

M400 Fingerprint



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Safety precautions

- On changing the batteries, ensure correct battery polarity and position!
- Dispose of spent batteries in the proper manner!
 - Do not heat the batteries, take them apart or short-circuit them!
 - Never throw batteries into naked flames!
 - The batteries must not be recharged!
 - Keep the batteries out of children's reach!
 - Any person swallowing batteries must seek immediate medical advice!
 - Damaged and/or leaking batteries may lead to acid burns and/or poisoning!

The M400 is a biometric locking system for furniture. It is intended for indoor use in home and office furniture. It must not be used out of doors or in wet areas. The system can learn between 1 and 3 master fingers and up to 50 different user fingers altogether. This manual contains all the information needed to ensure troublefree installation and operation of the M400 system.

Wording and graphics have been prepared for you with care. However, no liability will be assumed for any mistakes that may have occurred. Copyright 2011 by LEHMANN Vertriebsgesellschaft mbH, D-32429 Minden. All rights reserved. These instructions must not be reproduced in any way (print, photocopy, microfilm or other process) or processed, duplicated or distributed using electronic systems either in whole or in part without written consent from LEHMANN Vertriebsgesellschaft mbH. We reserve the right to change the scope of supply and/or introduce technical changes without prior notice if necessary for manufacturing reasons.

Please keep this manual in a safe place for future reference.

Operating description

Furniture units can be conveniently locked and unlocked electronically with the biometric electronic locking system M400 FP. The M400 system allows you to issue selective access authorisations so that only authorised personnel are given access to specific items of furniture. The system is programmed and operated without requiring any additional devices.

The M400 FP works autonomously, without being connected by cable to other control electronics or the power supply system. The system can learn up to 50 different user fingers quickly and simply using any electronic control unit.

Once the system has successfully been programmed, the furniture lock automatically executes a locking process whenever an authorized user finger passes over the previously activated sensor. A master finger cannot trigger a locking process. It is exclusively used to program the system.

Advice on operation and care

For hygiene reasons, biometric systems with human contact should be cleaned at regular intervals. Material adhering to the sensor or fingers can interfere with the system and possibly prevent correct recognition of duly authorized fingers.

The following instructions should therefore be observed.

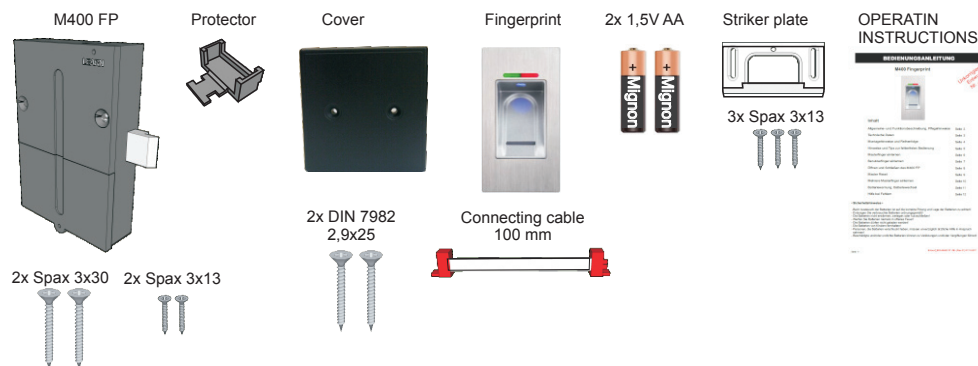
- Do not pour any liquids into or over any of the system's components and never immerse the components in liquids.
- Always clean the system and particularly the sensor with a soft, clean, slightly damp cloth.
- Do not use any cleaning products containing abrasives or solvents. Glass cleaning agents, thinner, alcohol, benzene and cleaning agents containing ammonia must not be used, as these agents will corrode the housings and cause lasting damage.
- Treating any of the electronic and mechanical components improperly or in any way other than described in this user manual may lead to malfunctions and thus invalidate the warranty.
- Under no circumstances should the housing of the electronic control or fingerprint unit be opened. Only the battery compartment may be opened to replace the batteries. Any violation of this requirement will likewise invalidate the warranty.

Please always check the following points before requesting support:

- Have all cables and plugs been connected correctly?
- Is the sensor perhaps soiled or is the finger injured? Please note the advice on operation and care.
- Do the batteries have sufficient power? Note the battery warning indicators and the information in the technical specifications.
- Are the corresponding light signals actually output during operation of the system?
- Has your fingerprint been recognized correctly and saved in the system? Please note the instructions and tips for troublefree operation.
- If the problem cannot be remedied, please reset the system and then reprogram it.

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Package contents



Power supply of the electronic control: Battery type: 2 x AA mignon cells, alkaline 1.5 V.
NiCd, NiMH and other rechargeable batteries, as well as zinc-carbon or lithium batteries must not be used!

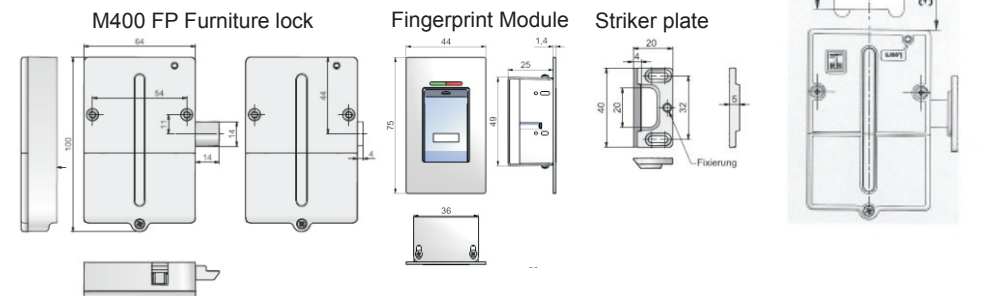
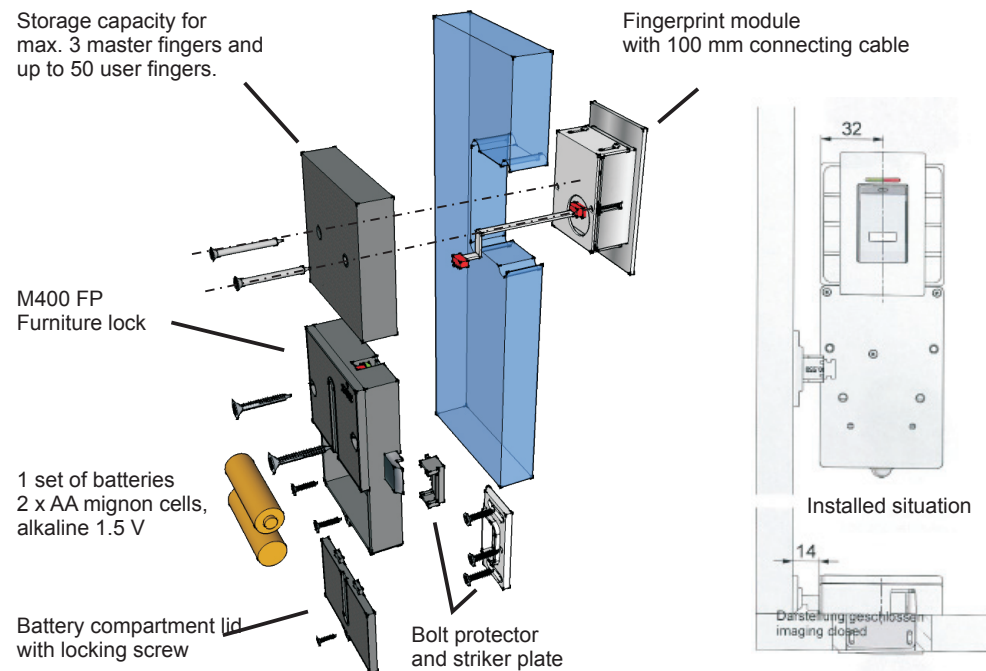
Temperature range:

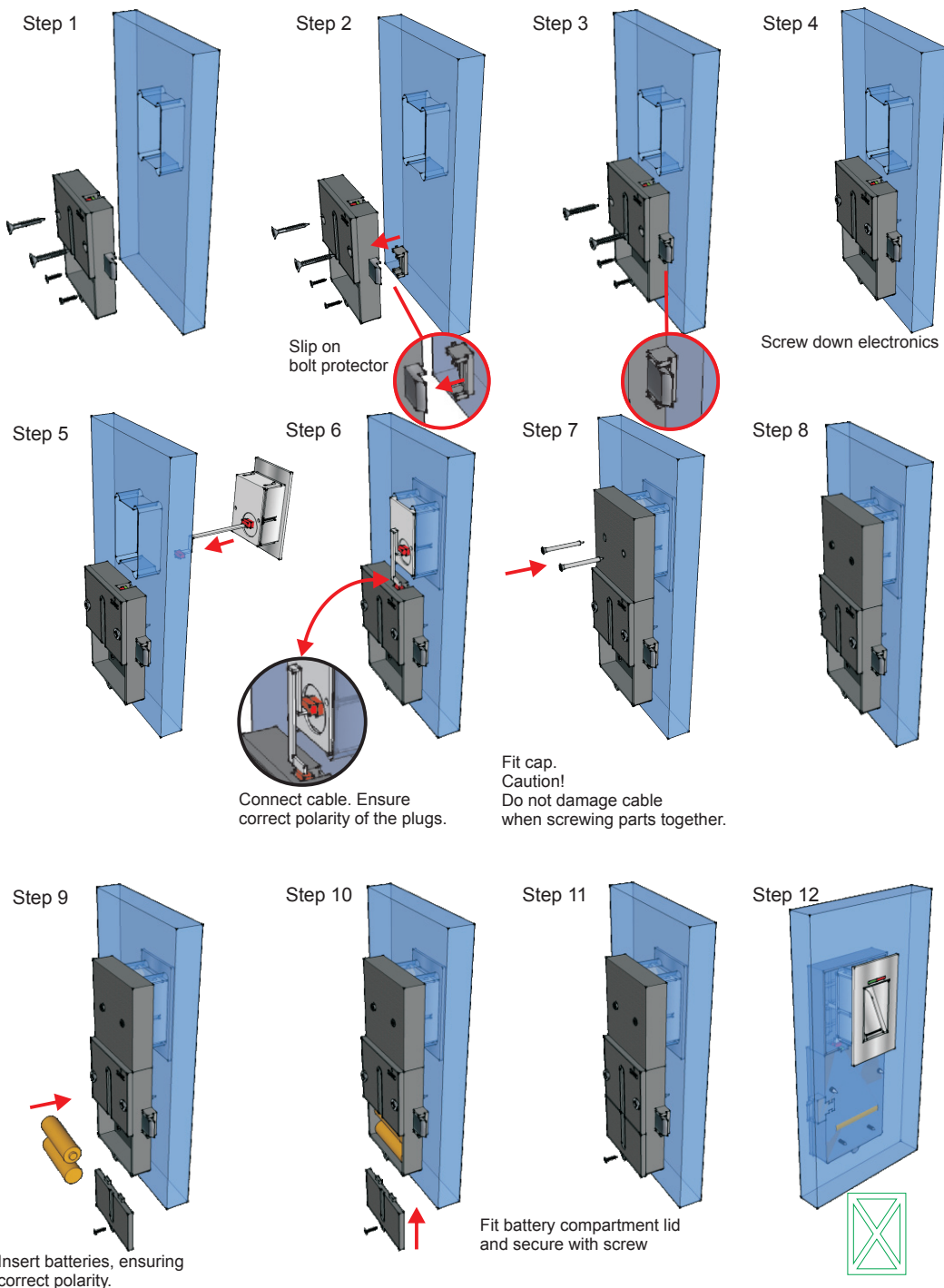
Operation = +5 °C to +40 °C at 30% to 80% relative humidity, non-condensing.

Storage = -25 °C to +70 °C at 30% to 80% relative humidity, non-condensing.

Storage capacity for max. 3 master fingers and up to 50 user fingers.

Storage capacity for max. 3 master fingers and up to 50 user fingers.

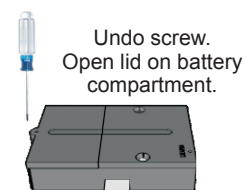




The M400 provides you with several low-battery warning stages (see table below).

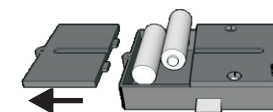
Warning stage	Display	Meaning	Effect
Stage 1	Indicator flashes 2 x red	Battery voltage is low. Batteries should be replaced	Normal operation is still given.
Stage 2	Indicator flashes 3 x red	Battery power is exhausted. Batteries must be changed.	The lock now only performs the "UNLOCK" command whenever actuated.

Changing batteries



Battery type: LR6, AA, alkaline

Change batteries. Make sure they are fitted the right way round. Close lid on battery compartment. Screw in fastening screw.

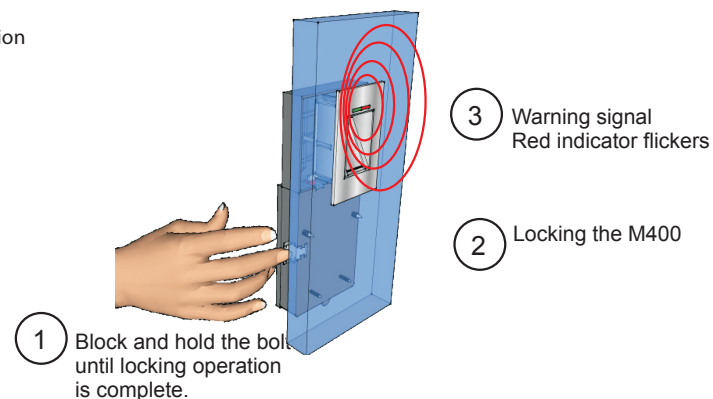


CAUTION: NiCd, NiMH and other rechargeable batteries, as well as zinc-carbon or lithium batteries must not be used!

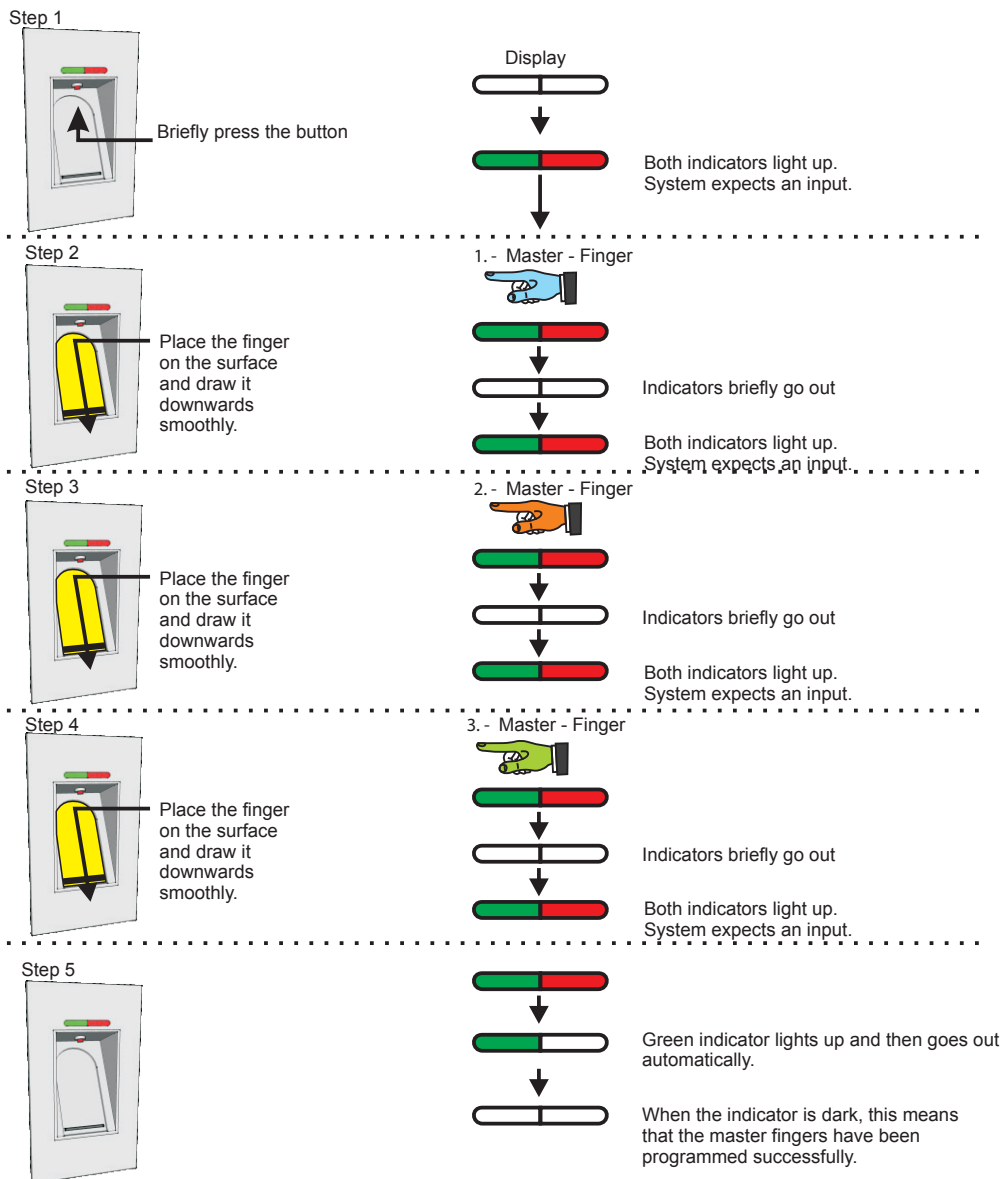
Monitoring the bolt position

The M400 has an internal sensor to determine the bolt limit position. If the bolt does not move into the limit position after a locking command, a visual warning is output (red LED flickers). This means that the furniture may not be properly locked. In such a case, check whether the bolt might have become blocked.

Test function



In contrast to the "standard application", up to 3 different master fingers can be saved in the system. This may be useful, for example, if administration of the lock is to be granted to several people. When programming the system, it is important to ensure that the master fingers are readily identified, as each master finger should only be read once by the sensor of the fingerprint unit. For this programming version and unlike the case with the standard procedure (in which a master finger is scanned three times), the fingerprint sensor must optimally recognize the master finger when it is scanned for the first time.

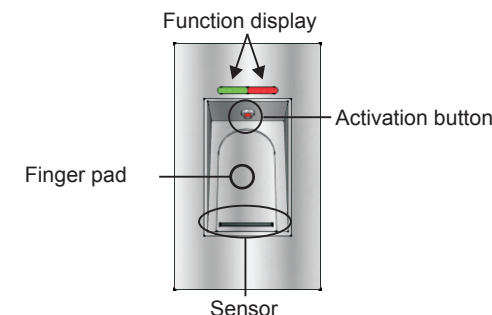
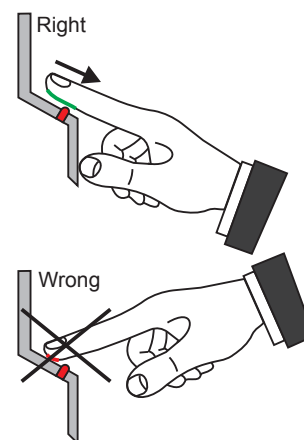


Instructions and tips for troublefree operation

Please note the following instructions for operation of the fingerprint system.

The fingerprint system is always programmed after delivery. This means that the first finger following activation of the system is identified and saved as master finger. It is therefore particularly important to carefully follow the instructions below.

1. The master finger should never be learned as a user finger.
2. After recording each finger (i.e. after drawing a finger over the sensor), always wait approx. 3 s until a signal is output by the corresponding LED and the next finger can be drawn over the sensor.
3. Draw the finger over the sensor smoothly and with moderate pressure.
4. Ensure that as many as possible of the whorls making up the fingerprint are drawn over the sensor. See diagrams below.
5. Scarred / injured fingertips should not be used as user or master finger. Please choose a different finger instead.
6. It is advisable to learn the individual user fingers 3 times in order to optimize the recognition rate. In the case of "difficult" fingers, it may be necessary to learn one and the same user finger up to 6 times or to choose a different user finger instead.
7. One and the same finger can be drawn over the sensor several times during the programming process. Despite this, only one storage location will be occupied (i.e. one user). This is possible because the system can learn and logically optimize striking features of the fingerprint in the software.
8. The thumb is a good alternative if the user's fingers are very slim.
9. At least two fingers should be learned for each user. This ensures that a "spare key (finger)" is always available in case of injury.
10. Hygiene and cleanliness are essential in the case of systems with human contact. Soiling and adhesions can impair operation of the system.

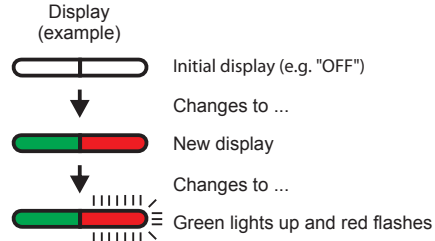
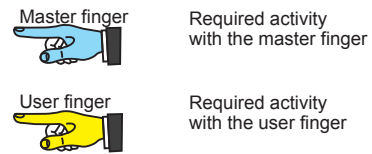


Important! When starting the system for the first time, the first 3 fingers are identified as master fingers and stored in the system. Master fingers cannot be learned later. The following steps must therefore be completed with great care!

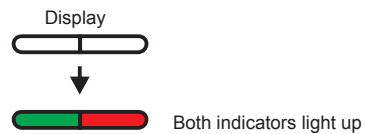
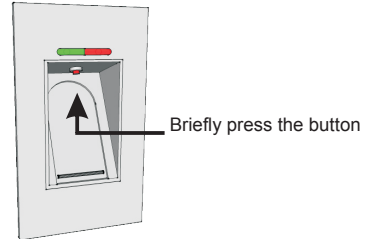
Always repeat the last action if the following displays do not appear. The system has a "timeout" function. In other words, the system switches off automatically after 30 seconds if nothing is entered or if the input is incorrect. This is indicated by a red flashing light 5 seconds before switching off. All inputs which have not been correctly concluded on expiry of the timeout will be discarded and are not saved. The corresponding programming section must be repeated in this case.

Programming up to 3 different master fingers in one system, see page -10- of this manual.

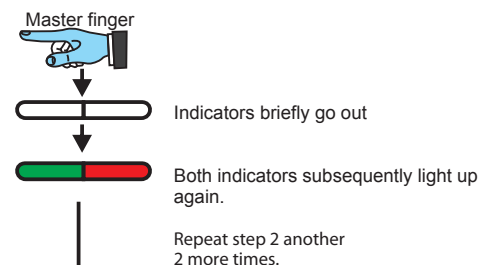
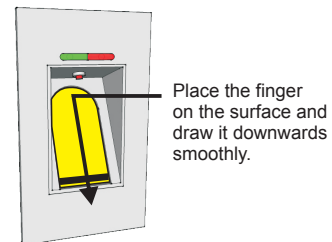
Legend



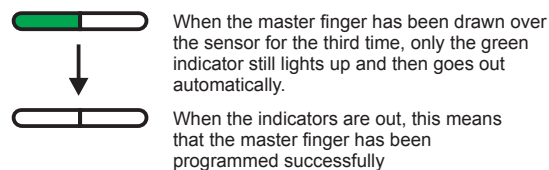
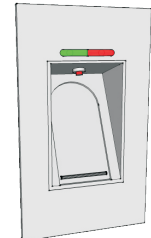
Step 1



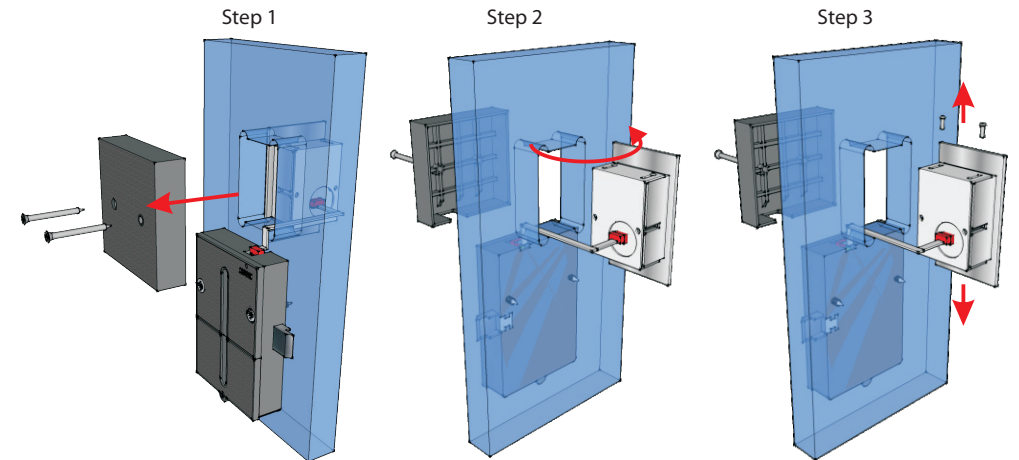
Step 2



Step 3



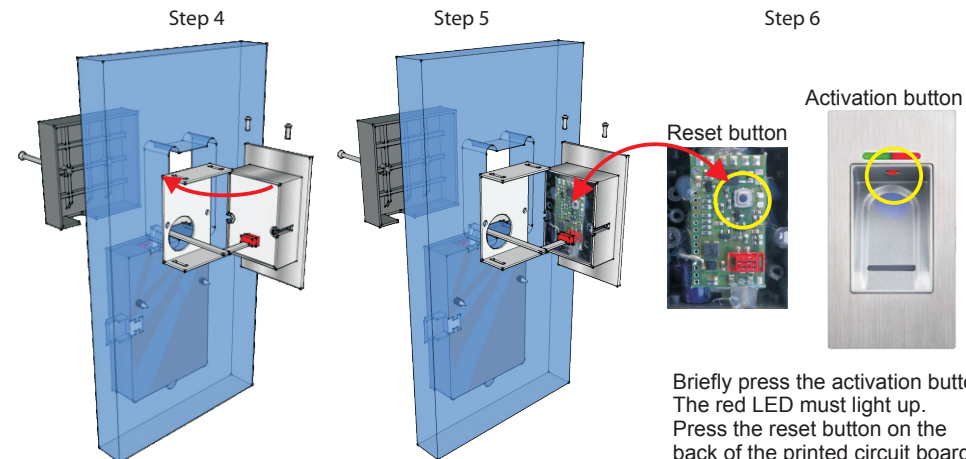
In rare cases, it may be necessary to return a system to the factory setting. Particularly, for example, if the person(s) with the master finger are no longer available. In this case, trained and authorised personnel can perform a "hardware reset".



Remove cover and pull the fingerprint reader out towards the front.

Caution: Do not undo cable connection.

Unscrew the retaining clip.



Carefully push back retaining clip and peel protective film off back of reader.

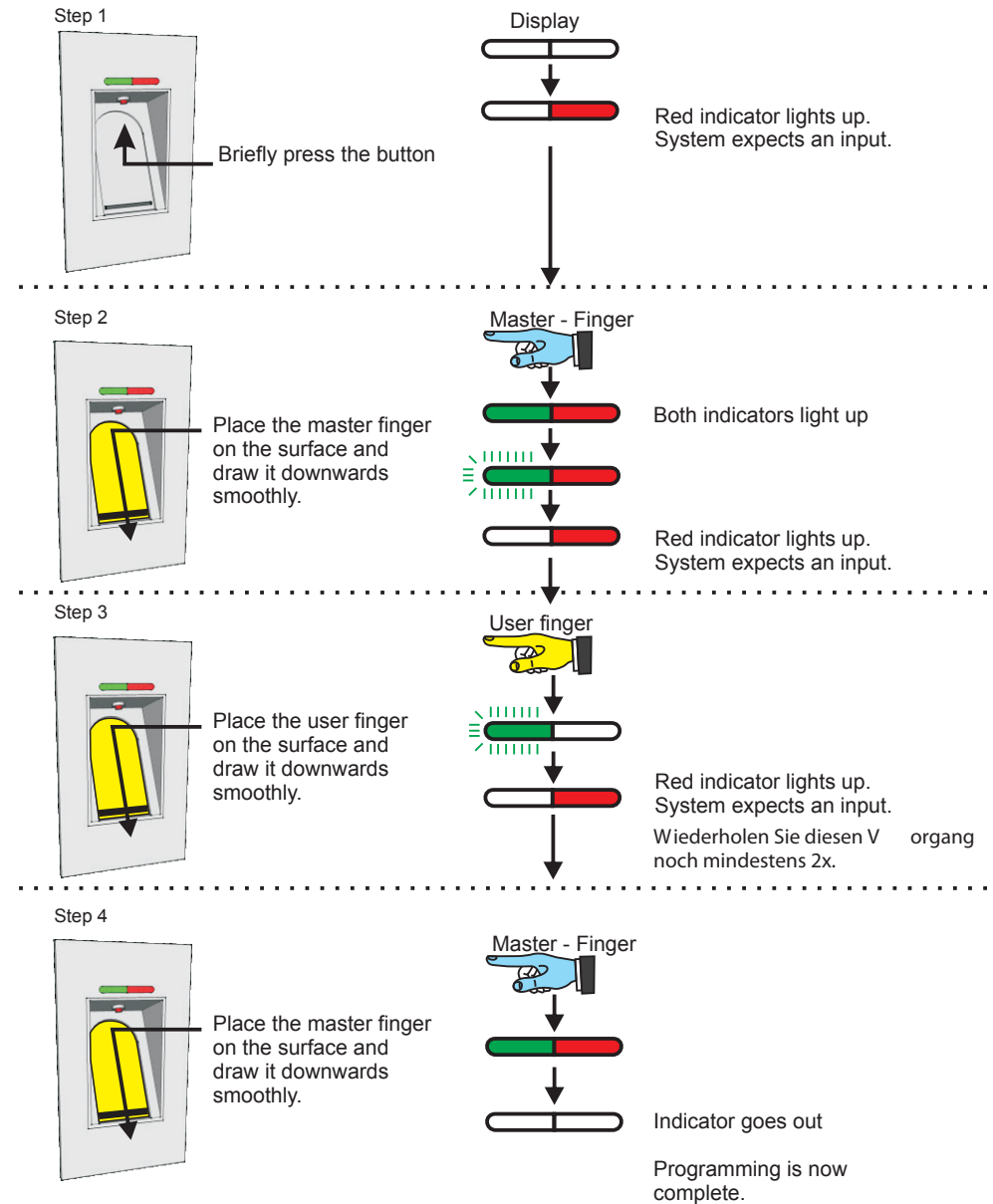
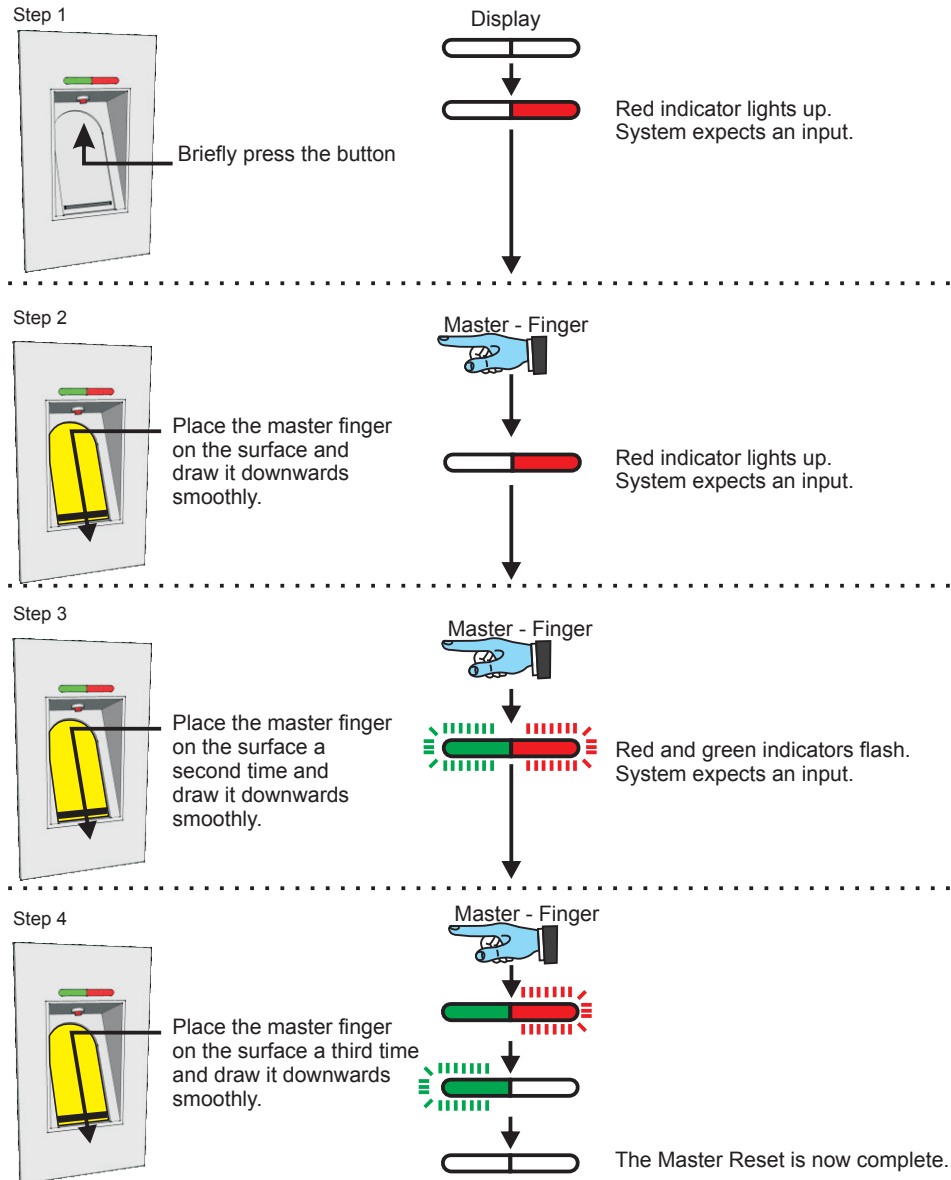
Locate the reset button on the printed circuit board.

Briefly press the activation button. The red LED must light up. Press the reset button on the back of the printed circuit board and hold it down for 2 seconds. The green LED also lights up. The system has been reset when both LEDs go out.

Step 5

Perform steps 1 to 4 in reverse order.

Users cannot be deleted from the M400 FP system selectively (i.e. certain users only). A Master Reset must be performed if one or more users are to be deleted. Please note that, in this case, the M400 FP will be reset to the condition prevailing on delivery. The master finger is then also deleted from the memory. The system must subsequently be reprogrammed completely. Important! After resetting and re-activating the system, the first 3 fingers are identified as master fingers and stored in the system.



Step 1

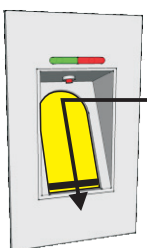


Briefly press the button

Display

Red indicator lights up.
System expects an input.

Step 2

Place the user finger
on the surface and
draw it downwards
smoothly.

User finger

Green indicator flashes.
Input was correct.
Lock opens.Indicators go out.
Procedure is complete.

Locking the M400 FP

Step 1

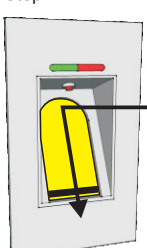


Briefly press the button

Display

Red indicator lights up.
System expects an input.

Step 2

Place the user finger
on the surface and
draw it downwards
smoothly.

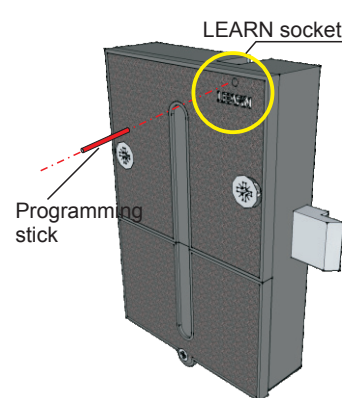
User finger

Red indicator lights up.
Input was correct.
Lock closes.Indicators go out.
Procedure is complete.

The M400 FP can be set to lock automatically after a delay. When this setting is activated, the system locks automatically after the preselected time of approx. 10 seconds. This setting has the benefit that you only have to swipe your finger over the finger scanner when opening the system. We only advise activating this setting for the the M400 FP catch version (sprung-type lock bolt). Only this version guarantees that the lock bolt is able to spring back on closing the door, avoiding damage to the furniture.

On leaving the factory, the M400 FP is programmed to the setting in which an authorised finger must be moved across the sensor for each locking function.

Activation: Delayed locking



1. Insert the programming stick into the LEARN socket and briefly press it down (slight resistance will be felt / button actuation).
2. Take the programming stick out again
3. Perform at least one closing cycle (open or close).
4. The M400 FP is now set for delayed locking.
5. Check for correct operation by opening the furniture lock (bolt moves into the casing). The lock bolt automatically moves out of the casing again after approx. 10 seconds (system is now locked).

Deactivation: Delayed locking

1. Repeat steps 1 to 3 (see above).
2. Automatic delayed locking is now deactivated again.
3. Check for correct operation by opening the furniture lock (bolt moves into the casing). If the lock bolt does not automatically move out of the casing after 10 seconds, the setting has been changed over successfully.

This function is not provided with any additional indicator as the current setting can be verified within 10 seconds.

Notes on potential malfunctions

If the system has not changed over (activation or deactivation of the automatic locking function), please repeat the relevant steps. This usually means that the button has not been pressed properly or for long enough.