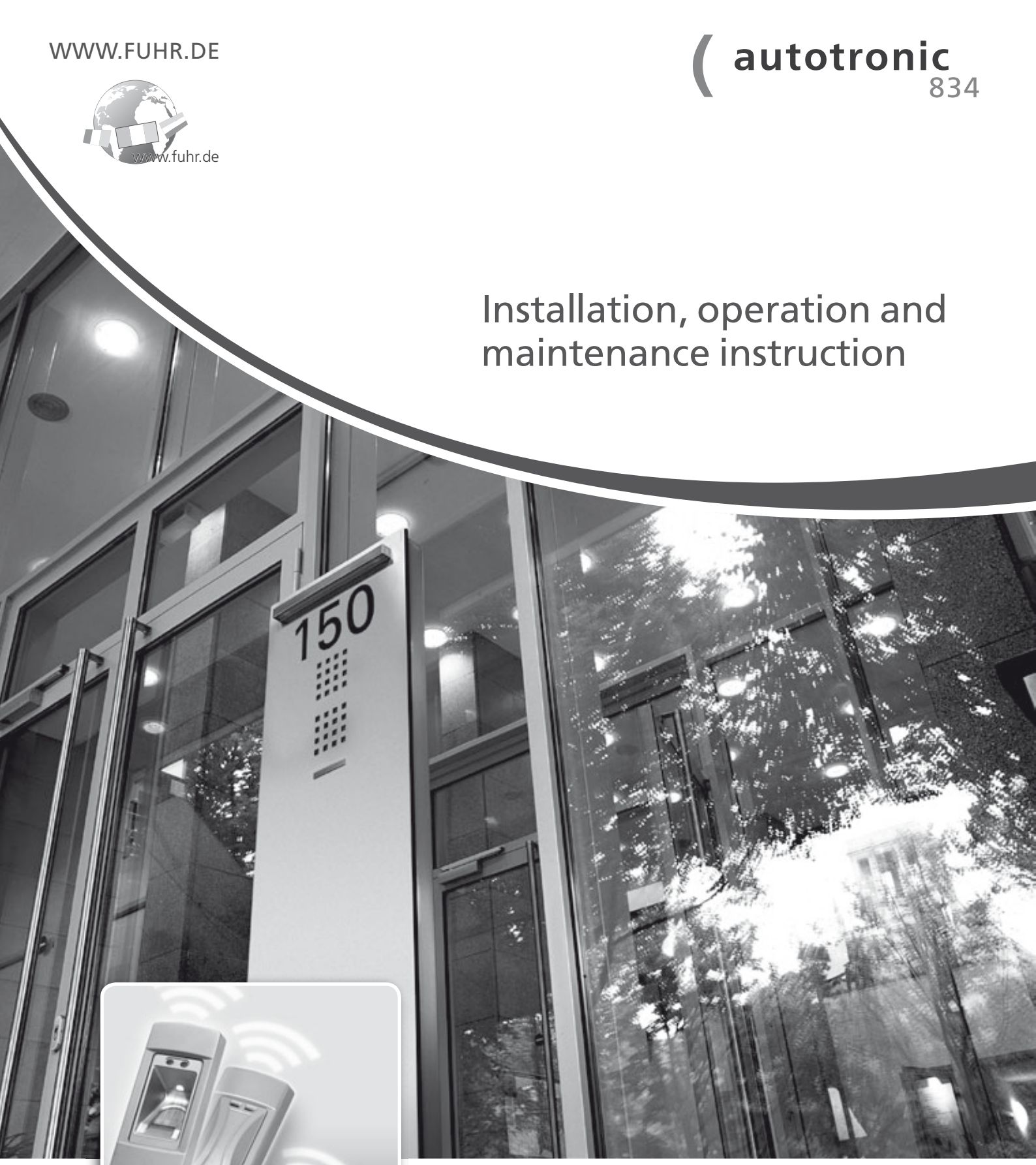
WWW.FUHR.DE

www.fuhr.de

autotronic 834

Installation, operation and maintenance instruction



These instructions are to be passed on by the fitter to the user

FUHR autotronic 834P with panic function:
Please observe the additional installation instructions MBW12.

FUHR

MBW15-GB/03.13-3

Contents

Instructions in further languages, refer to www.fuhr.de

1 Introduction

The FUHR **autotronic** 834 multi point locking system locks doors automatically by means of magnetic triggering upon closing over the door. The convenient unlocking operation is motor-driven with two parallel high performance drives – reliable, strong and fast. One can choose between different opening versions:

- By means of the two-way intercom system
- Via radio key
- Via radio fingerprint scanner
- Via radio transponder
- Via all kinds of external access control systems

Automatic locking system advantages:

- Conserves energy as the door always closes imperviously.
- Always ensures secure locking of main entrance doors, apartment doors, construction project doors or back doors.
- Suitable for use with all door materials.

Mechanical opening with the standard profile cylinder's key (a non-restricted cylinder is not required) is also possible at any time; e.g. in the event of power failure. The door can be opened easily using the lever-handle on the internal side of the door.

The standard locking and unlocking functions in detail:

The special functions are described in chapter 6.

Locking (closing):
When closing over the door, the robust latching deadbolts extend automatically to 20 mm and are safeguarded against being pushed back.

By triggering the central deadbolt via the profile cylinder, the total locking system is mechanically safeguarded. All possibilities of opening by means of the drive unit are deactivated.
At the same time the internal lever handle is blocked for control purposes or as a child safety lock.

Unlocking (opening) from the outside:

- By using the profile cylinder's key
- Optionally by means of a FUHR access control module such as radio key, radio fingerprint scanner, or radio transponder, as well as alternatively by means of any other access control system (release signal via potential-free or energised contact!)

Unlocking (opening) from the inside:

- Via the door lever handle as usual
- Alternatively by using the profile cylinder's key
- Optionally via a domestic two-way intercom system
- Optionally via a wireless wall-mounted push-button switch
- Optionally by means of another access system e.g. transponder, code lock, finger print recognition, eye scanner or similar (release signal via potential-free or energised contact!)
- As well as by means of a facility management system

Further electrical connections are available for:

- Alarm systems
- Access control systems (fingerprint scanner, code lock, transponder etc.)
- Electrically operated door openers (e.g. for disabled accessible doors = 'barrier-free building')
- Time switches (permanently-open function)
- External indicator LED
- Access control system's electronic shut down signal for alarm systems
- Illuminated fixed pad handles / glazed units

2 Important information / safety instructions

These instructions contain important information regarding installation, commissioning and operation pertaining to the FUHR **autotronic** 834 multi point locking system. Please read carefully **prior** to installation and commissioning. The points raised here provide supplementary information to the FUHR product information M3/3. The importance of their compliance must be pointed out to builders and end-users. 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 is carried out exclusively by professional staff.

Text passage denoting this symbol  relevant to safety and must be strictly adhered to.

The FUHR **autotronic** 834 multi point locking system has been designed and manufactured taking safety-related regulations and harmonised standards into account.

The safety of the FUHR autotronic 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. Only use the locking system in technical perfect working order! Malfunctions that impair security are to be eliminated immediately. Until the malfunction has been eliminated, the drive unit is to be switched off and ope–rated mechanically! The power supply unit's power feed is to be disconnected when working on the locking system and live components.

The FUHR **autotronic** 834 multi point locking system has been engineered to be used in conjunction with the provided FUHR **autotronic** components. 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 **autotronic** 834 multi point locking system must be protected from humidity. It is not suitable for areas with high humidity and chemical substances.

The FUHR **autotronic** 834 multi point locking system has been designed for installation in main entrance doors, apartment doors, construction project doors and back doors. The system with 2 latching deadbolts and 92 mm hole-distance (type 4) is regularly subjected to both internal and external tests. For this purpose durability testing in the highest grade (grade 7) with 200,000 operations was carried out successfully.

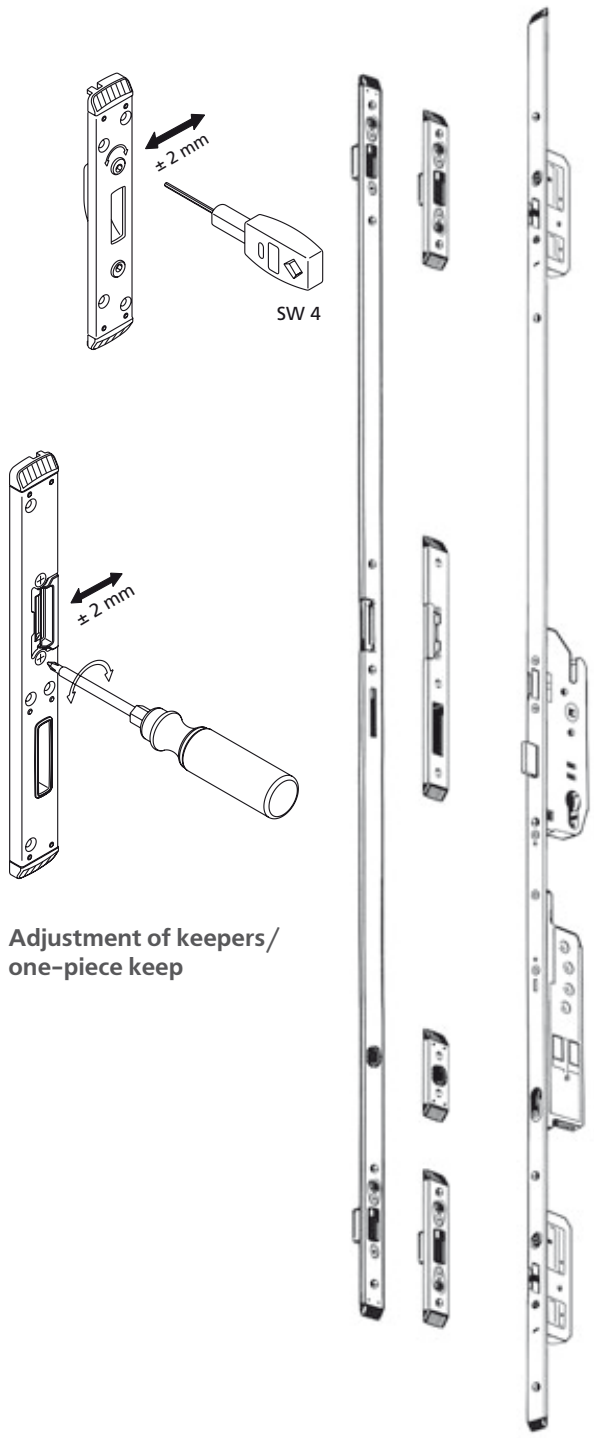
All images, dimensions, product and design related information contained in these instructions represent the latest developments regarding the FUHR **autotronic** 834 multi point locking system at the time of printing. This product is subject to FUHR CIP (continuous improvement process) and is constantly 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 these instructions is published on our website **www.fuhr.de.**

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. Please feel free to request a profile-related routing drawing! 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.

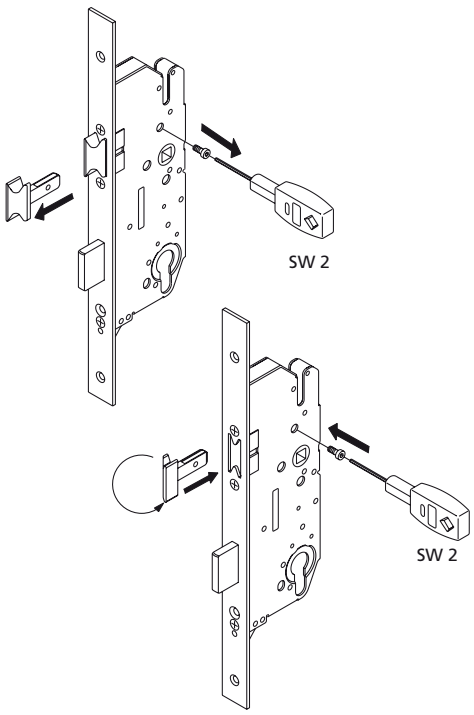
What the delivery contents include depends on the respective version.
The basic components are depicted below.

FUHR autotronic 834 multi point locking system with one-piece keep or individual keeps



Adjustment of keepers/ one-piece keep

Latch conversion on the main lock and on the additional lock casings



3 Installation examples

3.1 Version 1 – Standard – with cable junction / without control unit

Functions:

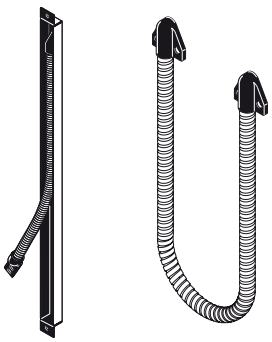
- Opening impulse via a two-way intercom system
- Connects up to external indicator LED part no. NZ80067

System components:

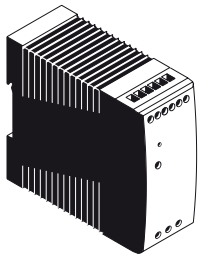
Multi point locking system FUHR autotronic 834
incl. electromotive drive unit

Profile related one-piece keep + magnetic contact for the drive unit to be ordered separately
Part no. NZM14195

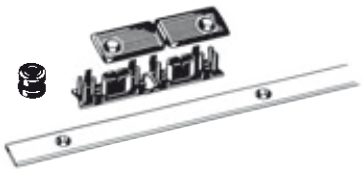
Concealed or surface-mounted cable junction
Part no. NZ80090/NZ80089



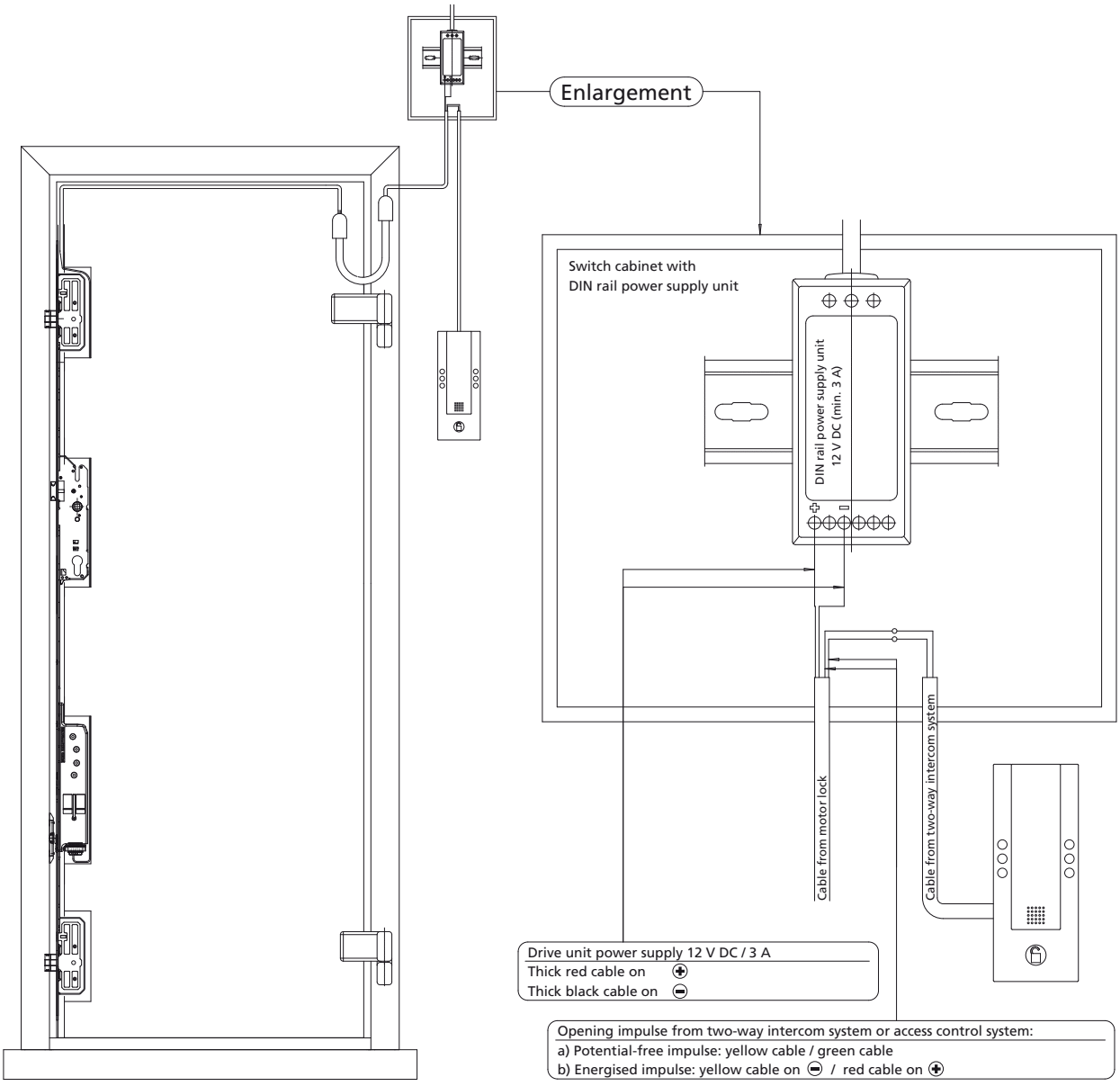
DIN rail power supply unit
Part no. NZT80086



Cable protection elements for secure cable laying:
Cover plate | 2 m | F16 – Part no. NZ33171X | F20 – Part no. NZ33172X | F24 – Part no. NZ33173X
Double cable guides
for Euro-groove – Part no. NZ13845
End caps for cover plate | F16 – Part no. NZ13846 | F20 – Part no. NZ13847
Cable protection sleeves – Part no. NZ80022



6-core connection cable | 10 m | with one coupler
Part no. NZ80075


Enlargement
Switch cabinet with
DIN rail power supply unit
DIN rail power supply unit
12 V DC (min. 3 A)
Cable from motor lock
Cable from two-way intercom system
Drive unit power supply 12 V DC / 3 A
Thick red cable on ⊕
Thick black cable on ⊖
Opening impulse from two-way intercom system or access control system:
a) Potential-free impulse: yellow cable / green cable
b) Energised impulse: yellow cable on ⊖ / red cable on ⊕

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 part no. NZ80067

System components:

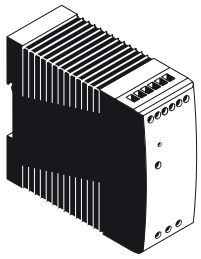
Multi point locking system FUHR autotronic 834
incl. electromotive drive unit

Profile related one-piece keep + magnetic contact for the drive unit to be ordered separately
Part no. NZM14195

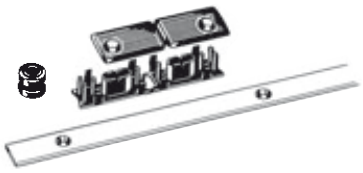
Profile related tappet contacts
Cable connector (length 4000 mm) with preassembled multi-functional jack

Contact surface
Cable connector (length 250 mm) preassembled

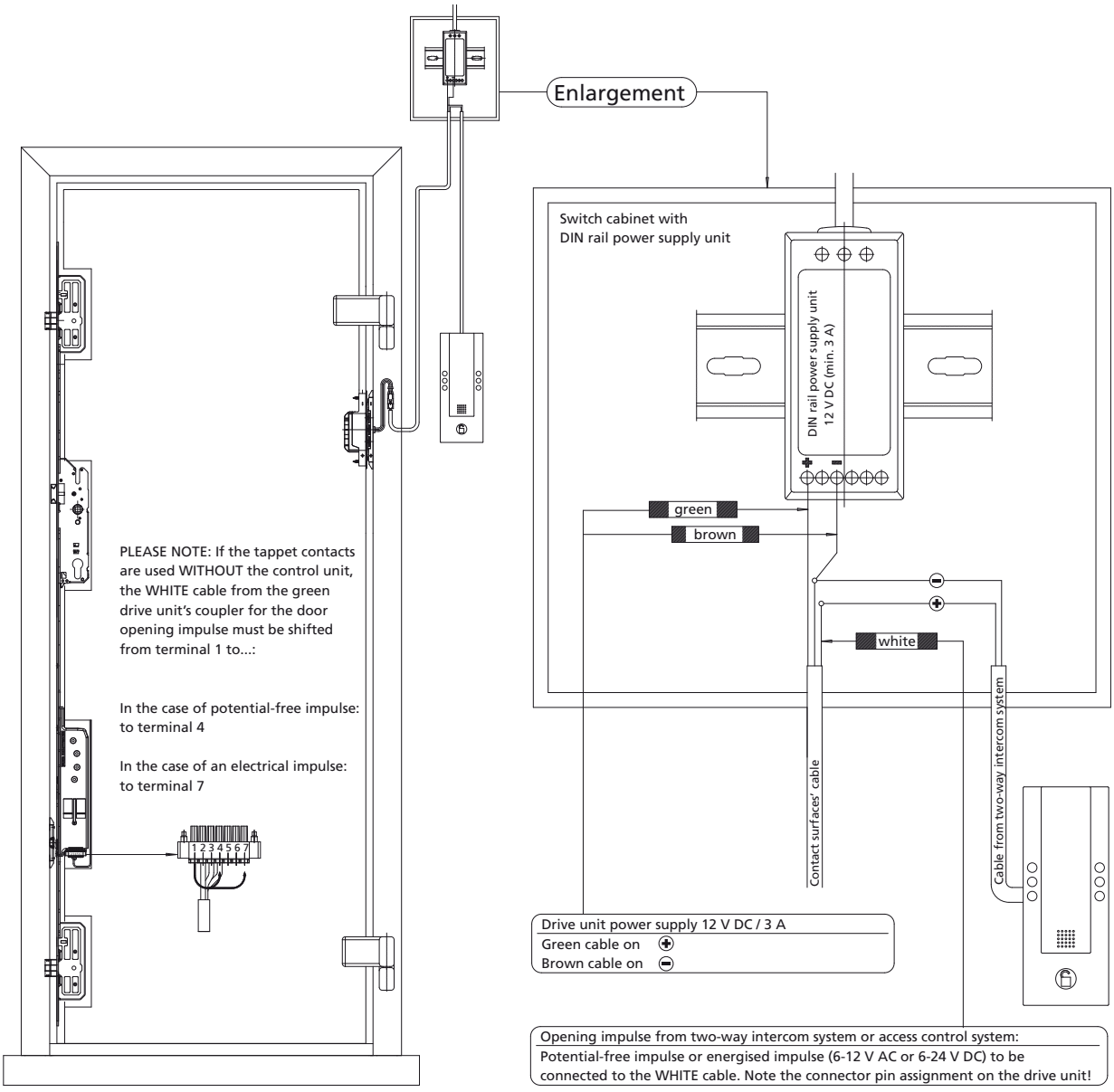
DIN rail power supply unit
Part no. NZT80086



Cable protection elements for secure cable laying:
Cover plate | 2 m | F16 – Part no. NZ33171X | F20 – Part no. NZ33172X | F24 – Part no. NZ33173X
Double cable guides
for Euro-groove – Part no. NZ13845
End caps for cover plate | F16 – Part no. NZ13846 | F20 – Part no. NZ13847
Cable protection sleeves – Part no. NZ80022



3-core connection cable | 8 m | with one coupler
Part no. NZ80063


Enlargement
Switch cabinet with
DIN rail power supply unit
DIN rail power supply unit
12 V DC (min. 3 A)
green
brown
white
PLEASE NOTE: 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 the case of potential-free impulse: to terminal 4
In the case of an electrical impulse: to terminal 7
1 2 3 4 5 6 7
Contact surfaces' cable
Cable from two-way intercom system
Drive unit power supply 12 V DC / 3 A
Green cable on ⊕
Brown cable on ⊖
Opening impulse from two-way intercom system or access control system:
Potential-free impulse or energised impulse (6-12 V AC or 6-24 V DC) to be connected to the WHITE cable. Note the connector pin assignment on the drive unit!

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 part no. NZ80067

System components:

Multi point locking system FUHR autotronic 834
incl. electromotive drive unit

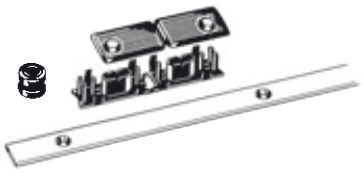
Profile related one-piece keep + magnetic contact for the drive unit to be ordered separately
Part no. NZM14195

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

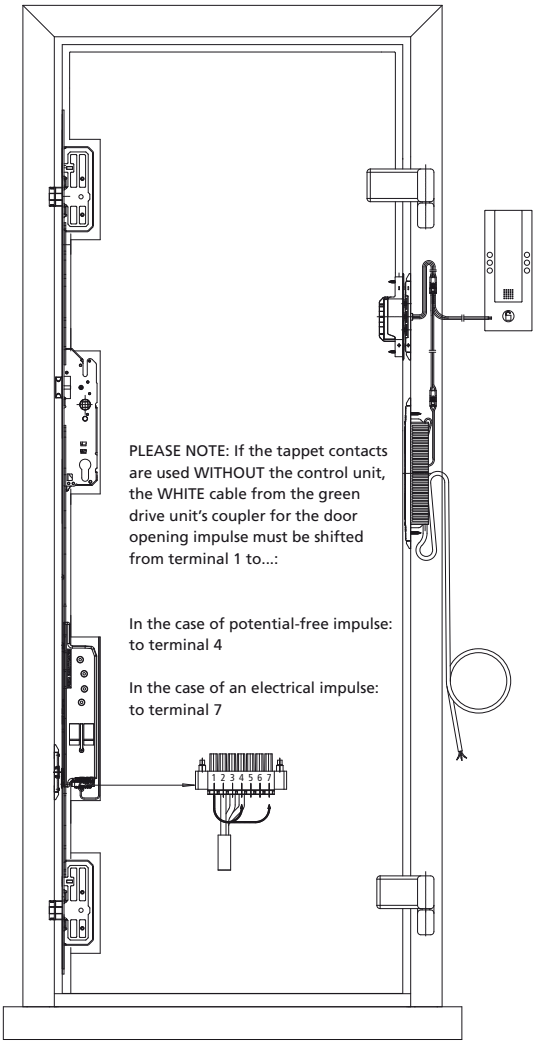
Contact surface
Cable connector (length 250 mm) preassembled

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

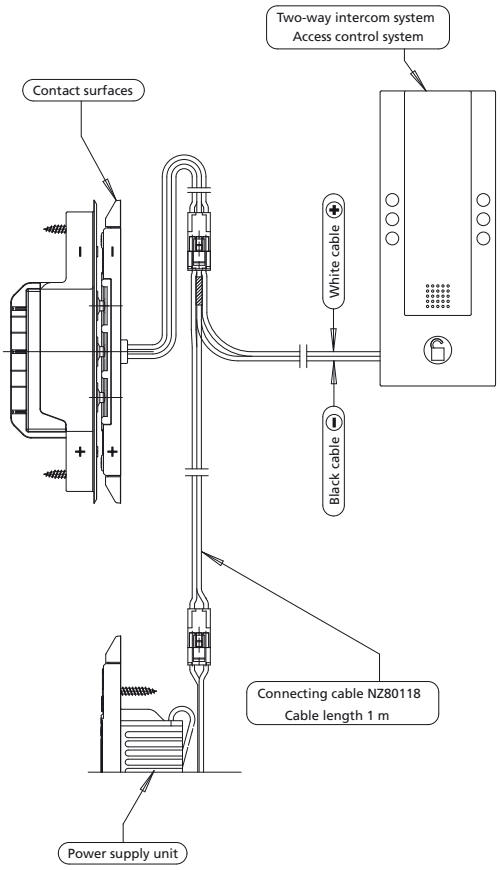
Cable protection elements for secure cable laying:
Cover plate | 2 m | F16 – Part no. NZ33171X | F20 – Part no. NZ33172X | F24 – Part no. NZ33173X
Double cable guides
for Euro-groove – Part no. NZ13845
End caps for cover plate | F16 – Part no. NZ13846 | F20 – Part no. NZ13847
Cable protection sleeves – Part no. NZ80022



4-core connection cable | 1 m | with two couplers
Part no. NZ80118



Opening impulse from two-way intercom system or access control system:
Potential-free or energised impulse (6-12 V AC or 6-24 V DC)
Note the connector pin assignment on the drive unit!



3.4 Version 4 – Project – 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
- Connects up to a swing door opener
- Connects up to time switches (permanently-open function)
- Connects up to external indicator LED part no. NZ80067
- Input signal to electronically disconnect the access control systems for alarm systems

System components:

Multi point locking system FUHR autotronic 834
incl. electromotive drive unit

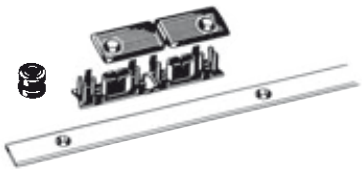
Profile related one-piece keep + magnetic contact for the drive unit to be ordered separately
Part no. NZM14195

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

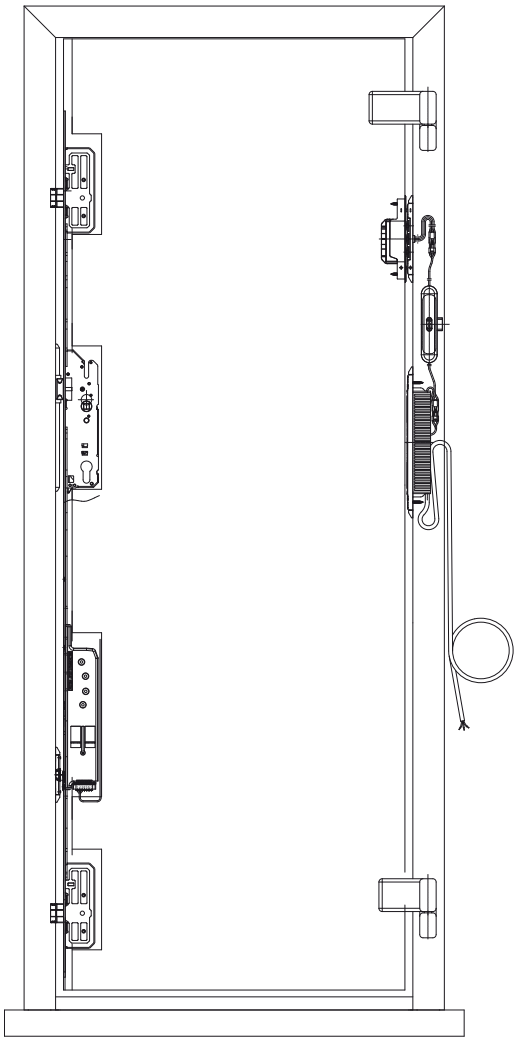
Contact surface
Cable connector (length 250 mm) preassembled

Control unit with master radio key
For installation in the door frame
Cable connectors (length 300 and 200 mm), preassembled
Part no. NZASTP0017

Cable protection elements for secure cable laying:
Cover plate | 2 m | F16 – Part no. NZ33171X | F20 – Part no. NZ33172X | F24 – Part no. NZ33173X
Double cable guides
for Euro-groove – Part no. NZ13845
End caps for cover plate | F16 – Part no. NZ13846 | F20 – Part no. NZ13847
Cable protection sleeves – Part no. NZ80022



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



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
- Connects up to a swing door opener
- Connects up to time switches (permanently-open function)
- Connects up to external indicator LED part no. NZ80067
- Input signal to electronically disconnect the access control systems for alarm systems

System components:

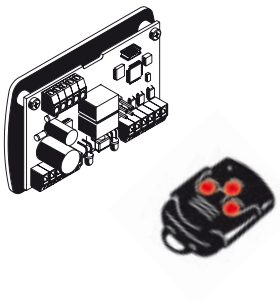
Multi point locking system FUHR autotronic 834
incl. electromotive drive unit

Profile related one-piece keep + magnetic contact for the drive unit to be ordered separately
Part no. NZM14195

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

Contact surface
Cable connector (length 250 mm) preassembled

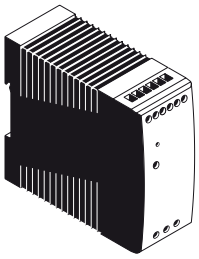
DIN rail control unit with master radio key
Part no. NZASTP0022

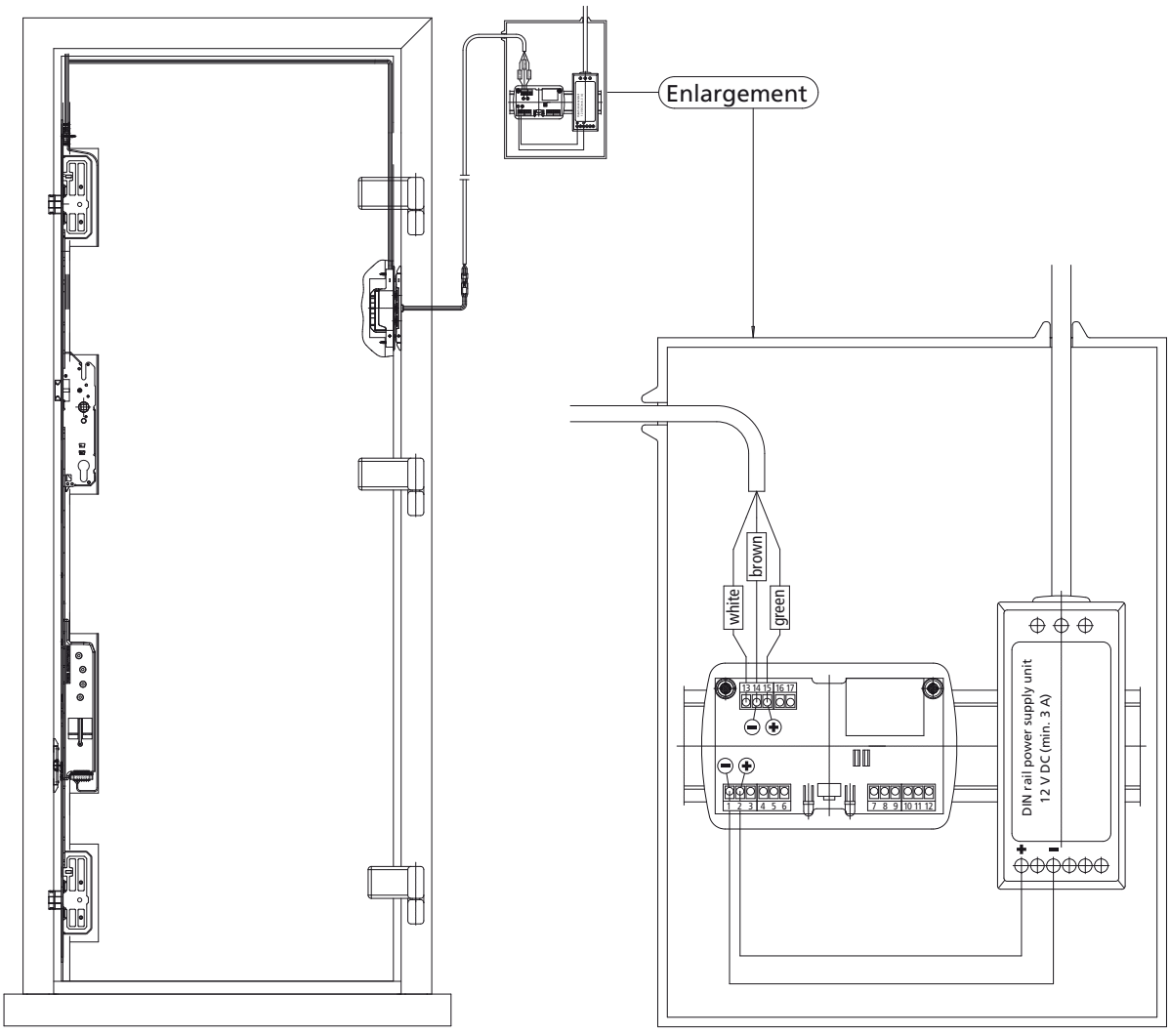


3-core connection cable |
8 m | with one coupler
Part no. NZ80063
(refer to the illustration on page 8)

Cable protection elements for secure cable laying:
Cover plate | 2 m | F16 – Part no. NZ33171X | F20 – Part no. NZ33172X | F24 – Part no. NZ33173X
Double cable guides
for Euro-groove – Part no. NZ13845
End caps for cover plate | F16 – Part no. NZ13846 | F20 – Part no. NZ13847
Cable protection sleeves – Part no. NZ80022
(refer to the illustration on page 8)

DIN rail power supply unit
Part no. NZT80086




Enlargement
white
brown
green
DIN rail power supply unit
12 V DC (min. 3 A)
13 14 15 16 17
1 2 3 4 5 6
7 8 9 10 11 12

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
- Connects up to a swing door opener
- Connects up to time switches (permanently-open function)
- Connects up to external indicator LED part no. NZ80067
- Input signal to electronically disconnect the access control systems for alarm systems

System components:

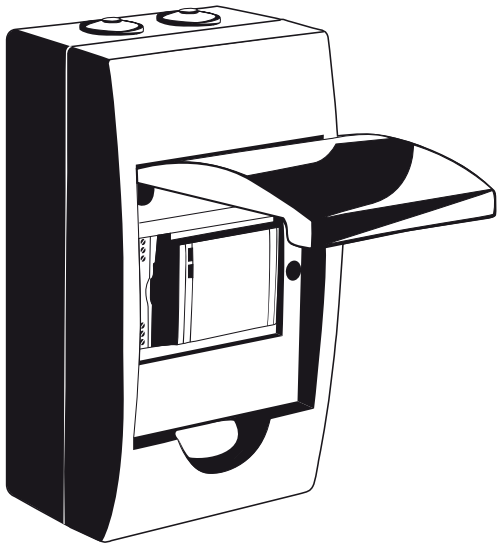
Multi point locking system FUHR autotronic 834
incl. electromotive drive unit

Profile related one-piece keep + magnetic contact for the drive unit to be ordered separately
Part no. NZM14195

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

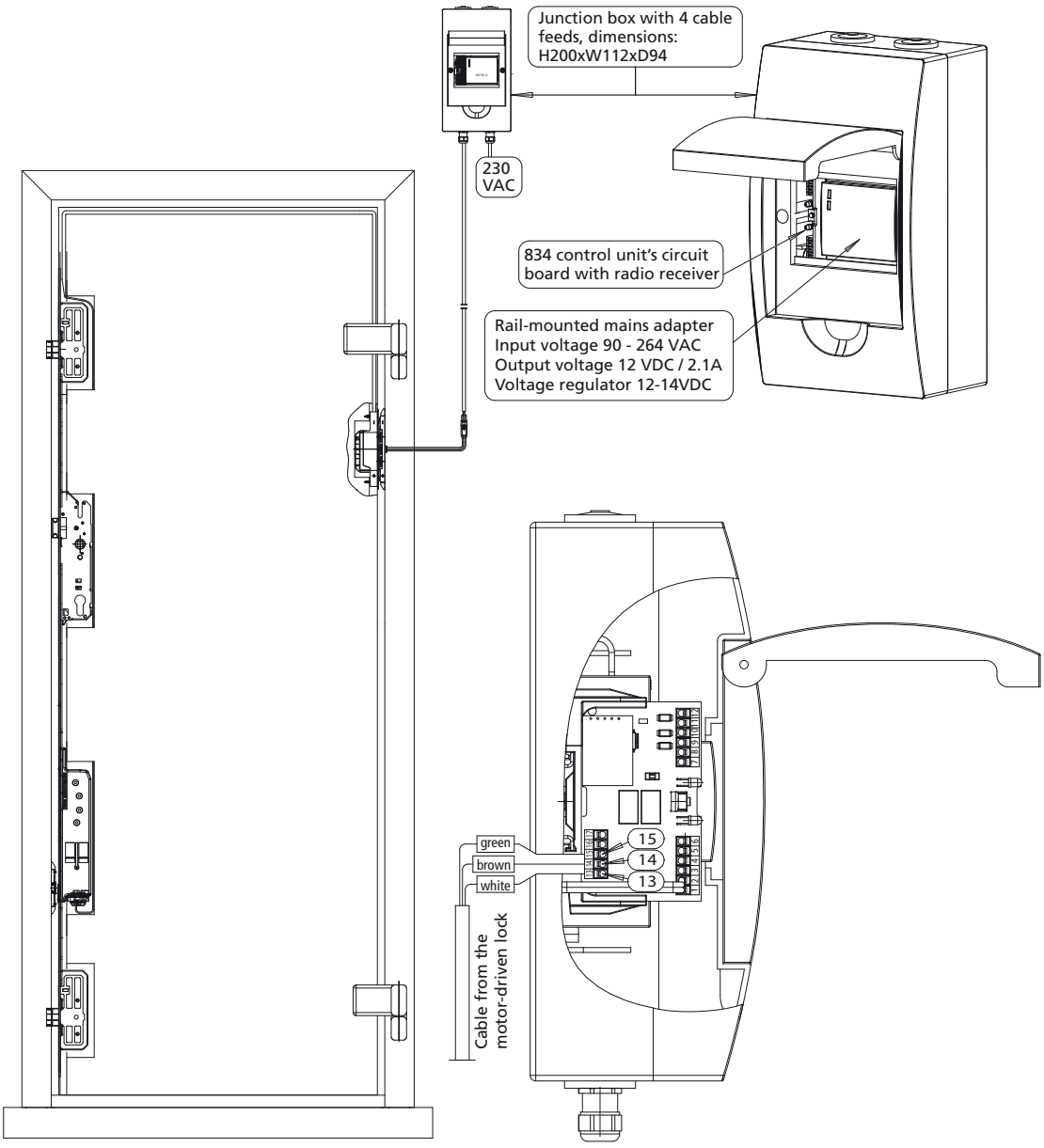
Contact surface
Cable connector (length 250 mm) preassembled

Control box with integrated mains adapter and master radio key
Part no. NZASTP043



3-core connection cable |
8 m | with one coupler
Part no. NZ80063
(refer to the illustration on page 8)

Cable protection elements for secure cable laying:
Cover plate | 2 m | F16 – Part no. NZ33171X | F20 – Part no. NZ33172X | F24 – Part no. NZ33173X
Double cable guides
for Euro-groove – Part no. NZ13845
End caps for cover plate | F16 – Part no. NZ13846 | F20 – Part no. NZ13847
Cable protection sleeves – Part no. NZ80022
(refer to the illustration on page 8)


Junction box with 4 cable feeds, dimensions: H200xW112xD94
230 VAC
834 control unit's circuit board with radio receiver
Rail-mounted mains adapter
Input voltage 90 - 264 VAC
Output voltage 12 VDC / 2.1A
Voltage regulator 12-14VDC
green
brown
white
15
14
13
Cable from the motor-driven lock

3.7 Optional accessories

3.7.1 Radio fingerprint scanner

Biometric system for convenient, keyless access control. With 2-channel technology, opening impulse via rolling code process.

Part no. NB366B
Part no. NB252N (cover)
Please order the cover separately.

Version with flat stainless steel cover
Part no. NB649N

3.7.2 Radio transponder reader

For non-contact code transmission of car keys and transponders to the control unit. With 2-channel technology, opening impulse via rolling code process.

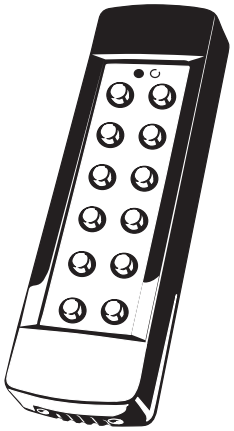
Part no. NB403
Part no. NB540 (without programming/pairing function for car keys)
Part no. NB252N (cover)
Please order the cover separately.

Version with flat stainless steel cover
Part no. NB688N
Part no. NB693N (without programming/pairing function for car keys)

3.7.3 Radio keypad

For a code transmission by entering a numeric combination. With 2-channel technology and an additional radio gong channel. Opening impulse via rolling-code process.

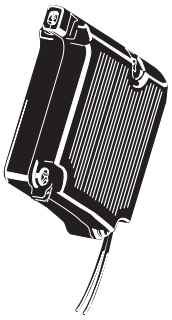
Part no. NB404
Part no. NB405N (cover)
Please order the cover separately.



3.7.4 Radio receiver modul

Pluggable onto the motor drive, compatible with all FUHR radio control moduls. A separate control is not necessary. Connects directly to the motor drive socket. 2-wire technology between mains adapter and motor drive is sufficient. 25 transmitters programmable. For motor drives with plug-in device.

Part no. NBFP490



3.7.5 Built–in transmitter for intercom sys–tems

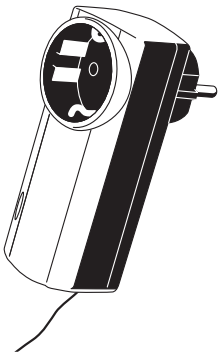
For installation in intercom systems. Sends a signal to open the door when powered with a voltage between 5-24 V AC or 6-32 V DC. With pre-assembled connection cable.

Part no. NZ80123

3.7.6 Power socket radio receiver

Designed for use with two-pin earthed/grounded plug-sockets. For triggering existing electrical drive units via radio key, e.g. garage doors.

Part no. NZ80088



3.7.7 Radio keys

Additional radio key with turquoise buttons.

Part no. NZ80062

3.7.8 User transponder

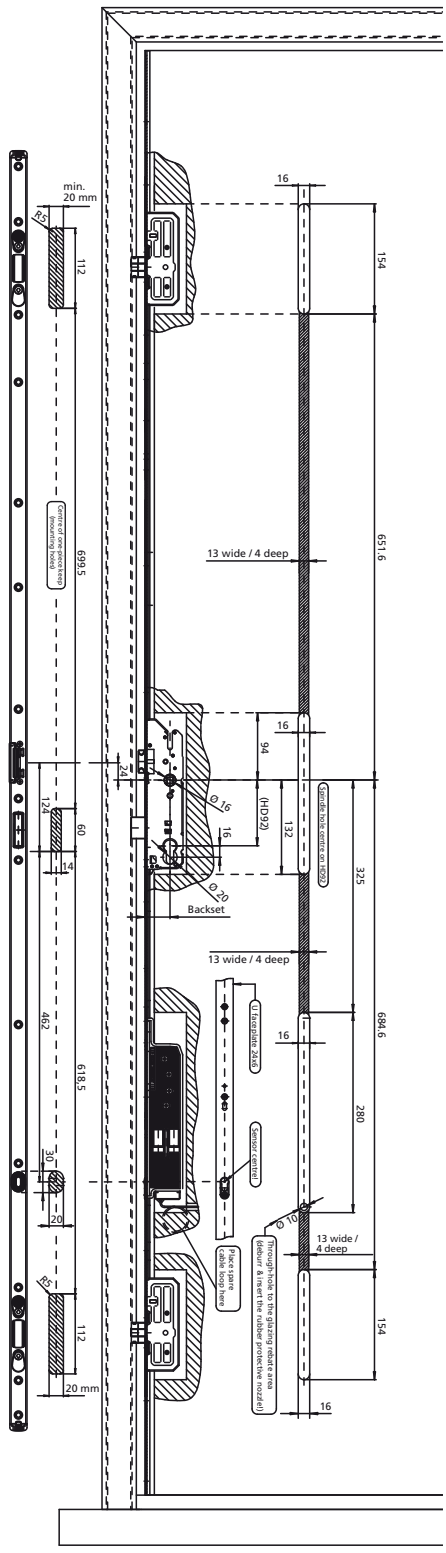
Additional user transponder (3 user transponders are included in delivery of transponder reader).

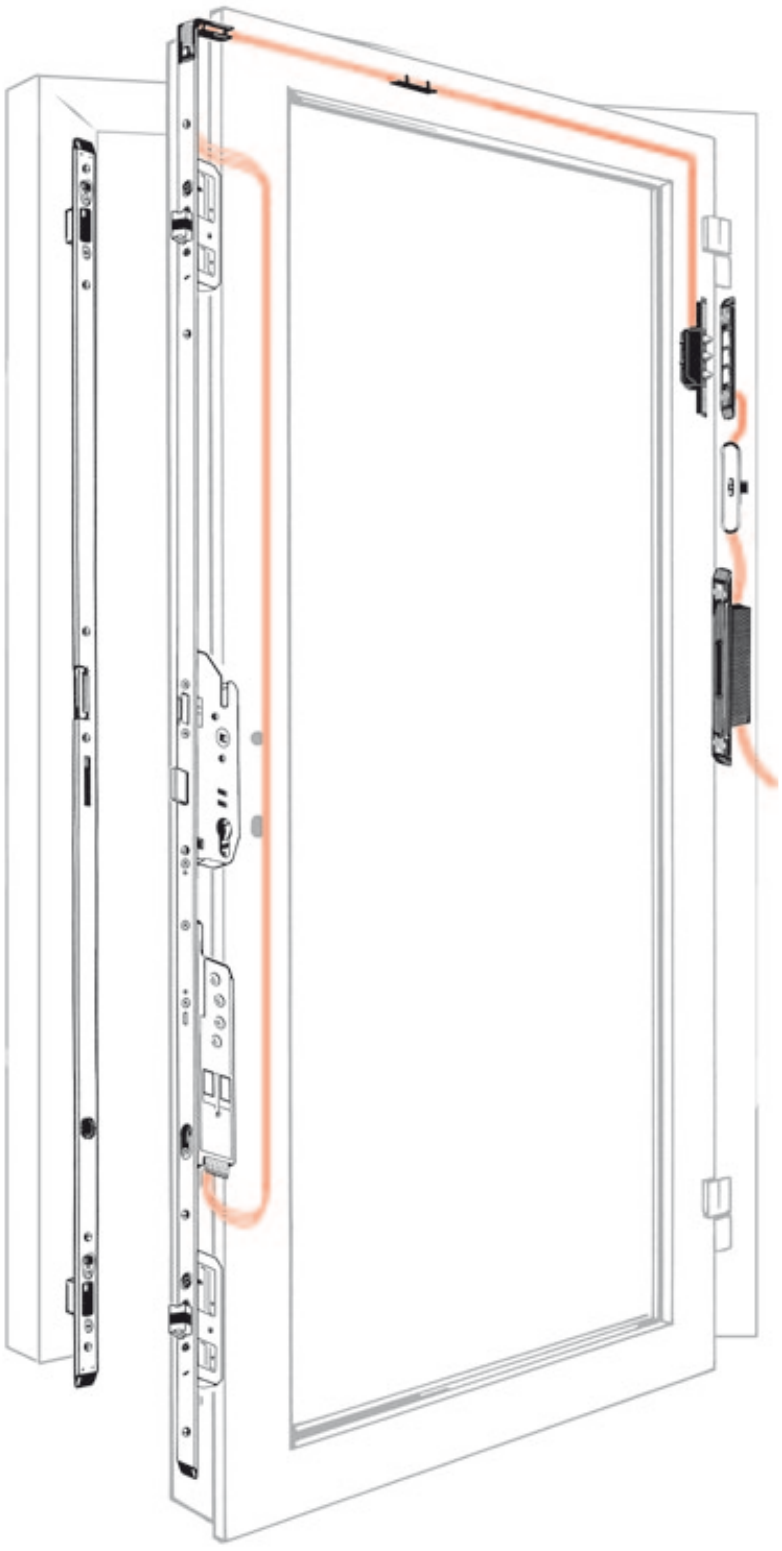
Part no. NZ80104

4 Installation instructions

4.1 Routing and drilling operations for all installation versions

Routings for the FUHR **autotronic** 834 multi point locking system for the standard faceplate lengths 2170 / 2400 mm and the matching one-piece keep. All dimensions in mm. *





* The dimensions may deviate due to the lock and keeper variations. Refer to the detailed drawing on page 46.

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.

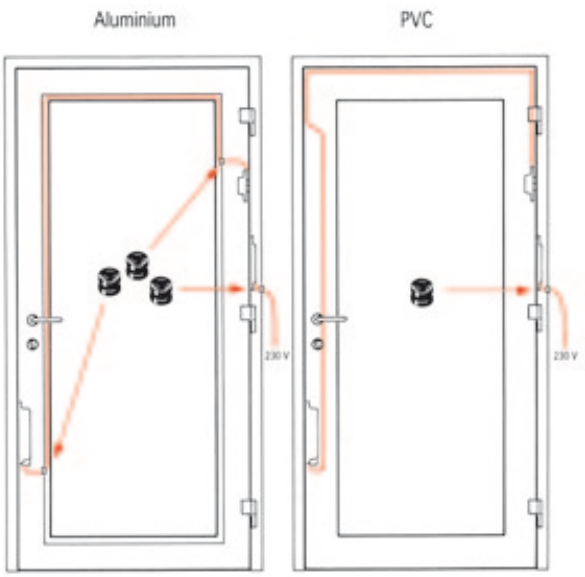
Deburr the cable feedthrough hole and insert the cable protection sleeves provided.

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 sleeves provided.

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

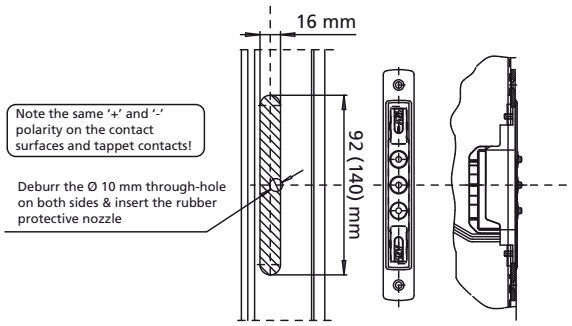
The cable-laying for version A is described in the following installation steps.



4.1.2 Routing for the tappet contacts in the door leaf for installation versions 2 - 6

Routing on the hinge side of the door leaf

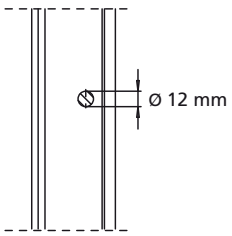
Make sure that the surface-contact device and the tappet contact device are aligned accurately horizontally. Refer to chapter 4.1.3.



4.1.3 Drill hole for the surface-contact's cable for installation versions 2 - 6

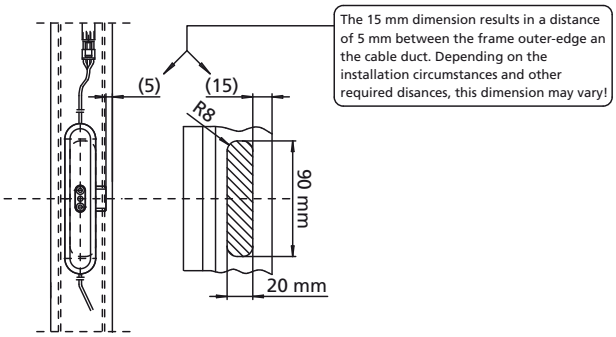
Drilling in the frame profile, laterally at the same height as the tappet contact device

Care must be taken to ensure that the surface-contact device and the tappet contact device are aligned accurately horizontally. Refer to chapter 4.1.2.



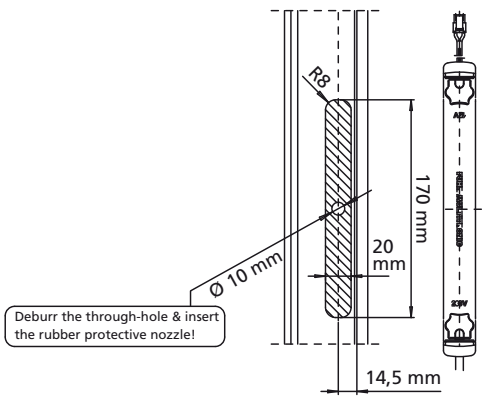
4.1.4 Routing for the control unit casing in the frame for installation version 4

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



4.1.5 Routing for the switching power supply unit in the frame for installation versions 3 and 4

Routing on the hinge side of the frame profile



4.1.6 Drill hole for the 230 V cable for installation versions 3 and 4

Drill hole on the reverse side of the profile within the routed opening for the switching power supply unit

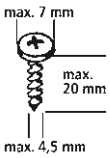
This drill hole must deburred carefully at both ends! Insert the cable protection sleeve provided in the drill hole to protect the 230 V cable. The cable must be protected against abrasion and securely fixed in order to prevent tractive forces.

4.1.7 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 carefully removed from the profiles.

4.1.8 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.



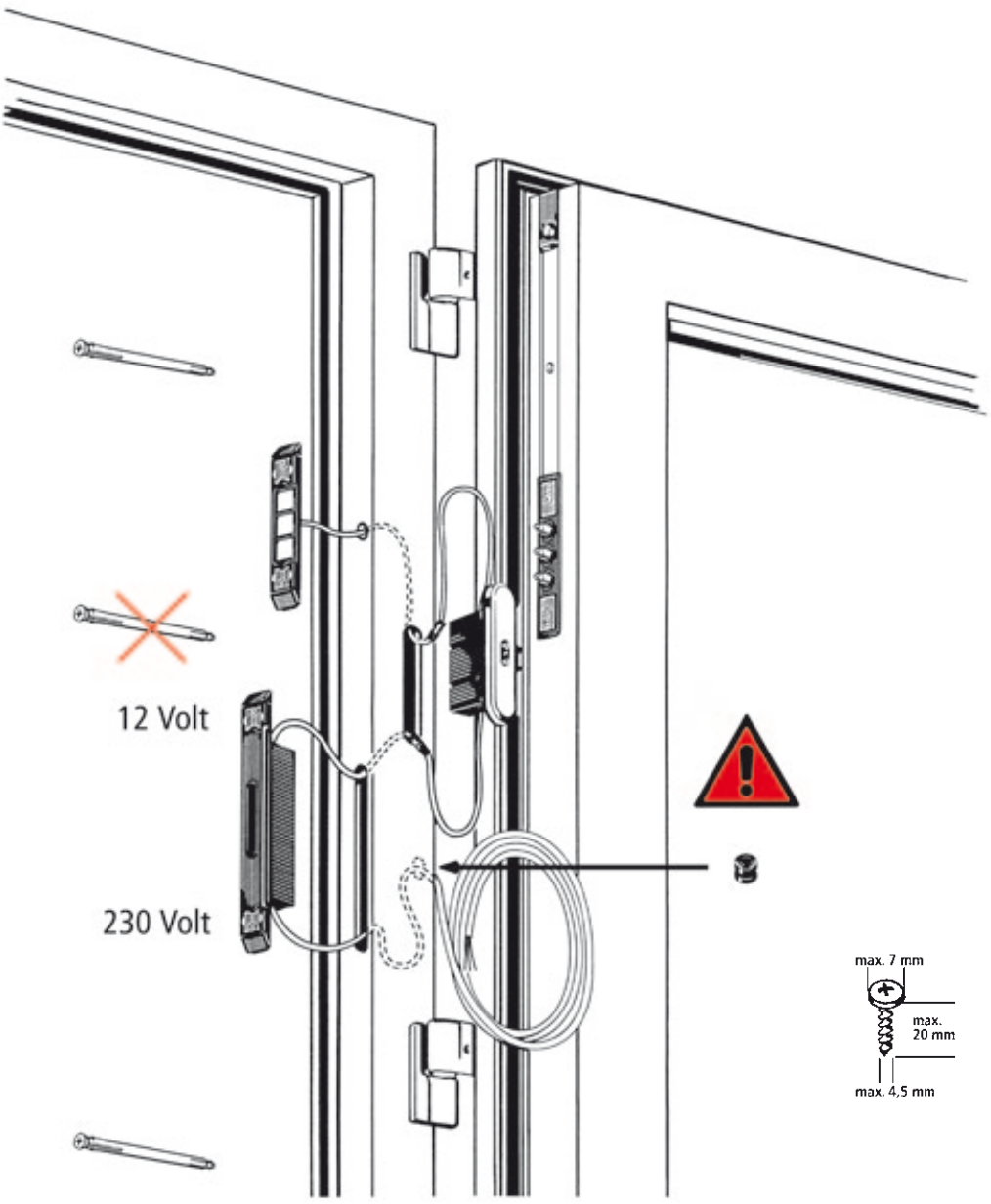
It is imperative that all screws are hand-tightened, as some components are made of PVC and may be damaged by the excessive force that a cordless screwdriver can exert.

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

4.2 Installation 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!

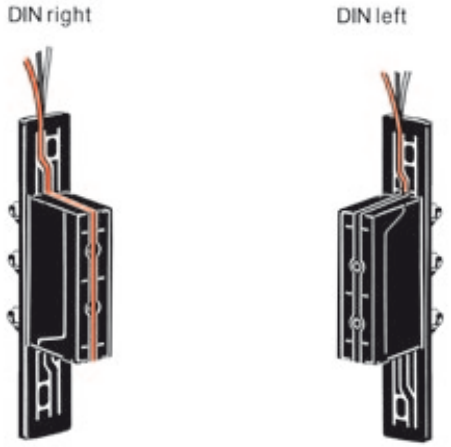


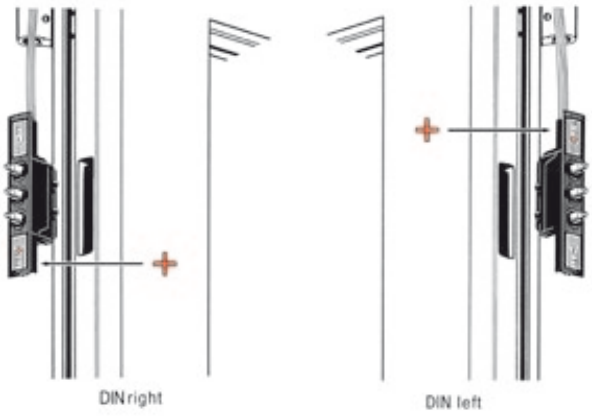
4.2.1 Installation of the tappet contacts in the door leaf for installation versions 2 - 6

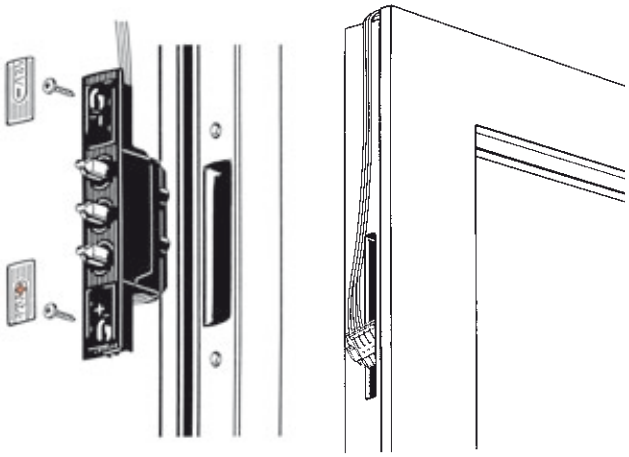
The electricity and data transfer control unit of the FUHR **autotronic** can be used for left handed as well as right handed doors.
On right handed doors the tappet contact device is installed as supplied.
On right handed doors the cable is placed in the guide channel on the rear side of the casing.

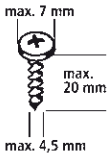
Check the polarity (plus/minus) before installing the tappet contacts, refer to the component's identification marking:
DIN right = Plus symbol on the bottom
DIN left = Plus symbol on the top

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.









4.2.2 Installation of the multi point 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 multi-functional jack when using this without a control unit, refer to chapter 3.

2. Screw-fix the plugs with a small screwdriver.

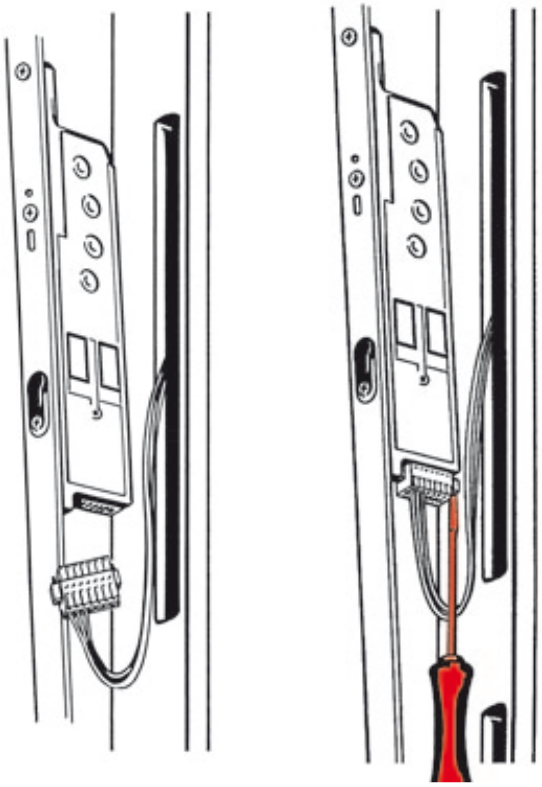
Please note! It is imperative to carry out this screw-fixing. The screw-fixing warrants permanent contact for the electricity and data transfer, and safeguards against vibration and shock.

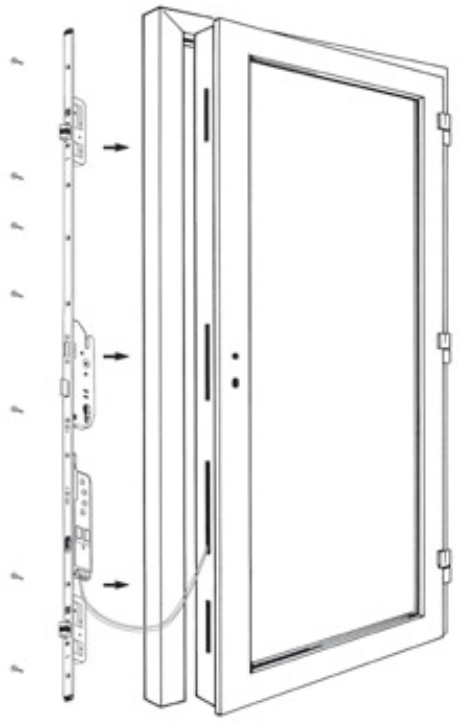
3. Insert the cable and FUHR **autotronic** 834 multi point locking system into the routed recess.

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

4. Screw-fix the multi point 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.



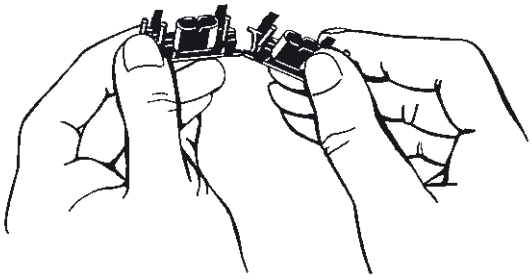


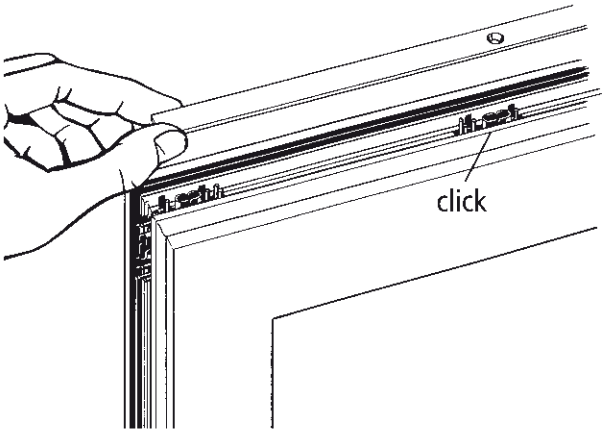
4.2.3 Installation of the cable guides, end caps and cover plates in the door leaf

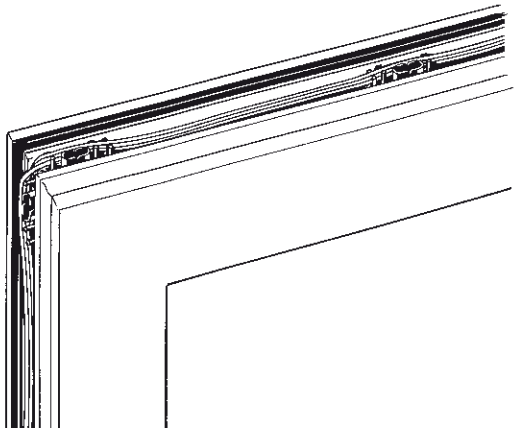
1. Fold the enclosed PVC cable guides for the profile corners in half and break them in two for the centre profile area.
2. Clip in each of the cable guides into the top door leaf corners, and depending on the door width and height, also in the Euro groove channel.
3. Lay the cable through the cable 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.

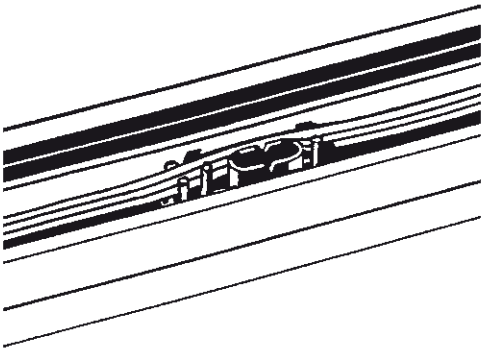
Ensure that the screws are screw–fixed through the cable guides' elongated holes. Non–compliance can lead to damaged cables.

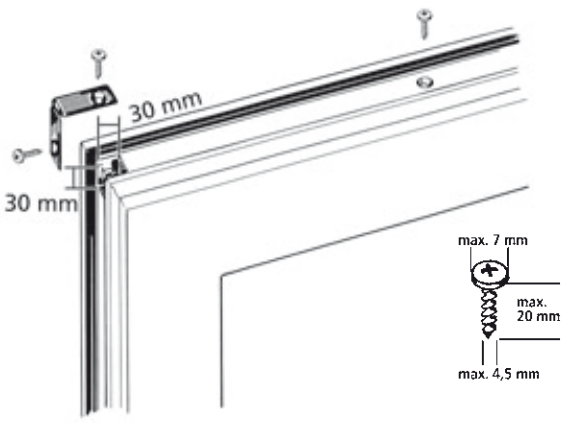
5. Put on the end caps and screw-fix through the cable guides.









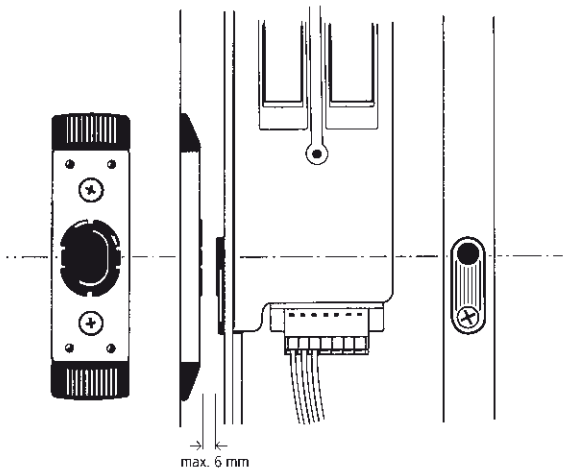


4.2.4 Installation of the magnetic contact in the door frame

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

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

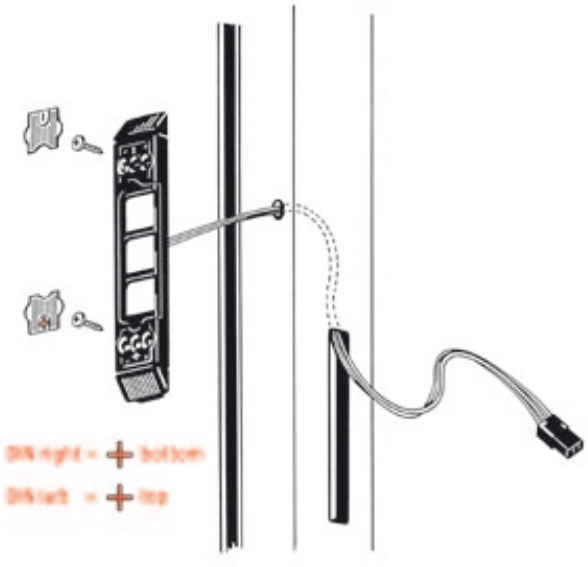
For one-piece keeps:
The installation of the one-piece keep is to be carried out in compliance with the routing drawing. The magnetic contact must be ordered separately (Part no. NZM14195) and installed.



4.2.5 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 8.1.



4.2.6 Installation of the control unit casing in the door frame

1. Remove the silver cover before installing the control unit casing. To do so, carefully insert a small screwdriver into the cover cap's recess and pry it out.

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.

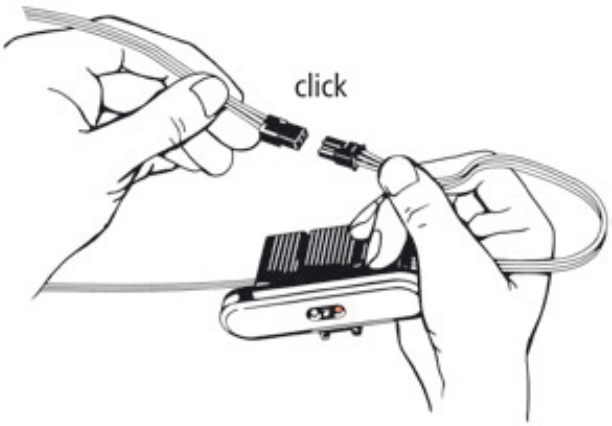
4. Carefully feed the control unit casing's cable back into the frame profile so that the control unit casing fits comfortably in the routed recess.

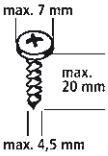
Please ensure that the cables are neither kinked, trapped nor damaged by sharp profile edges.

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

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

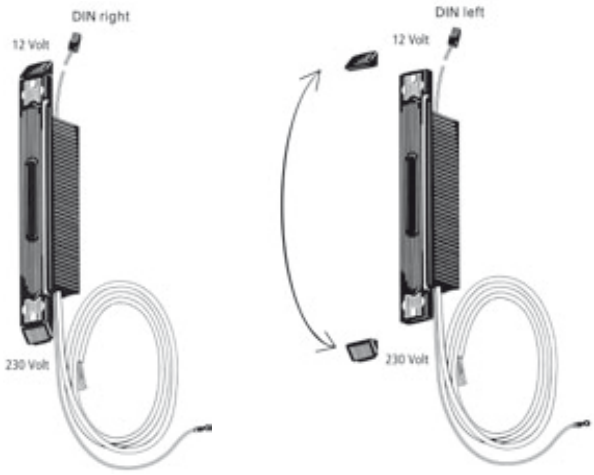
6. Replace the control unit casing's cover cap.





4.2.7 Installation of the switching power supply unit (transformer) in the door frame

The FUHR **autotronic'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 swopped 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.

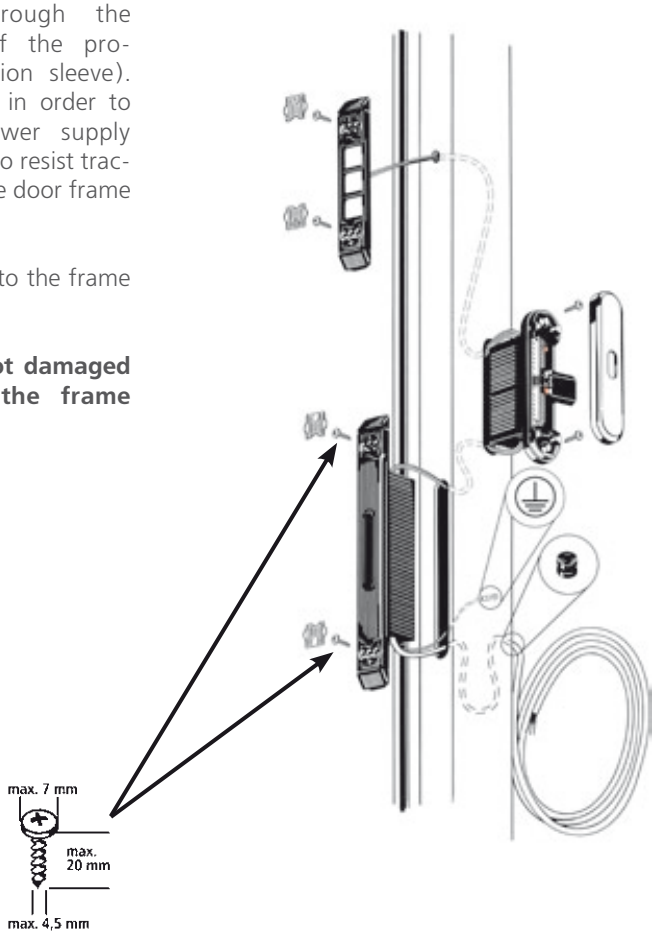
Depending on the profile type, loop the cable at the bottom of the profile.

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.

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 autotronic components have been installed, check that the door leaves and frames are aligned parallel.

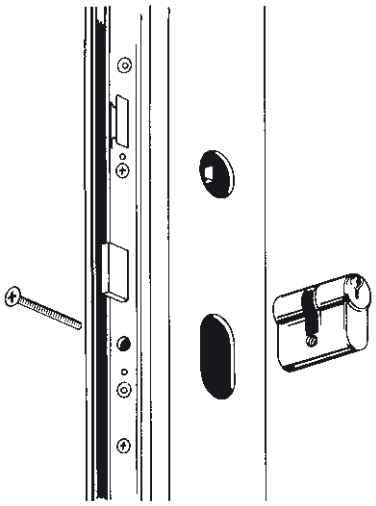
2. Install a profile cylinder in the centre lock.

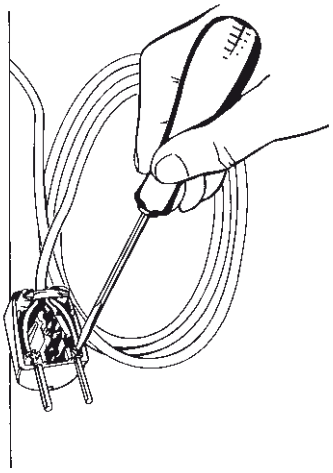
3. Subsequently connect the 230 V cable to the mains voltage by means of a two-pin earthed plug for testing purposes (only to be carried out by qualified personnel).

4. The green LED will light up as soon as the operating voltage is applied. Upon closing over the door, the latching deadbolts extend 20 mm. The lock is now automatically locked 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 9.

6. If the FUHR **autotronic** 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. Ensure 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 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, an emergency power supply can be used if required. The door can be opened at any time via the profile cylinder.**

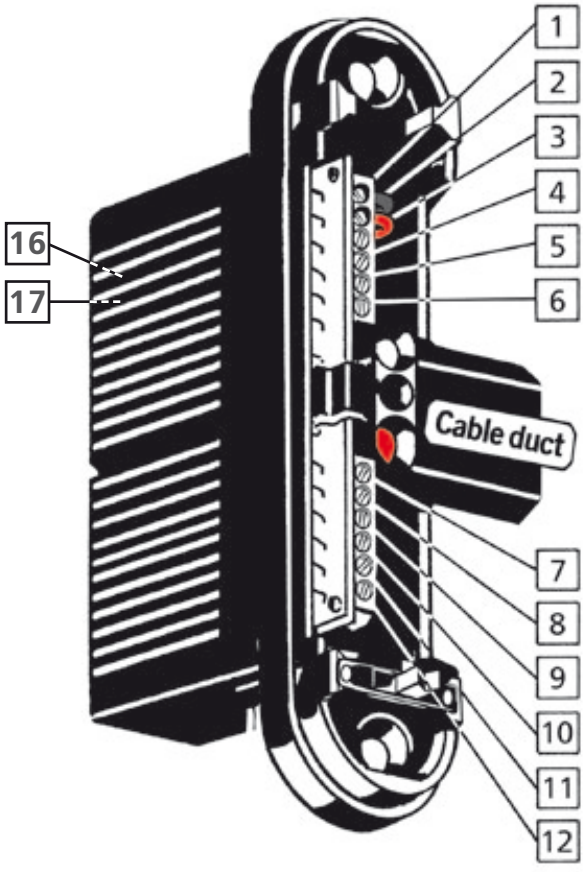
6 Function and connection possibilities of the control unit

The FUHR **autotronic** control unit is equipped, as standard, with an integrated radio receiver as well as 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 openers, alarm systems, facility management systems etc.). The input and output sockets are located:

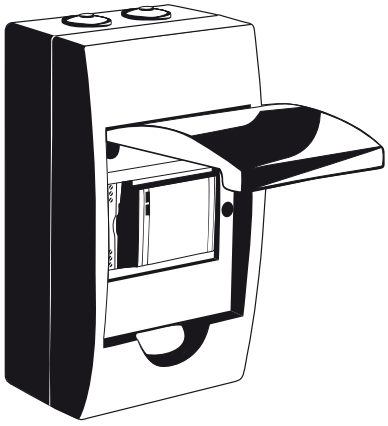
- On the frame: under the surface-mounted **control unit casing's** cover plate (refer to 6.1)
- On the door leaf: **multi-functional jack** of the FUHR **autotronic** drive unit (refer to 6.2)

6.1 The control unit casing's circuit board

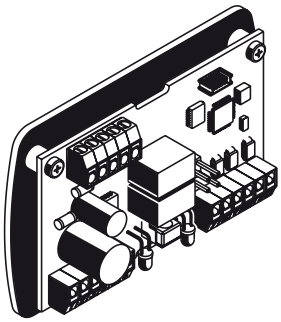
Outlined below are some examples of the potential allocation of the control unit's connection terminals.



Control box with integrated mains adapter



DIN rail controller



Terminal	Assignment

1 + 2: Already occupied by the 12 V DC switching power supply unit's power supply.

3 + 4: **Output** – e.g. for **electrical swing door openers**

- **Function 1:**
  Immediately after the FUHR **autotronic** 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 opener'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 on page 48), 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: **Output signal for the door leaf setting** – e.g. for **alarm systems**

- Unlocking the lock and opening the door leaf triggers the related opener contact within 1 second. This remains triggered until the door leaf is closed. An alarm system control unit digitally processes the signal status and reports back 'OPEN' or 'CLOSED'.

7 + 8: **Input** for 6-12 V AC (alternating current) or 6-24 V DC (direct current)

- If an impulse is applied to this input (e.g. controlled via a building management system), the FUHR **autotronic** lock will open

9 + 10: **Input** for potential-free signals
– optionally, this input can be used with two modes of operation:

- **Function 1:**
  Standard opening
  If a **potential-free impulse ⩽ 1 second** is applied to this input (e.g. controlled via an access control system), the FUHR **autotronic** lock will open.
- **Function 2:**
  Opening with day latch retaining function (permanently-open function)
  If a **potential-free continuous signal** is applied to this input (e.g. controlled via a time switch) the FUHR **autotronic** lock will open. All locking components remain completely withdrawn as long as the continuous signal is applied.

11 + 12: **Input** for potential-free signals

- If a **potential-free impulse** is applied to this input (e.g. controlled via an access control system), the FUHR **autotronic** lock will open.

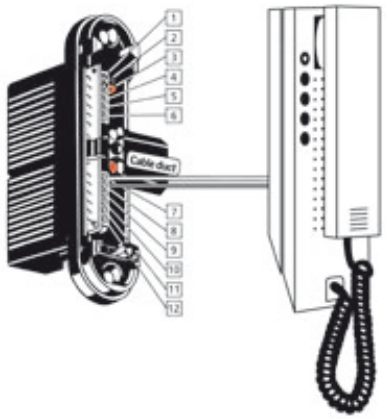
16 + 17: **Input** for potential-free signals

- As long as this input is triggered, all motorised opening functions (radio receiver and controll terminals 7-12) as well as the opening impulses via the motor's circuit board (terminal 4/7) are deactivated. The internal red LED and the connected external indicator LED, if applicable, flash permanently.

6.1.1 Application examples for the circuit board's assignment

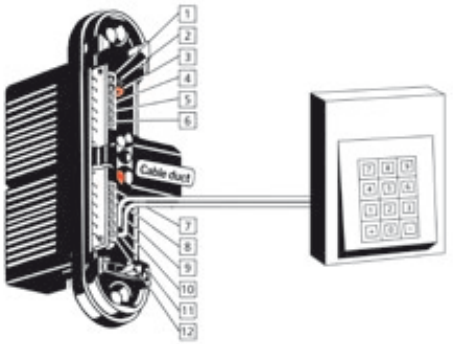
Application example – two-way intercom system:
For example the door shall be opened via radio key from the outside.
The opening is triggered from the inside by means of an existing two-way intercom system with a 12 V AC control cable. This was, as the case may be, used previously for an electrical door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

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



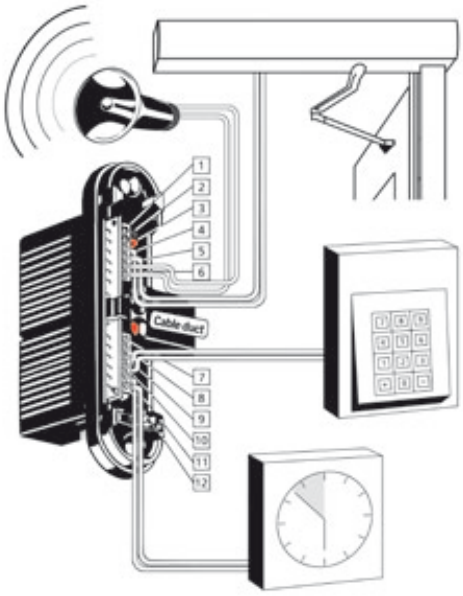
Application example – external access control:
The opening shall be triggered from the outside by means of an access control system (e.g. numeric code lock or finger print).

Terminal assignment:
Connect up the access control system with potential-free impulse to terminals 11 + 12.



Application example in construction projects:
For example: the door is switched to the 'permanently-open function' in the 'day operation mode', in the 'night operation mode' the lock shall always lock both completely and fully automatically.
Opening from the outside is triggered by means of an access control system (e.g. numeric code lock or transponder). In addition, an electrical swing door opener shall automatically open the door leaf and the door leaf setting for the alarm system is monitored.

Terminal assignment:
Connect the time switch with potential-free continuous signal to terminals 9 + 10 for function 2.
Connect the access control system with potential-free continuous impulse to terminals 11 + 12 for function 1.
Connect the swing door opener to terminals 3 + 4. Connect the alarm system to terminals 5 + 6.

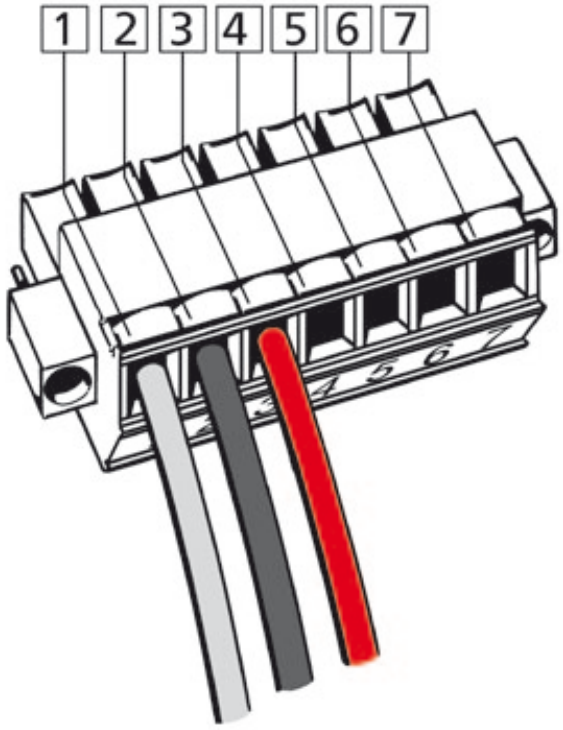


6.2 The drive unit's multi-functional jack

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 12 V DC impulse or the potential-free contact etc.) is connected to the appropriate terminal.

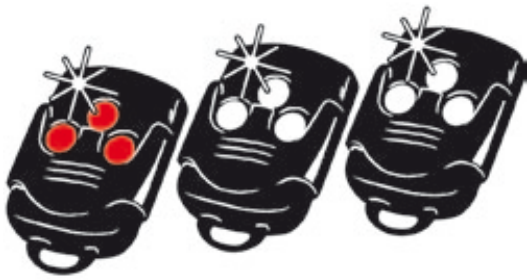
Terminal	Assignment
1 + 2 + 3	Already occupied by the 12 V DC drive unit's power and data supply cable.
4 + 5	**Input** (impulse < 1 second) – e.g. for **external access control systems (transponders, code locks, finger print, eye scan etc.),** that are mounted directly on the door leaf. ➢ The FUHR **autotronic** lock opens motor-driven by means of a potential-free impulse from the two-way intercom system or the access control system.
5 + 6	**Output** ideally used for the power supply of **illuminated fixed pad handles or illuminated glazed panels.** ➢ Terminal 5 = GND (earth) and terminal 6 = 12 V DC (max. 350 mA).
5 + 7	**Input** (impulse < 1 second) – e.g. for **external access control systems (transponders, code locks, fingerprint recognition, eye scanners etc.),** that are mounted directly on the door leaf. ➢ The FUHR **autotronic** lock opens motor-driven by means of an energised impulse from the two-way intercom system or the access control system. ➢ Terminal 5 = GND (earth) and terminal 7 = 6-12 V AC or 6-24 V DC.



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

7 The radio keys (remote control)

The delivery contents of a control unit include a master radio key (radio-controlled remote control) with red buttons. With the help of the master radio key, an additional 24 user radio control keys can be tuned in. All radio keys are copy protected by means of a 'rolling code system'.



The radio keys are equipped with a three channel radio-controlled remote control. The individual buttons (channels) are allocated as follows:
Centre button – Main door **– Tuned in on site**
Left button – Free for e.g. garage door
Right button – Free for e.g. garden gate.

The radio key is equipped with a battery-operated indicator light. The radio keys are particularly energy saving. One battery suffices for approx. 50,000 operations.

Battery change:

1. Open the radio key casing with a coin.
2. Slide the battery out.
3. Insert new battery (Type: CR 2032). Note that the Plus symbol is pointing upwards.
4. Press the radio key casing together again.

Important!
In order to ensure that the door can be opened in the event of an emergency (e.g. power failure), the profile cylinder key should always be carried in addition to the radio key.

7.1 Master radio key

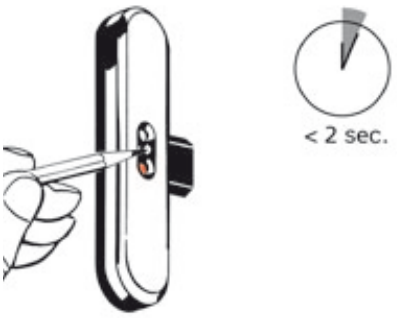
The radio key with the red buttons serves as the master key. Only this key has the ability to tune in or delete other radio keys.
The master radio key's middle button has already been tuned in at the factory to the control unit within the same set.

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

7.2 Tuning in and deleting radio keys

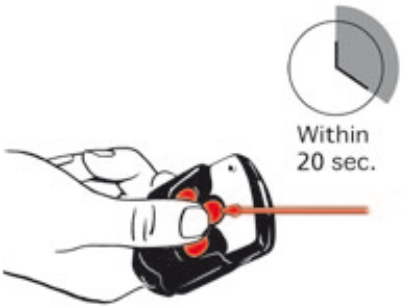
7.2.1 Tuning in individual radio keys (max. 25)

1. During the initial commissioning, all radio keys should, for security reasons be deleted as described in chapter 7.2.3. Subsequently proceed from step 2.



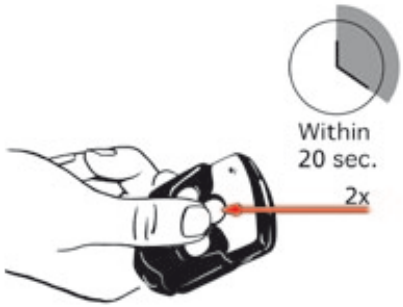
2. Close the door and press the programming button **briefly (less than 2 sec.)** between the control unit casing's red and green LED with a thin object (e.g. ballpoint pen or pencil).

3. The green LED flashes slowly.



4. Now press the master key's middle transmitter button **within 20 sec.**

5. If the control unit accepts the master key, the green LED lights up for 2 seconds and then continues to flash slowly.

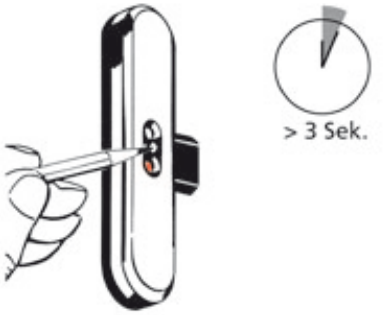


6. Press the middle button twice consecutively **within 20 seconds** of the new radio key to be tuned in. The tuning in procedure is aborted if the 20 second time limit is exceeded.

7. If the new radio key has been accepted by the control unit, the green LED lights up for 1 second and then goes out.

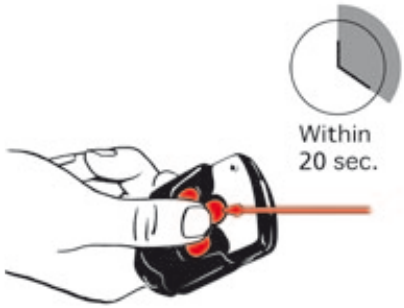
8. Repeat from step 2, should you wish to tune in another radio key.

7.2.2 Deleting individual radio keys (except the master key)



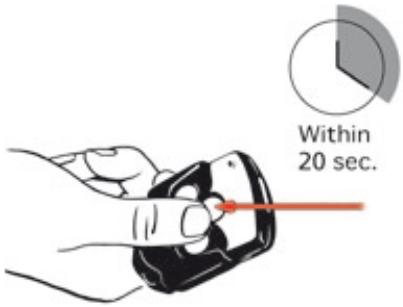
1. Close the door and press the programming button **for longer than 3 sec.** between the control unit casing's red and green LED with a thin object (e.g. ballpoint pen or pencil).

2. Release the programming button as soon as the green LED flashes quickly.



3. Now press the master key's middle transmitter button **within 20 sec.**

4. If the control unit accepts the master key, the green LED initially lights up for 2 seconds and then continues to flash quickly.

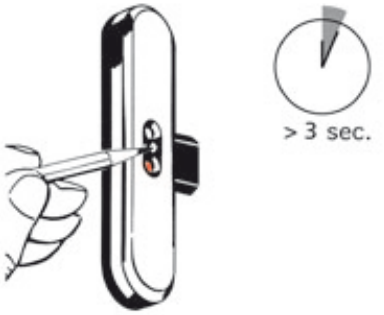


5. Press the middle button of the radio key to be deleted **within 20 seconds**. The deleteprocess is aborted if the 20 second time limit is exceeded.

6. If the transmission code has been successfully deleted, the green LED lights up for 1 second and then goes out.

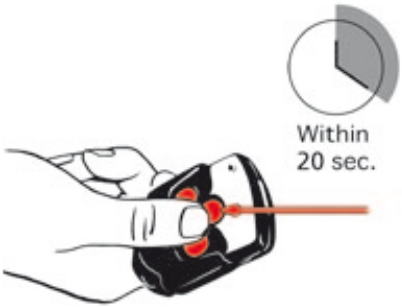
7. Repeat from step 1, should you wish to delete another radio key.

7.2.3 Deleting all radio keys (except the master key)



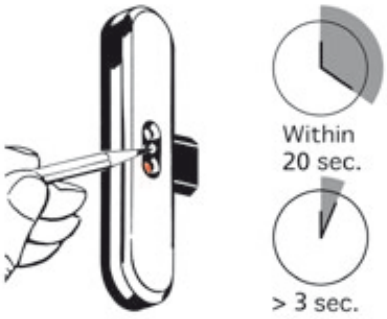
1. Close the door and press the programming button **for longer than 3 sec.** between the control unit casing's red and green LED with a thin object (e.g. ballpoint pen or pencil).

2. Release the programming button as soon as the green LED flashes quickly.



3. Now press the master key's middle transmitter button **within 20 sec.**

4. If the control unit accepts the master key, the green LED lights up initially for 2 seconds and then continues to flash quickly.



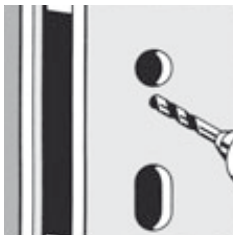
5. Now press the programming button on the control unit again **within 20 seconds for longer than 3 seconds.** The delete process is aborted if the 20 second time limit is exceeded.

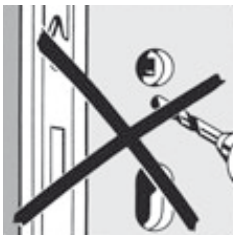
6. If all of the transmission codes (except the master transmission code) have been successfully deleted, the green LED lights up for 1 second and then goes out.

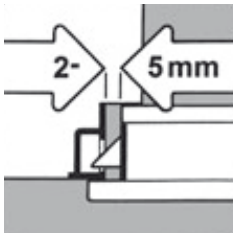
Note:
If the master key is not recognised during the tuning-in and delete processes, the respective function is aborted.

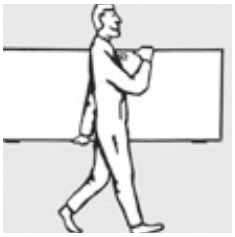
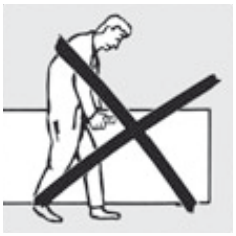
8 Maintenance and care

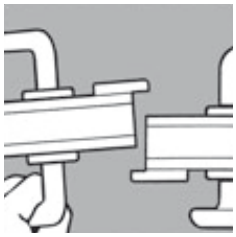
The points raised below are intended as an addition to the FUHR product information M3/3. The importance of their compliance must be pointed out to builders and users alike. In the event of non-compliance with these imperative instructions, faultless system operation cannot be warranted. The FUHR autotronic lock may only be used in conjunction with the components supplied. Failure to do so invalidates warranty issues.

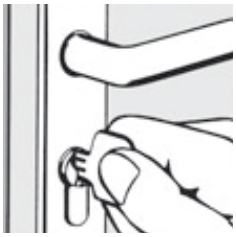
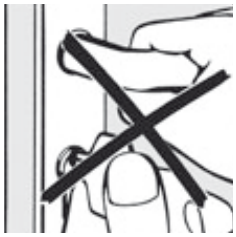


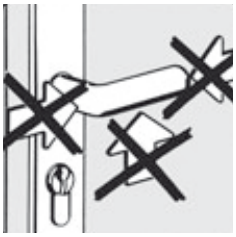




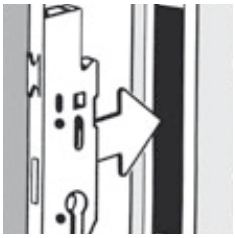











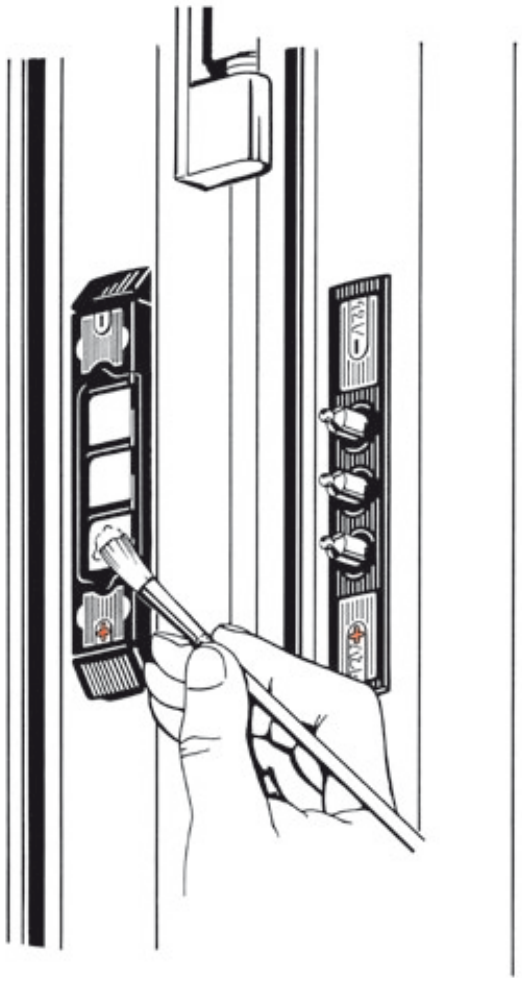

All safety-relevant hardware must be checked at least annually for both wear and tear, and if mechanically secured. Depending on the requirements, fixing screws must be tightened or the damaged or worn parts exchanged for original parts by a specialised company. Additionally all movable parts and locking 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 you consider a service and maintenance contract with a specialist company.

8.1 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.

(The contact lubricant can be reordered under part no. NZ80077.)



9 Troubleshooting

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

IMPORTANT! The entire FUHR autotronic lock has been subject to extensive inspectionsby the manu-facturer. If faults are found once installed,the installation should be checked to begin with. The FUHR autotronic lock must never be opened forcefully using the lever-handle! All components have been designed for smooth-running operation. The FUHR autotronic 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 motor-driven.	Green and red LEDs flash alternately.	Deadbolt doesn't run smoothly.	Check the door installation and possibly adjust.
		The door is warped.	Check the door installation and possibly adjust.
		The keeps have been adjusted too tightly.	Readjust/loosen keeps
		The central deadbolt has been protracted.	Retract the central deadbolt.
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 4.2.1 and 4.2.5).
			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 8.1).
The lock does not lock.		Magnets in the keeps are out of range.	Readjust the keepers and/or door. Check the clearance.
The lock does not lock motor-driven.	No LED lights up.	Power and data 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 4.2.1 and 4.2.5).
			Connect the cable properly to the green multi-functional jack (refer to 6.2).

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 and replace the battery.
Retracting time is too short for the motorised opening of the latching deadbolts.	Green LED lights up in the closed door leaf setting.	The magnetic contact for the drive unit is missing.	Install the magnetic contact on the frame and/or insert into the one-piece keep.
Door was opened.	Green and red LEDs light up	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.
The latch remains retracted.		The connecting rods are blocked by faceplate screws.	Insert the screws perpendicular to the faceplate.
		External control signal is applied to terminals 9-10 for too long.	Reduce the impulse duration to ⩽1 second.

10 Technical data

10.1 FUHR **autotronic** radio keys (remote control)

The radio keys conform to the R&TTE guideline 1999/5/EG

Coding:	Not necessary as the transmission code will be tuned in
Channel:	868.3 MHz
Channels:	3
Modulation:	FSK (frequency shift keying)
Range:	Up to approx. 50 m. depending on the installation circumstances
Power supply:	1 x 3 V battery, CR 2032
Operating control:	Light emitting diode (LED)
Temperature range:	-10 °C to +50 °C
Dimension:	53 x 36 x 15 mm
Weight:	Approx. 20 g. (including battery)

10.2 FUHR **autotronic** control unit 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

10.3 FUHR **autotronic** drive unit

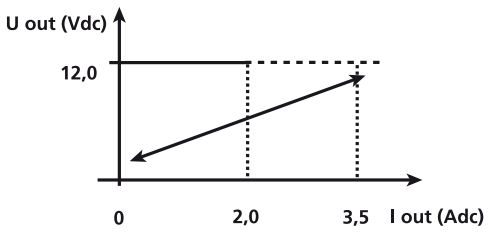
Dimension:	50 x 206 x 15.5 mm
Weight:	Approx. 500 g. (only electrical locking unit)
Power supply:	12 V DC
Signalling:	1 piezo buzzer
Temperature range:	-10 °C to +50 °C
Relay contact load capacity:	60 V DC / 1 A / 30 W

10.4 FUHR **autotronic** switching power supply unit

Type: 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

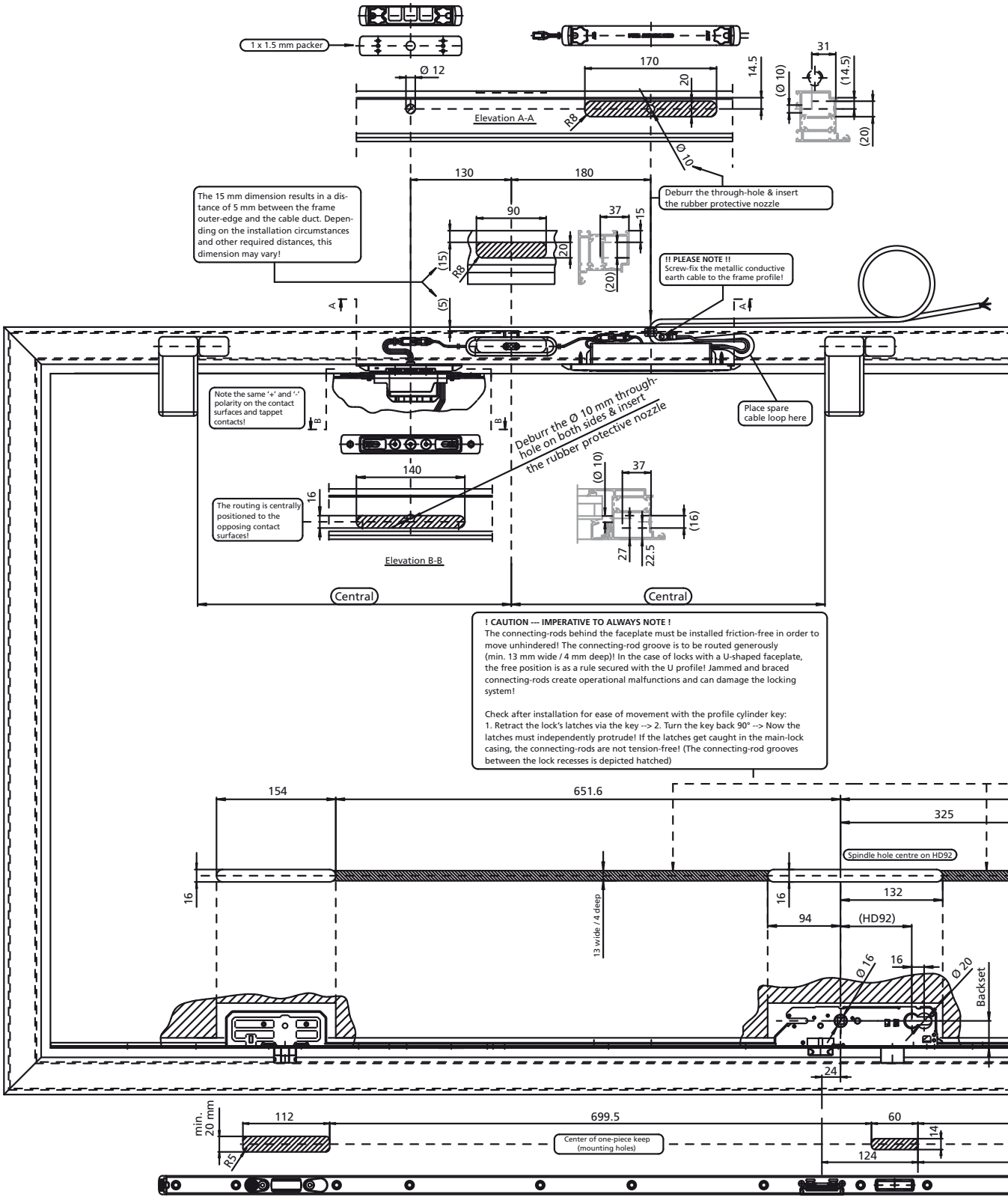
Tested in accordance with:	EN 60950
EMV:	EN 50081-2 (emitted interference) EN 61000-6-2 (interference resistance)
Test voltage:	4.2 KV
Type of construction:	Cable cast in the contact
IP rating:	IP 20 with plug (IP 53 without plug)
Protection grade:	Prepared for protection grade I devices and systems
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 3.5 A at 5 % ED
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:

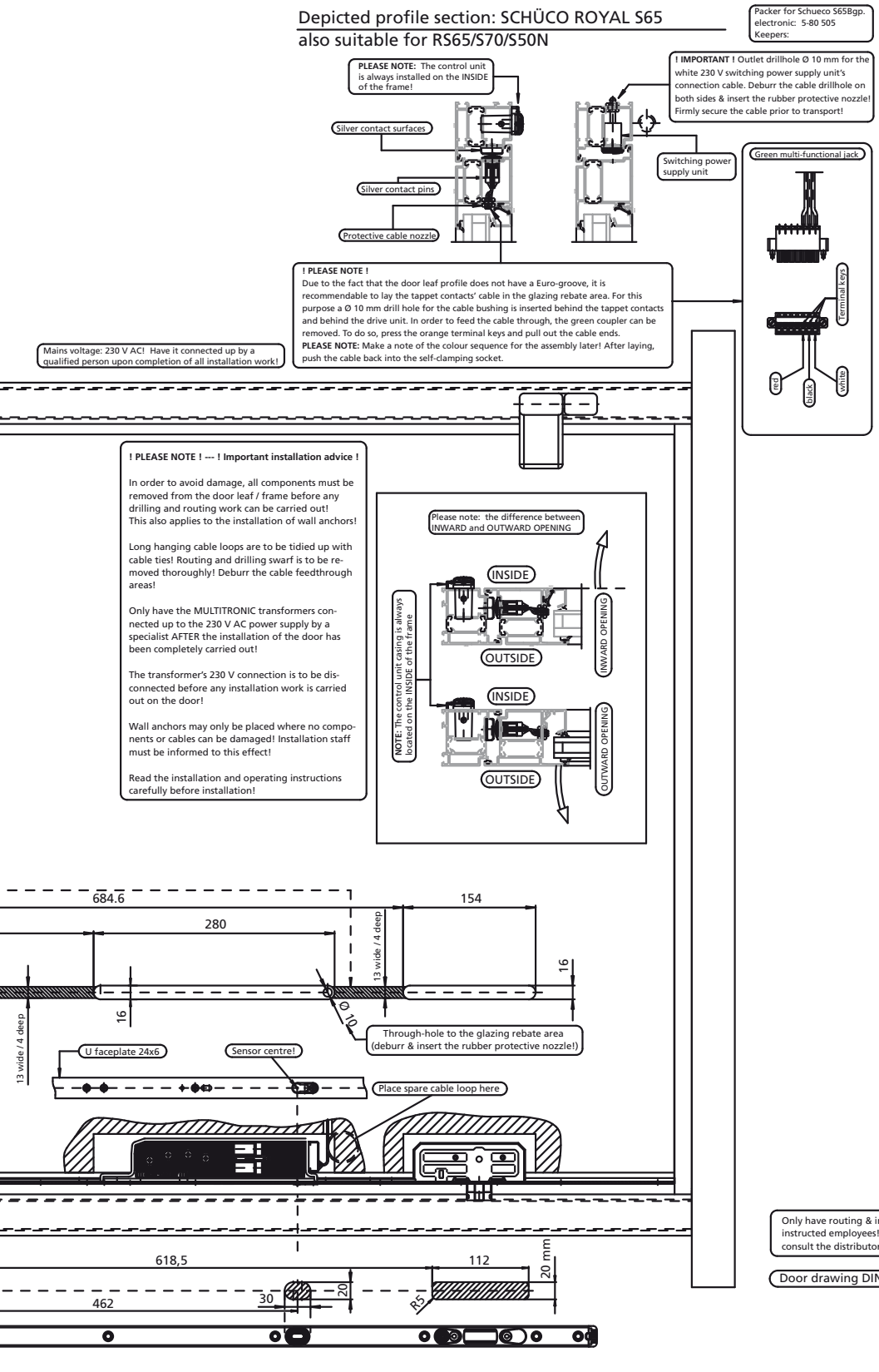


10.5 Routing plan example for Schueco Royal S65

The routing dimensions in other profile situations may deviate. All dimensions in mm.

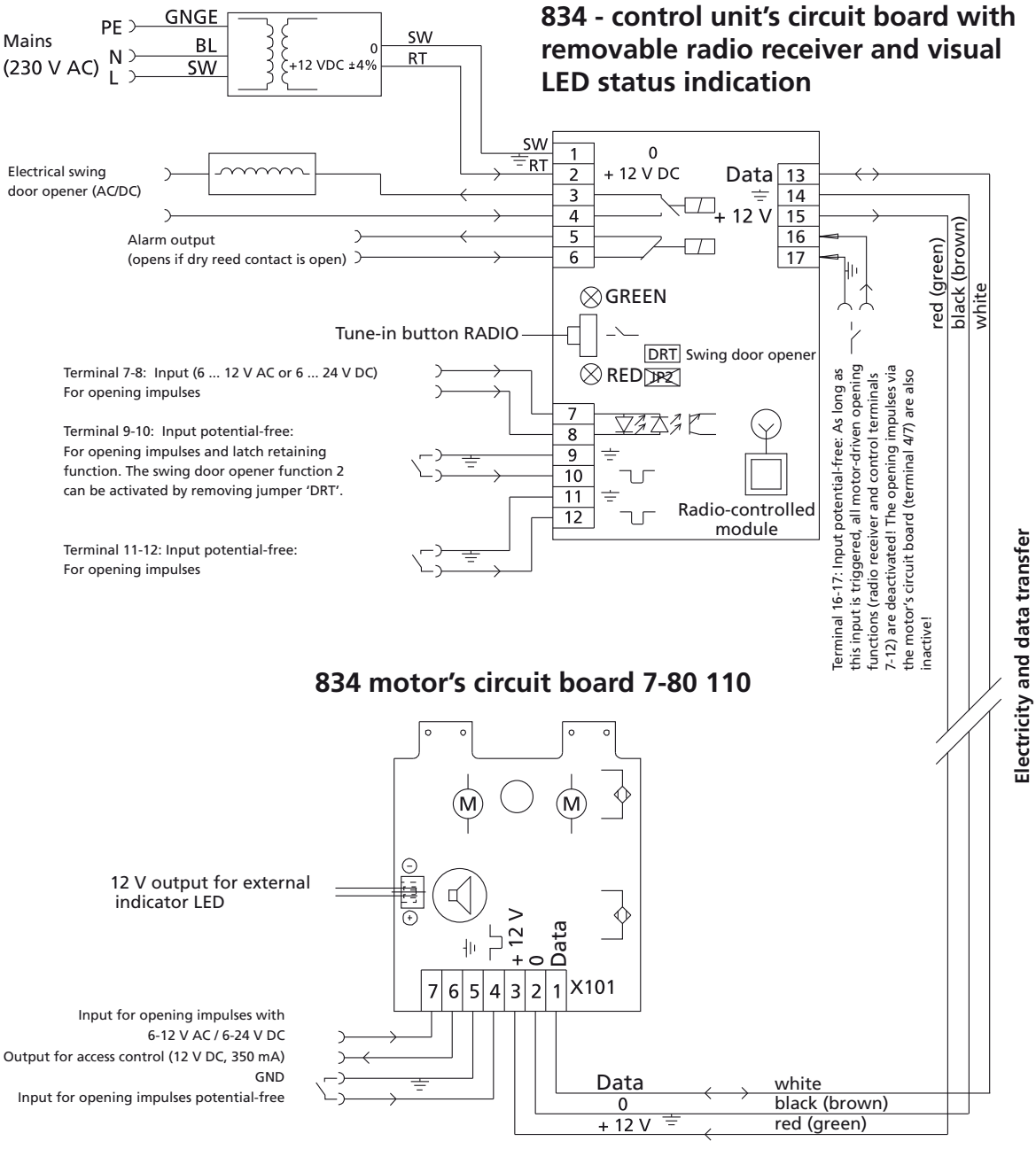


Depicted profile section: SCHÜCO ROYAL S65
also suitable for RS65/S70/S50N



10.6 Wiring diagram

Power supply via switching power supply unit
min. 12 V DC / 3A (residual ripple < 250 mVpp)



Swing door opener special function of the 834 control unit by means of removing the 'DRT' jumper:

1. **'DRT' jumper INSERTED on the circuit board:** Swing door opener function 1
   If the 'DRT' jumper is inserted (delivery standard), an opening impulse is switched for 1 second to terminal 3-4 on the swing door opener after unlocking the lock.
2. **'DRT' jumper REMOVED from the circuit board:** Swing door opener function 2
   If the 'DRT' jumper is removed, the control unit's swing door opener relay remains switched (terminal 3-4) as long as the continuous signal on terminal 9-10 for the latch retaining function (permanently-open) is switched.

'JP2' jumper has no function!

CARL FUHR GmbH & Co. KG Schlösser und Beschläge

Carl-Fuhr-Straße 12 D-42579 Heiligenhaus
Tel.: +49 2056 592-0 Fax: +49 2056 592-384
www.fuhr.de · info@fuhr.de