Operating Instructions
Swing Gate
MPS 122

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1. Delivery

1.1 Scope of supply for the Swing Gate

1 x swing gate with drive
1 x control cabinet
1 x motor controller MMC-120
1 x logic controller MBC-110
1 x power supply
3 x M8 fastening material
1 x set of documents

Optional extras:
- Windows software MPS-Diag for setting functions and parameters, and for fault diagnosis
- USB/RS-232 converter with cable for use with MPS-Diag software

1.2 Technical data

TECHNICAL DATA	UNIT	MODEL MPS 122
Voltage	VAC	110-240
Frequency	Hz	50-60
Duty cycle	%	100
Degree of protection	IP	44
Opening time [1]	s	1.5 – 4.0
Closing time [1]	s	1.5 – 4.0
Diameter	mm	159
Width	mm	925
Height	mm	1000

[1] Depending on width of gate

The data given in the table may change as a result of technical changes!

2. Safety

2.1 General safety instructions

The design of MAGNETIC swing gates complies with the state of the art and they are manufactured and tested to ensure safe, reliable operation and that they leave our works in perfect condition. Nevertheless, the system can give rise to dangers to persons and goods if it is improperly used. The operating instructions must therefore be read completely and the safety instructions observed.

In the event of improper use, the manufacturer is absolved from any liability and will refuse guarantee claims.

2.2 Proper use

A MAGNETIC swing gate may only be used to provide controlled access for pedestrians who wish to enter a restricted-access zone which is normally under surveillance.

Only controllers MBC and MMC may be used to control operation of the swing gate. Before changing or modifying the product or the control modules, consult the manufacturer.

Only original spare parts and accessories from MAGNETIC may be used.

IMPORTANT NOTE!

MAGNETIC is not responsible for any type of material damage, injury to persons, or other faults or accidents that arise from failing to observe the conditions for proper use!

2.3 Symbols in these instructions

The following warning and instruction symbols indicate situations which could give rise to potential hazards for persons or goods, or important instructions relating to operation of the barrier.

The text passages to which these symbols relate must be read and observed without fail.

Components from suppliers may have their own safety regulations and instructions for use. These must also be observed.

CAUTION!

This symbol accompanied by the word "CAUTION" indicates a situation which could entail a danger to life and limb.

The measures given to avoid this hazard must be strictly observed.

ATTENTION!

This symbol accompanied by the word "ATTENTION" indicates a situation in which there could be a danger of material damage.

The measures given to avoid this hazard must be strictly observed.

IMPORTANT NOTE!

This symbol accompanied by the words "IMPORTANT NOTE" indicates text containing important information,

These sections contain specific instructions on installation, application, and maintenance.

RECYCLING!

When the swing gate is taken out of service at the end of its useful life, it must be disposed of in accordance with local laws and regulations.

The materials used must be sorted and disposed of separately.

Similarly, the regulations concerning the disposal of lubricants (oil and grease) and other auxiliary materials must be observed.

2.4 Work safety

- When working on the gate, the mains voltage must be switched off and safeguarded against unintentional restarting.
- Before commissioning, make sure the barrier is adequately fastened to a secure foundation.
- A lockable two-pole main circuit breaker must be installed on site
- A residual current device (RCD) must be installed on site.
- These operating instructions and all other accompanying documents must be stored so that they are accessible at any time for the operating and maintenance personnel.
- Before commissioning, all electrical and mechanical functions must be checked.
- The electrical installation must be carried out in accordance with the accompanying circuit diagrams.
- The electrical installation must be carried out by trained specialist personnel.
- Covers on mains plugs, mains units, and electric wiring may only be removed by trained specialist personnel.
- Before maintenance work or troubleshooting for electrical faults, the main switch must be turned off without fail.
- When the unit is switched on, or when power returns after a power failure, the barrier automatically becomes operative again.

3. Product description

3.1 General

The MPS swing gate is a user-friendly pedestrian barrier developed to provide controlled access for persons, in simple security applications, to zones which are normally under surveillance.

They are also used to supplement our turnstiles and flap barriers, in particular to zones which need control of persons carrying luggage or in wheelchairs.

Basically, the swing gate can be used in both directions. As supplied, the swing gate is designed for bi-directional operation and to open through 90° in each direction. Using special PC software, the opening angle can be changed to between 10° and 300°. Further parameters, such as speed, hold-open time, etc. can also be modified using the software.

The swing gate is opened by an external access-control system operating through digital inputs. Closure is fully automatic following expiry of an adjustable hold-open time.

The drive system, which consists of our MHTM (Magnetic High Torque Motor) in combination with a planetary reduction gear, ensures a powerful, precise motion sequence. Depending on your requirements, the swing gate can be locked in the three end positions by means of an electro-mechanical clutch.

A high degree of force can be applied to the barrier element to force it out of its locked position without causing damage to it. A slipping clutch or similar device is not required. After a forced opening, the barrier returns automatically to its original position.

The entire drive is maintenance-free and almost entirely free of wear; it contains no limit switches or similar devices.

In the event of a power failure, the swing gate is free to open in both directions.

The housing is a ground stainless-steel cylinder with a diameter of 159 mm. The barrier element can be supplied in several different lengths. The swing gate housing is fastened to the floor with three M8 screws.

3.2 Housing and lane width
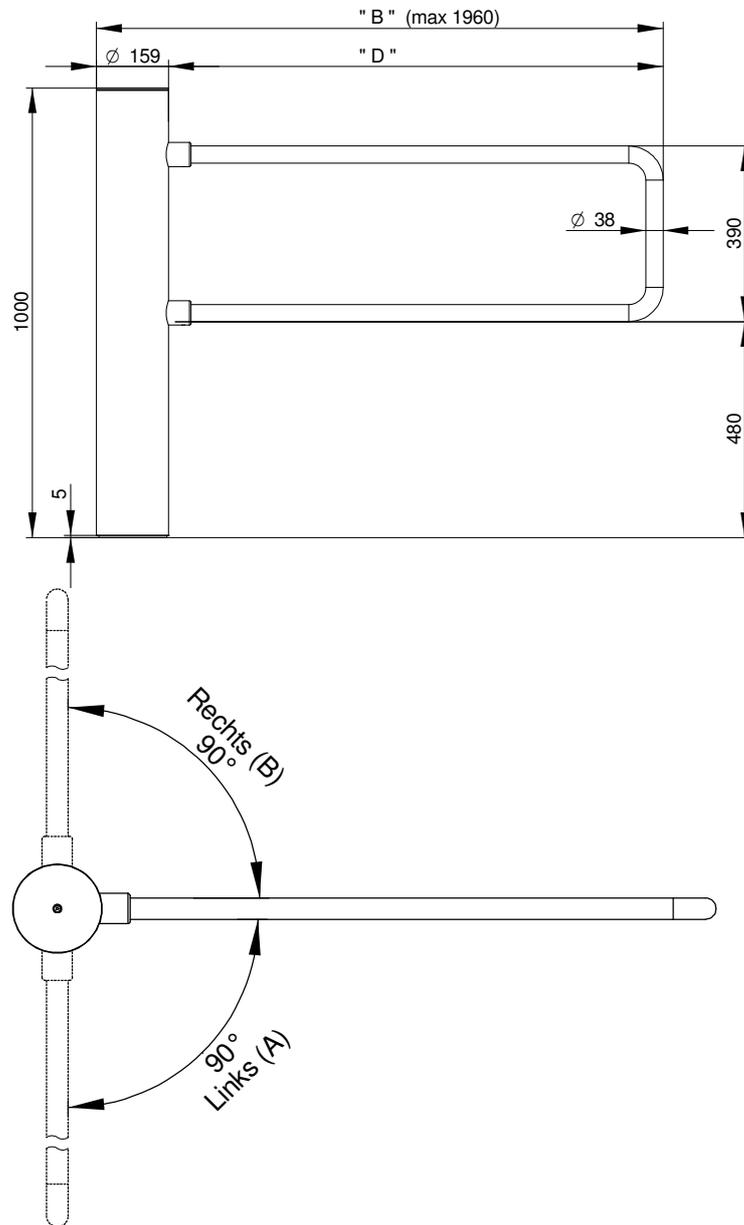
B = total width including MPS column
D = passage width

Fig. 3.1   Installation dimensions

3.3   Left-hand and right-hand versions

Normally, Swing Gate MPS 122 is designed for bi-directional operation and to open through 90° in each direction. At both end-positions there are mechanical stops, which are set so that the maximum opening of the gate is 2x92°.

In operation, the barrier stops ca. 2° before the mechanical end stops.

Normally, the swing gate is configured as a right-hand version, i.e. the right stop is the reference point to which the gate moves when it is switched on. There are, however, applications in which it is not acceptable to have a mechanical stop at the right position, e.g. so that a barrier can be opened in the escape direction.

In such cases, the swing gate can be reconfigured using the software so that the left stop is the reference point. The right stop can then be set, for example, so that it is at 180°, which allows the barrier to be pushed open from the right position.
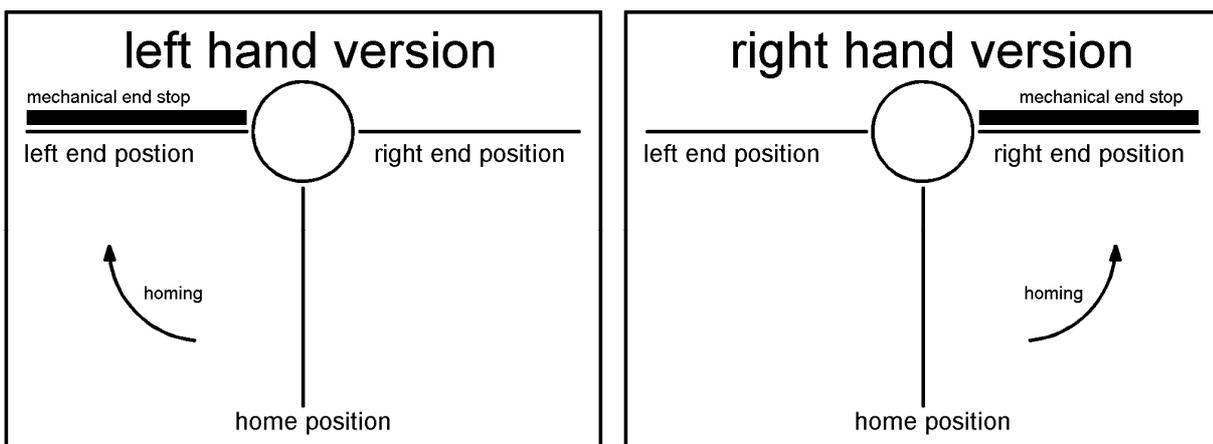
Fig.3.2   Left-hand and right-hand versions

3.4   Overview controllers
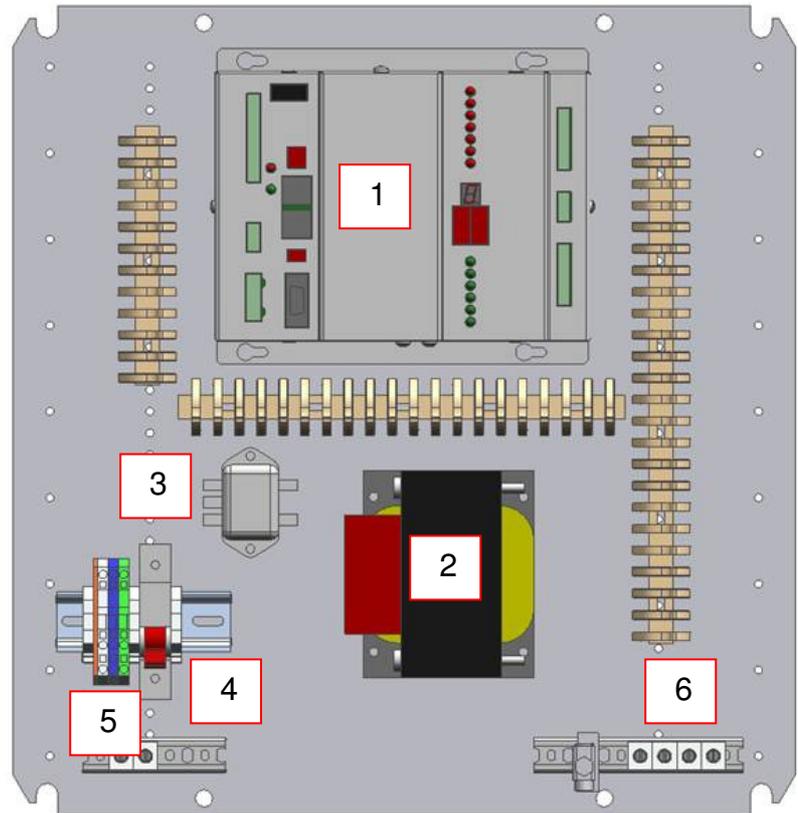
Fig.3.3   Mounting plate (control cabinet)

1 – logic controller MBC-110
2 – transformer power supply
3 – mains filter
4 – mains switch
5 – terminal block for mains connection
6 – 42V cable to MPS column

4. Assembly and installation

4.1 Foundations

For installation of the housing, a level concrete surface (PC250 concrete) or equivalent robust industrial floor is required. If there is a flagged or tiled surface, it is essential that the anchors grip securely in the foundation; in that case longer anchors may be necessary. For outdoor applications, the foundation should reach an 800mm frostline and be steel reinforced.

The requirements for concrete foundations can be seen in Fig. 4-1. Two empty conduits are required for cables to and from the housing. Wiring must be carried out according to the circuit diagram and the schematics. Any additional wiring, for example for access-control equipment, must be planned by the customer. Make sure that cables laid in the conduits have sufficient length projecting out of the concrete floor.

Consult MAGNETIC if there are any points you are not clear about.

Schraube DIN933 M8x80 A2 (rostfrei) (3x)
screw DIN933 M8x80 A2 (stainless) (3x)

Federring DIN128 A8 A2 (rostfrei) (3x)
spring washer DIN128 A8 A2 (stainless) (3x)

Scheibe DIN9021 d8,4 A2 (rostfrei) (3x)
washer DIN9021 d8,4 A2 (stainless) (3x)

Ankerstange mit Innengewinde M8 (3x)
anchor bolt with inside thread M8 (3x)

Einzelheit/Detail B

Ø 159

Bereich für Leerrohre ca Ø70mm
Datenleitung und Netzleitung unbedingt
in getrennten Leerrohren verlegen

area for conduit approx Ø70mm
data lines and AC power lines
must not run within the same conduit

800 (Frosttiefe / Frost depth)

ca. Ø. 70 Bereich für Leerrohre
approx. Ø70 area for conduits

TK Ø 105 ①

Ø 14 Bohrtiefe 90mm (3x)
Ø 14 drilling depth 90mm (3x)

3 x 120°

□ 300

Ansicht Fundament ohne MPS
view foundation without MPS

Fig. 4.1   Foundation and conduit drawing

1 – Conduit for external power supply, PG21 (28 mm)
2 – Conduit for control leads, display, light barrier supply, PG36 (42 mm)
3 – Conduit for motor, resolver, brake, earth connection (4 sqmm), PG36 (42 mm)
4 – Alternative mains lead, PG21 (28 mm)

4.1 Preparation for the installation

The barrier is supplied completely assembled (except for the u-bar).

*Fig.*4.2

For proper installation of the barrier, the steps described below are essential.

Fig. *4.3*   *Fig.*4.4

Undo and remove the M8 countersunk screw holding the cover.

Fig.4.5

Remove the cover and the sealing.
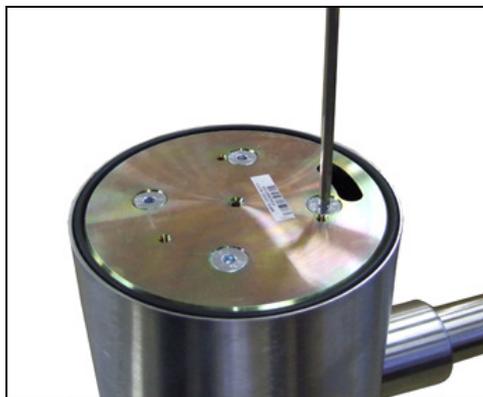
Fig. 4.6

Undo and remove the four M8 countersunk screws.

Fig.4.7

Lift off the outer tube with the barrier.

4.2 Foundation anchors

The barrier should be mounted as shown in Fig. 44.8. The MPS housing is fastened to the foundation with three hexagon-head screws and anchors.

These fastening materials are included in the scope of supply.
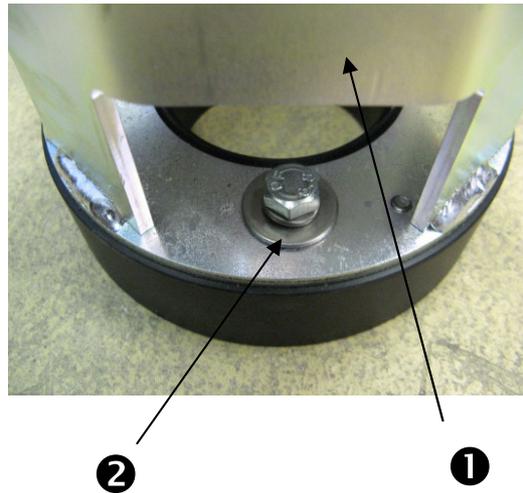
Fig. 4.8 MPS floor mounting

1 – *MPS housing tube*
2 – *Screws M8, spring washers, plain washers (3 of each)*

1. Place the housing base at the intended location, so that the cut-out in the tube shown in Fig. 4.7 is approximately centred on and in the direction of the required home position.

2. Introduce the leads from below.

3. Mark the holes.

4. Move the housing base to the side.

5. Drill three holes for the anchors.

6. Fit the three anchors with M8 female threads.

7. Place the housing base over the anchors (take car not to damage the conduits and cables).

8. Secure the housing base to the foundation with M8 screws into the anchor threads.

Important note!
The hardening time for resin cartridges varies with the ambient temperature:
>20° ---- 10 min
10°-20° ---- 20 min
0°-10° ---- 1 h
-5°-0° ---- 4 h

4.3   Electrical connections

> ⚠️ **CAUTION!**
>
> Connections of electrical wiring may only be carried out by a trained and qualified electrician.

4.3.1   Cable connections

Two cables must be connected between the MPS swing gate and the control cabinet:

- a CAN connection between the MBC-110 and the MMC-120

- a 42V supply from the transformer to the terminal block in the MPS
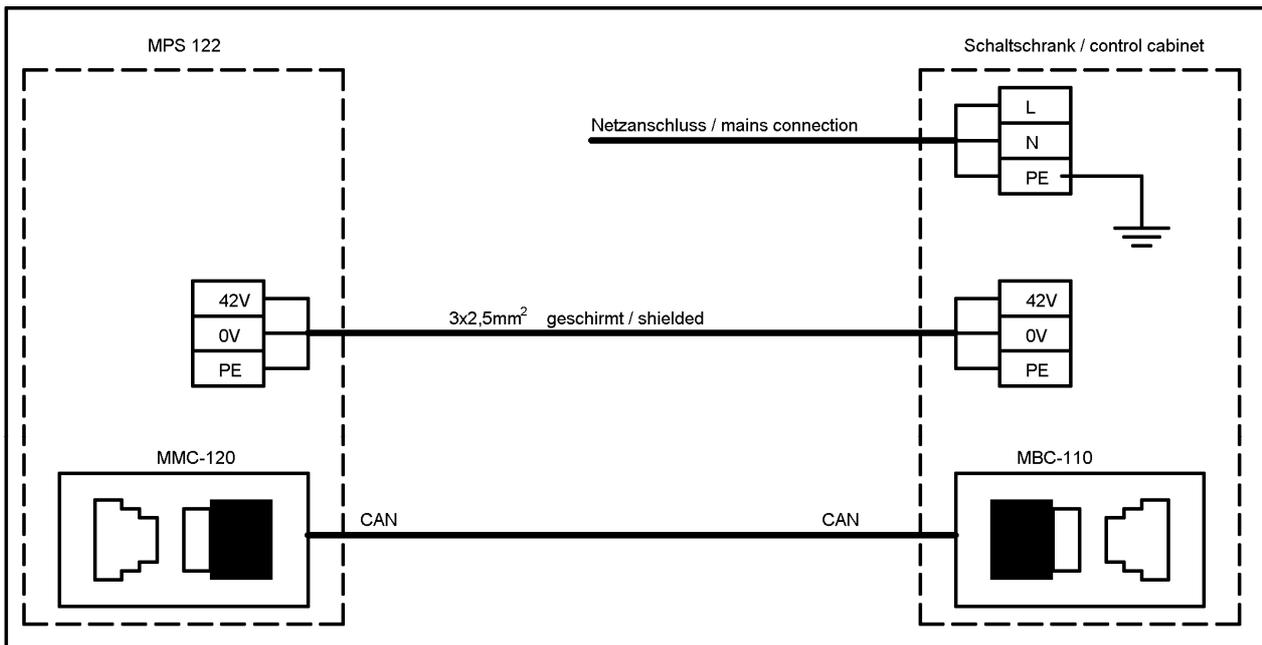
Fig.4.9 Connection cables

Draw the leads coming from the MPS upwards and connect them as shown in the wiring diagram.
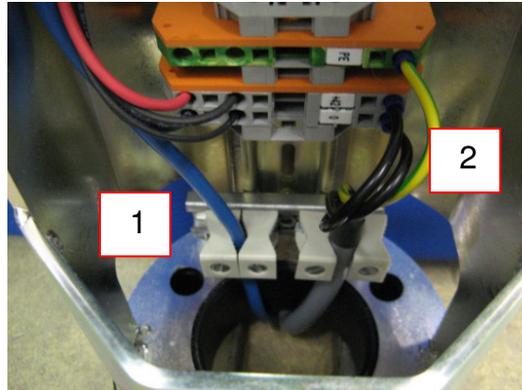
Fig.4.10   Strain-relief fitting for wiring

1 – CAN cable

2 – 42V cable
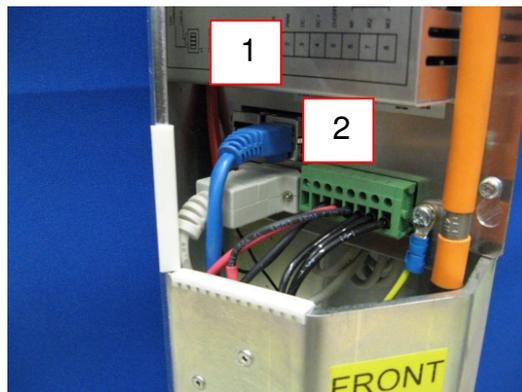
Fig.4.11   Wiring terminals

1 – motor controller MMC-120

2 – Connect CAN cable at MMC-120 motor controller

4.3.1   Mains connection

The mains cable is connected in the control cabinet (see attached schematic diagrams).

4.3.2   Control lead connections at MBC-110

The control and signal leads are connected at the MBC-110 controller (see attached schematic diagrams).

4.3.3 Re-assembling the MPS column

1. Replace the outer tube with the barrier.

2. Rotate the outer tube so that the slot in the upper cover plate is approximately centred over the stop screw.
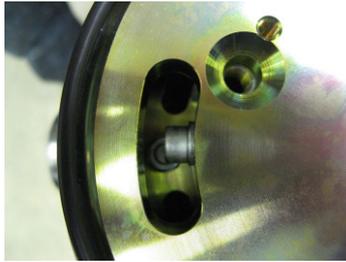
Fig. 4.12 Location relative to stop screw

3. Replace the four M8 countersunk screws and tighten them.

4. Do not fit the cover yet.

4.3.4 Setting the two mechanical end stops

1. Turn the outer tube with the barrier clockwise until the stop screw contacts the right end-stop.

2. Loosen the screw of the right end-stop and move the stop until it is ca. 92° clockwise from the required home position.

3. Retighten the screw firmly.
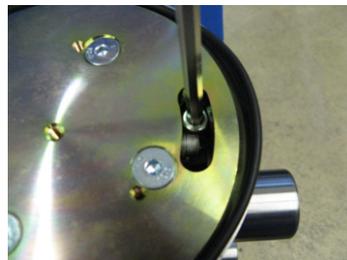
Fig. 4.13 Setting the right end-stop

4. Turn the outer tube with the barrier anti-clockwise until the stop screw contacts the left end-stop.

5. Loosen the screw of the left end-stop and move the stop until it is ca. 92° anti-clockwise from the required home position.

6. Retighten the screw firmly.
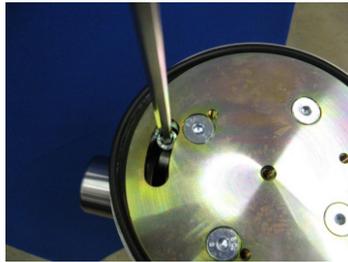
Fig. 4.14 Setting the left end-stop

7. Mount the barrier.

8. Put the swing gate into service (see "Commissioning") and check that the positions are correct. If the positions are not correct, the mechanical end-stops must be readjusted.

9. Refit the O-ring.

10. Replace the cover.

11. Replace and tighten the M8 countersunk screw to secure the cover and seal.

5. Commissioning

5.1 Safety note

CAUTION!

Before commissioning for the first time, make sure that all assembly and installation instructions have been followed and that the electrical connections have been correctly made.

Faulty installation or connections can cause malfunctions which could result in injuries.

The notes on assembly and installation in these operating instructions must be strictly observed.

5.2 Commissioning

1. Make sure there are no obstructions to operation of the swing gate. The passage through the barrier must be clear.

2. Switch on the power supply at the mains switch on the control cabinet.

3. When starting for the first time, it may first be necessary to load the software for motor controller MMC-120 from the logic controller. This procedure can take up to one minute. Please do not switch the power off during this operation, otherwise the procedure will have to be repeated. On future occasions, this procedure is not required when the power supply is switched on.

4. Next, the swing gate will carry out homing, i.e. it will move first to the mechanical end-stop and then to the home position.

5. The swing gate is controlled through the digital inputs and outputs on the MBC-110 controller.

5.3 Further settings

If you have to change functions or parameters, please see the section "Program MPS-Diag". To use the program, you will need a laptop or PC with the Windows software MPS-Diag.

6. Description of MBC110 functions

6.1 Digital inputs and outputs

6.1.1 Technical data of the inputs

- All inputs are galvanically isolated by optoelectronic couplers

- Input voltage: 24V ±10%

- Input current: 10 mA per input

- Impulse length for inputs: 100 ms – 300 ms

6.1.2 Functions of the digital inputs

Input	Function
Input 1	Emergency
Input 2	Open left
Input 3	Open right
Input 4	Close (lock) the swing gate
Input 5	Manual reset
Input 6	Not used
Input 7	Not used
Input 8	Not used
Input 9	Not used

Input 1 = emergency

This input permits free passage through the swing gate in an emergency situation. The input is fail-safe, i.e. the swing gate is only operative when a continuous signal is present.

When the continuous signal fails, power to the motor is cut off and the u-bar can be moved freely.

The input operates via a second channel directly on the end stage of the motor amplifier. It is assigned a higher ranking than all other inputs.

When several swing gates are to be opened in parallel by an external emergency-stop switch, the inputs must be galvanically isolated by an additional relay to prevent voltage coupling between the individual swing gates.

Input 2 = Function: open barrier to left

Opening impulse for open barrier to left
If the signal is applied for longer, the hold-open time is restarted

Inputs 3 = Function: open barrier to right

Opening impulse for open barrier to right
If the signal is applied for longer, the hold-open time is restarted.

Inputs 4 = Function: close (lock) the barrier

Input for higher-level closure of the barrier. Opening signals are no longer accepted. The barrier can be locked at this input. However, input 1 (emergency situation) retains a higher level, i.e. even when the barrier is locked, it is still possible to open the barrier completely.

Inputs 5 = Function: manual reset

Input for manually resetting the control system after a power failure. Input is only required when the function "Manual reset" is also active.

Inputs 6 - 9 = not used

6.2   Relay outputs

6.2.1   Technical data of the outputs

- Potential-free relay contacts are connected together in groups

- Switched voltage: 5 – 48V

- Switched current: 10 mA – 1 A

6.2.2   Function of the outputs

Output	Function
K 1	Global error / power failure
K 2	Barrier in home position
K 3	Barrier in left end-position
K 4	Barrier in right end-position
K 5	Counting impulse on reaching left end-position
K 6	Counting impulse on reaching right end-position

Relay 1 = Global error / alarm output

When certain errors occur, a continuous signal is given at this output; it continues as long as the error persists.

Possible errors are:
- Running time of barrier too long = obstacle detected
- CAN communication with final stage is impaired
- Hardware fault in final stage
- Software error in final stage
- Homing is being carried out
- Power failure
- Manual reset expected (only when selected)

IMPORTANT NOTE!

Relay 1 operation is fail-safe, i.e. a power failure or a wire breakage at the relay output is also indicated at the global error output. This means that the relay contact pair is closed as long as there is no error. As soon as the global error described above occurs, the relay contacts open.

Relay 2 = Barrier in home position

A continuous signal is given at this output when the barrier is in home position.

Relay 3 = Barrier in left end-position

A continuous signal is given at this output when the barrier is in the left end-position.

Relay 4 = Barrier in right end-position

A continuous signal is given at this output when the barrier is in the right end-position.

Relay 5 = Counting impulse left

A counting impulse 500 ms long is given at this output when the barrier reaches the left end-position.

Relay 6 = Counting impulse right

A counting impulse 500 ms long is given at this output when the barrier reaches the right end-position.

6.3 Diagnosis display

6.3.1 Functions of the diagnosis display

For diagnosis, the MBC-110 has a 7-segment display. This can, however, only be read with the outer tube and barrier removed. It is therefore recommended that errors are read via the serial interface using the diagnosis program MPS-Diag.

Normal operation

●

The dot blinks continually at 0.5 Hz.

6.3.2 Homing

The letter "H" blinks at 10 Hz when the home position is approached at low speed following a power failure. When the home position is reached, the display reverts to that for normal operation.

H.H.

The buzzer sounds during the homing procedure.

6.3.3 Waiting for a manual reset

A white bar runs in a circle, clockwise until the reset signal is present. Afterwards the display reverts to that for normal operation. The display time for each state is 0.5 s.

0.0.0.0.0

Display when waiting for a manual reset.

6.3.4 Display of software version status

First the letter "U" is displayed, then the first information (with dot), then the second information, followed by a pause. Then the cycle begins again. The display time for each state is 2 s.

Example for software version V1.4.

U1.4

6.3.5 Display of error codes

First the letter "E" (Error) is displayed, then the first figure of the error code, then the second figure, followed by a pause. Then the cycle begins again. The display time for each state is 2 s.

Example for Error code 23

```
E23.
```

Error code	Description of fault	Self-resetting
01	Obstacle detected by run-time monitor	Yes
02	Emergency input is activated	Yes
05	Barrier has been pushed in wrong direction	Yes
07	Vandalism detected	Yes
20	Fault at MMC controller	No
21	Final stage of MMC servo-device cannot be switched on	No
22	MMC lifeguarding error	No
40	Error during homing	No
41	Wrong program mode	No
50-57	Software error	No
5D	Checksum error in EEPROM	No
5E	Checksum error in flash	No
5F	Watchdog error	No
60	Error when initialising CAN protocol stack	No
61	Error when initialising CAN bus	No
62	Error in CAN-servo address	No
63	Error downloading controller parameters to servo	No
64	Reserved	No
65	Error I²C-EEPROM	No
66	Software error	No
70-7F	Error downloading MMC-Firmware	No

Self-resetting errors are shown for not more than 20 seconds after elimination of the error. However as long as the error persists, the error code will be displayed.

When there is a non-self-resetting error, the barrier will go out of service. The error code will then be continuously displayed until the control system is returned to operation following elimination of the fault.

6.3.6 Hold-open time

The hold-open time is displayed as a countdown in one-second steps. If the remaining time is still more than 9s, a special character (according to the enabled direction) is displayed, or an "F" (Free) for clearance in both directions. Normally, the maximum time is 25s.

Enabled left	Enabled right

F. 9. 8. 7. 6. 5. 4. 3. 2. 1. 0

6.4 CAN-Bus addressing and termination

The MBC-110 logic controller and the MMC-120 motor controller exchange data on a CAN bus line. Each of the controllers must therefore have a fixed CAN address assigned to it. In addition, a termination resistor must be activated at both ends of the bus to prevent interference.

The CAN addresses and the termination are set using four DIP switches on both controllers.

The correct DIP switch settings are shown below:

		MBC-110	**MMC-120**
Termination	**DIP 1**	ON	ON
CAN-Address	**DIP 2**	OFF	OFF
CAN-Address	**DIP 3**	OFF	OFF
CAN-Address	**DIP 4**	OFF	OFF

Fig. 6.1   DIP switches CAN
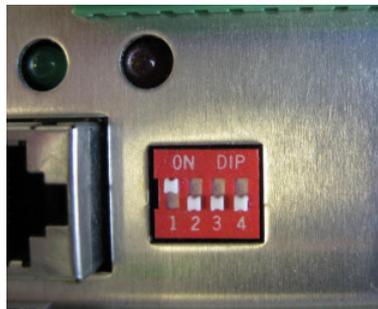
Fig.6.2   CAN DIP switches MBC-110
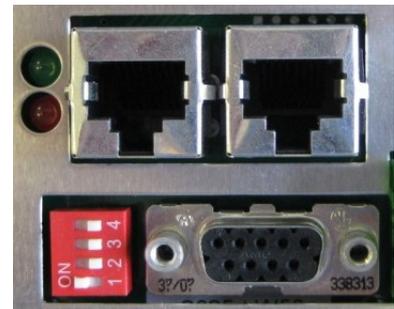
Fig.6.3   CAN DIP switches MMC-120

Incorrect DIP switch settings can result in the swing gate failing to operate or in faults during operation.

7. Mode: MPS Standard

7.1 Power-off state

In the power-off state, no current is applied to the motor and the barrier is unlocked. The barrier is free to rotate.

7.2 Commissioning

7.2.1 Starting routine

When the supply voltage is switched on, the system first checks which reset option is selected.
If "Manual reset" is selected, the control system waits for a reset impulse at the "Manual reset" input, and then carries out homing.
When "Auto reset" is selected, homing is carried out immediately.

7.2.2 Homing

The system carries out homing to determine where the barrier is by moving it to the mechanical end-stop. This is carried out at reduced speed and torque. During homing, the buzzer gives an acoustic warning. The homing direction depends on whether a left or right gate has been selected.

With a left gate, when the power is switched on again, the barrier rotates clockwise at low speed until it reaches the mechanical end-stop. On reaching the end-stop, the barrier reverses and runs anti-clockwise to the defined home position (default setting = 90°). Once it has reached the home position, the MPS is ready for use.

With a right gate, when the power is switched on again, the barrier rotates anti-clockwise at low speed until it reaches the mechanical end-stop. On reaching the end-stop, the barrier reverses and runs clockwise to the defined home position (default setting = 90°). Once it has reached the home position, the MPS is ready for use.

If the function "Brake applied in home position" is activated, the brake will be applied.
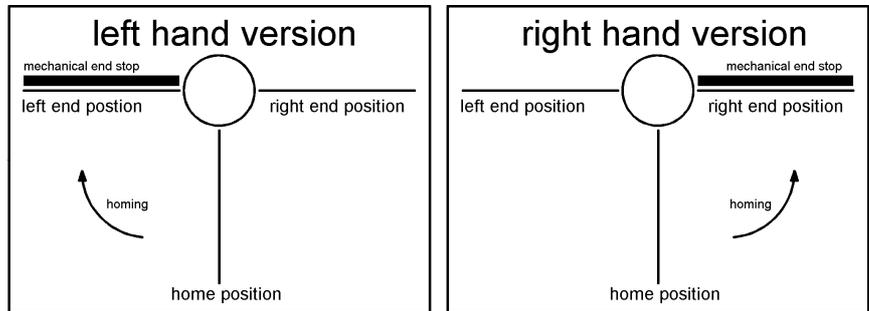
Fig. 7.1: Homing for left and right gates

7.3   Normal motions

In the three possible positions, the swing gate is held by the motor with a low torque. If the function "Brake activated" is selected for one or more positions, no current is applied to the motor in these positions and current is applied to the brake instead.

If no clearance is given for one of the two opening directions, then the barrier is in the home position. The brake is always activated as soon as there is an attempt to move the swing gate out of the home position (see special cases).

On receipt of a clearance impulse for one direction, the barrier is opened in the direction of passage. When it reaches the end-position, the barrier is either held in position by the motor or by activation of the brake (depending on the function selected).

On expiry of the hold-open time, the barrier returns automatically to the home position.

7.4   Special cases

7.4.1   Obstacle detected during a motion

If the gate is stopped during its motion, e.g. by a user who stops, or by a piece of luggage becoming jammed, then, depending on the function selected, one of the following measures will be carried out:

1. There is no reaction.

2. The barrier returns to the initial position and immediately restarts the motion.

3. The barrier continues to press with reduced force and speed.

4. The barrier retracts a short distance, then reverses and runs in the original direction again

7.4.2   Pushing in the wrong direction

If someone attempts to push the barrier in the wrong direction during a motion, the brake is applied immediately. After a pause the brake is released again. The brake will be activated again immediately if the attempt to push the barrier in the wrong direction continues, and so on.

Otherwise, when the brake is released, the gate will continue in the original direction and stop on reaching the end-position.

7.4.3   Attempted vandalism

The barrier is locked in its inactive position. If a force greater than the maximum holding force is applied to the gate, the brake is released and then applied again immediately, and so on. It is thus possible to move the gate in a succession of small steps. If the attempted vandalism is interrupted, the barrier returns to its original end-position.

7.4.4   Emergency situation

If the input IN1 "Emergency" is interrupted during operation, the barrier goes to a safe condition. The power supply is immediately cut off to both the motor and the brake. The control system returns to operation when there is again voltage at input IN1.

8. Program MPS-Diag

Swing Gate MPS 122 is configured in our works so that it can be put into service for applications that require opening through 90° in each direction without further programming.

If functions and parameters have to be changed on site, the optional program MPS-Diag is available.

In addition, you will need a laptop or PC with an RS-232 interface. If the computer does not have an RS-232 interface, a USB/RS-232 converter will also be required.
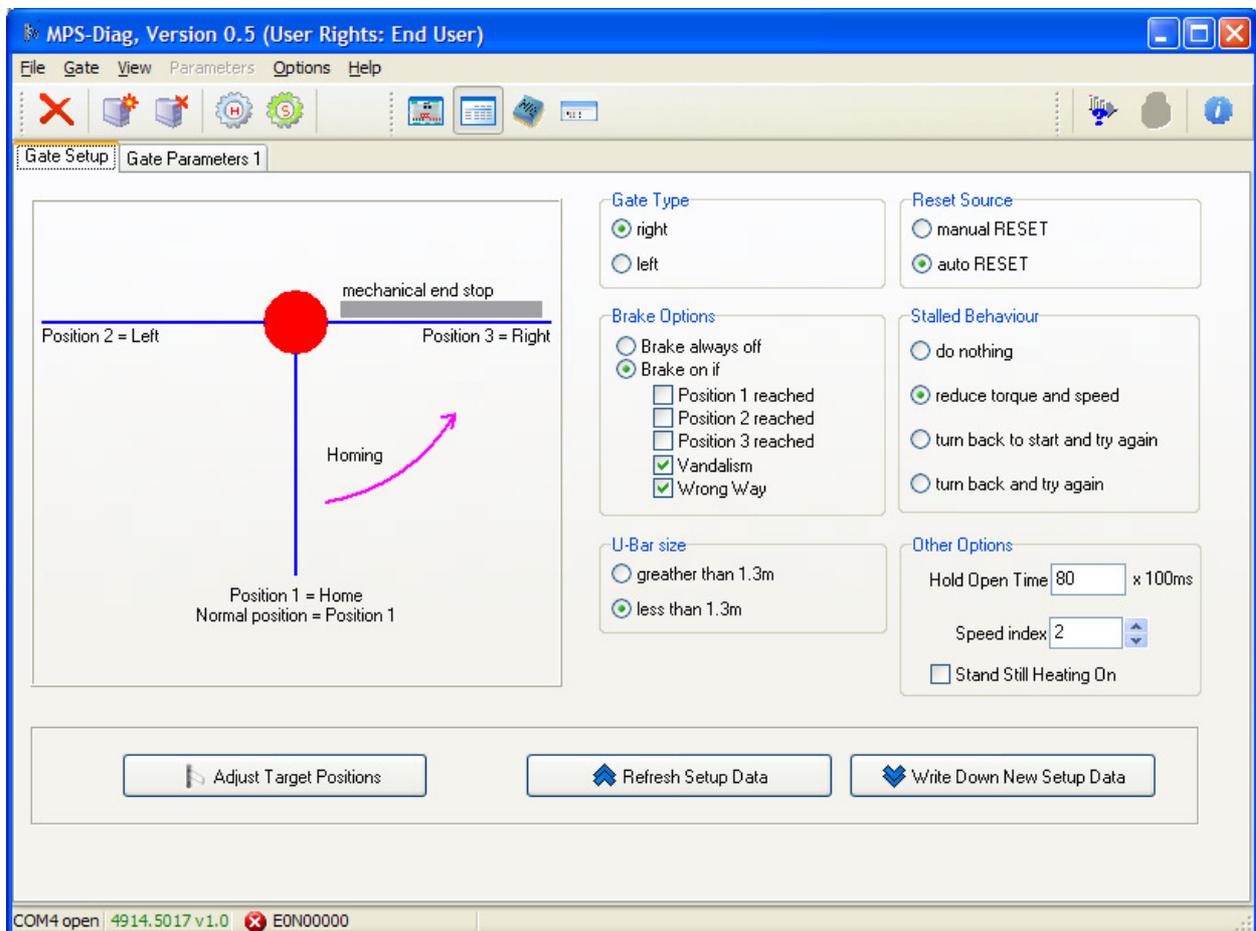
Fig.8.1   Program MPS-Diag

8.1   Connecting a laptop to controller MBC-110

Connect the RS-232 interface on the MBC-110 using a normal DB9 extension cable (all pins connected 1:1, no leads crossed) to the RS-232 interface on your laptop or PC.

If the computer does not have an RS-232 interface, you must use a USB/RS-232 converter. Don't forget to install a driver for the USB/RS-232 converter on your laptop/PC!
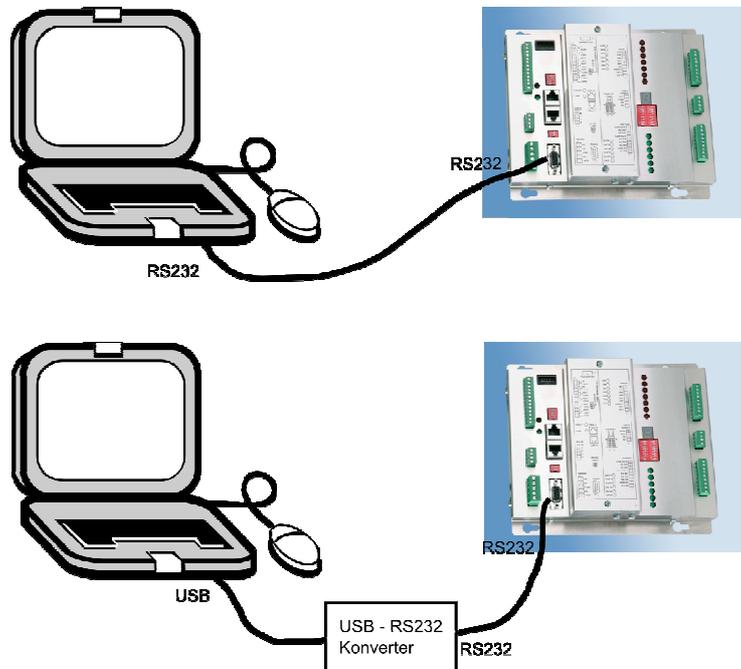
Fig.8.2   Connecting a laptop to the MBC-110

8.2 Using the program MPS-Diag

To use the program MPS-Diag for configuration of a swing gate, you must first install the program on a laptop or PC.

1. To do this, start the program MPS-DiagSetupxxx.exe and follow the instructions in the installation routine.

2. Then start the program MPS-Diag on your laptop or PC.

3. Select the COM port of your computer in the "Options" menu.

8.3 Function and parameter settings

Functions and parameters are set using the Windows program MPS-Diag.

The following functions can be set by the customer:

- Gate type, left / right
- Brake applied / not applied in end-position left / right / home, during vandalism attempts or pushing the barrier in the wrong direction
- Selecting the size of the u-bar
- Reset source
- Behaviour after impact detection
- Hold-open time
- Speed
- Heating activated
- Programming of both end-positions and home position
- Reset all parameters to factory default values

8.3.1 Selection of gate type, left / right

This point informs the control system whether the gate is a left or a right version. On a right gate, the barrier homes against the right mechanical end-stop. On a left gate, the barrier homes against the left mechanical end-stop.
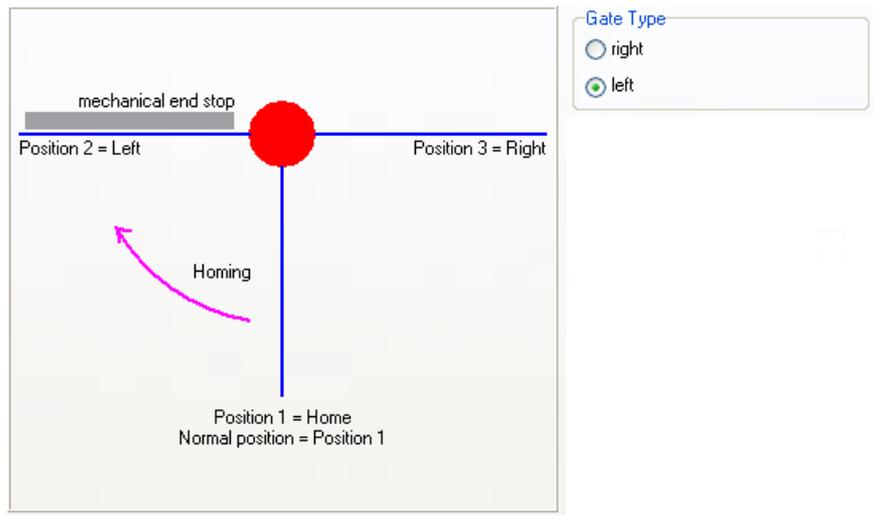
Fig. 8.3 Example: left gate 2 x 90 °
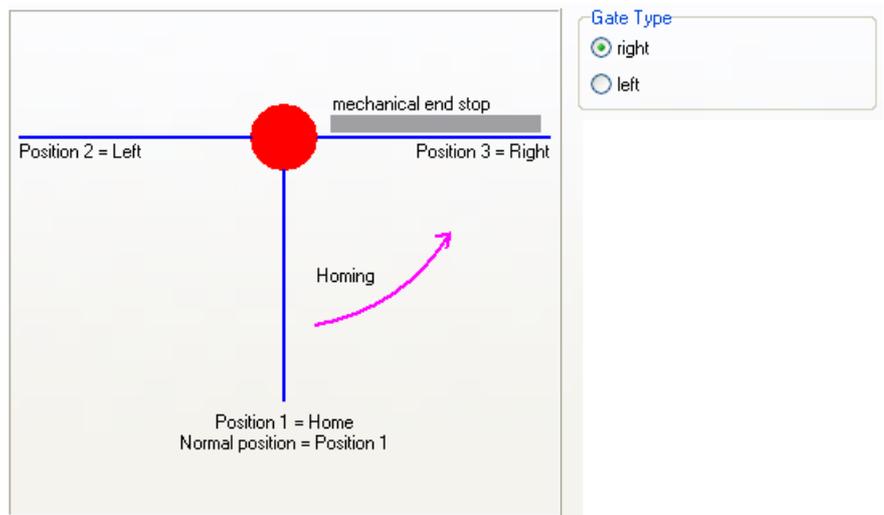
Fig. 8.4 Example: right gate 2 x 90 °

8.3.2 Brake applied / not applied

This point informs the control system whether the brake should be applied in one of the three positions or not, in cases of attempted vandalism or in cases of pushing the barrier in the wrong direction. The system provides for independent setting for each of the five options

Fig. 8.5 Options for brake settings

8.3.3 Size of the barrier (u-bar)

At this point, the width of the barrier must be selected.

Fig. 8.6 Selection of barrier width

8.3.4 Reset source

This point determines whether the control system waits for an impulse at the input "Manual reset" or starts immediately with homing after a power failure.

Fig. 8.7 Selection of reset source

8.3.5 Behaviour when an obstacle is detected

This point determines how the barrier reacts when an obstacle is detected (stalled condition).

1. There is no reaction.

2. The barrier returns to the initial position and immediately restarts the motion.

3. The barrier continues to press with reduced force and speed.

4. The barrier retracts a short distance, then reverses and runs in the original direction again.
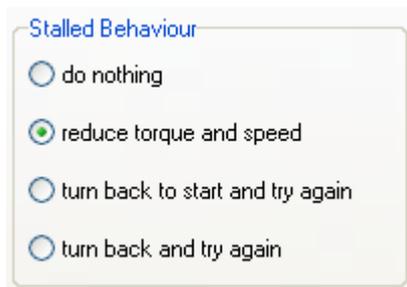
Fig. 8.8: Behaviour when an obstacle is detected (stalled condition)

8.3.6 Hold-open time

At this selection point, the hold-open time can be set between 0 and 25 seconds in steps of 100 ms. An entry of 50, thus, corresponds to 5 seconds.

Fig. 8.9: Setting the hold-open time

8.3.7 Speed

At this selection point, one of three preset speeds (0 = slow / 1 = medium / 2 = fast) can be chosen for normal operation, subject to the condition that the barrier width is less than 1.30 m (see Section 7.2.3).
If the barrier width is more than 1.30 m, only Speed 0 (slow) can be selected.

Fig. 8.10: Setting the speed

8.3.8 Heating active when stationary

This point determines whether the heating is activated when the gate is stationary.
Heating is only required when the barrier is used at ambient temperatures below 0 °C.
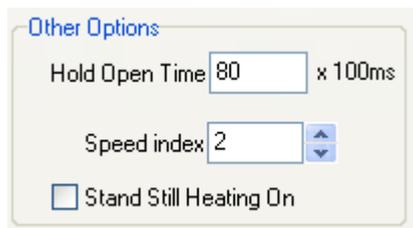
Fig. 8.11: Setting the heating

8.3.9   Teach-in for three possible positions

As standard, the MPS is supplied for 2 x 90° opening. The three positions can, however, be changed independently of each other.
There is an entry screen in MPS-Diag for this purpose.

Fig. 8.12: Calling up the screen for setting target positions

Setting the three target positions is a multi-stage process.
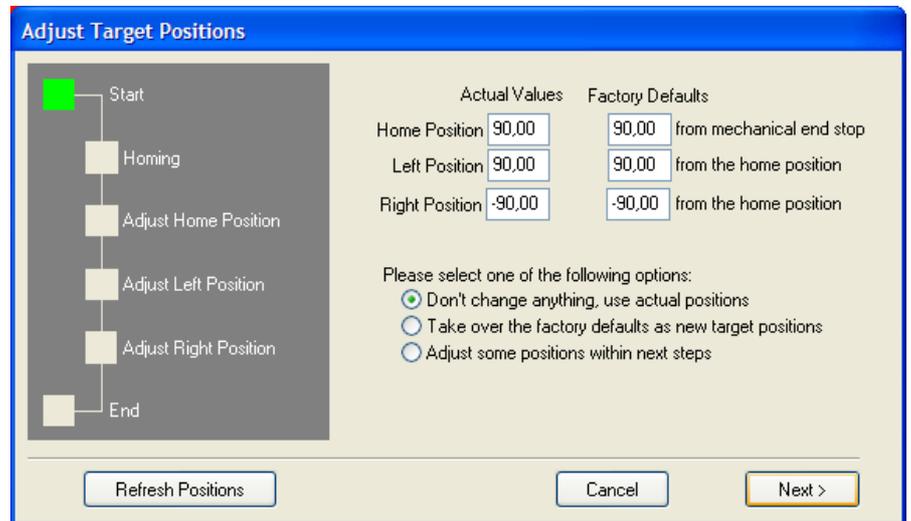
Fig. 8.13: Setting target positions

First, homing must be carried out. To do this, the MBC control system is brought to service mode. Then the three positions can be changed:
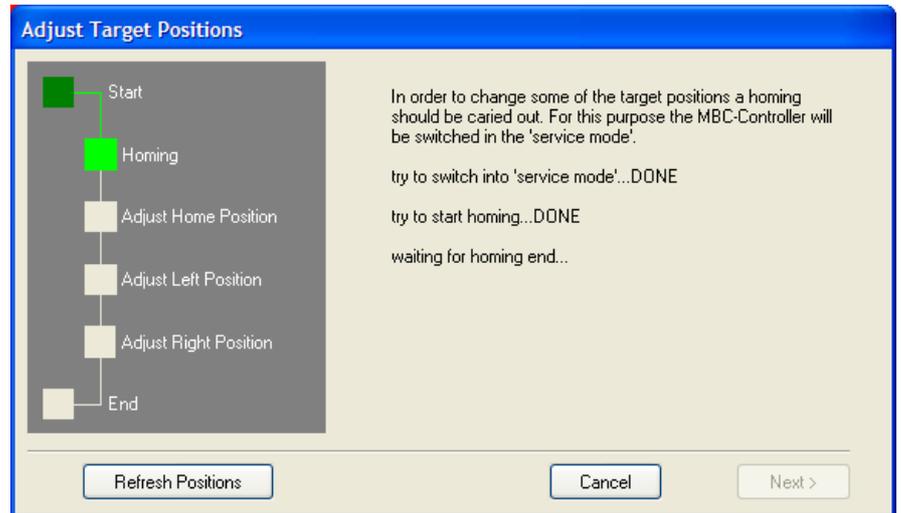
Fig. 8.14: Homing procedure

The home position is the first that can be changed:
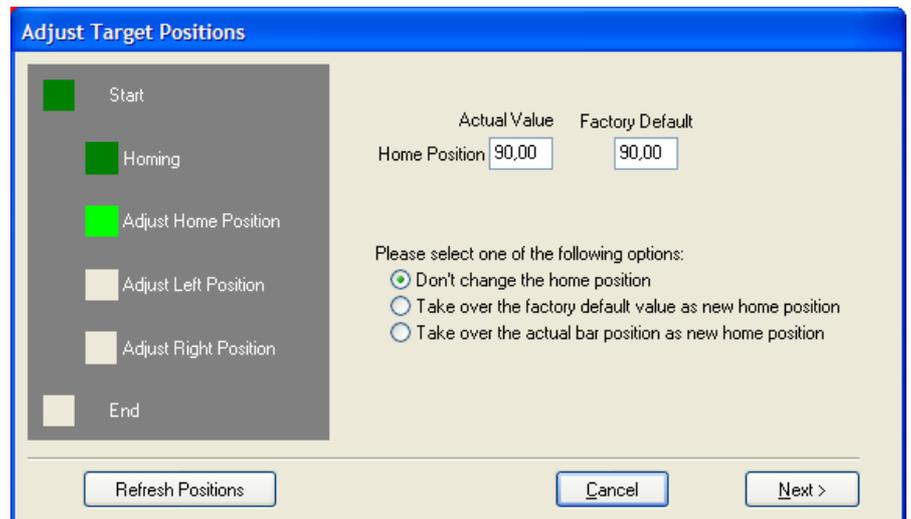
Fig. 8.15: Changing the home position

The left position is the second one that can be changed:
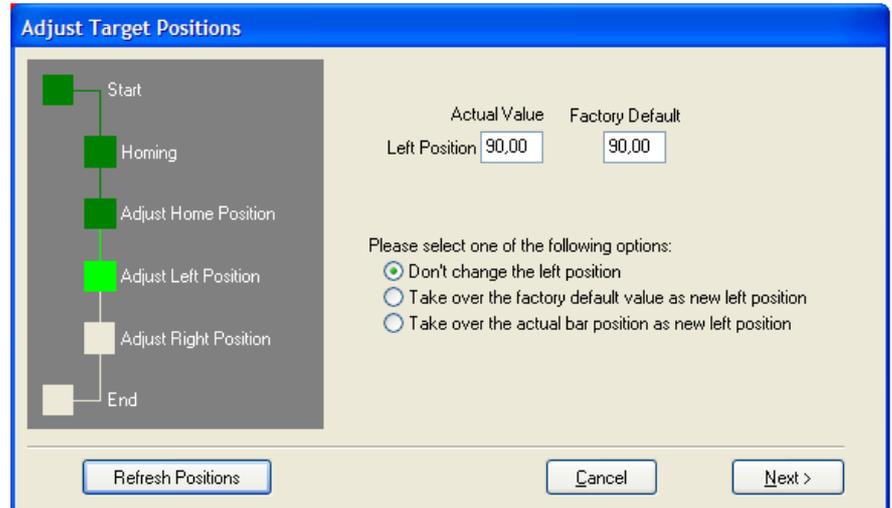
Fig. 8.16: Changing the left position

Thirdly, the right position can be changed:
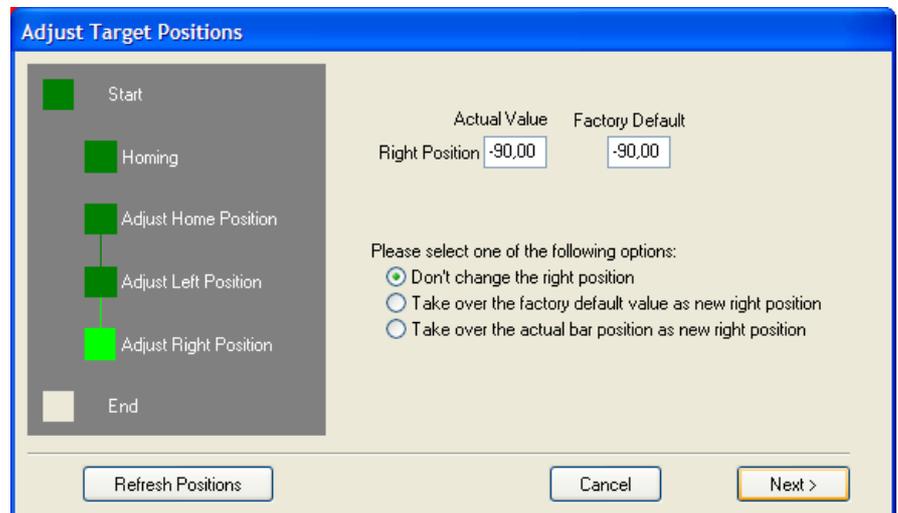
Fig. 8.17: Changing the right position

Finally, confirmation restarts the MBC control system.
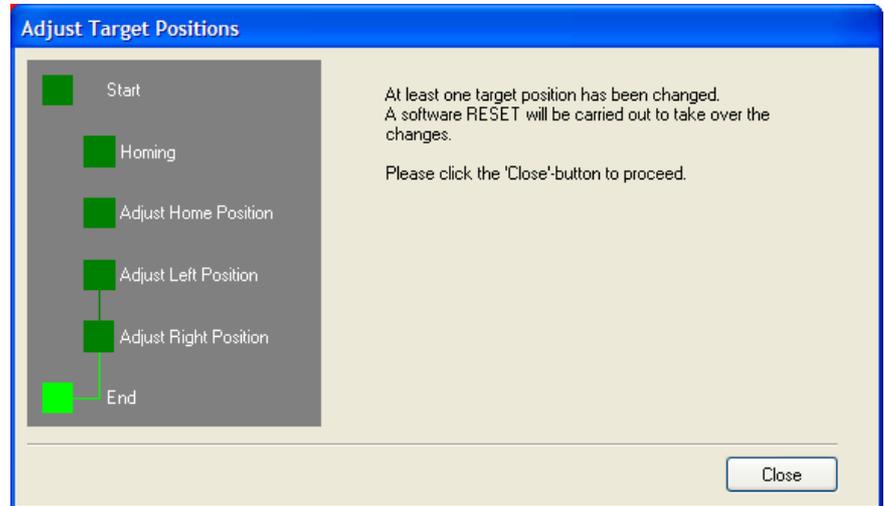
Fig. 8.18: Resetting the MBC control system

8.3.10 Reset all parameters to factory default settings

At this point, all parameters can be reset to their factory default settings.

1. Open the "View" menu and select "Parameters".
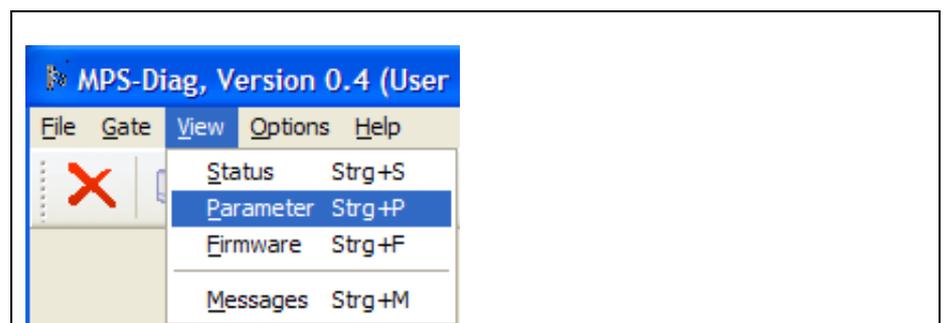
Fig. 8.19 Menu Parameters

2. A new "Parameters" menu will appear in the title bar. Click on this menu and select "Restore all parameters to factory default settings".
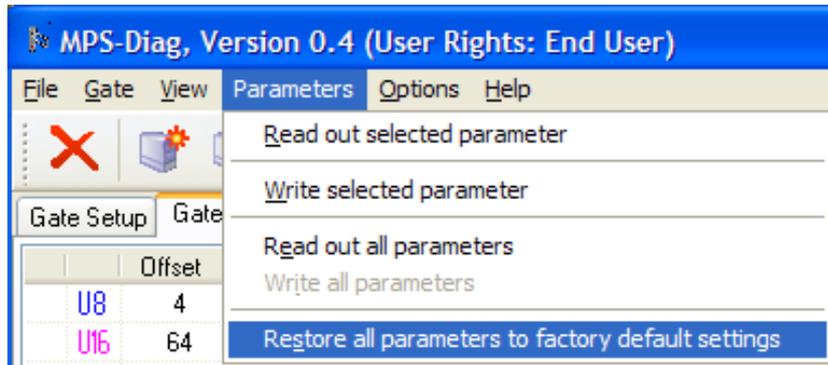
Fig. 8.20 Menu "Restore all parameters to factory default settings"

3. This is followed by a security prompt to prevent it being done unintentionally.
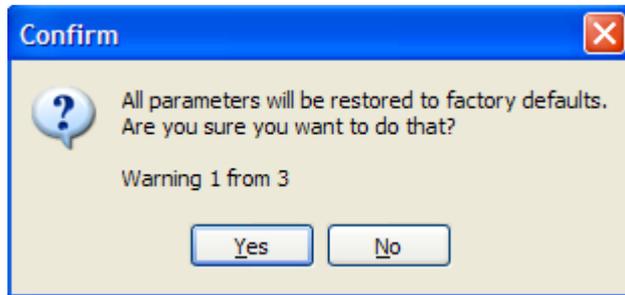
Fig. 8.21 Menu "Confirm"

By clicking on "Yes", all parameters will be returned to their factory default settings. By clicking on "No", the procedure is cancelled.

8.4 Downloading between MBC-110 and MMC-120

Every time the MBC-110B is booted after power has been cut off, a software check is carried out between the MBC-110 and the connected MMC-120 servo-controller. This checks that the servo-controller has the correct software and also that the correct version, which corresponds to the MBC-110 application software, is loaded

If it is detected that the servo-controller has the wrong software or the wrong version, then the correct software will be automatically downloaded from the MBC-110 to the MMC-120.

The software can, however, be loaded manually from the MBC-110 to the MMC-120 using the Windows program MPS-Diag.
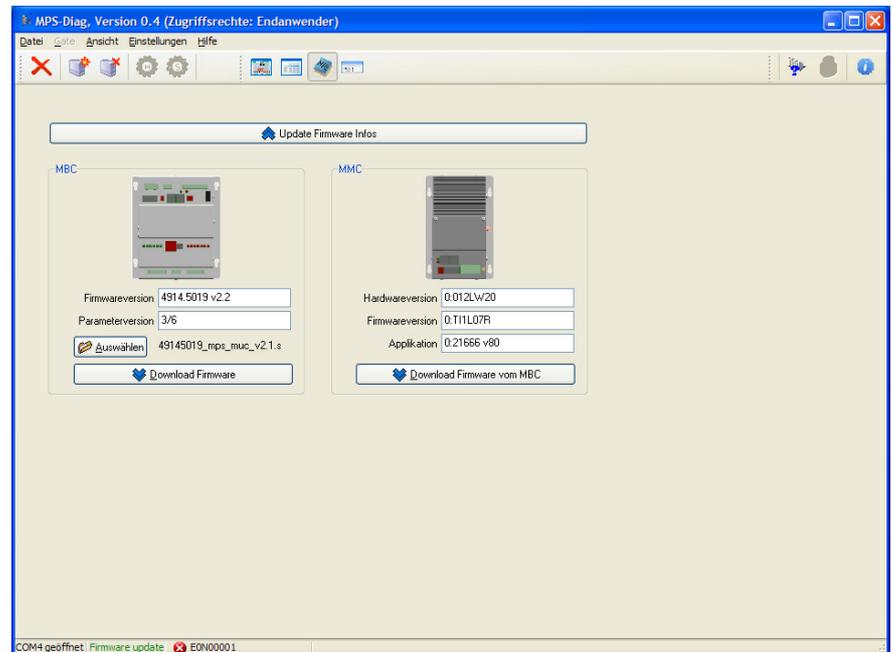
Fig.8.22 Programming using the program MPS-Diag

8.5 Reading out errors

Error codes on the MBC-110 and MMC-120 can only be read directly after removing the outer tube and the barrier. The program MPS-Diag offers the possibility of reading errors from the MBC-110 and MMC-120 controllers through the serial interface.
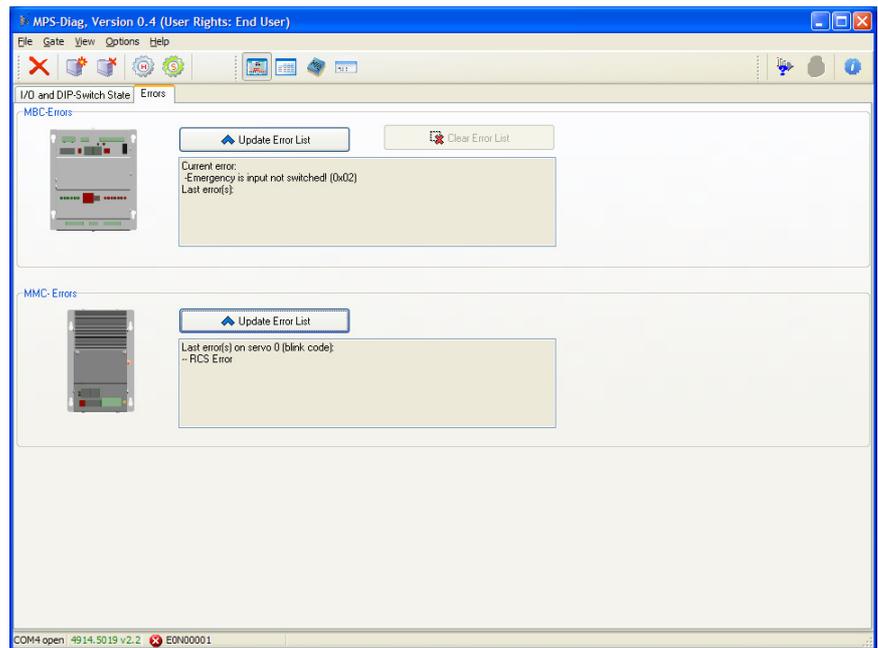
Fig. 8.23 Reading error codes from MBC-110 and MMC-120

8.6 Status interrogation

The status of the inputs, outputs and DIP switches can only be read directly on the MBC-110 after removing the outer tube and the barrier. The program MPS-Diag therefore allows you to read the status of the inputs, outputs, and DIP switches via the serial interface.

IMPORTANT NOTE!

The status of the DIP switches for setting the CAN bus parameters and those of the RS485-/422 interface cannot be read using MPS-Diag. This is only possible directly on the controllers. It is therefore essential to check these settings before assembling the MPS!
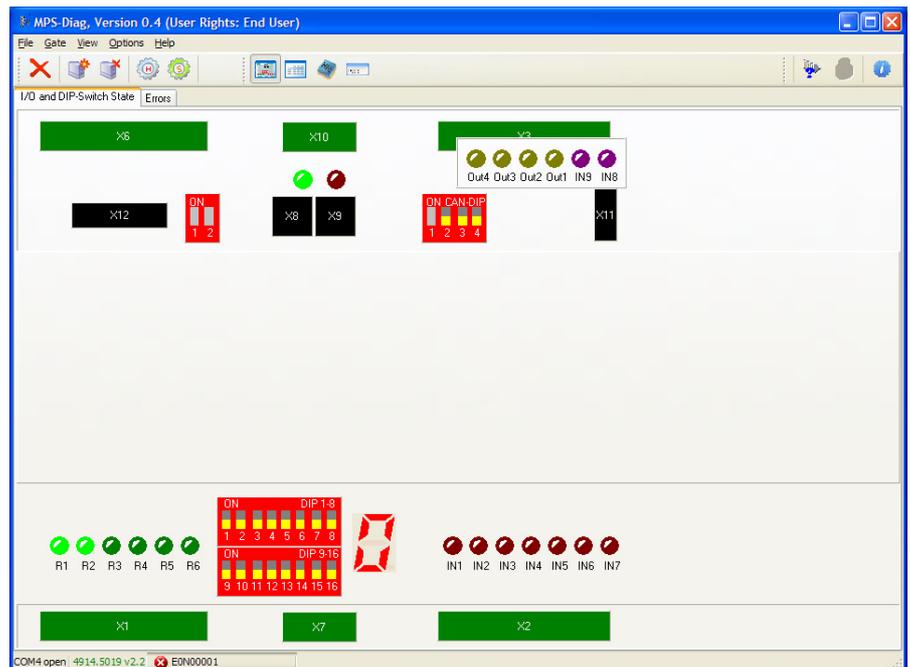
Fig. 8.24 Reading the status of the inputs, outputs and DIP switches

9. Technical support

If a fault occurs during operation that cannot be rectified by a qualified electrician, contact your authorised contractual partner.

IMPORTANT NOTE!

Before making a telephone call, please note the data on the type plate, such as type, serial number, version etc.

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10. Spare parts and accessories

Exploded drawings with details of spare parts and their part numbers will be supplied on request.

11. Guarantee

The manufacturer reserves the right to make technical changes and modifications without prior notice.

Subject to the condition that the operating instructions are observed, and that no inadmissible operations are carried out on the technical equipment, and that the installation has suffered no mechanical damage, MAGNETIC provides the following guarantee on all mechanical and electrical components:

- 3 years after delivery
- 2 years after commissioning

12.   Taking out of service

RECYCLING!

The relevant regional regulations and laws covering the disposal of substances, materials, and machine parts must be observed. Materials that can be recycled must be handed over to specialised disposal partners.

In the interests of a clean environment, you must ensure the responsible handling, use and disposal of all materials.

Packaging material

When the barrier and its accessories have been unpacked, the packaging materials must be sorted and separated for disposal.

Barrier

When disposing of a barrier or parts of a barrier, the materials must be sorted and recycled separately.

Electrical and electronic components

The materials used in electrical and electronic components must be disposed of separately. They may contain plastics and toxic substances.

IMPORTANT NOTE!

To ensure proper disposal of electrical and electronic components, you can consult MAGNETIC or a competent electrician.

Lubricants and auxiliary substances

Lubricants and auxiliary substances (e.g. oils, greases etc.) must be properly stored and must not be allowed to enter the environment in an uncontrolled fashion.

CAUTION!

It is forbidden to dispose of combustible or inflammable materials together with normal rubbish.

13. Appendix

13.1 Schematic diagrams

The schematic diagrams are supplied as a separate document.

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