3D FLASH MINI Mounting and Installation Guideline

Document TBS-062

NOTE: The latest version of this document always available at:
https://cloud1.tbs-biometrics.com/index.php/s/i1hwaIKVxmDm169

Release	Author	Comment
Dec 09, 2025	AG	First version

Content

1 Introduction

The TBS Terminal series brings Access Control and Time & Attendance applications featuring biometrics to a new level. They combine highest security with user convenience and the most flexible configuration options on the market.

This document describes the mounting and installation of the 3D FLASH MINI facial recognition reader.

The basic configuration of TBS devices is described in the 'TBS Firmware Manual'.

New TBS partners are invited to follow the 'TBS Quickstart Guide'.

Special software configuration options are explained in specific TechNotes, please check for them in the TBS Partner Portal.

All documentation links are indicated in the appendix.

TBS Support

For any additional information please get in touch with TBS support:

email: support@tbs-biometrics.com

phone: +41 (55) 533 2000

2 Legal and Safety Instructions

Allowed Applications

TBS products are not designed, authorized or warranted to be suitable for use in medical, military, aircraft, space or life support equipment, nor in applications where failure or malfunction of a TBS product can reasonably be expected to result in personal injury, death or severe property or environmental damage. TBS accepts no liability for inclusion and/or use of TBS products in such applications.

Inspection of goods received

If the packaging or product has been damaged in transport, or should you suspect that it may have a fault, the product must not be put into service. In this case, contact your TBS company representative.

Installation and Servicing

Installation, setup and servicing of our appliances must only be carried out by suitably trained personnel.

- Installation and electrical connections must only be made by correspondingly qualified specialists. The relevant national Electrical Engineers construction regulations must be observed.
- Setup and servicing must only be made by persons who have the know-how to do so e.g. by reading the respective TBS manuals or attending TBS trainings / webinars.

When not otherwise stated, the following safety instructions apply:

- Installation and servicing of our appliances must be carried out when disconnected from the power supply, in particular appliances that are normally supplied by low-voltage current.
- It is prohibited to alter the device or to remove protective shields and covers.
- Do not attempt to repair an appliance after a defect, failure or damage, or to put it back into operation again. In such case please contact your TBS company representative or the TBS hotline.

If there are still some points on which you are not entirely clear, please do not take a chance. All queries can be clarified by your TBS company representative, or by ringing the TBS hotline.

Disclaimers

TBS accepts no responsibility for any injuries or damage caused as a result of improper use.

Information in this document is believed to be accurate and reliable. However, TBS does not give any representations or warranties, expressed or implied, as to the accuracy or completeness of such information and shall have no liability for the consequences of use of such information.

Should you discover any fault with the product or in its documentation, or have any suggestions for improvement, please confidently approach your TBS company representative or TBS hotline.

TBS reserves the right to make changes to the information published in this document at any time and without notice.

3 Mounting and Installation

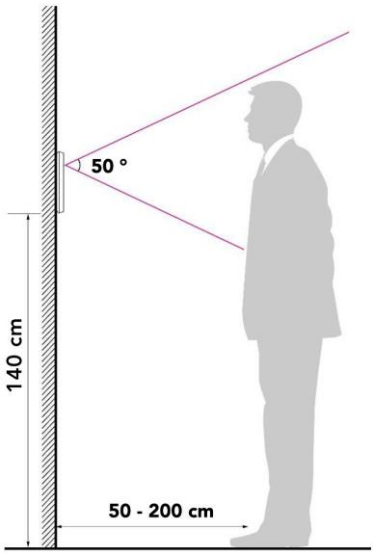
3.1 Installation Environment

- 3D FLASH MINI (TBS-062) is designed for indoor use.
- TBS is developing a dedicated «Heavy Duty» model (TBS-063) for protected outdoor installations. This installation guide will be updated after its release.
- Protection from sunlight: where the device cannot be installed in a shaded area, a separate roof must be installed that safely protects the device from sunlight. Its main purpose is to protect the device from heat, and to extend its service life by protecting it from UV radiation.

NOTE:
Installation in extreme environments without proper protection may cause permanent damage and voids warranty.

3.2 Recommended Mounting Information

- The recommended mounting height for the 3D FLASH MINI is 140 cm (55 inches) from ground to the bottom of the device.
- This relates to a person size of about 150 cm to 200 cm when scanning in the short distance; longer scanning distance means smaller and taller persons are within view as well.
- According to the typical size of the expect user group, you might adjust the mounting height up or down.
- Strong ambient light and / or direct light into the front side of the 3D FLASH MINI should be avoided. Sunlight, halogen lamps or other strong illumination may reduce the performance of the 3D FLASH MINI and may result in increased failure-to-capture rates or failed authentication events, especially for liveness checks. Due to lens flare effect, the reader could not be able to recognize a face properly if the subject is backlighted.



3.3 Prepare the Unit for Installation

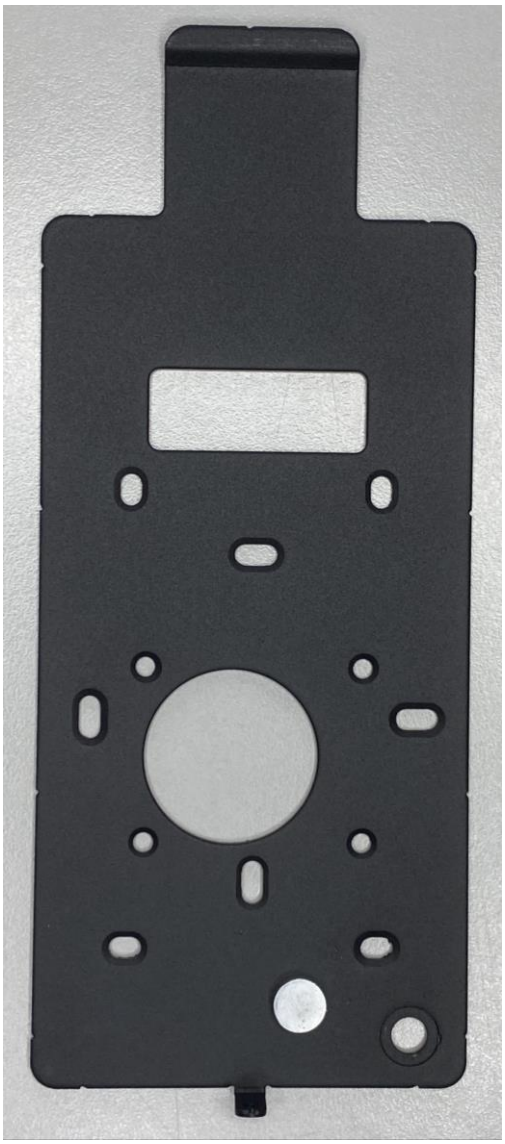
- Place the 3D FLASH MINI with the front down on a soft surface.
- Detach the metallic wall plate from the 3D FLASH MINI by removing the screw at the bottom of the unit. The screwdriver tool fitting for the security screw is included in each package (see picture of the included set below). Separate the wall plate from the reader by lifting the plate upward. The screw will be re-used to attach the 3D FLASH MINI to the plate following installing and wiring.

3.4 Wall mount installation

- Installation can be accomplished by mounting directly to a wall (surface mount).
- A metal wall mounting plate is included in each package (see picture on next page). This plate is mounted on the wall, and the 3D FLASH MINI is secured on it using the bottom screw.
- The package includes connection cables, mounting screws and a security screwdriver as shown in the picture.

- Place the installation plate on the desired wall location and screw it into the wall. Please ensure that the bottom tab in the plate faces outward into the room and the cable opening (marked in green) matches the opening in the wall. Utilization of wall anchors is mandatory.

Backside view with wire connection pass through (power, LAN, serial)



Front view of wall plate as mounted to the wall with outline of the reader. The bottom tab faces away from the wall.

- To mount 3D FLASH MINI, slide the unit into the wall plate from the top into the central hook.
- Lock the 3D FLASH MINI using the special security type bottom screw.

4 Power and Signal Wiring

4.1 3D FLASH MINI Wiring Layout and Cables

This chapter describes the general wiring layout and the cables provided with the device.

The picture below shows connection pin layout. The label is printed on the reader backside:

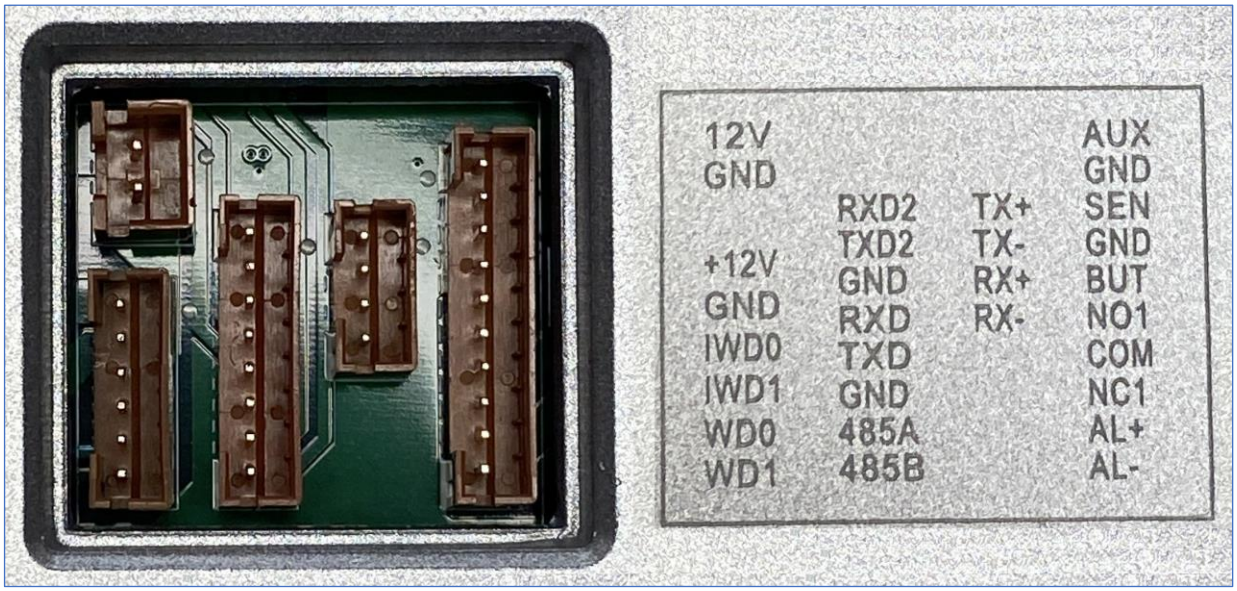


Figure and Table: Overview of cable connections on the backside of 3D FLASH MINI

12V Power Input +			**AUX** GPIN1
GND Power Input -			**GND** GPIN1
	RXD2 n.a.	**TX+** LAN	**SEN** GPIN2
	TXD2 n.a.	**TX-** LAN	**GND** GPIN2 & GPIN3
+12V Power Out +	**GND** RS232-Ground	**RX+** LAN	**BUT** GPIN3
GND Wiegand Ground	**RXD** RS232-Receive	**RX-** LAN	**NO1** Relay1 normally open
IWD0 n.a.	**TXD** RS232-Transmit		**COM** Relay1 input (connect +12V)
IWD1 n.a.	**GND** RS485-Ground		**NC1** Relay1 normally closed
WD0 Wiegand Out 0	**485A** RS485-A		**AL+** n.a.
WD1 Wiegand Out 1	**485B** RS485-B		**AL-** n.a.

4.2 General Wiring Requirements

The 3D FLASH MINI requires at least the following wiring:

- Ethernet cable: Cat5 cable or better is recommended.
- Power input cable:
  - AWG 14 to 18: recommended
  - AWG 19 or 20: usable depending on the cable length (less than 3 meters)
- Power Input requirement: 12 VDC. The power consumption amounts to 8 W peak.
- The Power supply delivered by TBS provides 12 VDC @ 3A (36 W; PSU is included with the device) To insert power cables into wire terminals please strip cable insulation off for ~5mm.

IMPORTANT:

For all signal wiring, including ethernet cables, it is recommended to connect cables of less than 30m length to avoid surge current spikes that may damage the equipment.

Do not power the device before all cable connections are properly made. Otherwise, there is risk of damaging the device.

Use stable power supply and shorter power input cable if possible, with correct gauge wire.
Any over- or under-voltage applied to this unit may cause permanent damage and voids the warranty.

4.3 Power Supply Wiring Recommendations

TBS recommends using a AWG16 gauge and 12 VDC power supply. The voltage specified is the one measured on the product block connector: 12 VDC (-15% / +10%).

The voltage drop due to the cable shall be considered. Table 3 shows the maximum distance between power supply and one unique device, depending on cable gauge and power supply rating.

Table 1: Maximum cable length in meters between power supply and one TBS terminal

Wire Size		Maximum distance [m]
mm^2	AWG	for 12 V ±10%
0.32	22	2
0.52	20	3
0.82	18	6
1.31	16	9

4.4 Ethernet Connection

For Ethernet connections, 3D FLASH MINI supports RJ45 LAN connection: the device has an internal proprietary LAN connector with 62 cm long elongation cable to external RJ45 socket.

The LAN cable should be of Cat5 or higher (it does not need to be crossed).

4.5 Integrated Relays

3D FLASH MINI features one integrated relay with NO/NC/COM dry contact.

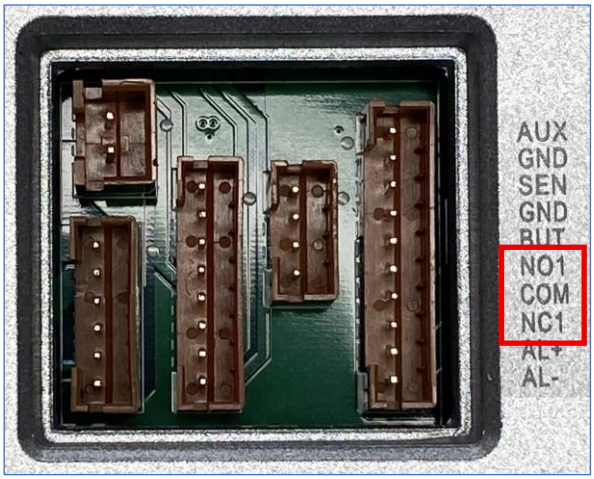
Use the provided cable adapter to connect to the right connection block. The relay pins are:

NO1 Normally open

COM Relay power; you could connect the +12V output here if you want to use the readers power supply to drive the relay

NC1 Normally closed

Relay output is meant to drive less than 20 W.



DISCLAIMER:

On-board relays must not be used to activate security access equipment such as gates or doors to grant access to secure areas, as they can be accessed and bridged by an intruder. Only non-security critical functionality such as lights may be directly activated using the internal switch.

Instead, use the data communication capabilities of the device (via ethernet, serial interfaces) to communicate with relays inside the secure area to activate security access equipment. TBS offers two dedicated controllers for such.

4.6 Connecting TBS Controllers

For various applications TBS Terminals can be connected to external controllers, e.g. to open a door. TBS offers two solutions:

- TBS CONTROLLER SMART**+** (4 relays, 4x GPIN, 4x GPOUT, connected via RS-485 or LAN)
- TBS CONTROLLER LITE (RelayBoard with 2 relays, 2 GPIN/GPOUT, connected via RS-485)

4.7 Connecting Third Party Controllers

4.7.1 RS485 Serial Interface

TBS recommends using RS485 and to protect communication using OSDP standard.

RS-485 cable can be connected with up to 1.2 km length (when using AWG#24 twisted pair).

It is mandatory to connect GND for RS485 connections.

Please connect from TBS device RS485 port directly to controller:

Terminal Label	Name	Type	Voltage Level
GND	GND	Ground	0V
485A	Data +	In/Out	0V-5V Bias (±7 V Offset)
485B	Data -	In/Out	0V-5V Bias (±7 V Offset)

4.7.2 RS232 Serial Interface

Please connect from TBS device RS232 port directly to controller using the provided cable.

Please connect the indicated pins from 3D FLASH MINI RS232 port directly to controller:

GND RS232-Ground (mandatory!)

RXD RS232-Receive

TXD RS232-Transmit

4.7.3 Wiegand Connection

Connection to 3rd party controllers can also be done via Wiegand interface. TBS devices offer Wiegand output lines supporting various standard formats (26 and 37bit).

The 3D FLASH MINI provides Wiegand OUT connections via the provided cable that can be directly connected to the corresponding 3rd party controllers Wiegand IN.

Please use the indicated pins.

Label on 3D FLASH MINI	Name	Type	Voltage Level
GND	Ground		Ground for Wiegand
WD0	Connection Zero	Out 1	Wiegand Out (5V TTL)
WD1	Connection One	Out 2	Wiegand Out (5V TTL)

5 Appendix

5.1 Maintenance

Cleaning

Prior to disinfection the devices should be cleaned to remove dust or dirt.

Use warm water with a few drops of soap or a combined cleaning & disinfection liquid normally used to wash hands. Don't use aggressive detergents.

Use soft towels for cleaning only, don't use abrasive cleaning equipment.

Pay attention never to use aggressive chemical cleaning agents, as these could attack the plastic housing of the device.

Disinfection

TBS devices can be disinfected with antiseptic liquid, e.g. Sagrotan, Dettol or a similar disinfectant applied as a spray.

Function check

TBS terminals are designed for permanent usage. Therefore, problems in the operation of the devices are detected during regular usage. Special tests to check for correct functioning are not required.

TBS recommends checking the integrity of the terminals at least every 6 months. If the devices are used in environments with dust or where oily substances are handled or other extraordinary environmental factors are present, the glass in front of the camera needs to be checked and cleaned with increased frequency.

Replacement Parts

When used in normal operation, no maintenance parts should be needed for 3D FLASH MINI.

5.2 Troubleshooting

The following table provides brief description of device error codes and quick resolutions.

Error code	Description	Resolution
0	No error.	
1	General error.	
42	Sensor image caching (sensor returned two same images in a row).	
100	Unknown DB error.	
101	DB empty.	Add users or reload database from BioManager.
102	Database limit reached.	
103	DB corrupted.	Reload database from BioManager.
200	Unknown configuration error.	Verify the settings in DeviceConfig.
201	Wrong configuration set.	Verify the settings in DeviceConfig.
300	Unknown server communication error.	
301	Device blocked (Off Active flag on server).	Enable active flag on BioManager.
302	Device blocked remotely using RemoteControl interface.	
303	Device not connected to server (either wrong configuration or connection problems).	
304	Device not validated on server.	Validate the device on BioManager.
305	Device in non-operable state - DB reload in progress.	Wait for DB reload process to complete.
400	General HW error.	
401	Intrusion detected.	Resolve using DeviceConfig under Maintenance / Security / Intrusion Prevention page.
410	Unknown sensor error.	
411	Sensor lost from USB interface.	
412	Sensor incorrect behaviour - sensor thread stops etc.	
413	Wrong sensor configuration.	
414	Runtime sensor error.	
415	Sensor too long in pos. loop three times in row.	The sensor is continuously triggered either manually or by external light or object inside sensor cavity. Rectify the cause and re-power the device.
420	Unknown RFID error.	
421	RFID initialization failed.	Ensure that RFID module is connected.
422	RFID runtime error (e.g. communication with reader failed).	Shutdown and re-power the device.
423	RFID card reading error.	
430	Unknown Relay/GPIO error	
431	Relay/GPIO communication error	
440	General problem with external verification initiated from 3rd party software.	
441	Empty token comes from external device.	
500	General logic error.	
501	User presented card in smartmode and he does not have it allowed.	Enable RFID flag in 'Id factors' for user in BioManager.
600	Unknown profile set.	
601	Wrong profile configuration.	
602	Communication error in profile (e.g. with SmartController).	
701	Too many pending access infos (TnA records) in the cache (device offline for long time).	Verify the connection to XML or WE server.
702	Enrollment error appeared (e.g. due to UserID duplication reported by server).	Delete error user in Admin DB page and ensure duplicate UserID or PIN code is not enrolled again.
703	One or more enrollments are pending on device (device is offline).	Verify the connection to WE server.
800	Too old BSP version for current FW or BSP Unknown reported.	

900	Unknown (general) camera error.	
901	Camera service communication error.	Verify camera endpoint configuration in DeviceConfig and ensure camera service is running on server.
1000	General network error.	
1001	No Wifi signal.	
1002	Low Wifi signal.	

5.3 TBS Port Assignments

The following table lists all TCP/UDP ports that are used in TBS software and firmware as part of the biometric subsystem infrastructure.

In case an installation is not going to use all TBS components TBS offers, some of the available services will not be needed, and the respective ports do not have to be open.

Table: Port assignments for BIOMANAGER ENTERPRISE installations (BM):

Machine	Port	Protocol	Comment	Inbound	Outbound
BM Server PC					
Secure device channel (1)	8808	HTTPS	default communication channel. BME installer sets required firewall settings by default	Yes	No
Biometric Client Service PC					
BM channel (1)	8808	HTTPS	communication channel to BME server and Device Control Center (DCC)	No	Yes
Enrollment API	8281, 8282, 8284	HTTP/S	communication channel between enrollment components.	Yes (2)	No
	8283	MQTT			
Enrollment PC					
BM channel (1)	8808	HTTPS	communication channel to BME server and Device Control Center (DCC)	No	Yes
Terminal					
BM On-Prem (1)	8808	HTTPS	communication channel to BME local server and Device Control Center (DCC)	No	Yes
BM CLOUD	443	HTTPS	communication channel to BME Cloud server	No	Yes
DeviceConfig	443	HTTPS	public web interface to configure devices	Yes	No
DeviceControl	8200	HTTPS	public interface to remotely control devices	Yes	No

(1) Can be customized during installation

(2) Ports are bound only to localhost

5.4 References to other TBS documents

TBS 3D FLASH MINI Mounting and Installation Guideline

Permanent link: https://cloud1.tbs-biometrics.com/index.php/s/CWiErd3j0qdqnlz

The QR code printed on the product opens this link, leading to the 3D FLASH MINI product folder from where this manual is available.

TBS Terminal Firmware

https://biometrics.talentlms.com

TBS Partner Portal with full product documentations and access to latest firmware for terminals. Access is restricted to registered TBS Partners.

TBS System Requirements

Permanent link: https://cloud1.tbs-biometrics.com/index.php/s/q8V3hzrLyR0Mnyg

Summarizes the prerequisites a site needs to offer regarding server & network to host a TBS installation.

TBS Enrollment with 3D FLASH MINI

Permanent link: *follows in a later update of this guide*

Description of the two available enrollment options, comprehensive manual for TBS system operators.

TBS Short instruction - Biometric Enrollment on 3D FLASH MINI

Permanent link: https://cloud1.tbs-biometrics.com/index.php/s/06pcwTzKxfgxxx5

One-pager providing guidance for the local enrollment process to TBS system operators.

TBS Manuals for TBS System Operators (Endusers)

Permanent link: https://cloud1.tbs-biometrics.com/index.php/s/JBNh6zAMJbRQoZD

Access all published manuals for TBS system operators, including the above short instructions.

TBS Data Privacy & Security (Endusers)

Permanent link: https://cloud1.tbs-biometrics.com/index.php/s/32H8doLfYsD4d9g

TBS documentation related to the privacy and security of biometric user data.