Gallagher
SMB USA Base Kit

Installation Note

Gallagher SMB USA Base Kit, T11 White Reader: C500306
Gallagher SMB USA Base Kit, T11 Black Reader: C500307
Gallagher SMB USA Base Kit, T15 White Reader: C500308
Gallagher SMB USA Base Kit, T15 Black Reader: C500309
Gallagher SMB USA Base Kit, T30 White Reader: C500311
Gallagher SMB USA Base Kit, T30 Black Reader: C500312

Edition 1.2 | December 2023

Introduction

Thank you for choosing Gallagher.

The Gallagher SMB security solution has been designed to meet the security needs for small to medium businesses. It is a fully integrated cloud-based security system that offers intruder alarm, access control, monitoring and user management all within one mobile app.

Kit contents

Check the cabinet contains the following items:

- 1 x Gallagher SMB Controller (C500100)
- 2 x Gallagher HBUS 8In 4Out Board (C300680)
- 1 x LSP 150 W PSU (C305747)
- 1 x LSP D8 Power Distribution Module (C305743)
- 1 x LSP B100 Secondary Voltage Module (C305740)
- 1 x Metal Mounting Plate with ducting
- 1 x Door earth wire
- 1 x Wiring loom and associated internal cable assembly
- 1 x Gallagher SMB T15 (C500481/480), T11 Reader (C500430/431) or T30 Keypad Reader (C300490/491) located in a separate carton

Check the plastic bag contains the following items:

- 2 x Cabinet keys
- 32 x 4k7 ohm resistors
- 1 x White sticker (for rear optical tamper)

Note: The 7 Ah 12 V standby batteries and power lead are not provided.

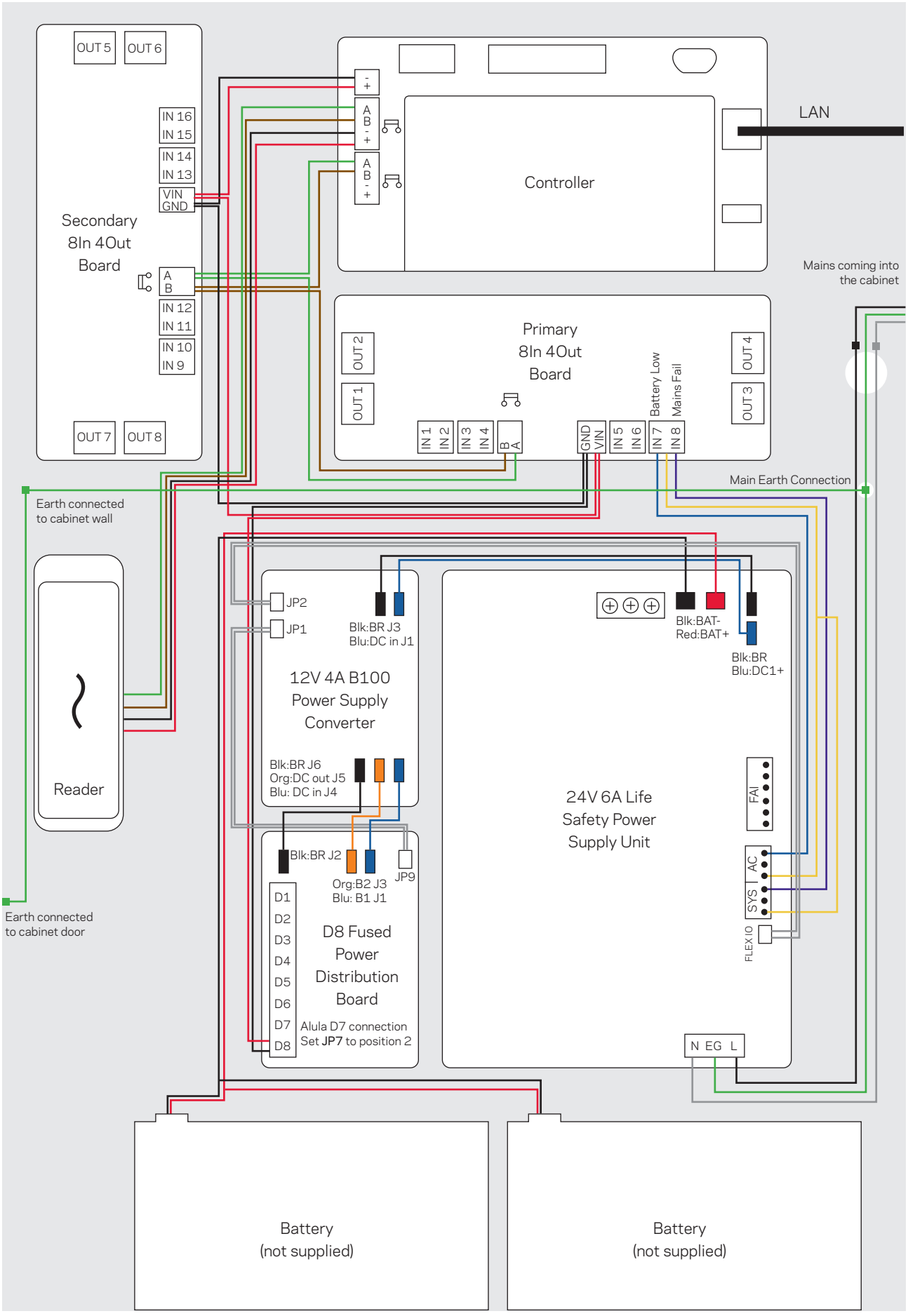
Additional items are:

- SMB US Monitoring Kit (C500615) includes Alula BAT-Connect
- SMB US Expansion Kit (C500310)
- 1 x HBUS 16In 16Out Board (C300688)
- 1 x HBUS 8 Port Hub (C300698)

All hardware items with an associated part number can be ordered as replacement parts.

What's connected?

The hardware within the kit is pre-wired to support the site's default software configuration.



Installation

The installation of this kit must be carried out by a Gallagher SMB Partner.
Follow the instructions in this document to install the kit.

ATTENTION: This equipment contains components that can be damaged by electrostatic discharge. Ensure both you and the equipment are earthed before beginning any servicing.

1. Install the cabinet

The cabinet is a secure metal enclosure containing the electrical equipment.
The cabinet also provides installation space for four 7 Ah 12 V batteries.

Before you begin

- Location
  The cabinet is designed to be mounted on the wall and should be installed in a secure room that is hidden from casual observers but allows frequent access. The room must provide environmental and extreme temperature protection, AC mains power availability, and security cable availability (for the low voltage connections). It is preferable for optimal work height that the cables exit the wall and enter the cabinet at eye height or just below, (i.e. approximately 1.6 m (5.25 ft) from the floor). The solution is considered a permanently connected system and is not intended to be moved once installed.

- Dimensions
  Cabinet - Height: 620 mm (24.4"). Width: 372 mm (14.65"). Depth: 150 mm (5.9").
  Mounting holes - 379.5mm (14.94") bottom to middle key holes. 593mm (23.34") bottom to top holes.

- Earthing
  The cabinet has an earth wire connected to the cabinet door, cabinet body, power supply unit and the main's supply earth wire. When the gear plate gets taken out of the cabinet to hang the cabinet on the wall for the first time, it is necessary to disconnect the earth wire from the door and from the cabinet body. They must both get reconnected (as well as the mains earth connection) after refitting the gear plate in the cabinet to comply with the local electrical regulations before turning on the mains supply.

- Tamper detection
  The controller's front optical detector uses the reflective metal plate (pre-installed on the inside of the cabinet door) to detect a change in light when the cabinet door is opened.
  The controller's rear optical detector uses the light pipe in the back face of the cabinet,

and a rear tamper sticker on the wall to detect a change in light when the cabinet is removed from the wall.

- Locking the cabinet
  Two cabinet keys are provided to secure the contents of the cabinet.
- Knockouts
  The knockouts in the side panels of the cabinet can be carefully tapped or cut out.

Procedure

1. Disconnect the earth wires connected to the cabinet door and left inside of cabinet and remove the door for ease of installation.
2. Remove the backplate from the cabinet by unscrewing the two nuts (centre left-hand side of the I/O board and D8 module) and lift it out.
3. Identify and create the knockouts needed for cables and the antenna (if using the Alula BAT-Connect, refer to separate installation note).
4. Mark the position of the six mounting holes and rear tamper detector (light pipe) on the cabinet mounting surface.
5. Fix the rear tamper sticker to the mounting surface. The sticker must align with the light pipe located in the back face of the cabinet.
6. Secure the cabinet to the wall, using a minimum of four securing anchors. The cabinet must be tight and flush against the wall. This ensures the distance between the rear tamper sticker and the controller's rear tamper detector is kept to a minimum.
7. Hook the backplate under the bolt heads on the right-hand side and align the two holes with bolts.
8. Secure the backplate back into place with two nuts.
9. Reconnect the earth wires to the door and to the body of the cabinet.
10. If using the Alula BAT-Connect for monitoring, refer to the US Monitoring Kit installation details.
11. An Expansion Kit is availale to increase capacity to support more doors, refer to the US Expansion Kit installation details.

2. Install readers

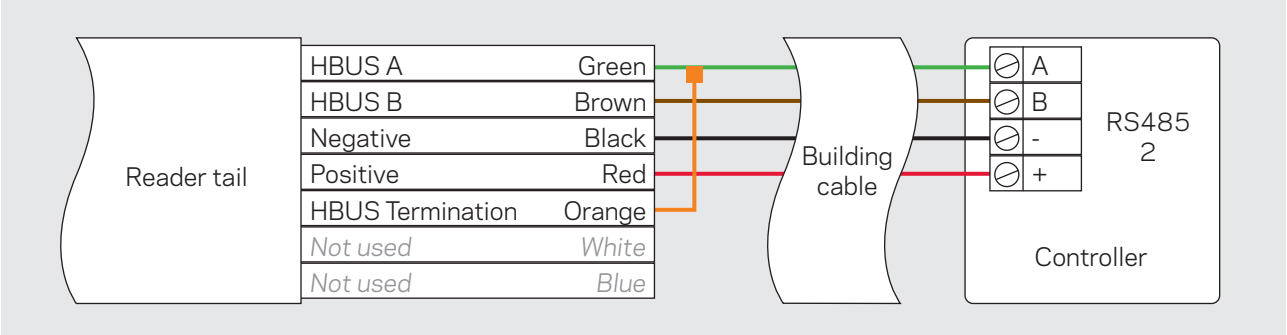
The default configuration provides allocation for one reader. It is recommended at least one reader be configured to a site. This allows a user to arm or disarm locally using their smartphone, in the event that the site losses internet connectivity. The smartphone uses Bluetooth to communicate with the reader.

Doors can be configured without a reader, if required.

The HBUS communications protocol allows a single reader to communicate over a distance of up to 500 m (1640 ft) from the controller, when using data only in a single CAT5E cable. Cabling should be a minimum size of 0.2 mm^2 (24 AWG).

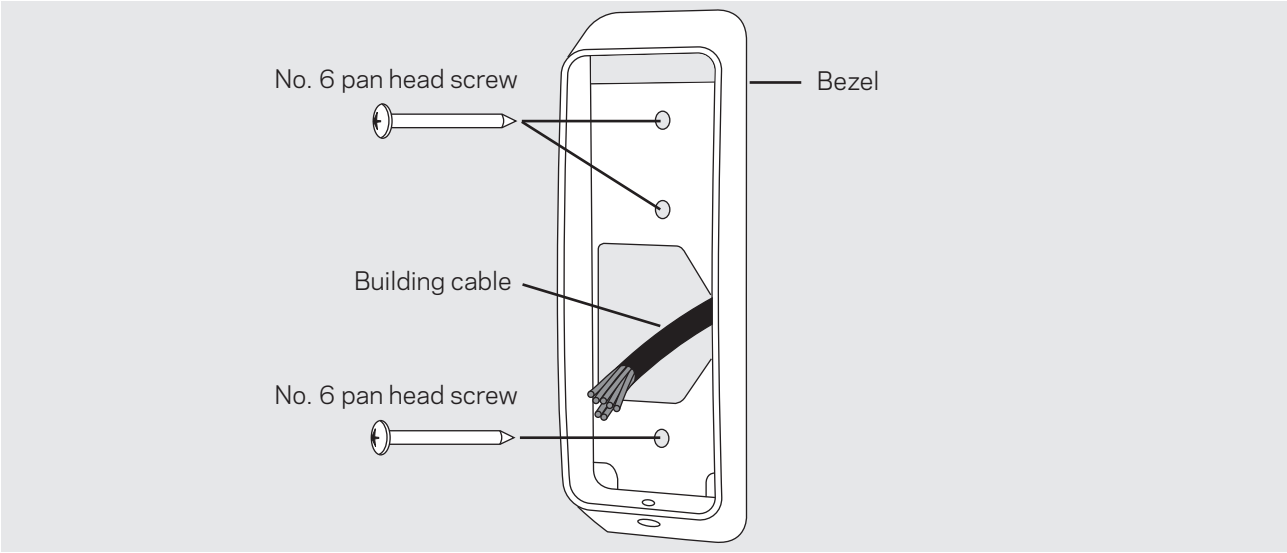
Connect the reader tail to the building cable. All cabling between HBUS devices should use ‘daisy chain’ wiring. This allows you to have multiple devices on the same cabling run. The end devices on the HBUS run must be terminated. To terminate a reader, connect the orange wire to the green wire.

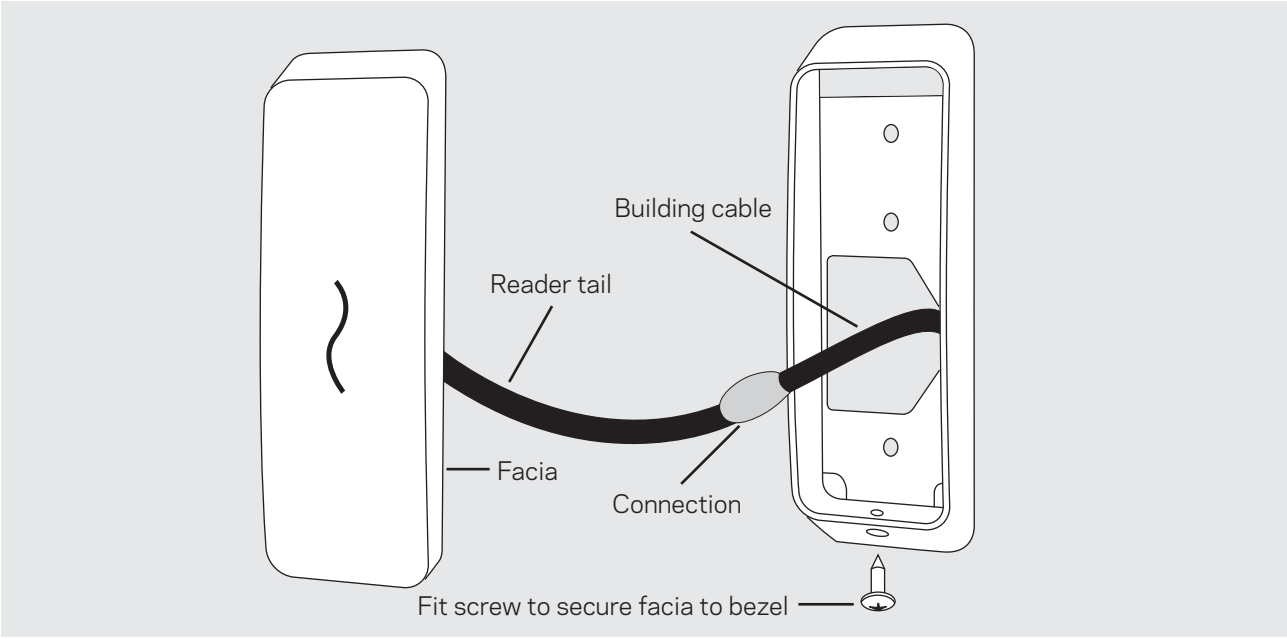
Should you require multiple doors, the HBUS 8 Port Hub (C300698) can be utilized. This hub supports the star wiring of eight HBUS devices to the hub's eight ports.
Note: you will still need to provide power to the door.



The reader is designed to be mounted on any solid flat surface. However, installation on metal surfaces, particularly those with a large surface area will reduce read range. The extent to which the range is reduced will depend upon the type of metal surface. Use a spacer plate or the reader mount block (C300951) accessory to improve the read range.

The recommended mounting height for the reader is 1.1 m (3.6 ft) from the floor level to the centre of the reader. However, this may vary in some countries, and you should check local regulations for variations to this height. If using conduit, the reader can be mounted on a mounting block (C300951).





3. Connect inputs and outputs

Two 8In 4Out Boards are pre-installed in the cabinet. The Primary board is directly below the controller.

The boards provide connection for a total of 16 inputs and 8 outputs. Two of the 16 inputs, on the Primary board, are used for monitoring mains power failure and battery low.
The remaining 14 inputs can be used to connect sensors.

The HBUS 16In 16Out Board can be utilized with the SMB Kit to expand the solution.

Connect inputs and outputs, as required. Fit two 4K7 resistors as close as possible to the device being monitored. When the monitored device incorporates a normally-closed tamper switch, it can be wired in series with resistor R1. All devices connected to a single I/O board must share the same resistor value. The resistance value for an I/O board can be changed within the SMB Configuration App.

Relays are provided as 'dry' contacts or 'electromagnetically switched' contacts. Each relay is rated 3 Amps at 24 Vdc for a resistive load, or 1 A at 24 Vdc for an inductive load.

The relay is controlled by the assigned output in the SMB Configuration App. To make use of the relay, terminate the positive constant supply to the common termination of the relay and nominate either Normally Open (N/O) or Normally Closed (N/C) termination to operate the external device.

The D8 Fuse Board provides power distribution. The board can be used to power locks, sensors, readers, and sirens, while maintaining circuit protection. Jumpers are used to draw either 12 Vdc or 24 Vdc from the board. The default jumper position is one which draws 24 Vdc, designed to power locks at 24 Vdc. Change the jumper to position two, if you want to draw 12 Vdc from the board.

Reference the LifeSafety Power D8 Installation Manual for further information.

The B100 provides an additional voltage in a conjunction with the LifeSafety FPO150. The B100 voltage input is 24 Vdc from the FPO150 and the secondary voltage output is 12 Vdc (DC OUT). 12 V required for the controller and I/O boards and 24 V is required for powering locks. The jumpers should not be interfered with.

Reference the LifeSafety Power B100 Installation Manual for further information.

4. Connect power to the system

The cabinet comes pre-installed with a LifeSafety FPO150 which is used to power the electrical hardware and charging up to four 7 Ah 12 V batteries (connected in a way to support 24 Vdc backup. It provides a battery charging current of 2.5 A.

Calculating battery life

The cabinet supports up to four 7 Ah 12 V batteries. To know how long your batteries will support your cabinet, calculate the following:

(combined battery capacity*) ÷ (total current draw in amps**) = (battery life in hours)

*To find the combined battery capacity, add the Ah values of all your batteries.

**To find the total current draw, add the current draw of the individual units in your cabinet. Refer to the end of this installation note and separate hardware installation notes for current draw values.

LifeSafety FPO150

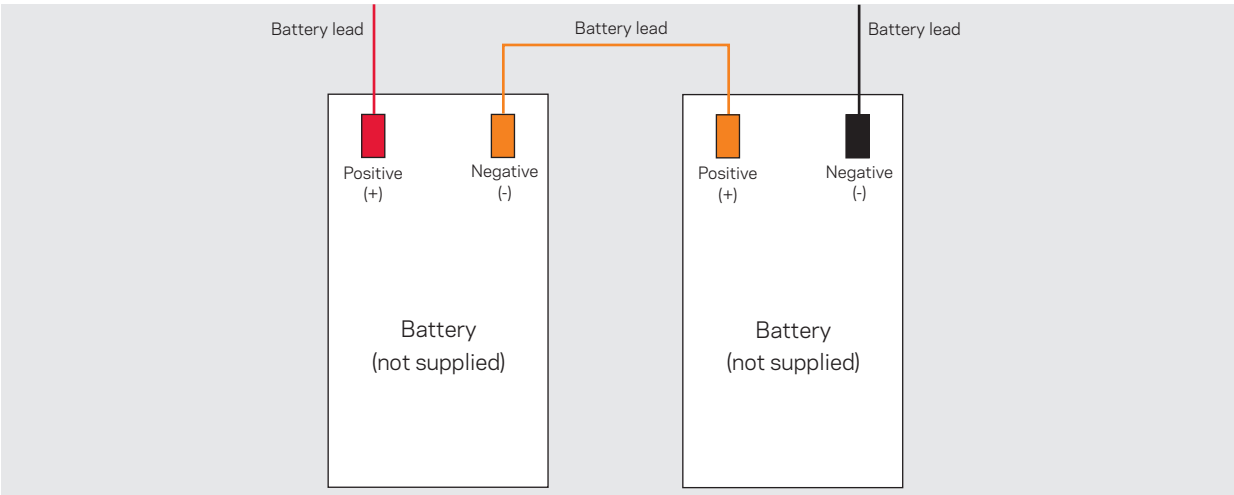
The AC mains connection to the LifeSafety's FPO150 power supply must be followed in accordance with LifeSafety's installation manuals. All AC mains electrical connections must comply to the local electrical authority's codes and NFPA section 70. Installation & service should be performed by a qualified service personnel.

Refer to LifeSafety's FPO150 Installation Manual for additional guidance.

The power supply provides two alarm outputs for monitoring battery low voltage and mains failure alarms. Both the alarm outputs have on-board 4k7 EOL resistors fitted as standard.

Note: Do not apply voltage directly to the Battery Low or Mains Failure outputs, as this will damage the monitoring circuitry, rendering the power supply unusable.

1. Using the battery leads provided, connect the required number of 7 Ah 12 V batteries to the FPO150. To provide 24 Vdc battery backup, connect the batteries as shown.



2. The red wire connects to the red/positive battery terminal. The black wire connects to the black/negative battery terminal. Use the orange wire provided as a jumper between batteries.

   Note: The batteries are not provided. The batteries are used as standby batteries, should the mains power supply fail. Battery capacity requirements are to be calculated based on the total load of the system and the number of hours required to run the system on battery backup. For additional battery capacity, it must be housed in an additional cabinet and connected to provide 24 Vdc back to the FPO150.

3. Terminate the AC mains earth to the main earth stud located on the right-hand side of the gear plate. Earth termination must adhere to NFPA section 70 and local authority electrical codes.

4. Connect the AC supply mains to the black (Live/Hot) and white (Neutral) wires in accordance with LifeSafetys installation manuals, NFPA section 70 and local authority electrical codes.

5. Energize the Lifesafety FPO150 mains.

   Note: A power lead is not provided with the kit.

6. Ensure all equipment operates correctly, both with mains power ON/batteries ON, and with mains power OFF/batteries ON.

Battery Low alarm

The Battery Low system alarm will be triggered when the battery charge falls below 10.8 V. If no battery is connected the Battery Low alarm will not activate. This output is connected to Input 7 on the default configuration of the Primary 8In 4Out Board.

Mains Failure alarm

The Mains Failure system alarm will be triggered when the mains voltage falls below approximately 90 V or when the mains voltage rises above approximately 250 V. This output is connected to Input 8 on the default configuration on the Primary 8In 4Out Board.

Note: Both Battery Low alarm and Mains Failure alarm are sent as a system notification to the customer via the Gallagher SMB app. These events are also visible in the Event History of the controller in the SMB Configuration app.

5. Connect the controller to the cloud

The controller connects to the site's local TCP/IP network.

1. Power on the controller.
2. Connect the site's Ethernet cable directly to the controller's Ethernet port.
3. Does the site's network use a proxy server to access the internet?
   If **no**, continue to step 4.
   If **yes**, you will need to supply the proxy server's hostname, port, and logon credentials to the controller. Refer to the topic *"7. Controller web browser configuration"* later in this document, to access the proxy settings.
4. Log into the SMB Configuration app and assign the controller to a site. If you have no login details, please contact Gallagher Technical Support. Note: The SMB Configuration App is a web-based portal and does not require you to download an app from the iOS or Google Play Store.
   Refer to the topic *"6. Assign the controller to a site"* later in this document.
5. Once assigned to a site, the controller will come online and connect to the cloud. An IP address is automatically assigned to the controller via DHCP. There is no MAC address or IP addressing required.

   The controller will download the latest firmware and its default configuration from the cloud. The download will take approximately 5 minutes. It may take longer if the download occurs over cellular. The controller will restart after the download. Configuration changes should not be published to the controller at this time. The Gallagher SMB solution only supports the latest firmware version on the controller. The firmware version can be viewed within the Properties section of the Controller lightbox in the SMB Configuration app.

   If the controller doesn't come online, check the site has an internet connection. Plug your laptop into the network and test the connection. Ensure the following ports are open on the site's network for the controller:

Port	Protocol	Details
67	UDP	DHCP to internal router
53	UDP	DNS to internal router
123	UDP	NTP to time.google.com
443	TCP	SMB Cloud HTTPS

6. Assign the controller to a site

1. Log into the SMB Configuration App.
   Note: Login details can be requested from Gallagher Technical Support.

2. Has the site been created?
   If **no**, continue to step 3.
   If **yes**, go to step 6.

3. Select the **+ADD NEW SITE** located at the top of the screen.
   The 'New Site' lightbox displays.

4. Enter a name for the site and complete all fields.
   The key account holder will be the first person from your customer's site to download the Gallagher SMB App. The Key Account holder performs a similar role to a facility manager and is the person who will invite other users to the site.

   Select the **Site uses tags** checkbox if the site will be issuing key tags to users. Selecting this checkbox will enable tag assigning functionality within the Gallagher SMB App.
   Note: If using tags, cards, or user codes to arm & disarm an area, change the **Locally disarm area** to **Single Factor** within the **Area** lightbox.

5. Select the **Save** button.
   The site is created, and the default configuration is displayed.

6. Navigate to the site, click the **Scan controller QR code** button, scan the QR code printed on the controller, then click the **ASSIGN CONTROLLER** button. If using a laptop, take a photo of the QR code using your phone and present it to the laptop.

   Note: If you're unable to scan the controller's QR code, you can enter the controller's ID in the **Controller ID** field, then click the **ASSIGN CONTROLLER** button. The controller's ID is printed on the controller, below the QR code.

   The controller will download the latest firmware and it's default configuration from the cloud. If the message **Cannot assign controller** displays, it has already been assigned to a site.

7. Controller web browser configuration

The Controller's cloud configuration web pages allow configuration of specific Controller settings, including the Controller's date/time and NTP server if needed.

To connect to the Controller's cloud configuration web pages, there are two methods:

Method	Procedure
Navigate to the Controller's IP address	1. Find the IP address that has been assigned to the Controller by the local DHCP server. 2. Set DIP switch 1 to ON. 3. Connect a laptop/PC to the same network as the Controller. 4. Using a web browser, go to the Controller's cloud configuration web page, replacing <*ip_address*> with the assigned IP address for the Controller: *http://<ip_address>/cloud/* The Sign In dialog displays. 5. Enter **cloud** for the username, then **GGLcloud** for the password and press **Enter**. The Gallagher Cloud Controller Configuration web page displays. 6. Select the required link to configure the Controller as needed. 7. When finished, set DIP switch 1 to OFF.
Reset the Controller's IP address, then navigate to it	If you cannot find the Controller's DHCP IP address, the Controller can use the default IP address by powering it on with DIP switches 1, 2, and 3 ON. The Controller then uses the following default addresses: ▪ **Controller IP:** 192.168.1.199 ▪ **Gateway:** 192.168.1.198 ▪ **Subnet:** 255.255.255.0 1. Connect the Controller to your PC via the Controller's Ethernet port. 2. Set DIP switches 1, 2 and 3 to ON. 3. Power cycle the Controller. 4. Using a web browser from a PC on the same subnet as the Controller, enter the default IP address of the Controller as follows: *http://192.168.1.199/cloud/* The Sign In dialog displays. 5. Enter **cloud** for the username, then **GGLcloud** for the password and press **Enter**. The Gallagher Cloud Controller Configuration web page displays. 6. Select the required link to configure the Controller as needed. 7. When finished, set DIP switches 1, 2 and 3 to OFF.

8. Configure the site

Configure the site using the SMB Configuration App. Configure Areas, Inputs, Outputs, Doors, then click **PUBLISH** to download the configuration changes to the controller.
For configuration instructions, refer to the Help Centre for Installers.

9. Test the site

Test Mode allows technicians to install, configure, and test an SMB site without alarming others by setting off sirens or other devices activated in response to an alarm. Test mode also prevents Site Managers, guards, and monitoring services from responding to alarms generated while the system is being tested.

1. Click **Enable Test Mode** from the **Site Actions**

2. Test Mode can only be enabled for a period – set the time for Test Mode to expire

3. If Guarding or Monitoring is enabled, a warning will display advising the Technician to inform the Monitoring station or Guarding company.

4. Test buttons will appear next to the Outputs. Alarm Relays are bypassed, Technicians can 'chirp' test outputs from this screen.

5. Click the **Test button** next to each Output

6. Once testing is complete click **Disable Test Mode** to disable it immediately, or it will automatically disable at the set expiry time.

Note: Once a site is activated, Test mode can only be enteren when Installer Mode is enabled.

10. Initialise tampers

The front optical tamper detector will sense when the cabinet door has been opened. The rear optical tamper detector will sense when the cabinet is removed from its mounting surface.

When you have finished wiring the devices and no longer need to access the cabinet:

1. Close and lock the cabinet door using the key provided.
2. Within the SMB Configuration App, click the controller at the top of the hardware tree.
3. Within the site's controller lightbox, select **Restart**.

11. Activate the site

When the site is activated, it will become operational and billing will commence. A site can be activated as soon as the system is operational, allowing the Key Account Holder to start using the system before you have fully completed the installation.

Select **Activate Site**. This will send an 'Account Activation' email to the Key Account Holder. The Key Account Holder will need to follow the instructions in the email to download the Gallagher SMB App and accept their credentials.

Note: If you are unable to onboard the Key Account Holder, ensure they have a PIN or pattern set on their phone.

The site has now been handed over to the customer. The SMB Configuration App changes to 'read-only' for the site. If you need to make additional configuration changes, the customer must enable **Installer Mode** within the **Settings** of the SMB App.

Controller Run LED flash patterns

Flash	Pattern	Meaning
Short flash Long flash (1 s cycle)	100 ms on, 250 ms off 400 ms on, 250 ms off	Boot code monitor running, network unplugged
Half flash	450 ms on, 50 ms off (2Hz flash)	Controller resetting
Fast	130 ms on, 130 ms off (4Hz flash)	Initialising
1 flash	500 ms on, 500 ms off (1Hz flash)	Normal running
2 flashes	2 flashes - pause (each flash is 50 ms on, 400 ms off, 1.2 s pause)	Controller is operating, connected to the cloud but has no configuration
3 flashes	3 flashes - pause (each flash is 50 ms on, 400 ms off, 1.2 s pause)	Controller has a valid set of keys but has not connected to the cloud
4 flashes	4 flashes - pause (each flash is 50 ms on, 400 ms off, 1.2 s pause)	No private keys or certificate loaded, so will be unable to authenticate with the cloud. Contact Gallagher Technical Support.
5 flashes	5 flashes - pause (each flash is 50 ms on, 400 ms off, 1.2 s pause)	Controller has a connection to the cloud but either the cloud has failed to authenticate the controller, or the controller has failed to authenticate the cloud. Contact Gallagher Technical Support.
6 flashes	6 flashes - pause (each flash is 50 ms on, 400 ms off, 1.2 s pause)	Controller does not have runnable firmware. Contact Gallagher Technical Support.

Technical specifications

Controller	Value
Voltage	9 Vdc - 16 Vdc (must be at least 3 V above output voltage)
Current without devices connected	110 mA
Maximum current per RS485 port	750 mA
Temperature range	-10 °C to 70 °C (14 °F to 158 °F)
Humidity	0 - 95% non-condensing
10/100BaseT Ethernet port	1 x 10 Mbs/100 Mbs

I/O Boards	Value
8In 4Out Board operating current	45 mA DC (relays OFF) 200 mA DC (relays ON)
8In 4 Out Board power rating	0.61 W (relays OFF) 2.72 W (relays ON)
Fuse	Onboard 1 A resettable polyfuse

Reader	Value		
Voltage	9 Vdc - 16 Vdc		
Current		Idle[1]	Maximum[2]
	T11 at 9 Vdc	106 mA	176 mA
	T11 at 13.6 Vdc	80 mA	142 mA
	T15 at 9 Vdc	110 mA	168 mA
	T15 at 13.6 Vdc	81 mA	136 mA
	T30 at 9 Vdc	130 mA	241 mA
	T30 at 13.6 Vdc	87 mA	160 mA
Temperature range	-35 °C to +70 °C (-31 °F to 158 °F) Direct sunlight may increase the internal reader temperature above the ambient temperature level		
Humidity	0 - 95% non-condensing		
Environmental protection	IP68[3]		
Impact rating	IK07[3]		
Unit dimensions	T11 Reader: Height 115 mm (4.5 inches) Width 70 mm (2.8 inches) Depth 12 mm (0.5 inches)		
	T15 Reader: Height 139 mm (5.47 inches) Width 44 mm (1.73 inches) Depth 23 mm (0.9 inches)		

	T30 Keypad Reader: Height 118.0mm (4.65 in) Width 86.0 mm (3.39 in) Depth 26.7 mm (1.05 in)
Maximum number of access controlled doors on one SMB controller	10
Standards and compliance	FCC, RCM, RoHS

[1] The reader is idle
[2] Maximum reader current during credential read
[3] Environmental protection and impact ratings are independently verified

LifeSafety Power FP0150

https://www.lifesafetypower.com/docs/im_fpo.pdf

D8 Simple Distribution Board

Input	Voltage	5 - 24 Vdc nominal
	Current	12 A maximum
	Standby Current	65 mA
Output	Voltage	Same as input
	Current (D8)	3 A Resistive
	Current (D8P)	2.5 A Resistive (Class 2 Power Limited)
Fuse (D8 Only)	3 A ATM automotive style	
Size	D8/D8P	4.00" x 2.50" x 1.0" (102mm x 64mm x 26mm)
Weight	D8/D8P	0.15lb (0.07kg)

B100 DC-DC Convertor

Input	Voltage	8 - 25 V (must be at least 3 V above output voltage setting)
	Current	3.5 A maximum
	Standby Current	35 mA
Output	Voltage	4.7 - 23 V
	Current	4 A maximum (Class 2 Power Limited)
Fuse (D8 Only)	7.5 A ATM automotive style	
Size	4.00" x 2.50" x 1.75" (102mm x 64mm x 45mm)	
Weight	0.20lb (0.09kg)	

SMB USA Base Kit standards and compliance

FCC, RCM, RoHS