MorphoAccess® SIGMA Series

Installation Guide

Warning

Revision History

The table below contains the history of changes made to the present document.

Version	Date	Reference	Description
01	December 2013	SSE-0000100543-1	Document creation
02	February 2014	2014_0000000606-V1	Minor updates, GPIO wiring update
03	May 2014	2014_0000000606-V2	Precision on installation for UL294 conformity Warning on space reservation in the wall for cable passage Warning on POE module connection SDAC schematic correction Recommendation on proximity of radio product
04	November 2014	2014_0000000606-V3 - Draft	Add UL information
05	February 2015	2014_0000000606-V4	Update wiring information for SDAC motion sensor option (Figure 12: Ground wiring, Figure 25: SDAC wiring)
06	October 2015	2014_0000000606-V5	Authorized User List and banned card list PSE standard clarification

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October 2015

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MorphoAccess® SIGMA Series Terminal

Congratulations for choosing a MorphoAccess® SIGMA Series Automatic Fingerprint Recognition Terminal.

MorphoAccess® SIGMA Series provides an innovative and effective solution for access control applications using Fingerprint Verification or/and Identification.

Among a range of alternative biometric technologies, the use of finger imaging has significant advantages: each finger constitutes an unalterable physical signature, developed before birth and preserved until death. Unlike DNA, a finger image is unique to each individual - even identical twins.

MorphoAccess® SIGMA Series integrates Morpho image processing and feature matching algorithms. This technology is based on lessons learned during 25 years of experience in the field of biometric identification and the creation of literally millions of individual fingerprint identification records.

We believe you will find the MorphoAccess® SIGMA Series fast, accurate, easy to use and suitable for physical access control.

The MorphoAccess® SIGMA Series offers the following advantages:

- high quality optical sensor (IQS quality sensor),
- supports multiple input/output interfaces used in the physical access control industry,
- Local Area Network interface for easy interaction with other host systems ; LAN and WLAN possibilities (Wi-Fi™ and 3G as an option),
- compact size for easy installation and integration into your available office space,
- intuitive man machine interface with touch panel and display, that is easy to use in both setup and operational modes,
- open architecture, with dedicated applications implemented via MorphoAccess® SIGMA Series Software Development Kit.

To ensure the most effective use of your MorphoAccess® SIGMA Series terminal, we recommend that you read this Installation Guide completely.

Scope of the document

This guide deals with the installation of MorphoAccess® SIGMA Series, which is made up of following list of products:

		Biometrics	Contactless smartcard reader			Water Resistant
			iCLASS®	MIFARE® DESFire® NFC	Prox®	
MA SIGMA Series	MA SIGMA	✓				
	MA SIGMA WR	✓				✓
	MA SIGMA iClass	✓	✓			
	MA SIGMA iClass WR	✓	✓			✓
	MA SIGMA Multi	✓		✓		
	MA SIGMA Multi WR	✓		✓		✓
	MA SIGMA Prox	✓			✓	
	MA SIGMA Prox WR	✓			✓	✓

NOTA :   *MA means MorphoAccess®*
         WR means Water Resistant

Safety Instructions

The installation of this product should be made by a qualified service Person and should comply with all local regulations.

It is strongly recommended to use a class II power supply at 12V-24V and 1A. min (at 12V) in conformity with Safety Electrical Low Voltage (SELV). The power supply cable length should not exceed 10 meters.

This product is intended to be installed with a power supply complying with IEC60950-1, in accordance with the NEC Class 2 requirements; or supplied by a listed IEC60950-1 external Power Unit marked Class 2, Limited Power source, or LPS and rated 12VDC, 1A minimum or 24VDC, 0,5A minimum.

In case of building-to-building connection it is recommended to connect 0V to ground. Ground cable must be connected with the terminal block Power Ground.

Note that all connections of the MorphoAccess® SIGMA Series terminal described hereafter are of SELV (Safety Electrical Low Voltage) type.

For UL294 installation, length of communication (RS422-RS485/Wiegand) and I/Os (GPI/GPO) cables must not exceed 30 meters.

Wiring Recommendations

Morpho recommends using a gauge AWG20 for 12V power supply when POE supply is not used.

The voltage specified is the one measured on the product block connector: 12V-24V (-15% / +10%)

For information, this table shows the maximum drop voltage observed on the terminal MorphoAccess® SIGMA Series:

Gauge AWG	Diameter (mm)	Maximum drop voltage @ 1m (V)	Maximum drop voltage @ 5m (V)	Maximum drop voltage @ 10m (V)
20	0.81	0.03	0.17	0.33
22	0.64	0.05	0.26	0.53
24	0.51	0.08	0.42	0.84
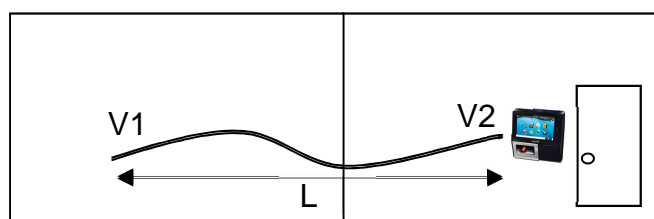
Drop voltage = loss of power due to wire resistance and its length: V2 = V1 – Drop voltage

Caution with battery usage

**CAUTION:
RISK OF EXPLOSION IF BATTERY IS REPLACED
BY AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING
TO THE INSTRUCTIONS**

Battery must be an UL certified reference.

Caution with Power over Ethernet (POE) usage

After use, the temperature of the POE module (optional) may be high: after power cut off, wait 5mn before working on connectors area.

Europe information

Morpho hereby declares that the MorphoAccess® SIGMA Series terminal has been tested and found compliant with following listed standards:

- EMC Directive 2004/108/CE.
- R&TTE Directive (1999/5/CE).
- ROHS Directive 2011/65.

USA information

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Responsible Party:

Morpho,

11, boulevard Gallieni

92130 Issy-les-Moulineaux – France

NOTA :   *This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy*

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and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Shielded cables must be used with this unit to ensure compliance with category B FCC restrictions.

Canada information

WARNING TO USERS IN THE CANADA / ATTENTION POUR LES UTILISATEURS AU CANADA

This device complies with Industry Canada license-exempt RSS standard(s), and with ICES 003 standard for version(s) without RFID reader. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

UL information

This product has been evaluated by UL regarding "UL 294 Access Control System Units ; Six Edition ; Dated May 10, 2013" and "UL 294B Power Over Ethernet (POE) Power Sources for Access Control Equipment" First Edition Dated May 10, 2013" on the following functionality

Biometric Access granted/ Access Denied
Pin Code Access granted/ Access Denied
Actuation of the onboard Relay 1/2 (Based on Valid Access

Credential) Prox™, MIFARE™, iCLASS™
GPIO Output was verified
GPIO Input was verified.
RS422/RS485; Wiegand and Ethernet communication were verified with a supplemental computer employing the vendor's proprietary software MBTB. UL version 2.0.4.0.

Please note that the following functions have not been evaluated by UL LLC

USB ports and its functionality
LOGS ; 3G (Cellular) Key functionality
Video/ Facial Recognition/Audio functions
FIPS 201 Personal identification verification features of this unit
NFC on this product (Near Field Technology)
The following Communication: Wi-Fi was not verified by UL. To List the product and accept the communication protocols we would need to evaluate the RS485, Wiegand, and Ethernet with an UL Listed access control unit

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Recommendations for terminal implementation

Every installation is unique. Sometimes the issues are well defined and can be handled in a standard fashion; sometimes the issues are very specific and may not be immediately recognizable.

Morpho recommends following these steps for a successful installation:

- **Plan the installation** - Choose the type of hardware required, decide if a network is required, and decide on the location and number of required terminals.

- **Unpack all items** - Unpack all items and check against the packing list.

- **Install network hardware components** - Install the cabling and components needed to run the system.

- **Install software** - Install the software needed to set up the terminals.

- **Pre-configure device** - Connect the terminals to the Ethernet, supply power to the terminals, and pre-configure the terminals.

- **Mount devices** - Mount the terminals in their final locations

- **Power distribution and device hook up** - Connect the terminals wiring via the back panel.

- **Power-up procedure** - Check the power connections, verify if battery is attached and then start the system safely. First Boot Assistant screen is displayed, where you can perform fundamental configuration.

To secure properly an access, Morpho recommends installing the MorphoAccess® SIGMA Series terminal as a part of the typical Access Control environment, described in the figure below.
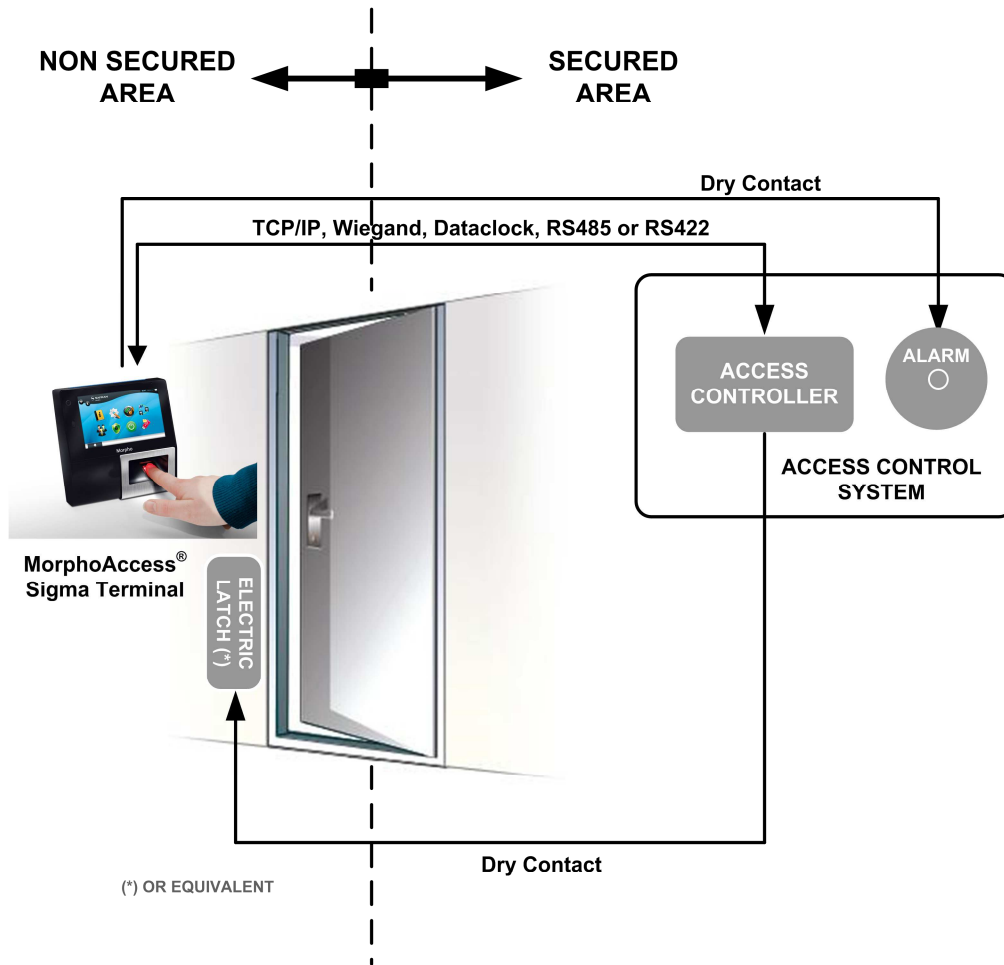
Figure 1: Implementation Recommendations

This environment comprises:

The MorphoAccess® SIGMA Series terminal itself

Its role is to perform one-to-many biometric identification or one-to-one biometric verification, i.e. to identify the individual who is presenting his finger on the terminal sensor by comparing his biometric data with the references previously stored in the terminal database (in the form of biometric templates) or to verify his identity using the reference stored in a contactless card presented to the terminal.

An Access Controller (3rd party product)

The Controller is the element which controls the access rights of the individuals to the secured area. For that reason, it must be located in the secured area.

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The individuals who are authorized to access the secured area have their User ID listed in a so-called "Authorized User List" (in contrast with a banned card list).

The MorphoAccess® SIGMA Series terminal and the Controller are communicating according to one of the TCP/IP, Wiegand, Dataclock or RS485 protocols:

- The MorphoAccess® SIGMA Series terminal sends User ID to the Controller
- The Controller sends its decision to the MorphoAccess® SIGMA Series terminal (which displays access granted or access denied depending on the answer)
- The MorphoAccess® SIGMA Series terminal sends an alarm signal to the Controller as soon as a malicious operation is detected (terminal pulled out from the wall or opened for maintenance operations); refer the paragraph dealing with anti-pulling and anti-tamper switches for more explanations.

The Controller is part of the global Access Control System of the secured area, which for instance can administrate the Authorized User List of the Controller and receive diaries of the decisions taken by the Controller.

An Alarm (3rd party product)

This element is connected to the MorphoAccess® SIGMA Series terminal through a dry contact.

The MorphoAccess® SIGMA Series terminal sends the command to activate the Alarm as soon as a malicious operation (terminal pulled out from the wall or having its bottom cover opened out of maintenance operations) is detected; refer the paragraph dealing with anti-pulling and anti-tamper switches for more explanations.

A Door Electric Latch or equivalent (3rd party product)

This element once activated opens the access. The Controller is the one which sends the command to activate the latch if access is granted (i.e. if the individual's User ID is listed in the Controller Authorized User List). Connection between these two elements is done through a dry contact.

Section 2 : General Description

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Box opening

At the box opening, components shall be extracted from the protection casing as depicted in the pictures below.

Extract the wall plate (which is not screwed to the terminal) and keep it separate until the installation of the terminal is completed. The screwing of the product to the wall plate is the last stage of the installation.

The protection accessory provided is optional: it is recommended for outside installation (to protect biometric module against water)

Figure 2: Box Opening

Components of the initial package
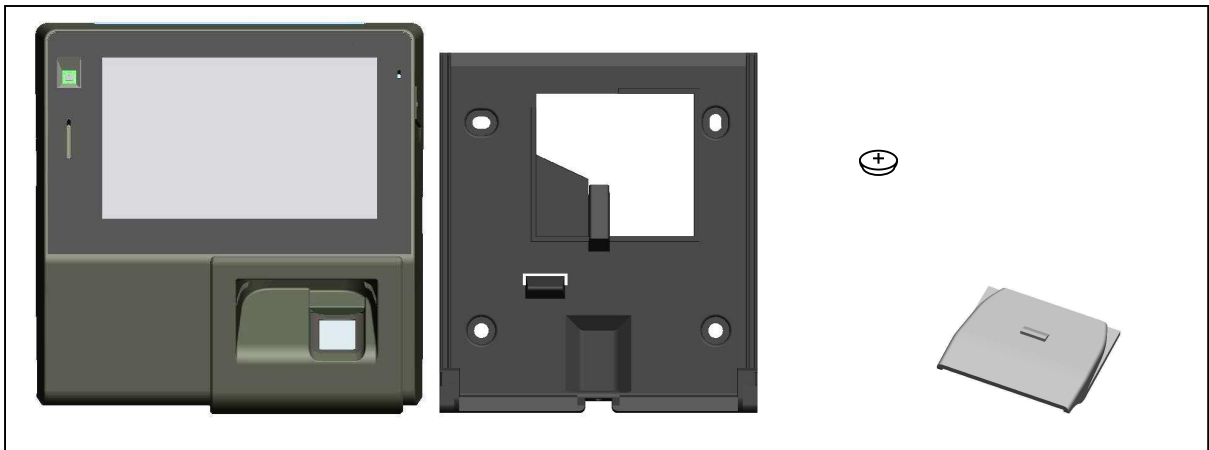
Figure 3: Box Content

1. One (1) Terminal's body
2. One (1) Wall frame
3. One (1) Battery
4. One (1) Protection accessory (for WR products only, which usage is optional)

Terminal's front view description

USB port (for configuration and settings with a USB mass storage)

Micro

Camera

Speaker

LCD

Touch panel

Sensor protection cap (optional, WR only)

Contactless card area

Logo on cover when available

Biometrical sensor (optical)
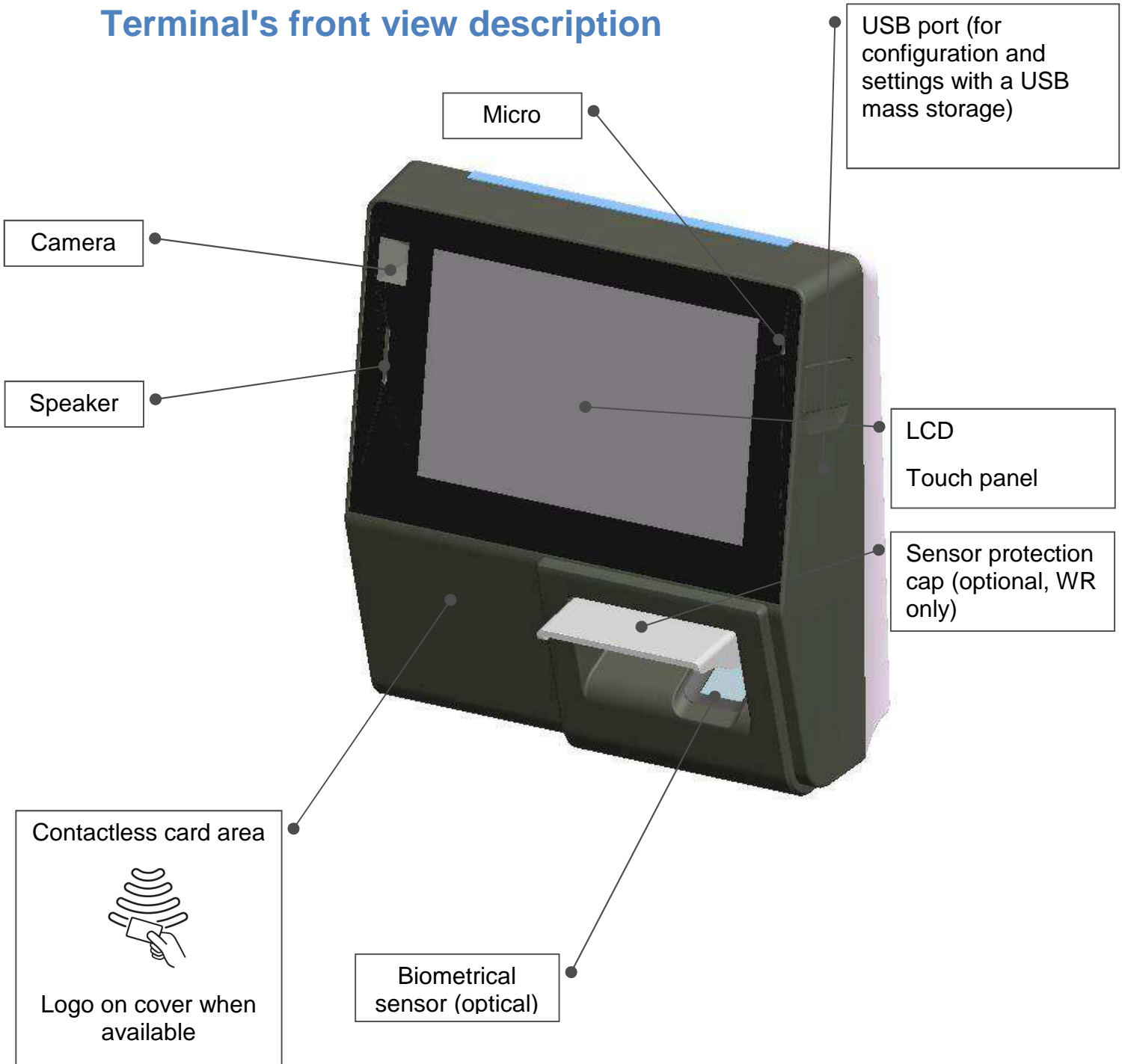
Figure 4: MorphoAccess® SIGMA Series terminal front view

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Terminal's rear view description

Battery installation: (+) in front of user

RJ 45

Reset button

USB port (for configuration and settings with a USB mass storage key, or for installation of a Wi-Fi™ USB dongle)

Battery

POE (Optional – supplied separately)

Micro SD card slot

Terminal blocks

Anti-tamper / Anti-pulling switches
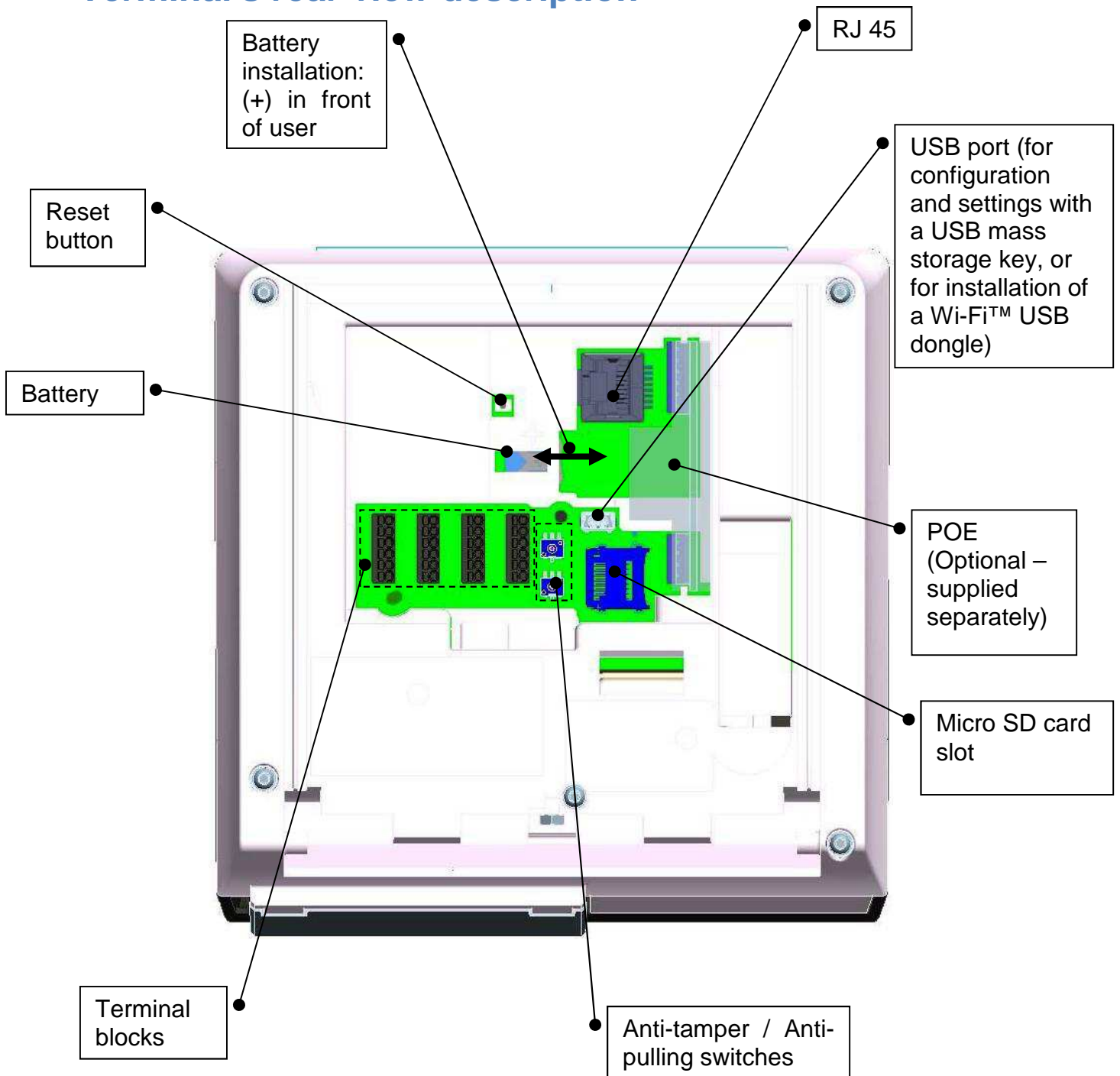
Figure 5: MorphoAccess® SIGMA Series terminal rear view

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MorphoAccess® SIGMA Series Technical Characteristics

Item	Description
Access control modes	Identification (search for fingerprint in a local database)
	Authentication with contactless smartcard, with or without fingerprint check (only if terminal is equipped with a contactless smartcard reader)
	Multi-factor: identification or authentication (only if terminal is equipped with a contactless smartcard reader)
	Proxy: the access control check is fully driven by a remote system
Man Machine Interface	5" WVGA color Touch-screen
	VGA camera for face image capture and videophone
	Loudspeaker & Microphone
Biometrics	Morpho Compact Biometric Module inside: 500dpi, 256 gray levels optical sensor. FBI PIV IQS quality sensor.
	False Acceptance Rate (FAR) adjustable from 1% down to 10-7%
	Database capacity: 3,000 users (standard) and up to 100 000 users (with specific license and Micro SD card in the terminal).
Log capacity	100 000 records (standard) and up to 1 000 000 (with specific license and Micro SD card in the terminal)
LAN/WLAN connection	For terminal configuration and data transfer: Ethernet 10/100 Base T (MDI, MDI-X) Or Wi-Fi™ Wireless LAN (option), WEP, WPA (PSK) and WPA2 (PSK) encryption available Either TCP, SSL or TLS protocol
RFID cards (depending on product version)	MIFARE® 1k, 4k MIFARE® PLUS S (SL1, SL3) 2k, 4k
	DESFire® 2k, 4k, 8k

	HID iCLASS$^{®}$ 16kb, 32kb
	HID Prox
Serial port	The serial port supports WIEGAND, DATACLOCK (ISO2), RS422 and RS485 protocols
Output relay switches	Access granted: 1 switch (normally "open")
USB host port	External port for terminal configuration through a USB mass storage key
	Internal port to connect an external Wi-Fi™ USB dongle using an adapter cable.
Input signals	LED1/LED2 to activate the access granted relay
Power supply	12 to 24 V DC power supply (1A min @12V)
	Or RJ45 connector with optional Power Over Ethernet component
Security of the terminal	Anti-tamper-pulling switches. Tamper-pulling detection: one relay switch ("open" in default state).
Size and weight	W x H x D: 150.5mm x 152.5mm x 57.5mm (5,92" x 6,00" x 2,26")
	Weight : ~580g
Environmental conditions	Operating temperature -10 °C to + 55 °C (14°F to 131°F)
	Operating humidity 10 % < RH < 80 % (non condensing)
	Storage temperature -25 °C to + 70 °C (-13°F to 158°F)
	Storage humidity 5% < RH < 95 %
	IP65 rated for WR models (once wall-mounted)
	The terminal should be installed in controlled lighting conditions. Avoid direct exposure to sunlight or to UV lights.
Certifications	CE, IEC6095-1, FCC Part 15, RSS210, Issue8 : 2010, RoHS, REACh, WEEE

Section 3 : Installation Procedure

Before proceeding to the installation

- Make sure that you have all the components described in "Components of the initial package" section at your disposal.

- Remove the wall plate. Keep this element at hand.

- Remove the screw at the bottom of the product. Keep this element at hand.
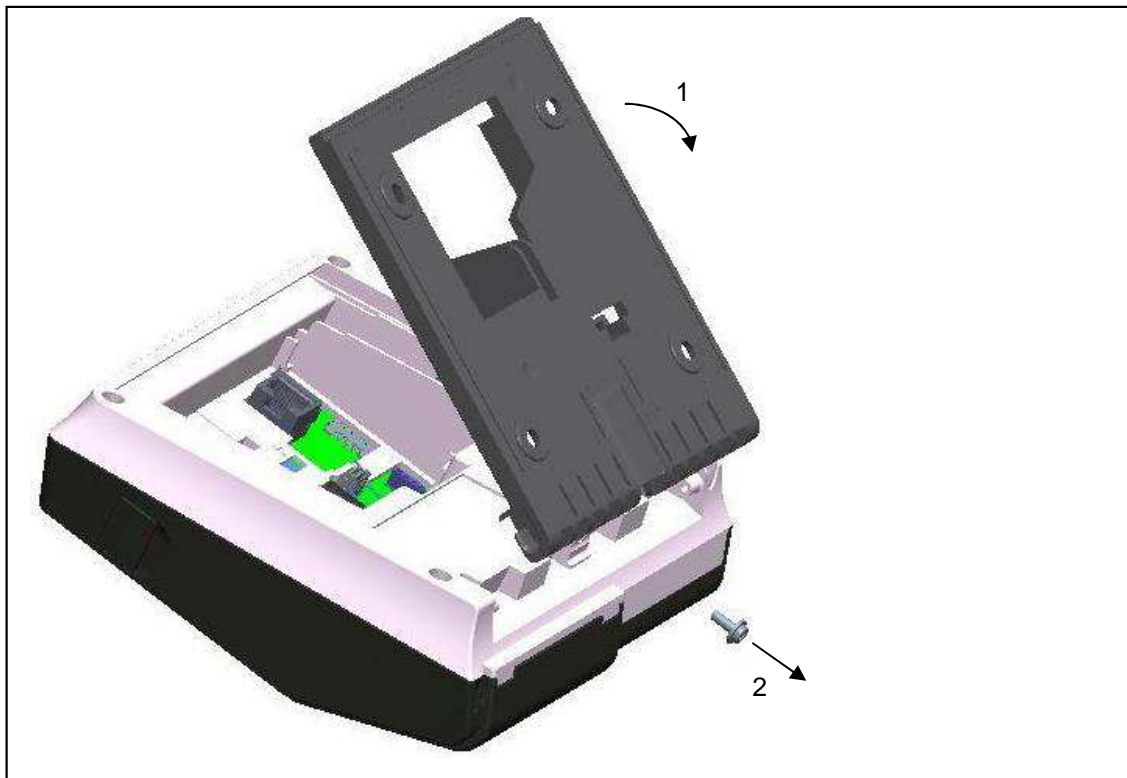
Figure 6: Removing wall frame and screw

It is then possible to fix the terminal on the wall.

The recommended height for fixing of the terminal is 1.40m (camera height).

⚠️ **For an optimal use the terminal must be installed in an area where the lighting conditions are controlled. Avoid direct exposure of the sensor to the sun light and ensure good ambient lighting for face detection if used.**

Installation

Required tools (not supplied)

- Four (4) raw plugs + four (4) ø 3.5mm max and length 30mm screws.
- One (1) screwdriver adapted to screws above.
- One (1) Drill (with a drill bit diameter adapted to raw plugs above).
- One (1) hole saw ø 67mm (depending on installation case).
- One (1) Flat tip screwdriver (0.4x2.0) for block connector cable removal.
- A (1) Torx T10 screwdriver

- Deadbolt/door strike
- Snubber diode required to protect regulated DC power supply from inductive kickback (1N4007 diode or equivalent recommended)
- Separate power supply for the deadbolt/door strike based on supplier's recommendations.
- External relay (if required)
- Networking cable

For UL-294 compliance, an earthed screen in the wire or around all wires to/from product is only required when the wires share space/compartment/tube with high voltage cables.

Equipment from the initial package to use

- One (1) Terminal's body.
- One (1) wall plate.

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Step by step procedure
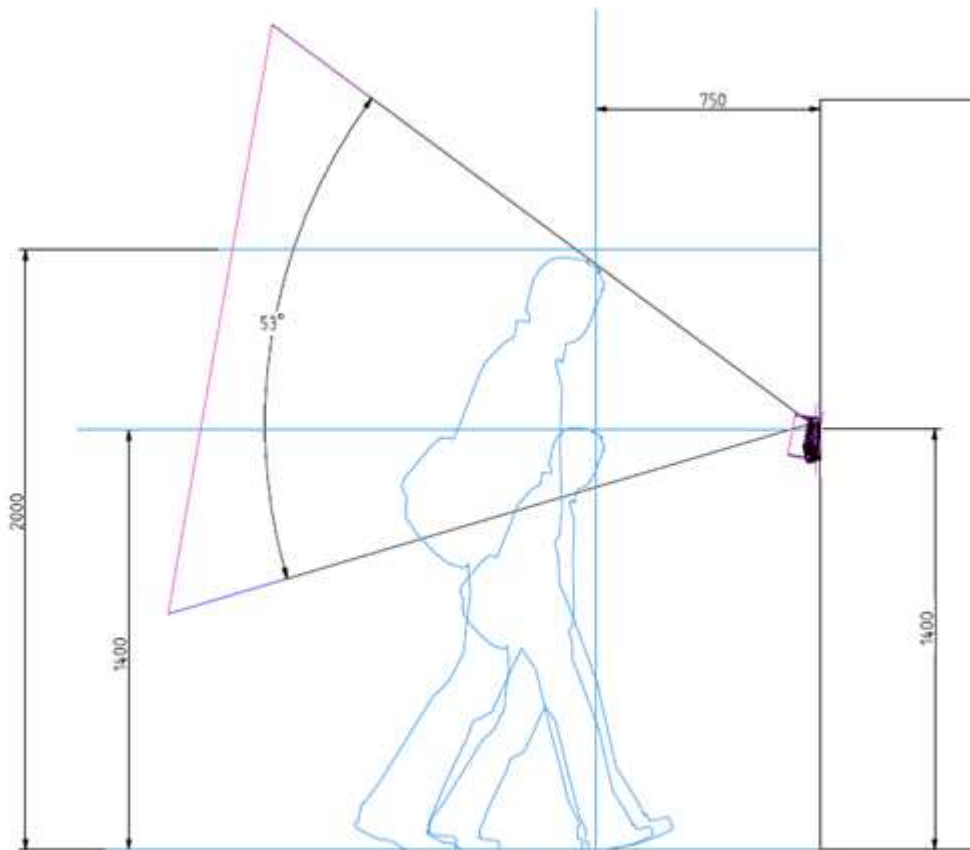
Figure 7: Face camera viewing angle

The recommended height for fixing of the terminal is 1.40m (camera height).

⚠️ **For an optimal use the terminal must be installed in an area where the lighting conditions are controlled. Avoid direct exposure of the sensor to the sun light and ensure good ambient lighting for face detection if used. For face detection, the user has to face the product.**

⚠️ **Power supply from electrical source shall be switched off before starting the installation.**

⚠️ **The strength of the attachment depends on the solidity of the wall on which the terminal is mounted.**

⚠️ **To ensure water tightness, the wall plate has to be sealed with a silicone bead (refer to corresponding picture for process).**

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Drilling the mounting holes
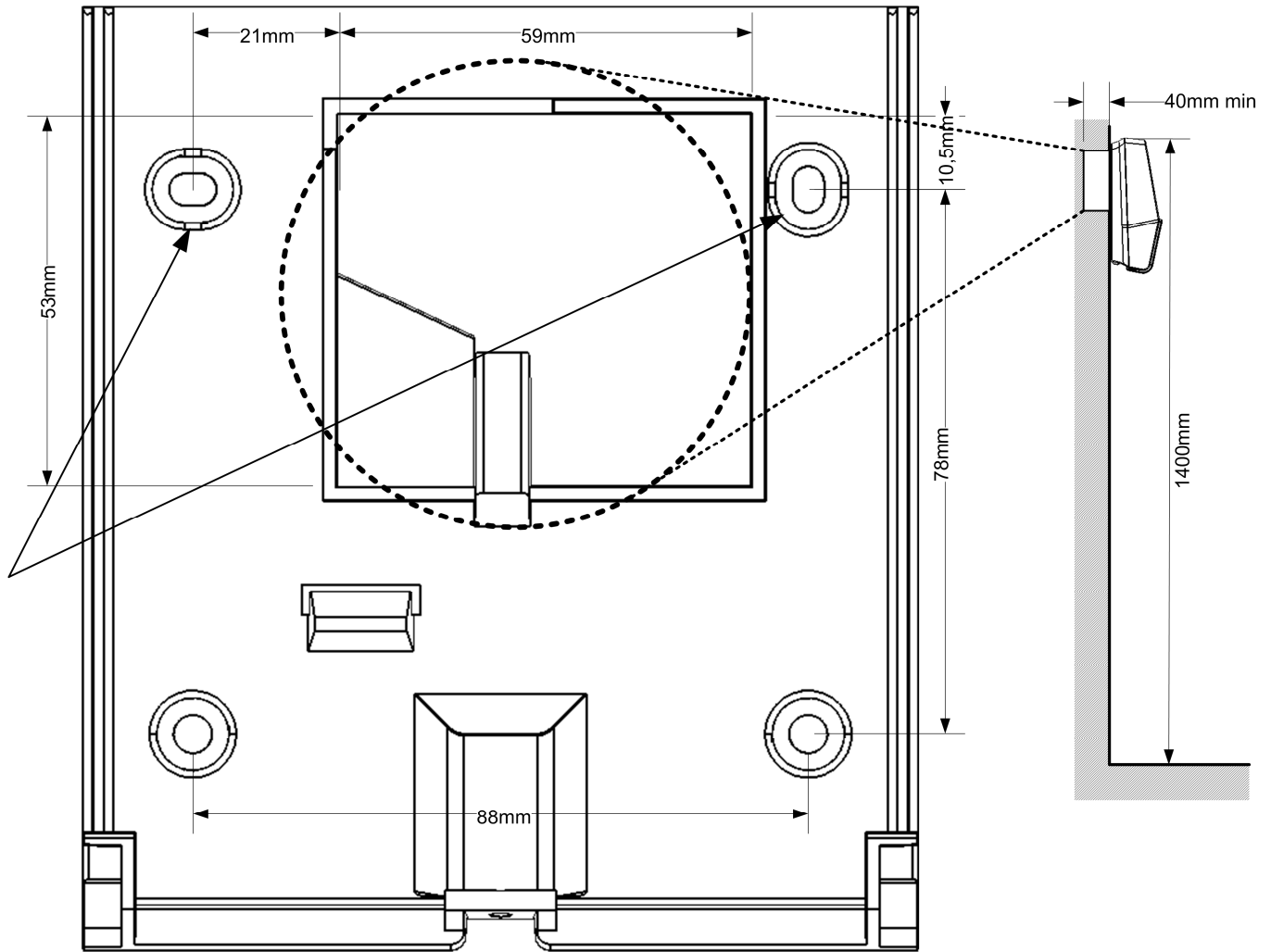
Figure 8: Drilling template

If not present, drill in the wall a hole with a diameter of 67mm (see Figure 8: Drilling template. This template can be found in the Quick Installation Guide).

Confirm the presence inside the hole of all the cables needed for the electrical installation (see Electrical Interface)

Drill in the wall 4 holes with a diameter adapted to screws and fit them with the raw plugs (see Figure 8: Drilling template).

Preparing wall plate
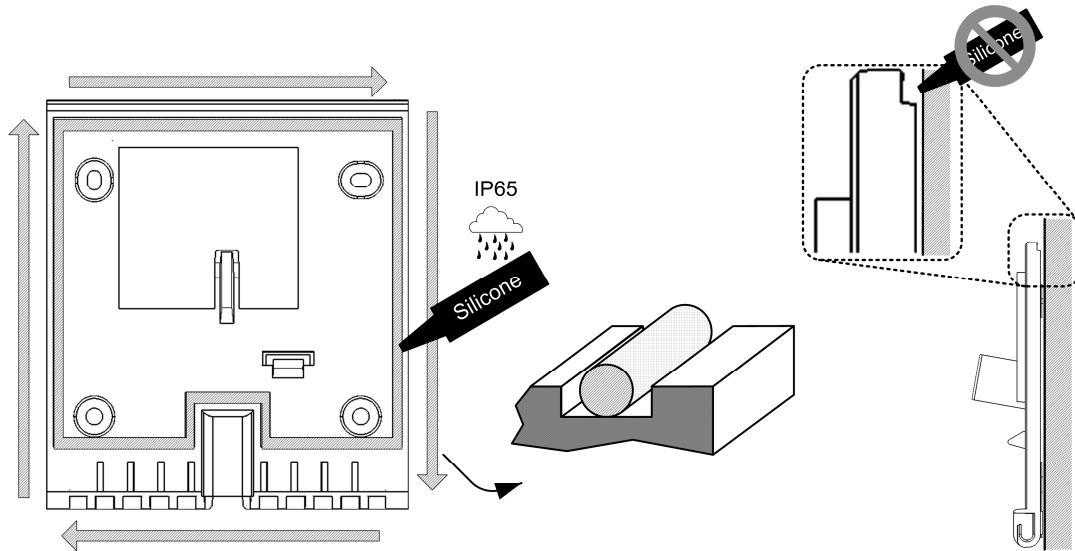
Figure 9: Wall plate preparation for water tightness

Create a silicone bead all along the notch. The silicone bead shall be reduced to avoid overflow on the upper part of the wall plate (risk to prevent product mounting).

Fixing

Be sure that a sufficient space is reserved in the wall for the passage of cables, in particular for Ethernet.
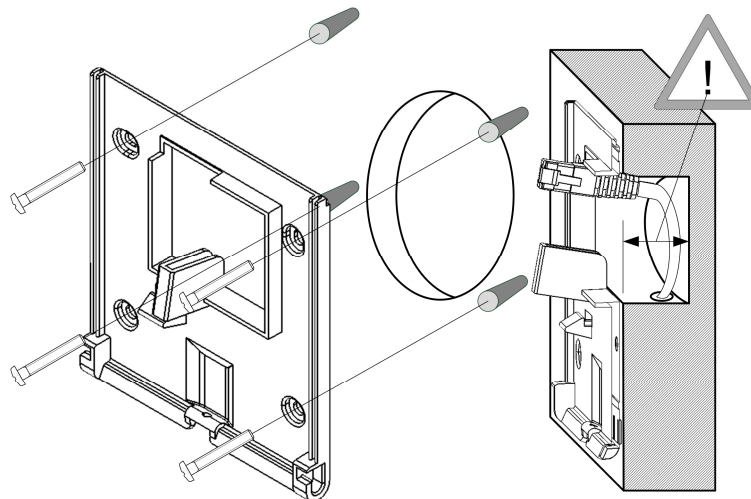
Figure 10: Wall plate fixing

Place the wall plate against the wall, opposite the four holes pierced in the wall (see Figure 10: Wall plate fixing).

Cabling

Cable for wiring shall be AWG 20 to 24, length shall be 12 cm to 15 cm (stripped on 0,6mm).
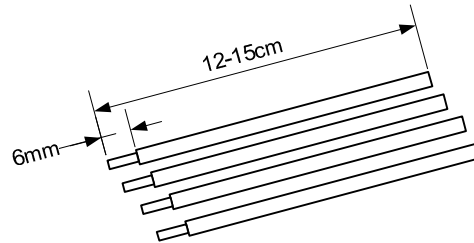
Figure 11: Cabling preparation

Prefer rigid cable to flexible cable (easier to connect)

Connection details:

Characteristics	min	max
Conductor cross section solid or stranded	0.2 mm²	0.5 mm²
Conductor cross section stranded, with ferrule without plastic sleeve	0.25 mm²	0.5 mm²
Conductor cross section AWG/kcmil	24	20

Closing

Don't forget to insert battery before closing product, but power has to be set up just after closing it. If product has to be stored, don't forget to remove the battery.

Lock the product with the lower screw.

Section 4 : Electrical Interface
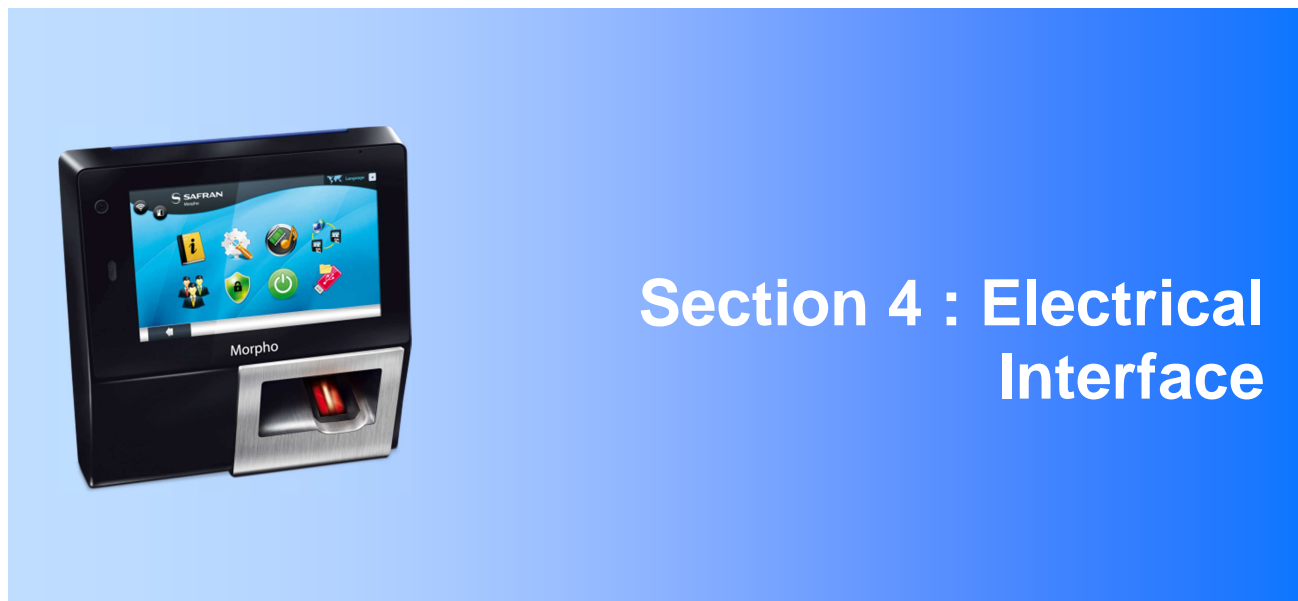
Wiring overview

⚠️ **Before proceeding, make sure that the person in charge of installation and connections is properly connected to earth, in order to prevent Electrostatic Discharges (ESD).**

In case of more than two digital signals use, digital grounds shall all be wired together outside the product.
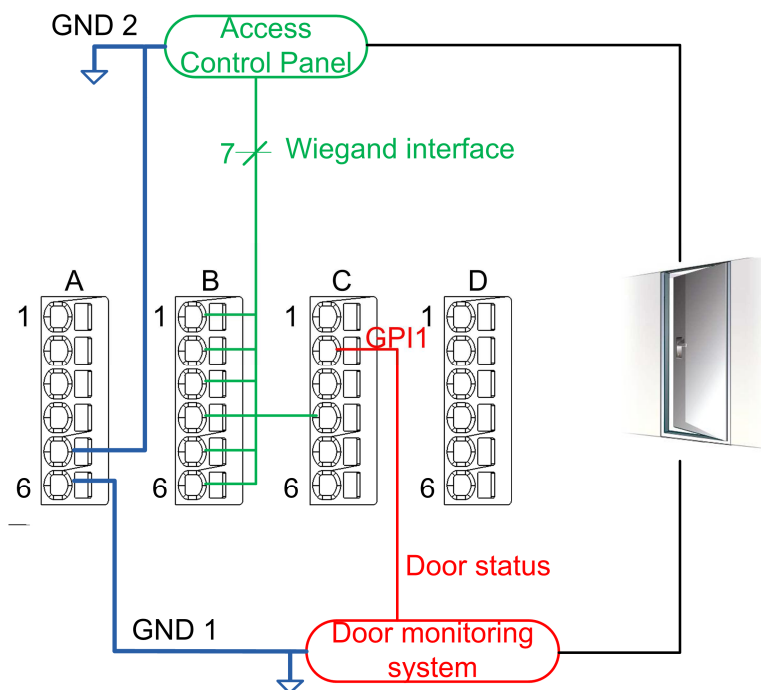
Figure 12: Ground wiring

Note that all connections of the MorphoAccess® SIGMA Series terminal described hereafter are of SELV (Safety Electrical Low Voltage) type.

⚠ Inversion of +12V and GND will damage the product

1 **Power supply +12V**	1 Wiegand IN 0
2 **Power ground**	2 Wiegand IN 1
3 Switch 2	3 Wiegand OUT 0
4 Switch 1	4 Wiegand OUT 1
5 Digital ground	5 Wiegand LED 1
6 Digital ground	6 Wiegand LED 2

μSD
USB
RJ45
POE
Battery
Reset button

1 Digital Input 0	1 Relay 1
2 Digital Input 1	2 Relay 2
3 Digital Input 2	3 RS422 RX-
4 Digital Output 0	4 RS422 RX+
5 Digital Output 1	5 RS422/485 TX+
6 Digital Output 2	6 RS422/485 TX-

Figure 13: Cabling layout

To connect wire to block connector, insert cable in the round hole of the connector.

To remove wire, insert a flat screw driver (0.4x2.0max) in the rectangular hole of the connector and pull the corresponding wire.

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Power Supply

POE and external power supply are not used at the same time: if both power supplies are used, priority is given to external power supply. If external power supply is shut down, switch to POE without reboot is not guarantee.

External Power supply
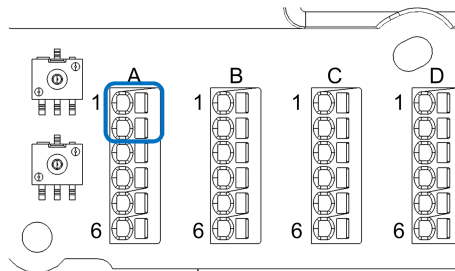
Figure 14: Power supply wiring

A	1	Power Supply 12V	In	Positive 12 Volts, power supply
	2	Power ground	In	Ground power supply

External power supply

- Must comply with CEE/IEC EN60950 standard.
- 12V to 24V (regulated) 1 Amp min at 12V.
- Could be provided by a 12 Volts Wiegand power supply, which complies with the Security Industry Association's Wiegand standard March 1995.

⚠ **Inversion of +12V and GND will damage the product**

POE (Power Over Ethernet)

MorphoAccess® SIGMA Series terminal's power supply can also be provided by the Ethernet using RJ45 connection (terminal is compatible with Power Supply Equipment compliants with IEEE802.3af). This mode is only available when the optional POE module is installed in the product.

Only POE module delivered by Morpho (kit reference 293656945) may be installed in the terminal.
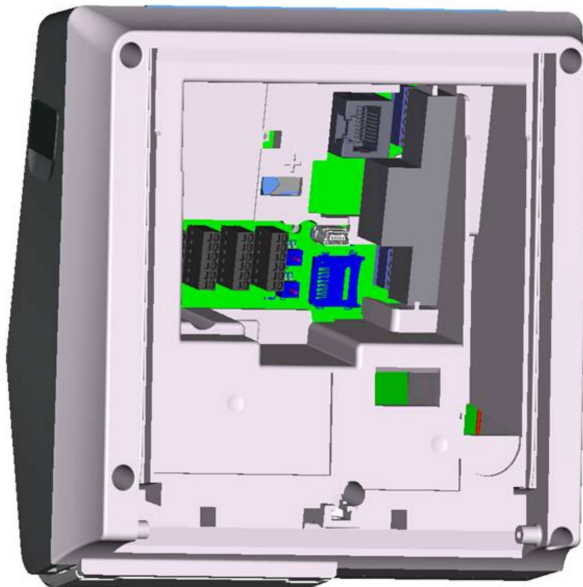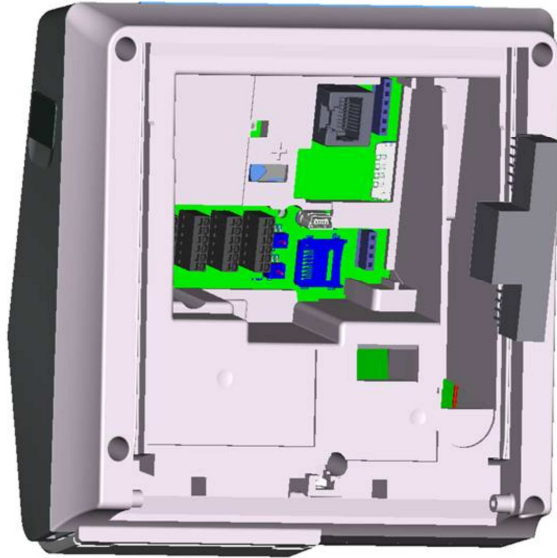
⚠️ **The POE module shall be installed on wall-mounted product. Verify it is well connected before power up.**

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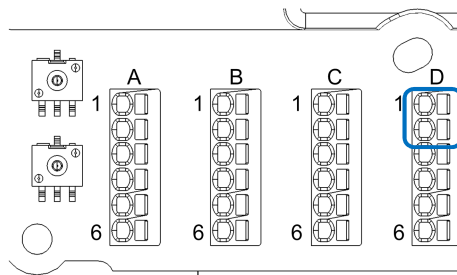
Output Relay

Figure 15: Output relay wiring

D			
	1	Relay 1	Contact relay (normally open)
	2	Relay 2	Contact relay strip
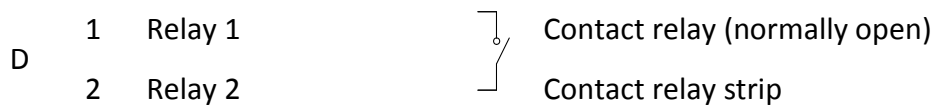
Nominal characteristics of relay

Load characteristics:

- 2 A max @ 30 VDC (according to the safety extra low voltage requirements independently of the power supply),
- Resistive load or inductive load; see warning information hereafter for inductive load.

⚠️ **Inductive load management requires a parallel diode for a better contact lifetime.**

Example of connection for electrical door locks
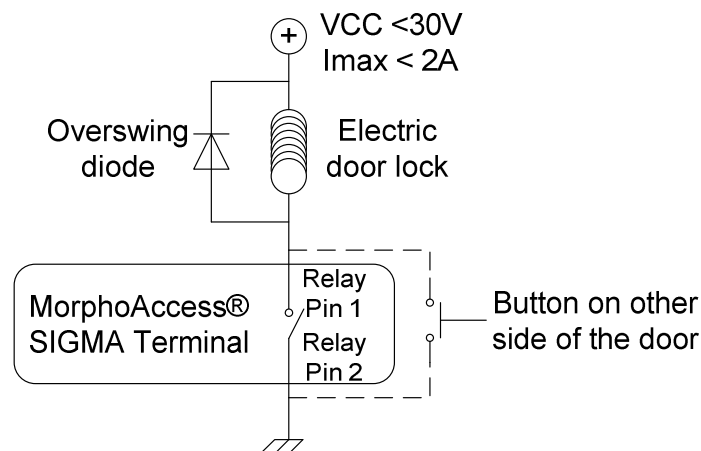
Figure 16: Example of electric latch connection

Tamper Switch
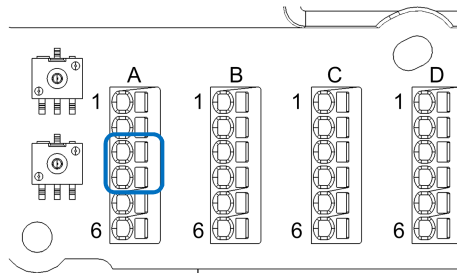
Figure 17: Tamper switch wiring

A	3	Switch 1	⌐	Tamper switch contact
	4	Switch 2	⌐	Strip on tamper switch

Operating principle for the switch

- Product installed on the wall plate: switch enabled (contact closed).
- Product opened (rear connectors accessible): switch disabled (contact open).

Nominal characteristics of switch block

100 mA at 30 VDC max (Resistive load) according to the safety extra low voltage standard.

This MorphoAccess® SIGMA Series terminal is part of security system; it is customer's responsibility to connect the tamper switch (contact) to physical access controller, in order to prevent the access to the connector blocks.

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Wiegand input wiring
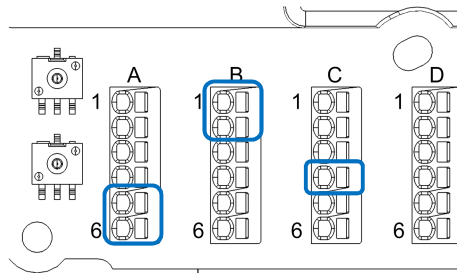
Figure 18: Wiegand input wiring

A	5	Digital ground		Ground for Wiegand (connect pin 5 or 6)
	6	Digital ground		Ground for Wiegand (connect pin 5 or 6)
B	1	D0_IN	In	Wiegand IN D0 (Output type required: Open drain or 5V+/- 5%)
	2	D1_IN	In	Wiegand IN D1 (Output type required: Open drain or 5V+/- 5%)
C	4	LED0	Out	Wiegand LED OUT 1 (typical = 5V) (option) :

⚠ **If pull-up's to 12V have been added on D0_IN and D1_IN inputs for MA5XX product, these resistors must be removed to avoid any damage.**

Wiegand output wiring

The following figure shows how to cable the wires of the serial port of the terminal for the Wiegand protocol
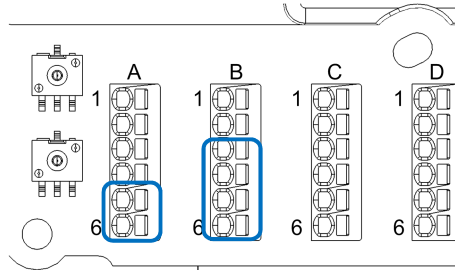
Figure 19: Wiegand output wiring

A	5	Digital ground	Ground for Wiegand (connect pin 5 or 6)
	6	Digital ground	Ground for Wiegand (connect pin 5 or 6)
B	3	D0_OUT	Out	Wiegand OUT D0 (5V TTL)
	4	D1_OUT	Out	Wiegand OUT D1 (5V TTL)
	5	LED1	In	Wiegand LED IN 1 (option) : panel feedback (Output type required: Open drain or 5V+/-5%)
	6	LED2	In	Wiegand LED IN 2 (option) : panel feedback (Output type required: Open drain or 5V+/-5%)

The use of LED1 and LED2 wires is described in the paragraphs below.

The controller supports neither LED1 nor LED2 signals

When the access controller has no relay contact to provide an answer to the MorphoAccess® terminal, then the decision to emit either the "access granted" signal or the "access denied" signal is taken by another way. It is either the MorphoAccess® terminal itself that decide, or it waits for the access controller answer through the local area network (TCP), or on the serial port in (RS422).

It is strongly recommended to disable the LED IN feature, to avoid any interference on MorphoAccess terminal behavior.

The controller supports only LED1 signal

When the access controller has only one relay contact which is dedicated to the "access granted" answer, this one must be connected between the LED1 and GND

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wires. The LED1 wire is set to the low level by closing the contact between the LED1 and the GND wires, and it means "access granted".

The MorphoAccess® terminal uses the timeout of the wait for a low level on the on LED1 wire or LED2 wire as "access denied" answer.

To minimize at most the waiting time of the user, the MorphoAccess® SIGMA Series terminal timeout value, must be adjusted to a value a little bit higher than the maximal value of the controller response time.

Warning: if the LED2 wire is connected, it must be constantly maintained in the high state.

The controller supports LED1 and LED2 signals

When the controller supports one relay contact for each of the possible answers then:

- The « access granted » contact must be connected between the LED1 and the GND wires of the terminal

- The « access denied » contact must be connected between the LED2 and the GND wires of the terminal.

The MorphoAccess® terminal considers that:

- The answer of the controller is "access granted", when the controller puts the LED1 wire to the low state (by closing a contact between the LED1 and the GND wires), **and leaves the LED2 wire to the high state.**

- The answer of the controller is "access denied", when the controller puts the LED2 wire to the low state (by closing a contact between the LED2 and the GND wires), **whatever is the state of the LED1 wire.**

The MorphoAccess® terminal also considers that the answer of the controller is "access denied" in case of time-out while expecting for a closure between LED1 and GND wires, or between LED2 and GND wires.

Serial port wiring

DataClock Input
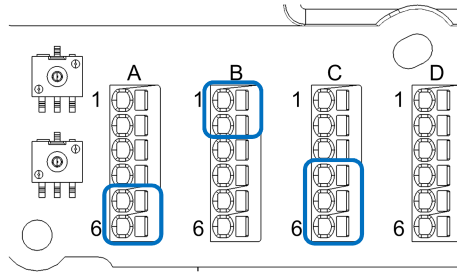
Figure 20: Serial port wiring – DataClock

A	5	Digital ground		Ground for Wiegand (connect pin 5 or 6)
	6	Digital ground		Ground for Wiegand (connect pin 5 or 6)
B	1	D0_IN	In	Data (Output type required: Open drain or 5V+/-5%)
	2	D1_IN	In	Clock (Output type required: Open drain or 5V+/-5%)
C	4	Digital Output 0	Out	Card present signal (if configured, only one selectable for Morpho Legacy)
	5	Digital Output 1	Out	Card present signal (if configured)
	6	Digital Output 2	Out	Card present signal (if configured)

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DataClock Output
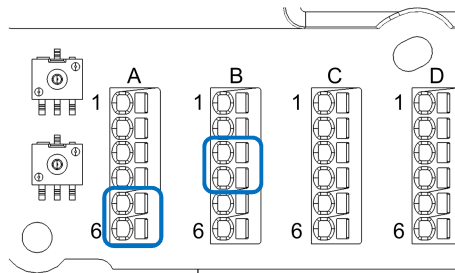
Figure 21: Serial port wiring – DataClock

A	5	Digital ground		Ground for Wiegand (connect pin 5 or 6)
	6	Digital ground		Ground for Wiegand (connect pin 5 or 6)
B	3	D0_OUT	Out	Data (5V TTL)
	4	D1_OUT	Out	Clock (5V TTL)

RS485
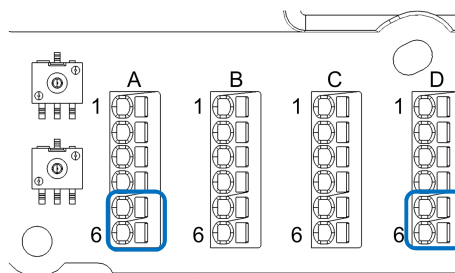
Figure 22: Serial port wiring – RS485

A	5	Digital ground		Ground (connect pin 5 or 6)
	6	Digital ground		Ground (connect pin 5 or 6)
D	5	RS485 TX / RX +	Out	RS485 non inverting signal
	6	RS485 TX / RX -	Out	RS485 inverting signal

RS485 implementation is limited to half-duplex communication. So only Tx+, Tx- and ground reference signals are necessary.

Depending on the RS485 network, an impedance adaptation may be required.

For farthest terminal, a 120-Ohms resistor termination may be added outside the terminal between TX+ and TX-.

RS422
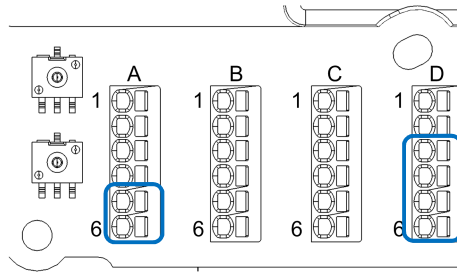
Figure 23: Serial port wiring – RS422

A	5	Digital ground		Ground (connect pin 5 or 6)
	6	Digital ground		Ground(connect pin 5 or 6)
D	3	RS422 RX-	In	RS422 inverting Receive
	4	RS422 RX+	In	RS422 non inverting Receive
	5	RS422TX+	Out	RS422 non inverting Transmit
	6	RS422TX-	Out	RS422 inverting Transmit

RS422 interface is a full duplex communication.

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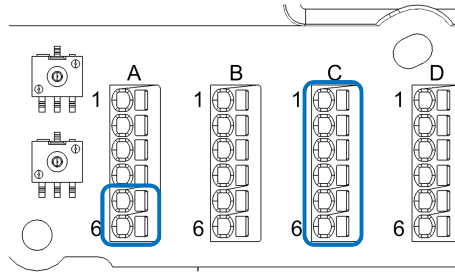
GPIO wiring

Figure 24: GPIO wiring

A	5	Digital ground		Ground (connect pin 5 or 6)
	6	Digital ground		Ground (connect pin 5 or 6)
C	1	Digital Input 0	In	Digital Input (1,8V to 5V)
	2	Digital Input 1	In	Digital Input (1,8V to 5 V)
	3	Digital Input 2	In	Digital Input (1,8V to 5 V)
	4	Digital Output 0	Out	Digital Output (5V – 5mA max)
	5	Digital Output 1	Out	Digital Output (5V – 5mA max)
	6	Digital Output 2	Out	Digital Output (5V – 5mA max)

Single Door Access Control (SDAC) implementation
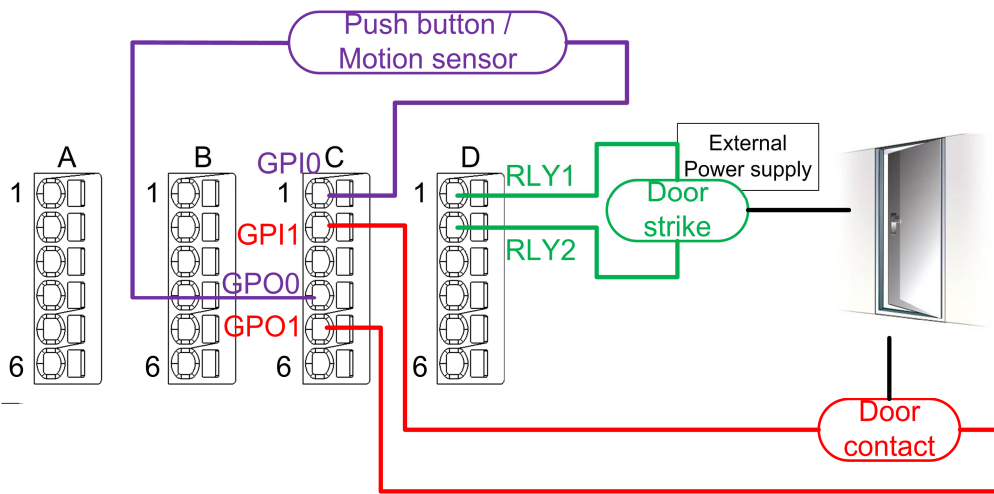
Figure 25: SDAC wiring

⚠ **If door contact is not used, GPI1 and GPO1 shall be connected together**

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Ethernet connection

Ethernet interface can be used to power the MorphoAccess® SIGMA Series terminal through POE (terminal is compatible with Power Supply Equipment compliants with IEEE802.3af). According to the POE standard two modes are available: power on data pins and power on dedicated pins.

Use either one of these modes depending on POE implementation on your local Ethernet network.

Wi-Fi™ or 3G dongle cannot be used with POE power supply

Ethernet cable shall be shielded

Default Ethernet configuration

By default, MorphoAccess® SIGMA Series terminal is configured in DHCP mode

Recommendations for RJ45 wiring

Pin	1	2	3	4	5	6	7	8
Signals	Data pair 1	Data pair 1	Data pair 2	NC/POE pin dedicated (+)	NC/POE pin dedicated (+)	Data pair 2	Ground/ pin dedicated (-)	NC/POE pin dedicated (-)
EIA / TIA T568B Colors	White orange	Orange	White green	Blue	White blue	Green	White brown	Brown
EIA / TIA T568A Colors	White green	White green	White green	White green	White green	White green	White green	White green
Corel L120 Colors	Grey	White	Pink	Orange	Yellow	Blue	Purple	Brown
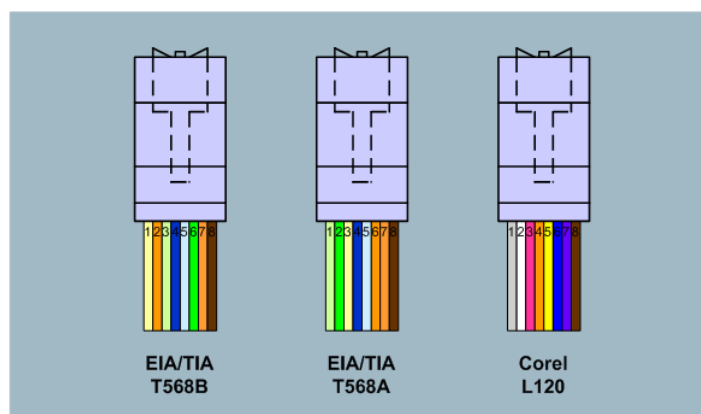
Figure 26: RJ45 wiring

RJ45 plug pinout is compliant with 10/100 base T, IEEE802.3 Specification. Product is compliant also with MDI or MDI-X.

External USB connection

Figure 27: External USB connection

The external Micro USB can be used for administration only to connect a mass storage USB key (with a standard Micro USB-type A / USB-type A female adapter).

This cable can be found in Morpho catalogue with ref 293658551.

Please refer to MorphoAccess® SIGMA Series Administration Guide for more information.

⚠️ **USB connection is limited to USB key connection (power consumption shall not exceed 200mA)**

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Wi-Fi™ / 3G dongle installation

Wi-Fi™ / 3G dongle shall be installed outside the product (separate area shall be reserved in the wall) and connected to the internal USB Mini B using Morpho cable provided in the kit.

Wi-Fi™ / 3G dongle shall not be exposed to temperature exceeding 50°C (don't forget thermal dissipation)

Wi-Fi™ and 3G features shall be available only if the product is powered from an external AC/DC 12V to 24V power supply (no enough power from the POE output for Wi-Fi™ or 3G)

Only Wi-Fi™ or 3G USB dongle delivered by Morpho (kit reference 293658530 for Wi-Fi™ or 293658548 for 3G) may be installed with the terminal for WLAN (Wireless Local Area Network) operation.

Cable has to be plugged on the upward USB connector, as on the following image:

Wi-Fi™ or 3G USB dongle (to be installed outside the product

USB extension cord
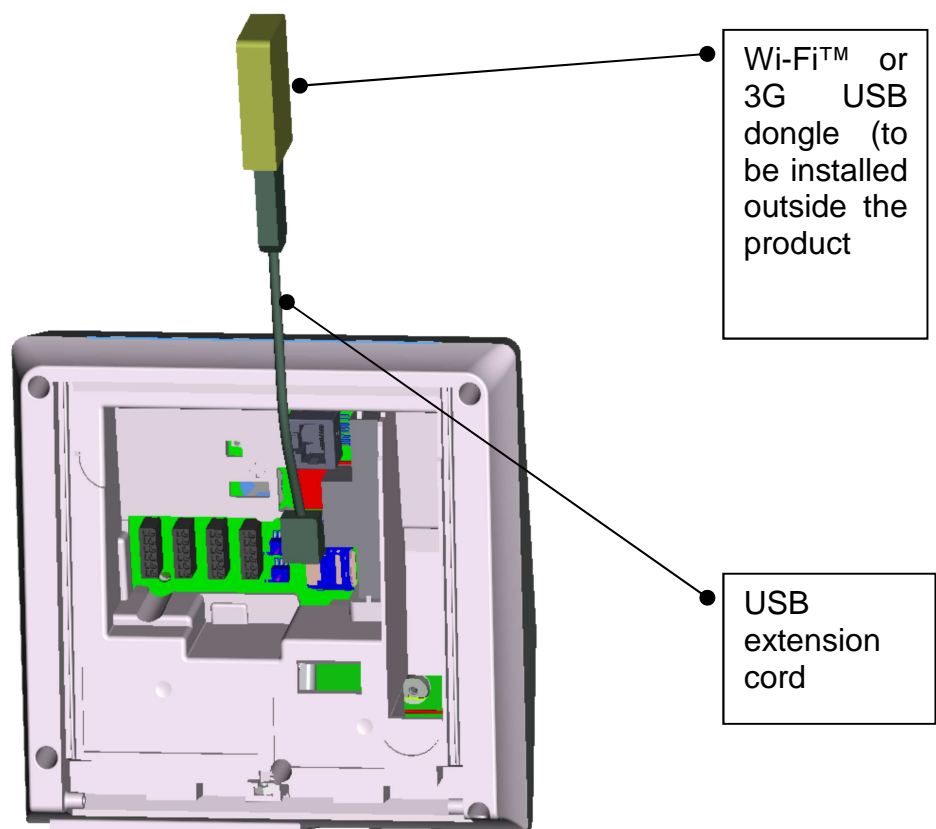
Figure 28: Wi-Fi™ / 3G dongle installation

Micro SD connection

Micro SD card shall be used for the following features:

- Database extension (license is necessary)
- Logs extension (license is necessary)
- Picture logs (photo taking or face detection)
- Dynamic messages

Micro SD card class shall be 10, lower class may reduce performances.

Micro SD card size shall be from 1GB to 32GB.

Micro SD card shall never be used on a Windows PC (it may damage the content of the card and make it inoperative). The product will format it with the right format.

Use Brand Name Micro SD card. No name card may reduce performances or have shorter life time.

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Battery

The battery shall be inserted in the dedicated area in order to keep date and time when power is accidentally cut off.

Battery model is CR1225 (3V).

> ⚠️ **Battery lifetime is limited when power is off: at least 48 hours at 25°C. Don't forget to change battery after long power cut or after several short power cut.**

Section 5 : User Interface

Modes for controlling access rights

Introduction

The MorphoAccess® SIGMA Series terminal offers several methods for controlling access rights: it needs to be configured in one of the following four modes:

- Identification mode,
- Authentication mode (requires a contactless smartcard reader in the terminal),
- Multi-factor mode (requires a contactless smartcard reader in the terminal),
- Proxy mode

Refer to MorphoAccess® SIGMA Series Administration Guide for more information on Access Control.

Identification mode

The Identification process of the MorphoAccess® SIGMA Series terminal proceeds by comparison of the biometric data of the finger placed on the biometric sensor, with all the biometric data stored in the database.

It means that the biometric data of the allowed users must be stored in the internal database before they can request the access on the terminal. This biometric data is acquired either directly on the terminal (using the embedded), or on an enrolment system using the same type of biometric sensor.

The access control by identification process is started when a finger is detected on the biometric sensor

When the user requests the access, his identity is unknown, and it is the terminal that searches for his identity. The terminal grants the access if a match is found (the user is identified); otherwise the access is denied (the user remains unknown).

For further information, please see the "Identification mode" section in the MorphoAccess® SIGMA Series Administration Guide.

Authentication (verification) mode

Unlike the "identification" mode, the user identity must be known in order to execute the authentication process.

Indeed, authentication is an identity verification process: the user provides his identity and the terminal checks it with the relevant process.

This mode doesn't compare the user's data to the data of several users: it compares the data provided by the user with the reference data provided by the same user during enrollment phase. The data can be on a card presented to the terminal or in a database and ID is provided by the user.

Access is authorized if the terminal finds a correspondence.

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For further information, please see the "Authentication mode" section in the MorphoAccess® SIGMA Series Administration Guide.

Multi-factor mode

In this mode, the "identification" and "authentication" modes are available simultaneously; the user decides which control method will be used:

- by placing his finger on the sensor, thereby triggering the identification process,
- by placing his contactless card on the reader, thereby triggering the authentication process,

This is the default mode for terminals fitted with a contactless smartcard reader.

For further information, please see the "Multi-factors method" section in the MorphoAccess® SIGMA Series Administration Guide.

Proxy mode

The Proxy mode is an operating mode where the access control main application is located in a distant system. This is not a standalone mode like Identification and Authentication modes.

It means that the terminal becomes a slave of the host system application. The access control application is running on the host system and uses MorphoAccess® SIGMA Series terminal high level functions:

- Identification function
- Authentication function
- Read data on a contactless card
- Access control result signal command

The MorphoAccess® SIGMA Series terminal is driven through an Ethernet (or Wi-Fi™) link using TCP, SSL or TLS protocol.

The MorphoAccess® SIGMA Series terminal acts as a server: it is either waiting for a command or executing a command.

The commands allowed by the MorphoAccess® SIGMA Series terminal are described in the MorphoAccess® SIGMA Series Host System Interface Specification document.

For further details about SSL or TLS on the MorphoAccess® SIGMA Series terminal, please refer to the MorphoAccess® SIGMA Series Administration Guide.

External database mode (also called polling mode)

When external database mode is activated, the MorphoAccess® SIGMA Series terminal does not verify user template in its local database. This mode is useful when the user templates are stored in external database.

When authentication is initiated on the terminal, the terminal will poll the user ID to external controller. On polling out the ID, the corresponding template (if exists) is fetched from the external database and is authenticated against user's biometric on

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the terminal. Once the template request is posted to the external database, the terminal shall wait for the finger template from the external database to start authentication. Further process shall be same as authentication.

Polling Process using buffer:

- The user's input ID will be queued in the terminal's queue, which is polled by external application.

- External application waits for the User ID by polling the buffer. After getting an ID, it will search the template in database and send template to terminal for further authentication.

- The user is authenticated by the external device and granted access accordingly.

MorphoAccess® SIGMA Series terminal also has distant commands to retrieve polling buffer status and polling buffer data. Refer to the MorphoAccess® SIGMA Series Host System Interface Specification document.

How to Activate?

External database mode can be activated through Webserver > Complete Configuration, by setting "ucc.enable_external_database" parameter to 1. Only an admin user can activate polling mode. You can refer to the MorphoAccess® SIGMA Series Host System Interface Specification document to know how to set this parameter.

NOTA :	*When terminal is in L1 legacy mode, then polling mode can be configured using SecureAdmin application.*

Configuring the terminal

MorphoAccess® SIGMA Series terminals are standalone biometric systems which offers advance features for access control. MorphoAccess® SIGMA Series terminals are equipped with a facility to support the MorphoAccess® and Bioscrypt legacy systems.

When MorphoAccess® SIGMA Series terminal is set in any of the legacy modes, it supports the database structures and configurations of the selected legacy system. When the terminal is booted for the first time, user can select any of the following modes:

MorphoAccess® 500 or J Series legacy mode

MorphoAccess® SIGMA Series terminal can be operated in MorphoAccess® 500 or J series mode (also referred as Legacy Morpho). In this mode, the terminal will support configurations and operations of MorphoAccess® 500 series terminals. Terminal can authenticate users enrolled in the MorphoAccess® 500 series terminal, using biometric check as well as contactless card. New users can also be enrolled in MorphoAccess® 500 series mode.

Access Path

First Boot Assistant > Protocol Configuration > Legacy Morpho

Once the product is configured in Legacy Morpho mode, the following methods can be used to configure the terminal:

- through the Ethernet interface (remote management)
- through a Wi-Fi™ connection (license and dongle required)

Configuration procedures are described inside the MorphoAccess® SIGMA Series Administration Guide as follows:

- Section 4: Terminal Configuration And Administration

Bioscrypt 4G Series legacy mode

MorphoAccess® SIGMA Series can be operated in Bioscrypt 4G mode (also referred as Legacy L1). In this mode, the terminal will support limited operations and configurations that are done using Secure Admin application. The terminal in L1 mode is able to authenticate the users enrolled on 4G terminals and contactless cards. However it is not possible to enroll users in legacy L1 mode on MorphoAccess® SIGMA Series terminal.

In case, users are enrolled in MA5G mode, the user data cannot be exported when terminal is in L1 mode.

Access Path

First Boot Assistant > Protocol Configuration > Legacy L1

Once the product is configured in Legacy L1 mode, the following methods can be used to configure the terminal:

- through the Ethernet interface (remote management)
- through a Wi-Fi™ connection (license and dongle required)

Configuration procedures are described inside the MorphoAccess® SIGMA Series Administration Guide as follows:

- Section 4: Terminal Configuration And Administration

MorphoAccess® SIGMA Series native mode

MorphoAccess® SIGMA Series terminal is by default in native mode, that is named MA5G. It will support the new features and configurations only in the native mode. The terminal can be configured using an internet browser connected to the embedded Webserver application.

Access Path

First Boot Assistant > Protocol Configuration > MA5G

NOTA :	*When terminal mode is switched from MA5G to any of the legacy modes, the entire configuration (excepted communication links) and all databases are erased*
NOTA :	*The terminal is rebooted on mode change and factory settings are applicable.*

Once the product is configured in native mode, the following methods can be used to configure the terminal:

- through the Ethernet interface (remote management)
- through a Wi-Fi™ connection (license and dongle required)

Configuration procedures are described inside the MorphoAccess® SIGMA Series Administration Guide as follows:

- Section 4: Terminal Configuration And Administration

Anti-tamper / anti-pulling switches

Please refer also to "Tamper Switch" section.

These switches are activated as soon as there is enough pressure applied on the terminal against the wall. They are deactivated as soon as this pressure is not big enough, e.g. when the terminal is pulled out of the wall.

When the switches are deactivated, the MorphoAccess® SIGMA Series terminal acts as required by the related configuration key (see MorphoAccess® SIGMA Series Administrator / User Guide for key configuration description):

- Ignore the event (default): useful during normal maintenance operations.

- Send an alarm message to the Central Access Controller, through the usual channel of the access control result messages (Wiegand, DataClock, RS485, Ethernet or Wi-Fi™). An alarm switch (relay contact) is directly available on block terminal «tamper switch pins». Please refer to "Wiring overview" and to "Tamper Switch" sections.

- Generate an audible alarm signal with the speaker and an alert message on the screen.

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Section 6 : Accessories, Software Licenses and PC Applications

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Compatible Accessories, Licenses and Software

The following items can be ordered directly to Morpho or to an official distributor, so as to enjoy all the features of your MorphoAccess® SIGMA Series terminal:

- **Power supply units**,

- **Power Over Ethernet module**: enabling POE capabilities on the product,

- **Contactless smartcards**: MIFARE® 1k, 4k; DESFire® 2k, 4k, 8k,

- **MA WI-FI PACK**: containing a Wi-Fi™ USB dongle and a Wi-Fi™ license to activate Wi-Fi™ capability on your terminal,

- **MA 3G PACK**: containing a 3G USB dongle and a 3G license to activate 3G network communication on your terminal,

- **User database size licenses (MA_10K_USERS, MA_50K_USERS, MA_100K_USERS)**: enabling database size upgrade from 3,000 to 10,000, 50,000 or 100,000 users capacity (max 3 fingers per record) at creation of the database. Requires Micro SD card in the terminal.

- **Log size licenses (MA_250K_LOGS, MA_500K_LOGS, MA_1M_LOGS)**: enabling logs size upgrade from 100,000 to 250,000, 500,000 or 1,000,000. Requires Micro SD card in the terminal.

- **MA_PAC license**: enabling physical access control mode (default license in products for access control features: Single Door Access Control, Wiegand output, Clock & data output, IP output, Serial output).

- **MA_TA license**: enabling time and attendance mode.

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Compatible PC applications

MorphoAccess® SIGMA Series terminals are fully compatible with:

- Morpho Integrator's Kit (MIK) software development kit (version 6 or later).
- M2A management application (version 1.2 or later)
- MorphoBioToolBox (version 2 or later)

Using Legacy Morpho mode, MorphoAccess® SIGMA Series is also compatible with:

- MEMS (version 7.3.1 or later),
- MIK (version 5.4 or later),

The limitations in Morpho Legacy mode are described in the following document:

MorphoAccess® SIGMA Series Release Note - Legacy Morpho limitations

Using Legacy L1 mode, MorphoAccess® SIGMA Series is also compatible with:

- SecureAdmin (version v4.1.19.0.0.a10.0 or later),

The limitations in L1 Legacy mode are described in the following document:

MorphoAccess® SIGMA Series Release Note - Legacy L1 limitations

Section 7 : Recommendations

Notice

The manufacturer cannot be held responsible in case of non-compliance with the following recommendations or incorrect use of the terminal.

General precautions

- Do not attempt to repair your terminal yourself. The manufacturer cannot be held responsible for any damage/accident that may result from attempts to repair components. Any work carried out by non-authorized personnel will invalidate your warranty.
- Do not expose your terminal to extreme temperatures.
- Use your terminal with original accessories. Attempts to integrate unapproved accessories to the terminal will void your warranty.
- Due to electrostatic discharge, and depending on the environment, synthetic carpet should be avoided in areas where the terminal has been installed.

Areas containing combustibles

It is strongly recommended that you do not install your terminal in the vicinity of gas stations, petroleum processing facilities or any other facility containing flammable or combustible gasses or materials.

Specific precautions for terminals equipped with a contactless smartcard reader

It is recommended to install terminals equipped with a contactless smartcard reader at a certain distance (> 30cm) from metallic elements such as iron fixations or lift gates or radio product (such as contactless smartcard reader). Performances in terms of contactless badge reading distance will decrease when metallic elements are closer.

Ethernet connection

It is recommended to use a category 5 shielding cable (120 Ohms). It is also strongly recommended to insert a repeater unit every 90m.

Extreme care must be taken while connecting Ethernet wire to the terminal block board since low quality connection may strongly impact Ethernet signal sensibility.

It is recommended to connect Rx+ and Rx- with the same twisted-pair wire (and to do the same with Tx+/Tx- and the other twisted-pair wire).

Date / Time synchronization

If you want to use the terminal for application requiring high time precision, we recommend synchronizing regularly your terminal time with an external clock (using NTP).

The terminal clock has a +/-10 ppm typical time deviation at +25°C (roughly less than +/- 1 sec per day).

At lower and higher temperature, deviation may be more important.

If date / time is not synchronized, don't forget to change battery after long power cut or after several short power cut.

Cleaning precautions

The use of a dry cloth is recommended to clean the terminal, especially the biometric sensor. Acid liquids, alcohol or abrasive materials are prohibited.

Legacy mode

When terminal mode is switched from MA5G to any of the legacy modes, the entire configuration (except communication links) and all databases are erased.

The terminal is rebooted on mode change and factory settings are applicable.

Firmware legacy limitations are described in the MorphoAccess® SIGMA Series Release Note.

Hardware legacy differences are described below:

Power supply

	4G	MA500 family	MA SIGMA family
DC power supply	12V – 24V (-15% / +10%)	12V (-15% / +30%)	12V – 24V (-15% / +10%)
DC power supply connection	DC Jack connector	Terminal block	Terminal block
Power supply by POE	Terminal are compatible with Power Supply Equipment compliants with IEEE802.3af		
POE power supply connection	Block connector and RJ45 connector	Block connector and RJ45 connector	Only RJ45 connector

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Ethernet communication

4G	MA500 family	MA SIGMA family
Block connector and RJ45 connector	Block connector and RJ45 connector	Only RJ45 connector

RS485/RS422 communication

4G	MA500 family	MA SIGMA family
Half duplex (slave mode only)	Half duplex Full duplex (slave and master mode)	Half duplex Full duplex (slave and master mode)

GPI/GPO

	4G	MA500 family	MA SIGMA family
GPI	3 GPI	No	3 GPI
GPO	3 GPO (3 TTLOUT_H and 3 TTLOUT_L)	No	3 GPO (≈ 3 TTLOUT_H only)
GPO current limitation	5mA@5V for 4G	-	5mA@5V

RELAY

	4G	MA500 family	MA SIGMA family
Relay pins available	NO / NC / COM	NO / NC / COM	NO / COM only
Driver capabiity	170mA	2 A @30V DC (Resistive load)	2 A @30V DC (Resistive load)

*: NO: Normally open

   NC: Normally closed

   COM: Common

RS232 communication

4G	MA500 family	MA SIGMA family
Available	Not available	Not available

Anti-theft/ Tamper switches

	4G	MA500 family	MA SIGMA family
Anti-theft switch	No	Yes	Yes
Tamper switch	Yes	Yes	Yes
Warning to a host if the product isn't supplied	No	Yes	Yes

Micro SD card

If Micro SD card is necessary for the features enabled, the following recommendations shall be applied.

- Micro SD card class shall be 10, lower class may reduce performances.
- Micro SD card size shall be from 1GB to 32GB.
- Micro SD card shall never be used on a Windows PC (it may damage the content of the card and make it inoperative). The product will format it with the right format.
- Use Brand Name Micro SD card. No name card may reduce performances or have shorter life time.

Lighting conditions for face detection

In order to get good performance of the face detection, the following recommendations shall be respected:

- The user shall not be against the light.
- The light in front of the user shall be at least 500 Lux.
- The background of the user shall be as neutral as possible (avoid images which could be mixed up with face).

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Annex 1 : Finger Placement Recommendations

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Main principles

Acquisition needs to be done with extreme care, in order to:

- get the best image quality
- increase recognition performance
- reduce recognition time

Then, it is highly recommended to:

- Maximize the contact between the fingerprint and the sensor
- Exert firm, but not excessive, finger pressure on the surface of the sensor
- Do not press too hard
- Do not slide nor roll the finger across the sensor
- Do not move the finger during acquisition
- Wait for the extinction of sensor backlight before removing the finger

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Most useful areas for biometric data

Fingerprint central area must be aligned with sensor center

Area containing the maximum information

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Position of finger

Finger height

Align center of 1st phalanx with sensor center
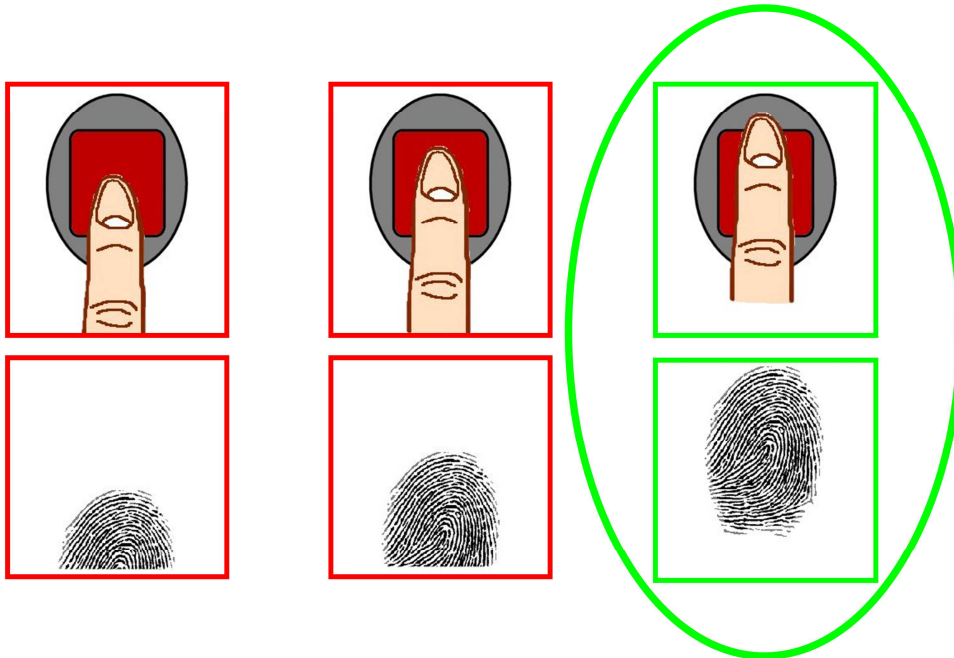
Finger angle

The finger must be parallel to sensor sides

IDEAL
POSITION

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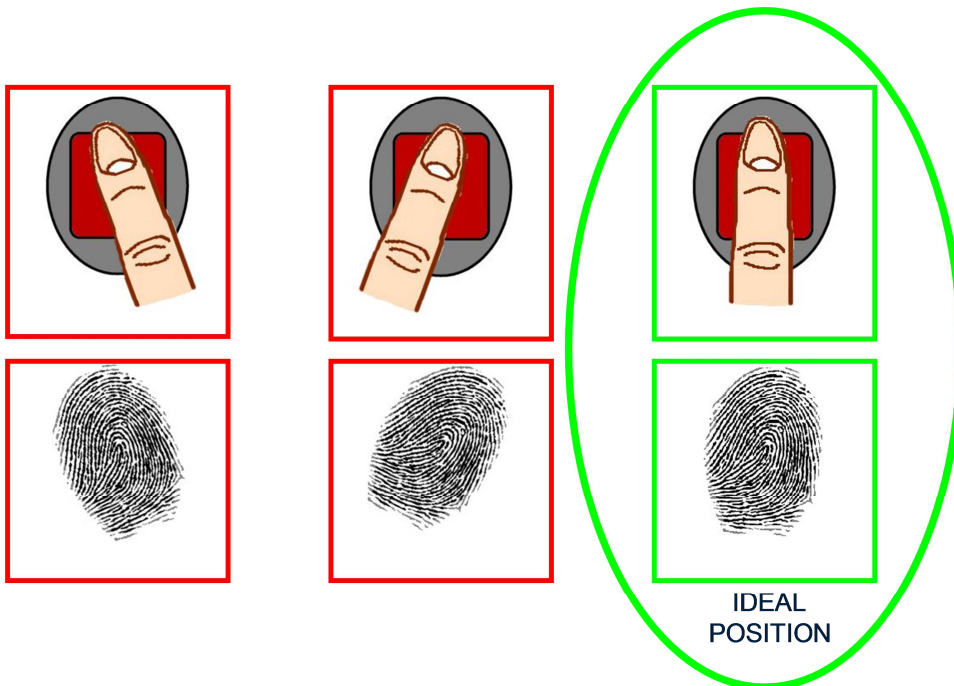
Finger inclination

Finger must be parallel to the sensor surface

IDEAL
POSITION
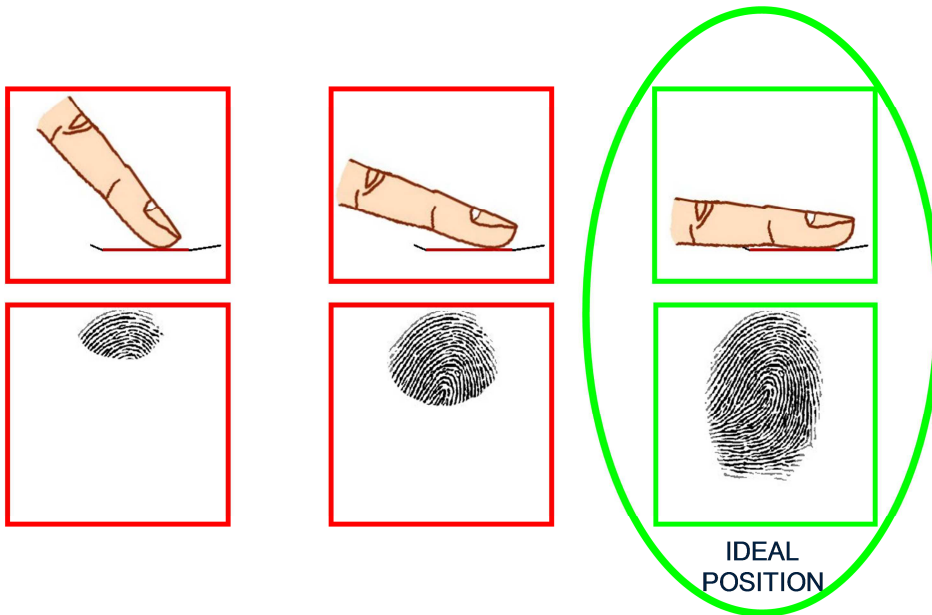
Finger rotation

Finger must be parallel to the sensor surface

IDEAL
POSITION

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Troubleshooting

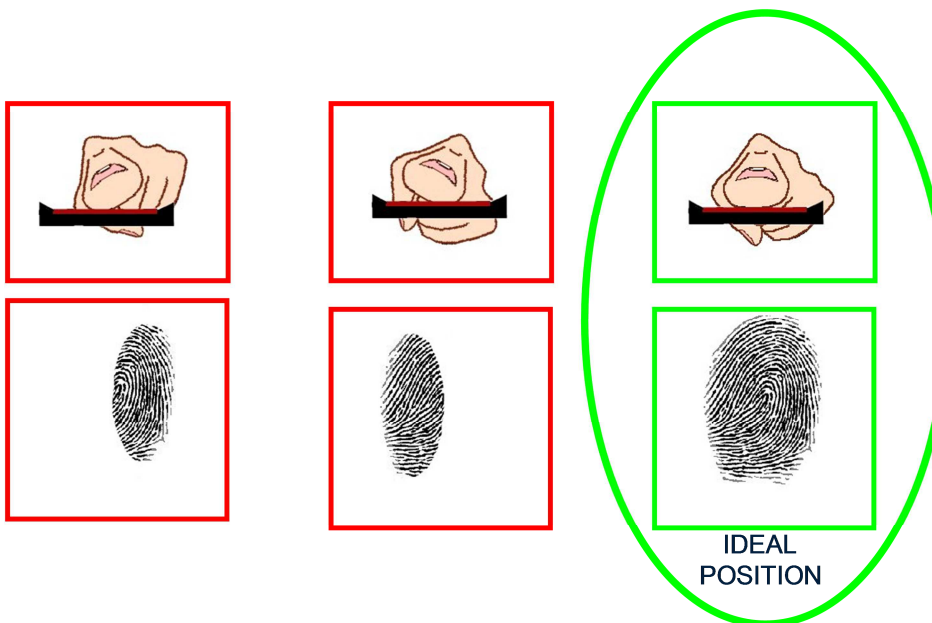When finger biometric data acquisition is difficult, please follow the recommendations listed below:

- The finger is cold
  - o Solution : warm up the finger

- The finger is wet
  - o Solution : wipe the finger

- The finger is dry
  - o Solution : warm up the finger and/or add a little bit of humidity

- The finger is dirty
  - o Solution: wash hands

- Remove bandages or adhesive tapes from the fingerprint area, and from the 2nd phalanx of the finger

- Do not press or tense finger to avoid blood vessels constriction

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Annex 2 :   Bibliography

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How to get the latest versions of documents

The last version of the documents can be downloaded from our web site at the address below:

www.biometric-terminals.com

(Login and password required).

To request a login, please send us an email to the address below:

hotline.biometrics@morpho.com

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Documents concerning the MorphoAccess® terminal

Documents about installing the terminal

MorphoAccess® SIGMA Series Installation Guide,

Ref. 2014_0000000606

This document describes terminal physical mounting procedure, electrical interfaces and connection procedures. This document is in English.

Documents about administrating / using the terminal

MorphoAccess® SIGMA Series Quick User Guide,

Ref. 2014_0000000530

This document gives a quick overview of the product and the basics of configuration and use. This document is in English.

MorphoAccess® SIGMA Series Administrator Guide,

Ref. SSE-0000100663

This document describes the different functions available on the terminal and procedures for configuring the terminal. It also contains the full description of all the configuration parameters for the terminal. This document is in English.

MorphoAccess® SIGMA Series Parameters Guide,

Ref. SSE-0000101115

This document contains the full description of all the terminal configuration parameters. This document is in English.

Documents for the developer

MorphoAccess® SIGMA Series Host System Interface Specification,

Ref. SSE-0000101114

This document describes the commands supported by the MorphoAccess® terminal. This document is in English.

MorphoAccess® SIGMA Series Remote Message Specification,

Ref. SSE-0000101111

This document describes the format of messages sent by the terminal to a distant system. This document is in English.

Release note

For each firmware version, a release note is published describing the new features, the supported products, the potential known issues, the upgrade / downgrade limitations, the recommendations, the potential restrictions…

Annex 3 :   Support

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Troubleshooting

The terminal IP address is unknown or it is not possible to connect to the terminal

Use terminal interface to configure a valid set of network parameters in your terminal.

The sensor is switched off

Check that the database contains at least one record.

Check that the identification mode is enabled.

The terminal returns erratic responses to Ping commands

Check the subnet mask.

Ask the network administrator for the correct value.

Check that each device connected to the network has a different IP address.

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Contacts

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http://www.biometric-terminals.com/

A login and password are required to access the full site content. If you don't have one, please send us an email to the address above to request one.

Contact by email is preferred.

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