

6.1 Wiring Diagram

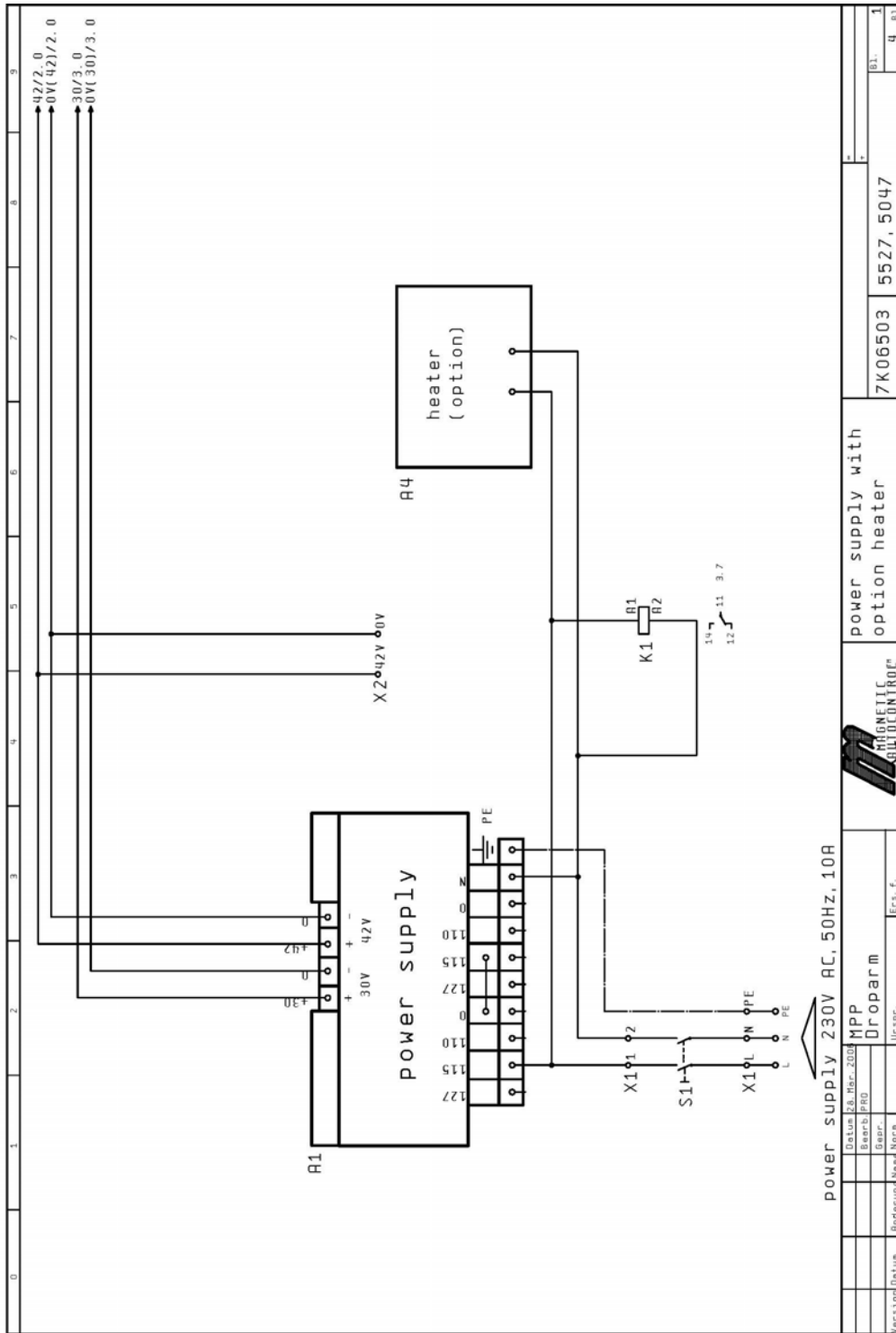


Fig. 7 Wiring diagram:
Please refer to Fig. 8 for electrical schematic drawing which details all connections to the MBC controller.

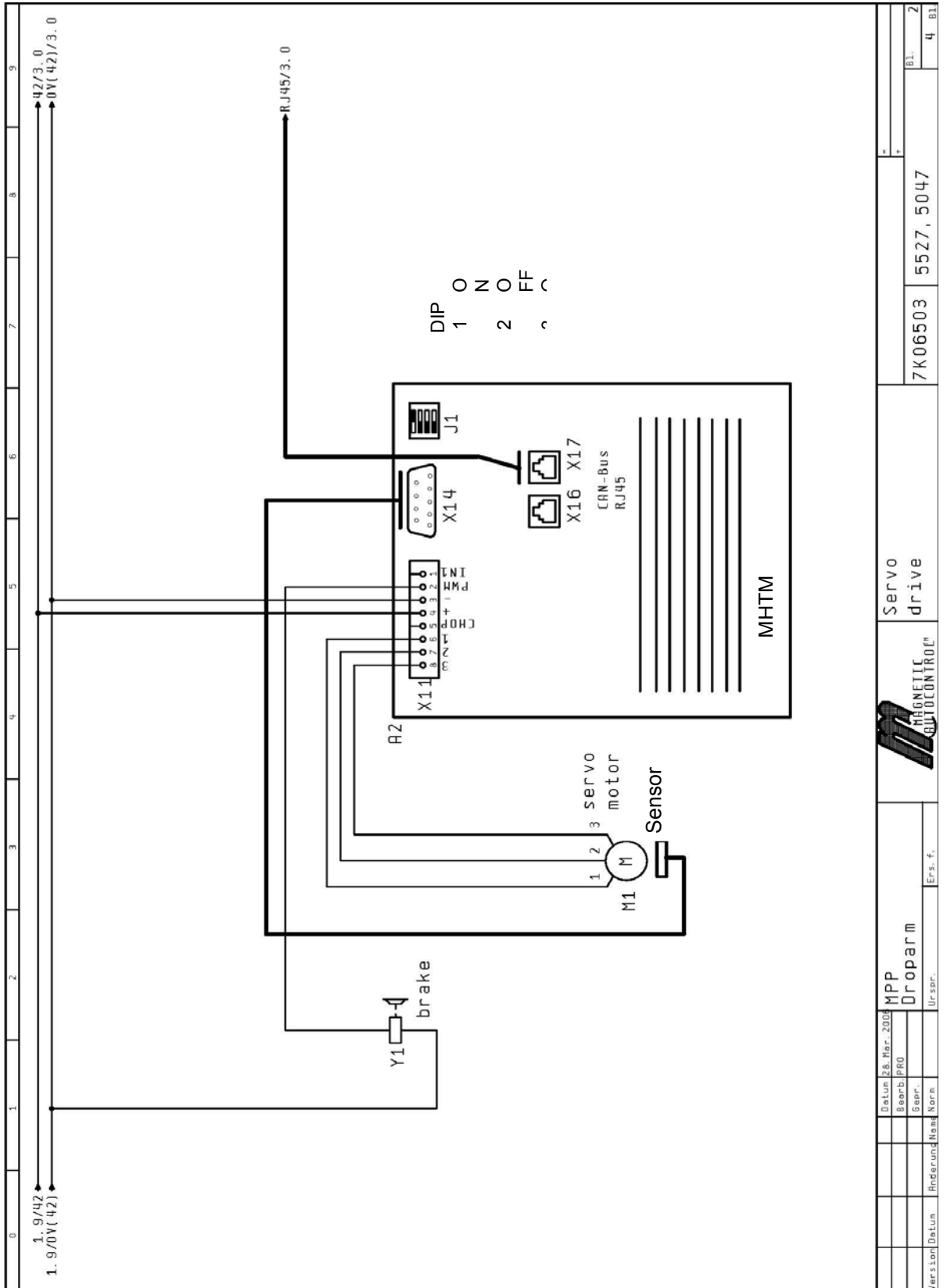
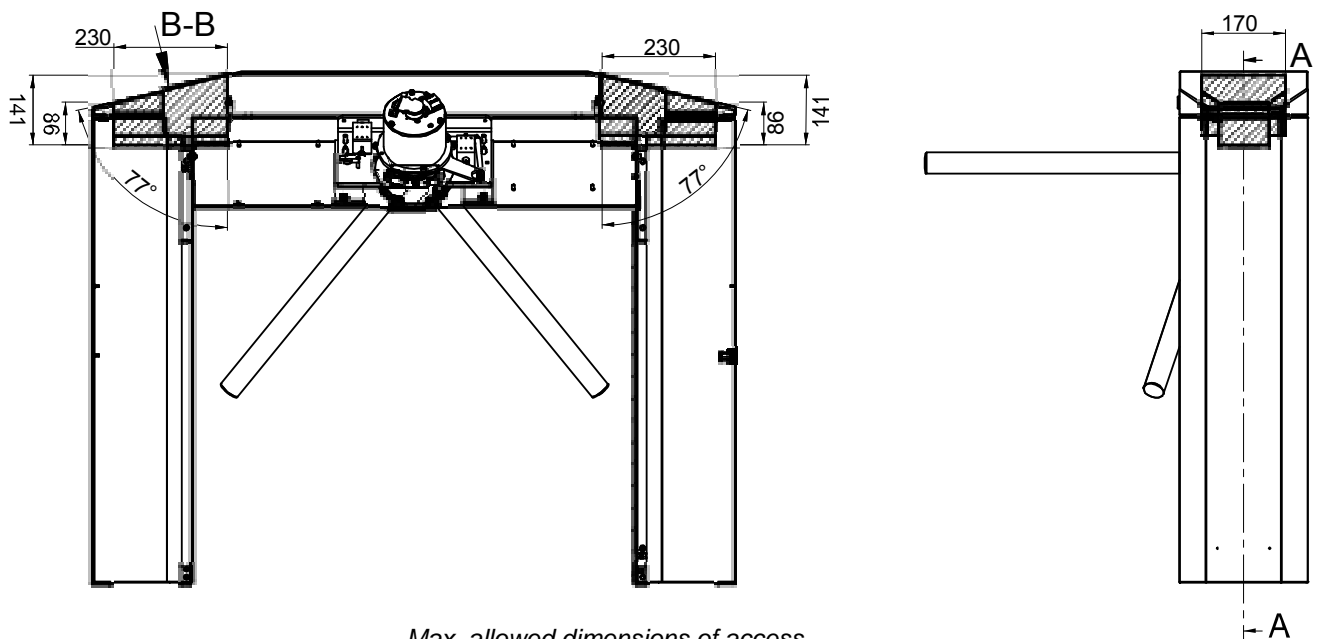


Fig. 8 Servo Drive

7. Installation of Access Control Systems

It is possible to install access control systems at the both ends of the cover. The way of mounting those devices depends on the supplied cover. It can either be fixed with screws onto the surface of the standard cover. The optional available special cover is furnished with removable fascia panels made of stainless steel or a synthetic material for a more comfortable installation of any access control systems.



Max. allowed dimensions of access control devices

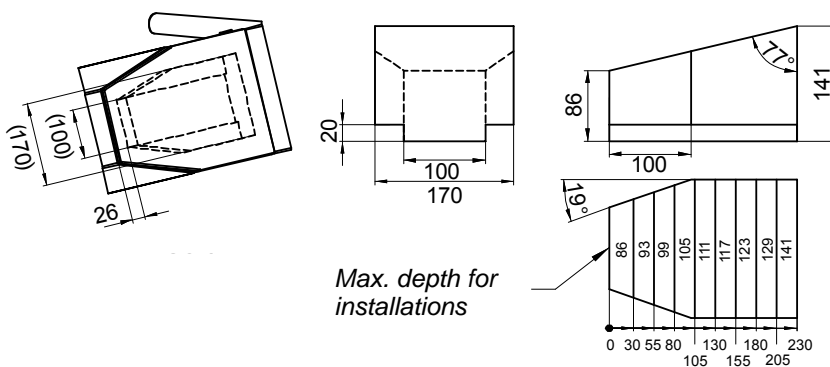


Fig. 11
Mounting of access control systems



8. Commissioning

Once the mechanical and electrical installation of the pivot barrier is completed, then it can be put into service.

Check before start-up that all assembly and installation instructions have been followed and the electrical connections have been performed correctly.

As power is first supplied and the isolating circuit breaker is turned on, the torque drive turns the pivot arm to the next home position.

The barrier is then ready for operation

8.1 Drop Arm Function

In case of power failure or on receipt of an input signal the turnstile arm automatically turns down and allows free passage. Retracting of the turnstile arm will also be effected automatically after power return. (Please refer to chapter 3.)

9. Technical Support

Should faults occur that cannot be rectified by a technician, please contact our Technical Support that is available to you:

Phone + 49 07622/695-5

Please refer to the name plate on the pivot barrier housing for the data required in the case of queries. This is found on the inside of the unit vis-à-vis the MBC controller.

10. Spare Parts and Accessories

An exploded drawing which details the individual parts and their identification numbers is available on request.

11. Warranty

The manufacturer reserves the right to adapt to technological progress without special announcement.

Magnetic will be pleased to provide up to date information and possible changes or additions to the operating instructions on demand.

Under the precondition that the operating conditions are complied with and no inadmissible interventions have been made to the interior of the equipment and the equipment has no mechanical damage, a warranty of 3 years after delivery of the equipment or 2 years from date of the first start-up applies on all mechanical and electrical components.

12. Operating Instructions MBC-110A-F100 Controller

General Description:

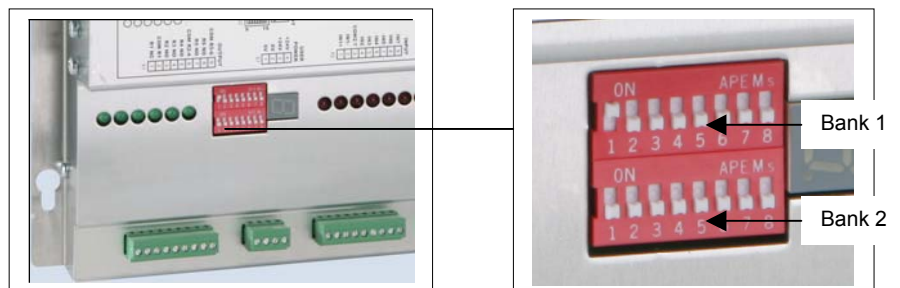
The MBC controller was designed by Magnetic for special applications in their own products. The MPP pivot barrier can only be controlled together with the servo controller MMC-120-100/200.

The motor (MHTM) and sensor are wired directly to the MMC that is connected with the MBC controller via CAN BUS. (Please refer to the electrical schematic drawing.)

As our aim was to provide a customer-friendly handling of the controller, the MBC controller comprehends an internal and an external (customer-sided) connection side.

The customers connection side consists of :

1. DIP switch board (2 x 8 DIP switches)
2. 7 Digits display
3. 6 LED green for outputs
4. 7 LED red for inputs
5. Three encoded / pluggable terminal blocks Input / Output for being connected



12.1 DIP Switch Description of Parameter setting

Functions to be set by the customer

It is to distinguish between parameters that are set as default (factory setting only) and functions that can be adjusted at the controller via the control elements by the customer.

The following functions can be adjusted by the customer:

12.1.1 Bank 1 DIP-switch 1: Pulse Storage

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

If the pulse storage is activated, several opening pulses can be stored. The pedestrian pivot 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	Max. 5 pulses per pivot direction can be stored

The pulse storage is available with different operating modes that are to be set by the factory. (See chapter factory setting of parameters.)

12.1.2 Bank 1 DIP-switch 2: Buzzer

The buzzer is an acoustic alarm signal. A permanent alarm signal indicates the homing mode of the controller, passage in wrong direction or error of the controller.

An additional sound can be switched on for confirmation of a valid request.

DIP 2	Buzzer
OFF	Confirmation sound off
ON	Confirmation sound on

12.1.3 Bank 1 DIP-switch 3: Drop Arm

The controller must be informed, whether the pedestrian pivot is operated with or without a drop arm, as this has an effect especially on the operational sequences of the homing mode.

DIP 3	Drop arm
OFF	Without drop arm
ON	With drop arm

12.1.4 Bank 1 DIP switch 4: Security Level

DIP 4	Security Level
OFF	Low - Security
ON	High - Security

(Note: This function will be available not before mid 2006.)

This function is only available with the MPP (Magnetic Pedestrian Pivot) and MPT (Magnetic Pedestrian Turnstile) barriers.

It defines the behavior of the brake in the event of several attempts to pass in wrong direction.

Security Low

It is possible, to pass in wrong direction by several steps. After recognition of wrong direction, though the brake will be activated but released immediately. If just in this moment the pivot arm is pushed down, it can be moved a little until the brake is activated again.

If the controller recognizes at release of the brake, that no further attempt is made to push the pivot arm, the motor returns to primary home position.

Security High

The holding time until the brake will be released after a wrong direction attempt will increase progressive with rising angle.

If the controller recognizes at release of the brake, that no further attempt is made to push the pivot arm, the pivot arm returns to the next home position.

12.1.5 Bank 1 DIP switch 5 and 6: Hold-Open Time

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

The hold-open time can be adjusted at 4 levels:

DIP 5	DIP6	Hold-Open Time
OFF	OFF	10 s
OFF	ON	20 s
ON	OFF	30 s
ON	ON	Endless

At level 4 "endless", the hold open time does not count down, the turnstile remains ready for passage.

12.1.6 Bank 1 DIP switch 7: Request of the Software Update Version

If this function is requested during operation mode, the update version is indicated in circular mode at the 7 segment display.

DIP 7	Update Version Software
OFF	Operating mode display
ON	Update Version displayed

12.1.7 Bank 1 DIP switch 8: Home Position

Required for alignment of the home position to the controller (see chapter "3.1.2 Learning of home-position").

Please proceed as follows:

Make sure, that the power is OFF. Then set the DIP switch 8 "home position" ON. When the power is switched ON, the controller automatically selects operation mode "Learning Home Position". The user is requested to confirm "home position" by means of a buzzer and the 7 digits display. During a period of about 10 seconds the buzzer sends warning beeps in intervals that become shorter and finally end in a permanent beep of about 5 seconds. The turnstile arm must be positioned in the desired final position during this time period. The home position will be automatically accepted for default at expire of the permanent beep after totally 15 seconds. This method allows to align the home position without being next to the controller.

For permanent storage of this position, the DIP switch "home position" must be set in OFF position. Storage will be confirmed via a buzzer and the 7 digits display.

For safety reasons, the controller starts only after power is switched off and on again.

DIP 7	Update Version Software
OFF	Normal operating mode
ON	Disposed to learn

12.1.8 Bank 2 DIP switch 9 and 16: Reserve

The selected program mode determines the controller program that runs after power return and reset of the controller.

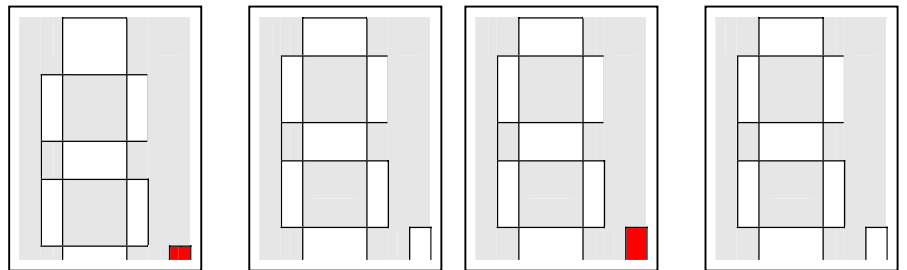
12.2 Seven Digits Display for Diagnosis

12.2.1 Function of the Diagnostics Display

The 7 digits display is designed for purpose of convenient diagnostics, showing different operational states and errors.

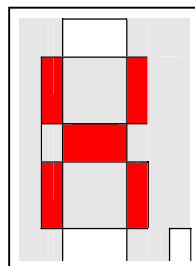
12.2.2 Normal Operating Status

Indication by a permanent blinking segment with 0.5 Hz (defined in "fry_op")



12.2.3 Learning of Home Position

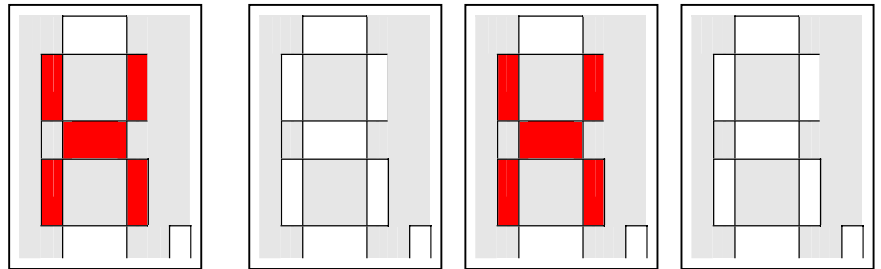
Permanent illuminated segments in the shape of an H until the home-position was confirmed via DIP switch, then the normal operating status is displayed.



For initial learning or change of the home position, make sure, that the power is OFF. Set DIP8 ON. Switch ON the main power of the MPP. (Now the MBC displays an H.) Re-position the turnstile arm in the desired final position by hand. Switch DIP 8 OFF. Once again, switch the MPP OFF and re-boot it.

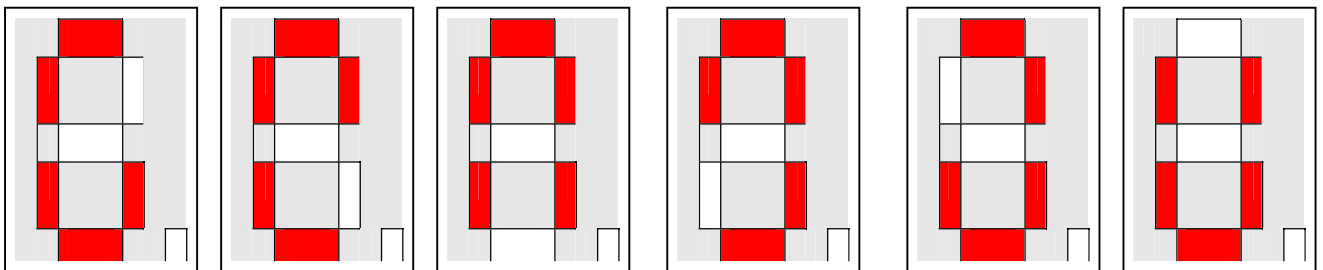
12.2.4 Homing (Turnstile Arm Moves to Home Position)

Blinking segments at 1 Hz frequency (defined in "fry_home") in the shape of an H indicate when the drop arm approaches to the home-position. As soon as the home-position is reached, normal operating status is displayed.



12.2.5 Waiting for Manual Reset

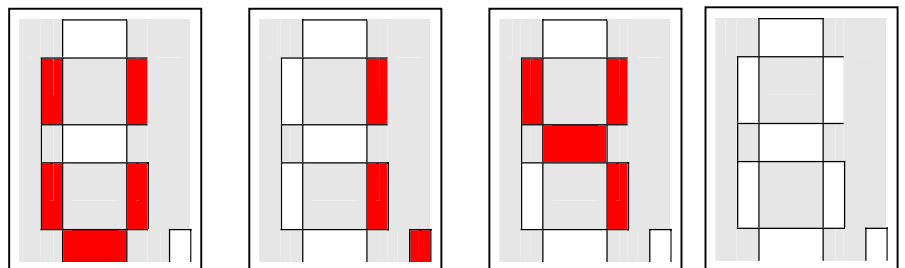
A white bar rotates clockwise until a reset signal is activated, then normal operating status is displayed. Each status is displayed during 0,5 seconds (defined in "delay_mes").



12.2.6 Display Update Version of the Software

First, the character *U* is displayed, successively followed by the major release (with a dot), the minor release and at last a pause, recurring in repeated sequences. Each status is displayed during 2 seconds (defined in "delay_mes").

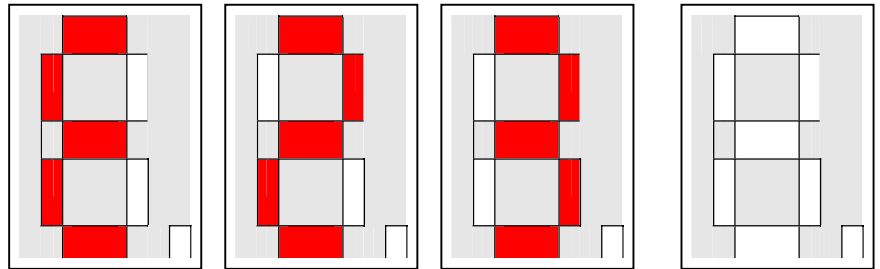
Example for version status 1.4



12.2.7 Display Error Code

First, the character *E* (Error) is displayed, successively followed by the first number, and then the second number of the error code and at last a pause, recurring in sequences. Each status is displayed during 2 seconds (defined in "delay_mes").

Example for error code 23



Legend Error Code:

Error Code	Description	Automatic Reset Function
01	Operating time control	Yes
02	Emergency access activated	Yes
03	Breach control activated	Yes
04	Contact mat energized	Yes
05	Access attempt wrong direction	Yes
06	Drop arm magnet currentless	No
07	Recognition vandalism	
08	Reserve	
09	Reserve	
10 - 19	Reserve	
20 - 39	Software failure (still to define)	No
40 - 59	Hardware failure (still to define)	No
60 - 79	Communication failure (still to define)	No
80 - 99	Reserve	

All those status and error codes, that are with automatic reset function, will be displayed during a period of max. 10 minutes after the error is rectified but however, as long as the failure is existing.

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

12.2.8 LED Green

The LED indicate, which outputs have been activated by the controller. Each LED is assigned to the according output (i. e. output 6 is assigned to LED 6 etc.).

12.2.9 LED Red

The LED indicate, which inputs have been activated by the controller. Each LED is assigned to the according input (i. e. input 6 is assigned to LED 6 etc.).

12.3 Functions of the Inputs

(Please refer to the wiring diagram)

Default setting of the inputs

INPUT	Default Function
IN1	ASB signal for servo controller (hard-coded)
IN2	Opening passage direction LH
IN3	Opening passage direction RH
IN4	Emergency entrance (attempt to reach the next end position)
IN5	Surveillance LH / Protection against breach
IN6	Surveillance RH / Recognition of illegal passage by means of a contact mat
IN7	Lock of the pedestrian pivot
IN8	End Stop of drop arm disabled
IN9	Recognition power failure (of main power)

The inputs can be operated either with 24V or even with 0V (high active or low active).

The function of IN1 can not be changed because of the input is hardware-sided connected with the ASB-input of the servo's final stage(s).

Release of the servo controller via IN1. The logic is inverted (recognition of broken wire), i. e. the controller is only energized in case of an permanent contact is activated. Otherwise the motor will be currentless and the drop arm magnet will release (if existing).

IN2 up to IN9 can be used for other functions via a parameter set.

12.3.1 Functional Description of the Inputs

Note: The function of IN1 can not be changed because of the input is hardware-sided connected with the ASB-input of the servo's final stage(s).

12.3.1.1. Input 2 Function Opening Pulse/Signal Aisle LH

Opening pulse for entry / left hand passage.

In the event of the signal is activated more than 5 seconds, a permanent contact is set.

12.3.1.2. Input 3 Function Opening Pulse/Signal Aisle RH

Opening pulse for exit / right hand passage.

In the event of the signal is activated more than 5 seconds, a permanent contact is set.

12.3.1.3. Input 4 Function

Free passage in both direction in case of emergency. Drop arm turns down automatically.

12.3.1.4. Input 5 Function Safety LH

Wiring of a monitoring system for recognition of a fraudulent access attempt by breach.

12.3.1.5. Input 6 Function Safety RH

Wiring of a monitoring system for recognition of a fraudulent access attempt by breach.

12.3.1.6. Input 7 Function Locked Gate

Input for lock of the pedestrian pivot in both directions. Any subsequent opening pulses will not be accepted then, despite a pulse is given by the higher ranking IN1 (emergency). In this case the locked barrier can released for free exit /entry.

12.3.1.7. Inputs 8 und 9 are for internal use.

12.4 Hardware of the Relay Outputs

The relay outputs REL1 to REL6 are wired on a shared connection plug board. Groups are combined to a pool in order to safe terminal clamps.

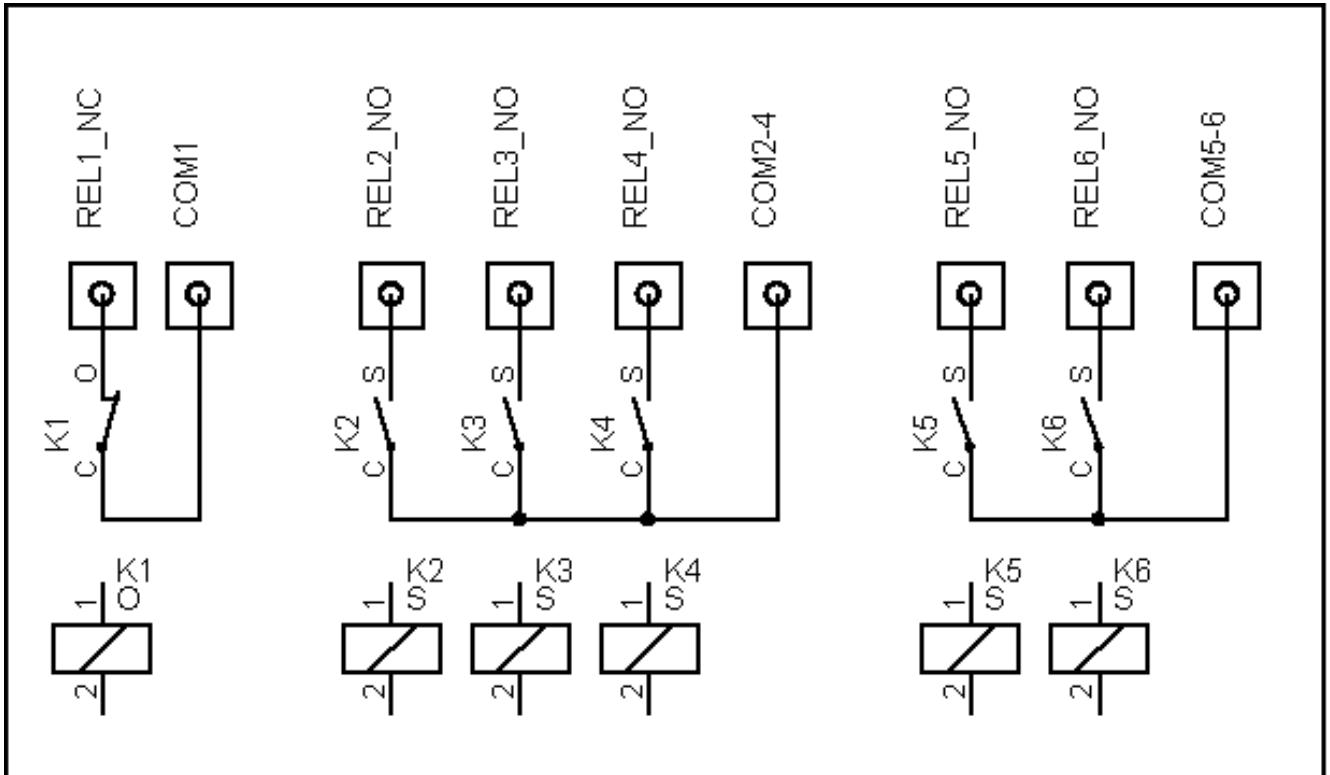


Fig. 13
Wiring Diagram Relay OUTPUTS (simplified drawing)

12.4.1 Possible Output Functions

Note: The function of REL1 can not be changed because of the output is also engaged for feedback in the event of power failure.

Output	Default Function
Relay 1	Collective fault / Power failure
Relay 2	Pedestrian Pivot in idle position
Relay 3	Free passage LH
Relay 4	Free passage RH
Relay 5	Counter pulse LH
Relay 6	Counter pulse RH
MOSFET-Output 1	Controlling holding solenoid drop arm
MOSFET-Output 2	Controlling retracting solenoid drop arm
MOSFET-Output 3	Heartbeat
MOSFET-Output 4	Reserve

Relay performance data max. 42V/1A

12.4.1.1. REL1 = Collective Errors and Alarm Outputs

In case of certain errors arise, a signal is activated via REL1 and stays active as long the error is pending.

Possible failures might be:

1. Running time of the MPP too long = obstacle recognized
2. Manual reset expected
3. Magnet of drop arm currentless = aisle open
4. Emergency open activated (inverted -> no signal pending)
5. Protection against breach activated
6. Contact mat energized
7. Failure between CAN communication and the final stage
8. Hardware failure final stage
9. Software failure final stage
10. Power failure

Important Information:

A power failure is to indicate at the collective output. For this reason, REL1 is operated inverted. From this it follows, that the relay is activated as long no failure occurs. As soon as one of the above mentioned collective errors arise, the relay will release.

12.4.1.2. Relay 2 Function Pedestrian Pivot in Home Position

A permanent contact is activated via this output as long as the pedestrian pivot is in home position.

12.4.1.3. Relay 3 Function Display free passage LH

A signal is activated via this output in case of free passage at left hand direction. This output can also be used to lock the pulse transmitter for right hand passage, if left hand passage is released.

12.4.1.4. Relay 4 Function Display free passage RH

A signal is activated via this output in case of free passage at right hand direction. This output can also be used to lock the pulse transmitter for left hand passage, if right hand passage is released.

12.4.1.5. Relay 5 Function Counter LH

A counter pulse is given via this output when the end position is reached after passing in left hand direction. This is also true for permanent open mode.

12.4.1.6. Relay 6 Function Counter RH

A counter pulse is given via this output when the end position is reached after passing in right hand direction. This is also true for permanent open mode.

13. Controller MMC-120-200

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.

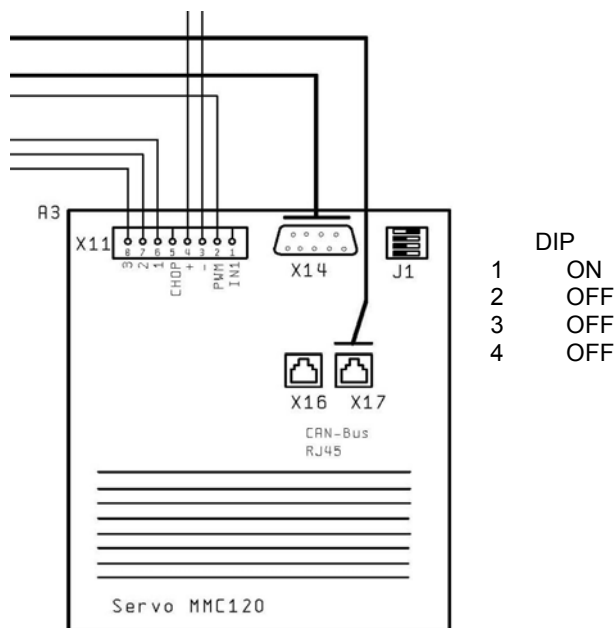


Fig. 14
DIP switches of the MMC Controller



Manufacturer

Magnetic Autocontrol GmbH.
Grienmatt 20
D-79650 Schopfheim
Phone 07622/695-5
Fax 07622/695-603
e-mail: info@ac-magnetic.de
www.ac-magnetic.com