

Operating Instructions

Fingerprint Access 4 Fingerprint Access SA

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IMPORTANT INFORMATION

Thank you for choosing Fingerprint Access 4 / SA, the biometric access system for material handling equipment. Before installing or operating the device, it is crucial to read through these operating instructions thoroughly to ensure safe and correct usage. This manual provides detailed instructions on installation, operation and maintenance of the Fingerprint Access 4 / SA system.

Installation Notice & Safety Precautions

Correct installation of the Fingerprint Access 4 / SA system is essential for safe and reliable operation. Ensure that the device is installed by qualified personnel according to the provided installation guidelines. All cables must be laid in a manner to avoid damages and minimize susceptibility to interference. Additionally, ensure that the device does not obstruct the view of the machine operator or interfere with the safe operation of the machine. Failure to install the device correctly may result in malfunctions or safety hazards. Do not attempt to disassemble or modify the device. Contact the manufacturer for any maintenance or repairs.

Consent to Data Protection Policy

The device is capable of exchanging information with the manufacturer's cloud server. By utilizing the Fingerprint Access 4 / SA system, the user acknowledges and agrees to adhere to the data protection policy implemented by the manufacturer. This policy governs the collection, storage, and usage of personal data, including biometric information, in compliance with applicable privacy regulations. Third-party services are utilized to store and analyze user and usage data.

Disclaimer

The manufacturer shall not be held responsible for any damage, injury or loss resulting from improper installation, operation or maintenance of the device. Users are solely responsible for ensuring compliance with all applicable safety regulations and guidelines. Applicable standards and directives in the country of operation must be observed.

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1. Introduction

Congratulations for obtaining your Fingerprint Access 4 or Fingerprint Access Stand-Alone (SA) device for safely controlling access to your industrial machine.

Fingerprint Access 4 / SA grants your staff access to a machine by scanning their fingerprints. The integrated sensor recognizes fingerprints and matches them reliably with up to 120 securely stored fingerprint templates. Two security levels enable differentiation between supervisor and operator access. The large touchscreen and the multi-language interface support easy and self-explanatory interaction between user and device. Enhanced security is provided by the integrated motion sensor, which detects machine utilization and conducts an automatic logout after a selectable interval of machine idle time. All devices provide Wi-Fi functionality to exchange information with the cloud server. While usage of the cloud is optional, it offers enhanced usability and features, including centralized access management, unlimited usage history tracking, and reporting on usage statistics. Additionally, the mobile connectivity function enables supervisors to connect their smartphones to the device, providing access to usage history and user information at their fingertips.

We recommend you to read through these operating instructions carefully as they contain important information on installing, configuring and operating your Fingerprint Access 4 / SA device.

Device Information

Fingerprint Access 4 and Fingerprint Access SA provide identical functionality, however differ in their housings. Fingerprint Access 4 devices are intended for integration into machines of specific manufacturers, whereas Fingerprint Access SA devices can be mounted with industrial mounts or customized holders to any machine at any desired position.



Fingerprint Access 4 (0 / 55 degrees)



Fingerprint Access SA (ball / bracket mount)

2. Getting Started

This chapter provides instructions on mechanically mounting and electrically connecting your Fingerprint Access 4 / SA device to your machine. Let's get started!

2.1 Unpacking your Device

Depending on the selected cable and connector configuration, your Fingerprint Access 4 / SA devices come with different accessories. The contents of the boxes are outlined as follows:

Fingerprint Access 4

Fingerprint Access 4 devices are built-in systems that come with the connector attached to their housing. Contents of the box include:



Fingerprint Access 4 device



Connector bag including

- 1x connector housing (FEP 42121400)
- 4x connector terminals (Tyco 1241381)
- 4x connector sealings (Tyco 963530)

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Quick Start Guide

Fingerprint Access SA

The stand-alone version of Fingerprint Access comes with a cable of configurable length attached. Depending on the configuration, the connector has either been attached or comes separately for easier cable routing during installation.



2.2 Installing your Device

Depending on your device, there are different methods for installing Fingerprint Access 4 / SA with your machine.

Fingerprint Access 4

As Fingerprint Access 4 is the built-in version, it will be mounted in the standard mounting frame of your machine. Depending on the manufacturer and the type of operation (ref. chapter 2.3), the key switch module is replaced or the device is added to an additional empty mounting frame on the machine. Press the device firmly from the front into the mounting frame until the four hooks attached to the device's housing clamp tightly. Examples of completed installations are shown below.



Fingerprint Access SA

As Fingerprint Access SA is the stand-alone version, mounting the device at any location on your machine is easy.

The devices are offered either with a standard 1-inch ball mount to flexibly connect with industrial-style mounts such as RAM Mounts.





Alternatively a screwing pattern with four M4 screws allows attaching the device to any customizable holder. The pattern comes in the dimensions of 24 x 30mm and is equipped with four M4 x 4mm threaded inserts.

When installing your Fingerprint Access SA device, ensure a safe and adequate routing of the cable. It is important to prevent the cable

from being damaged, becoming loose, or posing any potential hazard during machine operation. Routing the cable inside overhead guards or securely fixing it with industrial-style cable clamps is recommended. The following example illustrates an installation with a standard 1-inch ball mount at the overhead guard of a forklift truck.



2.3 Connecting your Device

Every Fingerprint Access 4 / SA device comes with a four-pin connector that serves as the electrical interface between the device itself and your machine. The pin assignment and the color coding of the wires are as follows:

Pin #1	red wire	Input Voltage (VIN) / Battery +, 18 - 75VDC
Pin #2	black wire	Ground (GND) / Battery -
Pin #3	green wire	Key switch, normally open (NO)
Pin #4	white wire	Key switch, common (NC)

The device is powered with a wide input range of 18 - 75VDC, making it safe for usage with 24V and 48V machines. Its low power consumption peaks at 6W and reduces to <1W in standby mode. Power to the device is supplied by the machine's electrical system, usually through a designated connection point for auxiliary devices.

If your battery-electric machine is equipped with an emergency switch to disconnect the electrical system from the battery, it is recommended to connect Fingerprint Access 4 / SA on the electrical system side to benefit from the emergency switch function. For combustion-engine machines, the device can simply be connected to the electrical system itself. Connect pin #1 (red cable) to the input voltage (battery +) and pin #2 (black cable) to ground (battery -) to supply the device with power.

Pins #3 and #4 represent the key switch and are routed through the internal relay. With successful fingerprint identification, the device connects pin #3 with pin #4. Upon logout the connection between pin #3 and pin #4 is interrupted.

There are two ways of using your Fingerprint Access 4 / SA device: as an access control system or as an immobilizer.

2.3.1 Usage as Access Control

When using Fingerprint Access 4 / SA as an access control system, the device replaces the key switch of your machine and takes over its functionality. In this case, connect the two wires of your machine's key switch to pin #3 and pin #4. Power supply through pin #1 and #2 remains as previously described.

Important!

The key switch connections of your Fingerprint Access 4 / SA device are designed for a maximum current carrying capacity of 4A. Do not route any ignition currents or high inrush currents through the device!

2.3.2 Usage as Immobilizer

You might want to operate Fingerprint Access 4 / SA as immobilizer system to provide enhanced security to your machine. In this case the device will interrupt the ignition or key switch circuit by acting as a switch. Interrupt the wire that leads to the key switch or the ignition (combustion engine powered machines) and connect one end of the interrupted wire to pin #3 and the other to pin #4. The device will interrupt the key switch or ignition functionality of your machine until an authorized operator has logged in. Power supply through pin #1 and #2 remains as previously described.

2.4 Initial Start-Up

After successfully installing and connecting your Fingerprint Access 4 / SA device, it's time to power it up for the first time. By providing electrical supply through your machine's battery, the device will start up.

When starting the device without any user registered, it automatically activates your machine. The display shows the sequence that the machine has been started and prompts to register the first user.



In this state, anyone would be able to operate the machine. Please use it only for delivery purposes or in situations where operation by authorized personnel can be ensured through different means.

In the state of initial start-up, you have limited menu functionality. The menu is opened by swiping up on the touchscreen. Adding the first user and configuring device settings is possible. We recommend verifying the system time and adjusting the time zone to receive correct time information from our server the moment a Wi-Fi connection is established.

3. Using the device

Now that your Fingerprint Access 4 / SA device is securely installed in place, connected to your machine and powered up for the first time, it's time to explore its functionality and unleash its full potential. This chapter serves as your comprehensive guide to configuring and using your device effectively. We will walk you through the various operations and menu items. Let's start!

3.1 Using the Touchscreen Interface

The touchscreen of your Fingerprint Access 4 / SA device offers intuitive navigation, allowing you to interact with the device effortlessly. Five gestures are required to perform all actions with the touchscreen:

Swipe Up 🕆	To enter the menu from any of the main screens, place your finger on the touchscreen and swipe upward in a vertical motion.
Swipe Down &	To logout or to exit the menu or return from any sub-menu, place your finger on the touchscreen and swipe downward in a vertical motion.
Swipe Left 🕁	When navigating through the menu or through sub-menus of multiple pages, swipe left to horizontally move to the next screen. The small dots at the bottom of the screen show the current position.
Swipe Right ⇔	When navigating through the menu or through sub-menus of multiple pages, swipe right to horizontally return to the previous screen. The small dots at the bottom of the screen show the current position.
Pressing 🔘	To select an option, press a button or enter a sub-menu, press the screen lightly at one position.

3.2 Login & Logout



The main function of your Fingerprint Access 4 / SA system is to grant authorized operators access to your machine. Upon starting the device, the main login screen will appear if at least one user has been registered to the device. The device prompts to scan a fingerprint to login and occasionally advises that swiping up from this main screen will provide access to the menu.

Upon placing a finger over the sensor, the device automatically recognizes fingerprint features and matches those with its internal database of registered fingerprint

templates. If the fingerprint provided is successfully matched with a registered template, the user will be logged in, your machine will be started and the screen shows the welcome message. Alternatively, if the fingerprint provided is unknown to the device, it will not conduct a login and show a message stating the fingerprint being unknown on the screen.





While logged in, the device will show the operating time for this sequence on the screen and advise to simply swipe down on the touchscreen to logout.

If the automatic logout function has been

activated and the machine remains idle for the designated time interval, Fingerprint

Access 4 / SA will count down the seconds of the last minute prior to automatic logout. To avoid an automatic logout, simply move the machine again. Once the automatic logout time elapses, the device will shut down the machine and log out the user.





To log out from a session and shut down the machine, simply swipe down on the main screen. The device will confirm a successful logout with a goodbye message, and the machine will proceed to shut down. After 3 seconds, the screen will revert to the main login screen, prompting the user to scan a fingerprint to log in. The device is now ready for another session.

3.3 Status Bar Symbols

The status bar, located at the top of the screen, remains visible at all times, providing essential information such as the current time and details regarding connectivity and movement status. The following six symbols can appear in the top left and top right corners. Their meanings are explained below.



Wi-Fi (full signal strength)

The currently connected Wi-Fi has excellent signal strength.



Wi-Fi (full signal strength)

The currently connected Wi-Fi has moderate signal strength.



Wi-Fi (full signal strength)

The currently connected Wi-Fi has low signal strength.



Cloud connection established Illuminates when a connection to the cloud server has been established.



Movement (driving)

Shows when the machine is moving.



Movement (parking)

Shows when the machine is idle or if no movement is detected.

4. Menu

In this chapter, we will explore the various menu functions available in your Fingerprint Access 4 / SA device. The menu serves as the central hub for managing users, configuring settings and setting up wireless connectivity. For each menu option we will provide clear explanations and instructions. Let's begin with how to access the menu, followed by an overview of all menu functions available.

4.1 Accessing, navigating and exiting the menu

To access the menu, simply swipe up from the main screen. If you are not already logged in, the device will request to identify yourself with your fingerprint. By verifying your fingerprint, the respective access level will be determined. Fingerprint Access 4 / SA distinguishes between four different access levels, representing two security levels:



Supervisor Access:	User fingerprint is registered as a supervisor.	
	Full menu access is granted.	
Operator Access:	User fingerprint is registered as an operator.	
	Restricted menu access is granted.	
Guest Access:	Fingerprint is not registered with the device.	
	Restricted menu access is granted.	
Initial Start-Up:	No fingerprint has been registered with the device.	
	Restricted menu access + adding users and Wi-Fi is granted.	

To move through the menu, simply swipe to the left for proceeding forward and to the right for backward. The small dots at the bottom of the page show the current position. Enter a sub-menu by simply tapping on the screen.

A sub-menu or the main menu can be exited at any time by swiping down. Certain menu pages contain a roller for selecting options, these pages cannot be exited by swiping down but provide a "Cancel" button.

If the granted access level does not match the expected level, such as a supervisor or an operator accessing the menu as a guest, the scanned fingerprint has not been recognized. If this issue persists, try logging in before swiping up to enter the menu. The menu of your Fingerprint Access 4 / SA device contains nine menu items, along with the Main Menu and Exit page. An overview of the respective menu contents is outlined below. Depending on the access level, different functions might be excluded.





Main Menu

The main menu page is the first page showing after swiping up from the main screen to enter the menu. It appears directly if the user is already logged in; otherwise, it shows after scanning the fingerprint. The access level granted is stated here.

Access Level: all

Adding New User

This sub-menu allows adding a new user to the device. Here, entirely new users will be registered. For adding or replacing fingerprints to existing users, the sub-menu "Manage Fingerprints" should be used.

Access Level: Supervisor and Initial Start-Up



Managing Fingerprints

Adding and replacing fingerprints of existing users is done through this sub-menu. For removing fingerprints from the device, the sub-menu "Delete User" should be used.

Access Level: Supervisor only





Change Access Level

Upon adding a new user, the access level "supervisor" (full menu access) or "operator" (limited menu access) had been chosen. Change the assigned access level of an existing user through this sub-menu.

This sub-menu allows you to delete an entire user from the

Access Level: Supervisor only

Access Level: Supervisor only







Delete User

Fingerprint Access 4 / SA devices are equipped with Wi-Fi functionality for cloud communication. Adding or removing Wi-Fi networks is done here.

Access Level: Supervisor and Initial Start-Up

device, including all registered fingerprints.



Mobile Connectivity

Checking up to 1,000 historical usage entries or obtaining an overview on registered users can easily be done via your smartphone. The sub-menu for "Mobile Connectivity" guides you on how to establish a connection and access the information.

Access Level: Supervisor only



Automatic Logout

Fingerprint Access 4 / SA devices can automatically shut down your machine after a certain time interval of no movement. Adjusting the time interval is done through this sub-menu.

Access Level: all





Language

Fingerprint Access 4 / SA devices come equipped with a multiple language interface. Select your preferred language in the "Language" sub-menu.

Access Level: all

Device Management

Obtaining important device information, adjusting and configuring the device is conducted through the "Device Management" sub-menu.

Access Level: all, restricted sub-menus



Exit Menu

This last menu page leads to exiting the menu and returning to the main screen.

Access Level: all

The following chapters will provide more detailed insights into each menu.

5. User Management

The first four menu items fall under the category of user management. Within this category, users can perform several actions such as adding new users, managing existing user profiles, changing access levels, and deleting entire user profiles. The following sub-chapters will describe each process in detail.

5.1 Adding New Users

To add a new user to the device, enter the sub-menu "Add New User". This sub-menu is only visible to users with supervisor access level or during the initial start-up sequence.



The initial screen of this menu prompts to enter the first and last name of the new user you wish to add. Tap the field of the name you are planning to enter and choose the



respective letters by scrolling the character roller up or down. Simply tap the selected letter to add it to the name. You may add up to 34 characters into each field. The letter, number and character buttons on the left side of the roller change the selectable options between upper- and lowercase letters, numbers and special characters. To delete the last character, press the "<DEL" button at the right side of the roller. With "OK" the names

entered are confirmed and you will proceed to the subsequent screen.

Both name fields need to contain at least one character and the combination of both names needs to be unique to the device. In case a user with exactly the same name is registered, the device alerts that the specific user profile already exists and requests whether a fingerprint should be added.

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Would you like to add a fingerprint?			
			_
No		Yes	



Once a unique name has been entered, an access level needs to be assigned to the new user. Choose "Supervisor" to grant full menu access to the new user. Selecting "Operator" will grant limited menu access as operators are not permitted to add, change or delete other users, nor access Wi-Fi and Mobile Connectivity sections. The access level assigned can be changed at any time through the sub-menu "Change Access Level".

After assigning the access

level, you will be prompted to define the hand and the finger you intend to enroll. Utilize the slider located at the bottom of the screen to switch between the left and right hand options. A specific finger is available for enrollment when it displays a green indicator. If no indicator is shown, that particular finger has already been registered and cannot be



selected. Tap the finger you intend to scan. Upon selection, the indicator will turn white, and the enrollment process will be initiated after 2 seconds. During this time interval you may still change the selection by tapping another finger with a green indicator. If all ten fingerprints for this user have already been enrolled, the device will return an error as no additional fingerprint can be added.

The enrollment process requires scanning the selected fingerprint twice to generate a reliable template. A successful sequence is as follows:





When the device requests the new user to scan the specified fingerprint with the prompt "Scan fingerprint", the user should lightly press the particular fingertip flat onto the sensor module, covering the entire sensor area. The finger should remain pressed onto the sensor until the screen displays 'Successful' and prompts the user to remove the finger, or in case an error message appears.

The device will report an error if a fingerprint is scanned that already exists in the database, as each fingerprint can only be

registered once to the device. It is crucial to ensure that the finger itself is clean and free from any minor injuries or skin cuts that could obstruct the clear visibility of the fingerprint pattern. With the sub-menu "Manage Fingerprints" you have the opportunity to replace enrolled fingerprint templates at any time.

After successfully generating a template from the two scans and securely storing it, your Fingerprint Access 4 / SA device will prompt you to choose whether another fingerprint should be enrolled for the same user. Selecting "Yes" will return you to the selection page for fingers to enroll, while choosing "No" will complete the enrollment process with a confirmation message.



Each device can store up to 120 fingerprints, which translates to 12 users if all ten fingerprints are registered per user. However, it is common practice and usually sufficient to enroll 2-3 fingerprints per user.

Upon scanning the fingerprint, place the fingertip flat onto the sensor, covering the entire area, in a position typically used in everyday operations. The sensor automatically adjusts for rotation while reading. For optimal performance and reliable recognition, it's crucial to consistently place the finger in a similar position on the sensor. Significant deviation from the enrolled position may result in rejection at login or in granting guest access level upon entering the menu.

5.2 Managing Existing Users

Through the sub-menu "Manage Fingerprints" you have the option to add fingerprints to an existing user profile or replace enrolled fingerprints for improved performance. This menu item is only visible to users with supervisor access level.



The initial screen of this menu prompts you to select the user whose fingerprints you wish to edit. The roller shows all users registered to this particular Fingerprint Access 4 /



SA device. Scroll up or down to select the desired username and press the "Manage" button to proceed. To exit this menu, simply tap the "Cancel" button.

As with adding new users, the device will prompt you to select the finger to add or replace the fingerprint of. You can use

the slider at the bottom of the page to choose between the left and right hand. However, unlike adding a new user, this menu allows you to select fingers with already enrolled



fingerprints (shown with a gray indicator) in addition to the available fingers (indicated in green). Simply tap the finger you intend to scan. Upon selection, the indicator will turn white, and the (re-)enrollment process will begin after a 2-second interval. During this time, you can still change the selection by tapping another finger. The (re-)enrollment process requires scanning the selected fingerprint twice to generate a reliable template. A successful sequence is as follows:



When the device requests to scan the specified fingerprint of the user to be edited with the prompt "Scan fingerprint", the user should lightly press the particular fingertip flat onto the sensor module, covering the entire sensor area. The finger should remain pressed onto the sensor until the screen displays 'Successful' and prompts the user to remove the finger, or in case an error message appears. It is crucial to ensure that the finger itself is clean and free from any minor injuries or skin cuts that could obstruct the clear visibility of the fingerprint pattern.

After successfully generating a template from the two scans and securely storing it, your Fingerprint Access 4 / SA device will prompt you to choose whether another fingerprint should be added or replaced for the same user. Selecting "Yes" will return you to the selection page for fingers to edit, while choosing "No" will complete the enrollment process with a confirmation message.



Upon scanning the fingerprint, place the fingertip flat onto the sensor, covering the entire area, in a position typically used in everyday operations. The sensor automatically adjusts for rotation while reading. For optimal performance and reliable recognition, it's crucial to consistently place the finger in a similar position on the sensor. Significant deviation from the enrolled position may result in rejection at login or in granting guest access level upon entering the menu.

5.3 Changing Access Levels

When adding new users to the device, it is mandatory to assign an access level, either as a supervisor or as an operator. Supervisors are granted full menu access and can add, manage, or delete users, as well as access wireless and mobile communication options. Operators, on the other hand, are only granted limited menu access to adjust basic configurations. Through this sub-menu "Change Access Levels", you may reassign access levels of existing user profiles. This menu item is only visible to users with supervisor access level.



The initial screen of this menu prompts you to select the user whose access level you wish to reassign. The roller shows all users registered to this particular Fingerprint



Access 4 / SA device. Scroll up or down to select the desired username and press the "Change" button to proceed. To exit this menu, simply tap the "Cancel" button.

In the subsequent screen, you will be prompted to choose the desired access level for the selected user. Press the "Supervisor" button to change the access level of the particular user to supervisor. Alternatively,

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get assigned?		
]
	Supervisor	
	Operator	

pressing the "Operator" button will grant the particular user restricted access rights to menu functions.

Assigning access rights solely affects the visibility and functionality of menu options. Both users with supervisor and operator access levels are able to log in and operate your machine without restrictions.



Please note that each Fingerprint Access 4 / SA device requires at least one supervisor to be registered. Attempting to change the

access level of the last remaining supervisor to "Operator" will result in an error. A device without a supervisor would no longer be manageable.

Once the access level has successfully been changed, the device confirms with stating the



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user name and the newly assigned access level.

5.4 Deleting Users

If a user profile needs to be deleted entirely from the device, you can do so through the sub-menu 'Delete User.' Prior to deleting a user profile, please note that the particular user will no longer be able to log in to and operate your machine. This sub-menu is only visible to users with supervisor access level.





The initial screen of this menu prompts you to select the user you wish to remove. The roller shows all users registered to this particular Fingerprint Access 4 / SA device. Scroll up or down to select the desired username and press the "Delete" button to proceed. To exit this menu, simply tap the "Cancel" button.

The subsequent screen requests confirmation whether you really want to delete the entire user profile from this device. The selected user

will not be able to log in to and operate your machine afterward! You can proceed with removing the selected user profile by pressing the "Yes" button. However, you can cancel by pressing the "No" button.





Please note that each Fingerprint Access 4 / SA device requires at least one supervisor to be registered. Attempting to delete the user

profile of the last remaining supervisor will result in an error. A device without a supervisor would no longer be manageable.

Once the user has successfully been deleted, the device confirms by stating the user name that has been removed from the device.



6. Connectivity

Your Fingerprint Access 4 / SA device is equipped with advanced connectivity functionality. By setting up Wi-Fi connections, you can facilitate data exchange between your device and the cloud. Cloud connectivity provides additional features such as cloud-based access management, reporting on usage statistics and unlimited usage history tracking. Your device enhances user convenience by providing quick access to usage history and user profiles directly from your smartphone. The following two sub-chapters will guide you through the setup process for both Wi-Fi and Mobile Connectivity.

6.1 Setting up Wi-Fi Connectivity

Connection to the cloud is established through Wi-Fi, which proves particularly advantageous for indoor usage scenarios, notably in warehouses or industrial halls where LTE signals may have limited penetration. Your device offers the capability to store credentials for up to 50 different Wi-Fi networks. This section explains how to add or remove Wi-Fi networks.



When accessing the "Wi-Fi Network" sub-menu, the device will prompt you to choose between adding or removing a Wi-Fi network. To add a new network, simply press the



"Add" button. Conversely, to remove a previously registered network, select the "Remove" button.

Adding a Wi-Fi Network

When adding a new network, the device will conduct an automatic scan of all available Wi-Fi networks within range, presenting their



SSIDs (names) in a scrollable list. Navigate through the list by scrolling up or down to select the desired network. Confirm your selection by pressing the "Add" button. To exit this menu without adding a network, simply press "Cancel."



If the desired network requires a password (WPA2), your Fingerprint Access 4 / SA device will prompt you to enter the network password. Use the character roller to navigate and select each letter of the password by scrolling up or down. Tap the chosen letter to add it to the password field. You can input up to 127 characters. The buttons on the left side of the roller allow you to switch between upper- and lowercase letters, numbers, and special characters. To delete the last character entered, use the "<DEL" button located on the right side of the roller. Press "OK" to confirm the entered password and proceed to the next screen.



The device will now attempt to establish a connection with your Wi-Fi network and verify if internet access is available. Upon successful connection, a confirmation message will be displayed on the screen, indicating that the device is connected to the Wi-Fi

network. However, if the connection to the Wi-Fi network fails or if no

internet connection is detected, the device will display an error message. It's important to note that Wi-Fi networks without active internet connections will not be added, as they cannot facilitate cloud connectivity.



Every Fingerprint Access 4 / SA comes with a preconfigured, default Wi-Fi network. If a network with the following credentials is available, your device will automatically connect to it:

SSID:QOC Biometric AccessPassword:#QOC!biometric

This feature enables a quick way of accessing the cloud for all devices. Simply set up a Wi-Fi network with these credentials at the parking or charging spot of your machines to ensure seamless connectivity.

If you operate your machines beyond the range of Wi-Fi networks, our industrial-style LTE router offers a seamless solution for mobile network connectivity. To obtain more information or to get your device, simply reach out to our technical support team. We will be delighted to assist you.

Removing a Wi-Fi Network

If you need to remove a previously registered Wi-Fi network from your Fingerprint Access 4 / SA device to prevent it from utilizing that network and its internet



connection, simply press the "Remove" button from the "Wi-Fi Network" sub-menu. A list containing all registered Wi-Fi SSIDs

(names) will then be displayed. Scroll up or down the list to select the desired network for removal. To confirm the removal of the selected network credentials, press the "Remove" button. Alternatively, press "Cancel" to exit this sub-menu without taking any actions. Upon successful removal of the



respective Wi-Fi credentials, the device confirms the action with a confirmation message.

6.2 Smartphone Connectivity

Accessing the last 1,000 entries of usage history or obtaining an overview of all registered users per device is quick and easy with your smartphone. Simply enter the





"Mobile Connectivity" sub-menu and ensure you have your smartphone nearby.

Upon entering the "Mobile Connectivity" sub-menu, your Fingerprint Access 4 / SA device will initiate its own Wi-Fi network, named according to its serial number (for example "QOC_9900001").



Take your smartphone and navigate to its Wi-Fi menu. Connect your smartphone to the Wi-Fi network mentioned on your Fingerprint Access 4 / SA device's screen. Depending on your smartphone model and software, it may take a short while until the



Wi-Fi network symbol appears on your phone. Certain models may display an alert indicating that the Wi-Fi network of the Fingerprint

Access 4 / SA device is not connected to the internet. This alert is correct and can be acknowledged.

After successfully establishing the Wi-Fi connection between your smartphone and your Fingerprint Access 4 / SA device, open the camera of your phone and scan the QR code displayed on your device's screen. Your phone will automatically guide you to open your Fingerprint Access 4 / SA device's web page. If your smartphone cannot read the QR code, you can alternatively open your phone's web browser and manually enter "192.168.1.1" into the address field and press enter.



Usage History connected to device QOC99-00001 #1023: Ahmed Youssoufi Login Time: 03/02/2024 14:24 Logout Time: 03/02/2024 16:12 Duration: 1:48h (88% operating) #1022: Josh Whittington Login Time: 03/02/2024 10:43 Logout Time: 03/02/2024 12:05

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#1021: Jeff Yang
Login Time: 03/02/2024 8:17
Logout Time: 03/02/2024 10:31 (auto logout)
Duration: 2:14h (92% operating)

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The web page provided by your Fingerprint Access 4 / SA device provides you valuable information on usage history and registered users.

To access the usage history for your machine, simply press the "View Usage History" button on the web page displayed on your smartphone. Your Fingerprint Access 4 / SA device will stream up to the last 1,000 usage logs directly to your smartphone.

The most recent usage history entry log is displayed at the top of the page. If the last user is still logged in to your machine, it will only show their name and login time. For all completed sessions on your machine, the usage

history entry includes the operator's name, login/logout time, and the duration of usage. If an automatic logout was conducted, the comment "(auto logout)" is displayed behind the logout time. Additionally, your Fingerprint Access 4 / SA device calculates the ratio of operating time versus the entire usage time and displays it behind the duration.

If you have set up a Wi-Fi connection to your Fingerprint Access 4 / SA device, the entire usage history will be stored in the cloud. However, without a cloud connection, your device will start overwriting historical usage datasets after the 1,000th entry.

To return to the main page, you can use the back function of your smartphone's web browser or simply press the "Back" button located at the bottom of the page. $\leftarrow \rightarrow C$ 192.168.1.1 **User Overview** connected to device QOC99-00001 #112: Ahmed Youssoufi (Supervisor) Language: English Auto Logout: 15 minutes **Registered Fingerprints:** Right Hand, Thumb Right Hand, Index Finger Right Hand, Middle Finger #412: Jeff Yang (Operator) Language: Chinese Auto Logout: Off **Registered Fingerprints:** Right Hand, Thumb **Right Hand, Index Finger** Left Hand, Thumb Left Hand, Index Finger

By pressing the "View Users" button from the main page, you can obtain an overview of all users registered to your device along with their respective roles, logout time, language setting, and enrolled fingerprints.

Your Fingerprint Access 4 / SA device will stream a list of its registered users to your smartphone's web browser. The list includes the cloud ID, followed by the user's first and last name, their role (supervisor/ and operator). If the user profile has never been synced with the cloud, the cloudID shows "0".

Additionally, the user's system language and preferred auto logout time interval are displayed, followed by the list of registered fingerprints.

7. User-specific Settings

The menu of your Fingerprint Access 4 / SA device offers items for configuring user-specific settings, which are saved in the profile of each respective user and loaded upon login.

7.1 Automatic Logout

The integrated motion sensor of your Fingerprint Access 4 / SA device distinguishes between machine movement and idle time. To enhance safety, the automatic logout function automatically shuts down the machine after a certain period of inactivity. Users can activate this functionality and choose their desired logout time interval through the 'Automatic Logout' sub-menu. This menu item is accessible to users of all access levels.



Time intervals can be conveniently selected between 5 and 60 minutes in 5-minute increments using the slider bar at the bottom of the screen. Simply select the desired



time period and press "Confirm" to save the settings. To deactivate the automatic logout functionality, move the slider bar all the way

to the left, indicating 'Off'. After successfully saving the newly selected time interval, the device acknowledges the change with a confirmation message.

Automatic logout intervals are stored in the user profile. Therefore, ensure that the user is

logged in to change the automatic logout settings for that respective operator. This feature enables all users to adjust to their preferred automatic logout interval.



7.2 Language

The Fingerprint Access 4 / SA devices support multiple interface languages, ensuring easy accessibility and operation for users across different regions and language preferences. Through the "Language" sub-menu, users can conveniently choose their desired interface language. This menu item is accessible to users of all access levels.



The roller shows the supported language options. Select the desired language by scrolling up or down and press the "Confirm" button once you have selected your



preferred language.

The device confirms the selected option and immediately switches all interface pages to the selected language.

Please note that language preferences are stored with the user profile of respective users. If the language is changed while a particular



user is logged in, the selected language will be saved and loaded on subsequent logins. However, if the language is changed while the device is logged out and the machine shut down, the language settings will only be applied to the device itself.

8. Device Management

Accessing important information and adjusting basic settings on your Fingerprint Access 4 / SA device is done through the "Device Management" sub-menu. This chapter will explain the individual information pages and functionalities in detail. While this menu item is accessible to users of all access levels, please note that certain menu items may have restrictions applicable only to users with supervisor access rights.



8.1 Status Information

The subsequent four menu pages provide essential information regarding your device's status, storage, movement, and connectivity. Each individual page is introduced as follows:

8.1.1 Device Information

This page displays essential information about your Fingerprint Access 4 / SA device. The serial number serves as the unique identifier for your device and, along with the software version, provides important information in case technical support is required. Additionally, the operating hours counter shows the total time your device has been in use, while the logins counter increments each time the device activates your machine.



Furthermore, each time your device is restarted, the session ID increases. It's important to note that all three counters cannot be reset when reverting the device to factory settings, as they provide crucial data on the device's utilization and aging.

8.1.2 Storage

Your Fingerprint Access 4 / SA device can store up to 120 individual fingerprint templates. Since theoretically 10 fingerprints per user could be registered, this would



result in a minimum of 12 user profiles. However, it is common practice to register 2-3 fingerprints per user to have one or more backups in case one fingerprint becomes inoperable due to small skin cuts or minor injuries. This allows for the registration of about 40 - 60 different users per device. The actual storage usage is shown on this page. The number of fingerprints stored on the

device represents the number of individual fingerprint templates compared to the storage limit of 120. Below that, it is shown how many users are registered and the distribution between supervisors and operators.

8.1.3 Movement Levels

The internal movement sensor of your Fingerprint Access 4 / SA device distinguishes between movement and idle states of your machine. These measurements are crucial



for usage statistics and automatic logout functionality. The identified movement/idle state of your machine is indicated by the small symbol at the top right of the screen. For more detailed information on the status bar symbols, refer to chapter 3.3.

Three values are displayed on the screen: parking, actual, and driving. The parking and driving values are the average values

measured by your device based on your particular machine's movements, while the actual value represents the currently measured movement value. These values do not come in a specific unit, as they intelligently combine gyroscopic and acceleration data for the best performance evaluation. If you notice that your device does not reliably detect or correctly represent your machine's movement, you may want to reset the measured values to factory defaults. Simply press the 'Reset Movement Levels' button to reset the values and initiate the intelligent learning process again.

8.1.4 Wi-Fi

If you have Wi-Fi connectivity configured (refer to chapter 6.1), this page provides more detailed information on your current Wi-Fi connection. The status field indicates whether a connection has been established or if the device is not connected to any



network. In the case of a successful connection, the Wi-Fi signal strength is displayed and graphically represented by a status bar. Wi-Fi signal strengths are classified into three categories: - Good signal strength: >= -50 dBm

- Moderate signal strength: > -70, < -50 dBm
- Low signal strength: <= -70 dBm

With a low signal strength, data exchange between your device and the cloud might be interrupted. However, the device is capable of reconnecting to any other network to maintain connectivity. The network field displays the SSID (name) of the Wi-Fi network currently connected to, and if this network provides access to the internet, the external IP address will be shown below. For cloud connectivity, an internet connection is required.

8.2 Device Configuration

The following menu options are part of configuring your Fingerprint Access 4 / SA device. While the menu item to calibrate the touch screen is accessible to users of all access levels, adjusting the system time may only be conducted by supervisors.

8.2.1 Calibrating the Touchscreen

To ensure accurate and precise input recognition, the touch screen might require calibration once in a while. Calibration essentially aligns the touch screen coordinates with the display coordinates, ensuring that when you touch a specific point on the screen, the device accurately interprets that input as occurring at the corresponding point in the digital interface. Over time, factors such as wear and tear, temperature changes, and environmental conditions can affect the accuracy of touch screen input. Calibration helps compensate for these factors and ensures consistent and reliable performance of the touch screen interface.

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Once you notice that the reaction of your device after touching, sliding or swiping on the screen is not as expected any longer, it is recommended to conduct the calibration

procedure.

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Calibration is conducted based on three screen coordinates that need to

be pressed subsequently. Upon entering the calibration sub-menu, the device prompts three times to press the center of a white circle displayed at different positions on the screen. It's essential to try to press the center of that circle as accurately as possible for the best



results. After the calibration sequence has been completed, the new touch screen calibration factors are saved. You can cancel the calibration procedure at any time by swiping down on the screen.

8.2.2 Adjusting the Clock

Your Fingerprint Access 4 / SA device is equipped with a system clock that is able to retain the time even during power cuts. A correct time setting is essential for reliable



usage history records and operating statistics. You can adjust the time by pressing the "Adjust clock manually" button at the bottom of the page.

The device requests to adjust the current date by selecting the day, month and year through the respective rollers displayed.

Scroll up or down on the roller until the correct value has been selected. Confirm the selection by pressing "Next" and the device will show the subsequent screen prompting to adjust the current time. Scroll up or down on the rollers for hour, minute and second to select





the correct time. Confirm your selection by pressing "Next".

The final screen prompts you to select your current time zone. Setting the correct time zone is crucial for the automatic adjustment of time via the network time server. All time zones are referenced to UTC (Coordinated Universal Time), the primary standard used worldwide and the basis for other time zones. Below is a list of major time zones around the world and their offset from UTC:

- **GMT (Greenwich Mean Time):** The time at the Prime Meridian, passing through Greenwich, London. It is often used interchangeably with UTC.

- Western European Time (WET): Used in Portugal, Ireland, and the UK during standard time. It is typically UTC±0.

- **Central European Time (CET):** Used in much of Western and Central Europe. It is typically UTC+1 during standard time and UTC+2 during daylight saving time.

- Eastern European Time (EET): Used in Eastern Europe and some countries in the Middle East. It is typically UTC+2 during standard time and UTC+3 during daylight saving time.

- Eastern Standard Time (EST): Used in parts of North America, including eastern regions of the United States and Canada. It is typically UTC-5 hours.

- Central Standard Time (CST): Used in parts of North America, including central regions of the United States and Canada. It is typically UTC-6 hours.

- Mountain Standard Time (MST): Used in parts of North America, including mountainous regions of the United States and Canada. It is typically UTC-7 hours.

- Pacific Standard Time (PST): Used in parts of North America, including western regions of the United States and Canada. It is typically UTC-8 hours.

- Indian Standard Time (IST): Used in India. It is typically UTC+5:30.

- China Standard Time (CST): Used in China. It is typically UTC+8.

- Japan Standard Time (JST): Used in Japan. It is typically UTC+9.

- Australian Eastern Standard Time (AEST): Used in Eastern Australia. It is typically UTC+10 during standard time and UTC+11 during daylight saving time.

- New Zealand Standard Time (NZST): Used in New Zealand. It is typically UTC+12 during standard time and UTC+13 during daylight saving time.

To confirm the adjustment made to your device's system clock, press the "Save" button.

If your device is connected to a Wi-Fi network with internet access, the current time will automatically be obtained from the time server, overriding any manual time adjustments. Therefore, it is essential to ensure that the time zone is correctly set to receive accurate local time from the time server.

If your country observes Daylight Saving Time, you can enable or disable it using the "DST" slider on the Time & Date menu page.

8.3 Activation Code

All Fingerprint Access 4 / SA devices are equipped for seamless cloud connectivity. The cloud integration offers advanced functionalities including cloud-based access



management, usage statistics reporting, and unlimited history tracking.

To link your device with your QOC Access Management Cloud Account, each device is provided with a unique activation code. Simply press the "Show Activation Code" button to reveal this code. Upon registering your device through the web portal, you will

be prompted to enter both your device's unique serial number and the activation code.

It's important to note that each activation code is exclusive to a single device and cloud account. Therefore, please refrain from sharing the activation code until your device has been successfully registered with the cloud, as it could potentially be utilized by unauthorized parties. This menu item is restricted to users with supervisor access level.





8.4 Resetting the Device

Resetting your Fingerprint Access 4 / SA device to factory settings may become necessary in various situations. Whether you are preparing to sell the machine or encountering a scenario where the only registered supervisor is unavailable for an extended period. To initiate a factory reset, navigate to the "Reset Device" menu option. This process clears all user data and restores the device to its original settings.

To execute the factory reset, you will need the unique Reset PIN assigned to your

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device. This PIN is printed on the type label located at the back of your device.

After pressing the "Reset Device" button, your Fingerprint Access 4 / SA device prompts you to enter the 16-digit Reset PIN. Use the keypad displayed on the screen to input the Reset PIN digit by digit. You can remove the last number entered by pressing the "<DEL" button. Once all digits are entered, press the "OK" button to confirm and proceed with the factory reset process.

The device asks you whether the device should really be reset to factory settings.

Important!

All data will be permanently deleted during the factory reset process. This means that all previously registered users will no longer be able to log in to your machine. Please proceed with the factory reset process only if you fully understand these consequences.



You have the option to cancel the factory reset process by pressing the "No" button or by sliding down on the screen. If you decide to proceed, simply press "Yes" to confirm, and your Fingerprint Access 4 / SA device will initiate the factory reset.

Important!

Resetting the device can take up to 2 minutes to complete. During this time, the device will not be responsive, and it will restart automatically once the resetting process has been completed. It is crucial that you do not disconnect the power supply during this period.

9. Troubleshooting

Despite our best efforts to design a reliable and user-friendly device with comprehensive documentation, questions or occasional issues may arise during operation. In this chapter, we answer your questions and provide guidance on identifying and resolving issues that you may encounter. By following the steps outlined in the solutions, you can quickly address any challenges and ensure optimal performance of your Fingerprint Access 4 / SA device.

9.1 Common Questions, Issues and Solutions

Issue: The device shows "fingerprint unknown" and prevents login, even though the fingerprint had been registered before.

Solution: The device is not able to detect the fingerprint reliably due to:

- a) The finger not being positioned on the sensor in a similar location as during enrolment.
- b) The finger itself being dirty or damaged by small skin cuts / injuries.
- c) The skin being too dry and brittle.

Ensure that you place your finger completely over the sensor and touch with your fingertip flat onto it. The device automatically equals out rotation.

If the skin of your fingertip is damaged, try another of your registered fingerprints as damaged skin might prevent reliable detection.

In case your skin is too dry and brittle, the features of your fingerprint will become hard to detect. Moisten your finger with some liquid or a wet cloth. For your own skin care consider applying hand cream regularly.

If the error persists, consider enrolling the affected fingerprint through the "Manage Fingerprints" sub-menu again.

- Issue: The automatic logout function starts counting down and finally logging out during machine operation.
- Solution: The internal motion sensor distinguishes between the operating and idle state of your machine. Advanced algorithms continuously learn

about your machine's movement pattern to differentiate both states reliably. In case your machine operates under very smooth and calm conditions, the sensor might not be able to trigger the movement level threshold. You should try to reset the movement levels to factory settings through sub-menu "Device Management" - "Movement Levels" and press the button "Reset Movement Levels". In case the issue persists, you can deactivate the automatic logout function through sub-menu "Automatic Logout" by moving the slider to "Off".

- Issue: As a registered supervisor I am identifying my fingerprint for accessing the menu, however the menu is restricted and shows "Guest Access Level".
- Solution: The device was not able to detect your fingerprint reliably and therefore didn't match with your registered user profile. Instead your fingerprint was treated as "unknown" and guest access had been granted. Try to login first and then swipe up to enter the menu. In this case another identification of your fingerprint becomes obsolete.
- Issue: I adjusted the automatic logout interval to 30 minutes, however the device still automatically logs out after another period of time.
- Solution: The automatic logout intervals are saved with each user profile and can be different among users. Adjusting the automatic logout interval while being logged in saves the selected time in your user profile. This time interval will be loaded upon login.
- Issue: I am trying to access usage history and user profiles though my smartphone but it cannot access the data.
- Solution: Upon starting mobile connectivity through the "Mobile Connectivity" sub-menu, the Fingerprint Access 4 / SA device opens a Wi-Fi access point to connect with your smartphone. In the Wi-Fi settings of your smartphone select to connect with Wi-Fi

"QOC_########" (matching the serial number of your device). Depending on your smartphone model it might take up to one minute until a Wi-Fi connection has been established. Once your smartphone shows a successful connection to your device's Wi-Fi, scan the QR code shown on the display and open the website to access usage history and user profiles.

- Issue: I have manually adjusted the system clock, but the adjusted time consistently gets overwritten, and the device displays a different time than what I set.
- Solution: If your device is connected to a Wi-Fi network with internet access, it automatically obtains the current time from the network time server. As a result, manual adjustments to the system clock will be overwritten. However, it's important to ensure that you have set the correct time zone, as an incorrect time zone setting may result in the network time server providing an incorrect time. For instructions on how to set the time zone, please refer to chapter 8.2.2.
- Question: I would like to reset my device to factory settings but I don't know the Reset PIN. Where can I find the Reset PIN?
- Answer: The Reset PIN of your Fingerprint Access 4 / SA device is printed on the type label at the back of your device. Alternatively you may contact the technical support at any time and receive the Reset PIN by providing the serial number of your device.
- Question: I would like to sell my machine, but I need to delete all registered fingerprints before. How can I delete the device's database?
- Answer: You can simply reset the entire device to factory settings by entering the sub-menu "Device Management" - "Reset Device". After entering the Reset PIN printed on the type label at the back of your device, your Fingerprint Access 4 / SA system will erase all data and revert to its

original factory state.

- Question: I need to access my machine without someone with their registered fingerprints being available. Is there a way to manually override the Fingerprint Access 4/ SA device?
- Answer: The purpose of the Fingerprint Access 4 / SA system is to prevent unauthorized usage of your machine. Therefore, there is no manual override function. You can consider resetting the entire device to factory settings. The machine will become accessible after, however the device's user database has then been erased. It is highly recommended to only use this procedure in case of an emergency or when renting or selling your machine to a third party.
- Question: I operate a battery-electric machine and the device will be out of power everytime when I disconnect the battery. Will it save all data?
- Answer: Yes, Fingerprint Access 4 / SA devices will save all important data in permanent, non-volatile memory. Your fingerprint database will be kept even if the device is out of power.
- Question: I need to transport my machine to a third party and the fingerprint database is empty. How can I move my machine with Fingerprint Access 4/SA being installed?
- Answer: As long as your Fingerprint Access 4 / SA device is in factory state or has been reset to factory settings it automatically activates your machine upon power-up. Thereby you can transport your machine with everyone being able to operate it. The actual functionality to login via fingerprint starts once the first user has been registered.

- Question: My machine is operating with 48V battery voltage. Can I use Fingerprint Access 4 / SA with it?
- Answer: Yes, the device is designed to accommodate input voltages ranging from 18 to 75VDC, with power consumption potentially reaching up to 6W.

9.2 Technical Support Contact Information

In case we have left any question unanswered, just reach out to our technical support. E-Mail us to:

support@QOCtechnologie.de

or

support@QOC.com.hk

You might want to check our website for latest information, FAQs, documents or product highlights at:

www.QOCtechnologie.de

or

www.QOC.com.hk

Feel free to reach out to us for any ideas on product improvements and additional features desired by you! We are happy to hear from you!



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