

## Description

Full Height Turnstile MPT-333

**MGC control unit**



MGC control unit

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# 1 Notes on the document

## 1.1 Purpose and contents of this description

This document describes the MGC control unit from the program 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	1.1

Table 1: Programme versions MGC control unit



### IMPORTANT!

For information on design and function, for technical data, installation and assembly, electrical connection, commissioning and cleaning and maintenance, see the separate operating instructions "Full height turnstile MPT-333 (Doc.ID: 5817,0028)".

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## 1.2 Symbols and illustrations used in this document


### 1.2.1 Warning notes and notes


Warning notes are characterised by pictograms in these operating 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 bodily injuries and property damage.

#### Warning Notes

 <b>DANGER</b>	
	The signal word DANGER points to an immediately dangerous situation, which leads to death or severe injuries if it is not avoided.

 <b>WARNING</b>	
	The signal word WARNING points to a potentially dangerous situation, which can lead to death or severe injuries if it is not avoided.

 <b>CAUTION</b>	
	The signal word CAUTION points to a potentially dangerous situation, which can lead to minor injuries if it is not avoided.

<b>NOTICE</b>	
	The signal word NOTICE points to a potentially harmful situation, which leads to property damage if it is 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 electricians with the following qualifications.

Designation	Qualification
Technician	<ul style="list-style-type: none"><li>› Has completed training as a plant mechanic, plant fitter, assembly mechanic, assembly fitter or has a comparable technical education.</li><li>› Has completed training as an electrical safety expert.</li><li>› Has additional knowledge and experience.</li><li>› Knows the associated technical terms and regulations.</li><li>› Can assess the work assigned to her/him, recognises possible dangers and take suitable safety measures.</li></ul>
Electrical specialist	<ul style="list-style-type: none"><li>› Has technical training which entitles him to carry out and monitor electrical work for commercial purposes.</li><li>› Has additional knowledge and experience.</li><li>› Knows the associated technical terms and regulations.</li><li>› Can assess the work assigned to her/him, recognises possible dangers and take suitable safety measures.</li></ul>

Table 2: Qualification of the personnel – MGC control unit

## 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 qualified electricians or technician with additional "electrical safety expert" training may wire and parameterise the control unit.
- › The electrical connection of the signal transmitters to the IN1 to IN8 inputs must fit the parameterisation.

➤ For parameterisation see Page 13, chapter 3.

### 2.1 Digital inputs

➤ For the definition "Entry" and "Exit" see Page 40, chapter 5.1.

By parameterising the inputs, you assign certain functions to the inputs. For example, if you parameterise the "Over-climb detection" function for input IN7, you must connect a sensor for the over-climb detection to this input.

If the function is marked with "|", the input is inverted (Fail Safe).

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

Clamp	Description	Function
IN1	Digital Input 1	Emergency open
IN2	Digital Input 2	Open entry
IN3	Digital Input 3	Open exit
IN4	Digital Input 4	Random function
IN5	Digital Input 5	Confirm warnings
IN6	Digital Input 6	Inhibit opening
IN7	Digital Input 7	Sensor B1
IN8	Digital Input 8	Sensor B2

Table 3: Factory settings "Digital inputs"

**Digital inputs, digital outputs and relay outputs**

Clamp	Function
–	Inputs that you assign this function "–" to are being deactivated.
Emergency open	<p>Emergency situation (Fail Safe)</p> <p>Connect fire service 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.</p> <p>If there is no signal at this entry, the passage is cleared in both directions.</p> <p>This input function is high priority to all other input functions.</p>
Confirm warnings	<p>Confirm warnings</p> <p>A pulse at this input confirms the "Warning" output function. The output is reactivated the next time a warning occurs.</p> <p>The number of the warning message remains stored in the event list until the control unit is restarted.</p>
Open entry	<p>Opening pulse for the passage from the zone not controlled (ZNC) to the zone controlled (ZC)</p> <p>If the signal is present for longer than 3 seconds, Permanent open is activated. ↗ Page 26, chapter 4.2.2, Parameter "Permanent open".</p>
Open exit	<p>Opening pulse for the passage from the zone controlled (ZC) to the zone not controlled (ZNC)</p> <p>If the signal is present for longer than 3 seconds, Permanent open is activated. ↗ Page 26, chapter 4.2.2, Parameter "Permanent open".</p>
Inhibit opening	<p>Lock pedestrian gate</p> <p>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 locked.</p>
Random function	<p>Activate random function, confirm hits</p> <p>As soon as +24 V DC are applied to this input, the random function is activated. If a hit is generated, the hit can be confirmed with a 0 V pulse via this input.</p> <p>For this entry to be effective, you must select the option "Counting" or "Random" for the parameter "Mode" in the "Random function" menu.</p> <p>↗ Page 29, chapter 4.2.6, "Random function" menu.</p>
Sensor B1 (internal use)	<p>Connection proximity sensor B1</p> <p>Sensor B1 is connected to this entry by default. The inductive proximity sensor is used to detect the end positions.</p>
Sensor B2 (internal use)	<p>Connection proximity sensor B2</p> <p>Sensor B2 is connected to this entry by default. The inductive proximity sensor is used to detect the end positions.</p>

Table 4: Function digital inputs

## 2.2 Digital outputs and relay outputs

↗ For the definition "Entry" and "Exit" see Page 40, chapter 5.1.

By parameterising the outputs, you assign certain functions to the outputs.

If the function is marked with "|", the output is inverted (Fail Safe).

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

Clamp	Description	Function
DO1	Digital output 1	GED red entry
DO2	Digital output 2	GED green entry
DO3	Digital output 3	GED red exit
DO4	Digital output 4	GED green exit
NO1	Relay output 1	Passage pulse entry
NO2	Relay output 2	Passage pulse exit
NO3	Relay output 3	–
NO4/NC4	Relay output 4	Passage free entry
NO5/NC6	Relay output 5	Passage free exit
NO6/NC6	Relay output 6	Random hit

Table 5: Factory settings Digital outputs and Relay outputs

Function	Function
–	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 (Fail safe). ↗ Page 47, chapter 6.3.
Warning	When the control unit recognises any Warning, the output with this function is deactivated (Fail safe). ↗ Page 47, chapter 6.3.
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 entry	Counting pulse for the passage from the zone not controlled (ZNC) to the zone controlled (ZC) When the next end position is reached in the zone controlled direction, a counting pulse (300 ms) is emitted via this output. A counting pulse is also emitted in the "Permanent open" operating mode.
Passage pulse exit	Counting pulse for the passage from the zone controlled (ZC) to the zone not controlled (ZNC) When the next end position is reached in the zone not controlled direction, a counting pulse (300 ms) is emitted via this output. A counting pulse is also emitted in the "Permanent open" operating mode.

**Digital inputs, digital outputs and relay outputs**

Function	Function
Passage free entry	Control of display "Passage in zone controlled direction cleared" When the passage in the zone controlled direction is cleared, a permanent signal is emitted via this exit. This exit may also be used to block a pulse encoder such as a card reader for the opposite direction. The request generator must be equipped with a lock input for this.
Passage free exit	Control of display "Passage in zone not controlled direction cleared" When the passage in the zone not controlled direction is cleared, a permanent signal is emitted via this output. This exit may also be used to block a pulse encoder such as a card reader for the opposite direction. The request generator must be equipped with a lock input for this.
Buzzer/Siren (alarm)	Acoustic signal transmitter This output is used to connect a signal transmitter.
Random hit	Hits of the random function, signal transmitter The random 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 function" input.
Service mode active	Pedestrian gate in service mode As soon as the service mode is switched on via the slider on the control unit MGC, this output is activated.
GED red entry	Gate End Display connection Connect the GED "red" of the zone not controlled to this output.
GED green entry	Gate End Display connection Connect the GED "green" of the zone not controlled to this output.
GED red exit	Gate End Display connection Connect the GED "red" of the zone controlled to this output.
GED green exit	Gate End Display connection Connect the GED "green" of the zone controlled to this output.
Magnet RL1 (internal use)	Connection magnet RL1 Magnet RL1 for locking is connected to this exit by default. The magnet locks in passage direction left.
Magnet RL2 (internal use)	Connection magnet RL2 Magnet RL2 for locking is connected to this exit by default. The magnet locks in passage direction right.

Table 6: Function digital outputs and relay outputs

### 2.3 Digital power outputs of the MFM01 plug-in modules

The control unit is equipped with the plug-in module MFM01 with the function "Magnets for locking".

Furthermore, the control unit can be equipped with additional plug-in modules MFM01.

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

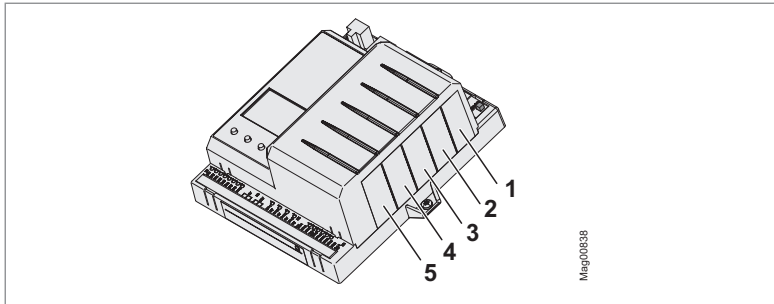


Fig. 1: Slot numbers

Slot number	Terminal plug-in module	LED plug-in module	Function
1	Magnets for locking		
	1	Red	Magnet RL1
	2	Green	Magnet RL2
	3	Yellow	–
2	On-site signalling, e.g. lights for zone controlled (ZC)		
	1	Green	Free in zone not controlled direction
	2	Red	Locked in zone not controlled direction
	3	Yellow	–
3	On-site signalling, e.g. lights for zone not controlled (ZNC)		
	1	Green	Free in zone controlled direction
	2	Red	Locked in zone controlled direction
	3	Yellow	–
4	–		
5	–		

Table 7: Functions for MFM01 plug-in modules

### 3 Parameterising control unit

#### 3.1 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.

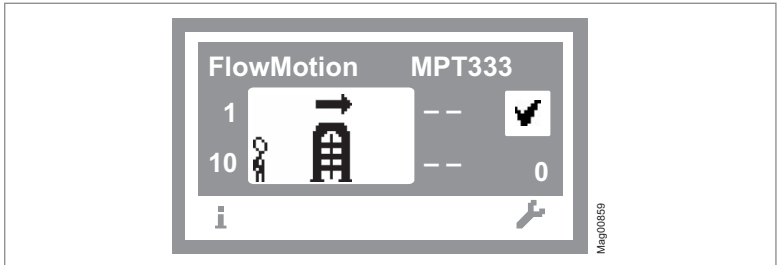



Fig. 2: Example "Operational View"

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.

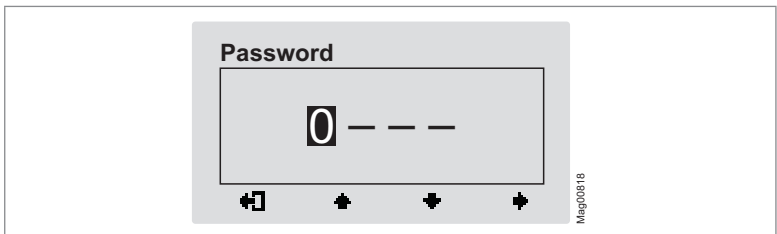


Fig. 3: View "Enter password"

**Parameterising control unit**

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

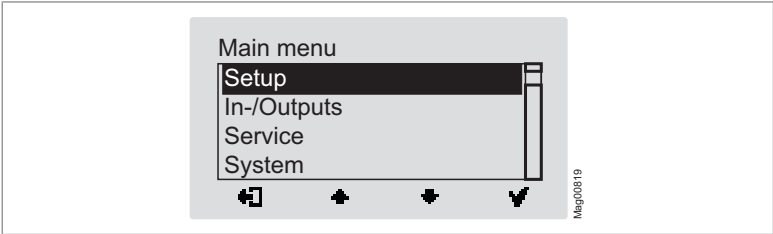


Fig. 4: View "Main menu – Setup"

4. Select the menu "System" with the two middle buttons «+», «-».

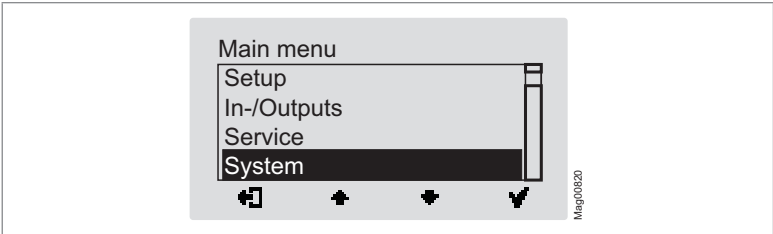


Fig. 5: View "Main menu – System"

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

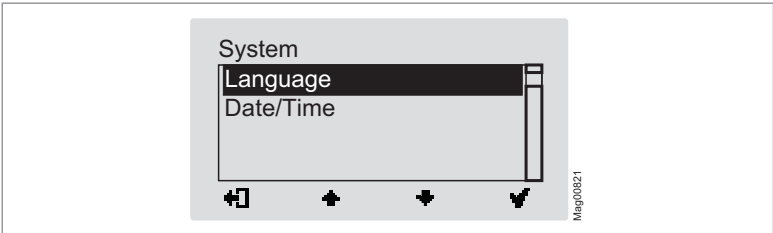



Fig. 6: View "Language"

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

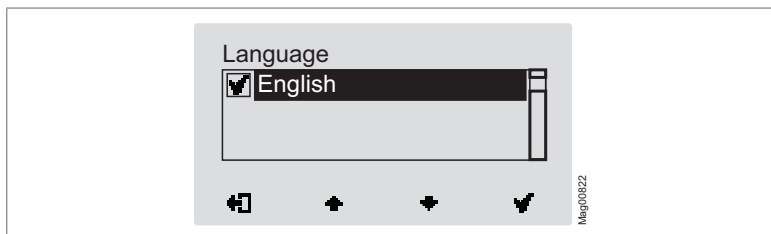


Fig. 7: View "Language - English"



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



Fig. 8: View "Language - German"



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



Fig. 9: View "Language" - German, step 2"

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

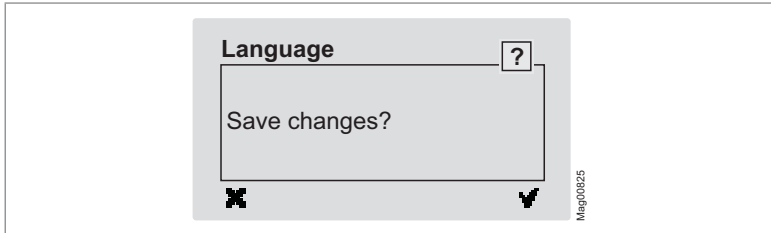


Fig. 10: View "Safety prompt – Save changes?"

Push the left button «**X**» if you do not want to save the changes. The menu language "English" remains active.

10. Confirm safety prompt with the right button «**✓**». The new menu language "German" is activated. The following view is displayed:

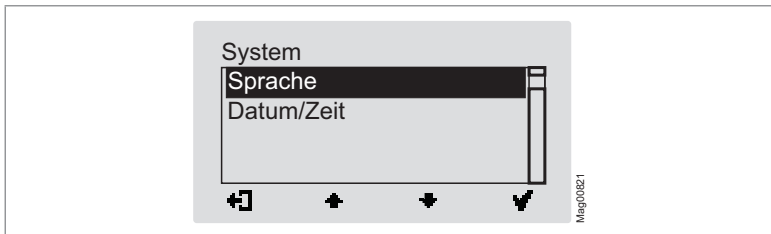


Fig. 11: View "Menu system – Menu language "German" is activated

11. Press the left button «**+**» repeatedly until the operating view is displayed again. ↗ Page 13, Fig. 2.

## 3.2 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 reset the parameters to factory settings.

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

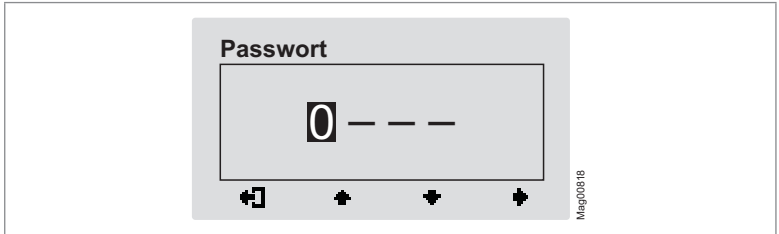





Fig. 12: View "Password"

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:

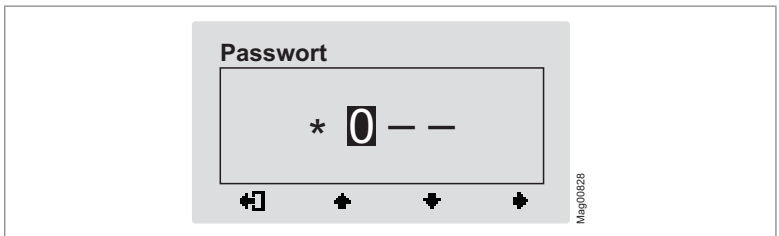








Fig. 13: View "Enter second digit of the password"

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.

## Parameterising control unit

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

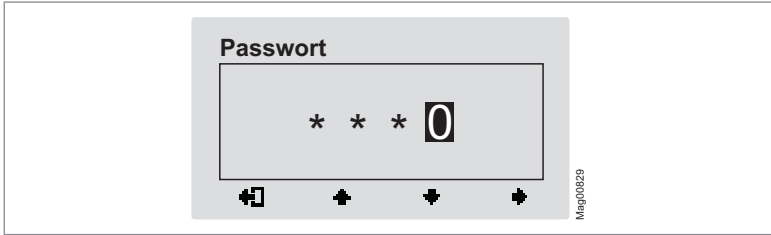





Fig. 14: View "Enter fourth digit of the password"

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

### 3.3 Control unit elements

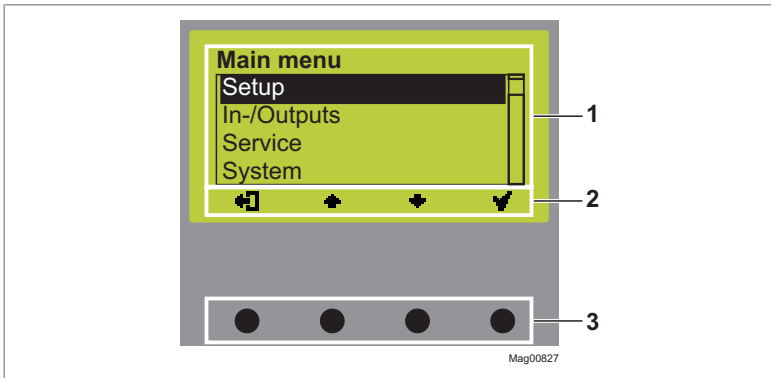


Fig. 15: Control unit elements MGC

- Menu
- Current function of the 4 control buttons
- Control buttons

### 3.4 Displays of the control unit

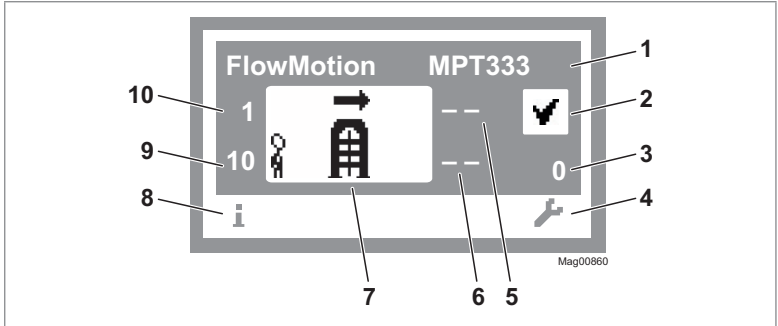


Fig. 16: Example "Operational View"

- 1 Type pedestrian gate here MPT-333 electromotive
- 2 Status display, here ready for operation
- 3 Angle of rotation, here 0
- 4 Current function of the right control button, here calling menu "Main menu"
- 5 Validations exit, here locked
- 6 Hold-open time exit, here locked
- 7 Operating display, here passage direction left enabled
- 8 Current function of the left control button, here calling menu "Information"
- 9 Holding-open time entry, here 10
- 10 Validations entry, here 1

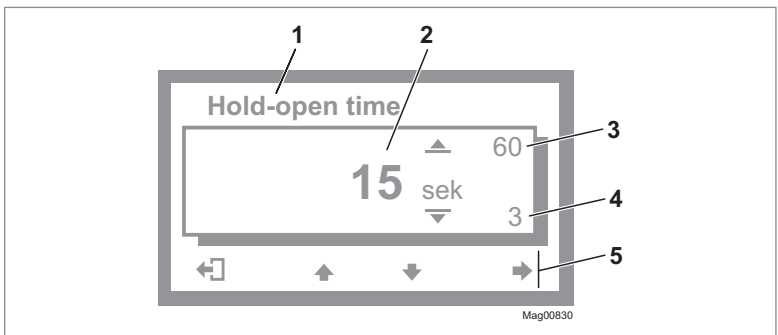


Fig. 17: Example "Screen Change Value"

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

## 3.5 Symbols in the display

### 3.5.1 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.

Clamp	Description
	<ul style="list-style-type: none"> <li>› Call menu "Information".</li> <li>› Scroll menu "Information".</li> </ul>
	Call menu "Main menu". Make all settings in the menu "Main menu".
	Leave current menu level. The next-higher menu level is displayed.
	<ul style="list-style-type: none"> <li>› Call next-lower menu level.</li> <li>› Select desired option or desired value. When the desired option was selected, the symbol  is displayed.</li> </ul>
	Option was selected but not yet stored
	<ul style="list-style-type: none"> <li>› Within one menu level: Move cursor (market) upwards.</li> <li>› For setting value: Increase figure.</li> </ul>
	<ul style="list-style-type: none"> <li>› Within one menu level: Move cursor (market) downwards.</li> <li>› For setting value: Decrease figure.</li> </ul>
	Move cursor one position to the right.
	<ul style="list-style-type: none"> <li>› Delete error message.</li> <li>› When changing settings: Cancel changing process.</li> </ul>

Table 8: Control button functions

### 3.5.2 Further symbols














Clamp	Description
	Wrong password entered. Access denied.
	Reset values to factory settings. To do this, you must enter the password "0000".
	The next validation is blocked by the random function.
	There is 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 in zone controlled direction cleared is cleared.
	The passage in zone not controlled direction cleared is cleared.
	The passage is enabled in both directions.

Table 9: Further symbols

### 3.6 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.

### 3.7 Protecting parameterisation from access















You can apply the access to the main menu with password protection.




➤ Page 35, chapter 4.4.2.

### 3.8 Parameterise value

#### Example: Change hold-open time

The operational view is displayed. ➤ Page 19, Fig. 16.

1. Press the right button «».  
 ✓ The "Main Menu" menu is displayed.
2. Select the menu "Setup" 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 thus 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 "Setup" menu is displayed.
12. Press the left button «» repeatedly until the operating view is displayed again.

### 3.9 Switching the "Service" mode on and off

In service mode, all opening signals are ignored.

#### Switch on mode "Service"

Switch the "Service" switch for the "Service" mode. The LED lights red. The display backlighting flashes.

#### Switch off mode "Service"

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

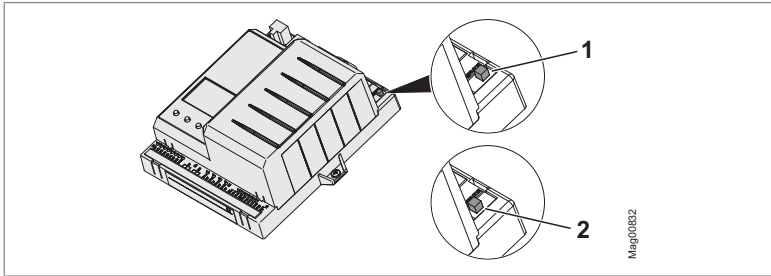




Fig. 18: Service switch

- 1 Mode "Service" on
- 2 Mode "Service" off

#### Button function

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

- › Middle left button «»: Opening pulse for the passage from the zone controlled (ZC) to the zone not controlled (ZNC) This button corresponds to the input function "Open exit".
- › Middle right button «»: Opening pulse for the passage from the zone not controlled (ZNC) to the zone controlled (ZC). This button corresponds to the input function "Open entry".

## 4 Description of menus and parameters

### 4.1 Menu "Information"

#### Call and navigate

The operational view is displayed. ↗ Page 13, Fig. 2.

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

Operating 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 « <b>+</b> » and « <b>-</b> » 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.
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.
Module info	Display of the software numbers (software #) and software versions (SW version) of the control unit and optionally plugged-in plug-in modules.

Table 10: Menu "Information"

## 4.2 Menu "Setup"

### 4.2.1 Hold-open time

Operational view > Main menu > Setup > Hold-open time	
Parameter	Description
Hold-open time	<p>Set the hold-open time.</p> <p>The hold-open time is started by an opening pulse 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.</p> <p>With the setting 0 s, the direction remains open until a passage takes place.</p> <p><b>Setting range</b></p> <ul style="list-style-type: none"> <li>› 0 to 60 s</li> </ul> <p><b>Factory setting</b></p> <ul style="list-style-type: none"> <li>› 7 s</li> </ul>

Table 11: Hold-open time

### 4.2.2 Permanent open

Operational view > Main menu > Setup > Permanent open	
Parameter	Description
Permanent open	<p>You use this parameter to specify whether and after what time the permanent open is activated for a permanent signal at the "Open entry" or "Open exit" input.</p> <p><b>Example option "after 3 s"</b></p> <p>If the signal is present at the "Open entry" or "Open exit" 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.</p> <p><b>Case Hold-open time &lt; time "permanent open"</b></p> <p>If a shorter time has been set for the parameter "hold-open time" than for the parameter "permanent open", the system switches to the operating mode "permanent open" immediately after the hold-open time has elapsed.</p> <p><b>Options</b></p> <ul style="list-style-type: none"> <li>› Inactive</li> <li>› After 3 s</li> <li>› After 10 s</li> </ul> <p><b>Factory setting</b></p> <ul style="list-style-type: none"> <li>› After 3 s</li> </ul>

Table 12: Permanent open

### 4.2.3 Interlock

Operational view > Main menu > Setup > Interlock	
Parameter	Description
Interlock	<p>Activate and deactivate the "Interlock" function.</p> <p>If the interlock has been activated, further rotation of the centre pillar is blocked for 1 second after each pass. This ensures that the centre pillar remains safely in the end position. If many people pass the pedestrian gate (high throughput), the option "Inactive [ ]" may be useful.</p> <p><b>Operating mode "with vend count"</b></p> <ul style="list-style-type: none"> <li>› Inactive: The centre pillar is not locked between the passages until all passages have been completed.</li> <li>› Activated: After each passage, the centre pillar is locked for 1 second.</li> </ul> <p><b>Options</b></p> <ul style="list-style-type: none"> <li>› Inactive [ ]</li> <li>› Activated [ X ]</li> </ul> <p><b>Factory setting</b></p> <ul style="list-style-type: none"> <li>› Inactive [ ]</li> </ul>

Table 13: Interlock

### 4.2.4 Vend count

Operational view > Main menu > Setup > Vend count	
Parameter	Description
Entry	Shows the current counter for validations for the passages in zone controlled direction.
Exit	Displays the current counter for validations of passages in the zone not controlled direction.
Max. pulse count	<p>Set the value for the maximum number of pulses. The pulses are counted up to the set value.</p> <p><b>Setting range</b></p> <ul style="list-style-type: none"> <li>› 0 to 10</li> </ul> <p><b>Factory setting</b></p> <ul style="list-style-type: none"> <li>› 3</li> </ul>
Max. pulse w/o passage (Max. pulse without passage)	<p>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.</p> <p><b>Setting range</b></p> <ul style="list-style-type: none"> <li>› 5 to 10</li> </ul> <p><b>Factory setting</b></p> <ul style="list-style-type: none"> <li>› 5</li> </ul>

Table 14: Vend count


### 4.2.5 Signalling

Operational view > Main menu > Setup > Signalling	
Parameter	Description
Buzzer/Siren	<p>Activate events for which an acoustic signal is to be triggered. Connect the acoustic signal to the "Buzzer/Siren (alarm)" output.</p> <p>An acoustic signal is possible for the following events:</p> <ul style="list-style-type: none"> <li>› Validation pulse</li> <li>› Error</li> <li>› Random hit</li> <li>› Passage</li> </ul> <p><b>Options</b></p> <ul style="list-style-type: none"> <li>› Inactive [ ]</li> <li>› Activated [ X ]</li> </ul> <p><b>Factory setting</b></p> <ul style="list-style-type: none"> <li>› Inactive [ ]</li> </ul>
GED mode entry	<p>Set the behaviour of the optional GEDs.</p> <p><b>Options</b></p> <ul style="list-style-type: none"> <li>› Off: The display is dark.</li> <li>› Red: The display is permanently red.</li> <li>› Green: The display is permanently green.</li> <li>› 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.</li> <li>› 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.</li> <li>› 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.</li> </ul> <p><b>Factory setting</b></p> <ul style="list-style-type: none"> <li>› Standby red</li> </ul>
GED mode exit	↗ "GED mode entry" parameter.

Table 15: Signalling

#### 4.2.6 Random function

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

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

For the random function you can choose between "Counting" or "Random" modes. You activate the random function via a permanent signal (+24 V DC) at the "random function" input. If the random function has generated a hit, the pedestrian gate is closed for passage despite a valid opening pulse. 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 function" input.

Operational view > Main menu > Setup > Random function	
Parameter	Description
Mode	<p>Set the function of the random function.</p> <p><b>Options</b></p> <ul style="list-style-type: none"> <li>› Disabled: The random function is not in operation.</li> <li>› 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 100<sup>th</sup> passage. The hit is confirmed via the "Random function" input function. After acknowledgement, the random function counter restarts.</li> <li>› Random: You can set the random probability using the "Hit range" and "Count of hits" parameters. By activating the random 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.</li> </ul> <p><b>Factory setting</b></p> <ul style="list-style-type: none"> <li>› Disabled</li> </ul>

## Description of menus and parameters

Operational view > Main menu > Setup > Random function	
Parameter	Description
Hit range	<p>The function depends on the selected mode.</p> <p>For the "Counting" mode, use this parameter to set the value at which a hit is to be generated.</p> <p>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.</p> <p>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.</p> <p><b>Setting range</b></p> <ul style="list-style-type: none"> <li>› 10 to 10000</li> </ul> <p><b>Factory setting</b></p> <ul style="list-style-type: none"> <li>› 1000</li> </ul>
Count of hits	<p>Set the number of hits to be generated in the set Count of hits.</p> <p>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.</p> <p><b>Setting range</b></p> <ul style="list-style-type: none"> <li>› 1 to 1000</li> </ul> <p><b>Factory setting</b></p> <ul style="list-style-type: none"> <li>› 10</li> </ul>
Delete validation	<p>Use the "Delete validation" parameter to specify whether the validation is to be deleted automatically in the event of a random hit. Validations are only deleted if the option "Entry" or "Exit" has been selected for the parameter "Direction".</p> <p><b>Options</b></p> <ul style="list-style-type: none"> <li>› 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.</li> <li>› Inactive [ ] 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.</li> </ul> <p><b>Factory setting</b></p> <ul style="list-style-type: none"> <li>› Inactive [ ]</li> </ul>

Operational view > Main menu > Setup > Random function	
Parameter	Description
Direction	<p>Select the passage direction for which the random hits are to be generated.</p> <p><b>Options</b></p> <ul style="list-style-type: none"> <li>› Both: Random hits occur in both passage directions. With this option, validations are not deleted.</li> <li>› Entry: Random hits occur only for passages in zone controlled direction.</li> <li>› Exit: Random hits occur only for passages in zone not controlled direction.</li> </ul> <p><b>Factory setting</b></p> <ul style="list-style-type: none"> <li>› Both</li> </ul>

Table 16: Random function

## 4.3 Menu "In-/Outputs"

### 4.3.1 Inputs

➤ Page 8, chapter 2.1.

### 4.3.2 Outputs

➤ Page 10, chapter 2.2.

## 4.4 Menu "Service"

### 4.4.1 Gate HW



#### IMPORTANT!

By default, the pedestrian gate is delivered with the configuration "Locking normally open". If you want a different configuration, convert the locking and adjust the parameters "Invert magnet RL1" and "Invert magnet RL2". Possible configurations: ↗ Page 34, Table 18.

For the conversion of the locking, see separate operating instructions "Full height turnstile MPT-333 (Doc.ID: 5817,0028)".

#### Operational view > Main menu > Service > Gate HW

Parameter	Description
Invert Magnet RL1	<p>This parameter is used to specify the switching signal for the Magnet RL1 for locking.</p> <p><b>Options</b></p> <ul style="list-style-type: none"> <li>› Inactive [ ]: Normally closed. In the event of power failure, the lock is locked and the centre pillar can be turned.</li> <li>› Activated [ X ]: Normally open. In the event of power failure, the lock is unlocked and the centre pillar can be turned.</li> </ul> <p><b>Factory setting</b></p> <ul style="list-style-type: none"> <li>› Activated [ X ]</li> </ul>
Invert Magnet RL2	<p>This parameter is used to specify the switching signal for the Magnet RL2 for locking.</p> <p><b>Options</b></p> <ul style="list-style-type: none"> <li>› Inactive [ ]: Normally closed. In the event of power failure, the lock is locked and the centre pillar can be turned.</li> <li>› Activated [ X ]: Normally open. In the event of power failure, the lock is unlocked and the centre pillar can be turned.</li> </ul> <p><b>Factory setting</b></p> <ul style="list-style-type: none"> <li>› Activated [ X ]</li> </ul>

Operational view > Main menu > Service > Gate HW	
Parameter	Description
Exit direction	<p>Unless otherwise ordered, the turnstile is delivered for the "Entrance side right" design. The control unit is parameterised accordingly. If the version "entrance side right" does not fit, the parameterisation can be changed via the parameter "exit direction" for the version "entrance side left".</p> <p>➤ Page 40, chapter 5.1.</p> <p>Note that if you change the parameter, you must also convert the support beam.</p> <p><b>Options</b></p> <ul style="list-style-type: none"> <li>➤ Right: All relevant parameters are parameterised for the version "Entrance side right". On passage in zone controlled direction, the centre pillar can be turned counter-clockwise.</li> <li>➤ Left: All relevant parameters are parameterised for the version "Entrance side left". On passage in zone controlled direction, the centre pillar can be rotated clockwise.</li> </ul> <p><b>Factory setting</b></p> <ul style="list-style-type: none"> <li>➤ Depending on the version ordered</li> </ul>

Table 17: Gate HW

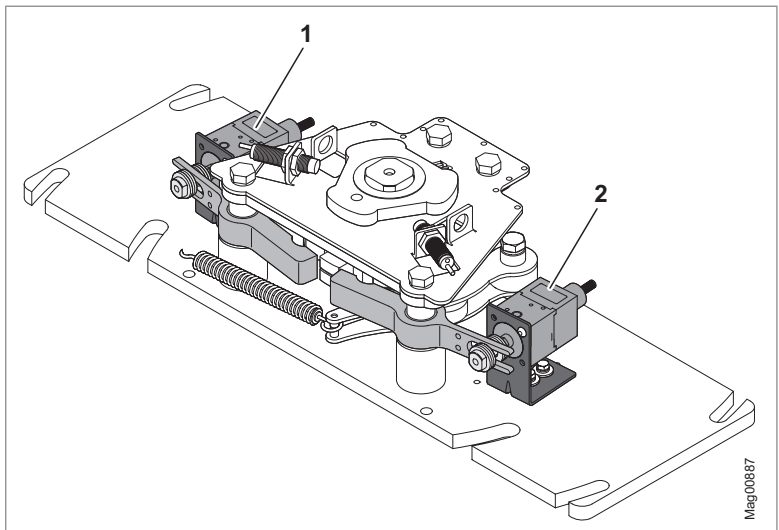


Fig. 19: Locking unit configuration "Normally open"

- 1 Magnet RL1
- 2 Magnet RL2

**Description of menus and parameters****Installation version magnets and settings MGC**

The following installation versions are possible for the magnets RL1 and RL2. The settings for the parameters "Invert RL1" and "Invert RL2" depend on the installation version.

The parameter "exit direction" determines the direction of rotation of the centre pillar. The settings of the parameter depends on the version ordered.

Installation version magnets				Settings MGC			
Magnet RL1		Magnet RL2		Parameter: Exit direction		Parameter: Invert ...	
Normally open	Normally closed	Normally open	Normally closed	Option: Left	Option: Right	RL1	RL2
RL1 and RL2 "normally open"							
X	–	X	–	–	X	[ X ]	[ X ]
X	–	X	–	X	–	[ X ]	[ X ]
RL1 and RL2 "normally closed"							
–	X	–	X	–	X	[ ]	[ ]
–	X	–	X	X	–	[ ]	[ ]
RL1 "normally open", RL2 "normally closed"							
X	–	–	X	–	X	[ ]	[ X ]
X	–	–	X	X	–	[ X ]	[ ]
RL1 "normally closed", RL2 "normally open"							
–	X	X	–	–	X	[ X ]	[ ]
–	X	X	–	X	–	[ ]	[ X ]

Table 18: Installation version of magnets and settings MGC

#### 4.4.2 Further parameters

Operating view > Main menu > Service	
Parameter	Description
Cycles	Display of complete passage procedures.
Lifetime	Display 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.
Main menu password	<p>Activate and deactivate password protection for the main menu To activate a change of the settings, either call the operating view or switch the voltage supply on or off.</p> <p><b>Options</b></p> <ul style="list-style-type: none"> <li>› Inactive: You can change the main menu without entering a password.</li> <li>› Enabled: You can change the main menu only after entering a password. The password is identical with the one for the menu "Service".</li> </ul> <p><b>Factory setting</b></p> <ul style="list-style-type: none"> <li>› Inactive</li> </ul>

Table 19: Service – Further parameters

#### 4.5 Menu "System"

Operational view > Main menu > System	
Parameter	Description
Language	<p>Select menu language</p> <p><b>Options</b></p> <ul style="list-style-type: none"> <li>› English</li> <li>› German</li> </ul> <p><b>Factory setting</b></p> <ul style="list-style-type: none"> <li>› English</li> </ul>
Date/Time	Correct date and time of the control unit MGC.

Table 20: System

## 4.6 Menu "Passage counter"

Operational view > Main menu > Passage counter	
Parameter	Description
From entry	Display for the number of completed passages in zone controlled direction. If necessary, the value can be changed. <b>Setting range</b> › 0 to 30000
From exit	Display of the number of passages completed in the zone not controlled direction. If necessary, the value can be changed. <b>Setting range</b> › 0 to 30000

Table 21: Passage counter

## 4.7 Menu "Information"

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 22: Information

## 4.8 Menu "Factory settings"



### 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 stored in the firmware and cannot be changed.

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

The user settings are the operating parameters.

---

### Options in the menu "Factory settings"










The menu "Factory settings" offers the following options:

- › Restore factory settings: The stored parameters in the memory area "Factory settings" are adopted 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 assume the default settings as operating settings and the factory settings were overwritten first, you need to use the option "Default settings as factory settings" and then the option "Restore factory settings".

**Option "Restore factory settings"**








The operational view is displayed. ↗ Page 19, Fig. 16.





1. Press the right button «».
  - ✓ The "Main Menu" menu is displayed.
2. Select the menu "Factory Settings" 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 "Reset 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 service password is different from the password "0 0 0 0".

The operational view is displayed. ↗ Page 19, Fig. 16.

1. Press the right button «».
  - ✓ The "Main Menu" menu is displayed.
2. Select the menu "Factory Settings" 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 "Reset 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.

5      **Function description**

5.1    **Versions and definitions**

**Left and right**

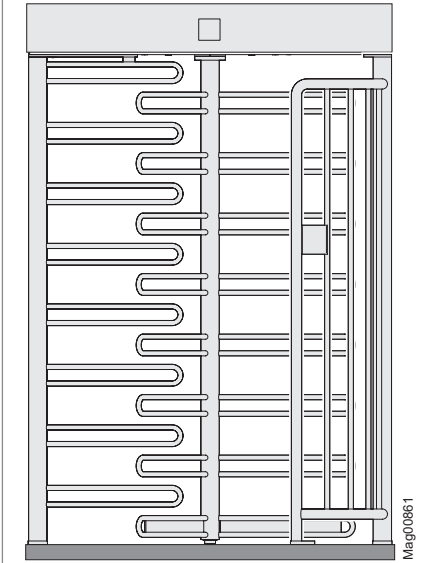
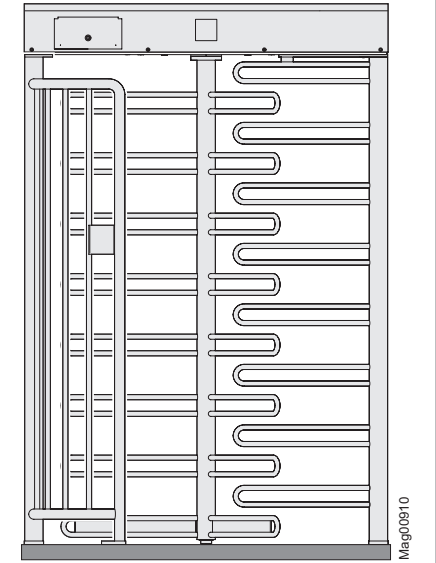
- › Left: The passage is to the left of the locking comb.
- › Right: The passage is to the right of the locking comb.

**Entry and exit**

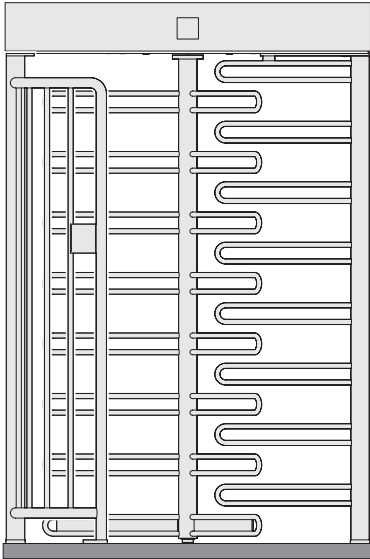
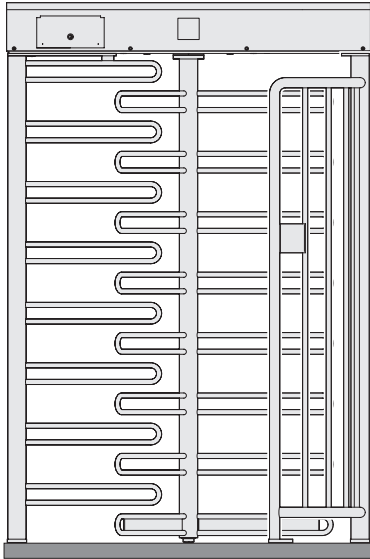
The service door or the cover of the support beam points into the zone controlled.

- › Entry: Passage from the zone not controlled (ZNC) to the zone controlled (ZC)
- › Exit: Passage from the zone controlled (ZC) to the zone not controlled (ZNC)

**Version "Entrance side right"**

Entry	Exit
 <p>Mag00861</p>	 <p>Mag00910</p>
<p>Fig. 20:    Version "Entrance side right" - view from the zone not controlled (ZNC), the entrance is to the right of the locking comb</p>	<p>Fig. 21:    Version "Entrance side right" - view from the zone controlled (ZC), the exit is to the left of the locking comb</p>

**Version "Entrance side left"**

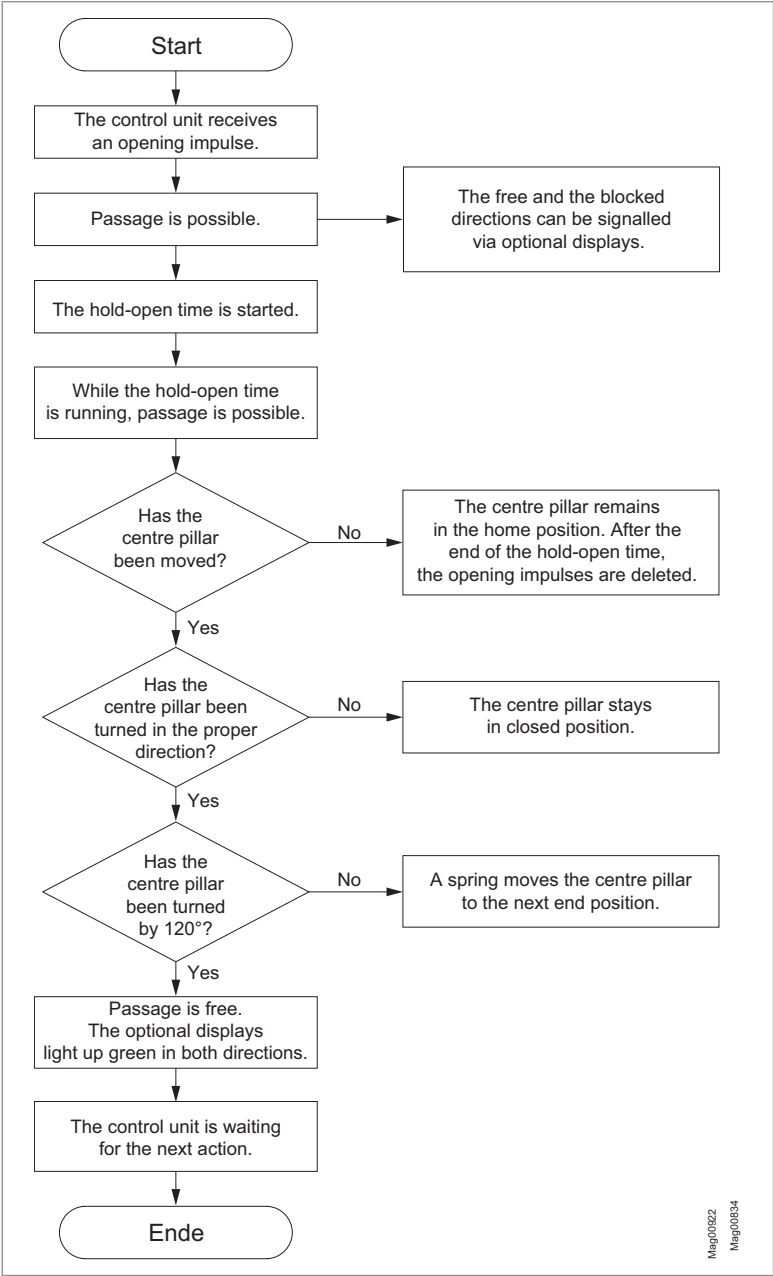
Entry	Exit
 <p>Fig. 22: Version "Entrance side left" – view from the zone not controlled (ZNC), the entrance is to the left of the locking comb</p>	 <p>Fig. 23: Version "Entrance side left" – view from the zone controlled (ZC), the exit is to the right of the locking comb</p>



**IMPORTANT!**

Unless otherwise ordered, the standard version is "Entrance side right".

5.2 Function sequence



## **5.3 Start-up and regular movement sequence**

### **Power-off state**

As standard, the pedestrian gate is supplied with the "normally open locking" configuration. In this case, the turnstile can be passed in both directions in the de-energised state. The centre pillar can be turned freely.

If the pedestrian gate is supplied with the configuration "Locking normally closed", the turnstile is locked in both directions. The centre pillar is locked.

### **Regular movement sequence 120°**

After receiving a validation pulse in one direction, the turnstile is released in the passage direction. The centre pillar can be rotated 120°. If the centre pillar is not turned completely, a spring moves the centre pillar to the next end position.

## **5.4 Operation modes**

### **5.4.1 Pulse operation in both directions without vend count**

The two inputs "Open entry" and "Open exit" 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 one of the two inputs was activated by a requesting pulse, 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.

In this operating mode, a request for a passage in the opposite direction is ignored while the passage is still cleared in the other direction. Only when the centre pillar is back in one of the end positions and the hold-open time has expired can a new opening pulse be processed.

The "Passage free entry" and "Passage free exit" outputs are used to control displays to signal the free and the blocked passage direction. Additionally, these outputs enable mutual locking of the request generators, such as card readers. The request generator must be equipped with a lock input for this. The request pulses from both directions must not occur at the same time or within approx. 0.1 s.

### **5.4.2 Pulse operation in both directions with vend count**

This operating mode works similarly to pulse operation without vend count. The pulse must be present between 0.2 and 1 sec.

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

If request pulses 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 pulses is independent of the sequence in which the pulses were received. 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 starts running again.

### **5.4.3 Permanent open in both directions**

If a permanent signal is present at the two "Open entry" and "Open exit", 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 opening pulse must be given.

After removal of the permanent signal, the corresponding direction is locked at once without completion of the hold-open time. The end position lock is not activated in permanent clearance operation.

If a permanent clearance signal is applied during pulse operation, the stored opening pulses for this passage direction are deleted.

### **5.4.4 Pulse operation in one direction, permanent open in the other direction**

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

If a permanent clearance signal is applied during pulse operation, the stored opening pulses for this passage direction are deleted.

## 5.5 Emergency

The turnstile is available in the following configurations:

- › Locking normally open
- › Locking normally closed

If no details were given in the order, the configuration "Locking normally open" is supplied.

If a conversion is necessary, the locking must be converted and the parameters adjusted. ↗ Page 32, chapter 4.4.1.

### **Configuration "Locking normally open"**

If the " | Emergency open" input is interrupted during operation, the turnstile switches to the "Permanent open" operating mode. The centre pillar can be freely turned in both directions. The turnstile remains energized.

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

### **Configuration "Locking normally closed"**

If the " | Emergency open" input is interrupted during operation, the turnstile switches to the "Permanent open" operating mode. The centre pillar is locked in both directions. The turnstile remains energized.

If the turnstile is equipped with the optional MAENT100 release lock, the lock can be manually released.

## 5.6 Random function

↗ Page 29, chapter 4.2.6.

## 6      **Corrective action**

### 6.1    **Safety in troubleshooting**



**Qualification of personnel**

- › Technician
- › Electrical specialist
- ↗ See Page 7, chapter 1.3.1.

**Personal protective equipment**

Wear the following personal protective equipment:

- › Work clothes
- › Protective gloves
- › Safety shoes
- › Protective helmet.

 <b>WARNING</b>	
	<p><b>Inappropriate troubleshooting!</b></p> <p>Inappropriate troubleshooting can cause severe injuries.</p> <ul style="list-style-type: none"><li>› Observe possible movements of the centre pillar. Defective control may lead to inadvertent movement of the centre pillar.</li><li>› In case of damaged components, take the pedestrian gate out of operation.</li><li>› Use only original spare parts.</li><li>› After completion of troubleshooting, ensure that all covers are correctly mounted.</li></ul>

This chapter describes possible causes of malfunctions and trouble shooting tasks.

Contact your dealer or customer service if you are unable to rectify the malfunctions due to the following descriptions.

## 6.2 Malfunctions turnstile

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 22, chapter 3.6.	Technician

Malfunction: Centre pillar does not rotate.

Possible cause	Corrective action	Removal by
Power supply is not connected	<ul style="list-style-type: none"> <li>› Switch on power supply.</li> <li>› Check power supply.</li> </ul>	Electrician or technician
Error present. The corresponding error message is displayed.	Depending on error message, check components, wiring, etc.	Electrician or technician
Power supply is present. Control unit display does not light up.	Control unit defective. Replace the control unit.	Electrician or technician
Locking signal present.	Remove locking signal.	Electrician or technician

## 6.3 Event, warning and error messages in the display

The control unit differentiates between events, warnings and errors. The corresponding message is displayed.

### 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.

If the function "Warning" has been chosen for an output, this output is deactivated at pending warnings (fail safe).

**Error messages "ERROR"**

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

If the function "Error" has been chosen for an output, this output is deactivated at pending errors (fail safe).

The fault must be rectified and a reset so that the pedestrian gate can be put back into operation.

➤ For the required qualification see Page 7, chapter 1.3.1.

**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.

**6.3.1 Event, warning and error messages – logic control (control unit)**

Number	Designation	Possible cause	Corrective action
3120 ERROR	Mains voltage fluctuations	Short-term mains failure has been recognised.	Check supply voltage and mains quality.
5530 ERROR	EEPROM checksum error	Checksum of parameters not correct	<ul style="list-style-type: none"> <li>› Reset parameters to factory settings. ➤ Page 37, chapter 4.8.</li> <li>› If required, contact Service.</li> </ul>
6000 ERROR	Module update error	A firmware update was not performed correctly.	<ul style="list-style-type: none"> <li>› Restart the control unit</li> <li>› If the error continues to be present, perform the update again via the service module.</li> </ul>
6102 ERROR	Software error system bus	Within the control, an error is pending in communication.	<ul style="list-style-type: none"> <li>› Check SW versions of all plug-in modules. If necessary, update via the service module.</li> <li>› If all FW versions are up to date, contact service.</li> </ul>
FF20 WARNING	Emergency open	0 V or no signal is present at the "Emergency open" input.	<ul style="list-style-type: none"> <li>› Check input signal.</li> <li>› If not used, disable the input function.</li> </ul>

Number	Designation	Possible cause	Corrective action
FF21 WARNING	Max. pulse without passage	The set maximum number of pulses without passage has been reached.	<ul style="list-style-type: none"> <li>› Check card reader / validation device, e.g. card reader.</li> <li>› Check the "Max imp. w/o passage" parameter.  <a href="#">↗</a> Page 27, chapter 4.2.4.</li> </ul>

Table 23: Event, warning and error messages – logic control (control unit)

### 6.3.2 Event, warning and error messages – all modules

Number	Designation	Possible cause	Corrective action
6010 WARNING	Watchdog reset	SW error	If required, contact Service.
8110 WARNING	CAN overrun	Warning	If required, contact Service.
8120 WARNING	CAN HW fault	Warning	<ul style="list-style-type: none"> <li>› Check the DIP switch next to the service interface (ON position).</li> <li>› If necessary, remove devices at the service interface.</li> </ul>

Table 24: Event, warning and error messages – all modules

## 6.4      **Perform reset**

Control unit reset is performed as follows:

- › Switch of power supply and switch it on again after 10 seconds.
- or
- › Press the two middle control buttons on the display of the control unit for 5 seconds.

### NOTICE



**Fast restart!**

Switching the pedestrian gate on again too fast can lead to damage to the device!

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

## 7 Menu setup

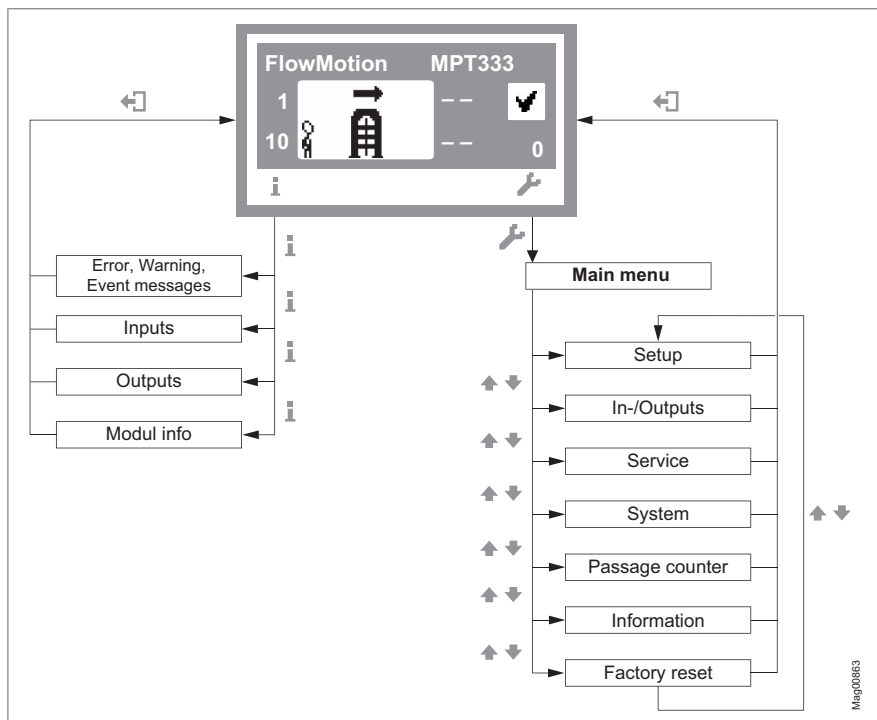


Fig. 24: Menu "Information" and "Main menu"

Menu setup

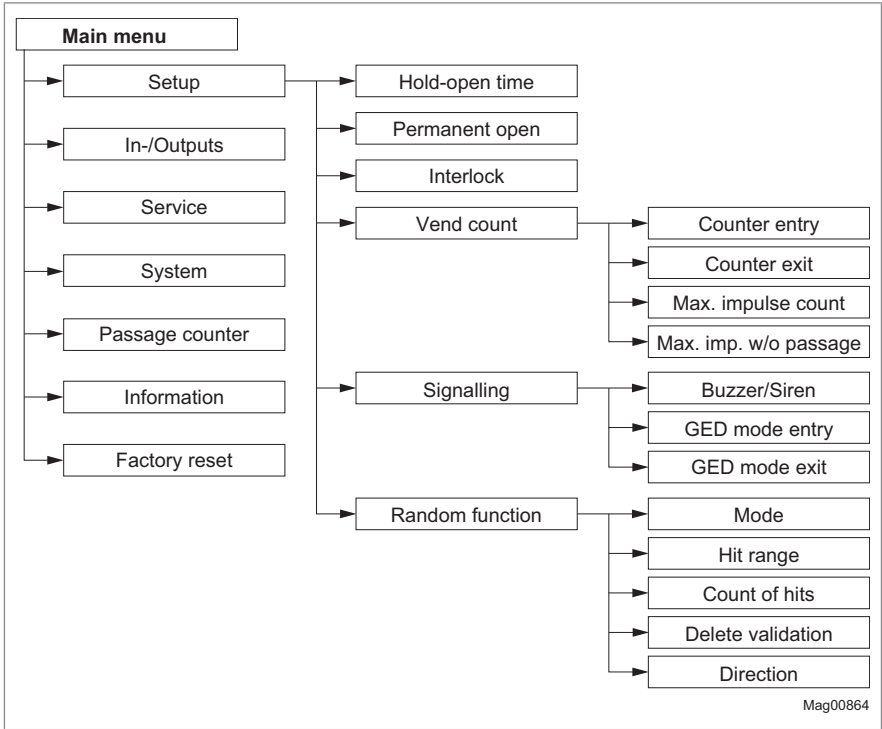


Fig. 25: Menu "Setup"

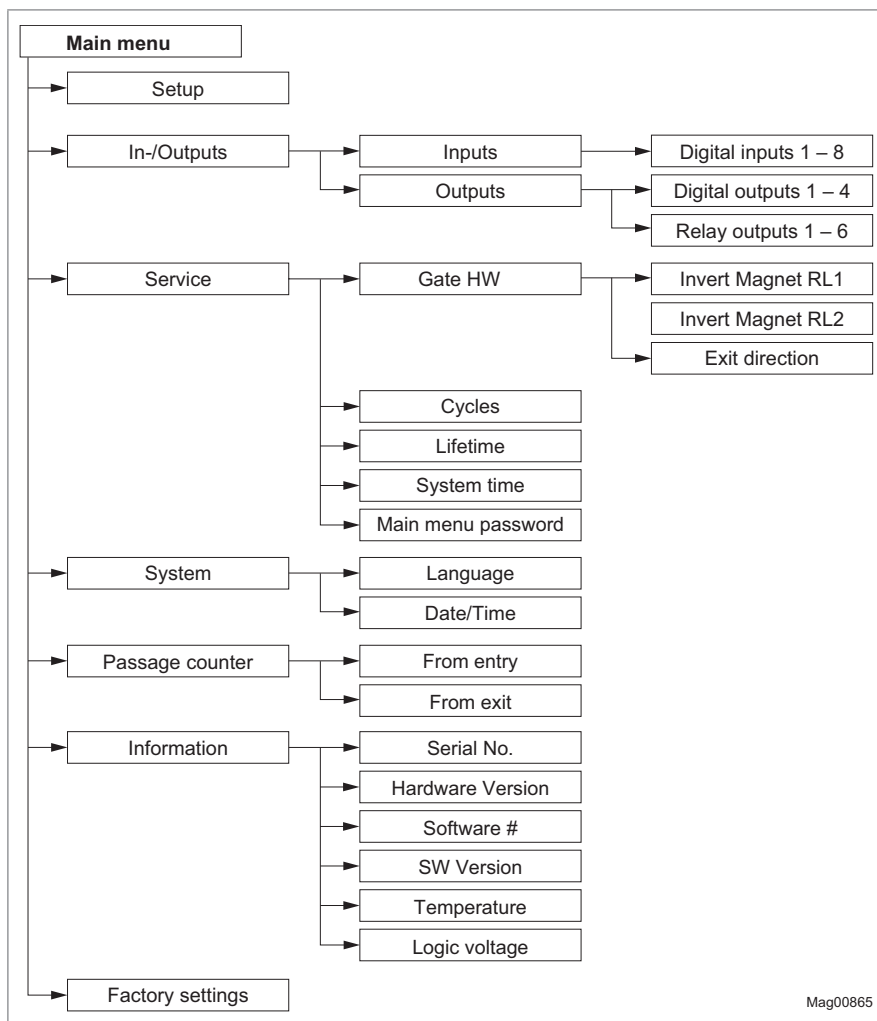


Fig. 26: Menu "Inputs/Outputs", "Service", "System", "Passage counter", "Information" and "Factory settings"



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