





M410 FP pro (M410 Fingerprint pro)

Operating Instructions

Content

Page

General system description / Safety precautions / Care and maintenance / Factory Settings
Operating Description / Admin Finger and User Finger / Technical Specifications 3
System components and Package Contents 4
Dimensions
Mounting on wood 6
Mounting the bolt protector7
Getting started and changing batteries / Bolt end position scan function /
Information for the programming
Installation mode / Programming the first admin finger
Programming an user finger in "assigned use" mode / Locking and unlocking in "assigned use" operating mode
Programming further admin fingers / Deleting an user finger
Deleting an admin finger 13
Facility Manager Function / Emergency Opening / Activate / deactivate auto locking
Reset to factory settings 15
Changing the operating mode16
Locking and unlocking in "shared use" mode / Configuration of M410 FP pro
With NFC-App
Battery warning / Firmware update / Disposal 20

GENERAL SYSTEM DESCRIPTION

The locking system is a battery-operated biometric locking system for furniture. The locking system consists of a lock and a fingerprint module, which are connected to each other by a cable. The locking system is intended for use in residential and office areas inside buildings. This manual gives you information in order to install and operate the locking system correctly. Keep the operating instructions in an easily accessible place. Using the locking system in applications for which it is not intended may result in irreparable damage to it and render any claims null and void.

Please be sure to read all warnings and read the operating instructions completely before you start assembly, commissioning and configuration.

The use of this locking system in combination with additional mechanical or electronic solutions from other manufacturers must be checked for compatibility. We assume no liability for damage resulting from incompatibility. Wording and graphics have been prepared for you with care. However, no liability will be assumed for any mistakes that may have occurred. The scope of items included by the manufacturer in the system as well as technical specifications are subject to change without notice.



SAFETY PRECAUTIONS

- → Pack the battery to transport the lock in such a way, that no short circuit can occur (explosion and fire hazard).
- → On changing the battery, ensure correct battery polarity and position.
- → Dispose of spent batteries and packaging material in the proper manner (see page 20, "Disposal").
- → Do not heat batteries, take them apart or short-circuit them.
- → Never throw batteries into open fires.
- → The battery must not be charged.
- → Keep the battery and packaging material out of children's reach.
- → Any person swallowing batteries must seek immediate medical advice.
- → Damaged or leaking batteries may cause acid burns and/or poisoning.

CARE AND MAINTENANCE

- Protect all system components from moisture.
- Clean the locking system with a clean, soft, damp cloth only.
- Do not use any aggressive detergents containing abrasives or solvents. Glass cleaners, thinners, alcohol, benzene
 or liquids containing ammonia are not suitable for cleaning purposes.
- Treating any of the electronic and mechanical components improperly or in any way other than described in this user manual may lead to malfunctions.
- Replace the battery in good time, but at the latest when the visual battery warning on the keypad lights up.

FACTORY SETTINGS

The locking system can be locked or unlocked with any finger at this point. After programming an admin finger, the locking system is in the "assigned use" operating mode.

OPERATING DESCRIPTION

With the locking system, you can conveniently unlock and lock your furniture. The fingerprint of an user is used as a "key". A maximum of 200 fingers (maximum number of admin and user fingers) can be programmed on the locking system. Two operating modes are available:

Operating mode	Description
Assigned use	There is a fixed assignment between the user finger and the locking system. The respective user finger is programmed or deleted by using an admin finger on the lock. Several users can have authorization for a lock at the same time. The locking system allows selective access authorizations to be granted so that only authorized persons have access. Up to 200 fingers can be programmed per lock (max. number of admin and user fingers). A user finger can be programmed at several locks at the same.
Shared use	A user can temporarily use a lock of his choice with one finger. If a lock is locked with a finger, the finger and the lock are coupled together. This coupling is deactivated when the user un- locks the lock again with his finger. ATTENTION: This mode should not be used in public areas or similar, as a user can lock several or even all locks.

ADMIN FINGER AND USER FINGER

Admin and user fingers can be programmed on the locking system. The following functions are possible with an admin finger:

- Programming and deleting user fingers
- Programming additional admin fingers
- Deleting admin fingers
- · Facility manager function and emergency opening
- · Configuration changes (e.g. operating mode, activating / deactivating auto locking, reset to factory settings)

The following functions are available with an user finger:

- Unlocking
- Locking

TECHNICAL SPECIFICATIONS

Product-ID	HOTR1PM6
Product name	M410 FP pro
Туре	Electronic lock with 1-point locking (spring loaded or deadbolt) and Fingerprint Scanner
Nominal voltage	3V
Power Supply	1600 mAh CR123A LiMnO2 battery
Fingerprint detection area	Ø 15 mm
Sensor resolution	508 dpi / 192 x 192 pixel
Fingerprint storage capacity N	200
Scanning speed	< 0,2 s
Verification speed	1:N < 10 ms / Fingerprint

False Acceptance Rate (FAR)	< 0.001 %
False Rejection Rate (FRR)	<1%
Operating conditions	Lock M410 pro: -5 °C / +60 °C @ RH 30 % 99 % FP module: -20 °C / +60 °C @ RH 10 % 85 %
Storage conditions	Lock M410 pro: -25 °C / +70 °C @ RH 30 % 85 % FP module: -40 °C / +75 °C @ RH < 85 %
Status indicator	RGB Ring LED
Material	Lock M410 pro: Housing made of ABS, locking mechanism made of zinc die cast ZP5 FP module: Stainless steel
Compliance	CE, RoHS

SYSTEM COMPONENTS AND PACKAGE CONTENTS

Please note that these operating instructions apply to different product versions. The package content therefore depends on the respective product variant. The product variants and mounting recommendations shown here are intended for wooden furniture with a thickness of 16-19 mm. With different wood thicknesses and materials, the screws for fastening the lock must be adjusted and, if necessary, additional components such as a spacer must be used.



Components:

- 1. Lock M410 pro
- 2. 4 x countersunk screw 3,5 x 35 cross recess
- 3. Battery CR 123A
- 4. Bolt protector
 - (not in version with fixed bolt)

- 5. Striker plate 4005
- 6. 3x screw 3 x 13 for striker plate 4005
- 7. Fingerprint module incl. connecting cable

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- 8. Fasting nut for fingerprint module
- 9. Programming stick

An additional spacer between the lock and the furniture door is required for use on doors with a material thickness of less than 16 mm (e.g. HPL or metal).

DIMENSIONS

Lock M410 pro



Striker plate 4005

e fixing

Fingerprint module



MOUNTING ON WOOD

Only install the locking system when it is unlocked. Carry out all programming processes and function checks with the cabinet door open. This gives you access to all components in the event of a malfunction. <u>Hand-tighten</u> all screws and nuts.

- Carry out a stepped drilling to mount the fingerprint module according to the following graphics.
- Fasten the fingerprint module with the fastening nut, e.g. with a socket wrench.
- Connect the cable of the fingerprint module to the lock in the correct position.
- Assemble the lock according to the following graphics.
- Assemble the striker plate according to the following graphics.









MOUNTING THE BOLT PROTECTOR (not in version with fixed bolt)

The bolt protector provided with the M410 pro can be used for additional protection of the locking system against external mechanical manipulation. Depending on the purpose the lock is being used for and where it is installed, we recommend fitting this additional, easy-to-mount protector.







GETTING STARTED AND CHANGING BATTERIES

Make sure that the lock and fingerprint module are correctly connected to each other with the connection cable. Make sure that the plug and the socket are connected in the correct position. When connecting to the lock, the plug contacts must point downwards to the circuit board in the lock. Insert the battery only after connecting the lock with the fingerprint module.

IMPORTANT: Only use one CR123A primary battery!



Open the battery compartment as shown above.



Insert the battery first with the minus pole as shown above. The battery is placed on the battery removal tape so that the tape tip protrudes. To remove the battery, pull on the battery removal tape.



Close the battery compartment with the tape inserted.

Inserting the battery

Battery is inserted correctly in the battery compartment.

BOLT END POSITION SCAN FUNCTION

The locking system also has a bolt end position scan function. If, during the locking process, the bolt does not reach its end position, the LED display flashes red for four times. The lock is not locked. Check the correct mounting position of the lock, the bolt protector and the striker plate.

INFORMATION FOR THE PROGRAMMING

· An admin finger is shown as follows in this manual:



• An user finger is shown as follows in this manual:



• There are long and short flashes, which are shown as follows. The flashing signals are available in different colors.



Furthermore, with some programming steps or warnings, there are long and short acoustic signals in parallel to the flashing signals (e.g. in the case of configuration changes). This is represented as follows:



- Place your finger flat on the reading field. The entire area of the reading field should be covered. The fingertip is not read!
- Do not swipe your finger across the reading field! If a finger cannot be detected correctly, the LED pulsates in light yellow-green:



In this case, check the position of your finger on the reading field. Hold the corresponding finger again with light pressure in the middle of the reading field.

- In order to register admin or user fingers correctly, the fingers must be successfully registered six times during the
 programming process. When registering a finger, slightly vary the position when placing the finger on the reading
 field. Do <u>not</u> change the finger to be learned during the learning process.
- All programming processes are carried out with the lock in <u>opened</u> position.
- If you do not remove the admin finger from the reading field during the programming steps, the LED flashes light yellow-green continuously until the finger is removed.
- If a programming process is not completed correctly, permission and configuration changes will not be accepted. The programming process or the programming mode are cancelled after 15 seconds of inactivity. The LED flashes red.



- To exit the programming mode without making any changes, wait 15 seconds for the system to automatically cancel the operation.
- The admin finger must not be programmed as a user finger at the same time.
- It is highly recommended to program at least <u>two admin fingers</u>.
- For some programming processes, the learn button on the lock must be pressed with the programming stick.



INSTALLATION MODE

During assembly, you have the option of locking and unlocking the lock with any finger. In this mode, the basic functions (locking and unlocking) can be tested on the lock. There is no processing of fingerprints.

Locking	
Touch the reading field. The LED flashes 2x short red.	-
Unlocking	
Touch the reading field The LED flashes 1x short green.	-

PROGRAMMING THE FIRST ADMIN FINGER

Irrespective of the required operating mode, an admin finger must always be programmed in advance to further programming and operation. The admin finger can only be programmed when the lock is open. In order to program an admin finger, the finger must be successfully read six times by the fingerprint module. After the admin finger has been programmed, the locking system is in the "assigned use" operating mode. If you want to use the lock in the "shared use" operating mode, change the operating mode. To do this, follow the instructions on page 16. It is highly recommended to program at least two admin fingers. To do this, follow the instructions on page 12.

Start programming mode	Use the programming stick to briefly press the learn button in the lock. The LED on the fingerprint module pulsates light yellow-green.	
Check admin finger	Place the admin finger to be programmed on the reading field until the LED lights up yellow. The finger was captured.	
2.1	The LED flashes 1x long red. The finger is unknown.	
Program admin finger	The LED flashes blue, the reading field is ready to scan your finger.	
2.	Briefly place the admin finger on the rea- ding field and <u>remove</u> it as soon as the LED lights up yellow.	
	The LED flashes 3x green, when the finger has been successfully captured.	
	Repeat the last process five times.	5x 🝼
	After the admin finger has been programmed, the LED flashes green several time short and 1x long.	

PROGRAMMING AN USER FINGER IN "ASSIGNED USE" MODE

A maximum of 200 different fingers (admin and user fingers) can be programmed per lock in the "assigned use" operating mode. The lock must be in position open. An admin finger that has already been programmed cannot be programmed as a user finger.

Start programming mode	Place a programmed admin finger on the reading field until the LED lights up yellow. The finger was captured. The LED flashes 1x short green together with one acoustic signal.	▲ ,
Check user finger	The LED pulsates light yellow-green, the reading field is ready to scan the finger.	
2-1	Briefly place the user finger to be program- med on the reading field and <u>remove</u> it as soon as the LED lights up yellow. The finger was captured.	
	The LED flashes 1x long red. The finger is unknown.	
Program user finger	The LED flashes blue, the reading field is ready to scan your finger.	
2-1	Briefly place the user finger to be program- med on the reading field and <u>remove</u> it as soon as the LED lights up yellow.	
	The LED flashes 3x green, when the finger has been successfully captured.	
	Repeat the last process five times.	5x رال
	After the user finger has been programmed, the LED flashes green several times short and 1x long.	

LOCKING AND UNLOCKING IN "ASSIGNED USE" OPERATING MODE

In the "assigned use" operating mode, the user finger must have been programmed beforehand.

Locking		
User finger	Place a programmed user finger on the reading field until the LED lights up yellow. The LED flashes 2x short red.	
Unlocking		
User finger	Place a programmed user finger on the reading field until the LED lights up yellow. The LED flashes 1x short green.	

The LED flashes 3x short red, if a finger is not authorized or if the finger cannot be read.

PROGRAMMING FURTHER ADMIN FINGERS

Additional admin fingers can be programmed on the locking system. The locking system must be open for this programming process.

Start programming mode	Place a programmed admin finger on the reading field until the LED lights up yellow. The finger was captured.	
	The LED flashes 1x short green together with one acoustic signal.	▲ >
Switch programming	The LED pulsates light yellow-green.	
mode	Use the programming stick to press the learn button once in the lock.	
	The LED on the fingerprint module flashes 2x short yellow with two acoustic signals.	▲ , ▲ ,
Check admin finger	The LED pulsates light yellow-green, the reading field is ready to scan the finger.	
2.	Place the new admin finger to be program- med on the reading field until the LED lights up yellow. The finger was captured.	
New	The LED flashes 1x long red. The finger is unknown.*	
Program admin finger	The LED flashes blue, the reading field is ready to scan your finger.	
2.	Place the new admin finger to be program- med on the reading field until the LED lights up yellow.	
New	The LED flashes 3x long green, when the finger has been successfully captured.	
	Repeat the last process five times.	5x 🕑
	After the admin finger has been program- med, the LED flashes green several times short and 1x long.	

* If an admin finger that has already been programmed is held on the reading field at this point, this admin finger will be deleted and may have to be programmed again.

DELETING AN USER FINGER

Individual user fingers can be deleted from the locking system. The locking system must be unlocked for this procedure.

Start programming mode	Place a programmed admin finger on the reading field until the LED lights up yellow. The finger was captured. The LED flashes 1x short green together with one acoustic signal.	■
Delete user finger	The LED pulsates light yellow-green, the reading field is ready to scan the finger. Place the user finger to be deleted on the reading field until the LED lights up yellow. The finger was captured. The LED flashes 3x short red together with three acoustic signals. The finger has been deleted.	 ▲ 》 ▲ 》

DELETING AN ADMIN FINGER

Individual admin fingers can be deleted from the locking system. The locking system must be unlocked for this procedure. An admin finger cannot delete itself. This means that in order to delete an admin finger (e.g.: admin finger B), the programming mode must be started with another admin finger (e.g.: admin finger A), which remains programmed into the system.

Start programming mode	Place a programmed admin finger on the reading field until the LED lights up yellow. The finger was captured. The LED flashes 1x short green together with one acoustic signal.	■
Switch programming mode	The LED pulsates light yellow-green.	
	Use the programming stick to press the learn button <u>once</u> in the lock. The LED on the fingerprint module flashes 2x short yellow with two acoustic signals.	■ , ■ ,
Delete admin finger	The LED pulsates light yellow-green, the reading field is ready to scan the finger.	
2.1	Place the admin finger to be deleted on the reading field until the LED lights up yellow.	
В	The LED flashes 3x long red together with three acoustic signals. The finger has been deleted	4) 4)

In order to delete all admin fingers at once, the locking system must be reset to the factory delivery status.

FACILITY MANAGER FUNCTION

A locked lock can be opened for 30 seconds with an admin finger. After 30 seconds, the lock locks automatically. After automatic locking, authorized user fingers can continue to be used both in the "assigned use" operating mode and in the "shared use" operating mode.

Unlocking with admin finger	Place a programmed admin finger on the reading field until the LED lights up yellow. The finger was captured.	
2.	The LED flashes 1x long green, 1x short green, 1x long green. The lock opens.	
	The LED pulsates light yellow-green for 30 seconds.	
	The LED flashes 2x short red. The lock closes.	

EMERGENCY OPENING

In the event that one or all authorized user fingers are not available, an emergency opening can be carried out with the admin finger. Please note that the lock remains open after the emergency opening.

Unlocking with admin finger	Place a programmed admin finger on the reading field until the LED lights up yellow. The finger was captured.	
2-1.	The LED flashes 1x long green, 1x short green, 1x long green. The lock opens.	
Emergency opening	The LED pulsates light yellow-green for 30 seconds.	
2-!	Place the admin finger, that unlocked the lock, again on the reading field within 30 seconds, the LED lights up yellow.	
	The LED flashes 1x short green. The lock remains open.	

ACTIVATE / DEACTIVATE AUTO LOCKING

In the "assigned use" operating mode, the auto locking function can be activated and deactivated. For locks in "shared use" mode, this function is skipped in the programming mode. This function is only suitable for locks with a spring-loaded bolt. After activating this function, the lock automatically closes after 10 seconds, once the lock was unlocked. The lock must be unlocked to activate this function.





RESET TO FACTORY SETTINGS

After a factory reset, all admin and user fingers are deleted. The locking system is in installation mode and can be locked and unlocked with any finger. To reset the lock, the lock must be unlocked.

Start programming mode	Place a programmed admin finger on the reading field until the LED lights up yellow. The finger was captured. The LED flashes 1x short green together with one acoustic signal.	▲ ,
Switch programming mode	The LED pulsates light yellow-green. Use the programming stick to press the learn button <u>once</u> in the lock. The LED on the fingerprint module flashes 2x short yellow with two acoustic signals.	

↓ This programming step is skipped, if the lock is in "shared use" mode.		
Switch programming mode	The LED pulsates light yellow-green.	
	Use the programming stick to press the learn button once in the lock.	
	The LED on the fingerprint module flashes 3x short purple with three acoustic signals.	4 , 4 , 4 ,
Switch programming mode	The LED pulsates light yellow-green.	
	Use the programming stick to press the learn button once in the lock.	
	The LED on the fingerprint module flashes 4x short red with four acoustic signals.	
Reset	The LED pulsates light yellow-green.	
2!	Place the admin finger that started the programming mode once on the reading field until the LED lights up yellow.	
	The LED flashes 3x long red together with three acoustic signals.	4) 4)
2.	The LED pulsates light yellow-green.	
	Place the admin finger that started the programming mode once on the reading field until the LED lights up yellow.	
	The LED flashes 3x long red together with three acoustic signals. The lock is reset to factory settings.	4) 4) 4)
Initialization	The LED flashes 1x long yellow together with one acoustic signal. The lock has been initialized and is ready for use again.	↓

CHANGING THE OPERATING MODE

The lock has two operating modes: "assigned use" and "shared use". You have the option of changing the operating mode when the lock is unlocked.





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LOCKING AND UNLOCKING IN "SHARED USE" MODE

Locking		
Check user finger	Briefly place an user finger on the reading field and <u>remove</u> it as soon as the LED lights up yellow. The finger was captured.	
	The LED flashes 1x long red. The finger is unknown.	
Scanning user finger and locking	The LED flashes blue, the reading field is ready to scan your finger.	
2.	Briefly place the <u>same</u> user finger on the reading field and remove it as soon as the LED lights up yellow.	
	The LED flashes 3x green, when the finger has been successfully scanned.	
	Repeat the last process five times.	5x 🝼
	After a successful scanning of the user finger, the LED flashes green several times short and 1x long.	
	The LED flashes 2x short red and the lock has been locked.	

Unlocking		
User finger	Place the scanned user finger on the reading field until the LED lights up yellow. The LED flashes 1x short green and the lock has been unlocked.	

CONFIGURATION OF M410 FP PRO WITH NFC-APP

The lock M410 FP pro can be configured either manually or with the LEHMANN Config app. After putting the app into operation on an Android smartphone or Apple iPhone, configuration changes can be made via the app.

After starting the app, select "Fingerprint" in the lower right area of the display. Once selected, the icon will be white and clearly visible. The Pin Code symbol on the left side of the display is nearly hidden. The lock must be in position open in order to use the app.

Three functions are available in the upper display area:

Profile	This function can be used to create and save configuration profiles on the smartphone. Configuration profiles that have already been created are displayed here. To create a profile, click on "Create new profile". Assign a unique name for the configuration profile. Enter the desired configuration in the appropriate fields. Finally, click on the Save button 3.
	To make changes to a configuration profile, select the configuration profile by briefly clicking on the name of the configuration profile in the overview. Enter the desired changes and click the Save button . If changes have been entered but you do not want them to be saved, click the Back button .

	To return to the profile overview from a configuration profile, click the Back button To transfer a configuration profile to the lock, select the configuration profile and click Transfer. Place an admin finger on the reading field until the LED lights up yellow. Hold the NFC antenna of the smartphone in front of the NFC antenna on the lock (see Data transfer to a fingerprint lock). To delete a configuration profile, press and hold on the name of the configuration profile in the overview of profiles. The delete symbol appears to the right of the profile
Manual configuration	This feature allows configuration changes to be made without saving a configuration profile. Configuration changes are entered in the appropriate fields. To transfer the configuration to the lock, click on "Transfer". Place an admin finger on the reading field until the LED lights up yellow. Hold the NFC antenna of the smartphone in front of the NFC antenna on the lock (see Data transfer to a fingerprint lock).
Direct	With this function, actions such as "Add user finger", "Delete user finger", "Add admin finger", "Delete admin finger", "Reset" etc. can be carried out. Select the required action. To transfer this command to the lock, click on "Transfer". Place an admin finger on the reading field until the LED lights up yellow. Hold the NFC antenna of the smartphone in front of the NFC antenna on the lock (see Data transfer to a fingerprint lock). If an admin or user finger needs to be added, the LED on the fingerprint module pulsates light yellow-green. Now place the finger to be added on the reading field several times and remove it again everytime until the LED flashes green several times briefly and once long. The finger is now added. If a finger should be deleted, the LED on the fingerprint module pulsates light yellow-green. Now place the finger you want to delete on the reading field of the fingerprint module until the LED lights up yellow and 3 times red. The finger is now deleted. Note that an admin finger cannot delete itself. When deleting an admin finger, programming mode must be started with another admin finger.

Data transfer to a fingerprint lock:

To transfer configurations or direct commands to the lock, first check the position of the NFC antenna on your smartphone. Activate the NFC interface on your smartphone.

To use the app, at least one admin finger must be programmed on the lock.

The lock must be in open position.

Click on the "Transfer" button in the LEHMANN Config app.

Place an admin finger on the reading field of the fingerprint module until the LED lights up yellow.

Hold the NFC antenna of your smartphone at the marked location on the corresponding lock. The NFC antenna in the lock is located in this area.

M410 pro



After a successful data transfer, a tick appears in the app.

If an admin or user finger needs to be added, the LED on the fingerprint module pulsates light yellow-green. Now place the finger to be added on the reading field several times and remove it again everytime until the LED flashes green several times briefly and once long. The finger is now added.

If a finger should be deleted, the LED on the fingerprint module pulsates light yellowgreen. Now place the finger you want to delete on the reading field of the fingerprint module until the LED lights up yellow and 3 times red. The finger is now deleted. Note that an admin finger cannot delete itself. When deleting an admin finger, programming mode must be started with another admin finger.

BATTERY WARNING

The locking system is equipped with a battery management system, which uses optical and acoustic signals to indicate that the battery needs to be changed. The battery warning occurs in two phases:



FIRMWARE UPDATE

You have the option of updating the firmware of the locking system via the micro USB socket on the lock. Firmware updates for this locking system are only made available on the website www.lehmann-locks.com if required (e.g. technical necessity). The LEHMANN Firmware Updater software is required for this. Further information on implementation and installation is available in the LEHMANN Firmware Updater software.



Dispose the locking system according to local regulations and guidelines. Remove the battery and dispose them separately according to national regulations. When disposing of partially discharged batteries, make sure that there are no short circuits between the poles of the batteries (danger of explosion and fire).

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