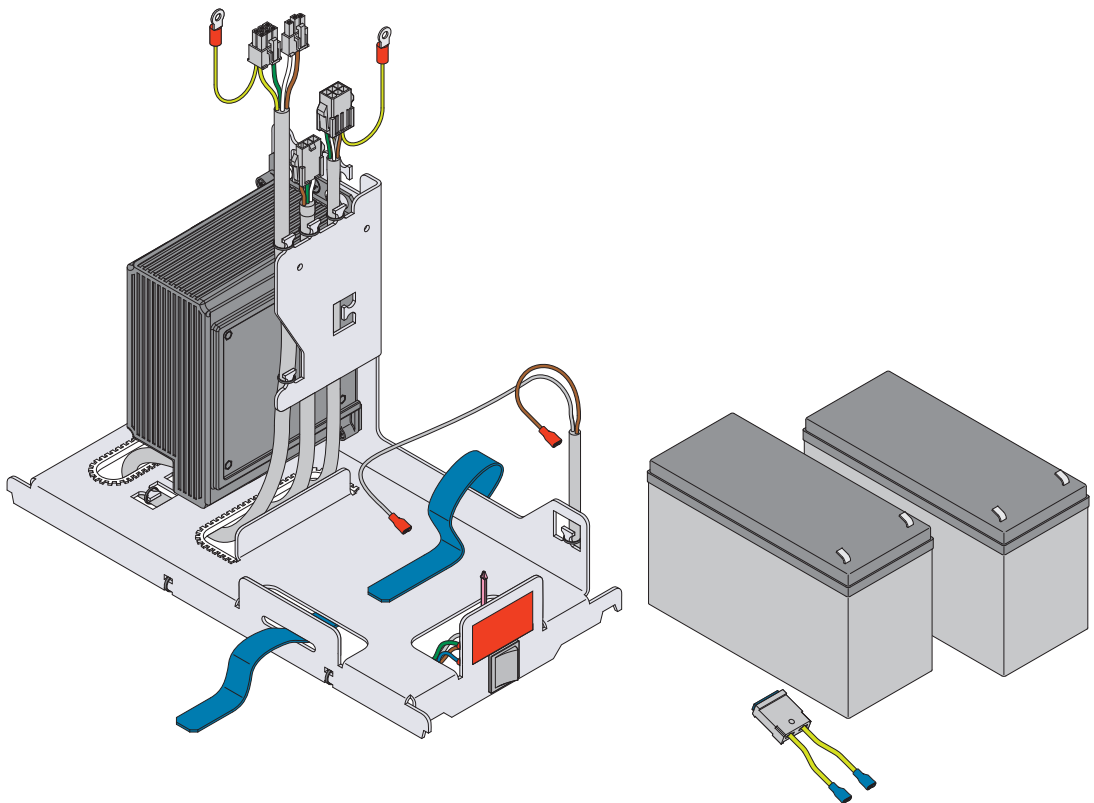


Operating Instructions

Battery Backup BAT010 MHTM™ MicroDrive



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Version: 02

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1 General

1.1 Information regarding the operating instructions

These operating instructions provide important notes on the handling of the battery backup for the MHTM™ MicroDrive barriers. Pre-requisite for safe working is the observance of all specified safety notes and instructions.

Carefully read the operating instructions before starting any work! They are a product component and must be kept in direct proximity of the battery backup, well accessible to the personnel at all times.

When passing the battery backup on to third parties, the operating instructions must also be handed over.

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

General

1.2 Pictogram explanation

Warning Notes

Warning notes are characterised by pictograms in these operating instructions. The warning notes are prelude by signal words expressing the scale of the hazard.

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

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

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

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

NOTICE	
	The signal word NOTICE points to a potentially harmful situation, which can lead to property damage if it is not avoided.

Hints and recommendations



NOTE!

... highlights useful hints and recommendations as well as information for an efficient and trouble-free operation.

1.3 Limitation of liability

All specifications and notes in these operating instructions have been compiled with consideration to the valid standards and regulations, the state of the art as well as to our long-standing knowledge and experience.

The manufacturer is not liable for damages caused by:

- Non-observance of the operating instructions
- Non-intended use
- Deployment of non-trained personnel
- Arbitrary modifications
- Technical changes
- Use of non-approved spare and wear parts.

1.4 Copyright

Surrendering the operating instructions to third parties without written permission of the manufacturer is not permitted.

Content details, texts, drawings, pictures and other illustrations are protected by copyright and are subject to industrial property rights. Any improper use shall be liable to prosecution.

Any type and form of duplication – also of extracts – as well as the exploitation and/or communication of the contents are not permitted without the manufacturer's written declaration of consent.

1.5 Scope of delivery

The scope of delivery comprises:

- Bracket with mains unit and installed cable set
- Optionally 2 rechargeable batteries, type YUASA NP7-12
- Double-sided hook-and-loop-tape
- Fuse housing with microfuse 15 A
- Label "Switch off barrier"

Supplied documentation:

- These operating instructions.

General

1.6 Customer service

Your vendor is available to you for technical information

For the address, see invoice, delivery note or the reverse of these instructions.



NOTE!

In order to enable fast handling note the data of the type plate such as type key, serial number, etc. before calling.

2 Safety

2.1 Intended use

The battery backup BAT010 is solely intended for installation in the MHTM™ MicroDrive barriers "Access" and "Parking" with 230 V power supply.

The battery backup continues to supply the barrier with voltage after power failure.

2.2 Non-Intended Use

The battery backup must not be used in explosive environments.

No attachments must be connected or installed.

The battery backup must only be used to supply a MHTM™ MicroDrive barrier with voltage.

No changes or conversions must be performed.

The battery backup BAT010 must not be installed in the barriers "Toll", "Toll HighSpeed", "Access XL" and "Access XXL".

The batteries must not be stored or operated in gas-tight housings.

All uses that are not described in the chapter "intended use" are forbidden.

 WARNING	
	Non-intended use is dangerous! Every non-intended use can lead to dangerous situations. – Only use the battery backup for their intended use. – All specifications in these operating instructions have to be strictly complied with.

Any types of claims due to damage arising from improper use are excluded. The operator alone shall be responsible for any damage arising from improper use.

Safety

2.3 Specialists and Operating Personnel

2.3.1 Requirements

 WARNING	
	Danger of injury at improper handling Improper handling can lead to considerable bodily injuries and property damage. – Have any activities only carried out by the individuals designated for that purpose.

The operating instructions specify the following qualification requirements for the different fields of activity:

- **Instructed people**
have been instructed during instructions provided by the operator with regard to the work assigned to them and possible hazards arising from improper conduct.
- **Specialised staff**
is due to its technical training, knowledge and experience as well as due to its knowledge of the pertinent regulations able to carry out the work assigned to it and to independently recognise potential hazards.
- **Electrical specialists** are able, due to their technical training, knowledge and experiences as well as knowledge of the relevant standards and regulations, to execute tasks on electrical systems and to independently recognise possible hazards.
In Germany, the electrical specialist must fulfil the provisions of the accident prevention regulation BGV A3 (e.g. master electrician). Appropriate regulations apply in other countries. The regulations valid there must be observed.
- **MHTM™ MicroDrive Service experts**
comply with the requirements of the electrical specialists named here. Additionally, these electrical specialists are trained and authorised by MAGNETIC to perform special repair and service work at MHTM™ MicroDrive barriers.

It must be expected that only those people are deployed who carry out their work reliably. People, whose ability to respond is affected, e.g. by drugs, alcohol or medicines, may not be assigned. Furthermore, the age and profession-specific regulations valid at the operating location must be observed when selecting personnel.

2.4 Personal protective equipment

It is necessary to wear personal protective equipment when dealing with the battery backup so as to minimise health hazards. Before carrying out any work, properly dress in the necessary protective equipment such as work clothes, protective gloves, safety shoes, safety helmet, etc. and wear during work.

2.5 Hazard notes and occupational safety

For your own safety and for the protection of the barrier modules, the following information must be observed and complied with:

Electric voltage

 DANGER	
	Mortal danger by electric voltage! Touching live parts can be lethal. Damage to the insulation or to individual components can be lethal. – Switch off the power supply immediately in case of damage to the insulation and arrange repair. – Only electrical specialists must carry out work on the electrical system. – Switch off power supply and secure against re-activation before performing any work. Test for absence of voltage! – Never bypass or deactivate fuses. – When replacing fuses observe the correct amperage specification. – Keep moisture and dust away from live parts. Moisture or dust may cause a short circuit. If the electrical connection is established at precipitation, e.g. rain or snow, penetration of moisture must be prevented by suitable measures, such as a protective cover.

Thunderstorm, lightning, electric voltage

 DANGER	
	Mortal danger from lightning and electrical voltage! If lightning strikes the barrier, contact to the barrier components and direct proximity to the barrier includes mortal danger. – Do not install the battery backup in thunderstorms. – Protect yourself in buildings or vehicles.

Safety

Danger of explosion at improper handling of the batteries

 DANGER	
	Danger of explosion! The batteries release hydrogen that may form an explosive mixture in connection with air. This may cause severe or potentially fatal injury! – Do not store or operate batteries in gas-tight housings.

3 Identification

3.1 Type plate

The type plate of the battery backup is at the top of the bracket.

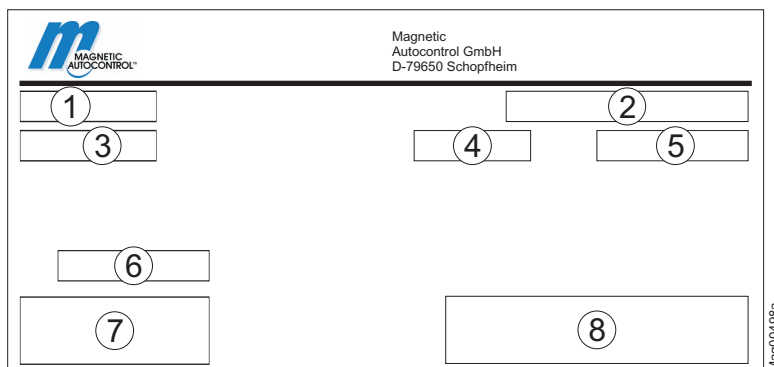


Fig. 1: Type plate

- 1 Type key, e.g. BAT010
- 2 Serial number, e.g. M00934567 URR
- 3 Power supply, e.g. 24 V (2 x 12 V)
- 4 Output voltage $U_1 = 24\text{ V } 1\text{ A}$
- 5 Output voltage $U_2 = 24\text{ V } 10\text{ A peak}$
- 6 Year and month of manufacture, e.g. R:2013-11
- 7 Barcode of the type key
- 8 Bar code for serial number

Technical data

4 Technical data

4.1 Barrier with battery backup

Designation	Unit	Value
Storage temperature	°C	-20 to +55
Ambient temperature, charging	°C	-15 to +50
Ambient temperature, discharging	°C	-20 to +55
Movement cycles ¹⁾	—	1000
Weight	kg	■ BAT010 incl. 2 batteries: 6.8 kg ■ 1 battery 2.5 kg
Battery	—	YUASA NP7-12
Microfuse	A	15

1) Measurement with barrier type Parking-Pro-LA3500 at an ambient temperature of 20 °C and completely charged batteries.

Table 1: Barrier with battery backup

4.2 Battery

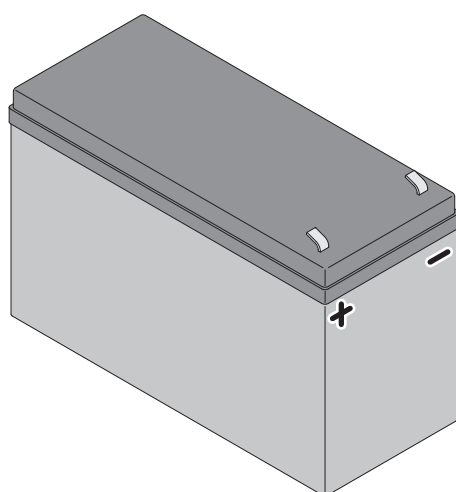


NOTE!

You can use the batteries provided by the operator for the battery backup. The batteries must meet the technical conditions according to the following table.

Designation	Unit	Value
Designation	—	YUASA NP7-12
Rated voltage	V	12
20-hour capacity up to 10.5 V at 20 °C	Ah	7
10-hour capacity up to 10.8 V at 20 °C	Ah	6.4
Dimensions incl. connections (length x width x height)	mm	151 x 65 x 97.5
Connection pin type	—	Plug-in connection 4.7 mm, suitable for flat plugs 4.8 mm x 0.8 mm
Storage temperature	°C	–20 to +60
Balanced charge voltage at 20 °C	V	13.65 ± 1 %
High charge at 20 °C	V	14.5 ± 3 %
Duration of use	Years	5
Standards	—	IEC 61056
Certification	—	UL, VdS

Table 2: Battery



Mag00499

Fig. 2: Pin layout battery

Installation and electrical connection

5 Installation and electrical connection

5.1 Use batteries provided by the operator

You can use the batteries provided by the operator for the battery backup. The batteries must meet the technical conditions according to the batteries described in chapter 4.2. → Refer to page 15, chapter 4.2.

5.2 Prepare barrier for installation

Closing boom

WARNING



Danger from closing boom!

A closing barrier boom can cause severe or potentially fatal injuries!

- Decommission the barrier for installation of the battery backup and the electrical connection as follows.
- Wear personal protection such as a helmet.

1. Secure barrier danger area e.g. with barrier tape.
2. Remove the barrier housing hood.



WARNING!

Danger of crushing between barrier boom and barrier housing!

3. Switch on service switch. The LED is lit red.
4. Manually open the barrier with the middle left button  at the control unit.
5. Unplug plug X11 for the light barrier connection from the control unit.



NOTE!

For the barrier to remain securely opened, we recommend pulling the plugs X11 at the control unit.

6. Switch off the barrier's power supply.
7. Switch off the barrier via the 2-pole mains switch.

Installation and electrical connection

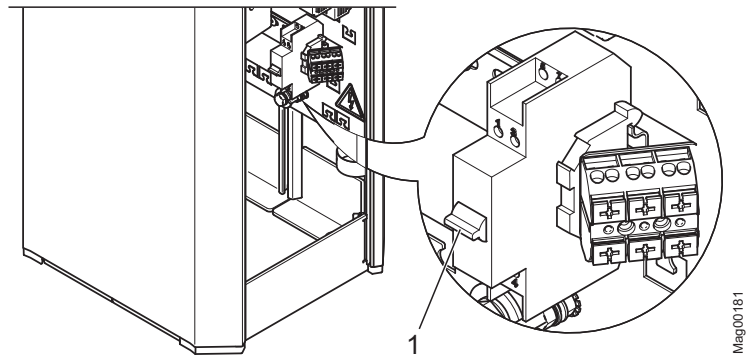


Fig. 3: Switching on and off the barrier

1 2-pole mains switch

5.3 Install battery backup

Scope of delivery

The battery backup is delivered as follows:

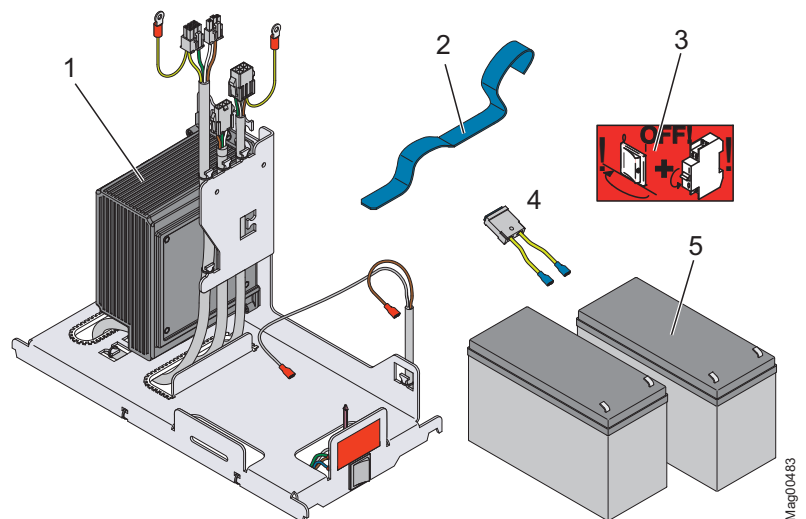


Fig. 4: Scope of delivery

- 1 Bracket with mains unit and installed cable set
- 2 Double-sided hook-and-loop-tape
- 3 Label "Switch off barrier"
- 4 Safety holder with microfuse
- 5 Optionally 2 rechargeable batteries, type YUASA NP7-12

Installation and electrical connection

Stick on label "Switch off barrier"

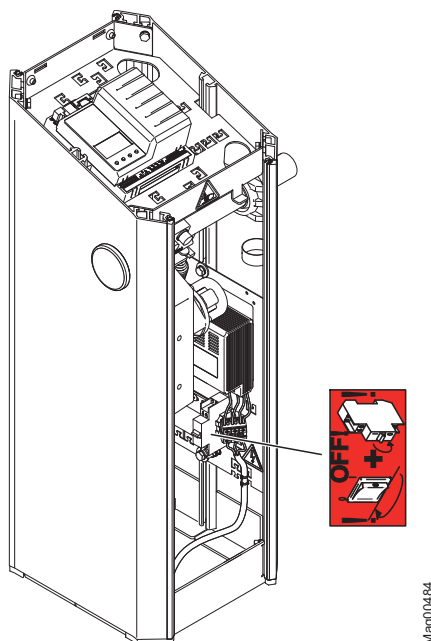


Fig. 5: Label "Switch off barrier"

1. Stick label "Switch off barrier" to 2-pole mains switch.

Unplug lines and
release protective earthing
conductor

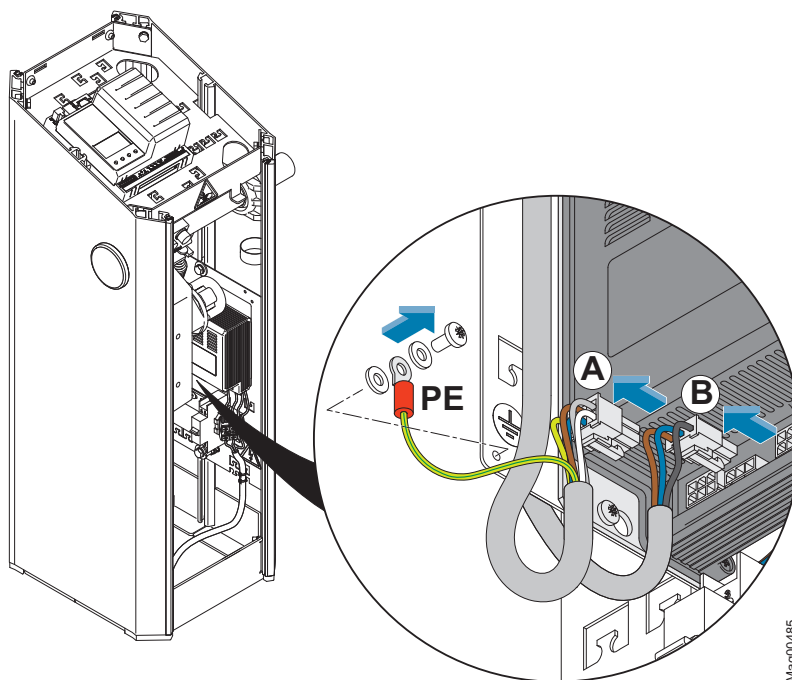


Fig. 6: Unplug lines and release protective earthing conductor

2. Release protective earthing conductor (PE) from angle sheet.
3. Unplug line to the control unit MGC (A).
4. Unplug line to the motor (B).

Installation and electrical connection

Attach double-sided hook-and-loop-tape

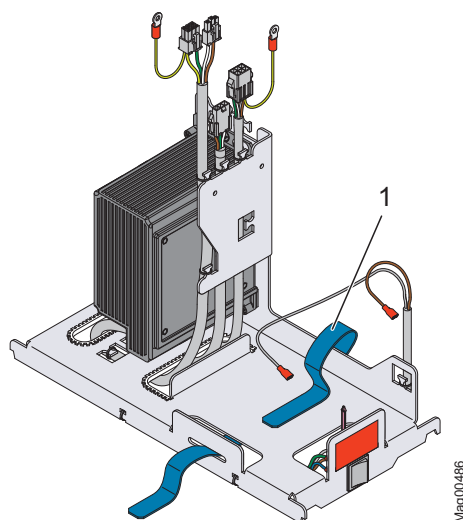


Fig. 7: Attach double-sided hook-and-loop-tape

1 Double-sided hook-and-loop-tape

5. Attach double-sided hook-and-loop-tape to the bracket according to Fig. 7.

Install bracket in barrier housing

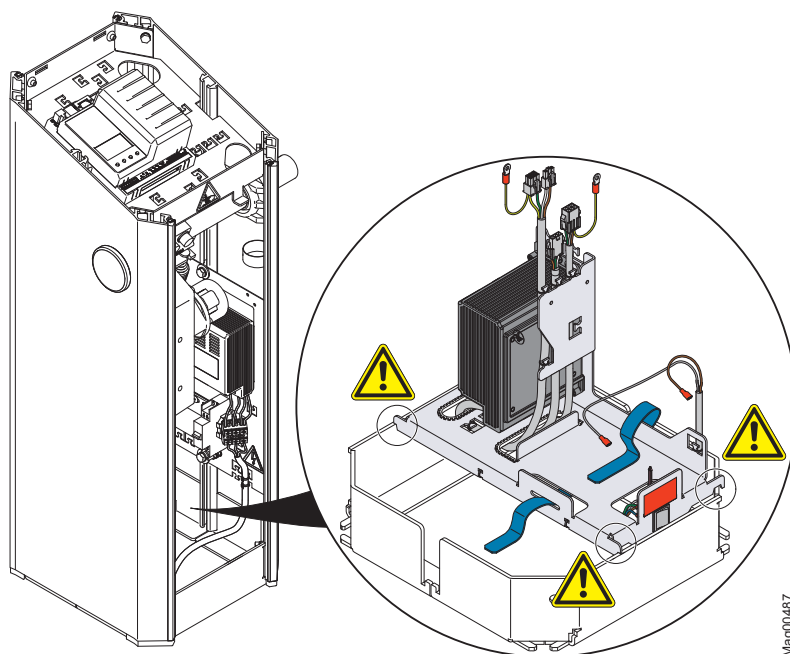


Fig. 8: Install bracket

6. Install bracket according to figure Fig. 8. The batteries are not installed yet.

Installation and electrical connection

5.4 Electrically connect battery backup

Designation of the lines

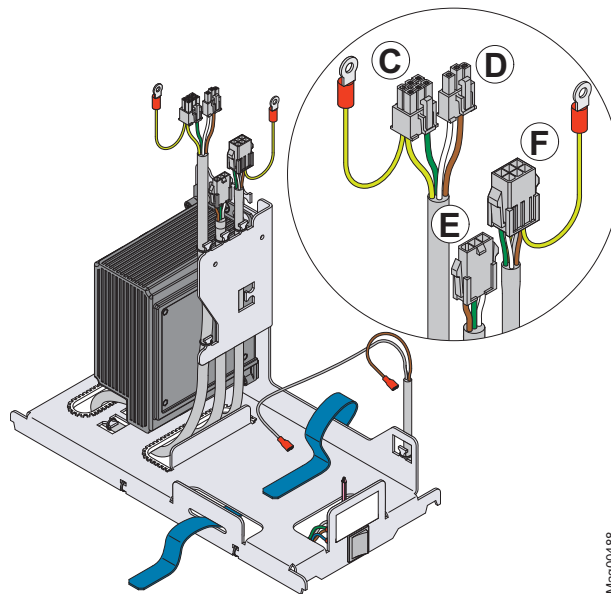


Fig. 9: Designation of the lines

- C* Line battery backup — mains unit barrier housing , 6-pin (X6)
- D* Line battery backup — mains unit barrier housing , 3-pin (X5)
- E* Line battery backup — motor, 3-pin
- F* Line battery backup — control unit MGC, 6-pin

Connect protective earthing conductor

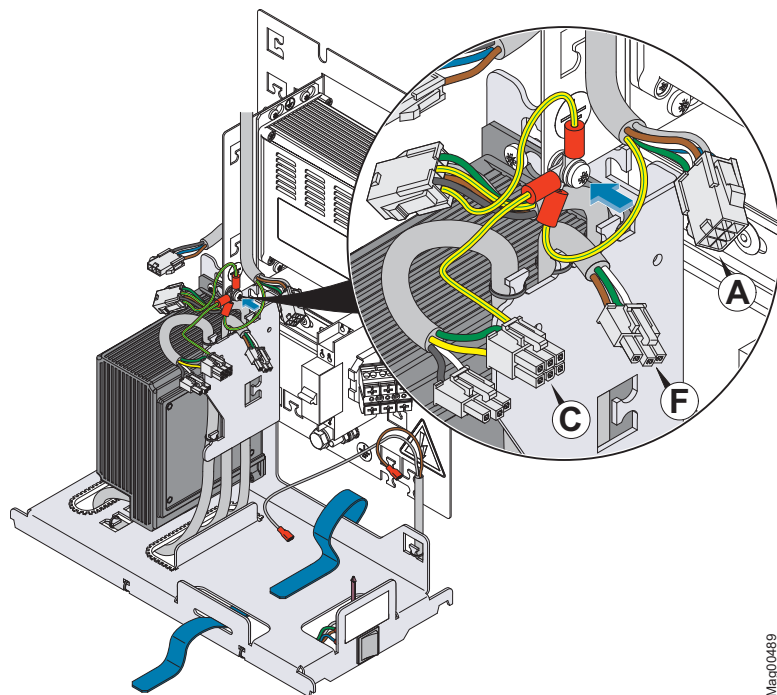
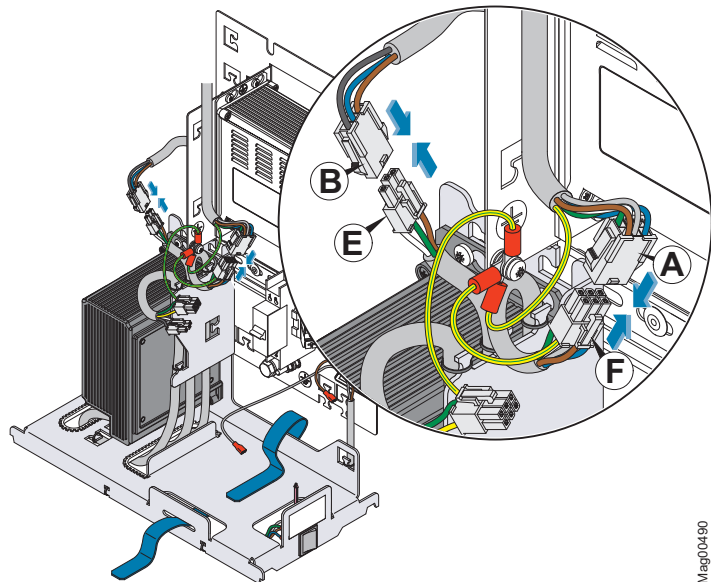


Fig. 10: Connect protective earthing conductor

Installation and electrical connection

1. Connect the protective earthing conductors from the following lines to the angle sheet:
 - Line mains unit barrier housing – control unit MGC (A)
 - Line battery backup – mains unit barrier housing (D)
 - Line battery backup – control unit MGC (F)

Connect lines



Mag00490

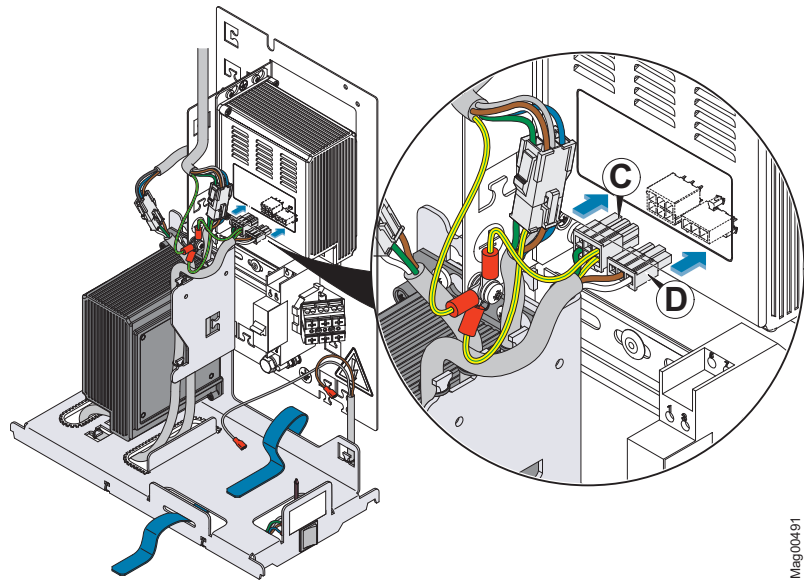
Fig. 11: Connect lines

- A Line – control unit MGC, 6-pin
- B Line motor, 3-pin
- E Line battery backup – motor, 3-pin
- F Line battery backup – control unit, 6-pin

2. Connect line battery backup – control unit (A) with line control unit (F).
3. Connect line battery backup – motor (B) with line motor (F).

Installation and electrical connection

Connect lines to the mains unit of the barrier housing



Mag00491

Fig. 12: Connect lines to the mains unit of the barrier housing

C Line battery backup — mains unit barrier housing , 6-pin (X6)

D Line battery backup — mains unit barrier housing , 3-pin (X5)

4. Plug line battery backup — mains unit barrier housing (C) into socket X6 at the mains unit barrier housing.
5. Plug line battery backup — mains unit barrier housing (D) into socket X5 at the mains unit barrier housing.

Installation and electrical connection

5.5 Insert and connect batteries

NOTICE



A short circuit at the batteries may destroy the batteries!

- Connect the batteries according to the description in this chapter.

Insert first battery

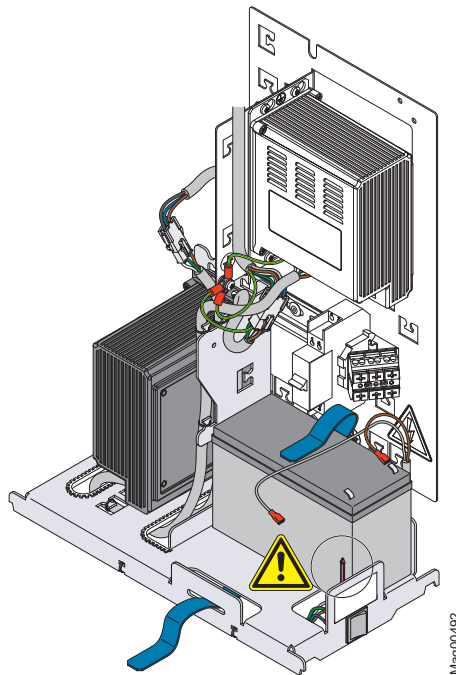


Fig. 13: Insert first battery

1. Insert first battery. Observe the following items:
 - The connection pins must point forward.
 - The temperature sensor must not be damaged and must be directly applied against the barrier housing.

Installation and electrical connection

Insert second battery

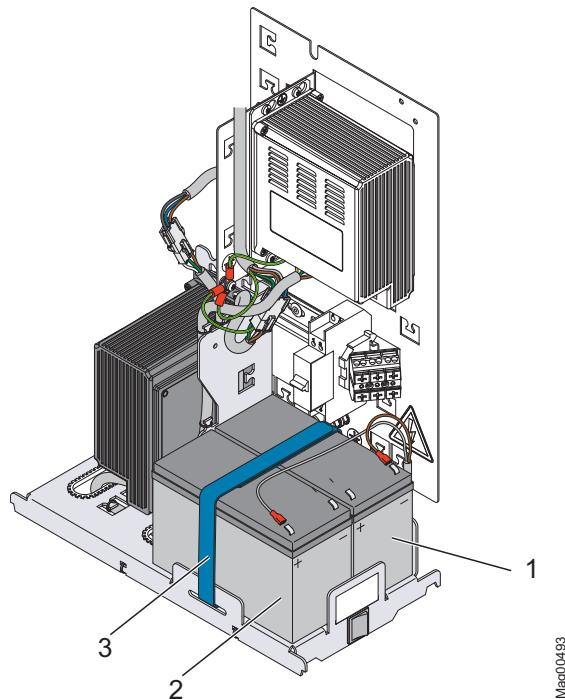


Fig. 14: Insert second battery

- 1 Battery 1
- 2 Battery 2
- 3 Double-sided hook-and-loop-tape

2. Insert second battery. Observe the following items:
 - The connection pins must point forward.
 - The temperature sensor must not be damaged and must be applied against the two battery housings.
3. Attach the batteries to the bracket with the double-sided hook-and-loop-tape.

Installation and electrical connection

Connect batteries

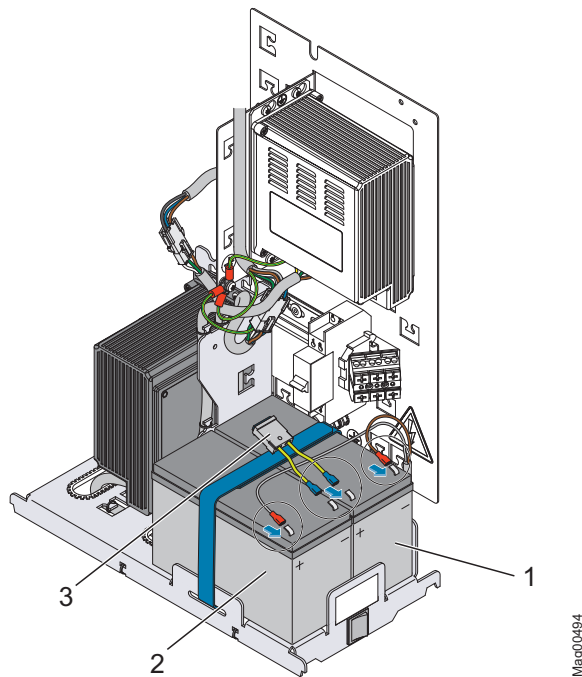


Fig. 15: Connect batteries

- 1 Battery 1
- 2 Battery 2
- 3 Fuse housing with microfuse
4. Remove safety caps from the connection vanes
5. Connect safety housing to the plus pole (+) of the battery 1 and the minus pole (−).
6. Connect shorter line (brown) to the minus pole of the battery 1.
7. Connect longer line (white) to the plus pole of the battery 2.

Operation

6 Operation

6.1 Switch barrier and battery backup on and off

NOTICE



A too early mains voltage power up after a shut down can result in damage of the equipment!

- Wait for at least 10 seconds after shutting off the mains voltage before you switch the mains voltage on again.

NOTICE



High current impulses may destroy the control!

- First switch on the barrier via the 2-pole mains switch and then switch on the battery backup.

Switching on

1. Remove the barrier housing hood.
2. Remove the barrier housing door.

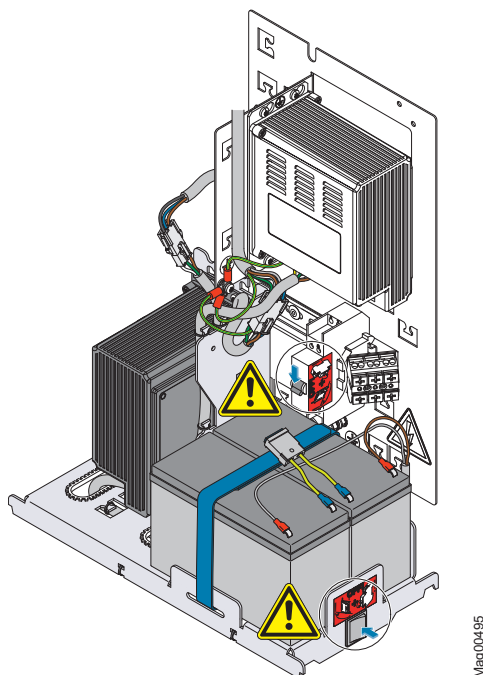


Fig. 16: Switch on the barrier and battery backup

3. Switch on the 2-pole mains switch.
4. Switch on the switch at the bracket.
5. Depending on the settings in the "Start-up behaviour" menu, the barrier boom slowly moves into the top end position (homing run) or stops.
6. Mount the door.
7. Attach and lock the hood.

Switching off

1. Remove the barrier housing hood.
2. Remove the barrier housing door.
3. Switch off the switch at the bracket.
4. Switch off the 2-pole mains switch.
5. Depending on the settings of the lever system's balancing spring and the settings in the menu "Power failure", the barrier boom opens or closes.
6. Mount the door.
7. Attach and lock the hood.

Operation

6.2 Settings

6.2.1 Battery backup

The menu "Battery backup" is used to set the opening and closing speed of the barrier boom during battery operation. The setting affects the battery life.

For standard operation, set the opening and closing speed of the barrier boom in the menu "Barrier speed". → Refer to page 29, chapter 6.2.2.

→ See separate document "Description of control units MGC and MGC Pro for MHTM™ MicroDrive barriers" for parameters of the control unit (Doc. ID: 5816,0006).

Operating view → Main menu → Attachments → Battery backup	
Parameter	Description
Battery backup	Select opening and closing speed of the barrier boom. Options ■ Normal speed The opening and closing speed corresponds to the setting in the menu "Barrier speed". ■ Slow after 200 cycles: The opening and closing speed is reduced to level "Slow" after 200 cycles. ■ Slow down directly: The opening and closing speed is reduced to the level "Slow" at once after switching to battery operation. Factory setting ■ Normal speed

Table 3: Menu "Battery backup"

6.2.2 Barrier speed

For standard operation, set the opening and closing speed of the barrier boom in the menu "Barrier speed".

Operating view → Main menu → Setup → Barrier speed	
Parameter	Description
Close	Select the closing speed for the barrier boom. The closing speed can be changed for all barrier types. The option "fast" corresponds to the barrier-specific speed (100 %). Options ■ Slow: approx. 50 % of the maximum speed ■ Medium: approx. 70 % of the maximum speed ■ Fast: maximum speed (barrier-specific speed) Factory setting ■ Fast
Open	Select the opening speed for the barrier boom. The parameter is displayed for barrier types with the control unit type "MGC-Pro". The option "Fast" corresponds to the barrier-specific speed (100 %). Options ■ Slow: approx. 50 % of the maximum speed ■ Medium: approx. 70 % of the maximum speed ■ Fast: maximum speed (barrier-specific speed) Factory setting ■ Fast

Table 4: Menu "Barrier speed"

Maintenance

7 Maintenance

The enclosed batteries by YUASA are nearly maintenance free according to the manufacturer.

8 Malfunctions

Malfunction: Barrier does not open.

Possible cause	Corrective action	To be carried out by
Power supply not activated.	■ Switch on power supply. → Refer to page 26, chapter 6.1. ■ Check power supply.	Electrical specialist
No power supply	Check power supply.	Electrical specialist

Malfunction: Barrier does not open. The barrier is supplied with voltage via the battery backup only. The display shows "Battery backup active".

Possible cause	Corrective action	To be carried out by
Microfuse of the battery backup defective.	Replace microfuse.	Electrical specialist
Capacity of the batteries no longer sufficient.	■ Charge batteries. ■ Replace batteries	Electrical specialist

Malfunction: Barrier opens and closes very slowly.

Possible cause	Corrective action	To be carried out by
Setup in the menus "Battery backup" and Barrier speed was changed.	Check setup → Refer to page 28, chapter 6.2.	Electrical specialist

8.1 Event message

Number	Designation	Possible cause	Corrective action
FF07 INFO	Battery backup active	The barrier is supplied with voltage via the battery backup.	Check and restore power supply.

Decommissioning, disassembly and disposal

9 Decommissioning, disassembly and disposal

9.1 Decommission battery backup

1. Remove the barrier housing hood.
2. Remove the barrier housing door.
3. Switch off the barrier. → Refer to page 26, chapter 6.1.
4. Switch off the barrier's power supply. Secure against reactivation. Test for absence of voltage.

9.2 Remove batteries and battery backup

1. Remove the batteries in the reverse order of chapter 5.5.
→ Refer to page 23, chapter 5.5.
2. Remove the battery backup in the reverse order of chapters 5.4 and 5.3. → Refer to page 20, chapter 5.4 and page 17, chapter 5.3.
3. Disconnect lines to the mains unit of the barrier housing
4. Remove battery backup.

9.3 Disposing of batteries and battery backup

NOTICE	
	Danger for the environment by improper disposal of battery backup or the batteries! In case of improper disposal of the battery backup or batteries, damage to the environment may result. – Observe the local and national laws and directives. – The enclosed batteries contain lead. Do not dispose of batteries in the household waste. – Disassemble battery backup according to resources. Sort resources and supply them to recycling.

Artikelnr. mat.no.	Bezeichnung/ lang Netztteil- Anschlusskabel	Länge "L" length "L"
2020,0214	Anschlusskabel lang Netztteil-Akkulaeder connection cable long power supp.-charger	750mm
2020,5462	Anschlusskabel standard Netztteil-Akkulaeder connection cable standard power supp.-charger	520mm

