. › Scroll "Information" menu.
	› Access "Main menu" menu. In the "Main menu" menu you can make all settings.
	› Leave current menu level. The next-higher menu level is displayed.
	› Access next-lower menu level. › Select desired option or desired value. When the desired option was selected, the symbol  is displayed.
	› Option was selected but not yet stored.
	› Within one menu level: Move cursor (market) upwards. › For setting value: Increase figure.
	› Within one menu level: Move cursor (market) downwards. › For setting value: Decrease figure.
	› Move cursor one position to the right. › In "Service" mode: Open the pedestrian gate for a passage from left.
	› In "Service" mode: Open the pedestrian gate for a passage from right.
	› Delete error message. › When changing settings: Cancel changing process.

Table 17: Control button functions

5.5.2 Further symbols

Function	Description
	Wrong password entered. Access denied.
	Reset values to factory settings. To do this, you must enter the password "0000".
	There is an information. Check the "Information" menu. To do this, press the left operating button.
	There is a warning. Check the "Information" menu. To do this, press the left operating button.
	There is an error. Check the "Information" menu. To do this, press the left operating button.
	The passage direction from left is released.
	The passage direction from right is released.
	The passage is enabled in both directions.

Table 18: Further symbols

5.6 Setting display contrast

The display contrast of the control unit is adjustable after activation while the logo is still displayed. The logo is displayed for 3 seconds.

If you push one of the middle buttons «», «», the display time of the logo extends by 2 seconds per push. You can thus extend the time to set the display contrast.

› Increase contrast, display grows darker: Press the «» button.

› Reduce contrast, display grows lighter: Press the «» button.

The set display contrast is saved automatically.

5.7 Protecting parameterisation from access

You can apply the access to the main menu with password protection. ↗ Page 36, chapter 5.2.

5.8 Parameterising value

Example: Change hold-open time

The operational view is displayed. ↗ Page 38, Fig. 25.

1. Press the right button «».
   √ The "Main Menu" menu is displayed.
2. Select the "Settings" menu with the two middle buttons «», «».
3. Confirm the selection with the right button «».
4. The "Hold-open time" parameter has a dark background and is therefore selected. If necessary, use the two middle buttons «», « » to select the "Hold-open time" parameter.
5. Press the right button «».
   √ The current hold-open time value is displayed. The cursor flashes on the first digit.
6. Use the middle buttons «», « » to set the desired digit.
7. Use the right button « » to move the cursor to the right.
   √ The cursor flashes on the second digit.
8. Use the middle buttons «», « » to set the desired digit.
9. Press the right button « ».
10. Use the left button « » to leave the "Hold-open time" parameter.
    √ The safety prompt "Save changes?" appears.

11. If the changes are to be saved, press the right button «✓». The new hold-open time is activated.
    If the changes are not to be saved, press the left button «✗». The previous hold-open time remains active.
    √ The "Settings" menu is displayed.
12. Press the left button «⇦» repeatedly until the operational view is displayed again.

5.9 Switching the "Service" mode on and off

Switching the "Service" mode on

Switch the "Service" switch for the "Service" mode. The LED lights red. The display backlighting flashes. The button assignment in the operating display changes.

Switching the "Service" mode off

After the service work, the switch "Service" must be switched. The LED must light green.

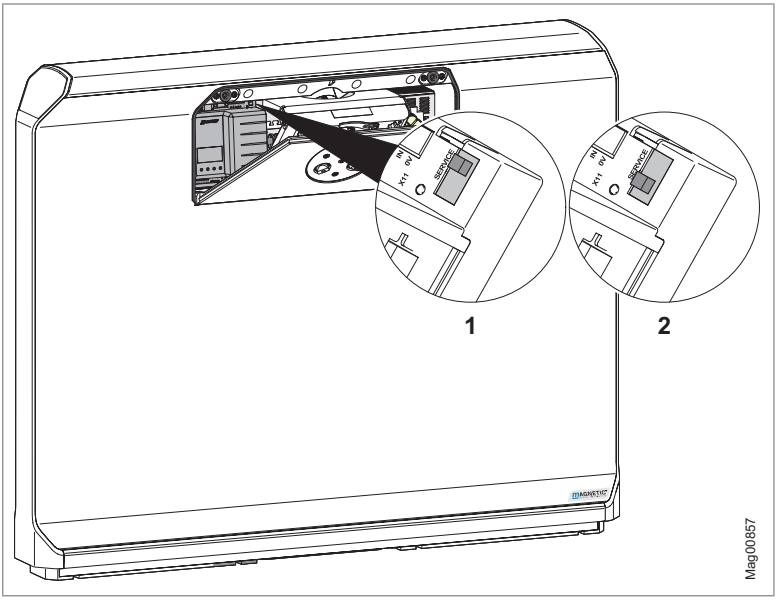


Fig. 27: Service switch

1 Mode "Service" on

2 Mode "Service" off

Functions in "Service" mode

Signals via the inputs of the control unit or via the interface are ignored.

In "Service" mode, you can control the motor with the two middle control buttons.

- Middle left button «  »: Open the pedestrian gate for a passage from right.
- Middle right button «  »: Open the pedestrian gate for a passage from left.

6 Description of menus and parameters

6.1 "Information" menu

Accessing and navigating

The operational view is displayed. ↗ Page 38, Fig. 25.

1. Press left button «».
2. Use the left button «» to scroll within the menu.
3. The "Information" menu can be left as follows:
   - › press the left button «» repeatedly until the operational view is displayed again or
   - › press the right button «».

Operational View > Information	
Parameter	**Description**
Error, warning or event messages	Display of the error, warning or event messages that occurred since the last voltage reset, including date and time. Use the «» and «» buttons to navigate through the messages. If no messages are present, the menu is not displayed.
Inputs	Displays the current settings for the digital inputs IN1 to IN8. Separate inputs can be deactivated or inverted. Deactivated inputs are marked with a "–", e.g. "IN8: –". Inputs with inverted functions are marked with a "|", e.g. "IN7: | Illumination off".
Outputs	Displays the current settings for the digital outputs DO1 to DO4 and the relay outputs NO1 to NO3 and NO/NC4 to NO/NC6. Separate outputs can be deactivated or inverted. Deactivated outputs are marked with a "–", e.g. "DO2: –". Outputs with inverted functions are marked with a "|", e.g. "NO5/NC5: | Passage clear right".
Module info	Display of the software numbers (software #) and software versions (SW version) of the control unit and plugged-in plug-in modules.

Table 19: "Information"

6.2 "Settings" menu

6.2.1 Hold-open time

Operational view > Main menu > Settings > Hold-open time	
Parameter	**Description**
Hold-open time	Set the hold-open time. The hold-open time is started by a validation by a control device, such as a card reader. A passage should take place within the set hold-open time. If there is no passage during the hold-open time, the direction is blocked. With the setting 0 seconds, the direction remains open until a passage takes place. **Setting range** › 0 to 60 s **Factory setting** › 7 s

Table 20: Hold-open time

6.2.2 Permanent open

Operational view > Main menu > Settings > Permanent open	
Parameter	**Description**
Permanent open	You use this parameter to specify whether and after what time the permanent open is activated for a permanent signal at the "Open from left" or "Open from right" inputs. **Example "After 3 s" option** If the signal is present at the "Open from left" or "Open from right" input for 3 seconds, the system switches to the "Permanent open" operating mode. As soon as the signal is no longer present at the input, the direction is immediately blocked. **Options** › Deactivated › After 3 s › After 10 s **Factory setting** › After 3 s

Table 21: Permanent open

6.2.3 Interlock

Operational view > Main menu > Settings > Interlock	
Parameter	**Description**
Interlock	Activate and deactivate the "Interlock" function. If the interlock has been activated, further rotation of the blocking element is blocked for 1 second after each passage. This ensures that the blocking element remains safely in the Home position. If many people pass the pedestrian gate (high throughput), the option "[ ]: Deactivated" may be useful. **Options** › [ ]: Deactivated › [X]: Activated **Factory setting** › [ ]: Deactivated

Table 22: Interlock

6.2.4 Safety/Security

Operational view > Main menu > Settings > Safety/Security	
Parameter	**Description**
Security mode	Adjust the security mode for breakthrough attempts. **Options** › Without locking Select the "Without locking" option if no locking is connected or if the pedestrian gate should never lock mechanically. The blocking element is only held in position by the motor force and the passage is blocked with the set holding force of the motor. The locking unit is not activated. "Holding force" parameter: ↗ Page 48 › With locking If you have selected the option "With locking", the direction-specific locking output on the plug-in module MFM01 is activated when vandalism is detected. The motor holding force is reduced. The lock is released again when the Home position is reached. **Factory setting** › Without locking

Operational view > Main menu > Settings > Safety/Security	
Parameter	**Description**
Holding force	Set the maximum holding force for locking in the home position (Home position). For certain applications, such as ski lift accesses, it may make sense to reduce the holding force. A lower holding force can reduce the risk of injury after validation errors. **Setting range** › 40% to 100% **Factory setting** › 100%

Table 23: Safety/Security

6.2.5 Vend count

Operational view > Main menu > Settings > Vend count	
Parameter	**Description**
Counter left	Displays the current counter for validations in "Left" direction.
Counter right	Displays the current counter for validations in "Right" direction.
Max pulse count	Set the value for the maximum number of pulses. The pulses are counted up to the set value. **Setting range** › 0 to 10 **Factory setting** › 3
Max pulse w/o passage (Maximum number of pulses without passage)	Set the value for the maximum number of pulses without passages. This value is used to check the connected validation device, e.g. card reader. If the counter value is above the set value, a warning message is issued. **Setting range** › 5 to 100 **Factory setting** › 5

Table 24: Vend count

6.2.6 Signalling

Operational view > Main menu > Settings > Signalling	
Parameter	**Description**
Buzzer/Siren	Activate events for which an acoustic signal is to be triggered. Connect the acoustic signal to the "Buzzer/Siren (alarm)" output. An acoustic signal is possible for the following events: › Vandalism › Validation › Error › Random hit › Passage › Climbing/Crawling **Options** › [ ]: Deactivated › [X]: Activated **Factory setting** › Vandalism [X]
Signal move	Activate and deactivate the "Signal move" function. If the function has been activated and a validation is available, the validation is signalled by a short rotation movement of the blocking element in the passage direction. Permanent opens are not signalled. If signalling and validation are active, vend count for the opposite direction is deactivated. Pulses in the same direction are accepted. **Options** › [ ]: Deactivated › [X]: Activated **Factory setting** › [ ]: Deactivated

Operational view > Main menu > Settings > Signalling	
Parameter	**Description**
GED mode left	Set the behaviour of the illumination connected to the outputs with the function "GED red left" and "GED green left". The illumination off can be a GED, for example. **Options** › Off: The display is dark. › Red: The display is permanently red. › Green: The display is permanently green. › Standby red: The display is red when locked. When released, the display turns green. The display is red during a passage in the opposite direction. › Standby off: The display is off when locked. When released, the display turns green. The display is red during a passage in the opposite direction. › Standby green: The display is green when locked. When released, the display flashes green. The flashing frequency is increased at the end of the hold-open time. The display is red during a passage in the opposite direction. **Factory setting** › Standby green
GED mode right	Set the behaviour of the illumination connected to the outputs with the function "GED red right" and "GED green right". The illumination off can be a GED, for example. **Options** "GED mode left" parameter: ↗ Page 50

Table 25: Signalling

6.2.7 Random check function

IMPORTANT!

For certain applications, it makes sense to invert the input assigned with the "Random check function" via the "Invert Inputs/Outputs" menu.

The MGC control unit is equipped with the "Random check function" option. This function allows random bag and identity control of persons.

If a hit was generated by the random check function and the next validation is blocked by the random check function, the following symbol appears on the display of the control unit: «».

For the random check function you can choose between "Counting" or "Random" modes. You activate the random check function via a permanent signal (+24 V DC) at the "Random check function" input. If the random check function has generated a hit, the pedestrian gate is not opened despite a valid validation. A signal is emitted at the output with the "Random hit" function. You can connect a signal lamp or a siren to this output.

The passage remains blocked until the random hit / validation is confirmed with a 0 V pulse at the "Random check function" input.

Operational view > Main menu > Settings > Random check function	
Parameter	**Description**
Mode	Set the function of the random check function. **Options** › Deactivated: The random check function is not in operation. › Counting: If the number of passages since activation has reached the set value for the "Hit range" parameter, a hit is reported and the passage is blocked. For example, if you set the value "100" for the "Hit range" parameter, a hit is generated every 100th passage. A hit is confirmed via the "Random check function" input function. After acknowledgement, the random check function counter restarts. As soon as the random check function is activated, all passages are also taken into account in the "Permanent open" operating mode. You can use this function, for example, with simple 1-lane systems to grant access to a certain number of people, such as in a gondola cabin. › Random: You can set the random probability using the "Hit range" and "Count of hits" parameters. By activating the random check function, the set "Count of hits" is randomly generated, which must lie within the set "Hit range". For example, if you set the value "100" for the "Hit range" parameter and "10" for the "Count of hits" parameter, hits are generated randomly for 10 people out of 100. A hit is confirmed via the "Random check function" input function. After acknowledgement, the random check function counter restarts. The "Random" mode is not active in the "Permanent open" operating mode. I.e. in the "Permanent open" operating mode, the passages are ignored for the "Random check function". In "Random" mode, only passages with active individual validation are taken into account so that a random hit is surprising for the user. Even in the case of pedestrian gates with low pedestrian traffic, the user cannot detect beforehand if a check is about to happen. **Factory setting** › Deactivated
Hit range	The function depends on the selected mode. For the "Counting" mode, use this parameter to set the value at which a hit is to be generated. For the "Random" mode, set the number range in which the random hits must lie. For example, if you set the value to "100", the random hits must be in the range 1 to 100. IMPORTANT! The value for the "Count of hits" parameter can be a maximum of 40 % of the value for the "Hit range" parameter. If the value set for the "Count of hits" parameter is too high, the "Count of hits" parameter is automatically adjusted. **Setting range** › 10 to 10000 **Factory setting** › 1000

Operational view > Main menu > Settings > Random check function	
Parameter	**Description**
Count of hits	Set the number of hits to be generated in the set Count of hits. IMPORTANT! The value for the "Count of hits" parameter can be a maximum of 40 % of the value for the "Hit range" parameter. If the value set for the "Hit range" parameter is too high, the "Hit range" parameter is automatically adjusted. **Setting range** › 1 to 1000 **Factory setting** › 10
Delete validation	Use the "Delete validation" parameter to specify whether the validation is to be deleted automatically in the event of a random hit. **Options** › Activated [X] Select this option if you want the check to take place before the passage. The user leaves the area via a separate passage. › Deactivated [ ] Select this option if you want the passage to take place when the hit is confirmed. In this case, the check is carried out after the passage. **Factory setting** › Deactivated [ ]
Direction	Select the passage direction for which the random hits are to be generated. **Options** › Both: Random hits occur in both passage directions. With this option, validations are not deleted. › Left: Random hits occur only for the "left" passage direction. › Right: Random hits occur only in the "right" passage direction. **Factory setting** › Both

Table 26: Random check function

6.3 "Inputs/Outputs" menu

6.3.1 Inputs

↗ Page 10, chapter 2.1.

6.3.2 Outputs

↗ Page 13, chapter 2.2.

6.3.3 Inverted In-/Outputs

This menu is only intended for MAGNETIC's service and only accessible with a password.

This menu allows you to invert individual inputs and outputs and with it the assigned functions. Customer-side additional relays for signal inversion are therefore not required.

Example

The input IN7 is assigned the function "Illumination off". In delivery state, this input is parameterised so that the optional floor illumination and frame illumination are switched off as soon as a voltage of 24 V is applied to this input.

If the illumination is to be switched off as soon as a voltage of 0 V is applied to input IN7, invert the "Illumination off" function according to the following description.

The operational view is displayed. ↗ Page 38, Fig. 25.

1. Press the right button «».
   √ The "Main Menu" menu is displayed.
2. Confirm selection with the right control button «».
3. Select the menu "Inputs/Outputs".
4. Confirm selection with the right control button «».
5. Select the menu "Invert Inputs/Outputs".
6. Confirm selection with the right control button «».
7. Enter "Service Password".
8. Confirm password with the right control button «».
9. Select the menu "Inputs".
10. Confirm selection with the right control button «».

11. Select input "Input 7 [ ]".
12. Invert the function of the input with the right button «✓».
    √ Your selection is marked with the symbol [X].
13. Use the left button «⏎» to leave the "Settings" menu.
    √ The menu "Invert In-/Outputs" is displayed.
14. Press the left button «⏎» repeatedly until the operational view is displayed again.

Input IN7 and therefore the assigned function "Illumination off" is inverted. In the menu "Information ()", the input IN7 with inverted function is marked with a "|"; in this example, it is "IN7: | Illumination off".

6.4 "Service" menu

This menu is only intended for Magnetic's service and only accessible with a password.

6.4.1 Gate HW

Operational view > Main menu > Service > Gate HW	
Parameter	**Description**
Homing offset	Mechanical tolerances can result in the blocking arm not being exactly in the middle position after homing. You can use this parameter to compensate for the deviation. Negative values correct the deviation to the left. Positive values correct the deviation to the right. The setting is only accepted after homing. To determine the suitable setting value, display the angle of rotation on the operating display ↗ Page 32, Fig. 11. Manually press the blocking arm to the desired zero position. Enter the displayed rotation angle for the "Homing offset" parameter. **Setting range** › –7° to +7° **Factory setting** › 0°

Operational view > Main menu > Service > Gate HW	
Parameter	**Description**
Align home position	If the correction of the centre position of the blocking arm via the "Homing offset" parameter is uncomfortable, you can manually align the centre position of the blocking arm via the "Align home position" parameter. You start the process via the "[X]: Activated" option. First, the drive executes a homing. At the same time the message "Please wait" appears on the display. As soon as the message disappears, the motor is de-energised and you can turn the blocking arm to the centre position. The new position is adopted after 10 seconds. The "Homing offset" parameter is adjusted. **Options** › [ ]: Deactivated › [X]: Activated **Factory setting** › [ ]: Deactivated
Drop arm	For turnstiles with "Drop arm" option, select the "[X]: Activated" option. For turnstiles without "Drop arm" option, select the "[ ]: Deactivated" option. **Options** › [ ]: Deactivated › [X]: Activated **Factory setting** › Depending on the order › If only one control unit was ordered, the factory setting is [ ]: Deactivated

Table 27: Gate HW

6.4.2 Further parameters

Operational view > Main menu > Service	
Parameter	**Description**
Cycles	Display of complete passage procedures.
Fraud L	Display of the number of detected vandalism / fraud attempts
Fraud R	Display of the number of detected vandalism / fraud attempts
Operation	Displays the operating hours counter. The operating hours counter records the time, during which the pedestrian gate is supplied with electrical power.
System time	Displays the internal date and the internal clock.

Operational view > Main menu > Service	
Parameter	**Description**
Main menu password	Activate and deactivate password protection for the main menu. To activate a change of the settings, either access the operational view or switch the power supply on or off. **Options** › OFF: You can change the main menu without entering a password. › ON: You can change the main menu only after entering a password. The password is identical with the one for the "Service" menu. **Factory setting** › OFF

Table 28: Service – Further parameters

6.5 "System" menu

Operational view > Main menu > System	
Parameter	**Description**
Language	Select menu language. **Factory setting** › English
Date/Time	Correct date and time of the control unit MGC.

Table 29: System

6.6 "Passage counter" menu

Operational view > Main menu > Passage counter	
Parameter	**Description**
From left	Display of the number of passages completed from the left. If necessary, the value can be changed. **Setting range** › 0 to 30000
From right	Display of the number of passages completed from the right. If necessary, the value can be changed. **Setting range** › 0 to 30000.

Table 30: Passage counter

6.7 "Information" menu

Operational view > Main menu > Information	
Parameter	**Description**
Serial no	Displays the serial number of the control unit
Hardware version	Displays the present hardware version
Software #	Displays the present software number
SW version	Displays the present software version
Temperature	Displays the current temperature in the control unit
Logic voltage	Display of the logic voltage, from hardware version E
X20-EN	Display of the analogue voltage 0–10 V at the terminal "X20-EN", from hardware version E onwards
PSU-FB	Feedback signal of the mains unit (for future expansions), from hardware version E onwards

Table 31: Information

6.8 "Motor MHP2" menu

This menu is displayed for mTripod pedestrian gates with an MHP2 motor.

Operating view > Main menu > Motor MHP2	
Parameter	**Description**
Motor temperature	Display of the current motor temperature.
Information	Display of information about the "MHP2 Motor" module: Serial number, hardware version, software # and software version.

Table 32: Motor MHP2

6.9 "Motor GW" menu (Gateway)

This menu is displayed for mTripod pedestrian gates with an MHP1 motor.

Operational view > Main menu > Motor GW	
Parameter	**Description**
Motor temperature	Display of the current motor temperature.
Motor SW	Display of the present motor software.
Information	Displays information on the module "Motor GW". Serial number, hardware version, software # and software version of the module "Motor GW" are displayed here.

Table 33: Motor GW

6.10 "Factory settings" menu

IMPORTANT!

The parameters of the control unit are stored in the three memory areas "Default settings", "Factory settings" and "User settings".

The default settings are identical to the factory settings in these operating instructions. The default settings are firmly store din the firmware and cannot be changed.

The factory settings can be assigned factory- or product-specific settings.

The user settings are the operating parameters.

Options in the "Factory settings" menu

The menu "Factory setting" offers the following options:

- Restore factory settings: The stored parameters in the memory area "Factory settings" are accepted as operating settings.
- User settings as factory settings: The current parameter settings are stored as factory settings. These factory settings can be used to receive project-specific settings.
- Default settings as factory settings: The factory settings are overwritten by the default settings.

If you would like to accepted the default settings as operating settings and the factory settings were overwritten first, you need to use the option "Default settings as factory setting" and then the option "Restore factory setting".

"Restore factory setting" option

The operational view is displayed. ↗ Page 38, Fig. 25.

1. Press the right button «».
   √ The "Main Menu" menu is displayed.
2. Select the menu "Factory setting" with the two middle buttons «», « ».
3. Confirm selection with the right control button «».
4. Enter password "0 0 0 0".
5. Confirm password with the right control button «».
   √ The message "Restore to factory settings" appears.
6. Press the right button «».
   √ The safety prompt "Save changes?" appears.

› If the changes are to be saved, press the right button «✓». The current settings are reset to factory settings. A restart is performed.

› If the changes are not to be saved, press the left button «✗».

7. Press the left button «⏎» repeatedly until the operational view is displayed again.

Via service password for all options

The operational view is displayed. ↗ Page 38, Fig. 25.

1. Press the right button «🔧».
   √ The "Main Menu" menu is displayed.
2. Select the menu "Factory setting" with the two middle buttons «▲», «▼».
3. Confirm selection with the right control button «✓».
4. Enter "Service Password".
5. Confirm password with the right control button «✓».
   √ The message "Restore to factory settings" appears.
6. Select the desired option with the two middle buttons «▲», «▼».
7. Confirm selection with the right control button «✓».
   √ The safety prompt "Save changes?" appears.

   › If the changes are to be saved, press the right button «✓». The current settings are reset to factory settings. A restart is performed.

   › If the changes are not to be saved, press the left button «✗».
8. Press the left button «⏎» repeatedly until the operational view is displayed again.

7 Function description

7.1 Definition of "left" and "right"

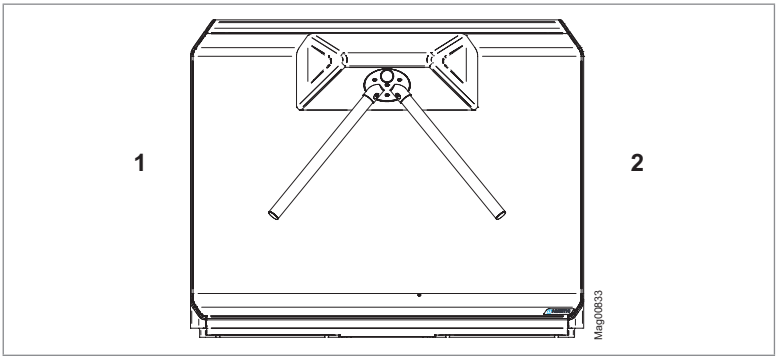
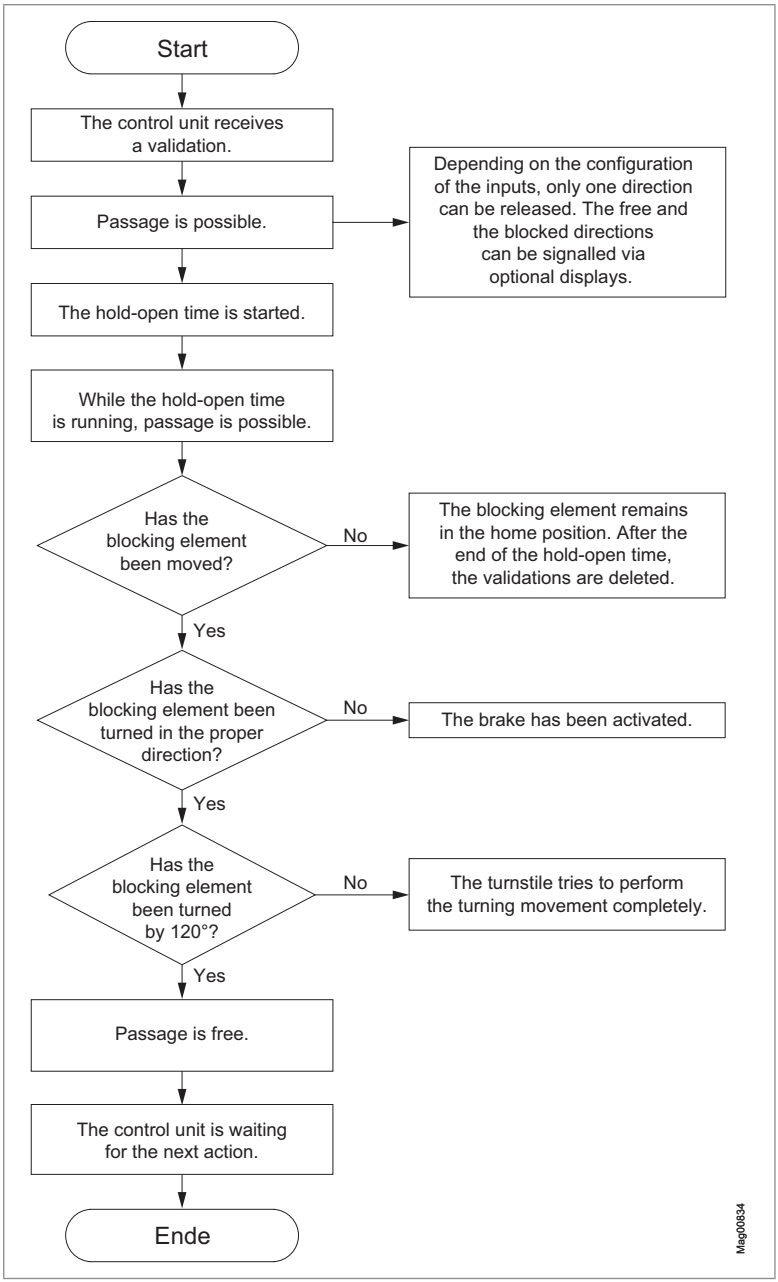


Fig. 28: Definition of "left" and "right"

1 Left (function "Open from left" for a passage from left)

2 Right (function "Open from right" for a passage from right)

7.2 Function sequence



7.3 Start-up and regular movement sequence

7.3.1 Power-off state

The motor is not energised in the power-off state. The lock is released and the capstan with the three blocking arms can be spinned freely. For turnstiles with "Drop arm" option, the top blocking arm is unlocked and moved downwards to allow free passage.

7.3.2 Reference run – find home position

After switching on, the turnstile automatically performs a reference run (homing). During the reference run, the homing sensor is searched for with a maximum movement of 360° counter-clockwise.

7.3.3 Start-up routine

Start-up routine for turnstiles without "Drop arm" option

Turnstiles without "Drop arm" option are immediately ready for operation after the reference run.

Start-up routine for turnstiles with "Drop arm" option

For turnstiles with "Drop arm" option, all released blocking arms are engaged fully automatically with one turn after the reference run.

7.3.4 Regular movement sequence 120°

After receipt of a validation in one direction, the turnstile is released in the passage direction, but the motor will keep the blocking element in the end position with a low force. The control expects that the user deflects the blocking element by at least 10° in the passage direction.

After the blocking element has been deflected once, the motor is applied with regular current and the blocking element is moved to the next end position (120°).

7.3.5 Regular movement sequence 120° with "Signal move" signalling

"Signal move" parameter: ↗ Page 49

After receiving a validation in one direction, the turnstile is cleared in the passage direction. The motor briefly moves by 12° in the passage direction to signal the release. The control unit expects that the user deflects the blocking element in the passage direction. Then the motor is applied with regular current and will move to the next end position (120°).

7.4 Operation modes

7.4.1 Pulse operation in both directions

The two inputs "Open from left" and "Open from right" are used to clear passage in the corresponding direction for one passage each. The pulse must be present between 0.2 and 1 sec.

When there is a validation available for one of the passage directions, the hold-open time starts to run off. Within this hold-open time, passage must be commenced. After the hold-open time has expired, the passage is blocked again in this direction.

When the blocking element is moved by more than approx. 35° in the cleared direction, the hold-open time is deleted immediately. Then it is no longer possible to return the blocking element in the other direction. The passage must be completed in the cleared direction.

In this operating mode, pulses for both passage directions can be stored and processed one after the other.

If validations were stored for both directions, both directions are cleared at first. The hold-open time starts running for both directions immediately.

The processing of the stored validations is independent of the sequence in which the control unit received the pulses. This means that if there are pulses for both passage directions, passage in both directions is possible. When a passage has been completed, the control unit verifies again for which directions pulses are still stored. If pulses are still stored, the hold-open time is count down again.

If the "Signal move" function is activated via the "Signalling" menu, only pulses in the direction in which the first pulse was given are counted. Pulses in the opposite direction are ignored. "Signal move" parameter: ↗ Page 49.

The outputs "Passage clear left" and "Passage clear right" are used for the mutual locking of the request generators such as card readers. The request generator must be equipped with a lock input for this.

7.4.2 Pulse operation in one direction / permanent open in the other direction

Prerequisite: For the parameter "Permanent open" either the option "After 3 s" or "After 10 s" has been selected. "Permanent open" parameter: ↗ Page 46

When a permanent signal is present on one of the two inputs "Open from left" and "Open from right", passage is cleared in the corresponding direction. Pulse operation remains active in the other direction.

If a validation is given for the passage direction in pulse operation, it is still possible to pass the pedestrian gate in the permanent open direction. After a successful passage, the hold-open time for the validation is set again in pulse operation.

After removal of the permanent signal, the corresponding direction is locked at once without completion of the hold-open time.

7.4.3 Permanent clearance in both directions

Prerequisite: For the parameter "permanent open" either the option "After 3 s" or "After 10 s" has been selected.

If a permanent signal is present at the two "Open from left" and "Open from right", the control unit switches to the "Permanent open" operating mode for both directions. This means that the passage is enabled in both directions and no validation must be given.

7.5 Special cases within the motion sequence

7.5.1 Stopping in mid-movement

If the blocking element is stopped in mid-movement, e.g. from the user not moving on, the motor will continue to turn with a low force.

7.5.2 Vandalism attempt: Passage without authorisation

With this type of vandalism attempt, a user either tries to pass the turnstile without validation or a user moves the blocking element against the released direction.

The behaviour of the turnstile depends on the setting of the "Security mode" parameter. "Security mode" parameter: ↗ Page 47

"Security mode" parameter: Option "Without locking":

As soon as a user moves the blocking element beyond the home position in a direction that is **not** released, the turnstile immediately tries to hold the position of the blocking element with maximum force until the user no longer pushes the blocking element or until the overload protection becomes effective. If an angle of rotation of 70° has been exceeded, the passage is released and the next end position is approached.

"Security mode" parameter: Option "With locking":

As soon as a user moves the blocking element beyond the home position in a direction that is **not** released, the locking is activated until the user no longer pushes the blocking element.

The turnstile signals this type of vandalism attempt as follows:

- The output function "Buzzer/Siren (alarm)" is set
- The output function "Vandalism" is set

The output function "Buzzer/Siren (alarm)" is parameterised ex works for the event "Vandalism". The output function "Vandalism" is **not** parameterised ex works.

7.5.3 Vandalism attempt: Turning back during the movement

With this type of vandalism attempt, the user has first moved the blocking element correctly in the released direction, but then moves it back in the other direction with more than the motor force.

The reaction of the turnstile depends on the angle of rotation. It can be turned back up to an angle of 35°. If the angle is greater than 35°, the position is held with maximum force until the user no longer presses back.

After a short pause, the movement continues.

The setting of the "Security mode" parameter has no influence on the behaviour of the turnstile with this type of vandalism attempt.

The turnstile signals this type of vandalism attempt as follows:

› The output function "Buzzer/Siren (alarm)" is set

› The output function "Vandalism" is set

The output function "Buzzer/Siren (alarm)" is parameterised ex works for the event "Vandalism". The output function "Vandalism" is **not** parameterised ex works.

7.5.4 Emergency

If the "| Emergency open" input is interrupted during operation, the pedestrian gate switches to the "Permanent open" operating mode for both directions. The capstan with the three blocking arms can spin freely. The motor remains energized to prevent excessive acceleration by the user.

The status is logged via the warning message 0xFF20.

As soon as power is restored at the "| Emergency open" input of the control unit, the pedestrian gate is put back into operation.

For turnstiles with "Drop arm" option, the top blocking arm is unlocked and moved downwards to allow free passage. As soon as power is restored at the "| Emergency open" input of the control unit, the turnstile is put back into operation.

7.6 Random check function

↗ Page 51, chapter 6.2.7.

8 Corrective action

8.1 Safety in troubleshooting

Qualification of personnel

› Technician
› Magnetic MHTM™ FlowMotion® service expert

↗ Page 9, chapter 1.3.1.

Personal protective equipment

Wear the following personal protective equipment:

› Work clothes
› Protective gloves
› Safety shoes.

⚠ WARNING	
	**Inappropriate troubleshooting!** Inappropriate troubleshooting can cause severe injuries. › Observe possible movements of the blocking element. Defective control may lead to inadvertent movement of the blocking element. › In case of damaged components, take the pedestrian gate out of operation. › Use only original spare parts. › After completion of troubleshooting, ensure that all covers are correctly mounted.

The following chapters describe possible causes of malfunctions and troubleshooting tasks.

Faults of the types WARNING and ERROR may only be corrected by a MHTM™ FlowMotion® service expert.

For the required qualification of the MHTM™ FlowMotion® service expert:
↗ Page 9, chapter 1.3.1.

8.2 Malfunctions pedestrian gate

Malfunction: Display is difficult or impossible to read.

Possible cause	Corrective action	Removal by
Display contact set too light or dark.	Correct display contact. ↗ Page 41, chapter 5.6.	Technician

Malfunction: Pedestrian gate does not open.

Possible cause	Corrective action	Removal by
Power supply is not connected.	› Switch on power supply. › Check power supply.	Technician
Error present. The corresponding error message is displayed.	Depending on error message, check components, wiring, etc.	MHTM™ FlowMotion® service expert
Power supply is present. Control unit display does not light up.	Control unit defective. Replace the control unit.	MHTM™ FlowMotion® service expert
Locking signal present.	› Remove locking signal. › Check input function "Inhibit opening". ↗ Page 11.	MHTM™ FlowMotion® service expert

8.3 Event, warning and error messages – definitions

The control unit differentiates between events, warnings and errors.

A message consists of a number, the category and a message text.

Event messages "INFO"

Event messages inform about events. The pedestrian gate continues to operate normally. Event messages do not influence the outputs of the control unit.

Warning messages "WARNING"

Faults that could be reset by the control unit are displayed as warnings. Operation of the pedestrian gate is not or only briefly impaired.

Error messages "ERROR"

Faults that cannot be reset by the control unit are displayed as errors. The pedestrian gate is put out of service.

IMPORTANT!

With some messages, the control unit tries to reset the cause of the message. If the attempt was successful, the message is displayed as WARNING. If the attempt failed, the message is displayed as ERROR.

8.4 Displaying and signalling messages

Messages are displayed and signalled as follows:

- Status display in the MGC.Connect programme: ↗ Page 25, Fig. 7.
- On the display of the MGC control unit.
- The output with the function "| Error" is deactivated in case of an error (ERROR) (closed-circuit principle). This function is not parameterised ex works. ↗ Page 13, chapter 2.2.
- The output with the function "| Warning" is deactivated in case of a warning (WARNING) (closed-circuit principle). This function is not parameterised ex works. ↗ Page 13, chapter 2.2.

8.5 Procedure in case of a fault / message

IMPORTANT!

Faults of the types WARNING or ERROR may only be corrected by a MHTM™ FlowMotion® service expert.

For the required qualification of the MHTM™ FlowMotion® service expert: ↗ Page 9, chapter 1.3.1.

IMPORTANT!

In the "Service" tab of the "MGC.Connect" programme, you can generate a current system report for the pedestrian gate. The system report contains an event log with additional information about a fault / message such as "Node name". ↗ Page 30, chapter 4.6.

1. Correct the fault according to the following chapters:
   - Node name "Gate Controller": ↗ Page 73, chapter 8.6.1.
   - Node name "Motor MHP2": ↗ Page 75, chapter 8.6.2.
   - Node name "Motor GW": ↗ Page 77, chapter 8.6.3.
   - Node name "Safety Controller": ↗ Page 79, chapter 8.6.4.
   - All others: ↗ Page 80, chapter 8.6.5.
2. Perform reset. ↗ Page 81, chapter 8.7.
3. Acknowledge message. ↗ Page 26, chapter 4.4.

8.6 Event, warning and error messages (troubleshooting)

8.6.1 Event, warning and error messages – Logic control (control unit)

Number	Designation	Possible cause	Corrective action
3120 ERROR	Mains power failure	Short-term power failure detected.	Check supply voltage and mains quality.
5112 WARNING	24 V logic voltage too low	Under voltage	› Reduce load. › Check mains unit.
5530 ERROR	EEPROM checksum	Checksum of parameters not correct.	› Reset parameters to factory settings. ↗ Page 60, chapter 6.10.
6000 ERROR	Module SW-update failed	Firmware update was not performed correctly.	› Restart the control unit. › If the error remains, perform the update again via the service module.
6101 ERROR	Software error: VS	Software error	› Perform software update.
6102 ERROR	Software error: System bus	Within the control, an error is pending in communication.	› Check SW versions of all plug-in modules. If necessary, update via the service module. › If all FW versions are up to date, contact service.
6103 WARNING	FW defaults restored	After a software update.	› Perform reset. ↗ Page 81, chapter 8.7. › If the error occurs repeatedly, replace the control unit MGC.
6104 WARNING	Unexpected motor state	Motor control error	› Perform reset. ↗ Page 81, chapter 8.7. › Perform software update. › Check wiring.
6105 ERROR	Homing failed	The pedestrian gate could not execute a reference run.	› Check motor communication. › Check mechanics. › Check the homing sensor. › Perform reset. ↗ Page 81, chapter 8.7.

Number	Designation	Possible cause	Corrective action
6110 ERROR	Safety Controller: SW update required	MHP2 motor detected. A software package with the firmware Motor GW is installed in the control unit.	Perform the software update as follows: › Execute package PREPARE_MHP2. › Install the latest firmware package for pedestrian gates SMP-MGC-PA0.
6111 ERROR	Motor GW: SW update required	No motor detected. Firmware Motor GW is required for the selected product.	› Check setting for gate type. Perform the software update as follows: › Execute package PREPARE_MHP1. › Install the latest firmware package for pedestrian gates SMP-MGC-PA0.
6130 ERROR	Safety Controller: Configuration faulty	The configuration of the safety controller is not consistent.	› Reset parameters to factory settings. ↗ Page 60, chapter 6.10.
7530 WARNING	Motor MPH2: Communication faulty	› No motor connected. › Cables and / or plugs to the motor interrupted. › Power supply to the motor interrupted.	› Check connections. › Check CAN termination and correct if necessary. See separate electrical wiring diagram.
8130 WARNING	Node monitoring	The communication to a plug-in module was interrupted.	› Check whether all plug-in modules are listed in the main menu. › Perform reset. ↗ Page 81, chapter 8.7.
FF20 WARNING	Emergency open active	0 V or no signal is present at the "Emergency open" input.	› Check input signal. › If not used, deactivate the input function.
FF21 WARNING	Max. pulses without passage reached	The set maximum number of pulses without passage has been reached.	› Check card reader / validation device, e.g. card reader. › Check the "Max pulse w/o passage" parameter. ↗ Page 48, chapter 6.2.5.

Number	Designation	Possible cause	Corrective action
FF24 ERROR	Drop arm feedback missing	The feedback of the micro switch of the holding magnet for the drop arm is missing.	› Check wiring. › Check the function of the magnet. › Deactivate input function.

Table 34: Event, warning and error messages – Logic control (control unit)

8.6.2 Event, warning and error messages – Motor MHP2

Follow the troubleshooting below for mTripod pedestrian gates with an MHP2 motor.

Number	Designation	Possible cause	Corrective action
2220 WARNING	Over current	Over current detected	› Check mains unit. › Check wiring.
3210 ERROR	Over voltage Ucc	Over voltage detected. Vandalism or mains unit defective.	› Check mains unit.
3211 ERROR	Over voltage Udc	Over voltage detected. Vandalism or mains unit defective.	› Check wiring. › Check mains unit.
3220 WARNING	Under voltage Ucc	Under voltage detected	› Disconnect additional loads from the MGC control unit. › Check mains unit.
3221 WARNING	Under voltage Udc	Under voltage detected. Mains unit overloaded. The message can occur in case of vandalism and deactivated locking.	› Disconnect additional loads from the MGC control unit. › Check mains unit. › Check wiring.
4210 ERROR	Over temperature	High temperature detected. Motor overloaded or blocked.	› Check the motor temperature via the "Motor MHP2" menu. The temperature must be below 100°C. › Reduce load. › Reduce speed.
4211 ERROR	Over temperature PCB	Motor overloaded or blocked.	› Reduce load. › Reduce speed.

Number	Designation	Possible cause	Corrective action
4220 WARNING	Derating	The power consumption of the motor is reduced to prevent the temperature from increasing any further. Motor overloaded or blocked.	› Remove inadmissible attachments. › Reduce load. › Reduce speed.
4221 ERROR	Under temperature PCB	Ambient temperature too low.	› Install heating.
5010 ERROR	Motor HW	–	› Perform reset. ↗ Page 81, chapter 8.7. › Perform software update. › Replace motor.
5020 ERROR	Encoder	–	› Perform reset. ↗ Page 81, chapter 8.7. › Perform software update. › Replace motor.
5030 ERROR	Hardware: I2C	–	› Perform reset. ↗ Page 81, chapter 8.7. › Perform software update. › Replace motor.
5040 ERROR	Hardware: SPI	–	› Perform reset. ↗ Page 81, chapter 8.7. › Perform software update. › Replace motor.
6150 ERROR	Selftest failed	EMC interference, motor control or microcontroller defective.	› Perform reset. ↗ Page 81, chapter 8.7. › Perform software update. › Replace motor. › If the error occurs repeatedly, replace the control unit MGC.
6170 ERROR	Configuration faulty	–	› Perform reset. ↗ Page 81, chapter 8.7. › Perform software update.
FFA1 ERROR	Trajectory	–	› Perform reset. ↗ Page 81, chapter 8.7. › Perform software update. › Check Motor.
FFA4 WARNING	Vandalism	An unauthorised passage was detected.	› Check locking. › Confirm warning via input.

Number	Designation	Possible cause	Corrective action
FF32 ERROR	HW-Enable test failed	–	› Check position and attachment of the control unit MGC (circuit board). If necessary, correct position and reattach. › Perform reset. ↗ Page 81, chapter 8.7. › Perform software update.

Table 35: Event, warning and error messages – Motor MHP2

8.6.3 Event, Warning and Error Messages – Motor GW

Follow the troubleshooting below for mTripod pedestrian gates with an MHP1 motor.

Number	Designation	Possible cause	Corrective action
2220 WARNING	Over current	Over current detected Warning may occur in connection with an impact.	› If no impact has occurred, check the wiring. › If required, contact Service.
3211 WARNING	Over voltage	Over voltage detected Warning may occur in connection with an impact.	› If no impact has occurred, check the wiring. › If required, contact Service.
3221 WARNING	Under voltage	Under voltage detected The message may appear if the blocking element is held and pressed for a longer period of time while the holding torque is active.	› Check the hold time by pressing on the blocking element while the passage is blocked. If the hold time is shorter than 1s, replace the mains unit. › Disconnect additional loads from the MGC control unit.
4210 WARNING	Over temperature	High temperature detected.	› Check the motor temperature via the "Motor GW" menu. The temperature must be below 100°C. › If required, contact Service.

Number	Designation	Possible cause	Corrective action
4220 WARNING	Derating	The power consumption of the motor is reduced to prevent the temperature from increasing any further.	› Remove inadmissible attachments. › If required, contact Service.
7510 ERROR	Motor: Communication faulty	Communication between motor and control disturbed or interrupted	› Check wiring. › If required, contact Service.
FF36 WARNING	Motor reset Homing is performed automatically.	A short overload or drop of the voltage supply of the motor controller has triggered a motor reset.	› Replace the mains unit, if necessary.
FF37 ERROR	Motor update failed	An error occurred while updating the motor software	› Perform reset. › If required, contact Service.
FF3A INFO	Motor update performed	This message is for information only.	–

Table 36: Event, Warning and Error Messages – Motor GW

8.6.4 Event, warning and error messages – Safety controller

Number	Designation	Possible cause	Corrective action
6150 ERROR	Selftest failed	EMC interference, motor control or microcontroller defective.	› Perform reset. ↗ Page 81, chapter 8.7. › Perform software update. › Replace motor. › If the error occurs repeatedly, replace the control unit MGC.
6170 ERROR	Configuration faulty	–	› Perform reset. ↗ Page 81, chapter 8.7. › Reset parameters to factory settings. ↗ Page 60, chapter 6.10. › Perform software update.
FFB1 WARNING	Emergency stop	The speed or torque has been exceeded during movement, e.g. due to vandalism or motor overload.	› Perform reset. ↗ Page 81, chapter 8.7. › Perform software update.
FFB2 WARNING	Safety stop	Vandalism, safety parameter exceeded or motor overloaded.	› Perform reset. ↗ Page 81, chapter 8.7. › Perform software update.
FF32 WARNING	HW-Enable test failed	–	› Check wiring. › Perform reset. ↗ Page 81, chapter 8.7. › Perform software update.

Table 37: Event, warning and error messages – Safety controller

8.6.5 Event, warning and error messages – All modules

Number	Designation	Possible cause	Corrective action
5510 ERROR	Controller selftest failed	EMC interference, MGC control unit or microcontroller defective.	› Perform reset. ↗ Page 81, chapter 8.7. › Perform software update. › If the error occurs repeatedly, replace the control unit MGC.
5531 WARNING	EEPROM 1 checksum	After a software update	› Perform reset. ↗ Page 81, chapter 8.7. › If the error occurs repeatedly, replace the control unit MGC.
5532 WARNING	EEPROM 2 checksum	After a software update	› Perform reset. ↗ Page 81, chapter 8.7. › If the error occurs repeatedly, replace the control unit MGC.
5600 WARNING	Motor/Gearbox configuration invalid	Wrong motor installed.	› Compare the marking on the type plate of the spare part with the original motor.
6010 WARNING	Watchdog reset	Software error	› Contact Service.
8110 WARNING	Bus fault	Warning	› When the error occurs repeatedly, contact service.
8120 WARNING	Bus HW fault	Warning	› Check the DIP switch next to the service interface (ON position). › If necessary, remove devices at the service interface.

Table 38: Event, warning and error messages – All modules

8.7 Performing reset

If you use one of the following options, the control unit will perform a reset:

› Switch of power supply and switch it on again after 10 s.

› Press the two middle operating buttons on the control unit display for 5 s.

› In the "MGC.Connect" programme, click on the "Service" tab and select the "Reset" button.

NOTICE

Restarting quickly!

Restarting the pedestrian gate too quickly can lead to damage of the equipment!

› Wait at least 10 seconds after switching off the pedestrian gate before you switch the mains power on again.

9 Menu structure

9.1 Menu structure directly on the control unit MGC

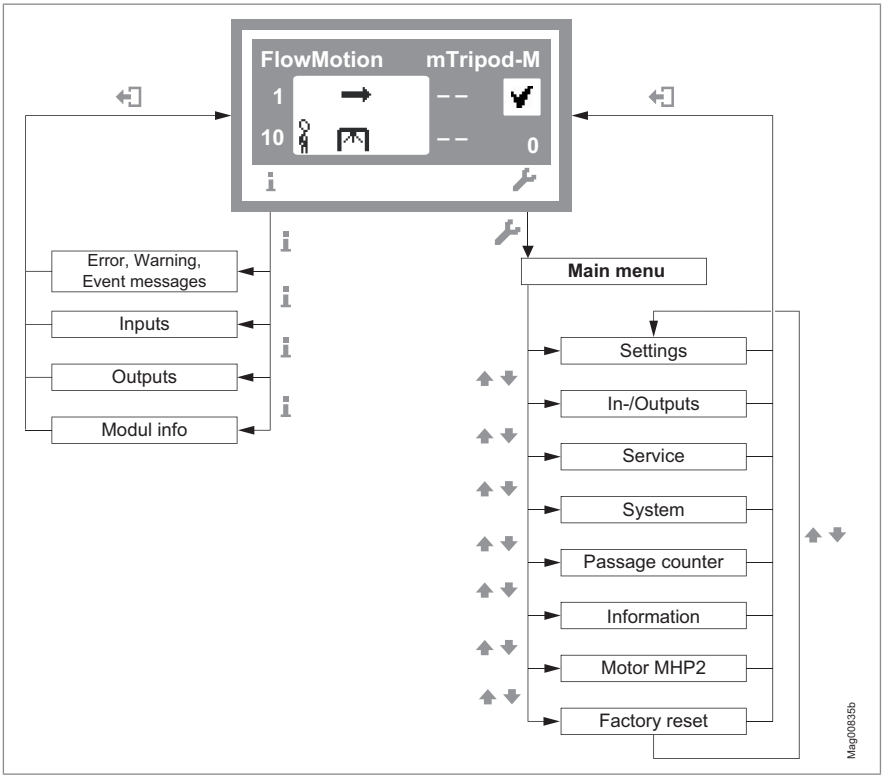


Fig. 29: "Information" and "Main menu"

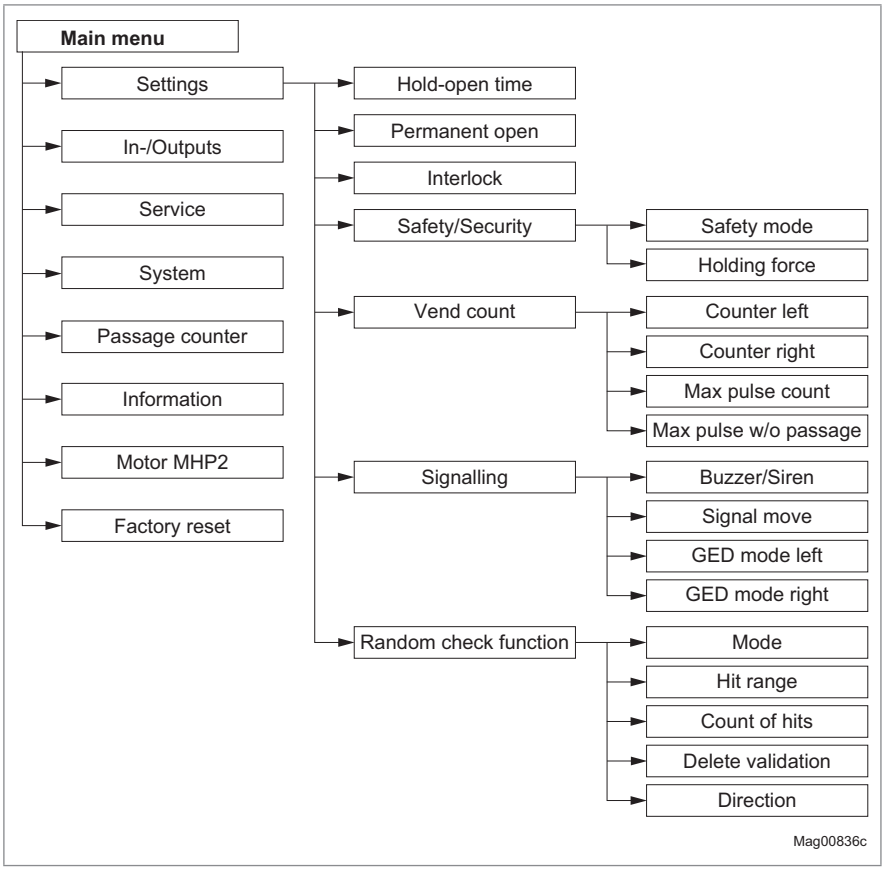


Fig. 30: "Settings" menu

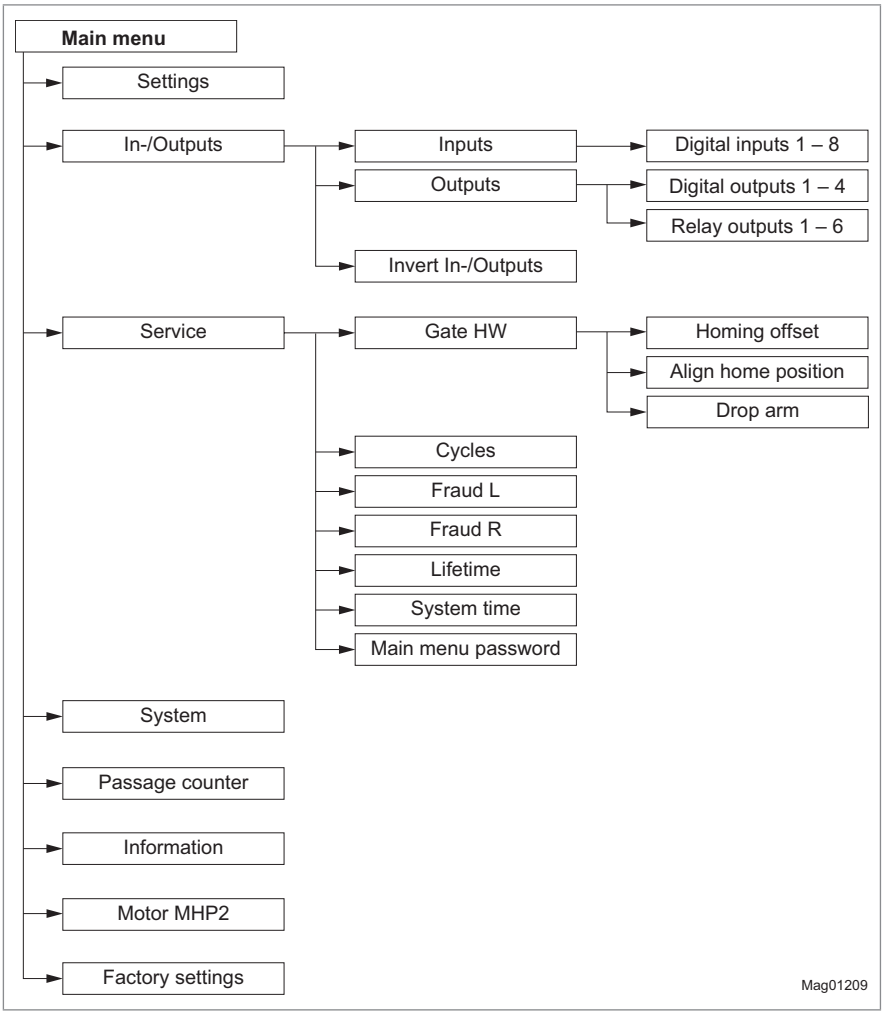


Fig. 31: "Inputs/Outputs" and "Service" menu

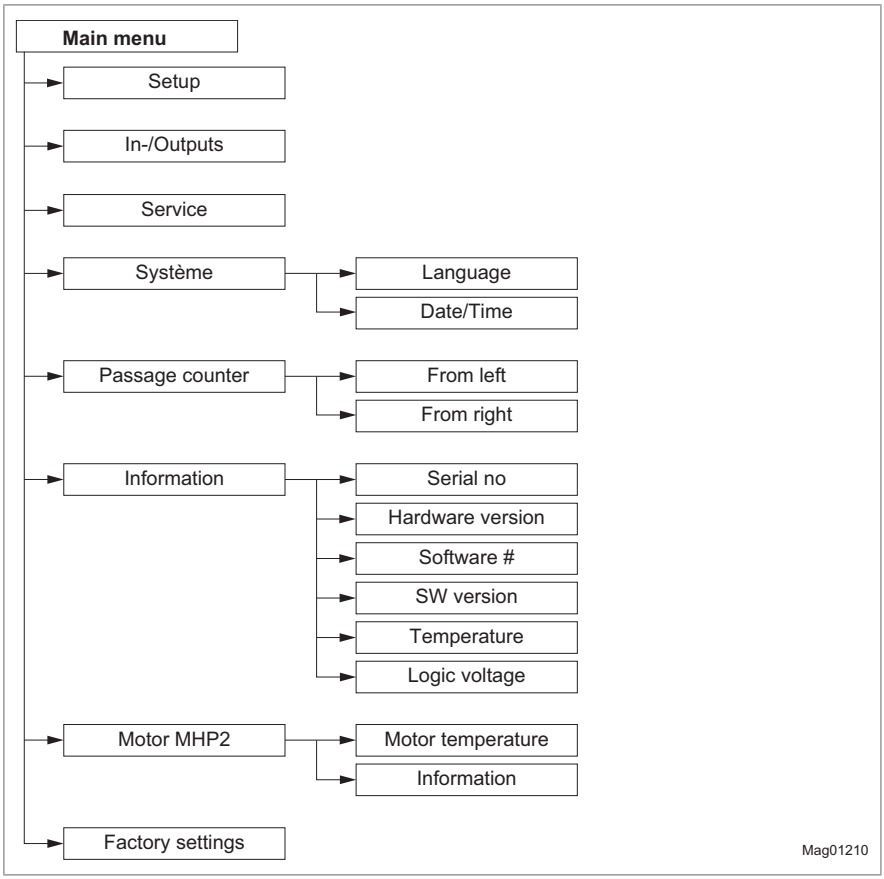


Fig. 32: "System", "Passage counter", "Information", "Motor MHP2" and "Factory settings" menu

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