

Operation and Installation Instruction Retractable Flap Barrier Model MPR 112



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1. Delivery

1.1 Scope of delivery

- 1 x Retractable barrier (quantity and models depend on lane layout)
- 4 x Mounting hardware
- 2 x Keys
- 1 x Documentation

1.2 Technical data

TECHNICAL DATA	Dimens. unit	MODEL		
		MPR-112A/B-A2X0	MPR-112A/B-A3X1	MPR-112A/B-A2X2
Voltage	VAC	115-240	115-240	115-240
Frequency	Hz	50-60	50-60	50-60
Gate open power consumption / current	W / A	40 / 0,3	35 / 0,3	80 / 0,47
Gate closed power consumption / current	W / A	45 / 0,3	35 / 0,3	117 / 0,7
Max. peak in operation (30 ms)	W / A	140 / 0,85	140 / 0,85	654 / 3,4
Duty Cycle	%	100	100	100
Protection class	IP	32	32	32
Opening time	ms	400	300 ³	600
Closing time	ms	400	300 ⁴	600
Length	mm	1300	1300	1300
Width	mm	200	250	280
Hight	mm	1035	1035	1035
³ Acrylic-flap	ms	-	350	-
⁴ Acrylic-flap	ms	-	350	-

The data given in the table can deviate due to technical changes! All current values refer to a mains voltage of 240 V.

1.3 Code table

M P R - 1 1 2 A - A 1 0 0 - XXXXX

Options

Customer or project code

Housing

- 0 = Narrow (200mm) passage 520 / 50mm gap
- 1 = Middle (250mm) passage 520 / 50mm gap
- 2 = Wide (280mm) passage 960 / 50mm gap
- 3 = Narrow (200mm) passage 550 / 50mm gap
- 4 = Narrow (200mm) passage 600 / 50mm gap
- 5 = Wide (280mm) passage 900 / 50mm gap

Material

- 0 = powder coated
- 1 = s/s 304 polish no 4
- 2 = s/s 316 L polish no 4
- 3 = s/s 430 polish no 4

Flap

- 1 = Soft-Flap single (only housing width 250mm)
- 2 = Soft-Flap telescopic
- 3 = Acrylic -flap single (only housing width 250mm)
- 4 = Soft-flap single to soft-flap telescopic
- 5 = Acrylic-flap single to soft-flap telescopic
- 6 = Telescopic to Telescopic

Voltage

- A = 230V 50Hz
- C = 115V 60Hz

Module

- A = End module left**
- B = End module right**
- C = Center module right**
- D = Center module left**
- E = Change over module right pass. 520/960mm**
- F = Change over module left pass. 520/960mm**
- G = Change over module right pass. 520/900mm
- H = Change over module left pass. 520/900mm
- I = Change over module right pass. 550/960mm
- K = Change over module left pass. 550/960mm
- L = Change over module right pass. 550/900mm
- M = Change over module left pass. 550/900mm
- N = Change over module right pass. 600/960mm
- O = Change over module left pass. 600/960mm
- P = Change over module right pass. 600/900mm
- Q = Change over module left pass. 600/900mm

Type

- 2 = Standard motor
- 4 = different drive system

Size

- 1 = Short barrier
- 2 = Long barrier

Generation

Product type

R = Retractable barrier

Product group

P = Pedestrian

Product classification

M = Magnetic product

1.4 Lane configuration

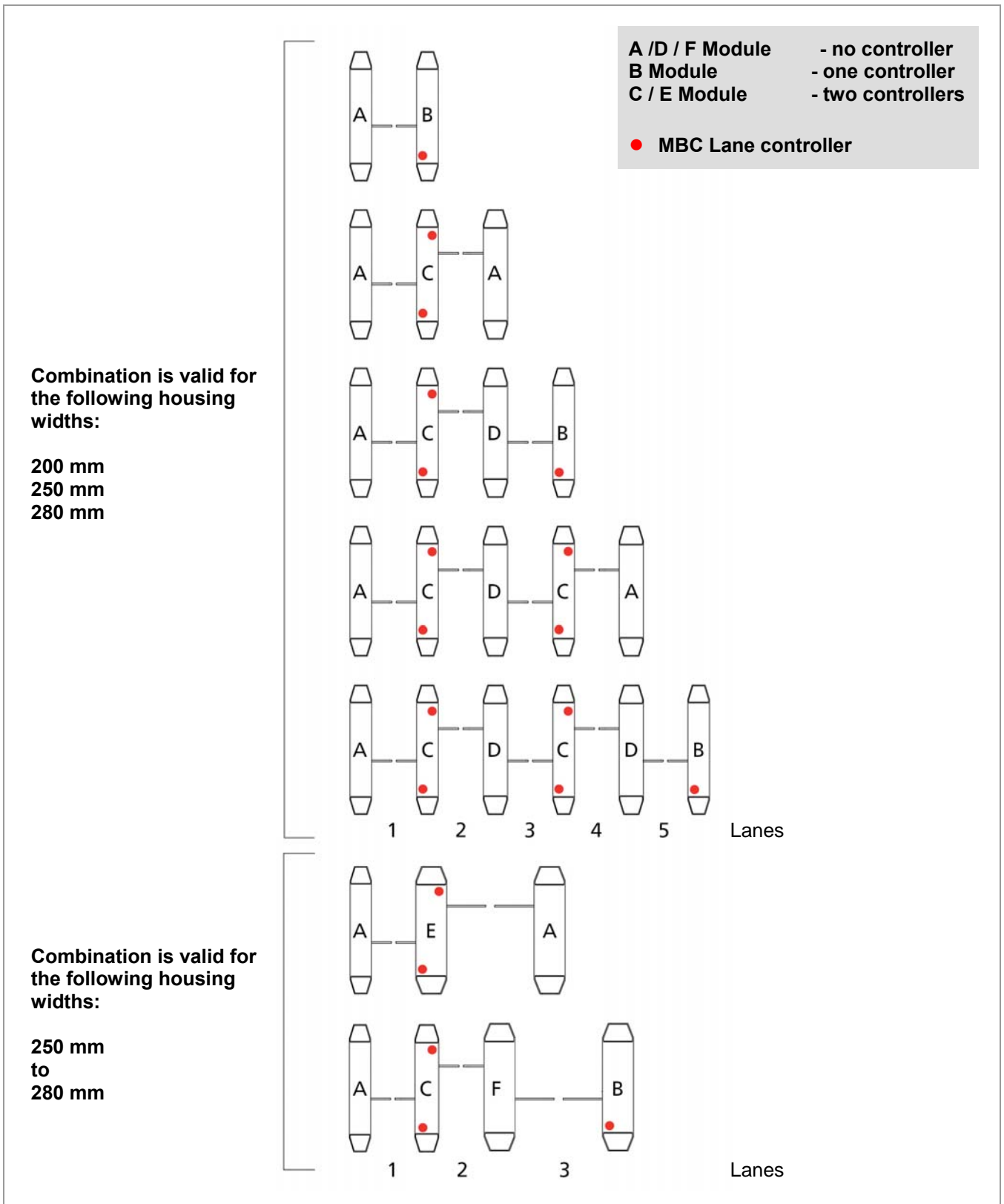


Fig. 1-1 Lane configuration

2. Safety

2.1 General safety notes

The MPR (**M**AGNETIC **P**edestrian **R**etractable Barrier) has been designed, built, and tested according to the latest available technology. The product has left the factory in a fully operational and safe condition. However, it is imperative that the installation is carried out in accordance to this operating manual. Therefore, it is vital to read this operating manual in full before starting the installation and that all the safety notes and remarks are being observed.

Any liability and warranty is declined by the manufacturer in the case of incorrect use and use for purposes other than intended by the design.

2.2 Intended use

The Magnetic pedestrian retractable MPR shall only be used to control pedestrians entering or exiting restricted areas.

The Magnetic Universal Controller MBC and MMC shall only be used for controlling the Magnetic pedestrian retractable MPR. Any other use is not permitted.

Conversions and modifications to the retractable or to the control modules are not permitted.

Only original spare parts and accessories from Magnetic shall be used.



NOTE!

MAGNETIC is not responsible for any kind of damages, injuries and other faults resulting from non-observance of the intended use described in this chapter!

2.3 Warnings and symbols used in this manual

The following symbols and references are used in this manual to give instructions and warnings (cautions) of particular importance. These must always be strictly observed!

Purchased components may have additional specific warnings that also need to be strictly observed.



WARNING!

This Symbol indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

The description of the situation is followed by measures of avoidance.

Please read and observe the given instructions very carefully.



CAUTION!

This Symbol indicates a potentially hazardous situation which, if not avoided, could result in property damages and material destruction.

The description of the situation is followed by measures of avoidance.

Please read and observe the given instructions very carefully.



NOTE!

The symbol “note” is used in case of an operating procedure or condition which is essential and, therefore, noted to gain special attention.

In addition the symbol indicates a potentially situation which, if not avoided, may result in an undesirable result or state.



RECYCLING!

When disposing of the unit at the end of utilisation ensure those noxious and dangerous residues are disposed of in accordance with the regulations. Based on the different material, disposal must occur in a separate manner.

The used lubrication and auxiliary material such as oils and fats will be disposed of in accordance with the statutory provisions.

2.4 Safety notes

- Disconnect all external opening or closing devices (remote control, control desk, etc.) during maintenance work.
- Do not operate the equipment without effective anchoring to the foundation.
- A main supply power circuit breaker must be installed.
- This operating manual and any other additional information must be kept in a, for all authorized person, accessible location.
- Before commissioning make sure all electrical and functional features are tested.
- The electrical wiring must comply with these instructions.
- Only certified and trained electrical technicians shall perform any electrical work.
- Before any maintenance or troubleshooting work the main power supply must be disconnected.
- Electrical voltage components like transformers, solenoids, resistors, and stator housings of motors, lamps etc. may be hot during and after operation. Do not touch such components; it can cause skin burns.

3. Product Description

3.1 General

The MPR retractable barrier is a user friendly access control barrier designed for rapid pedestrian entrance and exits to and from train stations, corporate receptions, airport terminals, immigration facilities, sports stadiums, etc.

The modular design allows a multitude of different lane and design configurations. The drive unit consists of our patented MHTM™ Direct Drive (MHTM=Magnetic High Torque Motor) which has been designed to provide high reliability and maintenance free operation. The patented MHTM™ Direct Drive technology in combination with a unique Sinusoidal lever system provides a high duty cycle.

The patented MHTM™ Direct Drive technology does not require gears or clutches of any kind resulting into a maintenance free operation.

In the event of a power failure, the flaps can close automatically by spring tension.

The barrier can be operated in Bi- Directional mode.

3.2 Drive unit

The MHTM™ direct drive system does not require any gears or clutches. Therefore the motor is not subject to wear and tear and does not require any greasing or oiling. The MHTM™ motor is maintenance free.

The drive system does not have any backlash. The motor has an extremely low mass resulting in low impact forces even with the fastest opening and closing times. The low noise level amounts approximately 40 dB.

The motor sensor controls each movement precisely allowing an exact positioning of the flaps and optimum acceleration and deceleration phases.

3.3 Static stability test

To show the stability of the wing into the mounted housing, Magnetic made a few different tests, to demonstrate and determine the stability of the wing.

- Static test
- Impact Pendulum test
- Dynamic front Impact test

3.3.1 Static test

The simulation shows the stability of the wing for static acting forces, as shown into the pictures below. The Linear Actuator increased the force until the wing has been irreversibly deformed.

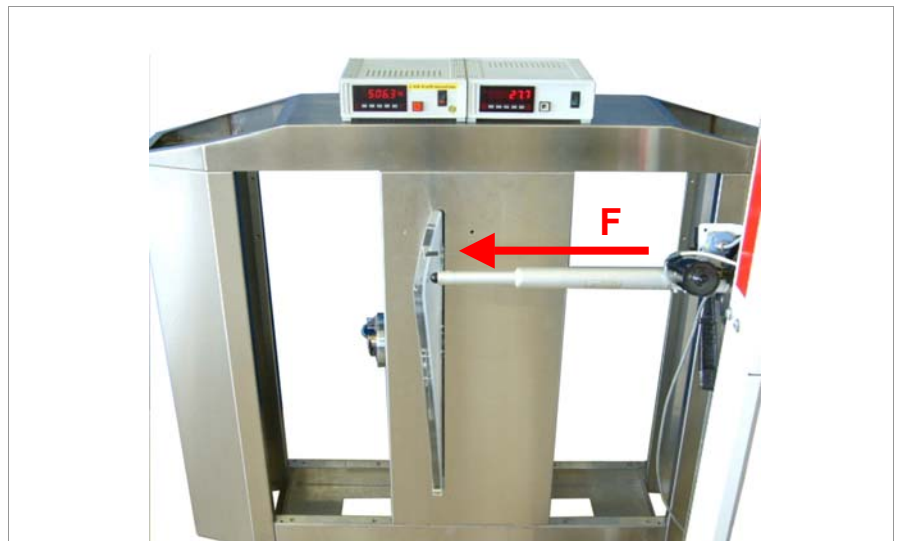


Fig. 3-1 Static test, figure shows a deformation of 27 mm at static force of 500 N



NOTE!

After withdrawing the static force the wing returned back into its original position! Above 500 N force irreversible deformations can occur!

3.3.2 Impact pendulum test

With the Pendulum test we simulate a dynamic side impact. This can occur in case of vandalism. (kick against the wing)

For testing, the pendulum was loaded with different weights at its end. Further the pendulum was positioned in exact horizontal position (90°) and has been dropped down. So the bar falls down by its self-weight and hits the wing on a defined point. Afterwards the same test has been made from the other side with exact the same conditions (weight, length of bar etc.)



Fig. 3-2 Pendulum impact test; experimental setup with pendulum and weights

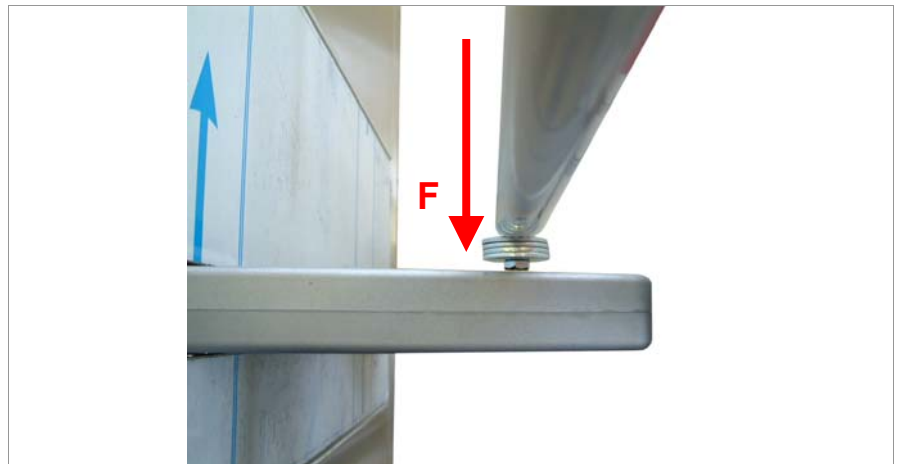


Fig. 3-3 Detail pendulum impact test; figure shows a deformation of 0.5 mm at an impact force of 1000 N

3.3.3 Dynamic front impact test

This test demonstrates the dynamic impact force of the wing during operation (closing).

The tests are determined according to the gate standard DIN EN 12453 with the prescribed measuring instrument .

The test was made in three different positions (nearly completely driven out, approx. half driven out and little driven out). The automatic reversing mechanism has been activated during the tests

The closing times of the individual wing types (PUR, Acrylic, Telescopic 280 mm and telescopic 200 mm) have been adapted in such a way, that the collision force amounts to a max. value of 400 N

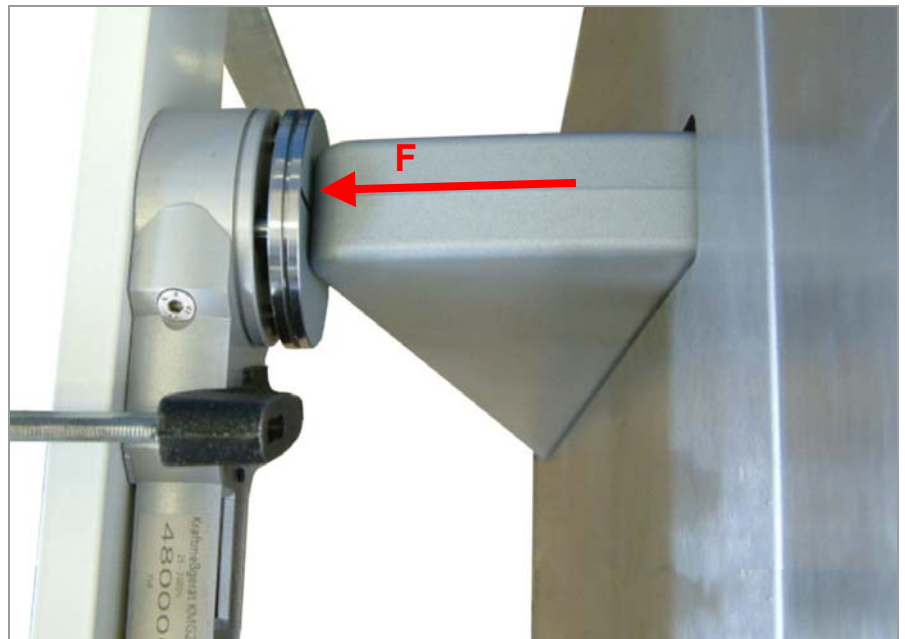


Fig. 3-4 Dynamic test; impact force of wing at status 1/2 extended on the load cell (soft flap shown)

3.3.4 Overview closing times

Housing type	Wing material	Speed
250	Acrylic-wing	approx. 350 ms
250	PUR- wing	approx. 300 ms
280	Telescopic	approx. 600 ms
200	Telescopic	approx. 400 ms

3.4 Housings and lane widths

900 mm
for us also

The MPR is offered in three different housings and lane widths with different types of flaps and flap materials. The available housing widths are 200 mm, 250 mm and 280 mm. The standard lane widths are 520 mm or 960 mm respectively 990 mm (depending on the distance between the flaps 50 or 80 mm).

We also offer custom lane and housing widths. Please contact MAGNETIC if you require custom measurements.

For housings and lane widths refer to Fig. .

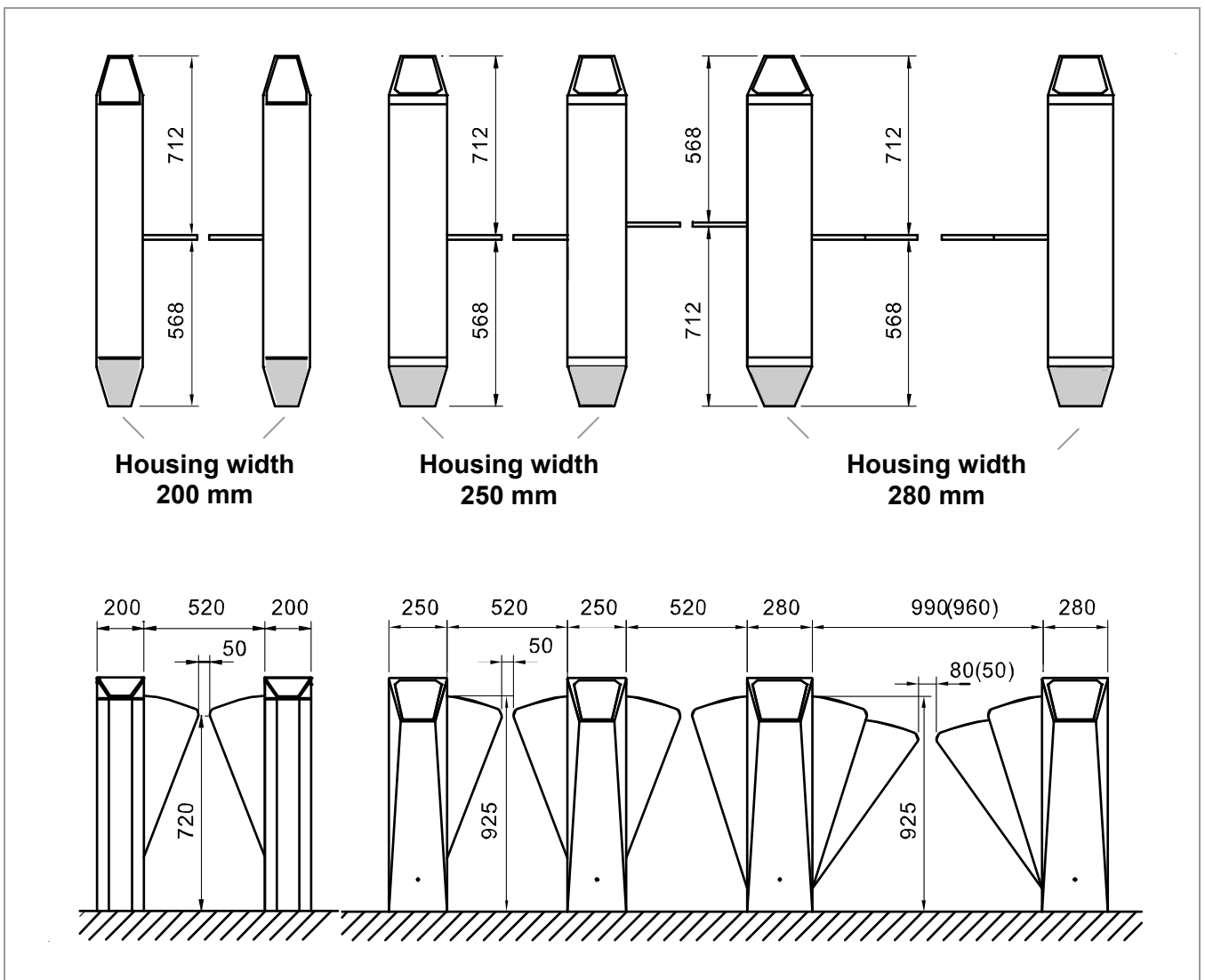


Fig. 3-5 Example installation, available standard housing widths

Definition of passage (DG):



Note!

The passage width (DG) is calculated as follows:

$$DG = (2 \times \text{extended flap width}) + (50 \text{ mm flap gap})$$

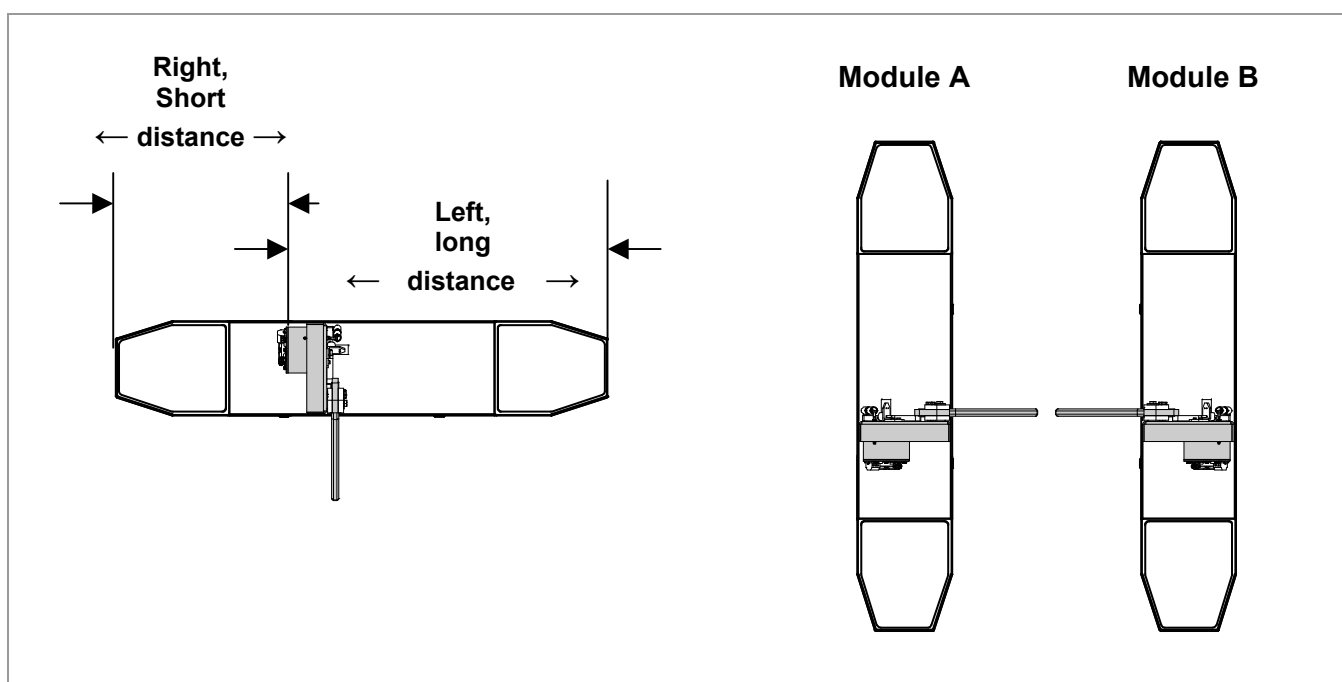


Fig. 3-6 Definition of direction right/left



NOTE!

“Right “and “Left “are defined by the positioning of the Motor to the shorter housing side.

According to the position of the Motor to the flap the designation of the passage “entrance right “or “entrance left “ results.

4. Mounting and installation

4.1 Foundation

The mounting surface of the concrete-foundation must be level to insure a solid base for the MPR. Once the concrete has set to an adequate hardness, the holes for the anchor bolts can be drilled using the dimensions shown in Fig. 4-1.

For installation of the conduit pipes refer to the piping plan and electric schematic. Additional cabling for access control and or other peripheral equipment is the installer's responsibility. Conduit pipes (with different diameters for low and high voltage cables as per Electrical code) must be installed to run the main power supply cable and the control cables. Please make sure that the cabling is long enough to reach the connection points.

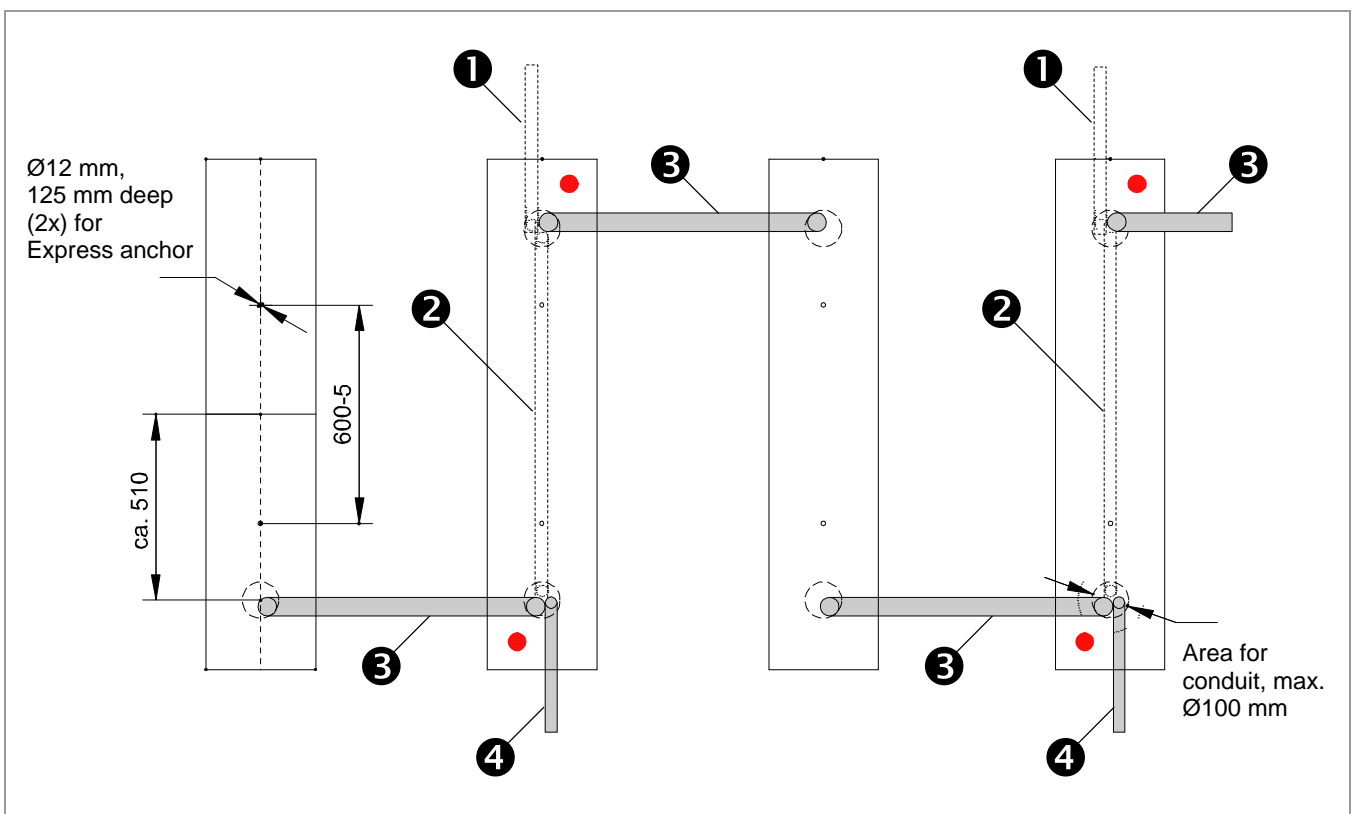


Fig. 4-1 Foundation and conduit plan

- 1 – Alternative external electric supply, PG21 (28 mm)
- 2 – Conduit for alternative electric supply, internal electric supply, PG21 (28 mm)
- 3 – Ductwork control line, PG36 (42 mm)
- 4 – Conduit electric supply external, PG21 (28 mm)

Mounting and installation

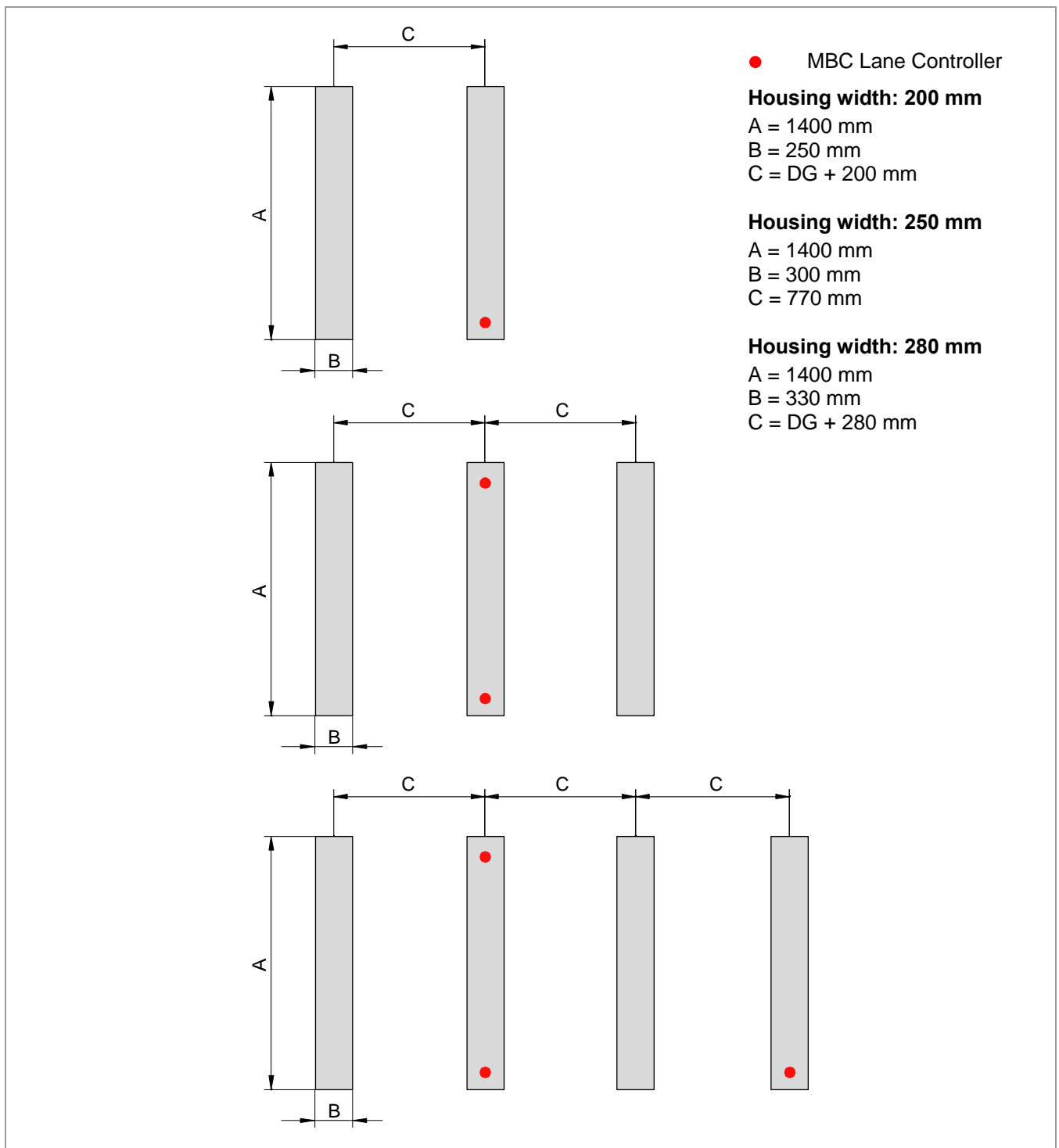


Fig. 4-2 Foundation plan, housing arrangement with MBC Controllers

For the definition of „Passage“ (DG), refer to description on page 16.

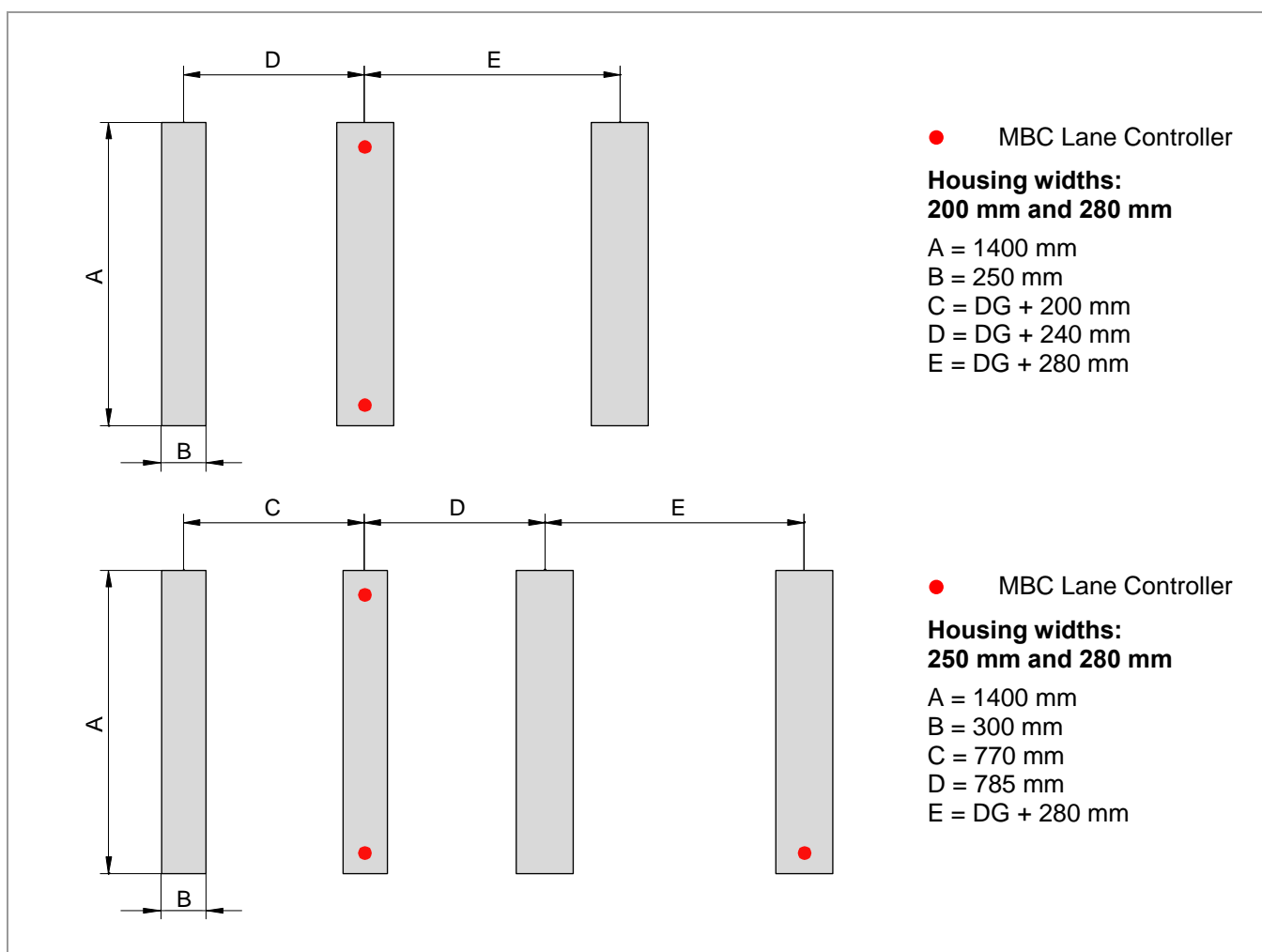


Fig. 4-3 Foundation plan, arrangement with different housing and passage widths

For the definition of „Passage“ (DG), refer to description on page 16.



NOTE!

When arranging further MPR units the same systematic applies as described in Fig. 4-1 to Fig. 4-3.

4.2 Access Doors

The motor as well as the drive- and control units are located behind the hinged housing doors.

Access is granted to authorized people by using the key supplied with the retractable barrier.

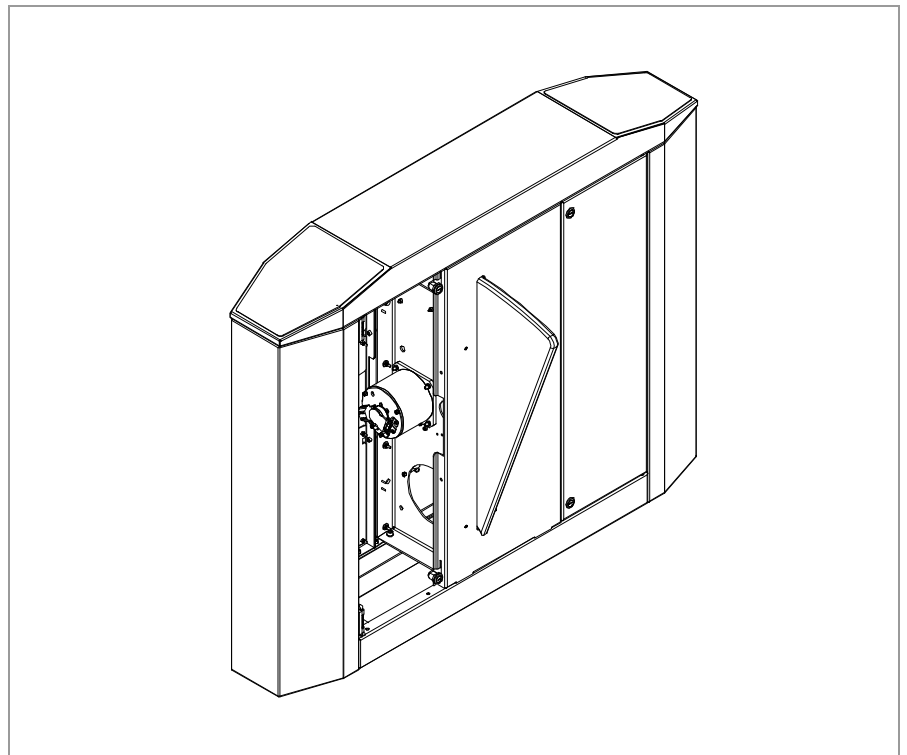


Fig. 4-4 Access to drive unit and controller

4.3 Mounting

Please follow the schematic Fig. 4-5 for proper installation. Please make use of the mounting hardware included in the delivery.

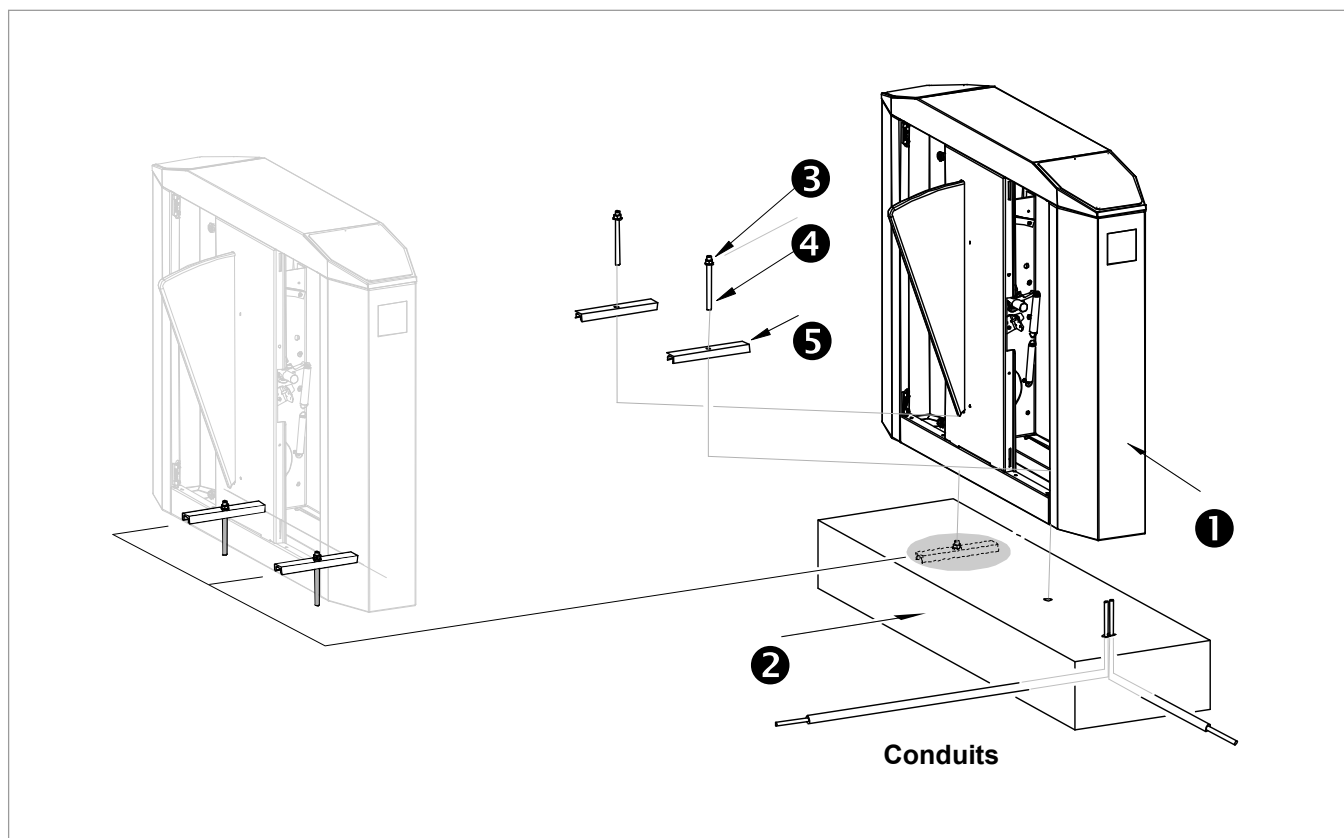


Fig. 4-5 MPR mounting with U-profile

- 1 – MPR housing
- 2 – concrete fundament
- 3 – nut, split washer, plain washer
- 4 – masonry anchor
- 5 – U-profile

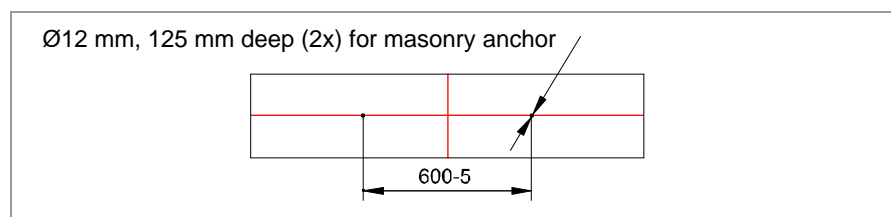


Fig. 4-6 Holes for masonry anchor (vertical and horizontal in middle)

5. Electrical Connection

5.1 Overview



CAUTION!

The connection of the electrical mains may be accomplished only by an electrical specialist!

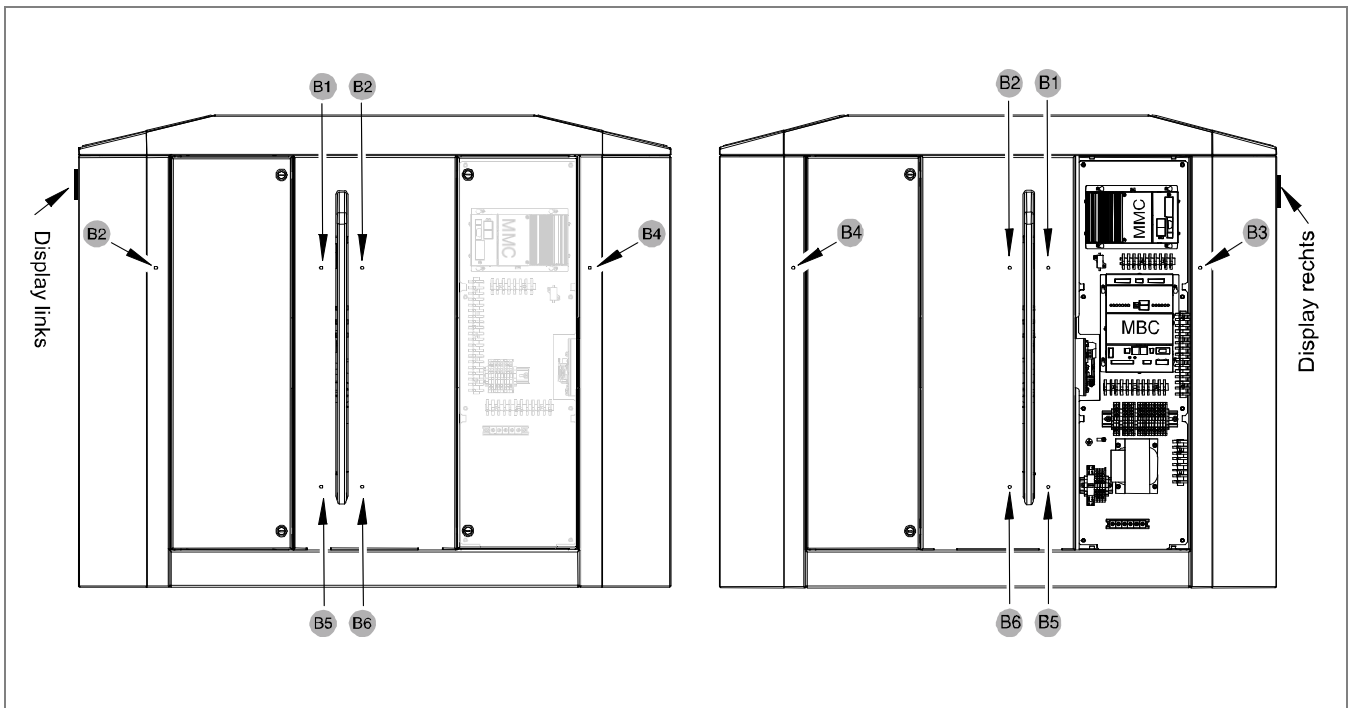


Fig. 5-1 Electrical Connection

B1 = safety PE-beam right

B2 = safety PE-beam left

B3 = outside right

B4 = outside left

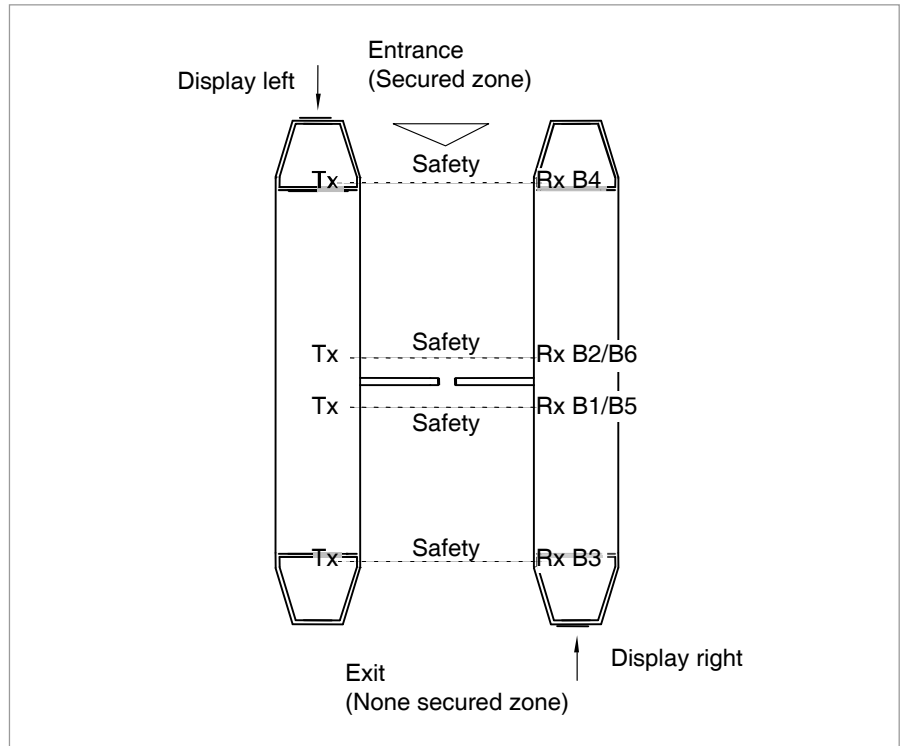


Fig. 5-2 Electrical Connection, top view

5.2 Wiring diagrams

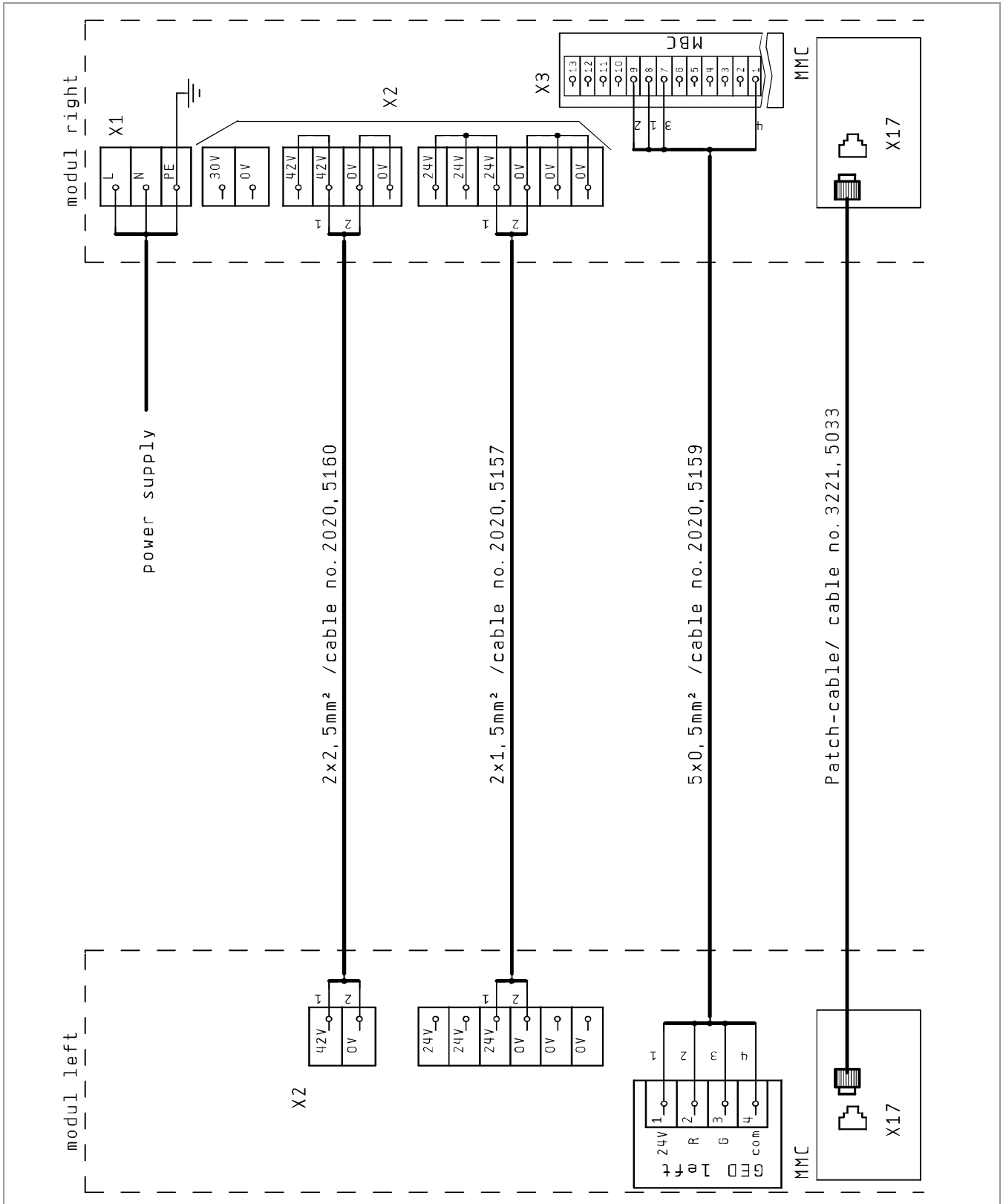


Fig. 5-3 Wiring diagram 1

Electrical Connection

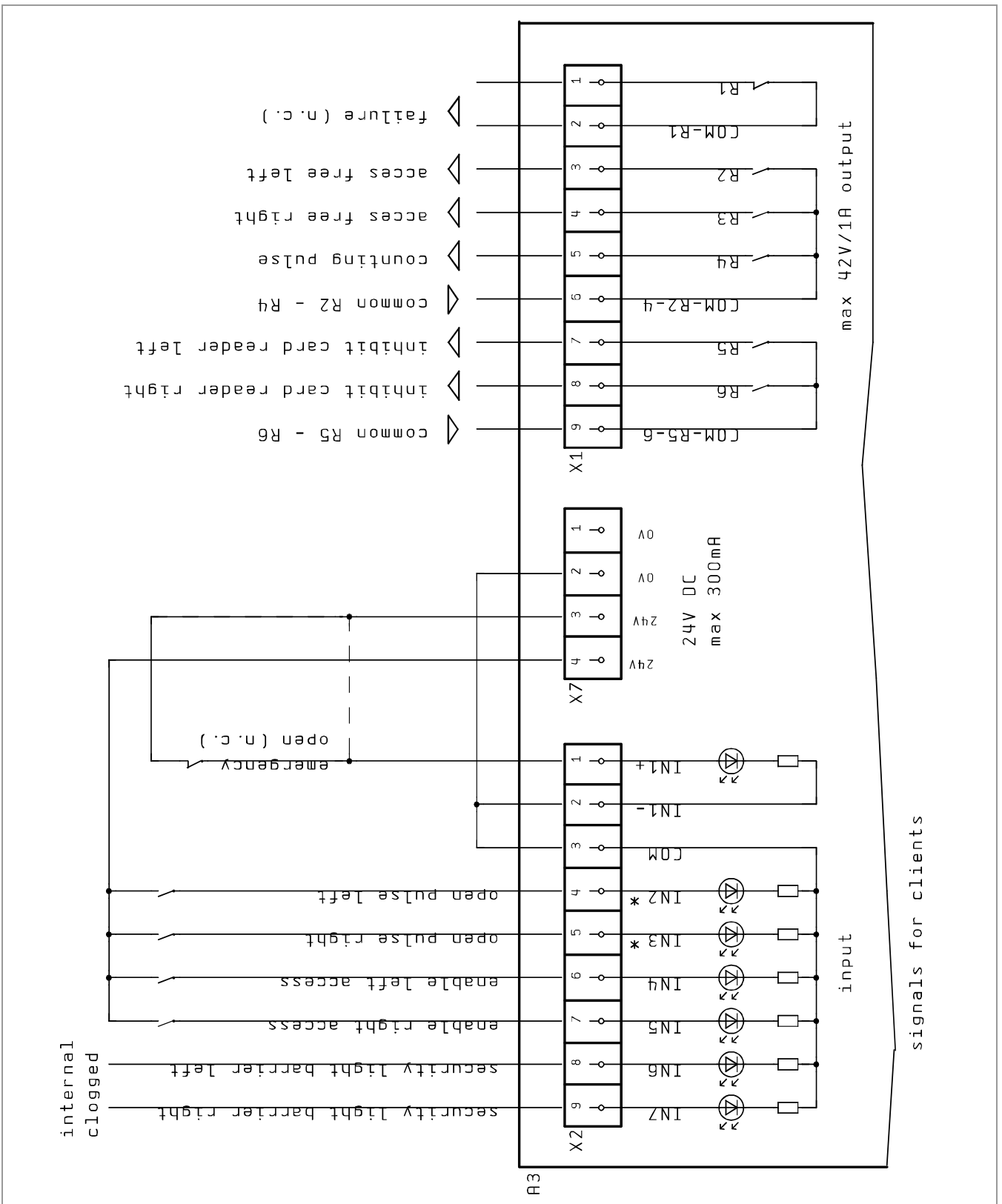


Fig. 5-4 Wiring diagram 2

6. Access Control Devices

When installing access control devices the following measures for mounting has to be considered.

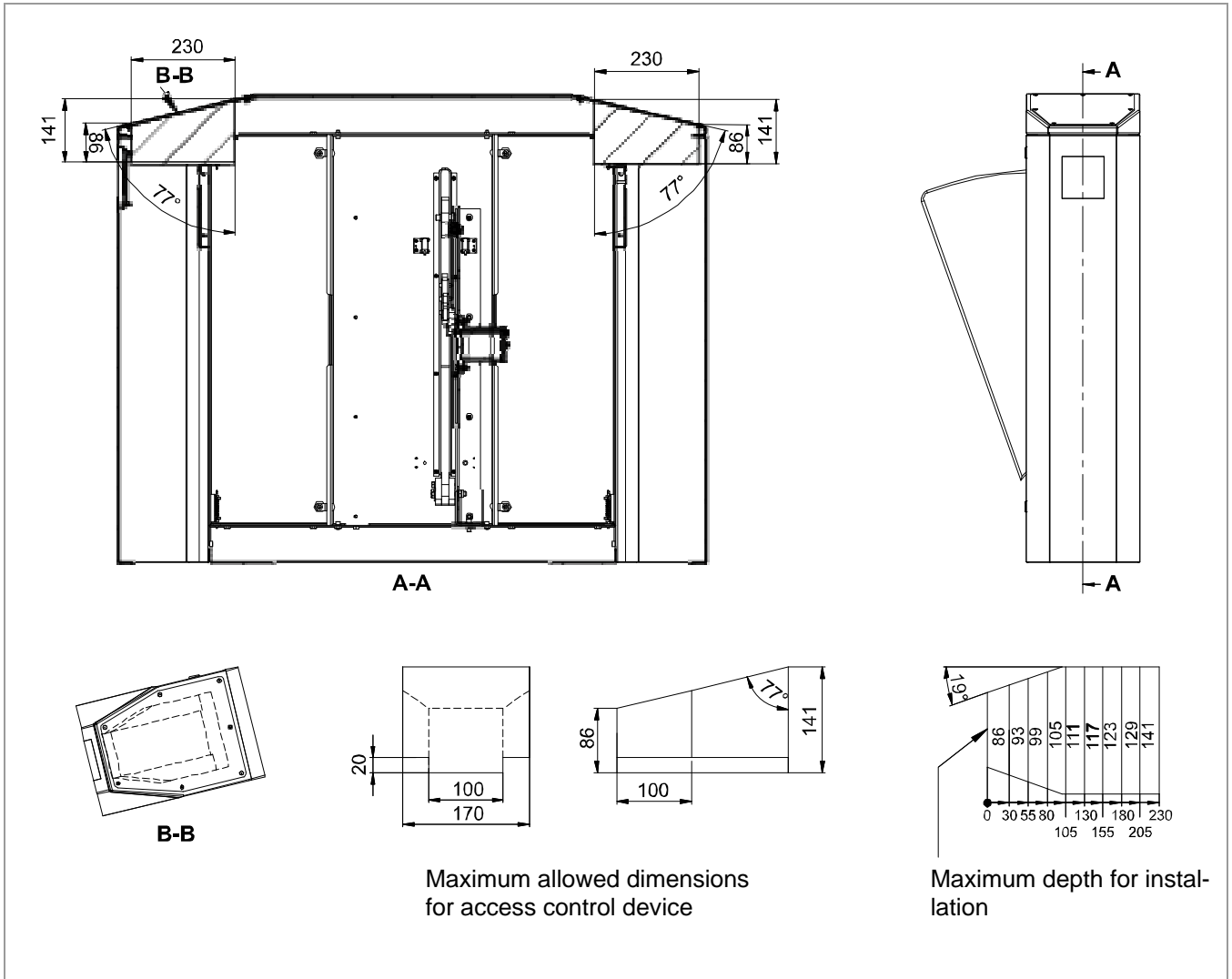


Fig. 6-1 Mounting instructions for access control device

7. Commissioning

7.1 General

After the mechanical and electrical installation of the gate it can be set in operation. Before starting the system it has to be checked that all mechanical work as well as electrical installation has to be carried through correctly.

To avoid the risk of injury and damage arising from any unintentional barrier movements during initial operations all persons and objects should be kept clear of the barrier zone.



WARNING!

Before the initial operation it has to be ensured that all mechanical work and electrical installation has to be carried through correctly.

In case of non-observance there is a risk of injury and damage by malfunctions.

All mounting and installation instructions of this manual have to be adhered strictly.

-
- After every power return (main switch ON) the wings move first into closed position (Reference drive, with reduced speed).
 - There are two possible exceptions:
 - o There is an active opening impulse.
 - o The emergency input or the enable input is not energized at the MBC controller.



NOTE!

Take into consideration that the safety PE-beams are in active status during the start procedure!

7.2 Start- Up instructions

With the help of the steps specified in the brief instruction a fast start-up of the unit can take place.

The points for wiring described below have to be accomplished with the first installation before the start-up of the MPR.

Find the details to the appropriate points indicated in the cross references.

Point 1

It has to be checked, if the inputs IN1+ and IN1- are wired. If not, it has to be installed. The inputs IN1+ and IN1- must be connected to plus respectively minus. This is done by a bridge of 0 and 24 V or by an external switch.

For details refer to schematic Fig. 8-5, page 57.

Point 2

Determination of potential at input COM2-7 (terminal3). This is done by connecting a wire jumper to 0V or 24V. By default COM2-7is connected to 0V. This means that all inputs must be activated by applying 24V. It can also be executed in opposite.

Point 3

Determination of clearance mode by connecting IN4 and IN5, standard switching +24 V.

For details refer to chapter 8.4, table IN 4 and IN5 on page 43.

Point 4

Wiring of several inputs, e.g card reader.

For details refer to chapter 8.4 „Description Mode 2“, table IN2 and IN3 on page 43.

Point 5

Please check DIP 11 setting (see page 41 point. 9.3.8)

8. Functional description of MBC110

8.1 Inputs and Outputs

The program is applied to controllers of the series MBC-110B-Fxxx. The hardware components described below are available.

8.1.1 Hardware of Inputs

The inputs 1 to 7 are optical isolated by opto-couplers. They are connected to one plug-in connector.

The inputs 2 to 7 have one common connection which can be linked alternatively by GND or +24 V. Thus it is possible to switch the inputs active "high" or "low".

The input 1 is double-pole which means independent from the other inputs. Another external potential can be applied. The input is connected with the ASB input of the servo-controller. Thus a number of servo-controllers can be enabled via a combined connection.

Furthermore it is possible by parallel connection of the inputs 1 to enable several gates by an external signal respectively to switch them powerless.

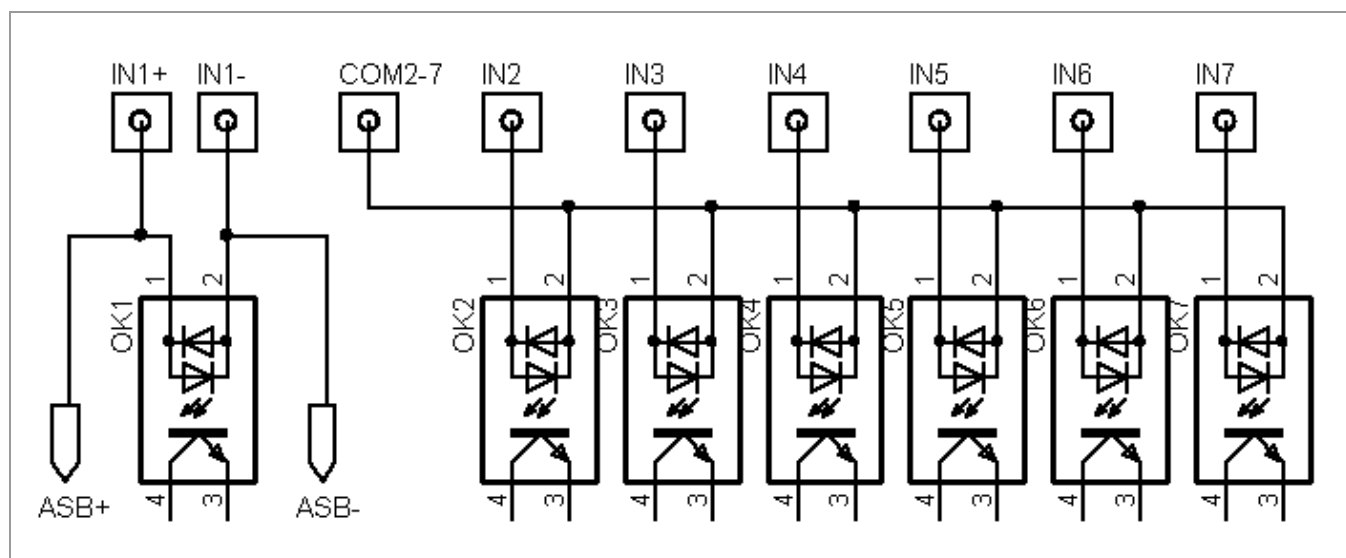


Fig. 8-1 Input connections, simplified diagram

8.1.2 Hardware relay outputs

The relay outputs 1 to 6 are connected to one plug-in connector.

Several groups are summarized in order to economize connecting terminals.

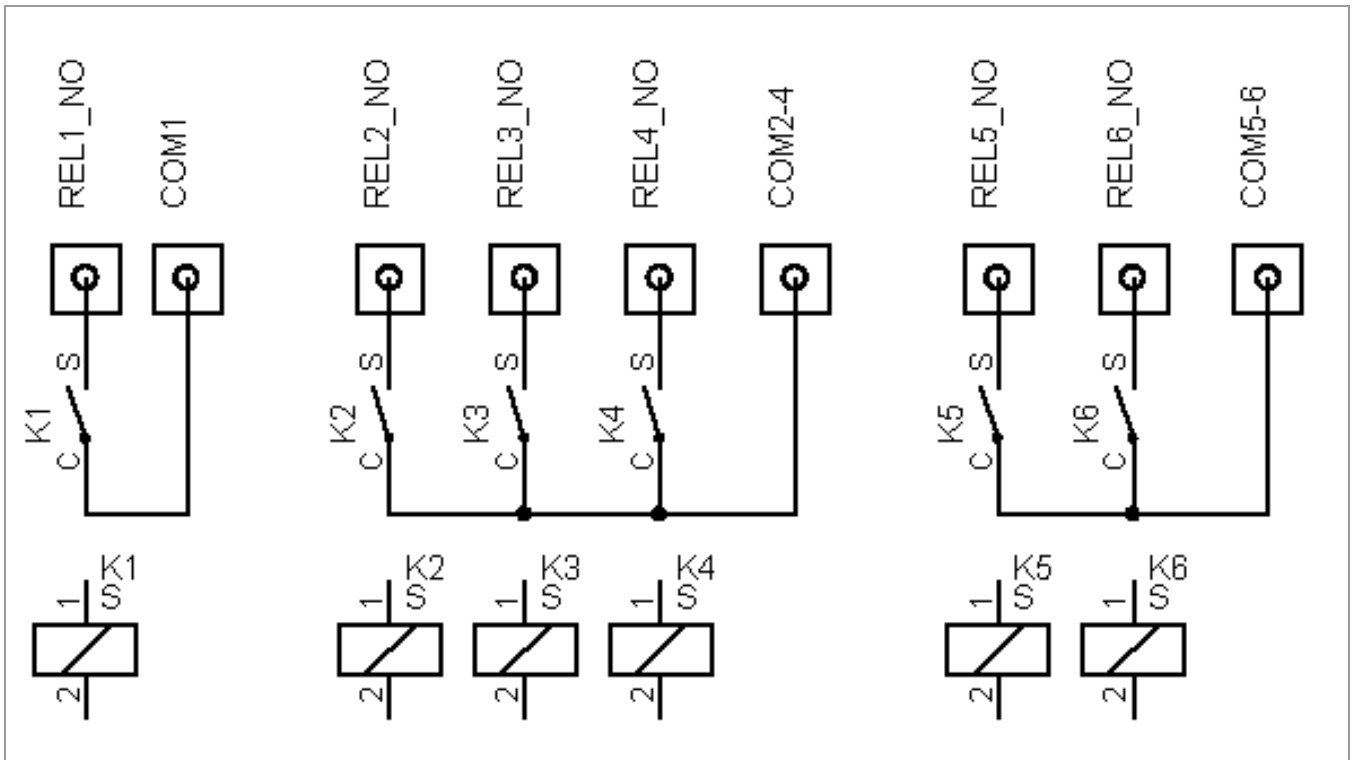


Fig. 8-2 Connection of relay outputs, simplified diagram

8.2 Additional internal inputs and outputs

8.2.1 Hardware of the internal inputs and outputs

The additional inputs and outputs are not needed in each mode of operation. They can be used also for special functions.

The outputs are MOSFET drivers, the inputs are opto isolated. The in-puts are on one side on the internal GND potential and thus may not be led out from the housing of the barrier; this applies likewise to the exits.

For each of the 4 exits a separate voltage regulator is present. Maximum Output current is limited on 500mA / 30V DC per output.

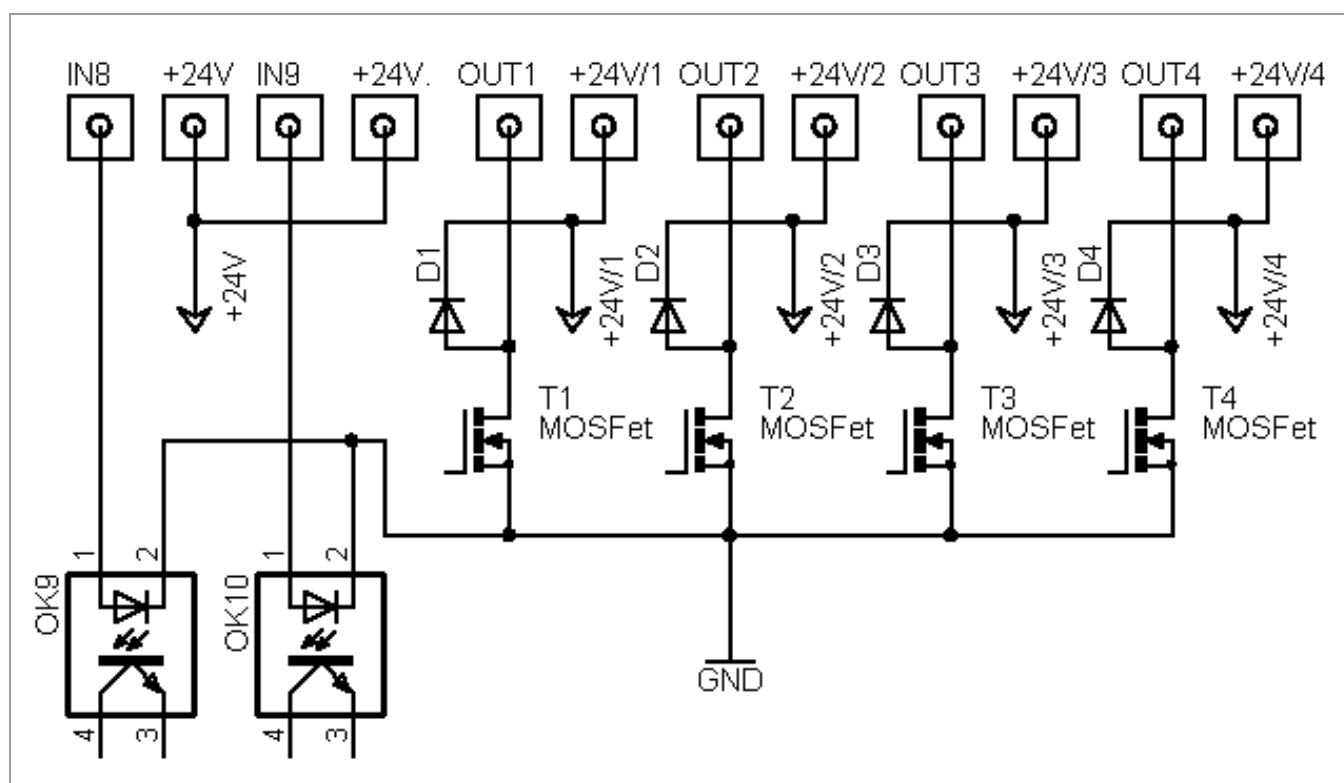


Fig. 8-3 Connection of additional inputs and outputs, simplified diagram

8.2.2 Default input functions

Input 1 is not alterable because the input is connected with the ASB input of the servo output stages

Inputs 2 and 9 are alterable with other functions by parameters.

Input	Default / Factory settings
Input 1	Emergency
Input 2	Open left, e.g. card reader
Input 3	Open right, e.g. card reader
Input 4	Clearance gate left
Input 5	Clearance gate right
Input 6	Safety PE left 1
Input 7	Safety PE right 1
Input 8	Logic. PE left
Input 9	Logic PE right

Input 1 = Input Emergency

Input 1 is not alterable.

In case of emergency both directions are permanently open. The drive is current supplied only with request of a continuous signal. When the signal dies out the passage is free in both directions. This input is superior to all other inputs.

Input 2 = Open left

Input impulse for passage left (entry)

Input 3 = Open right

Input impulse for passage right (exit)

Input 4 = Clearance Mode

Determine the use direction of the gate.

IN 4	IN 5	Clearance Mode
0	0	Out of service = wings closed
1	0	Entry Mode = passage only from entry / left
0	1	Exit Mode = passage only from exit/ right
1	1	Bi-directional Mode = passage from both directions

1 = active; 0 = not active

Input 6 = Safety PE left

Controlling of the safety area as personal security. Logic inversed; means signal as long as the beam is free; Fail-safe active.

Input 7 = Safety PE right

Controlling of the safety area as personal security. Logic inversed; means signal as long as the beam is free; Fail-safe active.

Input 8 = second PE left

Controlling of the safety area as personal security. Logic inversed; means signal as long as the beam is free; Fail-safe active.

- Mode 2: PE beam before card reader left

Input 9 = second PE right

Controlling of the safety area as personal security. Logic inversed; means signal as long as the beam is free; Fail-safe active.

- Mode 2: PE beam before card reader right

8.2.3 Default function of outputs

The function of relay 1 is not alterable because this output is also used as feedback for power supply loss.

Output	Default function
Relay 1	Global alarm output / Voltage failure
Relay 2	Ready for passage left
Relay 3	Ready for passage right
Relay 4	Counting pulse output
Relay 5	Inhibit card reader left
Relay 6	Inhibit card reader right
MOSFet-output 1	GED left red
MOSFet- output 2	GED left green
MOSFet- output 3	GED right red
MOSFet- output 4	GED right green

Relay 1 = Global Alarm message / alarm output

Global alarm output, alarm permanent as long as the failure appears.

Failure description:

- Impact detection
- Emergency input activated (inverted)
- CAN communication with output stage disturbed
- Hardware failure output stage
- Software failure output stage
- Voltage failure



NOTE!

In that a wire break is to be indicated at the global alarm output, relay 1 is inverted operated. That means that the relay is energized as long as no error is present.

As soon as one of the described errors appears the relay will be switched off.

Relay 2 = Ready for passage left

Gives a permanent signal as long as the gate is ready for the passage.

Relay 3 = Ready for passage right

Gives a permanent signal as long as the gate is ready for the passage.

Relay 4 = Count impulse

After a passage detection, the Relay 4 is activated for 300 ms in each direction; also valid for free entry/exit mode.

Relay 5 = Inhibit card reader left (opposite locking)

Gives an output to lock the card reader right, if the passage left is given free (by card reader left).

Relay 6 = Inhibit card reader right (opposite locking)

Gives an output to lock the card reader left, if the passage right is given free (by card reader right).

Output 1 = Gate End Display left red

This output controls the red cross at left GED.

Output 2 = Gate End Display left green

This output controls the green arrow at left GED.

Output 3 = Gate End Display right red

This output controls the red cross at right GED.

Output 4 = Gate End Display right green

This output controls the green arrow at right GED.

8.2.4 Function of the diagnostic display

The 7 segment display is designed for purpose of convenient diagnostics. It indicates various operating conditions and error messages..

Normal operating status

Indication by a permanent blinking segment with 0.5 Hz.

Display of software version

First the character "U" is displayed followed by the major releases (with dot), then the Minor release and at last an interval. After that the cycle starts again.

Each status is displayed for 2 seconds.

Display of error codes

First the character “E” (error) is displayed followed by the first number of the error code, the second number of the error code (plus dot) and at last an interval. After that the cycle starts again.

Each status is displayed for 2 seconds.

Error code	Error description	Auto reset
01	Safety PE – beams covered before “ INIT”	yes
02	Emergency input not energized	yes
03	PE – beams covered during “HOMING”	yes
04	Vandalisms (forced)	yes
05	Impact identified	yes
06	Wrong direction (wrong-way)	yes
07	Watchdog Timer Reset	no
08	Only in MPR Mode	yes
09	Reserved	
10 - 13	PE beams permanent covered	yes
20	CRC error Flash memory	No
21	Wrong application software in servo controller → download necessary	No
22	Wrong application software version in servo controller → download necessary	No
23 – 29	Reserved	
30	Memory servo controller could not be erased	No
31	No communication with servo controller	No
32	Download impossible	No
33	New software could not be activated	No
34 - 39	Not used	
40	Error homing (span)	no
41	Invalid program mode	no
42	Servo not ready	no
43	Servo Fail State	no
44 – 59	Not used	
60	Error of CAN – protocol stack initialising	no
61	Initialising CAN-Bus Error	no
62	Servo not found	no
63	Download Error of the automatic controller parameters to the servo	no
64	Servo disappeared during operation	no
65	Error I ² C-EEPROM	no
66	Error EEPROM CRC	
67 – 79	Communication Error	no
80 – 99	Reserved	

Error codes with automatic reset function will be displayed for further 10 seconds after the error is rectified. But as long as the error exists as long the error code is displayed.

All other errors will cause pedestrian barriers to be set out of operation. The error code will be displayed permanently until the new start of the controller after rectification of the fault.

8.3 Parameter settings

The following functions are settable via the DIP switches.



NOTE!

Modifications of the DIP switch settings will only be processed after power on (except for DIP 7)

8.3.1 DIP-switch 1: Pulse Storage

If the pulse storage is switched off, the MPR will be opened due to a pulse released at one of the both opening inputs. Any following pulses will be ignored as long the MPR remains still open.

If the pulse storage is activated, several opening pulses can be stored. The pedestrian gate stays open, until all stored pulses are executed and the pulse store is cleared. Each passage will reduce the pulse by 1.

DIP 1	Pulse Storage
Off	No pulse stored
On	Up to 5 pulses can be stored

8.3.2 DIP- switch 2: Buzzer

The buzzer sends out permanent alarm signals in following cases:

- During the homing process
- In case of a wrong-way intrusion
- In case of a hardware or software error
- In case of a break-through attempt
- If a PE beam is blocked for more than 30 seconds

A short beep is also sent out in following situations:

- If the gate is ready for passage
- After a passage has been completed

DIP 2	Buzzer
Off	Buzzer off
On	Buzzer on

8.3.3 DIP- switch 3 and 4: Safety delay time

It is the additional time after receiving the closed command. After the safety delay time the wings close.

The safety delay time is adjustable in 4 steps:

DIP 3	DIP 4	Safety delay time
Off	Off	0 s
On	Off	1 s
Off	On	2 s
On	On	3 s

8.3.4 DIP- switch 5 and 6: Hold open time

The hold-open time is a defined period during the MPR is ready for passage after receipt of an opening pulse and nobody enters for passage. After this period expire the MPR locks (if nobody walks through).

The hold-open time can be adjusted in 4 steps:

DIP 5	DIP 6	Hold open time
Off	Off	2 s
On	Off	4 s
Off	On	6 s
On	On	12 s

8.3.5 DIP- switch 7: Request of the Software Version

If this function is activated during operation mode, the current software version is indicated in circular mode at the 7 segment displays.

DIP 7	Update Version Software
Off	Operating mode display
On	Update Version displayed

8.3.6 DIP- switch 8: Reserved

Reserved for future applications.

DIP 8	Reserved
Off	Not used
On	Not used

8.3.7 DIP- switch 9 and 10: Program - Mode

By selecting the program mode it is determined which control program starts after power on and reset.

DIP 9	DIP 10	Programme mode
Off	Off	Reserved
On	Off	MPR Mode 2
Off	On	Mode 3 (KPR Mode)
On	On	Reserved

8.3.8 DIP- switch 11: Determine entrance direction

The DIP switch 11 determines if the long side left is the entrance, or the short side right is the entrance.

For details refer to chapter 3.4 on page 15 and Fig. 1-1 on page 6.

DIP 11	Determination of Entrance side
Off	left – long side entrance
On	right – short side entrance

8.3.9 DIP- switch 12: Behaviour after impact detection

Determines the behaviour after an impact detection.

DIP 12	Behaviour after impact detection
Off	Wings are still trying to close (no retract)
On	Wings open immediately and try to close with reduced speed

8.3.10 DIP- switch 13: Reverse during closing

After receiving the close signal the wings try to close. If the PE beams are covered before receiving the closed position, the wings can either retract or continue closing operation.

DIP 13	Retract
Off	Wings continue the closing procedure
On	Wings open and stay open until blocked PE beams are cleared

8.3.11 DIP- switch 14 - 15: Wing-Type

Determine the MPR wing type and aisle width

		Aisle width	Aisle width	Aisle width
DIP 14	DIP 15	Standard 250 mm housing	Telescopic 200 mm housing	Telescopic 280 mm housing
Off	Off	Acrylic 520 mm	520 mm	960 mm
On	Off	Soft 520 mm	560 mm	900 mm
Off	On	Not used	600 mm	Not used
On	On	Not used	Not used	Not used

8.3.12 DIP- switch 16: Reserved

For future applications

DIP 16	Reserve
Off	Not used
On	Not used

Hold-Open time

The hold-open time is displayed as countdown in 1 s steps. If the rest hold open time is above 9 s the display shows a special character or "F" (Free).

Safety delay time

The Safety delay time is displayed as countdown in 1 s steps. The maximum time is normally 5 s.

8.4 Description Mode 2

Mode 2 allows free entry or exit in both directions. This requires the installation of two PE beams at the end of the barriers close to the card readers (standard).

The two light beams can have two functions. First it allows free entry or exit by opening the flaps when a person comes from the correct direction, and secondly it allows the controller to detect persons coming from an incorrect direction, hence the barrier remains closed.



Note!

The gate is always in status closed (except Emergency and fully free), if no opening pulses are interpreted (closed mode).

Mode 2 allows the following setup:

Emergency, Out-of-service, Entry, Exit, Bi-directional, Free Entry, Free Exit, Free Entry – Controlled Exit, Controlled Entry – Free Exit, Fully Free

The operation modes are controlled via the inputs IN1 to IN5..

IN1 Emergency	IN 2 Open left	IN3 Open right	IN4 Passage left enabled	IN5 Passage right enabled	Resulting Operation mode
0	x	x	x	x	Emergency
1	x	x	0	0	Out of Service
1	pulse	x	1	0	Entry
1	x	pulse	0	1	Exit
1	pulse	pulse	1	1	Bi-directional
1	1	x	1	0	Free Entry
1	x	1	0	1	Free Exit
1	1	pulse	1	1	Free Entry, controlled exit
1	pulse	1	1	1	Free Exit, controlled entry
1	1	1	1	1	Fully Free

0 = not active; 1 = active; x = non relevant

8.4.1 Mode 2: Emergency Mode

The emergency input IN1 supersedes any other input. The emergency input is NORMALLY CLOSED; if this signal is open, the barrier opens immediately overriding any other existing and ignoring following inputs.

The barrier remains open until the emergency signal is activated.

Direction left (entry):

- Barrier End Display left shows green arrow
- Opening input impulse left is ignored
- PE beam card reader left ignored
- Output ready for passage left is on
- Output Inhibit card reader left is on

Direction right (exit):

- Barrier End Display right shows green arrow
- Opening input impulse right is ignored
- PE beam card reader right ignored
- Output ready for passage right is on
- Output Inhibit card reader right is on

8.4.2 Mode 2: Out-of-service Mode

IN4 and IN5 lock the barrier in the corresponding direction (IN4 left and IN5 right). This means that if IN4 or IN5 is open the passage in the corresponding direction is locked and no opening signal is accepted.

Direction left (entry):

- Barrier End Display shows RED CROSS
- Opening input Left disabled
- Output r.f.p.l.* is off
- Output l.c.r.l.* is on

* r.f.p.l. = ready for passage left

* r.f.p.r = ready for passage right

* l.c.r.l. = Inhibit card reader left

* l.c.r.r. = Inhibit card reader right

Direction right (exit):

- Barrier End Display shows RED CROSS
- Opening input Right disabled
- Output r.f.p.r. is off
- Output l.c.r.r. is set

While the Out-of-Service mode is activated the controller activates an alarm output every time a person walks into the light beams on each end of the gate

8.4.3 Mode 2: Entry Mode

If IN4 is activated (contact closed) and IN5 disabled (contact open) the barrier allows passage only from left to right (entry). Any opening inputs on IN4 are ignored.

Direction left (entry):

- Barrier End Display shows GREEN ARROW
- Opening input Left is activated
- Directional beams are active and evaluated based on the walk-through direction
- r.f.p.l. is being controlled
- l.c.r.l. is off

Direction right (exit):

- Barrier End Display shows RED CROSS
- Opening input Right disabled
- Directional beams are active and evaluated based on the walk-through direction
- r.f.p.r. is off
- l.c.r.r. is on

In case a person is trying to walk through the barrier from an incorrect direction, the controller immediately activates an alarm output and the barrier remains closed. This alarm turns off after 2 s when the person backs out of the barrier.

If a person walks into the barrier from the controlled direction without presenting a valid identification within 5 seconds, the controller activates an alarm output as well. The alarm turns off after 2 s when the person backs up, or presents the valid identification to the card reader.

8.4.4 Mode 2: Exit Mode

If IN5 is activated (contact closed) and IN4 disabled (contact open) the barrier allows passage only from right to left (exit). Any opening inputs on IN 4 are ignored.

Direction left (entry):

- Barrier End Display shows GREEN ARROW
- Opening input Left is activated
- Directional beams are active and evaluated based on the walk-through direction
- r.f.p.l. is off
- l.c.r.l. is on

Direction right (exit):

- Barrier End Display shows GREEN ARROW
- Opening input Right enabled
- Directional beams are active and evaluated based on the walk-through direction
- r.f.p.r. is being controlled
- l.c.r.r. is off

In case a person is trying to walk through the barrier from an incorrect direction, the controller immediately activates an alarm output and the barrier remains closed. This alarm turns off after 2 s when the person backs out of the barrier.

If a person walks into the barrier from the controlled direction without presenting a valid identification within 5 seconds, the controller activates an alarm output as well. The alarm turns off after 2 s when the person backs up, or presents the valid identification to the card reader.

8.4.5 Mode 2: Bidirectional Mode

If both, IN4 and IN5 is activated (contact closed) the barrier allows passage from both directions.

Direction left (entry):

- Barrier End Display shows GREEN ARROW
- Opening input Left is activated
- Directional beams are active and evaluated based on the walk-through direction
- r.f.p.l. is being controlled
- l.c.r.l. is being controlled

Direction right (exit):

- Barrier End Display shows GREEN ARROW
- Opening input Right enabled
- Directional beams are active and evaluated based on the walk-through direction
- r.f.p.r. is being controlled
- l.c.r.r. is being controlled

As soon one side receives, a valid opening pulse (access card reader, etc.) the end display on the opposite side will change to a RED CROSS and all opening inputs from the opposite side are disabled. Upon successful completion of a walkthrough, the end display changes to a GREEN ARROW and both sides accept opening commands again.

The exception of the above is when the option "Input Count" was selected. The Input Count feature stores opening pulses until the person passes through the unit. Every opening input on IN2 and IN3 increments the count and every walkthrough decrements the count by one. Therefore, if the Input Count feature is active in Bidirectional mode the access control device can be used simultaneously from both directions.

If a person walks into the barrier from the controlled direction without presenting a valid identification within 5 seconds, the controller activates an alarm output. The alarm turns off after 2 s when the person backs up, or presents the valid identification to the card reader.

8.4.6 Mode 2: Free Entry Mode

To activate the free entry mode, IN4 must be activated (contact closed), IN5 must be disabled (contact open) and IN2 must be permanently activated (contact closed). Any access control opening pulses on IN3 are ignored.

As soon a person walks into the directional beam set the barrier opens (granted that the person approached the barrier from the correct direction) and the open-hold-time is being activated. The opposite direction is disabled and an alarm is being activated when a person comes from the wrong direction.

If the passage is begun in the correct direction, so after releasing the high-speed closing and interrupting the light barrier before the card reader an OFF period of 2 s is set. In this time no wrong way alarm occurs. Becomes a Safety light barrier active during the closing time, the time is after-triggered. This can be necessary because of a rolling suit-case which is pulled afterwards.

Direction left (entry):

- Barrier End Display shows GREEN ARROW
- Opening input Left is activated
- Directional beams are active and evaluated based on the walk-through direction
- r.f.p.l. is on
- l.c.r.l. is off

Direction right (exit):

- Barrier End Display shows RED CROSS
- Opening input Right disabled
- Directional beams are active and evaluated based on the walk-through direction
- r.f.p.r. is off
- l.c.r.r. is on

In case a person is trying to walk through the barrier from an incorrect direction, the controller immediately activates an alarm output and the barrier remains closed. This alarm turns off after 2 s when the person backs out of the barrier.

8.4.7 Mode 2: Free Exit Mode

To activate the free exit mode, IN5 must be activated (contact closed), IN4 must be disabled (contact open) and IN3 must be permanently activated (contact closed). Any access control opening pulses on IN2 are ignored.

As soon a person walks into the directional beam set the barrier opens (granted that the person approached the barrier from the correct direction) and the open-hold-time is being activated. The opposite direction is disabled and an alarm is being activated when a person comes from the wrong direction.

If the passage is begun in the correct direction, so after releasing the high-speed closing and interrupting the light barrier before the card reader an OFF period of 2 s is set. In this time no wrong way alarm occurs. Becomes a Safety light barrier active during the closing time, the time is after-triggered. This can be necessary because of a rolling suit-case which is pulled afterwards.

Direction left (entry):

- Barrier End Display shows GREEN ARROW
- Opening input Right is activated
- Directional beams are active and evaluated based on the walk-through direction
- r.f.p.l. is off
- l.c.r.l. is on

Direction right (exit):

- Barrier End Display shows RED CROSS
- Opening input Left disabled
- Directional beams are active and evaluated based on the walk-through direction
- r.f.p.r. is on
- l.c.r.r. is off

In case a person is trying to walk through the barrier from an incorrect direction, the controller immediately activates an alarm output and the barrier remains closed. This alarm turns off after 2 s when the person backs out of the barrier.

8.4.8 Mode 2: Free Entry, Controlled Exit Mode

If IN4 and IN5 are active and the opening signal at IN2 is maintained the barrier is set-up for free entry (right) and controlled exit (left) through an access control device.

The barrier is always closed and opens as soon as a person enters the lane from the “free direction” or makes use of a valid ID card (or other valid media) at the controlled exit.

If the passage is begun in the correct direction, so after releasing the high-speed closing and interrupting the light barrier before the card reader an OFF period of 2 s is set. In this time no wrong way alarm occurs. Becomes a Safety light barrier active during the closing time, the time is after-triggered. This can be necessary because of a rolling suit-case which is pulled afterwards.

Direction left (entry):

- Barrier End Display shows GREEN ARROW
- Opening input Right is activated
- Directional beams are active and evaluated based on the walk-through direction
- r.f.p.l. is on
- l.c.r.l. is on

Direction right (exit):

- Barrier End Display shows GREEN ARROW
- Opening input Right enabled
- Directional beams are active and evaluated based on the walk-through direction
- r.f.p.r. is being controlled
- l.c.r.r. is being controlled

As soon one side receives, a valid opening pulse (directional beams, access card reader, etc.) the end display on the opposite side will change to a RED CROSS and all opening inputs from the opposite side are disabled. Upon successful completion of a walk-through, the end display changes to a GREEN ARROW and both sides accept opening commands again.

If there is an opening impulse at the controlled side the gate opens when the PE beam is free at the empty side.

8.4.9 Mode 2: Controlled Entry, Free Exit Mode

If IN4 and IN5 are active and the opening signal at IN3 is maintained the barrier is setup for free exit (right) and controlled entry (left) through an access control device.

The barrier is always closed and opens as soon as a person enters the lane from the “free direction” or makes use of a valid ID card (or other valid media) at the controlled exit.

If the passage is begun in the correct direction, so after releasing the high-speed closing and interrupting the light barrier before the card reader an OFF period of 2 s is set. In this time no wrong way alarm occurs. Becomes a Safety light barrier active during the closing time, the time is after-triggered. This can be necessary because of a rolling suit-case which is pulled afterwards

Direction left (entry):

- Barrier End Display shows GREEN ARROW
- Opening input Right is activated
- Directional beams are active and evaluated based on the walk-through direction
- r.f.p.l. is being controlled
- l.c.r.l. is being controlled

Direction right (exit):

- Barrier End Display shows GREEN ARROW
- Opening input Right enabled
- Directional beams are active and evaluated based on the walk-through direction
- r.f.p.r. is on
- l.c.r.r. is on

As soon one side receives, a valid opening pulse (directional beams, access card reader, etc.) the end display on the opposite side will change to a RED CROSS and all opening inputs from the opposite side are disabled. Upon successful completion of a walk-through, the end display changes to a GREEN ARROW and both sides accept opening commands again.

If there is an opening impulse at the controlled side the gate opens when the PE beam is free at the empty side.

8.4.10 Mode 2: Fully Free Mode

To setup the barrier to “free mode” in both directions, the signal on IN2, IN3, IN4, and IN5 must be maintained.

The barrier remains open at all times. No directional logic is activated.

Direction left (entry):

- Barrier End Display shows GREEN ARROW
- Opening input Right is activated
- Directional beams will be ignored
- R.f.p.l. is on
- I.c.r.l. is on

Direction right (exit):

- Barrier End Display shows GREEN ARROW
- Opening input Right enabled
- Directional beams will be ignored
- R.f.p.r. is on
- I.c.r.r. is on

This mode is used for free passage in both directions.

8.4.11 Mode 2: Power-off status

In the power-off status the motors are not energised. The passage is free.

8.4.12 Mode 2: Normal Operation

Without Input Count

The barrier can be opened individually via the opening inputs IN2 (left) and IN3 (right) or directional beams (free entry or exit, or both). As soon the controller received an input on either of the opening inputs, the “hold open timer” is being activated. At the same time, the controller provides an output for a display or “red/green” signage indicating the patron that he or she is allowed to walk though or in the opposite direction that the lane is occupied.

If for any reason the patron does not walk though the lane before the „hold open timer“ has elapsed the barrier will close and the

opening input erases. In applications, using cons or tokens to allow entry or exit the token or coin is lost.

The barrier will close immediately after the patron passes through both, safety beams and the “hold open timer” is erased.

The controller provides a feature called “safety delay timer”. If this feature is activated the barrier delays the closing of the flaps until this preset-able time has elapsed.

Note: The barrier closes only if all safety beams are clear, meaning that no person or object is activating the beams.

We do provide a feature that allows the operator to choose whether the barrier should continue to close if a safety beam is activated while the flaps are already in the closing process. This is an effective tool to prevent tailgating.

With Input Count

The Input Count Feature stores five (5) opening pulses until the person passes through the unit. Every opening input on IN2 and IN3 increments the count and every walkthrough decrements the count by one. Therefore, if the Input Count feature is active in Bidirectional mode the access control device can be used simultaneously from both directions. The barrier remains open until the stored count reaches zero again.

PE beams nearby both card readers

Both PE beams near the card readers are urgently required in Mode 2. Without the PE beams Mode 2 cannot be run.

The PE beams have the following functions:

- If a person moves into a PE beam at the passage without opening pulse the card reader at the other side will be locked. No opening impulses are interpreted at this side. Further an alarm is activated when a person moves into the PE beam near the card reader without a valid request.
- In bi-directional mode the GED at the opposite side is switched red when at the request side an opening signal is detected. After passage or after the hold-open time without passage the GED is switched back to green (standard position).

Mode changing during operation

If a mode is changed during operation (e.g. from entry to exit mode) no opening impulses process data must be lost.

The mode change is recorded but it is done not until the last opening impulse is processed.

After recording a mode change no new opening impulses are accepted. That means both opening entries must be ignored and both card readers must be locked.

8.4.13 Mode 2: Homing – Teach-in procedure

Both end positions are taught-in, i.e. a homing is realised.

For this after return of tension the motor firstly goes to the inner rubber buffer and so determines the open end position. As soon as the safety light barriers are free the motor goes with reduced speed (same as Input 6 = off) to the outer rubber buffer and thus determines the close end position. From the next closing movement on the gate operates in the chosen speed.

As it may happen that during the first closing movement an object is located between the wings the outer rubber stop is only taken as reference in case that a minimum angle (depending on wing type) between inner and outer stop has been exceeded. If the minimum angle is not reached the control unit goes out of operation and activates an alarm (Error 40 = Homing-Span). Then, a service engineer has to come at site and to check why the mechanic has not reached the target position. Then, he has to disconnect and connect again the operating voltage.

8.5. Special cases within the operating procedure

8.5.1. Impact recognition

Normally, persons should be protected in the safety area by the means of the PE beam logic, so that no impact should happen. However, it is possible that an object (e.g. a suitcase) is passing the safety area when closing the wings. Because of its form it cannot be recognised from the safety PE-beams. In this case an impact can hit the object.

Depending from position of DIP switch 12 the gate must react differently by recognizing an impact.

DIP 12 = OFF:

An identified hindrance is ignored. The barrier continues to close.

DIP 12 = ON:

The barrier opens immediately upon realizing an object and closes again with reduced speed to make sure the object does not get damaged (1 s delay time).

At the same time an alarm output is activated.

8.5.2. Breakthrough attempts

Depending on the adjusted force the wings are blocked in the final position (levers in neutral) or they can be pushed open by a certain force in opening direction.

8.5.3. Emergency Situation

If during operation the emergency input is being activated the barrier goes immediately into safe mode. Hence, the springs are pulling the flaps open allowing free lane passage in both directions.

Upon releasing of the emergency contact, the barrier goes back to normal operation.

8.6. MBC110 circuit diagrams

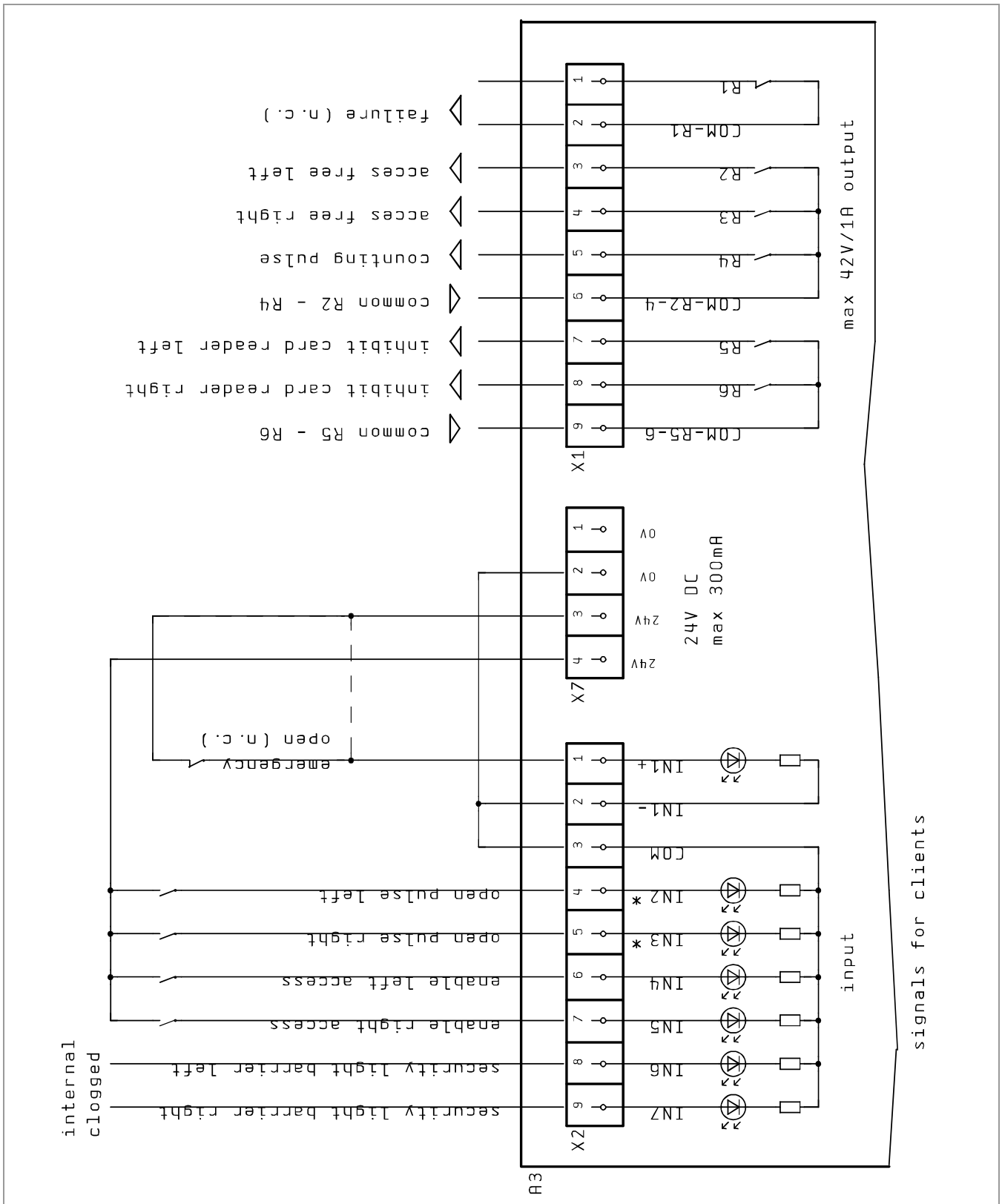


Fig. 8-4 MBC Connection diagram

Functional description of MBC110

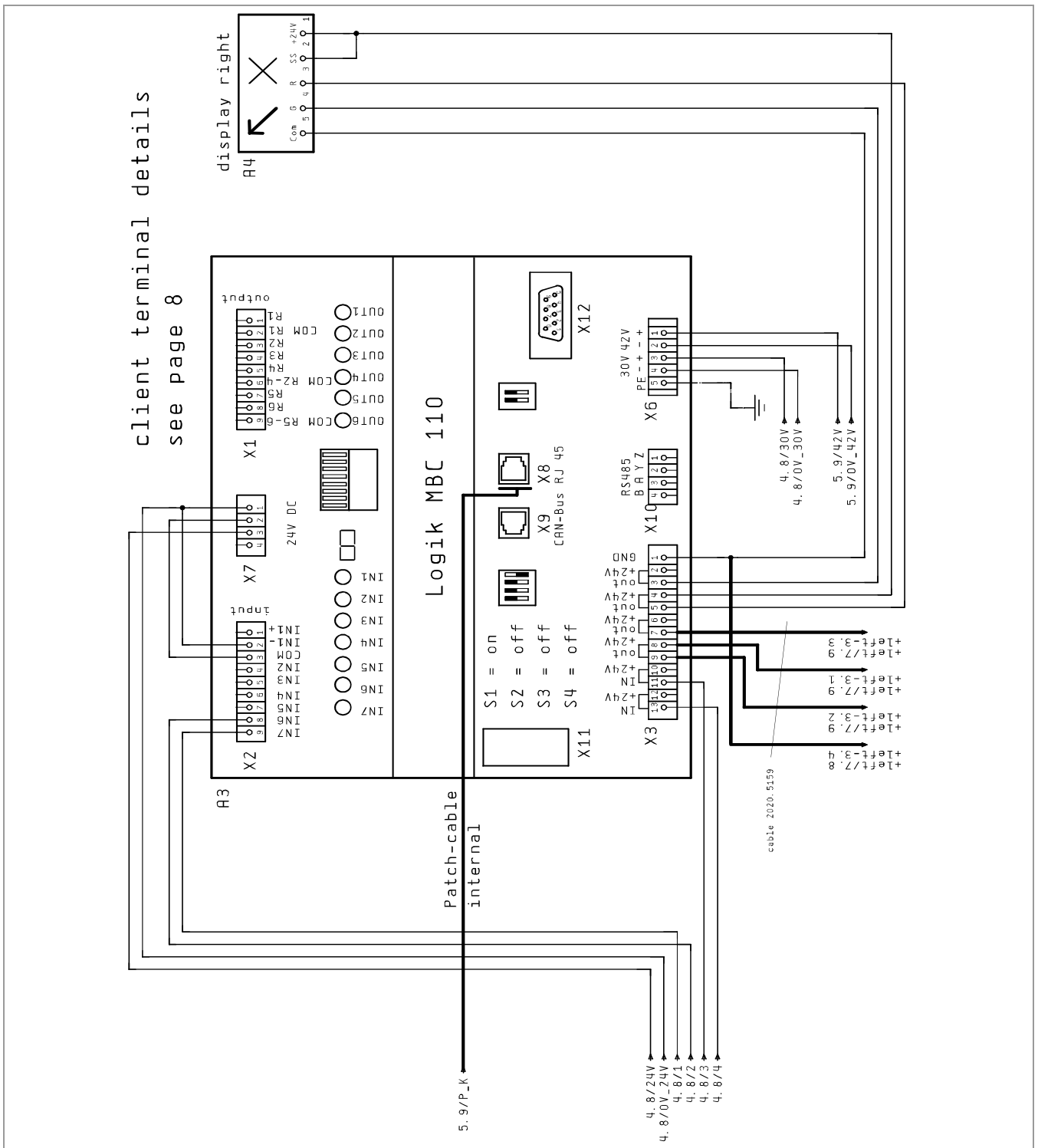


Fig. 8-5 Logic Module MBC 110

9. MMC-120 Controller

The MMC controller has been wired and adjusted und left the factory in a fully operational condition. Other adjustments are not possible by default. The DIP switches are for scheduling the CAN Bus and cannot be changed.

Conversions and modifications to the control module are not permitted. If, at any time you require to replace this controller (e. g. in case of repair) please arrange the terms of replacement with Magnetic before as otherwise any liability and warranty is declined by the manufacturer.

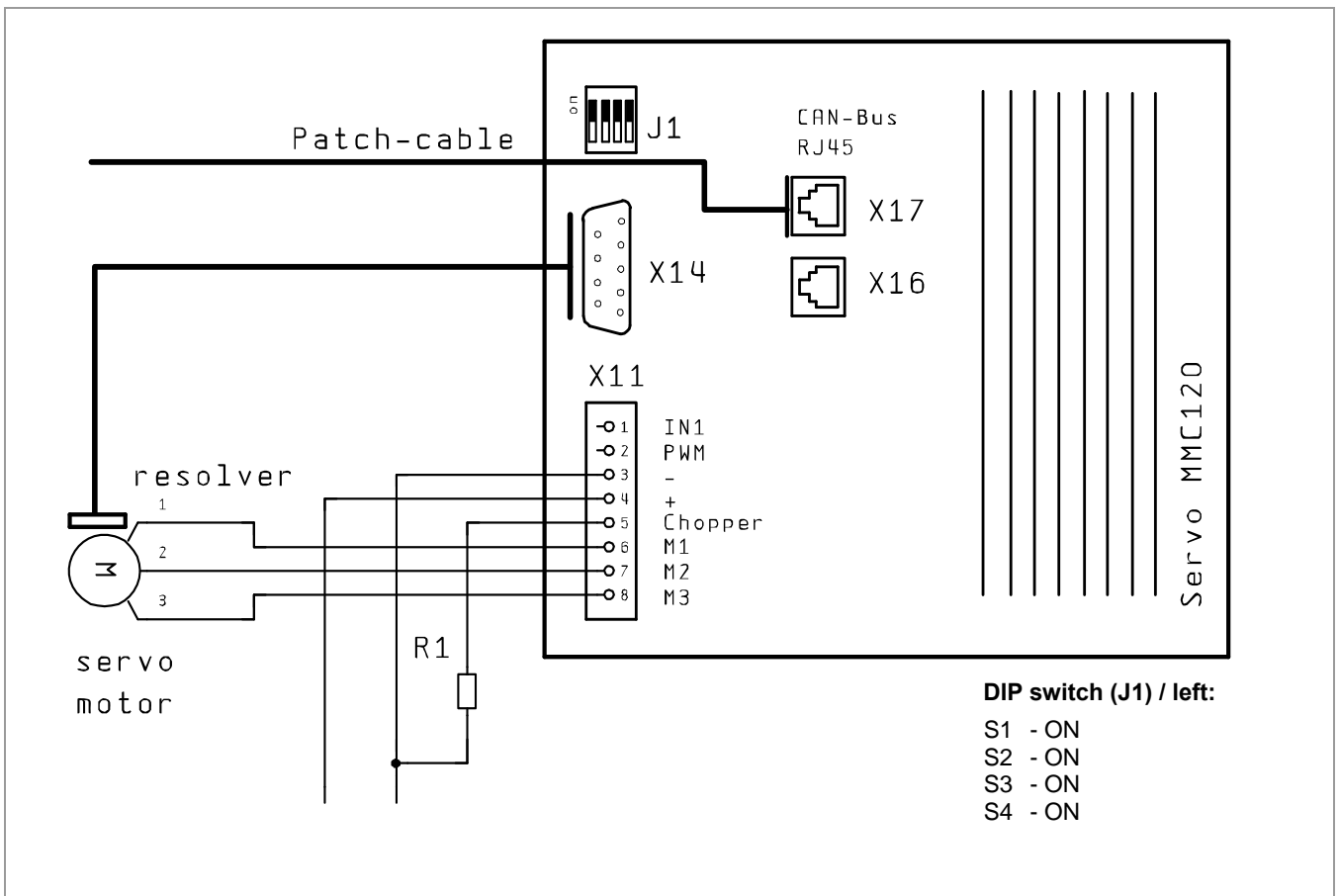


Fig. 9-1 MMC 120 Controller – left side, schema and DIP switch setting (J1)

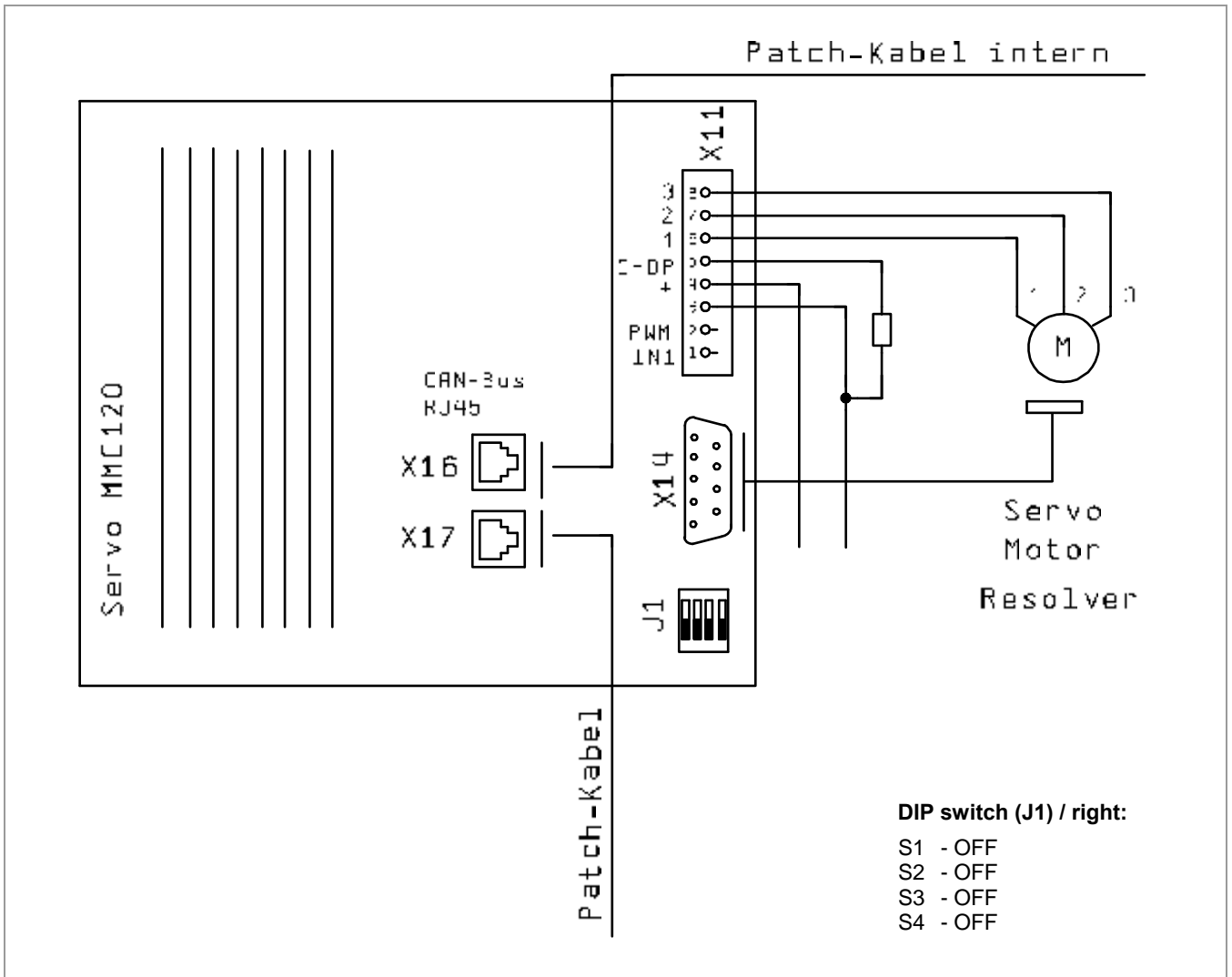


Fig. 9-2 MMC 120 Controller – right side, schema and DIP switch setting (J1)

MMC-120 Controller

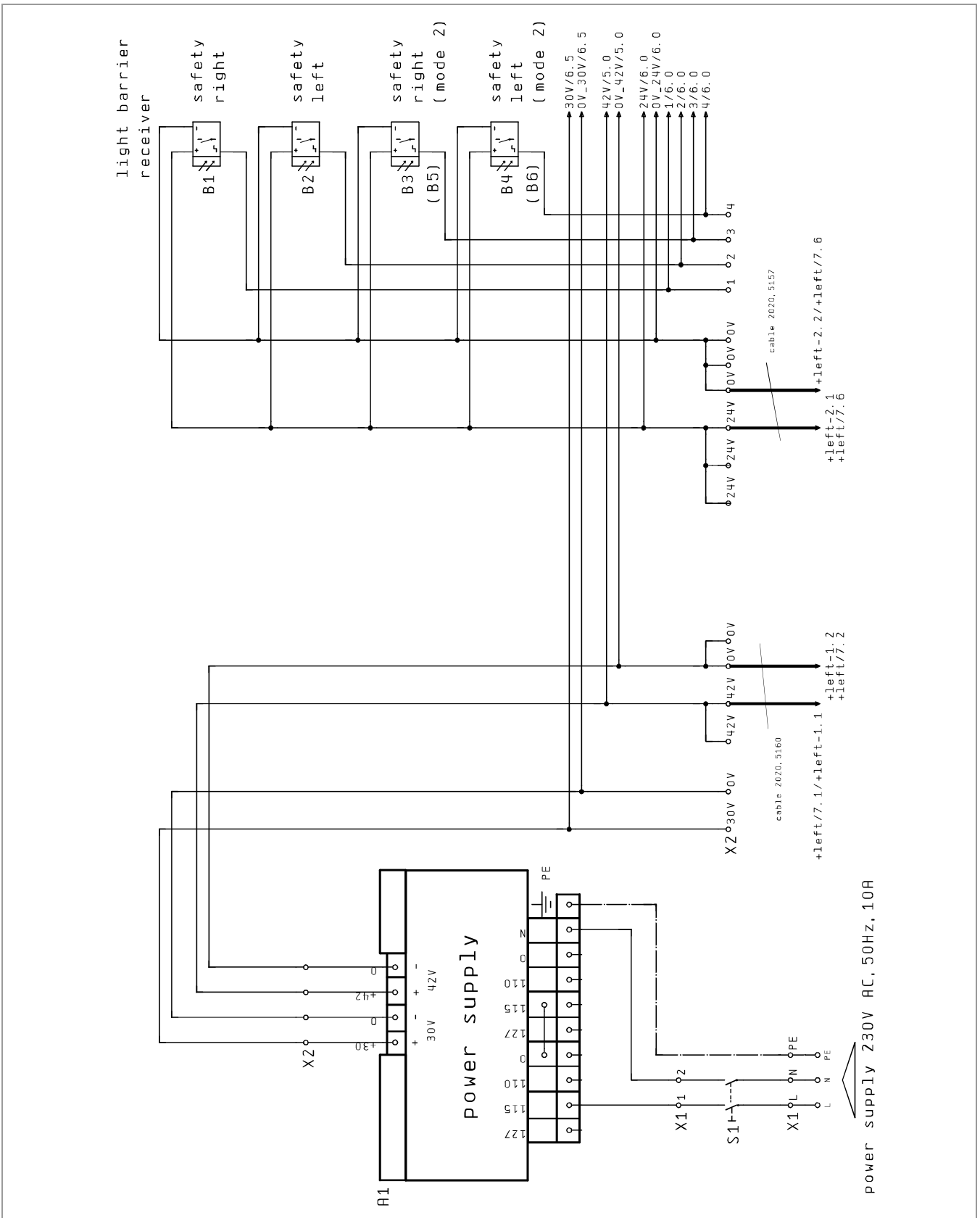


Fig. 9-3 Wiring diagram, power supply unit and PE beams

10. Safety PE-Beam System

All safety beams are setup in fail-safe mode; hence, the PNP-Output is switched on during normal operation and switched off when an object is detected.

In addition, each light beam is monitored for proper operation. Meaning that if a light beam shows detection for longer than 30 seconds the controller assumes that the light beam is malfunctioning (e.g. dirt).

9. Maintenance

10.5. Wing replacement

Dismounting the wing



CAUTION!

Before starting any kind of maintenance work make sure that the main power supply is switched OFF!

If it is necessary to replace a wing proceed stepwise as follows:

- Open the service door at the housing; refer to chapter 4.2 "Access Doors" on page 20. A free access to the driving components must be ensured.
- Hang out the return spring(s) ❶.

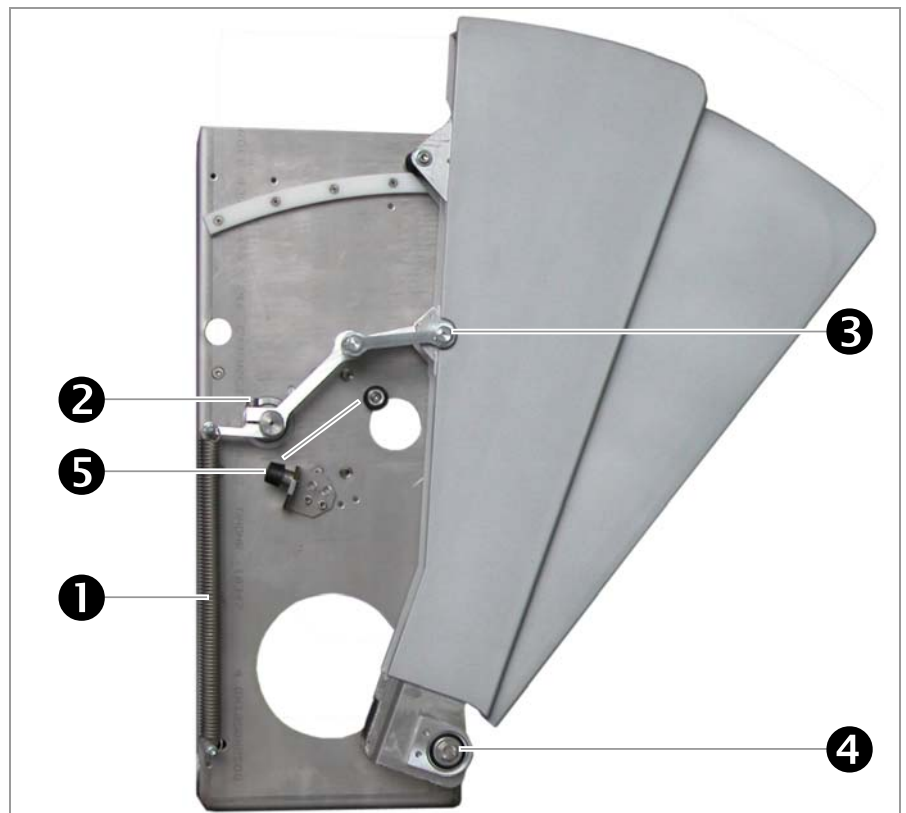


Fig. 9-1 Wing replacement

- Loosen the socket head screw of the lever on the motor drive shaft ②.
- Remove the socket head screw of the fixing between lever and wing ③.
- Pull off the levers from the motor drive shaft.
- Remove the pivot point bolt of the wing bearing ④.
- Take out the wing backwards.
- In dependence of the spare part status dismount further relevant parts from the wing.

Mounting the wing

- Fit the minor parts at the wing in dependence of the spare part status.
- Insert the wing into the housing.
- Fit the pivot point bolt of the wing bearing.
- Connect lever and wing by the socket head screw.
- Push the levers on the motor drive shaft.



CAUTION!

Before tightening the lever on the motor drive shaft turn the wing – lever mechanism one complete turn by hand!

The components will align by themselves. Finally tighten the lever socket head screw.

- Hook in the return spring(s).
- Adjust the inner and outer buffer stop for the lever ⑤.
- Make sure that all components are fitted properly.



NOTE!

By fitting different lever systems the extend length of the wings can be modified! Information and parts on request.

10.6. Motor replacement



CAUTION!

Before starting any kind of maintenance work make sure that the main power supply is switched OFF!

If it is necessary to replace the MHTM (MAGNETIC High Torque Motor) proceed stepwise as follows:

- Open the service door at the housing; refer to chapter 4.2 “Access Doors” on page 20. A free access to the driving components must be ensured.
- Hang out the return spring(s). See Fig. 9-1 on page 62.



Fig. 9-2 Motor replacement

- Loosen the socket head screw of the lever on the motor drive shaft (see chapter 0 “Dismounting the wing” on page 62).
- Disconnect the cable connectors at the backside of the motor ❶.
- Remove the four motor mounting screws ❷.
- Take the motor out of the housing.



NOTE!

The resolver unit is adapted to the motor. The resolver cannot be replaced separately but only as complete unit due to special calibration!

For fitting the new motor proceed in opposite sequence. When starting the system after motor replacement the mechanic system is calibrated automatically by the resolver.



CAUTION!

Before tightening the lever on the motor drive shaft turn the wing – lever mechanism one complete turn by hand!

The components will align by themselves. Finally tighten the lever socket head screw.

10.7. Software up date

It's possible to update the software of the MBC and MMC controllers. With MBC software versions 2.0 a new feature has been introduced: The program for the MMC-120 servo controllers is integrated in the MBC program. Therefore, it is possible to download the software for the MMC-120 from the MMC-110.

To update the complete system of controllers, two steps are necessary:

The first step is to update the MBC software and the second step is to download the MMC software from the MBC controller.

Currently, there are following MBC software packages available:

- 200 mm MPR/KPR: Program 4914,5007 – Vx.y.s.
- 250 mm MPR/KPR: Program 4914,5004 – Vx.y.s.
- 280 mm MPR/KPR: Program 4914,5005 – Vx.y.s.

Vx.y. stands for software version x.y., e.g. V2.1.



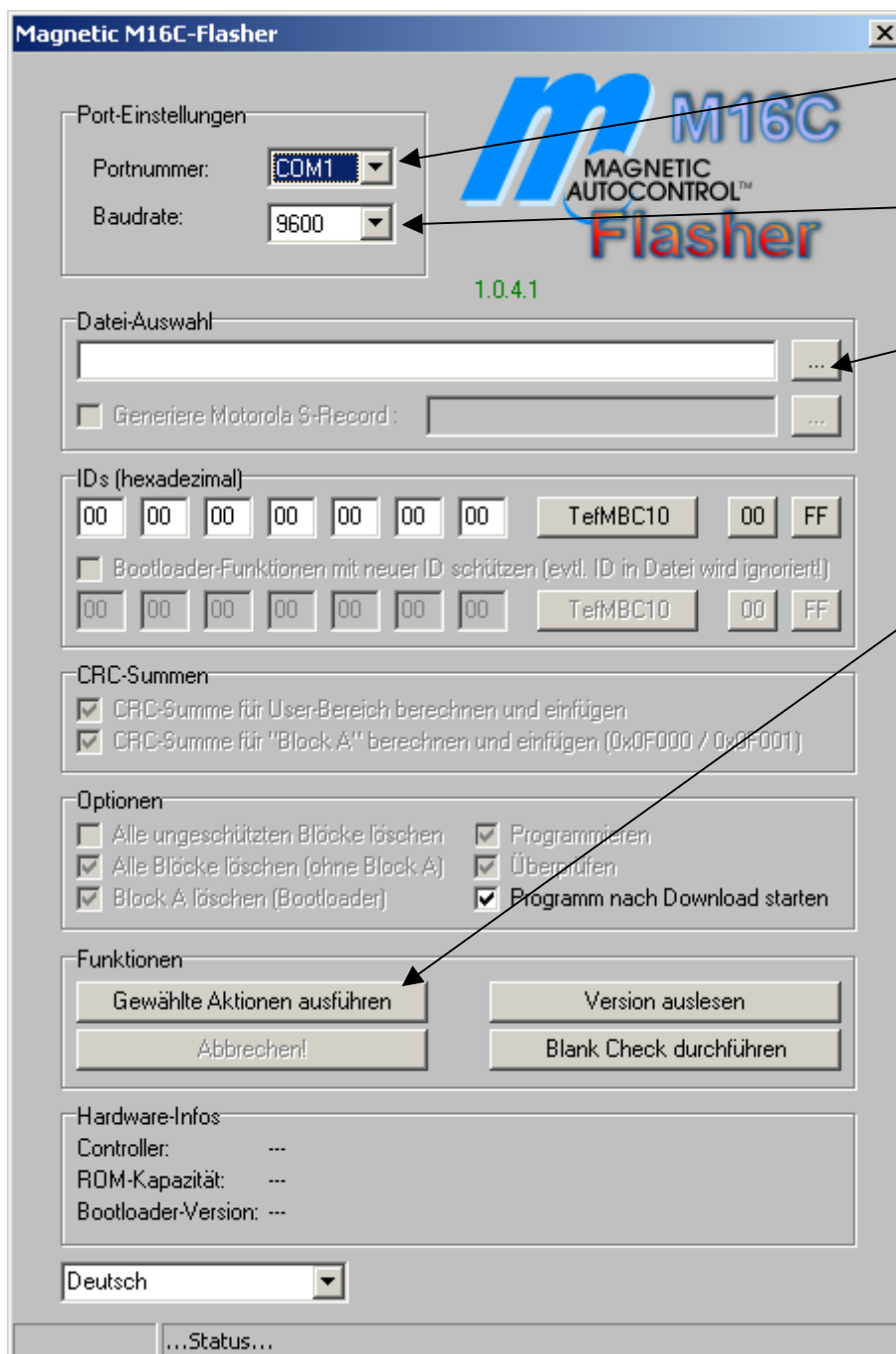
NOTE!

Make sure that the correct wing type and aisle width is selected by DIP switch 14 and 15!

How to download the Software

1. First Step is to open the down load the latest Software version to the MBC controller. This has to be done by using the M16C Flasher Software.

Steps



1. Select the COM Port

2. Select the baudrate

3. Select the file to download

4. Start the download

2. Second step is to download the servo program from the MBC to the two MMC servo controllers.

To start the download, the following steps are necessary.

- a) Write down the DIP switch setting as it is.(so you can restore the original setting after download)
- b) Set all 16 DIP switches to position ON
- c) Turn the power OFF, wait min. 3 sec. then turn the power on again.
- d) Display shows “L” (LOW – set all DIP switches low), now set all 16 DIP to position OFF.

Display shows now

c = clearing

d= down load (first Servo Controller)

b= re booting (first Servo Controller)

Then c , d, and b for the second servo Controller.

After both servo Controllers are finished you will see a rotating (blank) bar on the display.

If there is a problem during the download you will get one of four possible error codes.

Error code	
30	Servo Controller cannot be erased (cleared)
31	No communication with the servo Controllers
32	Download impossible
33	Problem with re- booting the servo Controller Software

c

Once you see the rotating bar on the Display, you must turn off the power of the gate.

Restore all DIP switches as you have written down before.

Turn the power on again, then the gate goes back into normal operation.

10. Technical Support

In case of problems please contact an authorized after sales service representative.



NOTE!

Please refer to the nameplate of the MPR Kit Set for the data required in the case of inquiries.

11. Spare Parts and Accessories

An exploded drawing with details of the individual parts and their identification numbers is available on demand.

11. Warranty

MAGNETIC provides a limited warranty on its products, which covers all mechanical and electrical components.

The following warranty details are valid:

- 3 years after delivery
- 2 years after initial operation
- 170,000 MTBF; electronic parts 40,000 hours
- 10,000,000 MCBF

Parts are excluded which are subject to wear and tear, for a period of two years from the date of first use or for a maximum of three years from the date on which the system was delivered provided that the operating instructions have been complied with, no unauthorized servicing of machine components has taken place, and that no mechanical damage to the machines is evident.

Please refer to our standard Warranty Statement

12. Disposal



CAUTION!

All applicable regional regulations, rules and laws relevant to the disposal of materials and machinery must be strictly followed.

Packing material

Once the equipment has been unpacked the packing materials have to be separated into the different basic materials (wood, cardboard, plastics, etc.) and then disposed in an expert manner.

MPR

The MPR Set has to be sorted by different materials (stainless steel, glass, rubber, etc.) and then disposed in an expert manner.

Electric and electronic equipment

Electric equipment has to be sorted by different materials (plastics, metal, toxic substances, etc.) and then disposed in an expert manner in compliance with the manufacturer's instructions.



NOTE!

For an expert information regarding disposal of electric equipment contact MAGNETIC or competent electricians.

Lubricants and operating materials

Consumables (oils, lubricants, etc.) have to be separated and then disposed in an appropriate manner.



CAUTION!

Do not add inflammable operating materials to normal waste. There is a high risk of fire!

Environment

In order to prevent environment pollution we recommend a careful separation and disposal of all materials.



RECYCLING!

When disposing of the unit at the end of utilisation ensure those noxious and dangerous residues are disposed of in accordance with the regional regulations.

Based on the different material, disposal must occur in a separate manner. Used lubrication and auxiliary material such as oils and fats will be disposed of in accordance with the statutory provisions.

Recyclable materials should hand to specialised recycling companies!

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Magnetic Autocontrol

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 Tel.: 07622/695-5
 Techn. Support

Zeichnungsnummer : 5527,5060
 Anlagenbezeichnung:
 Kunde : wiring diagram
 Kommission : MPR standard

Endkunde:

Installationsort :

Type :

Zuleitung : 230V/AC
 50Hz
 16A

Projekt Beginn : 10. Aug. 2006
 Projektverantwortlicher :
 Letzte Änderung : 18. Apr. 2007
 Letzter Bearbeiter : PRO

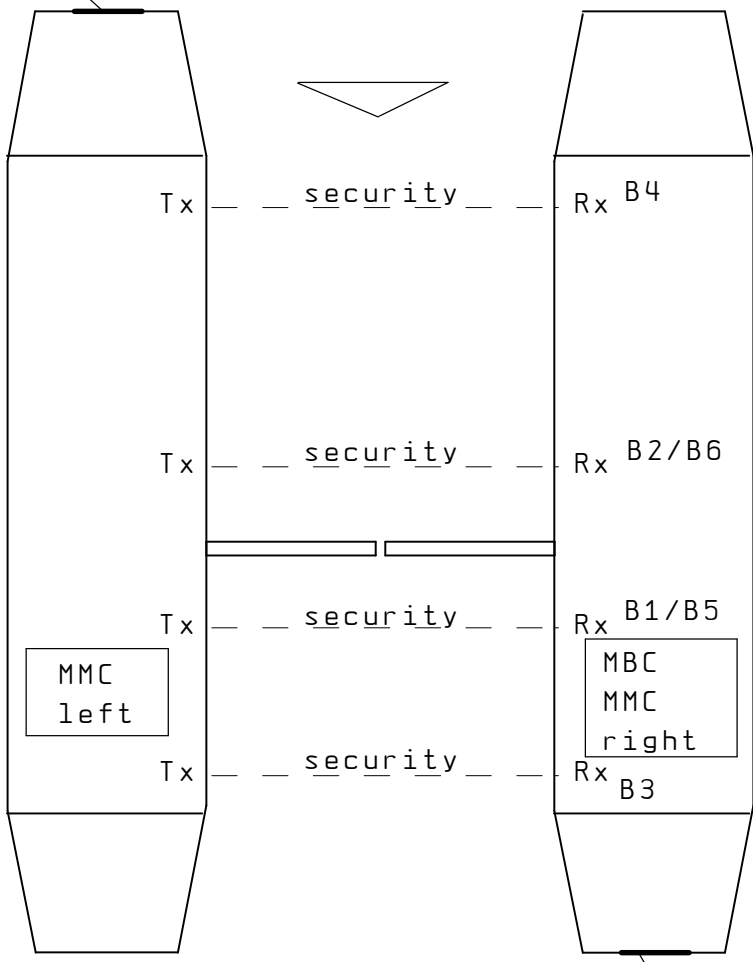
Anzahl der Seiten : 9

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2	18.04.07	7K07502	Pr	Bearb.	PRO				1
1	22.09.06	7K06513	Pr	Gepr.					9
wiring diagram MPR standard							cover		
							7K06510	5527,5060	



display left

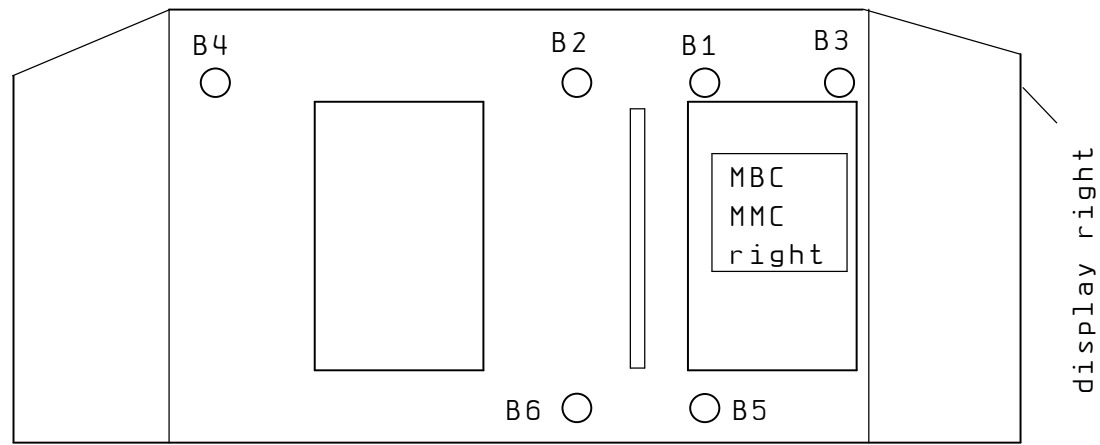
entry
(insecure area)



exit
(secure area)

display right

side view



light barriers

- B1 = safety light barrier right
- B2 = safety light barrier left
- B3 = right outside (only mode2)
- B4 = left outside (only mode2)
- B5 = auxilary safety light barrier right(option mode 1)
- B6 = auxilary safety light barrier left (option mode 1)

2	18.04.07	7K07502	Pr	Datum	10. Aug. 2006
1	22.09.06	7K06513	Pr	Bearb.	PRO
Version	Datum	Änderung	Name	Norm	Urspr.

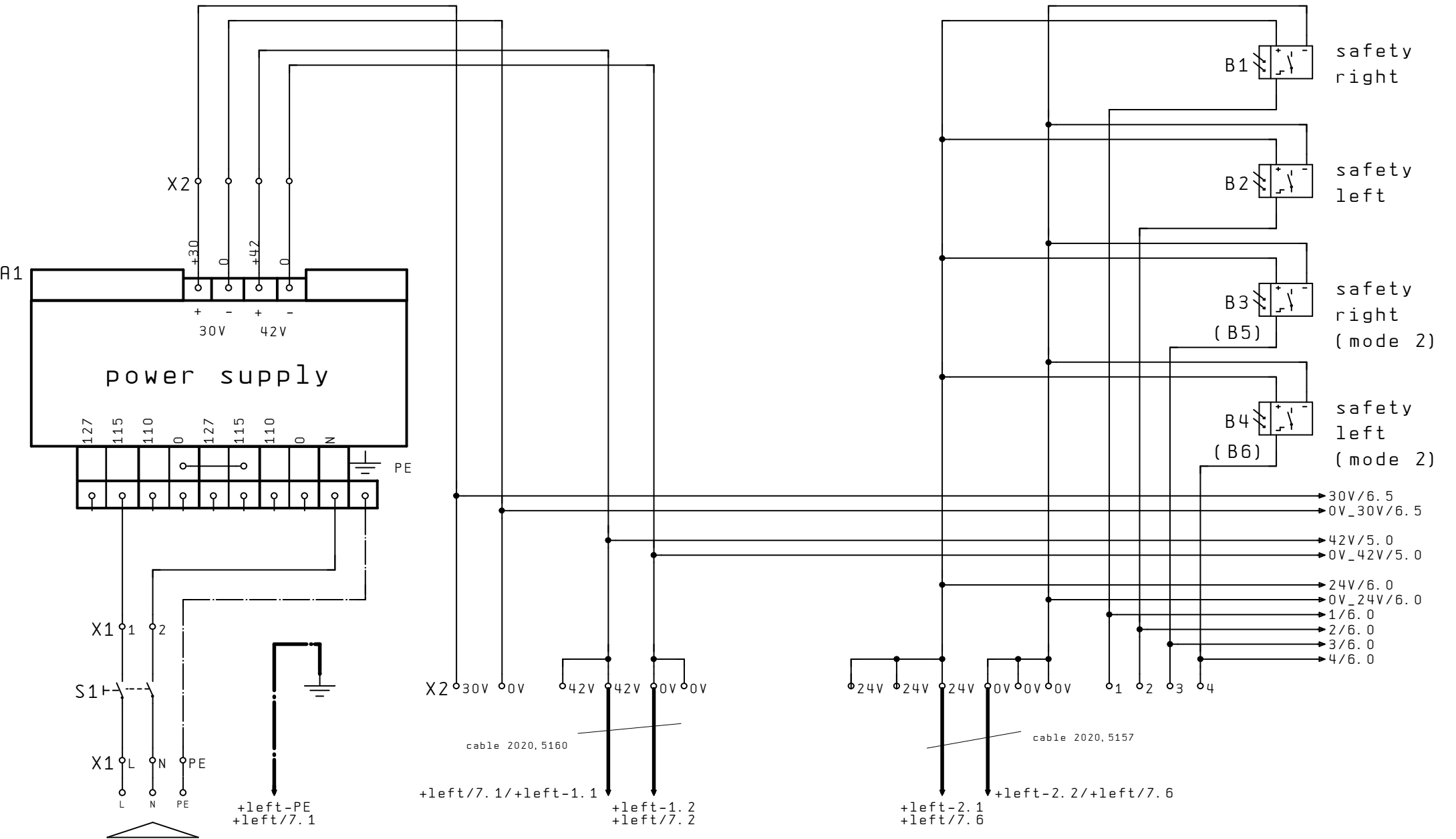
wiring diagram
MPR standard



overview

7K06510	5527, 5060	B1.	3
			9 B1

light barrier receiver



power supply 230V AC, 50Hz, 10A

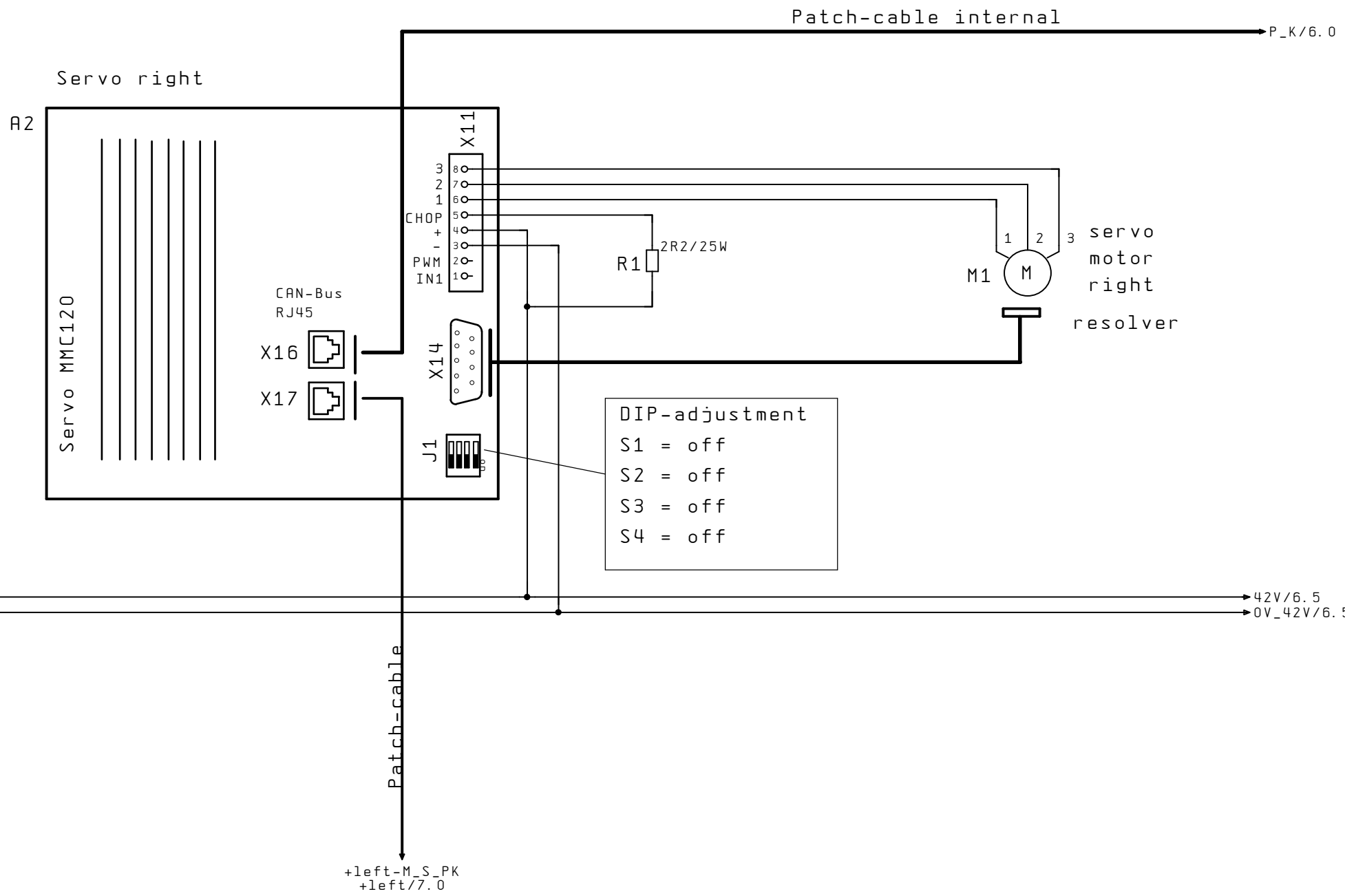
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1	22.09.06	7K06513	Pr	Bearb.	PRO
Version	Datum	Änderung	Name	Norm	Urspr.
					Ers. f.

wiring diagram
MPR standard



MPR right, power supply, light barrier

7K06510	5527, 5060	B1.	4
			9 B1



2	18.04.07	7K07502	Pr	Datum	10. Aug. 2006
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Version	Datum	Änderung	Name	Norm	Urspr.
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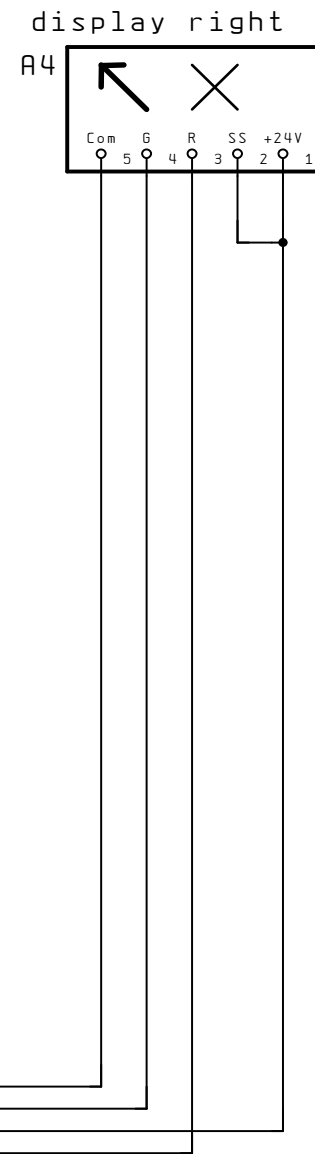
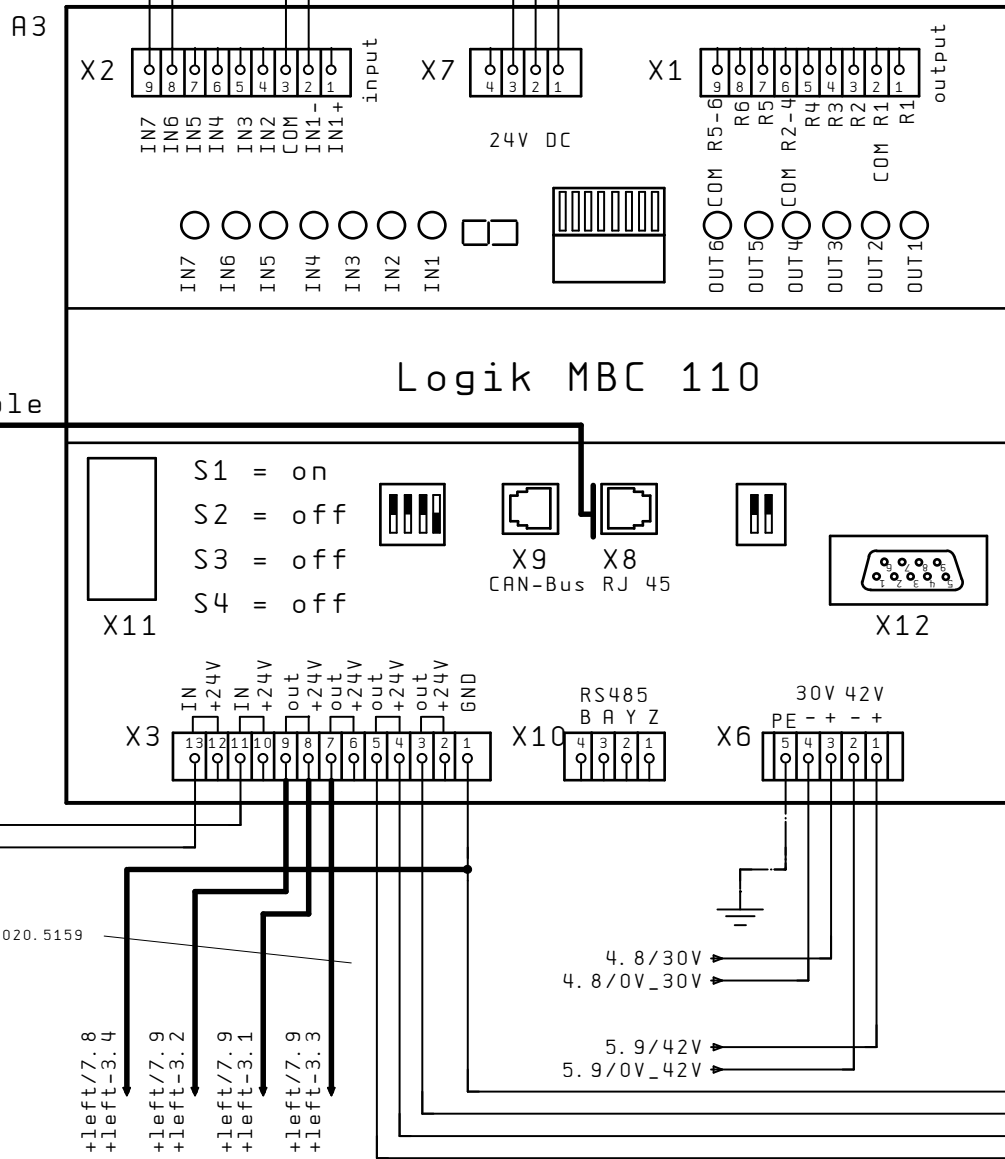
wiring diagram
MPR standard



MPR rechts
Servo Controller

7K06510	5527,5060	B1.	5
		9	B1

client terminal details
see page 8



Patch-cable
internal

5.9/P_K

4.8/24V
4.8/0V_24V
4.8/1
4.8/2
4.8/3
4.8/4

cable 2020.5159

4.8/30V
4.8/0V_30V
5.9/42V
5.9/0V_42V

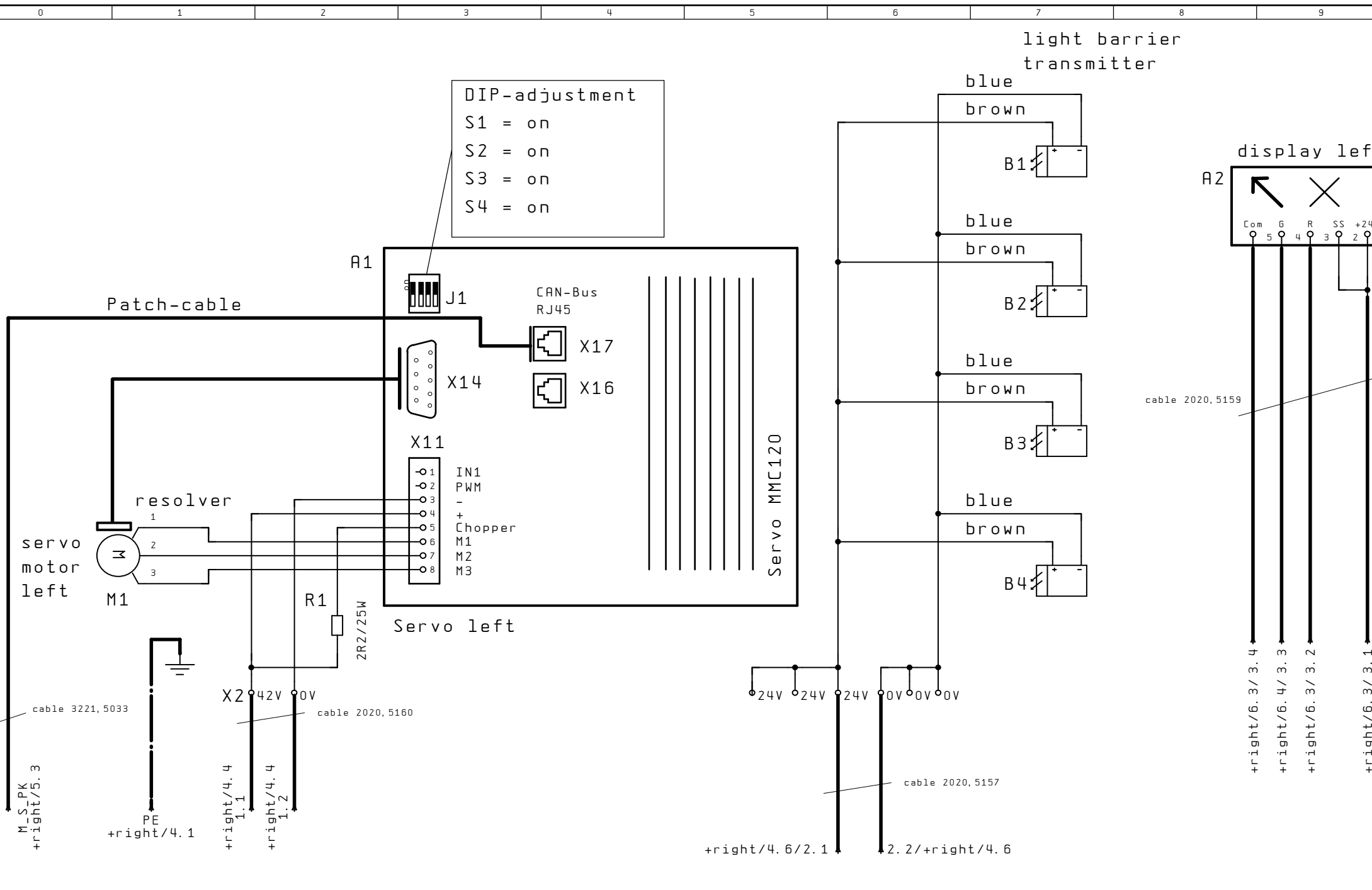
+left/7.8
+left-3.4
+left/7.9
+left-3.2
+left/7.9
+left-3.1
+left/7.9
+left-3.3

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MPR right
Logik Modul MBC

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			9 B1



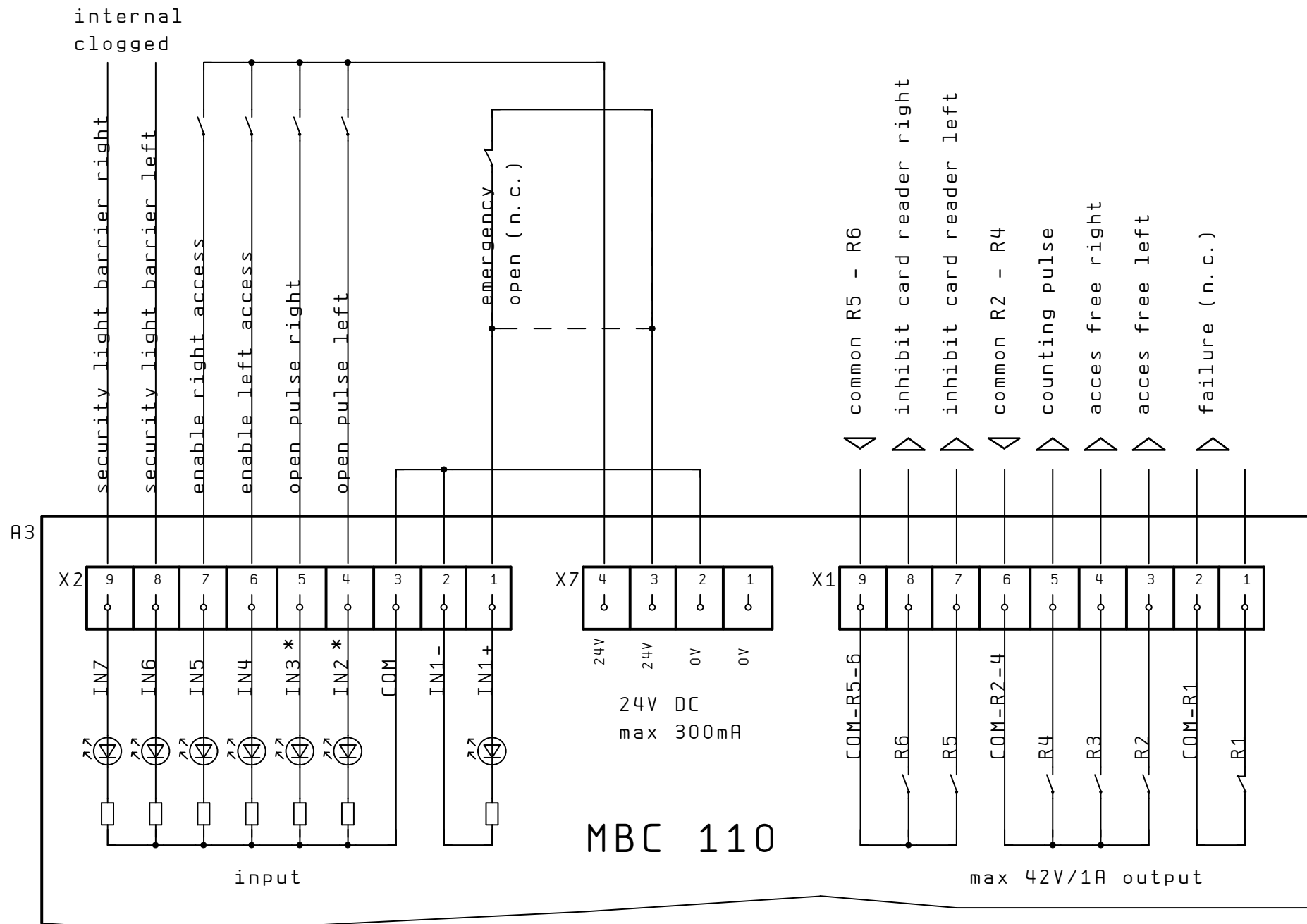
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Version	Datum	Änderung	Name	Norm	Urspr.
					Ers. f.

wiring diagram
 MPR standard



MPR left
 servo, light barrier

7K06510	5527,5060	B1.	7
			9



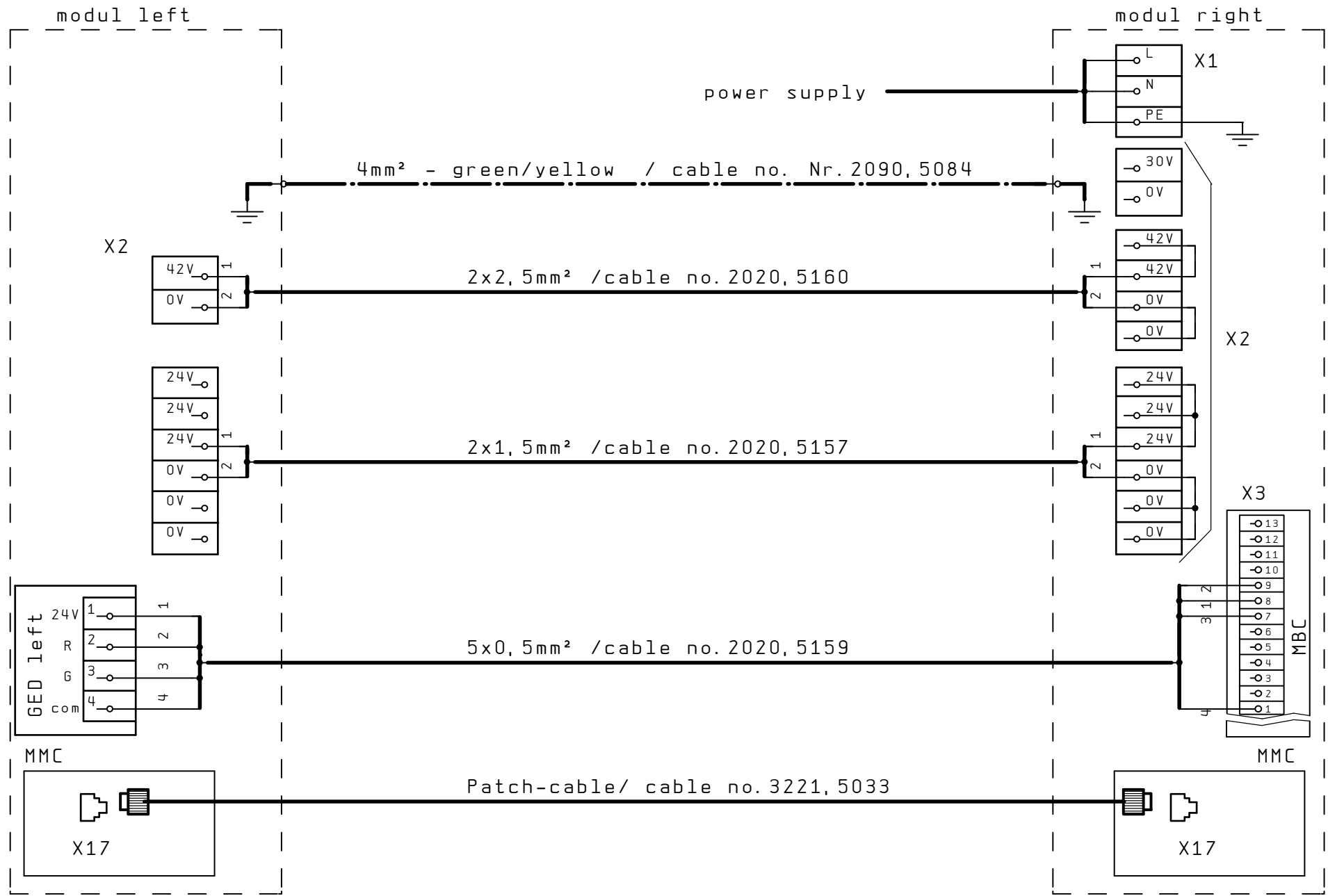
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1	22.09.06	7K06513	Pr	Bearb.	PRO
Version	Datum	Änderung	Name	Norm	Urspr.
					Ers. f.

wiring diagram
MPR standard



MPR-module B/C
terminal details

7K06510	5527,5060	= terminals
		+
		B1. 8
		9 B1



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Version	Datum	Änderung	Name	Norm	Urspr.							