

Installation, operation and maintenance instructions



Please note the additional information:

Installation instructions for panic and emergency exit door locks MBW10.



Declaration of performance 881/881GL



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Important advices which have to be noticed



www.fuhr.de

For this manual in other languages see www.fuhr.de

1 Introduction

The FUHR multipoint locking system **multitronic 881** locks doors electromotively – at all times and fully automated.

- Particularly reliable – strong and fast – due to two parallel high performance motor drives.
- This saves energy as the door always closes imperviously.
- Enables secure locking of main entrance doors, apartment doors or back doors.
- Suitable for use with all door materials as well as for burglary-resistant doors in accordance with EN 1627 RC 2 and RC 3.

The standard locking and unlocking functions in detail:

Special functions are described in chapter 6.

Locking (closing):

All locking components are locked automatically 3 sec. after the door has been closed over. (This can however in emergency situations – e.g. in the event of power failure – also be carried out mechanically by turning the key.)

Unlocking (opening) from the outside:

- By using the FZG free-running profile cylinder's key (depending on the drive-gear position; 4 turns)
- Optionally by means of a FUHR radio access system e.g. transponder, finger print scanner or similar access control systems

Unlocking (opening) from the inside:

- Via the door lever handle as usual or by using the FZG free-running profile cylinder's key (depending on the drive-gear position; 4 turns)
- Optionally via a domestic intercom system (6-12 V AC, 6-24 V DC or potential free)
- Optionally by means of a FUHR radio access system e.g. transponder
- Optionally by means of another access system (release signal via potential-free contact)
- Optionally by means of a contemporary BMS device (Building Management System)



Do not operate the lever-handle during the electrical locking and unlocking procedure!

The optional ServoAccess version:

In addition to the standard functions above, **ServoAccess** provides an additional operation comfort due to a motorized support when opening mechanically. The **multitronic 881 ServoAccess** is opened from its locked basic position by the first key turn. As a further benefit, the servo function supports the already smooth opening when the lever handle is operated slowly.

This function is particularly suitable for applications where the mechanical opening is done by key e.g.:

- In multi-family houses, where the operation of the access control is reserved for the owner for various reasons
- Office buildings in which only a time switch controls the activation and outside the „main times“ the key (locking system) should be used
- For groups of people who for various reasons do not use access control, e.g. small children or elderly people who prefer the conventional key for door opening

Further electrical connections are available for: (some are only operated by controller)

- Alarm systems
- Access control systems
- Electrically operated door openers
- External control LED
- Time switches (permanent-open function or day latch function, via cable or radio activation)
- Electronical shutdown signal

2 Important information/safety instructions

These instructions are aimed at door fabricators and contain important information regarding installation, commissioning and operation pertaining to the FUHR multipoint locking system **multitronic** 881. Please read carefully **prior** to installation and commissioning. The points raised here provide supplementary information to the FUHR Product Liability Information for door locks, see www.fuhr.de. In the event of non-compliance with these imperative instructions, faultless system operation cannot be warranted. We assume that the installation as well as commissioning and maintenance is carried out exclusively by professional staff.

The FUHR multipoint locking system **multitronic** 881 has been designed and manufactured taking safety-related regulations and harmonised standards into account. This product's safety features are an essential pre-requisite for the EN 14846 accreditation. Therefore no alterations or modifications may be carried out other than those described in these instructions.



The safety of the FUHR multitronic product largely depends on its correct installation and regular maintenance! The installation of the electronic components requires particular care, since abrasion points, defective cables, damaged contacts, etc. affect security and can lead to the malfunction of the system. Please ensure that all components are in perfect functioning condition prior to installation. Damaged or defective components may not be used under any circumstances. Use the locking system only in technically perfect condition! Malfunctions that impair security are to be eliminated immediately. Until the malfunction has been eliminated, the drive unit is to be switched off and operated mechanically! The power supply unit's power feed is to be disconnected when working on the locking system and live components.

The FUHR multipoint locking system **multitronic** 881 has been engineered to be used in conjunction with the provided FUHR **multitronic** components. All specified components must be installed to ensure the requirements outlined in EN 14846 are met. We accept no liability for improperly installed systems and/or the use of non-original or non factory approved system accessory parts. The modification of components or the use of non approved accessory components can cause malfunctions. Material damage or personal injury resulting from non-compliance with the installation, operation and maintenance instructions or inappropriate operation invalidates the warranty. We assume no liability for any consequential damage.



The FUHR multipoint locking system multitronic 881 must be protected from humidity. It is not suitable for areas with high humidity and chemical substances.

The FUHR multipoint locking system **multitronic** 881 has been primarily designed for installation in main entrance doors, apartment doors and back doors. Products manufactured in accordance with EN 14846 requirements provide a high level of personal protection and adequate protection against intrusion when fitted to a suitable door and door frame. The system with 2 hook bolts (type 3) has been tested and certified in accordance with DIN EN 179. The variants with 2 round bolts (type 8) and with 2 hook and dual round bolts (type 11) have been tested and certified in accordance with DIN EN 1125. For this purpose durability testing in the highest grade (grade 7) with 200,000 operations was carried out successfully. The product was tested, approved and certified for fire resistance on a single leaf aluminium door by MPA Braunschweig (certification number PB 3019/2006).



For use in heavily frequented doors (more than 50 operations per day) e.g. in public or office building projects, it is necessary to use either of the two day-latch functions during busy periods (refer to chapter 6.1.4).

Do not operate the lever-handle during the electrical locking and unlocking procedure!

The installation steps depicted on the following pages serve as a schematic diagram. Due to the numerous profiles available on the market, there may be slight deviations in specific points. It is therefore imperative that the profile-related routing drawing provided with the FUHR **multitronic** set is adhered to. Please contact your sales partner or the manufacturer in the event of discrepancies or queries. The indicated sequence in these installation instructions is exemplary. The sequence may be varied if required.

IMPORTANT!

All components contained in the set (particularly the control unit and the radio key) are coordinated and should not be used in conjunction with other sets.

2.1 BASIC COMPONENTS | SETTING POSSIBILITIES

Multipoint locking system with one-piece or standard strike plates

The delivery content depends on the respective version. The basic components are described below.

Setting possibilities

A reliable function of the door system is only guaranteed if lock and door have been installed correctly and **hinges and one-piece/standard strike plates** have been adjusted correctly. In order to achieve an optimal tightness of the door, the **one-piece/standard strike plates** can be adjusted as follows:



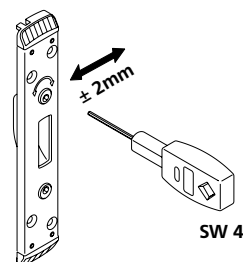
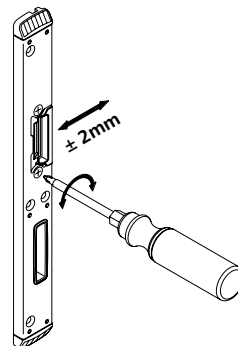
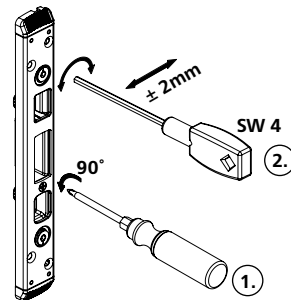
Standard strike plate type 4/10/11

One-piece strike plates type 4/10/11

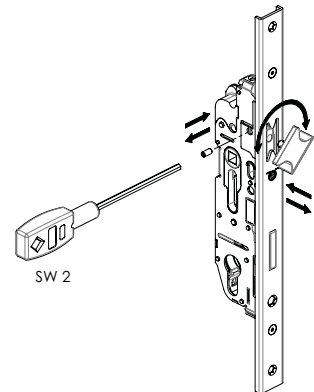
multitronic 881 type 11

Contact magnet

Adjustment of one-piece/standard strike plates



Latch conversion



2.2 CERTIFICATIONS | LABELLING OF THE LOCKS

Panic locks EN 1125 + Panic exit locks EN 179

WARNING! Please note at all costs!

The CE-conformity according to DIN EN 1125 or DIN EN 179 is only given, when the FUHR panic locks 881/881GL/ServoAccess are installed with the tested and certificated components. Further information can be found on our website www.fuhr.de.

Panic locks in accordance with EN 1125 and emergency exit devices in accordance with EN 179



multitronic 881/881GL – type 11

1309 CPR 0422	2020
EN 1125:2008	3-7-6-B-1-3-2-1/2-A/B-B
1309 CPR 0421	2020
EN 179:2008	3-7-6-B-1-3-5-1/2-A/B-B/D

Emergency exit devices in accordance with EN 179



multitronic 881/881GL/881WA – type 3

1309 CPR 0421	2020
EN 179:2008	3-7-6-B-1-3-4-1/2-A/B-B/D



multitronic 881/881WA – type 8

1309 CPR 0422	2020
EN 1125:2008	3-7-6-B-1-3-2-1/2-A/B-B
1309 CPR 0421	2020
EN 179:2008	3-7-6-B-1-3-2-1/2-A/B-B/D



multitronic 881 – type 8, double-leaf

1309 CPR 0422	2020
EN 1125:2008	3-7-6-0-1-3-2-1/2-A/B-A
1309 CPR 0421	2020
EN 179:2008	3-7-6-0-1-3-2-1/2-A/B-A

Further certifications/tests:



Certified in accordance with DIN 18251-3.



Tested in accordance with EN 14846.



Certified in accordance with QM342.



Under testing

2.3 SCOPE OF SUPPLY OF A MULTITRONIC-SET

The components shown here do not necessarily correspond to the scope of supply of your door. What the delivery contents really include depends on the respective version.

Multipoint locking system multitronic 881 incl. electromotive drive unit



One-piece keep or individual keeps

Profile related version,
incl. magnetic contact
(Art.no. VNZM14195)



Control unit with radio receiver and visual locking indicator

Preassembled cable connectors (length 200 and 300 mm)



Switching power supply unit (transformer)

Profile related version,
230 V AC input/12 V DC output, Cable connectors 230 V
(length 3000 mm – surface-mounted cable), earth/ground
cable (length 400 mm) and 12 V (length 200 mm)
preassembled



Surface-contact device for electricity and data transfer

Preassembled cable connector (length 250 mm)



Tappet contacts for electricity and data transfer

Cable connector (length 4000 mm), with preassembled
multi-functional jack



Radio key

to be handed over to the end user;
4-channel radio key as remote control,
1 pc. with red buttons = master key
2 pcs. with turquoise buttons



Cover plate, cable guides and end caps

for safe cable-laying (only for doors with Euro groove);
2 m. cover plate
6 pcs. double cable guides
2 pcs. end caps

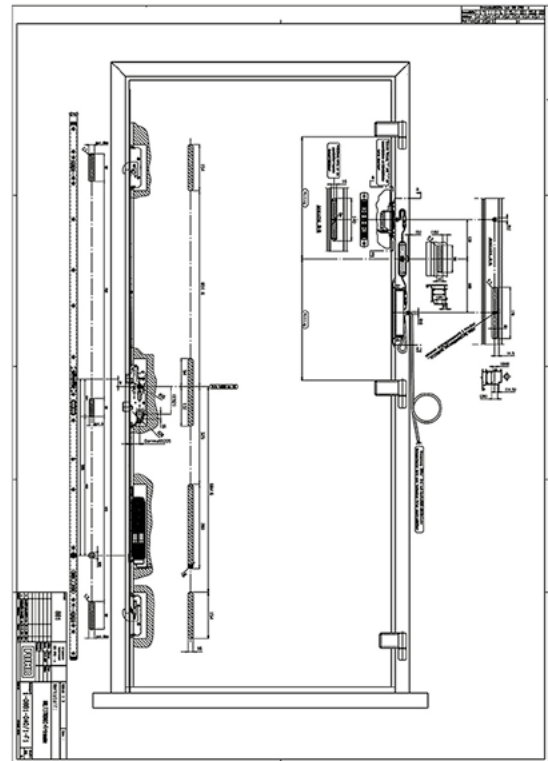


Cable protection sleeves

3 pcs.



Profile-related routing drawing



3 Installation examples

3.1 VERSION 1 – STANDARD – WITH CABLE JUNCTION/WITHOUT CONTROL UNIT

Functions:

- Opening impulse via a two-way intercom system
- Connects up to external indicator LED Art. no. VNZ80067

System components:

Multipoint locking system
FUHR multitronic 881/881
GL /ServoAccess
incl. electromotive
drive unit



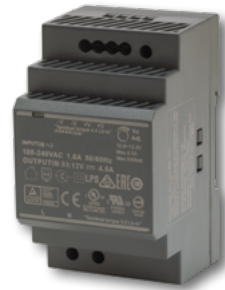
Profile related
one-piece keep +
magnetic contact
for the drive unit
to be ordered
separately
Art. no. VNZM14195



Concealed or surface-mounted cable junction
Art. no. VNZ80090/VNZ80089



DIN rail power supply unit
Art.no. VNZT80345



Cable protection elements for secure cable laying:
Cover plate | 2 m | F16 – Art. no. VNZ33171X |
F20 – Art. no. VNZ33172X | F24 – Art. no. VNZ33173X
Double cable guides for Euro-groove
Art. no. VNZ13845

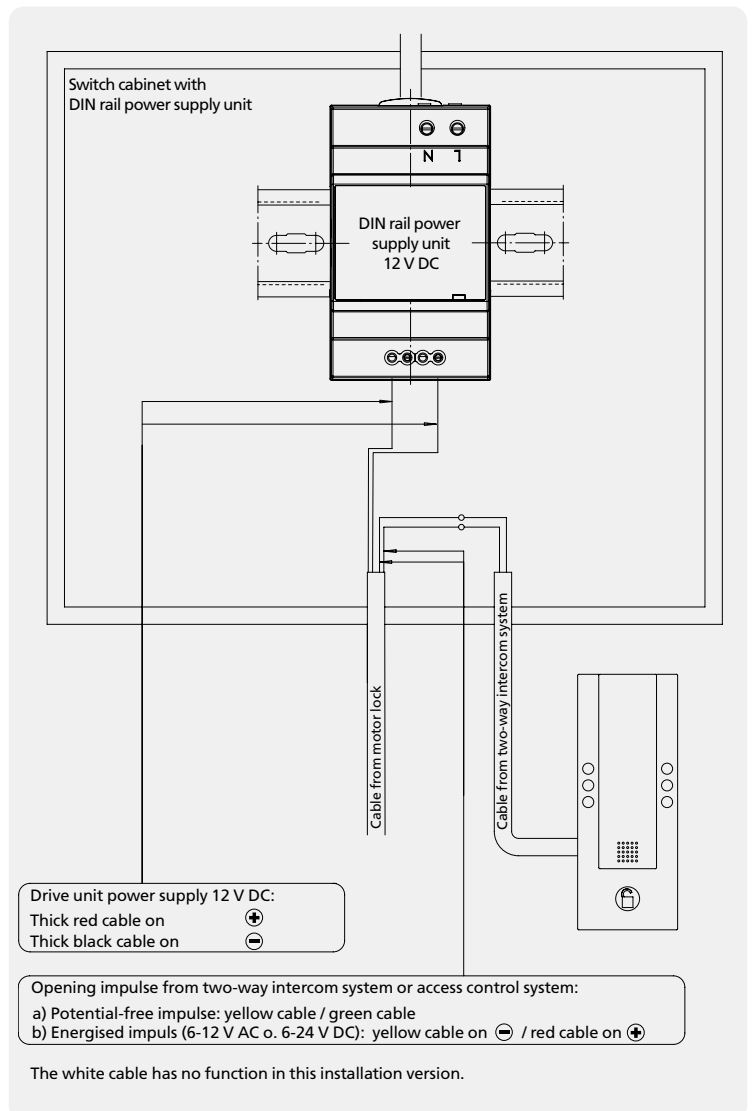
End caps for cover plate |
F16 – Art. no. VNZ13846 |
F20 – Art. no. VNZ13847
Cable protection sleeves –
Art. no. VNZ80022



6-core connection cable | 10 m | with one coupler Art.
no. VNZ80075



Principle of connection



3.2 VERSION 2 – STANDARD – WITH TAPPET CONTACT /WITHOUT CONTROL UNIT

Functions:

- Opening impulse via a two-way intercom system
- Connects up to external indicator LED Art. no. VNZ80067

System components:

**Multipoint locking system
FUHR multitronic 881/881
GL /ServoAccess**
incl. electromotive
drive unit



**Profile related
one-piece keep +
magnetic contact
for the drive unit
to be ordered
separately**
Art. no. VNZM14195



Profile related tappet contacts

Cable connector (length 4000 mm) with
preassembled multi-functional jack

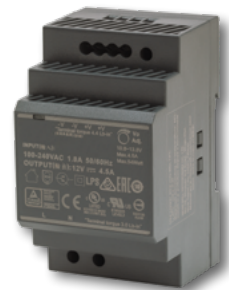
Contact surface

Cable connector (length 250 mm)
preassembled



DIN rail power supply unit

Art. no. VNZT80345



Cable protection elements for secure cable laying:

Cover plate | 2 m | F16 – Art. no. VNZ33171X |
F20 – Art. no. VNZ33172X | F24 – Art. no. VNZ33173X

Double cable guides for Euro-groove – Art. no. VNZ13845

End caps for cover plate |

F16 – Art. no. VNZ13846 |

F20 – Art. no. VNZ13847

Cable protection sleeves –
Art. no. VNZ80022

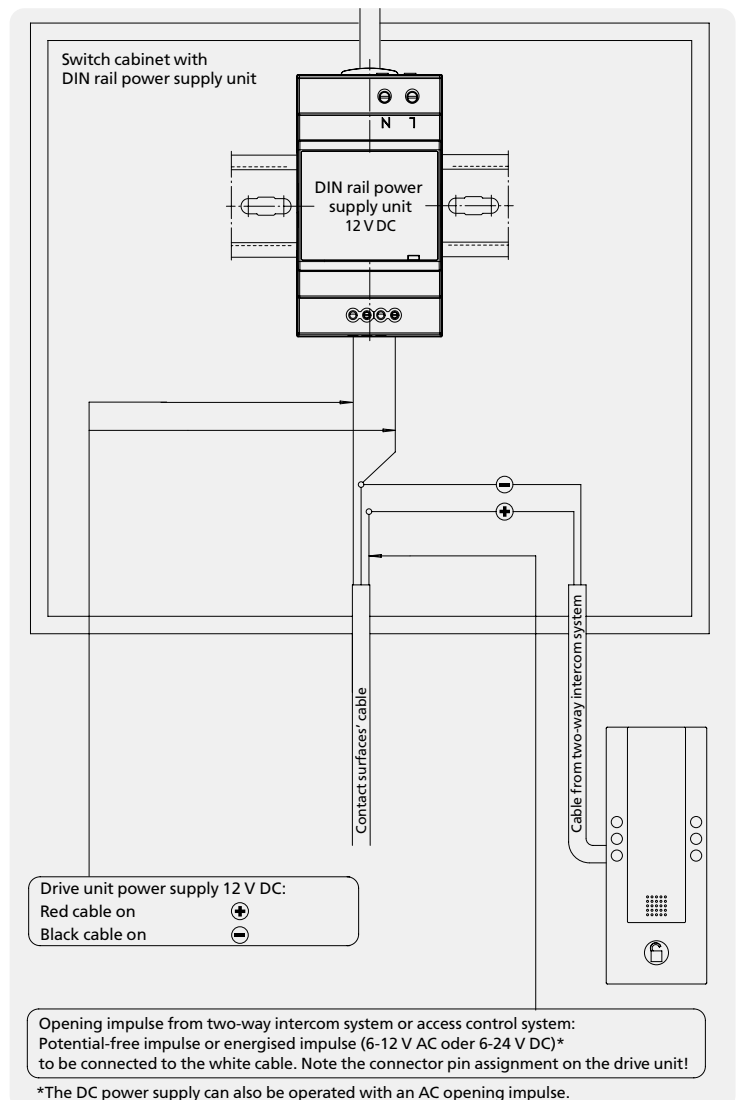


3-core connection cable | 8 m | with one coupler

Art. no. VNZ80063A



Principle of connection



PLEASE NOTE – connector pin assignment on the drive unit:

If the tappet contacts are used **without** the control unit, the **white** cable from the green drive unit's coupler for the door opening impulse must be shifted from terminal 1 to:

- in case of potential-free impulse: to terminal 4
- in case of an electrical impulse: to terminal 7

3.3 VERSION 3 – STANDARD – WITH TAPPET CONTACT AND SWITCHING POWER SUPPLY UNIT ON THE FRAME/WITHOUT CONTROL UNIT

Functions:

- Opening impulse via a two-way intercom system
- Connects up to external indicator LED Art. no. VNZ80067

System components:

**Multipoint locking system
FUHR multitronic 881/881
GL/ServoAccess**
incl. electromotive
drive unit

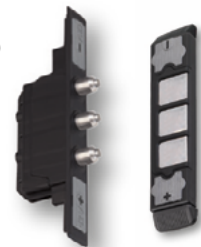


**Profile related
one-piece keep +
magnetic contact
for the drive unit
to be ordered
separately**
Art. no. VNZM14195



Profile related tappet contacts
Cable connector (length 4000 mm) with
preassembled multi-functional jack

Contact surface
Cable connector (length 250 mm)
preassembled



**Profile related switching
power supply unit**
For installation in the door frame
230 V AC input/12 V DC output,
Cable connectors 230 V
(length 3,000 mm - surface-mounted
cable), Earth cable (length 400 mm)
and 12 V (length 200 mm)
Preassembled



Cable protection elements for secure cable laying:
Cover plate | 2 m | F16 – Art. no. VNZ33171X |
F20 – Art. no. VNZ33172X | F24 – Art. no. VNZ33173X
Double cable guides for Euro-groove – Art. no. VNZ13845
End caps for cover plate |
F16 – Art. no. VNZ13846 |
F20 – Art. no. VNZ13847
End caps for cover plate –
Art. no. VNZ80022



4-core connection cable | 1 m | with two couplers
Art. no. VNZ80118B



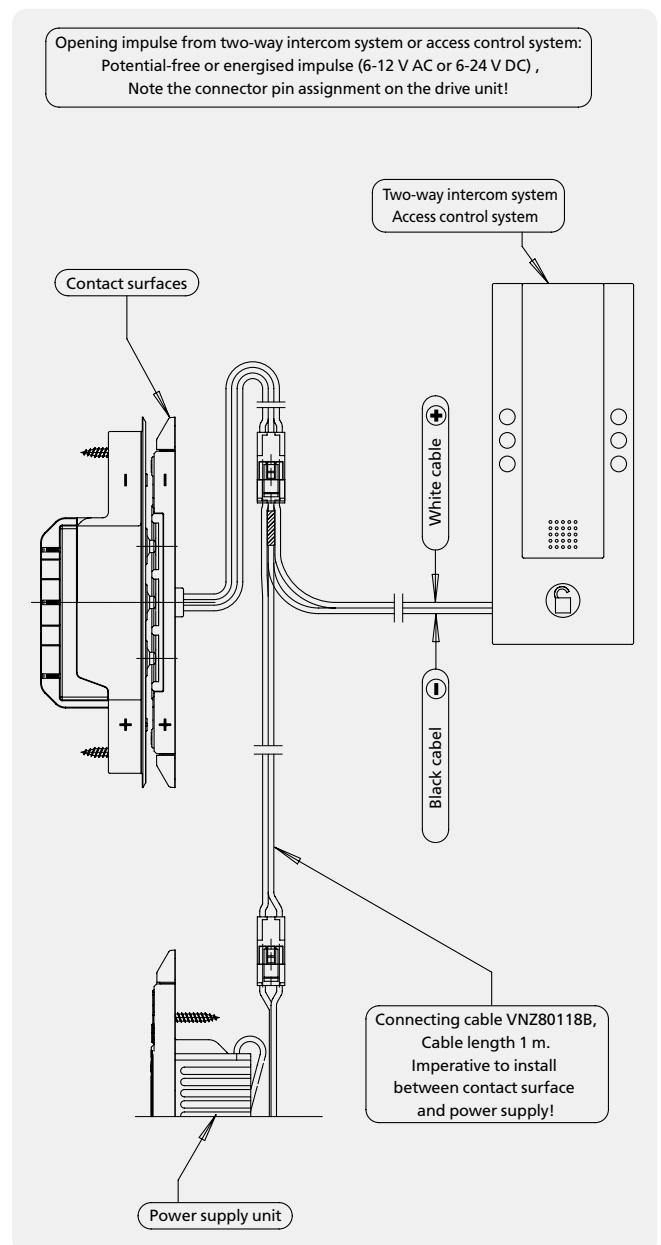
Principle of connection



PLEASE NOTE – connector pin assignment on the drive unit:

If the tappet contacts are used **without** the control unit, the **white** cable from the green drive unit's coupler for the door opening impulse must be shifted from terminal 1 to:

- in case of potential-free impulse: to terminal 4
- in case of an electrical impulse: to terminal 7



3.4 VERSION 4 – STANDARD – ALL-INCLUSIVE FOR INSTALLATION IN THE DOOR

Functions:

- Opens via FUHR radio-controlled access control modules such as radio key, fingerprint scanner or transponder
- Integration in facility management systems
- Connection to external access control systems
- Connects up to an alarm system
- Radio activation of permanently open and day latch function
- Connects up to a swing door opener
- Connects up to time switches (permanently-open function)
- Connects up to external indicator LED Art. no. VNZ80067
- Input signal to electronically disconnect the access control systems for alarm systems

System components:

Multipoint locking system FUHR multitronic 881/881 GL /ServoAccess

incl. electromotive
drive unit



Profile related one-piece keep + magnetic contact for the drive unit to be ordered separately

Art. no. VNZM14195



Profile related tappet contacts

Cable connector (length 4000 mm) with
preassembled multi-functional jack

Contact surface

Cable connector (length 250 mm)
preassembled



Control unit with master radio key

For installation in the door frame
Cable connectors (length 300
and 200 mm), preassembled
Art. no. VNZSTP0419



Cable protection elements for secure cable laying:

Cover plate | 2 m | F16 – Art. no. VNZ33171X |

F20 – Art. no. VNZ33172X | F24 – Art. no. VNZ33173X

Double cable guides for Euro-groove – Art. no. VNZ13845

End caps for cover plate |

F16 – Art. no. VNZ13846 |

F20 – Art. no. VNZ13847

Cable protection sleeves –

Art. no. VNZ80022

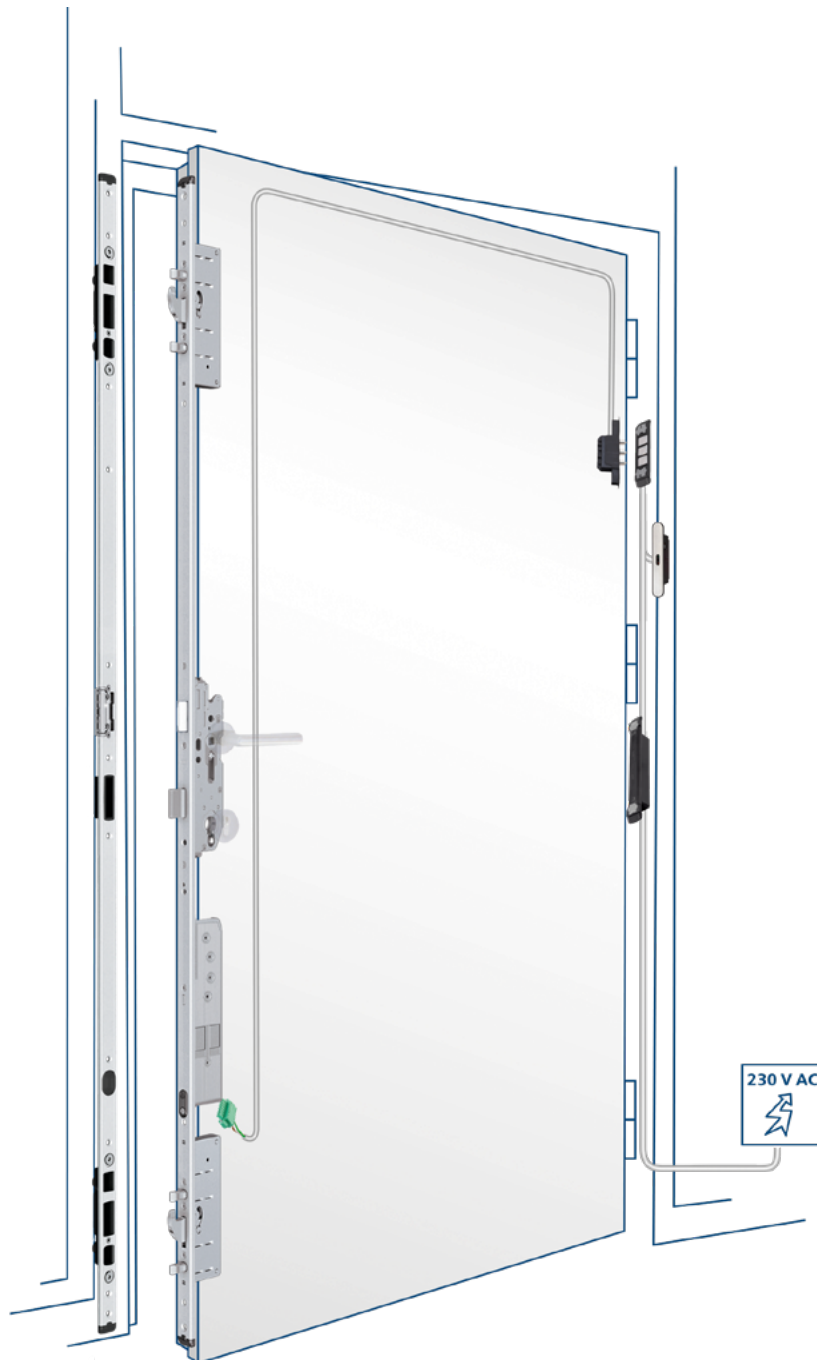


Profile related switching power supply unit

For installation in the door frame
230 V AC input/12 V DC output,
Cable connectors 230 V
(length 3,000 mm - surface-mounted
cable), Earth cable (length 400 mm)
and 12 V (length 200 mm)
Preassembled



Principle of connection



The illustration shows the door from the inside.
Always mount the control unit on the inside.

3.5 VERSION 5 – PROJECT – ALL-INCLUSIVE WITH DIN RAIL COMPONENTS

Functions:

- Opens via FUHR radio-controlled access control modules such as radio key, fingerprint scanner or transponder
- Integration in facility management systems
- Connection to external access control systems
- Connects up to an alarm system
- Radio activation of permanently open and day latch function
- Connects up to a swing door opener
- Connects up to time switches (permanently-open function)
- Connects up to external indicator LED Art. no. VNZ80067
- Input signal to electronically disconnect the access control systems for alarm systems

System components:

Multipoint locking system
FUHR multitronic 881/881 GL
/ServoAccess
incl. electromotive
drive unit



Profile related
one-piece keep +
magnetic contact
for the drive unit
to be ordered
separately
Art. no. VNZM14195



Profile related tappet contacts
Cable connector (length 4000 mm) with
preassembled multi-functional jack

Contact surface
Cable connector (length 250 mm)
preassembled



DIN rail control unit with master radio key
Art. no. VNZSTP80238



3-core connection cable | 8 m | with one coupler
Art. no. NZ80063A (refer to the illustration on page 12)

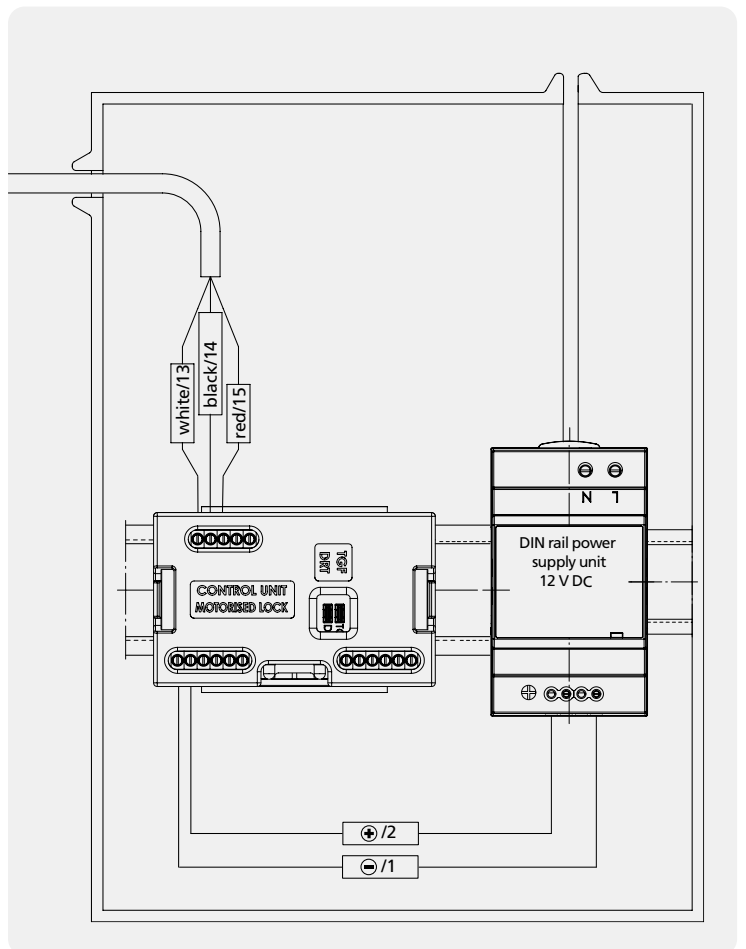
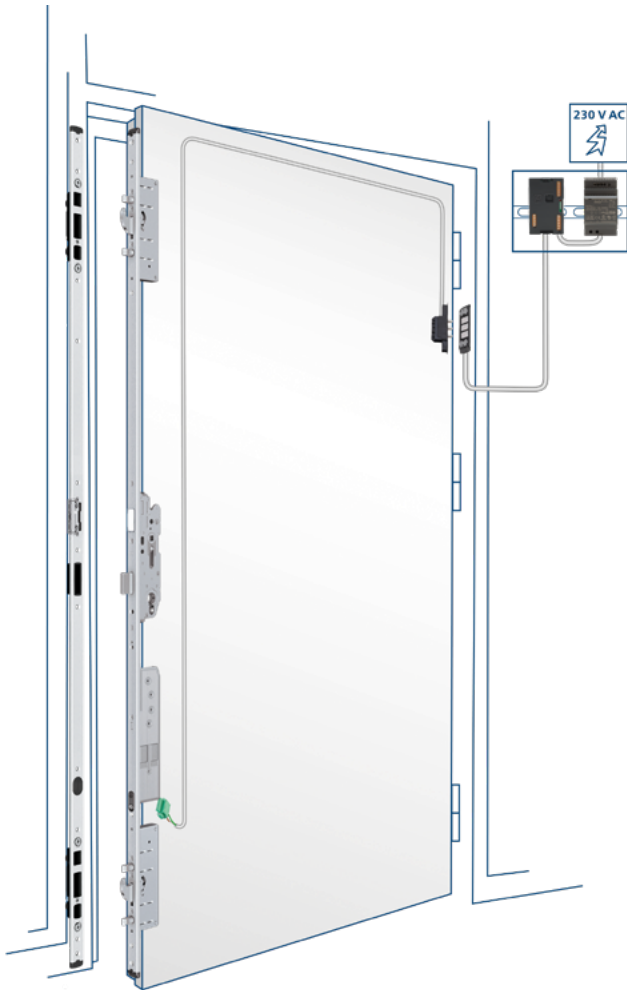
Cable protection elements for secure cable laying:
Cover plate | 2 m | F16 – Art. no. VNZ33171X |
F20 – Art. no. VNZ33172X | F24 – Art. no. VNZ33173X
Double cable guides for Euro-groove – Art. no. VNZ13845
End caps for cover plate |
F16 – Art. no. VNZ13846 |
F20 – Art. no. VNZ13847
Cable protection sleeves –
Art. no. VNZ80022



DIN rail power supply unit
Art. no. VNZT80345



Principle of connection



3.6 VERSION 6 – PROJECT – ALL-INCLUSIVE WITH CONTROL BOX

Functions:

- Opens via FUHR radio-controlled access control modules such as radio key, fingerprint scanner or transponder
- Integration in facility management systems
- Connection to external access control systems
- Connects up to an alarm system
- Radio activation of permanently open and day latch function
- Connects up to a swing door opener
- Connects up to time switches (permanently-open function)
- Connects up to external indicator LED Art. no. NZ80067
- Input signal to electronically disconnect the access control systems for alarm systems

System components:

**Multipoint locking system
FUHR multitronic 881/881
GL /ServoAccess**
incl. electromotive
drive unit



**Profile related
one-piece keep +
magnetic contact
for the drive unit
to be ordered
separately**
Art. no. VNZM14195



Profile related tappet contacts

Cable connector (length 4000 mm) with
preassembled multi-functional jack

Contact surface

Cable connector (length 250 mm)
preassembled



Control box with integrated mains adapter and master radio key

Art. no. VNZSTP497



3-core connection cable | 8 m | with one coupler
Art. no. NZ80063A (refer to the illustration on page 12)

Cable protection elements for secure cable laying:

Cover plate | 2 m | F16 – Art. no. VNZ33171X |

F20 – Art. no. VNZ33172X | F24 – Art. no. VNZ33173X

Double cable guides for Euro-groove – Art. no. VNZ13845

End caps for cover plate |

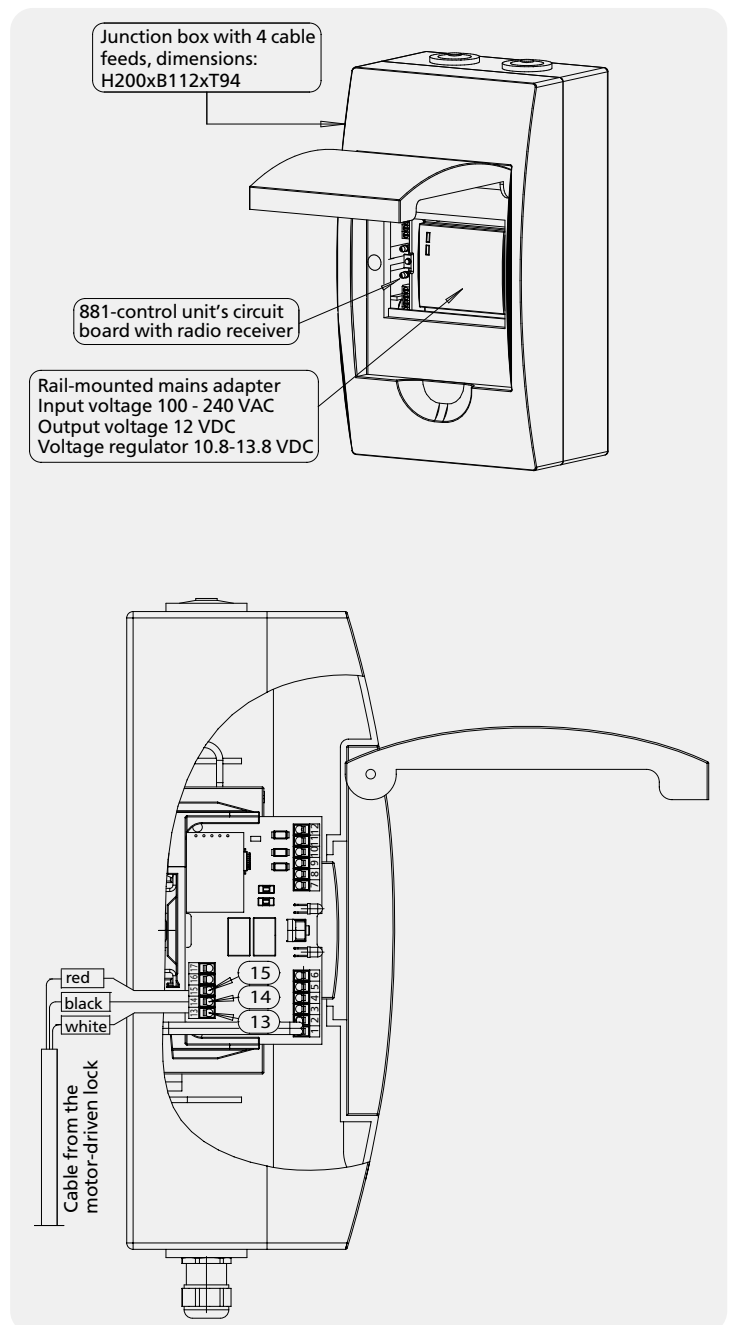
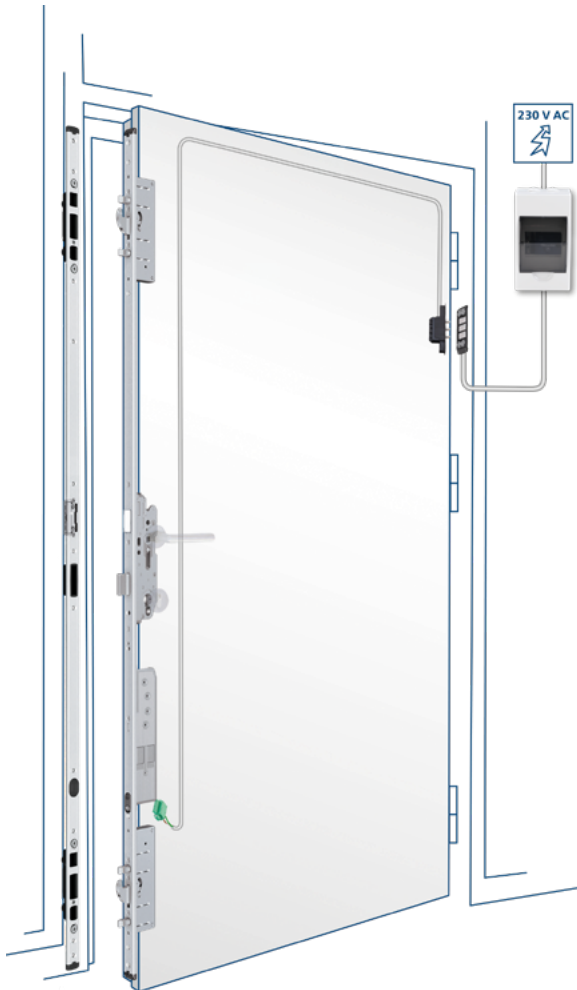
F16 – Art. no. VNZ13846 |

F20 – Art. no. VNZ13847

Cable protection sleeves –
Art. no. VNZ80022



Principle of connection

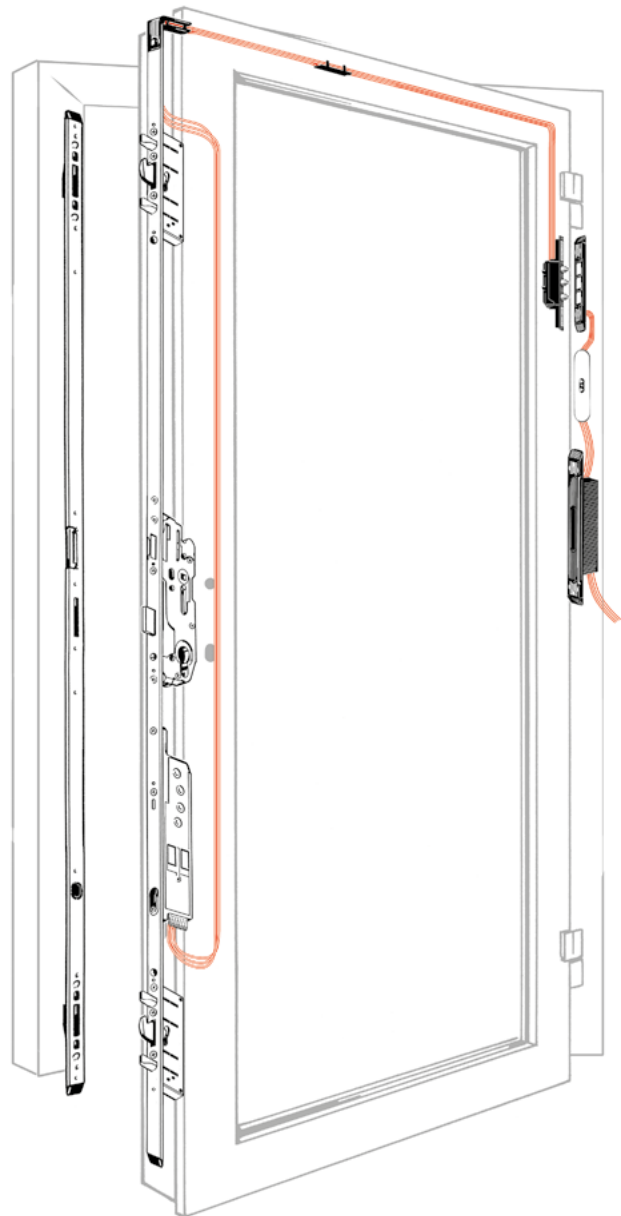


4 Installation instructions

4.1 ROUTING AND DRILLING OPERATIONS

The routings for the FUHR multipoint locking system **multitronic** 881 are carried out in accordance with the routing drawing provided.

In addition to the conventional routings for FUHR multipoint locking systems, for example on **multisafe** 855, only 2 additional routings in the door leaf and the door frame are required. These installation instructions therefore only describe the additional routing and drilling operations for the electronic locking mechanism.



The illustration shows the door from the inside.
Always mount the control unit on the inside.

4.1.1 CABLE-LAYING DEPENDING ON THE DOOR DESIGN FOR ALL INSTALLATION VERSIONS

Version A – e.g. for PVC doors:

Cable-laying in the Euro groove.



Deburr the cable feedthrough hole and insert the cable protection sleeves provided.

Version B – e.g. for aluminium doors:

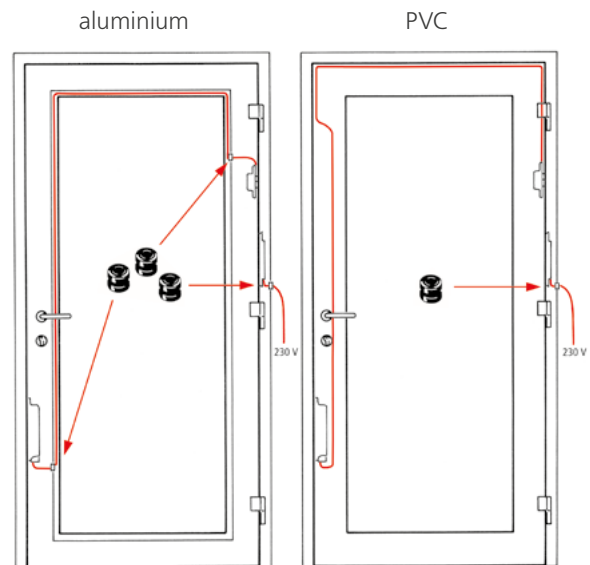
If the cable is to be laid in the glazing rebate's Euro groove, a Ø 10 mm drill hole is to be drilled in the glazing rebate area.



Deburr the cable feedthrough hole and insert the cable protection sleeve provided.

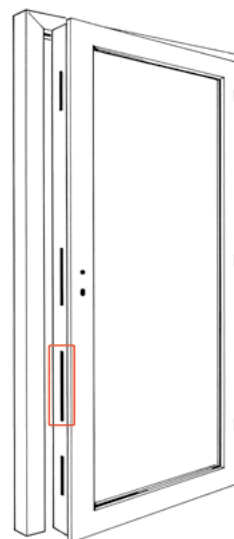
The 230 V electricity cable is a surface-mounted cable. Conduit must be used for concealed cabling. The door frame must be earthed/grounded.

The cable-laying for version A is described in the following installation steps.



4.1.2 ROUTING FOR THE ELECTRONIC DRIVE UNIT IN THE DOOR LEAF

Routing in compliance with the separate routing drawing between the main lock and the bottom additional locking point.

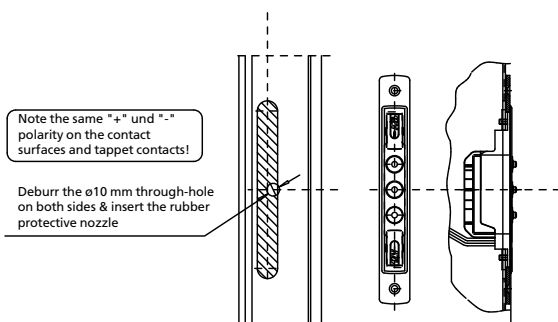


4.1.3 ROUTING FOR THE TAPPET CONTACTS IN THE DOOR LEAF ON THE INSTALLATION VERSIONS 2 -6

Routing on the hinge side of the door leaf



Make sure that the surface-contact device and the tappet contact device are aligned accurately horizontally. Refer to chapter 4.1.4.



Exemplary routing. Please ask for the particular profile-related routing dimensions.

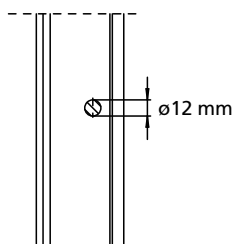


4.1.4 DRILL HOLE FOR THE SURFACE-CONTACT'S CABLE ON THE INSTALLATION VERSIONS 2 -6

Drilling in the frame profile, laterally at the same height as the tappet contact device

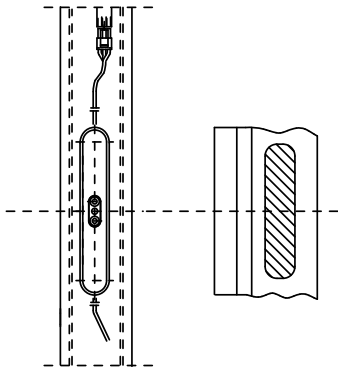


Care must be taken to ensure that the surface-contact device and the tappet contact device are aligned accurately horizontally. Refer to chapter 4.1.3.



4.1.5 ROUTING FOR THE CONTROL UNIT CASING IN THE DOOR FRAME ON THE INSTALLATION VERSION 4

Routing on the hinge side of the door frame face **inside of the building**



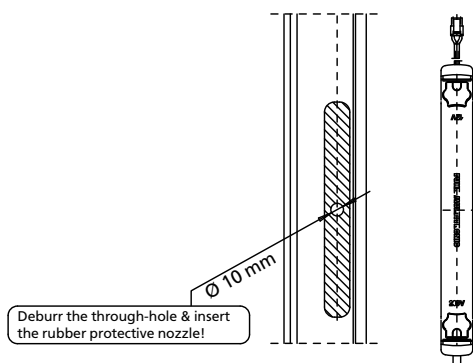
Exemplary routing. Please ask for the particular profile-related routing dimensions.



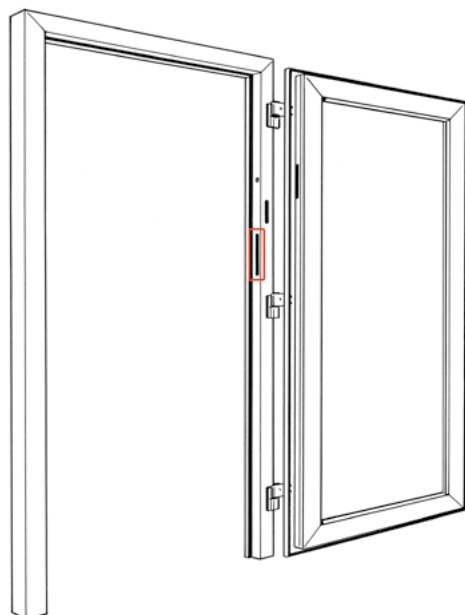
The illustration shows the door from the inside.
Always mount the control unit on the inside.

4.1.6 ROUTING FOR THE SWITCHING POWER SUPPLY UNIT IN THE DOOR FRAME ON THE INSTALLATION VERSIONS 3 AND 4

Routing on the hinge side of the frame profile



Exemplary routing. Please ask for the particular profile-related routing dimensions.



4.1.7 DRILL HOLE FOR THE 230 V CABLE ON THE INSTALLATION VERSIONS 3 AND 4

Drilling on the back of the profile within the cut-out for the switching power supply unit



This drill hole must be deburred carefully at both ends! Insert the cable protection sleeve provided in the drill hole to protect the 230 V cable. The cable must be protected against abrasion and securely fixed in order to prevent tractive forces.



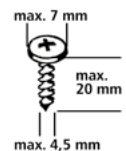
4.1.8 SAFETY INSTRUCTIONS



All routing and drilling work must be deburred carefully. The cables must be securely fixed in this area in order to prevent abrasion. All routing and drilling swarf must be carefully removed from the profiles.

4.1.9 SCREWS FOR FIXING INDIVIDUAL COMPONENTS

Conventional fenestration screws with a maximum screw head diameter of 7 mm and a maximum screw diameter of 4.5 mm may be used. The PVC components (switching power supply unit, surface-contact device etc.) are to be fixed with screws with a **maximum length of 20 mm**. To fix the metal components (faceplates, keeps etc.) select a screw length according to the requirements. Depending on the profile material, screw holes may have to be pre-drilled with an appropriate drill.



It is imperative that all screws are hand-tightened (maximum torque 1 Nm), as some components are made of PVC and may be damaged by the excessive force that a cordless screwdriver can exert.

It is essential that the surface-contact device and the tappet contact device are aligned accurately.

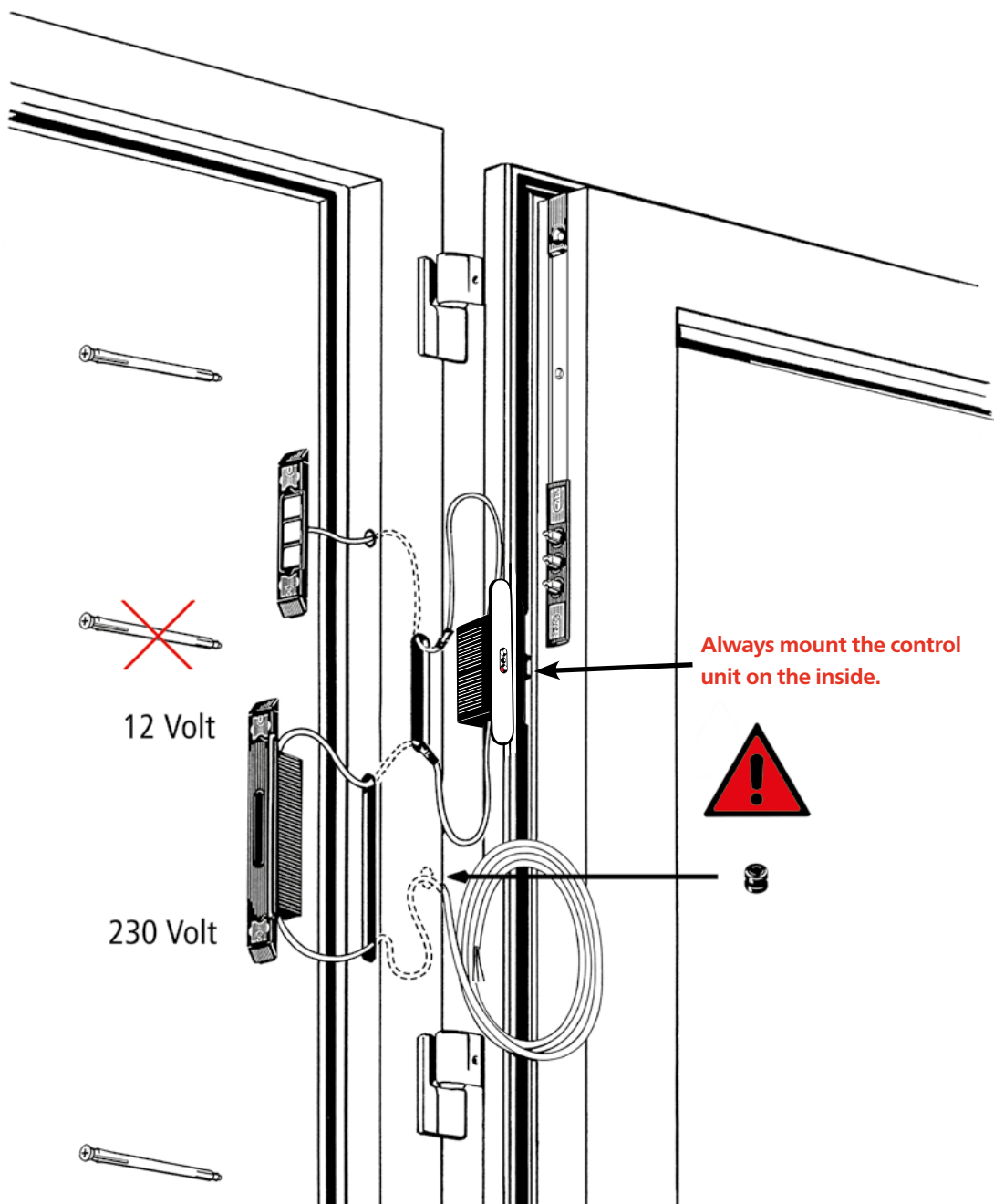
4.2 INSTALLATION

4.2.1 INSTALLATION ON INSTALLATION VERSION 4



The installation requires exceptional care. This applies particularly to the electronic components, as routing and drilling swarf, abrasion points, defective cables and damaged contacts etc. can lead to the device malfunctioning.

Avoid positioning fixing materials (e.g. frame-fixing screws) in areas where electronic components are located!



4.2.2 INSTALLATION OF THE TAPPET CONTACTS

The electricity and data transfer control unit of the FUHR **multitronic** can be used for left handed as well as right handed doors.

On right handed doors the tappet contact device is installed as supplied.

On right handed doors the cable is placed in the guide channel on the rear side of the casing.



Check the polarity (plus/minus) before installing the tappet contacts, refer to the component's identification marking:

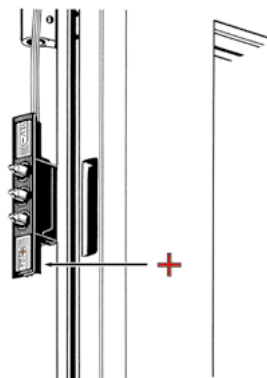
DIN right = Plus symbol on the bottom
DIN left = Plus symbol on the top

1. Remove the silver covers from the tappet contact device.
2. Insert the tappet contact device into the door leaf's routed recess.
3. Lay the cable with the green plug in the channel above the door.
4. Screw-fix the casing to the door leaf profile.
5. Replace the covers.
6. Insert the green plug in the additional locking point's top routing and lead it down to the routed recess for the electrical drive unit.

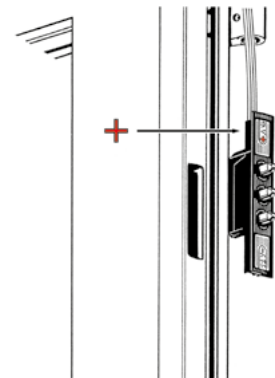
DIN right



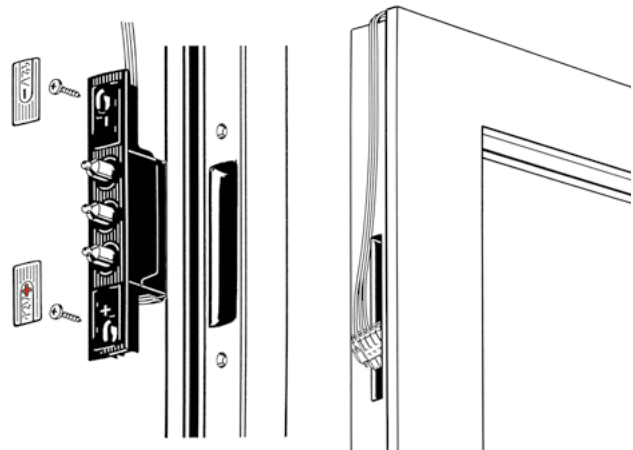
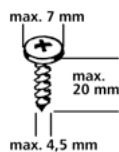
DIN left



DIN right



DIN left



4.2.3 INSTALLATION OF THE MULTIPOINT LOCKING SYSTEM IN THE DOOR LEAF

1. Connect the tappet contact device's green plug to the corresponding contact plug on the electrical drive unit. As the case may be, please note deviating cable assignment on the multifunctional jack when using this without a control unit, refer to chapter 3.
2. Screw-fix the plugs with a small screwdriver.



Please note! It is imperative to carry out this screw-fixing. The screw-fixing warrants permanent contact for the electricity and data transfer, and safeguards against vibration and shock.

3. Insert the cable and FUHR **multitronic** 881 multipoint locking system into the routed recess. Leave a **spare cable loop** below the green drive unit's coupler in the profile in order to be able to remove the lock at a later stage.

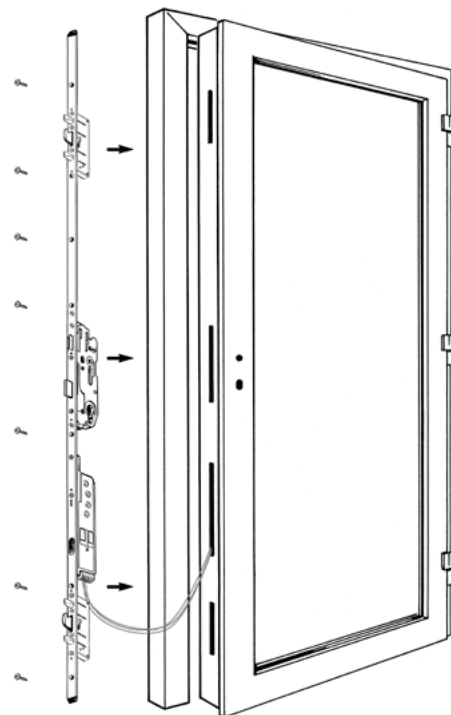
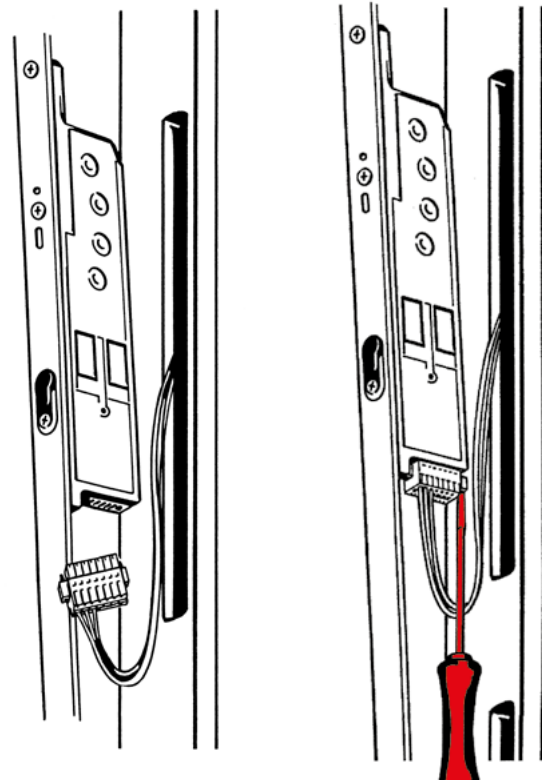


In doing so, ensure that the cables are neither kinked, trapped nor damaged.

4. Screw-fix the multipoint locking system's faceplate. Fix the screws in a straight manner in order to prevent the connecting-rods being jammed by the screws.

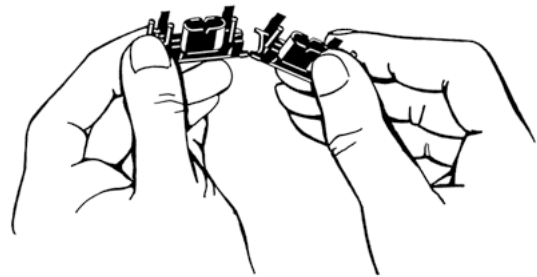


Please note! The connecting-rods have to be able to move unhindered. Friction caused by screws or too narrow profile guide grooves cause operational malfunction.



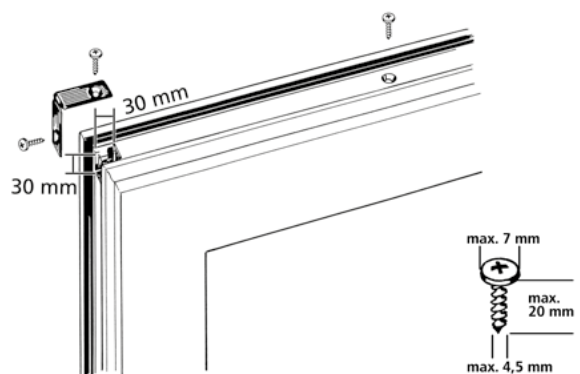
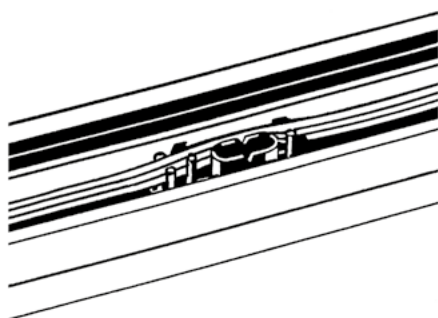
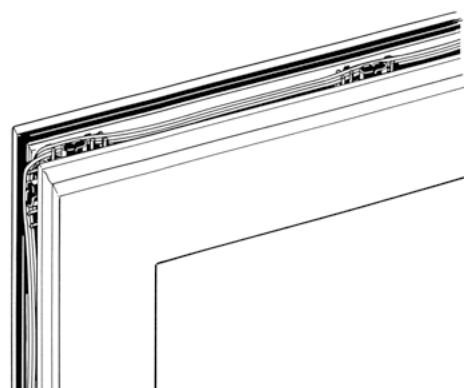
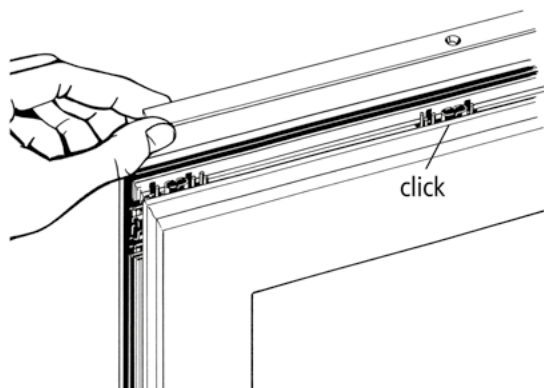
4.2.4 INSTALLATION OF THE CABLE GUIDES, END CAPS AND COVER PLATES IN THE DOOR LEAF

1. Fold the enclosed PVC cable guides for the profile corners in half and break them in two for the centre profile area.
2. Clip in each of the cable guides into the top door leaf corners, and depending on the door width and height, also in the Euro groove channel.
3. Lay the cable through the cable guide and loop the surplus cable between two cable guides.
4. Crop and screw-fix the cover plate according to the door width or height.



Ensure that the screws are screw-fixed through the cable guides' elongated holes. Non-compliance can lead to damaged cables.

5. Put on the end caps and screw-fix through the cable guides.



4.2.5 INSTALLATION OF THE MAGNETIC CONTACT IN THE DOOR FRAME

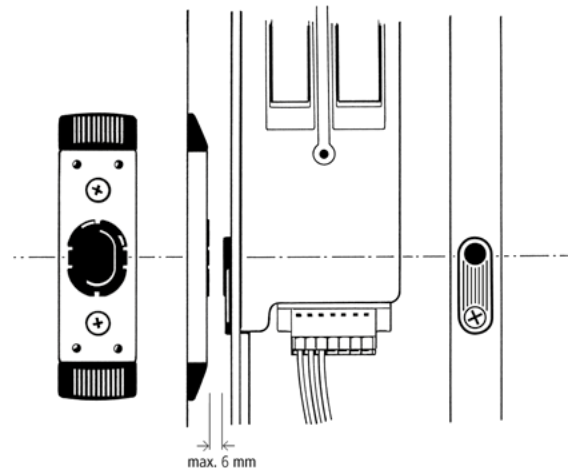
1. Install the magnetic contact in accordance with the supplied routing drawing. The exact drawing dimension must be adhered to in order to warrant perfect contact with the electromotive drive's reed switch.



Make sure that the reed switch and magnet are aligned horizontally at the same height.

For one-piece keeps:

The installation of the one-piece keep is to be carried out in compliance with the routing drawing. The magnetic contact must be ordered separately (Art. no. VNZM14195) and installed.

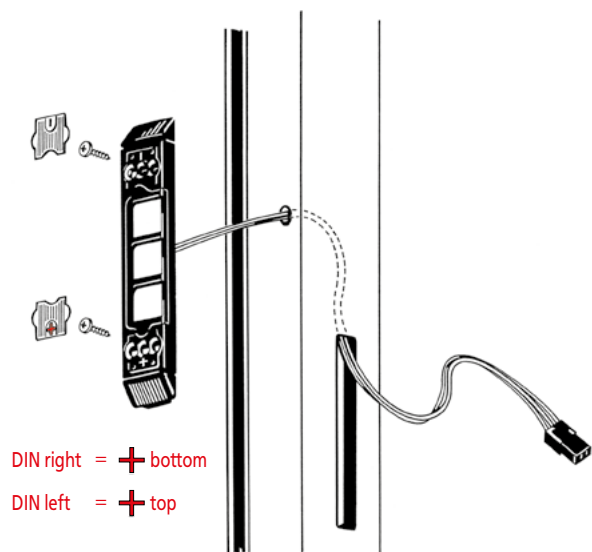


4.2.6 INSTALLATION OF THE SURFACE-CONTACT DEVICE IN THE DOOR FRAME

1. Remove the silver covers.
2. Feed the surface-contact device's 3-core cable (red, black, white) through the frame profile's drill hole and back outside through the control unit casing's routed opening. Pull the cable all the way through the routed opening so that the surface-contact device is located level on the profile.
3. Screw fix the surface-contact device to the frame profile.
4. Replace the covers.



In order to ensure proper contact and durable operation, the contact surface has been pre-treated with contact lubricant. Please do not remove this lubricant film! Adhere to the regular maintenance instructions in compliance with chapter 9.1.



4.2.7 INSTALLATION OF THE CONTROL UNIT HOUSING IN THE DOOR FRAME

1. Remove the stainless steel cover before mounting the control unit housing. This is held by two magnets and can be easily removed. To do this, carefully grasp the recess in the cover plate with a small screwdriver or fingernail and remove the cover plate.
2. Connect up the surface-contact device's 3-core cable plug (red, black, white) with the control unit casing's 3-core cable plug. The plug clicks in audibly.
3. Insert the 2-core control unit casing cable into the routed recess, guide the cable downwards, and exit through the switching power supply unit's routed recess.
4. Carefully feed the control unit casing's cable back into the frame profile so that the control unit casing fits comfortably in the routed recess.



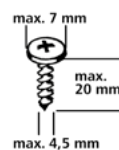
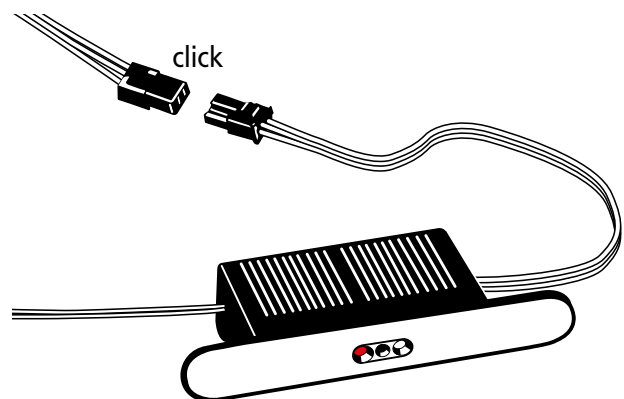
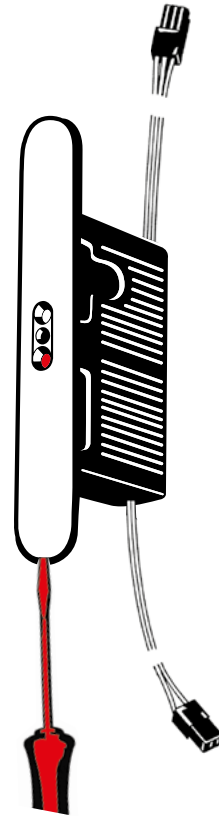
Please ensure that the cables are neither kinked, trapped nor damaged by sharp profile edges.

5. Screw-fix the control unit casing into the frame profile.



Ensure that the cables are not damaged when screw-fixing.

6. Replace the control unit casing's cover cap.



4.2.8 INSTALLATION OF THE SWITCHING POWER SUPPLY UNIT (TRANSFORMER) IN THE DOOR FRAME

The FUHR **multitronic's** switching power supply unit can be used for left handed as well as right handed doors. **On right handed doors** the switching power supply unit is installed as supplied.

On left handed doors the top profile-related end cap is swapped with the bottom one.

1. Remove the silver covers.
2. The green/yellow earth cable is to be electroconductively connected with the door's metal frame.
3. Connect up the control unit casing's 2-core cable (red/black) with the switching power supply unit's cable counterpart. The plug clicks in audibly.
4. Feed the cable carefully back into the frame profile, **ensuring that the switching power supply unit fits comfortably into the routed recess.**



Depending on the profile type, loop the cable at the bottom of the profile.

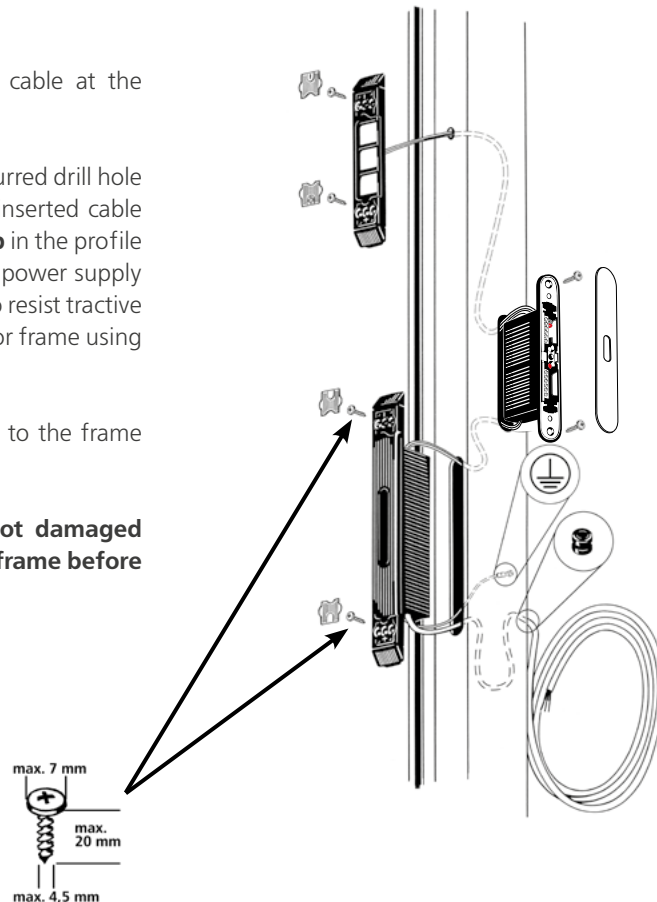
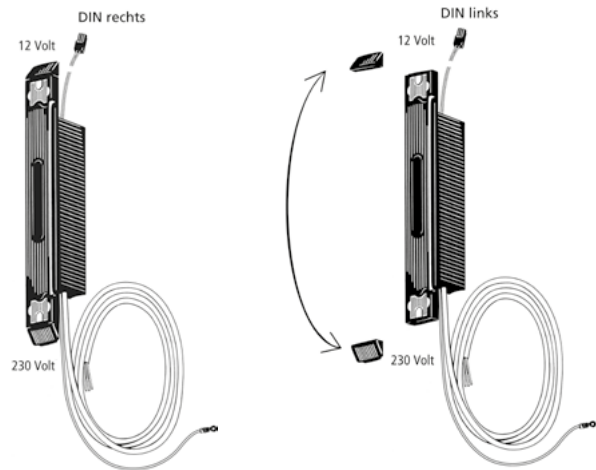
5. Guide the 230 V cable out through the deburred drill hole at the bottom of the profile (through the inserted cable protection sleeve). Leave a **spare cable loop** in the profile in order to be able to remove the switching power supply unit at a later stage. Fix the rolled up cable to resist tractive forces and fasten it to the outside of the door frame using a cable tie.

6. Screw-fix the switching power supply unit to the frame profile (maximum torque 1 Nm).



Ensure that the cables are not damaged when screw-fixing. Earth the frame before commissioning.

7. Replace the covers.



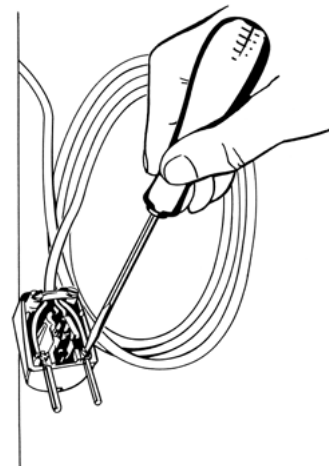
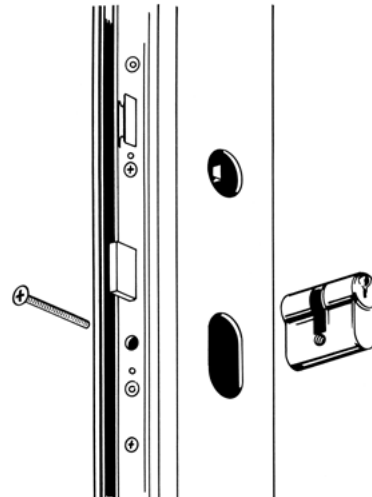
5 Commissioning

5.1 OPERATION VERIFICATION CHECK ON THE FABRICATOR'S PREMISES



1. After all of the FUHR multitronic components have been installed, check that the door leaves and frames are aligned parallel.

2. Install a profile cylinder with **free-running mechanism and FZG marking** in the centre lock.
3. Subsequently connect the 230 V cable to the mains voltage by means of a two-pin earthed plug for testing purposes (only to be carried out by qualified personnel).
4. The green LED will light up as soon as the operating voltage is applied. 3 seconds after the door is closed (reed switch is actuated by the contact magnet), the system locks automatically and the red LED lights up.
5. In order to test all functions, the door should be opened and locked several times in the door factory via the drive unit, the profile cylinder, and via the lever-handle. In the event of any problems arising, please proceed in accordance with chapter 11.
6. If the FUHR **multitronic** lock is fully operational, the two-pin earthed plug can be removed and the door can be despatched.



5.2 COMMISSIONING ON SITE



1. Install the door in the wall opening in the usual manner, guiding the 230 V cable to the internal side of the wall. Make sure that fixing materials (e.g. wall anchors) are not located where the electronic components are.

2. An electrician must connect up the 230 V cable to the power supply. The door frame's earthing/grounding is to be professionally checked. Conduit must be used for 230 V concealed cabling.
3. In order to be able to warrant the power supply of all electronic components, also in the case of a network operator's power failure, emergency exit doors in accordance with DIN EN 179 and DIN EN 1125 as well as fire doors in accordance with DIN 4102 and DIN EN 1634 should be equipped with an emergency power supply!

6 External connection options

The FUHR **multitronic** control unit is equipped with a multitude of input and output sockets to connect additional components such as e.g. transponder, eye scan, finger print, code locks, electrical swing door opener, alarm systems, facility management systems etc. (see chapter 6.1).

In addition, the **multi-functional jack** on the FUHR **multitronic** motor drive provides further inputs and outputs for the connection of e.g. access control systems, illuminated push buttons or glazing elements (see chapter 6.3).

Mounting control



Rail mounted control



Multi-functional jack



Control box with integrated mains adapter



6.1 THE CONTROL UNIT

Besides many further connection possibilities the multi-functional control also provides the use of a day-latch function und a permanent-open function.

With the day-latch function, during the day the door is secured only by the latch. Ideal for heavily frequented doors where controlled access is required. With the permanently-open function, the latch and all locks are permanently retracted. This allows unhindered opening of the door from both sides - without access control.

This two functions can be realised in two different ways:

- **Cable connected** – via an external or optional available switch (see chapter 6.1.1)
- **Wireless via radio signal** – via a radio key or with another FUHR access control system (see chapter 6.1.2)

A combined application of both variants is not recommended, or should only be carried out by qualified personnel and checked beforehand on the basis of individual customer requirements.

The LEDs on the controller indicate which function has been set:

Day-latch function: green + red LED flash slowly

Permanently-open function: green LED flashes slowly

6.1.1 Cable connected permanent unlocking

Enables manual activation of the permanently-open function (terminals 9 + 10) or the day-latch function (terminals 11 + 12)



Control switch for activating special functions

Stainless steel cover plate with slide switch and connecting cable, for retrofitting the mounting control.

Art. no. VNZSTZ0459

6.1.2 Wireless permanent unlocking via radio signal

Enables activation of the permanently-open function or the day-latch function via radio key or via other FUHR access control systems, available from software version SW 4.51 (see chapter 6.1.4).



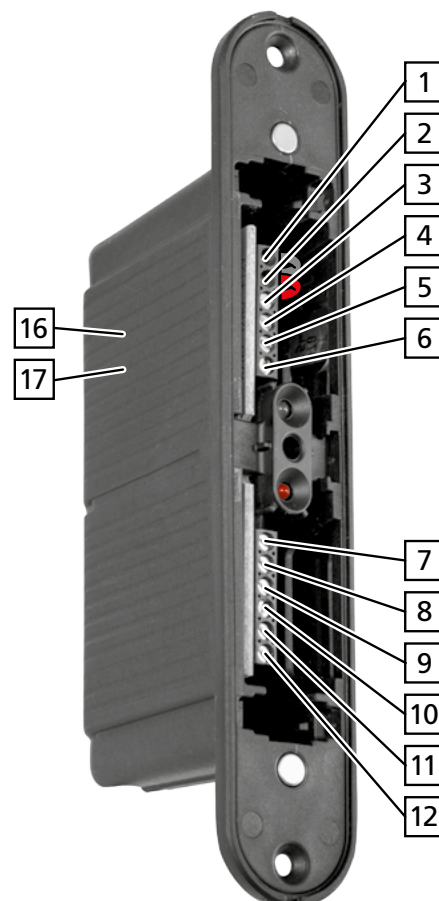
4-channel radio key with wall bracket

Easy mounting at a suitable location inside the building, high transmission range, including battery with long life.

Art. no. VNZ80293

6.1.3 Connecting possibilities of the control

In the following, the assignment possibilities of the connection terminals of the control unit are described as an example:



<u>Terminal</u>	<u>Assignment</u>
Grid 1 (GND) + 2 (+12V):	Already occupied by the 12 V DC switching power supply unit's power supply.
Outputs: 3 + 4 Swing door drive	Output, e.g. for electric swing door drive Make contact <ul style="list-style-type: none"> • Function 1: Immediately after the FUHR multitronic lock has been opened via radio control, transponder etc., a relay triggers the make contact for 1 second. This impulse is processed by the swing door drive's control unit and triggers the swinging movement of the door leaf. • Function 2: The DRT jumper can be removed if required (refer to the wiring diagram in chapter 7), enabling the swing door opener's output to be triggered just as long as a continuous signal is applied to the latch retaining function (terminal 9 & 10).
5 + 6 Alarm output	Output door leaf position, e.g. for alarm systems Break contact Opening the door leaf and/or unlocking the lock triggers the related break contact within 1 second. This remains triggered until the door leaf is closed over and the lock has been locked. An alarm system control unit processes the signal status and reports back 'OPEN' or 'CLOSED'.
Inputs: 7 + 8 Door opening	Input for 6-12 V AC or 6-24 V DC – optionally, this input can be used with two modes of operation: <ul style="list-style-type: none"> • Function 1: Standard opening with subsequent complete locking after 3 seconds If a 1 sec. impulse is applied to this input (e.g. activated via a building management system) the FUHR multitronic lock will open. • Function 2: Opening with day latch function If a continuous signal is applied to this input (e.g. activated via a time switch) the FUHR multitronic lock will open. Upon opening the door leaf or after 5 seconds, only the lock's latch protrudes. All bolts remain withdrawn as long as the continuous signal is applied.
9 + 10 Door pening	Input for potential-free signals – optionally, this input can be used with two modes of operation: <ul style="list-style-type: none"> • Function 1: Standard opening with subsequent complete locking after 3 seconds If a potential-free impulse ≤ 1 second is applied to this input (e.g. controlled via an access control system) the FUHR multitronic lock will open. • Function 2: Opening with permanent-open function If a potential-free continuous signal is applied to this input (e.g. controlled via a time switch) the FUHR multitronic lock will open. The latch and all bolts remain withdrawn as long as the continuous signal is applied. By removing the DRT jumper, the output signal on terminals 3 + 4 is switched for the same length of time as the continuous signal present here.
11 + 12 Door opening	Input for potential-free signals – optionally, this input can be used with two modes of operation: <ul style="list-style-type: none"> • Function 1: Standard opening with subsequent complete locking after 3 seconds If a potential-free impulse ≤ 1 second is applied to this input (e.g. controlled via an access control system) the FUHR multitronic lock will open. • Function 2: Opening with day latch function If a potential-free continuous signal is applied to this input (e.g. controlled via a time switch) the FUHR multitronic lock will open. Upon opening the door leaf or after 5 seconds, only the lock's latch protrudes. All bolts remain withdrawn as long as the continuous signal is applied. The TGF jumper can be removed if required (refer to the wiring diagram in chapter 7), enabling the lock's latch to no longer retract motor-driven upon the first day-latch activation
13 – 15:	Already pre-assigned for power and data transmission.
16 + 17 Deactivation	Input for potential-free signals As long as this input is switched, all motorised opening functions (radio receiver and control terminals 7-12) deactivated. The opening impulses via the motor board (terminal 4/7) are also inactive.
Radio receiver	For opening impulses via FUHR rolling code or easy-wave radio controlled access control , see chapter 8.

6.1.4 WIRELESS CONTROL OF THE PERMANENTLY-OPEN FUNCTION VIA RADIO SIGNAL | TUNING IN A RADIO KEY

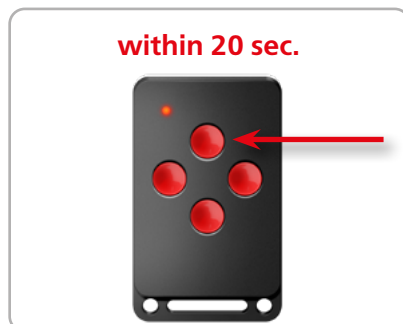
(available from software version SW 4.51)

Instead of the radio key VNZ80293 shown here as an example, any other FUHR radio access control system can be taught in for activation.

PERMANENTLY-OPEN FUNCTION

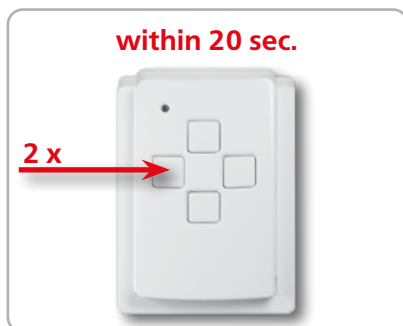


1. Carefully press the programming button on the control unit for about **10 seconds**. As soon as the red and green LED flash release the programming button.



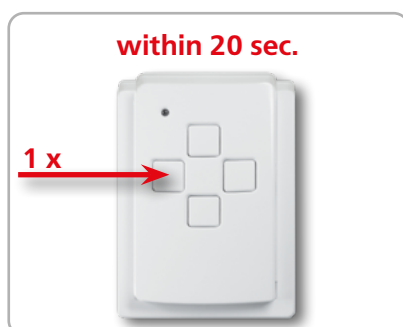
2. Now press the master key's front, middle button **within 20 seconds**.

» If the control unit accepts the master key, the green LED lights up for 3 seconds and then continues to flash quickly.



3. **Within 20 seconds**, press a key of the radio key to be paired **twice** in succession. The tuning in procedure is aborted if the 20 second time limit is exceeded.

» If the control unit accepts the new radio key, the green LED lights up for 3 seconds.



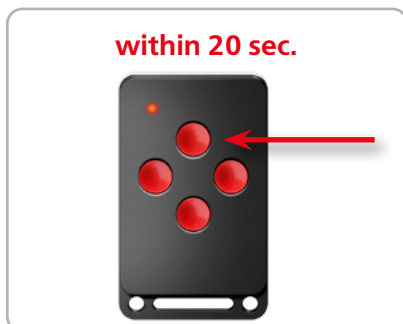
4. If you want to activate or deactivate the permanently-open function, press the send button on the radio key **once**.

» When the permanently-open function is activated, the green LED of the control unit flashes slowly.

DAY-LATCH FUNCTION

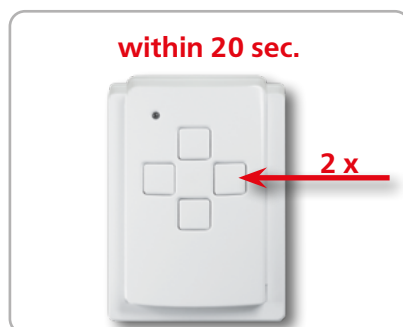


1. Carefully press the programming button on the control unit for about **10 seconds**. As soon as the red and green LED flash release the programming button.
2. **Briefly** press the programming button of the control **again**. The red and green LED flash alternately.



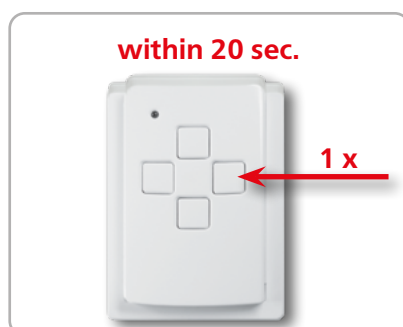
3. Now press the master key's front, middle button **within 20 seconds**.

» If the control unit accepts the master key, the green LED lights up for 3 seconds and then continues to flash quickly.



4. **Within 20 seconds**, press a key of the radio key to be paired **twice** in succession. The tuning in procedure is aborted if the 20 second time limit is exceeded.

» If the control unit accepts the new radio key, the green LED lights up for 3 seconds.



5. If you want to activate or deactivate the day-latch function, press the send button on the radio key **once**.

» When the day-latch function is activated, the red and green LED of the control unit flash slowly.

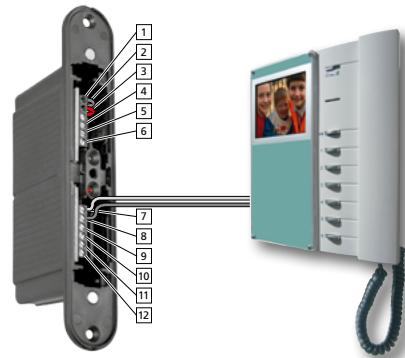
6.1.5 APPLICATION EXAMPLES FOR CIRCUIT BOARD ASSIGNMENT

Application example in residential buildings:

For example the door shall be opened via radio key from the outside. The opening is triggered from the inside by means of an existing two-way intercom system with a 12 V AC control cable. This was, as the case may be, used previously for an electrical door opener.

Terminal assignment:

Connect the two-way intercom system's cables to terminal 7 + 8.

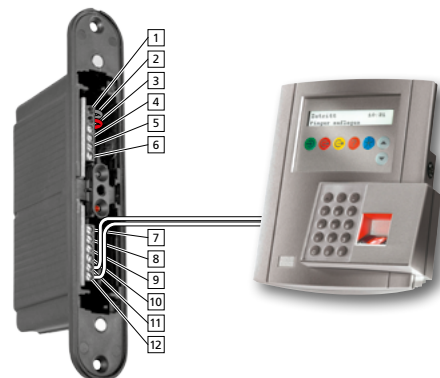


Application examples in residential/public buildings:

The opening shall be triggered from the outside by means of an access control system (e.g. numeric code lock or finger print).

Terminal assignment:

Connect the access control system with potential-free impulse (≤ 1 sec.) to terminals 11 + 12.



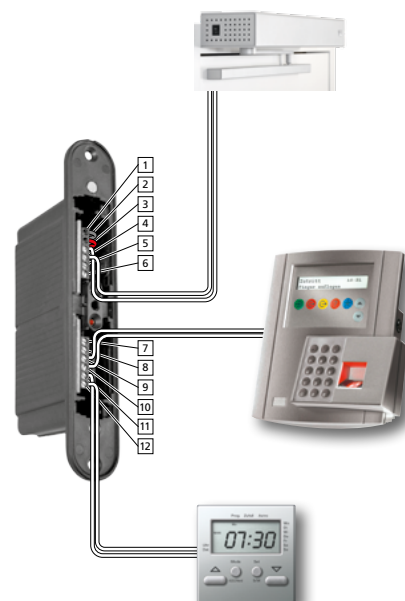
Application example in construction projects:

The door shall be locked during the day for example by means of the latch only. At night the lock shall be locked both completely and fully automatically. Opening from the outside is triggered by means of an access control system (e.g. numeric code lock or finger print). In addition, an electrical swing door opener shall open the door leaf.

Terminal assignment:

Connect the time switch with potential-free continuous signal to terminals 11 + 12 for function 2.

Connect the access control system with potential-free impulse (≤ 1 sec.) to terminals 9 + 10 for function 1. Connect the swing door opener to terminals 3 + 4.



6.2 THE RADIO RECEIVER

If only a radio signal is required to open the door, the radio receiver module can be used as an alternative to the control unit (for locks from date of manufacture: 04/2010).

The radio receiver module VNBFP490 **(1)** receives the radio signal and forwards it to the motor for door opening. It has a transparent programming button with red control LED **(2)** for pairing the FUHR radio transmitters and a 3-wire connection cable **(3)**, which is connected to the green plug of the motor drive.

To position and fix the drive unit, the radio-controlled module's housing is equipped with an insertion channel and a catch spring **(4)**. The drive unit is equipped with appropriate mounting areas*. Slide the radio receiver module downwards along the insertion channel until the catch spring in the motor drive's housing positively engages into place.

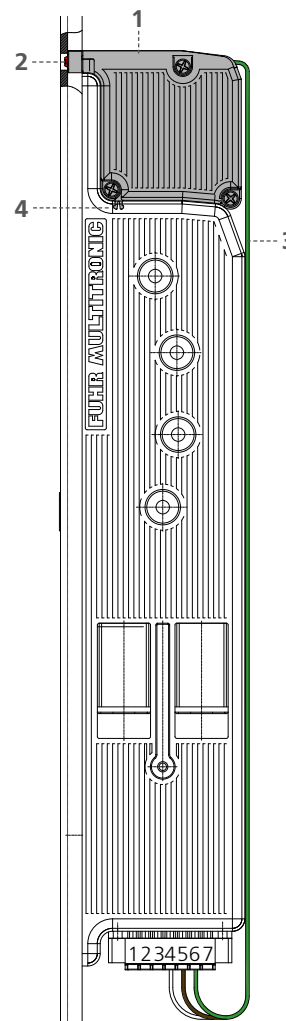
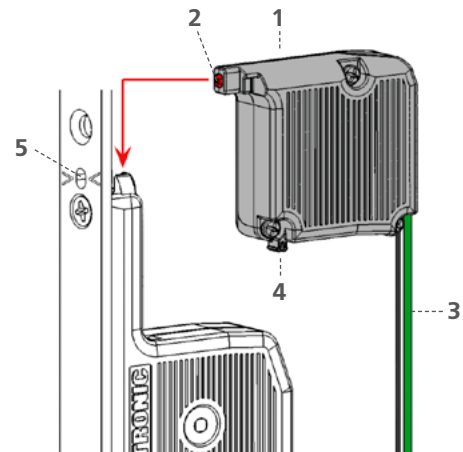
There is an opening **(5)** in the lock faceplate located above of the drive unit, through which one can activate the **LED tune-in button (2)** in a built-in state from the outside with a thin object. This LED tune-in button must be pressed first for disassembly, before the radio receiver module can be removed towards the top.

Connecting the cables

Three cables are located on the back of the radio receiver: white, brown & green. Please connect these three cables in the correct arrangement to the following screw terminals of the multifunction plug of the motor drive:

- Terminal 4 – white cable
- Terminal 5 – brown cable
- Terminal 6 – green cable

After the motorised lock's 12 V DC power supply has been connected (terminal 2-3 refer to chapter 6.3), the radio receiver is operational.



Detailed installation, operating and maintenance instructions MBW24 of the radio receiver module VNBFP490: www.fuhr.de

6.3 THE DRIVE UNIT'S MULTI-FUNCTIONAL JACK

The below-mentioned applications are merely intended as application examples of common connections. Furthermore there is a multitude of other possible applications.



It is important that the respective switching signal (e.g. the energised impulse or the potential-free contact) is connected to the appropriate terminal.

Terminal

Assignment

1 + 2 + 3

Already occupied by the 12 V DC drive unit's power and data supply cable.

4 + 5

Input – potential-free impulse (< 1 sec.) – e.g. for **external access control systems (transponders, code locks, finger print, eye scan etc.)**, that are mounted directly on the door leaf.

- By means of either the access control system's control unit or by pressing a switch, a brief potential-free contact triggers opening the FUHR **multitronic** lock.

5 + 7

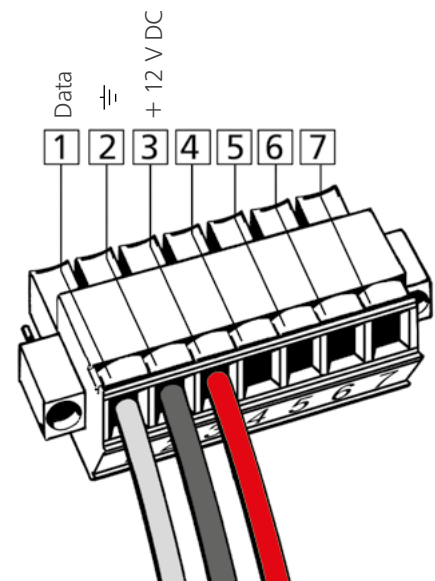
Input – energised impulse (< 1 sec.) – e.g. for **code locks or transponder systems**, that are mounted directly on the door leaf.

- Terminal 5 = GND (earth/ground) and
- terminal 7 = 6-12 V AC/6-24 V DC.

5 + 6

Output – ideally used for the power supply of **illuminated fixed pad handles or illuminated glazed panels**.

- Terminal 5 = GND (earth/ground) and
- terminal 6 = 12 V DC (max. 350 mA).



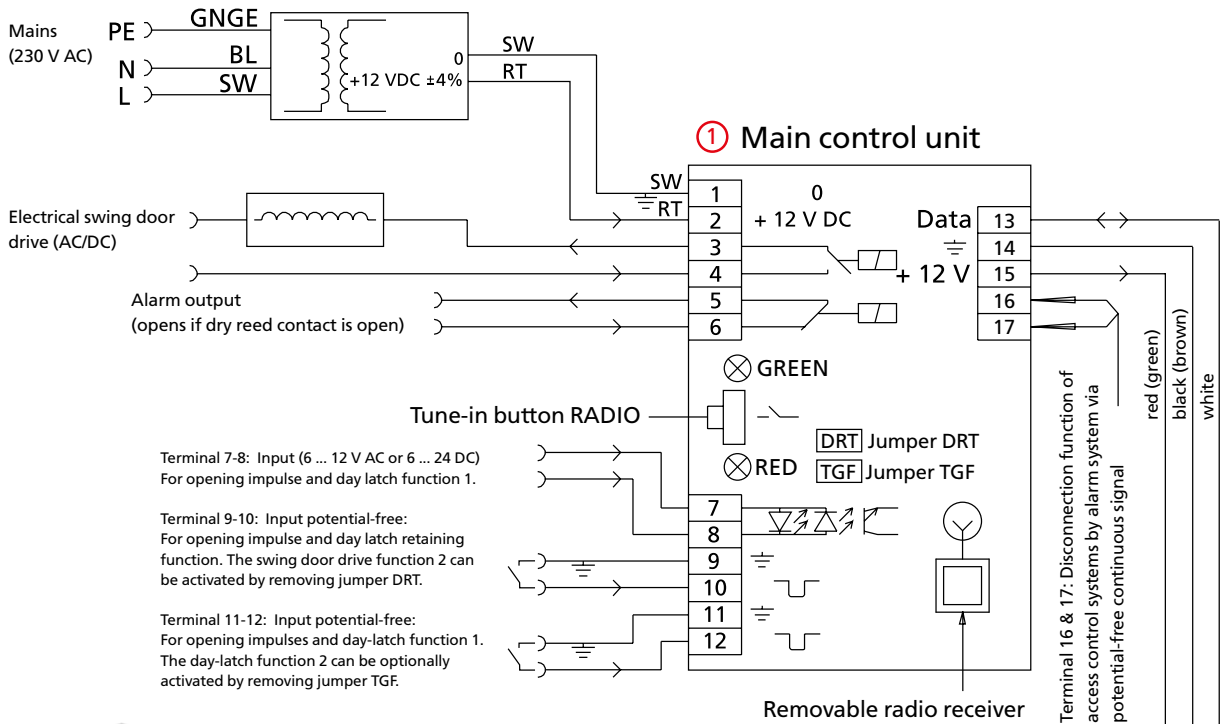
Reverse polarity causes damage!!



We recommend the use of shielded cables in order to avoid interference from external sources and ensure proper functioning.

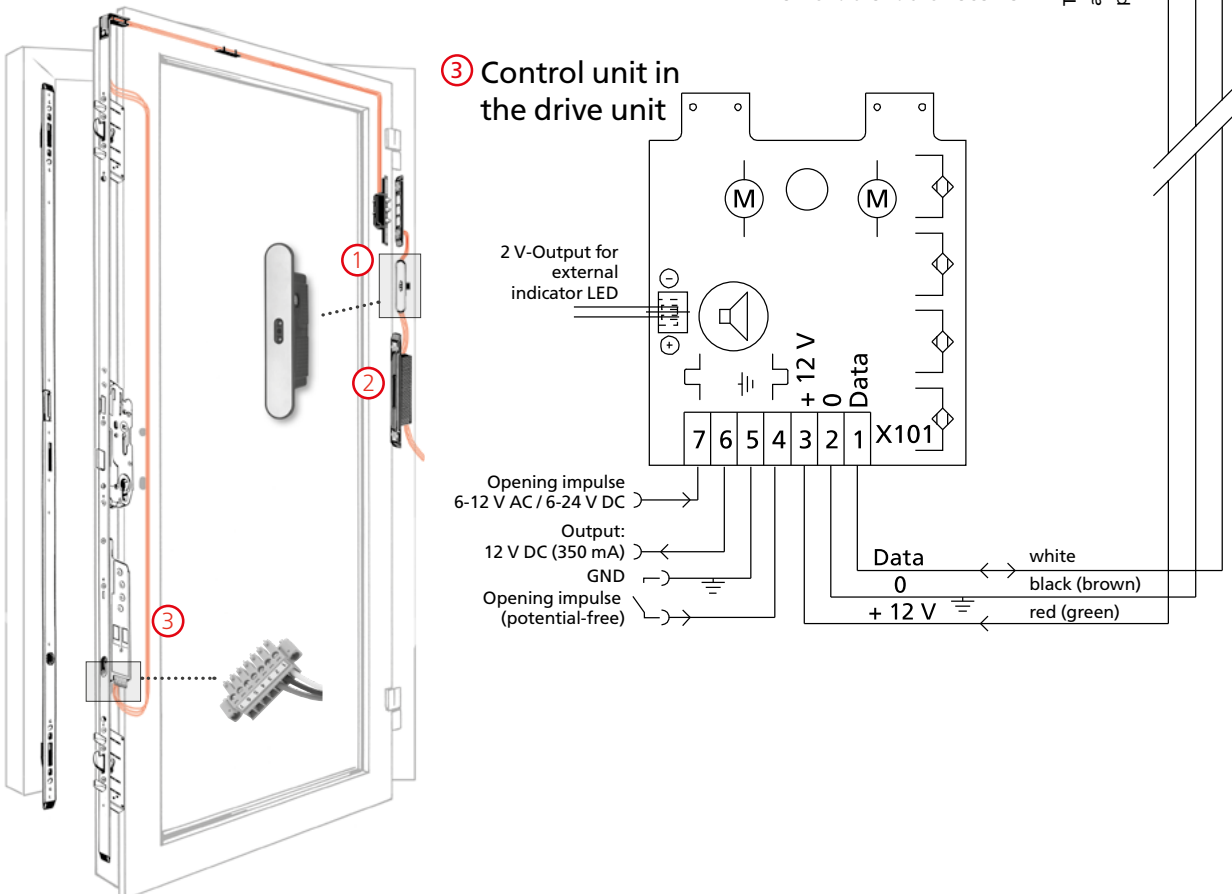
7 Wiring diagram

② Power supply via FUHR switching power supply unit 12 V DC (residual ripple < 250 mVpp)

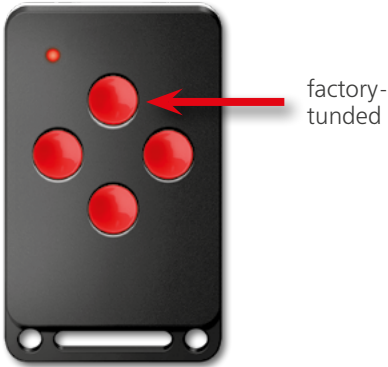


Electricity and data transmission

③ Control unit in the drive unit



8 Control via FUHR radio access control systems



Each control unit comes with a radio receiver. To the scope of delivery of a control unit or a radio receiver module a master radio key with red buttons is included. With the help of the master radio key, 25 user radio control keys or any other FUHR access system can be tuned in. All radio keys are copy protected by means of a 'rolling code system'. The middle button of the master key has already been programmed to the control unit or the radio receiver module in the factory.

In the following, the pairing and deletion of 4-channel radio keys is described. Each of the keys (channels) can be assigned individually, e.g. for front door, garage door, property gate and lighting.

The handling of other FUHR radio transmitters (finger scan, keyboard, transponder etc.) is analogous. Detailed information: www.fuhr.de.

For the connection of external access controls, please refer to the wiring diagram in chapter 7 and the corresponding instructions.



The master key cannot be deleted or switched at a later stage. It should therefore be kept safely, as additional keys cannot be tuned in or deleted should it be lost.

8.1 THE PROGRAMMING KEYS

DIN rail controller

Integrated radio receiver

Radio receiver module



Programming button



LED-Programming button

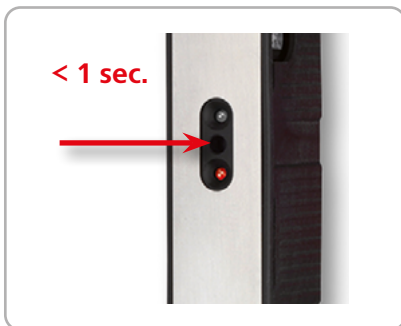


8.2 TUNING IN AND DELETING USER RADIO KEYS

8.2.1 TUNING IN INDIVIDUAL USER RADIO KEYS (MAX. 25)

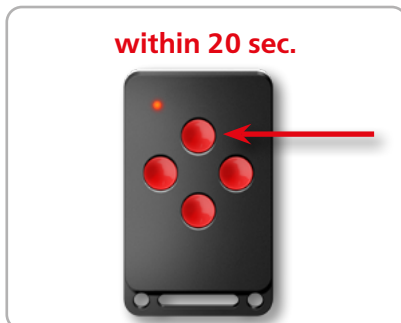


For safety reasons, we recommend that you first delete all radio keys when starting up for the first time (see chapter 8.2.3). Then proceed as follows:



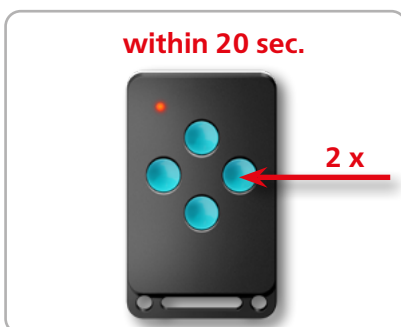
1. **Briefly (max. 1 second)** press the programming button on the control unit or radio receiver module with a thin object.

» The green LED (control) or the red LED (radio receiver module) flashes slowly.



2. Now press the master key's front, middle button **within 20 seconds**.

» If the control unit or the radio receiver module accepts the master key, the green LED lights up for 2 seconds and then continues to flash slowly.

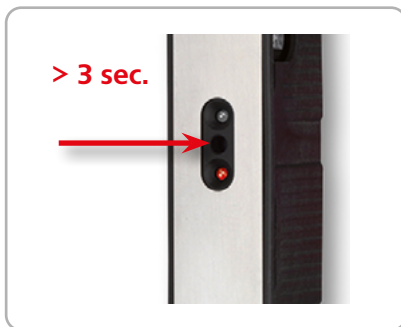


3. **Within 20 seconds**, press a key of the radio key to be paired **twice** in succession. The tuning in procedure is aborted if the 20 second time limit is exceeded.

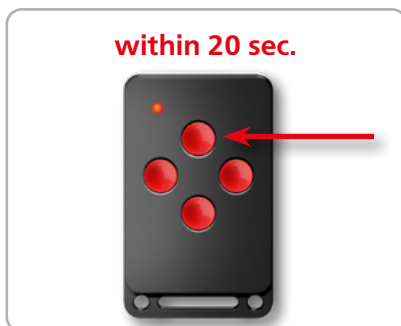
» If the new radio key has been accepted by the control unit or the radio receiver module, the green LED (controller) lights up for 1 second and the red LED (radio receiver module) for 4 seconds.

4. Repeat from step 1, should you wish to tune in another radio key.

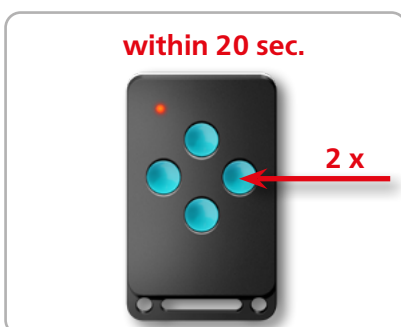
8.2.2 DELETING INDIVIDUAL USER RADIO KEYS



1. Press the programming button of the control unit or the radio receiver module **until (longer than 3 seconds) the green LED (control unit) or red LED (radio receiver module) flashes quickly.**



2. Now, press the front, middle button **within 20 seconds.**
 - » If the control unit or the radio receiver module accepts the master key, the green LED initially lights up for 2 seconds and then continues to flash quickly.

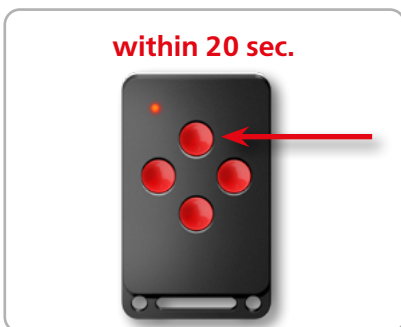


3. **Within 20 seconds**, press the corresponding key of the radio key to be deleted. The deleteprocess is aborted if the 20 second time limit is exceeded.
 - » If the transmission code has been successfully deleted, the green LED lights up for 1 second and then goes out.
4. Repeat from step 1, should you wish to delete another radio key.

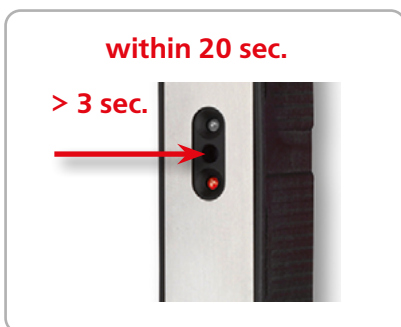
8.2.3 DELETING ALL USER RADIO KEYS



1. Press the programming button of the control unit or the radio receiver module **until (longer than 3 seconds) the green LED (control unit) or red LED (radio receiver module) flashes quickly**. Then release the button.



2. Now, press the front, middle button of the master key **within 20 seconds**.
 - » If the control unit or the radio receiver module accepts the master key, the green LED initially lights up for 2 seconds and then continues to flash quickly.



3. Now press the programming button on the control unit again **within 20 seconds** for **longer than 3 seconds**. The delete process is aborted if the 20 second time limit is exceeded.
 - » If all transmitter codes (except the master transmitter code) have been successful, the green LED (control unit) lights up for 1 s and the red LED (radio receiver module) lights up for 4 seconds.

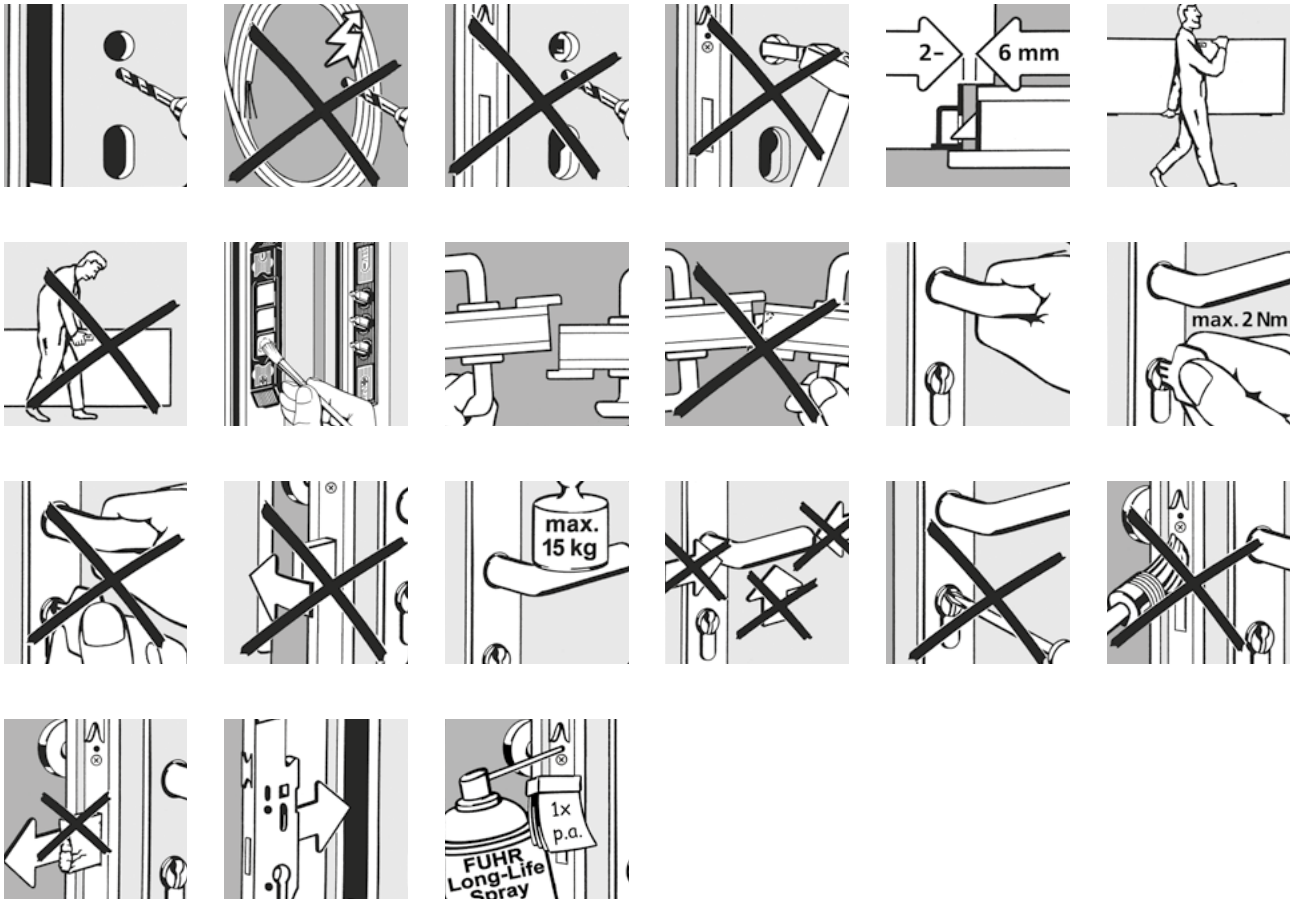


Note:
If the master key is not recognised during the tuning-in and delete processes, the respective function is aborted.

9 Maintenance and care



The further points raised here provide supplementary information to the FUHR Product Liability Information for door locks, see www.fuhr.de. The importance of their compliance must be pointed out to builders and users alike. In the event of non-compliance with these imperative instructions, faultless system operation cannot be warranted. The FUHR multitronic lock may only be used in conjunction with the components supplied. Failure to do so invalidates warranty issues.



All safety-relevant hardware must be checked at least annually for both wear and tear, and if mechanically secured. Depending on the requirements, fixing screws must be tightened or the damaged or worn parts exchanged for original parts by a specialised company.

Additionally all movable parts and locking points must be lubricated and their function must be checked. Only cleaning and maintenance agents that do not damage the corrosion protection of the hardware components are to be used.

Hardware adjustments as well as replacing hardware components must be carried out by a specialist company.

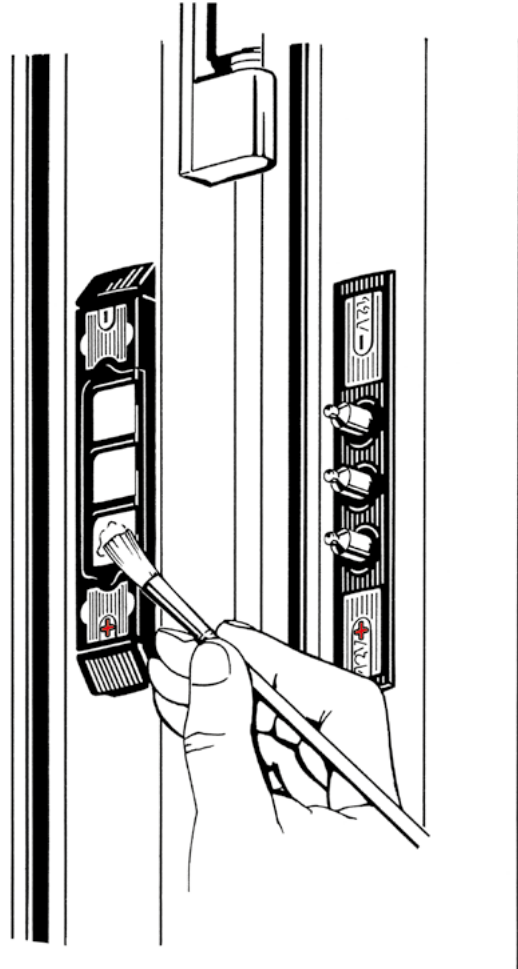
We recommend ensuring and documenting the maintenance via a maintenance contract with a specialist company.

9.1 CONTACT DEVICE



In order to ensure perfect contact between the contact surfaces and the tappet contacts, we recommend that the surfaces are treated with the provided contact lubricant twice a year. Lubricants from other suppliers are not suitable and therefore inadmissible.

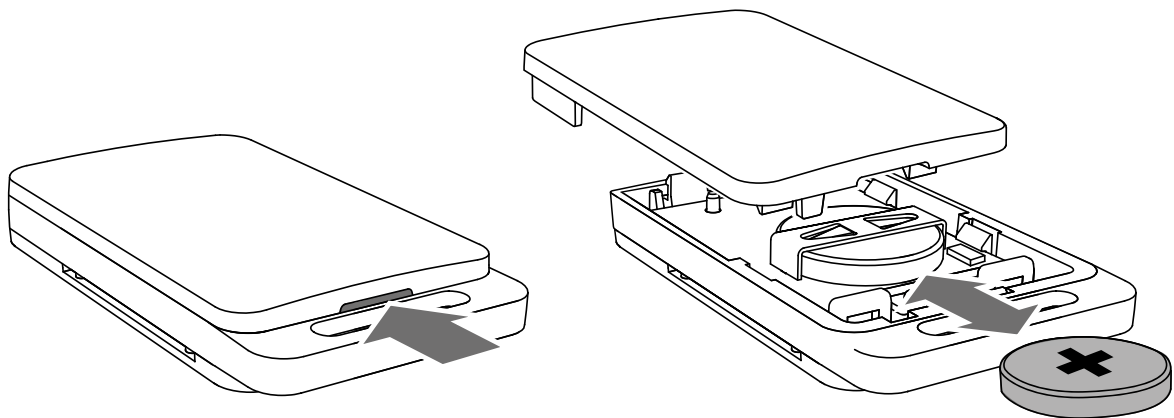
(The contact lubricant can be reordered under Art. no. VNZ80077.)



9.2 BATTERY CHANGE OF THE RADIO KEYS

The radio keys are particularly energy-saving and have a battery indicator light. The battery is sufficient for approx. 50,000 operations. Check the battery indicator light regularly to avoid failure. To change the 3- or 4-channel radio key battery, follow the steps below:

1. Carefully open the radio key housing with a coin (3-channel radio key) or a narrow object, e.g. a slotted screwdriver (4-channel radio key).
2. Push out the battery.
3. New battery (type: CR 2032). The plus symbol must point upwards.
4. Press the radio key housing together again.



10 Technical data

10.1 MULTITRONIC-SET

Power consumption

for standby operation including the

12 V DC mains adapter:	Approx. 65 mA
during the closing movement:	Approx. 450 mA
during the opening movement:	Approx. 400 mA
while the latch retracts for approx. 5 seconds:	Approx. 250 mA
Start-up current of motor:	Approx. 1 A
Brief current peak while blocked:	Approx. 3 A
Temperature range:	-10 °C to + 50 °C
Door leaf weight:	Max. 200 kg

10.2 MASTER/USER RADIO KEY

The radio keys conform to the R&TTE guideline 2014/53/EU

Channel:	868.3 MHz
Modulation:	FSK (frequency shift keying)
Security:	Rolling code
Channels:	4
Power supply:	1 x 3 V battery, CR 2032
Operating control:	Red light emitting diode (LED)
Temperature range:	-10 °C to +50 °C
Dimensions:	61.5 x 37 x 10.5 mm
Weight:	Approx. 11 g.

10.3 4-CHANNEL RADIO KEY WITH WALL BRACKET

The radio keys conform to the R&TTE guideline 2014/53/EU

Channel:	868.3 MHz
Modulation:	FSK (frequency shift keying)
Security:	Rolling code
Channels:	4
Power supply:	1 x 3 V battery, CR 2032
Operating control:	Red light emitting diode (LED)
Temperature range:	-10°C to +50°C
Dimensions without wall bracket:	60 x 38 x 14 mm
Weight:	Approx. 25 g

10.4 MULTITRONIC CONTROL WITH RADIO RECEIVER

Coding:	Not necessary as the transmission code will be tuned in
Channel:	868.3 MHz
Modulation:	FSK (frequency shift keying)
Aerial:	Cable aerial approx. 110 mm
Power supply:	12 V DC
Operating control:	2 light emitting diodes (LEDs)
Temperature range:	-10 °C to +50 °C
Dimension:	120 x 45 x 25 mm
Weight:	Approx. 75 g (incl. cable and casing)
IP rating:	IP 20
Alarm output:	Max. contact load capacity 125 V AC/1 A/62 VA

10.5 RADIO RECEIVER

Channel:	868.3 MHz
Modulation:	FSK (frequency shift keying)
Sicherheit:	Rolling code with master transmission principle
Aerial:	On board
Power supply:	12 V DC
Current consumption:	15 mA
Operating control:	Red light emitting diode (LED)
Temperature range:	-10°C to +50°C
Dimensions:	43 x 40 x 15 mm
Connection cable:	3-core, approx. 320 mm long
Weight:	Approx. 50 g
IP rating:	IP 20
Switching impulse:	Potential-free

10.6 MULTITRONIC DRIVE UNIT

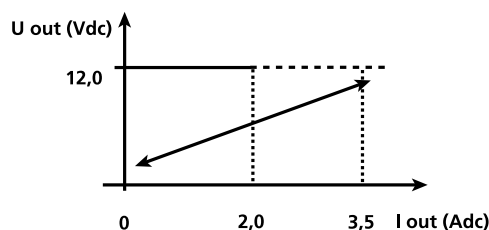
Dimension:	50 x 206 x 15.5 mm
Weight:	Approx. 500 g. (only electrical locking unit)
Power supply:	12 V DC
Signalling:	1 piezo buzzer
Temperature range:	-10 °C to +50 °C
Contact rating terminal 6:	max. 350 mA (resetting fuse/PTC)

10.7 MULTITRONIC SWITCHING POWER SUPPLY UNIT (INSTALLATION IN THE DOOR FRAME)

Model: Primary switching controller (single phase, primary clocked built-in power supply)
Impulse load capacity, short circuit protected, open-circuit proof, high efficiency, thermal overload protection

Tested in accordance with:	EN 60950
EMV:	EN 50081-2 (emitted interference) EN 61000-6-2 (interference resistance)
Test voltage:	4.2 KV
Type of construction:	Cable cast in the contact
IP rating:	IP 20 with plug (IP 53 without plug)
Protection grade:	Prepared for protection grade I devices and systems
Ambient temperature:	-20 °C to +60 °C (0 °C to 40 °C without derating)
Relative humidity:	5 to 80 %
Cooling method:	Self-cooling by means of natural convection
Storage temperature:	-25 °C to +85 °C
Input voltage range:	230 V AC input (180 to 264 V input voltage range)
Channel:	50 to 60 Hz
Input current:	Type 0.7 A at 230 V AC
Switch-on current:	< 15 Ap
Mains power failure bridging:	> 20 ms at 230 V AC nominal voltage
Overvoltage protection:	Yes
Connections:	3 m cable with 3 x 0.75 mm ²
Output voltage:	12 V DC stabilised 2% (SELV)
Output current:	2.0 A 100 % ED/Duty Cycle 3.5 A at 5 % ED/Duty Cycle
Ripple:	<100 m Vpp (at 20 MHz bandwidth)
Control deviation:	Max. 2 %
Current limiting:	Refer to the characteristic line in the diagram
Efficiency:	Type 79 %
Connections:	300 mm x 0.75 mm ²
Dimension:	230 x 25 (29) x 35 mm
Weight:	Approx. 350 g. (including cable)

U/I characteristic line:



11 Troubleshooting

In the event that your FUHR **multitronic** lock should fail to function properly, please refer to the table below to find and rectify the fault.



IMPORTANT! The entire FUHR multitronic lock has been subject to extensive inspections by the manufacturer. If faults are found once installed, the installation should be checked to begin with. The FUHR multitronic lock must never be opened forcefully using the lever-handle! All components have been designed for a smooth running operation. The FUHR multitronic lock has not been designed to straighten out warped or distorted doors! Careful and proper installation and maintenance of the door is a prerequisite for durable, trouble free operation.

Type of fault	Signal	Possible cause of fault	Fault repair
The lock does not lock completely.	Green and red LEDs flash alternately. Or the lock beeps five times after the attempt to lock.	The locking mechanism doesn't run smoothly.	Open the lock using the cylinder key. (Not with force via the lever-handle!)
		The door is warped.	Check the door installation and possibly adjust.
		The keeps have been adjusted too tightly.	Readjust keeps/ regulate less contact pressure.
		The locking bolts are obstructed.	Check as to whether all keeps are freely accessible and have the correct position.
		A profile cylinder without „FZG“ marking has been installed.	Install a non-restricted FZG free-running profile cylinder (free-running cylinder for locks with gear mechanism; refer to chapter 5.1).
The lock does not lock or unlock.	Green and red LEDs light up.	Data connection between the electronic drive unit and the control unit is interrupted.	Check if the spring-loaded tappet contacts are correctly poled (note +/-; refer to chapter 4.2.2 and chapter 4.2.6).
			Are the spring-loaded tappet contact pins meeting the flat surface contact when the door is closed over?
		One or more cables are damaged.	Check all cables and plug-and-socket connections.
		Tappet contacts and contact surfaces have no contact.	Lubricate the contact surfaces (refer to chapter 9.1).
The lock does not lock.	Green LED lights up.	Magnet is out of range.	Readjust the magnet and/or door. Check the clearance.
	Green and red LEDs flash slowly.	Day latch function is activated.	Deactivate the day latch function.
	Green LED flashes slowly.	Permanently-open function is activated.	Deactivate the permanently-open function.
	No LED lights up	Power connection between the electronic drive unit and the control unit has short-circuited.	Check if the spring-loaded tappet contacts are correctly poled (note +/-; refer to chapter 4.2.2 and chapter 4.2.6). Connect the cable properly to the green multi-functional jack (refer to chapter 6.3).
		The power supply of the mains adapter is not given or too low.	Check the output voltage of the mains adapter (12 V DC).

Type of fault	Signal	Possible cause of fault	Fault repair
The door cannot be opened by the radio key or by an external opening impulse.	Red LED lights up.	The radio key is not tuned in.	Tune in the radio key.
		The distance to the receiver is too large.	Hold the radio key closer to the door.
		The batteries in the radio key are too weak.	Hold the radio key closer to the door, if necessary exchange the battery.
		Check the connection to the control (refer to chapter 6.1) resp. to the motor drive (refer to chapter 6.3).	Amend to the correct connection.
	Green and red LEDs light up when the door is open.	This is not a fault. A signal is being transmitted to indicate that the door has been open for more than 20 seconds.	Close the door. The lock will lock automatically.
Latch remains retracted.		The connecting rods are blocked by faceplate screws or the screws have been overtightened.	Insert the screws perpendicular to the faceplate and make sure with U-rail faceplates that the connecting rods will not be blocked.
		External control signal is applied to terminals 9-10 for too long.	Reduce the pulse duration to ≤ 1 second.

11.1 USE WITH THE RADIO RECEIVER MODULE

The following LED signals can only be checked after connecting the 12 V DC power supply.

LED signal of the programming button	Meaning:
LED is lit continuously	No master key has been paired yet. Note: The first station you pair is the future master station!
LED lights up for 2 sec.	A previously paired transmission signal has been received, the lock is unlocked by motor.
LED lights up for 0.5 sec.	A still unpaired transmission signal was received, the lock does not unlock.
LED does not light at all.	In the non-actuated basic position, the LED does not light up because no transmission signal is received. However, if the LED does not light up despite the transmission of an opening signal, the radio receiver or the motor lock has not yet been connected to the operating voltage of 12 V DC or the cables on the motor plug have been connected incorrectly.

12 Optional accessories

The FUHR motor locks **multitronic** 881 can be supplemented with a wide range of accessories. For example, radio access controls, SmartHome products and numerous electronic components are available. Details can be found on our website www.fuhr.de.



All images, dimensions, product and design related information contained in these instructions represent the latest developments regarding the FUHR **multitronic** 881/881GL/ServoAccess multipoint locking system at the time of printing. This product is subject to FUHR CIP (continuous improvement process) and is constantly enhanced to reflect the latest technology. For the purpose of your satisfaction, we reserve the right to implement changes to this product. Model and product claims cannot be lodged. The latest version of the instructions is published on our website www.fuhr.de.

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