Gatekeeper H Technical Instructions

Technical Support

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Nov 2025

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Preface

This wiring guide is for the security technician or electrician responsible for installing the Gatekeeper H5 and door readers supplied by GymMaster.

This guide includes an overview of the hardware involved, example wiring diagrams for both Fail-Safe and Fail-Secure access, emergency buttons, as well as diagnostic tests and basic troubleshooting.

Please read this manual carefully before the installation of the Gatekeeper and readers.

Hardware Checklist

What's in the Kit (supplied by GymMaster):

- ❏ Gatekeeper H
- ❏ Gatekeeper power supply
- ❏ GymMaster readers depending on setup:
  - ❏ Desktop reader with USB cable
  - ❏ Wall-mounted card reader with diodes

Sourced by Installer (not supplied by GymMaster):

- ❏ **Router with internet connection**
- ❏ **Cabling**
  - ❏ 4-core screened 18-20 AWG cable
  - ❏ Cat5e Ethernet cable
- ❏ **Battery backup (recommended)** i.e **Uninterruptible Power Supply** (UPS) to maintain constant power for the Gatekeeper, door readers, door lock, internet router and any network components in the event of a power outage.
- ❏ **Exit buttons** as required (exit button, emergency exit).
- ❏ **Door lock power supply**
- ❏ **Door hardware** as required (door lock, turnstile etc) Door Lock should be preferably 12V DC magnetic lock or electric strike. **Note that locks must not exceed a 30VDC rating**.

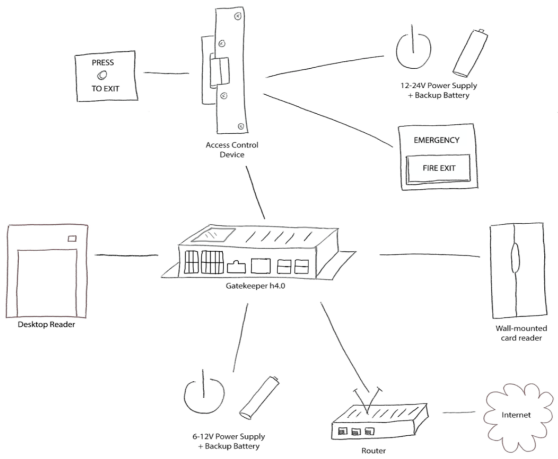
Gatekeeper Overview

The GymMaster Gatekeeper H5 is an access control device designed to manage facility entry and exit when used with GymMaster gym management software. It connects to the internet via an RJ45 cable and integrates seamlessly with GymMaster door or desktop readers. Additionally, the unit supports receipt printers and cash drawers through its USB ports.

Only GymMaster integrated readers and approved cash drawers and receipt printers can be connected to the gatekeeper unit. Any other devices will affect operation.

Note: The Gatekeeper includes an offline mode that allows current gym members to access the facility if the network connection is lost.

Please consult your local council to ensure compliance with all entrance and exit regulations. It is also strongly advised to install an Emergency Exit button and a separate key-lock or equivalent manual access method for safety.



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Power Supply

The Gatekeeper requires a 12V DC power supply rated at a minimum of 2A. **Do not** use a power supply exceeding 15V or providing less than 2A, as this may damage the device or cause instability.

It is **strongly recommended** to connect the Gatekeeper to a **battery backup**, such as an Uninterruptible Power Supply (UPS), to ensure continuous power for all access control systems. A suitable UPS should support direct connection for the router, door lock, and Gatekeeper power supplies, and must be rated to deliver more than 2A total output to reliably power all connected hardware.

Important Warnings

Do **NOT** use the Gatekeeper or the Gatekeeper power supply to power any door locks.

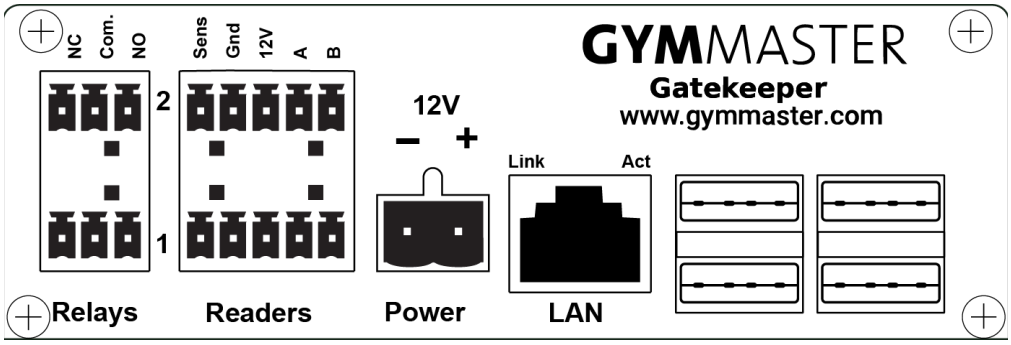
Door readers **MUST NOT** be mounted on conductive metal without an earth, or this may cause interference issues. These issues are usually not immediately apparent but will occur over time, preventing member access. You can install an insulating casing or mounting to prevent these issues if grounding or alternative surfaces are not available.

The maximum length of a standard USB cable connection is 3 metres (10 feet). Do not use multi-hubs or extensions to connect the desktop reader to the Gatekeeper. For Door Readers, ensure that the stub wiring is kept for future troubleshooting.

Install the Gatekeeper where it can be easily accessed by gym staff. Staff may need to access it in the event of a failure to power cycle it. If multiple Gatekeepers are installed, mark which Gatekeeper is controlling which door readers to enable troubleshooting.

Fail-secure wiring installation can trap members in the building in the event of a power outage if the UPS fails. Fail-safe wiring installation is recommended. Fail-safe wiring can leave the building unsecured in the event of a power outage if no UPS is used.

Gatekeeper Interface



Technical Specifications:

Name	Details
Power requirements	12V 2A
Power consumption	12-24W
Communication protocols	RS485, RS232
Input/Output ports	4x RS232, 2x RS485
Networking	1x RJ45 IPV4, TCP/IP, HTTP, HTTPS, DNS, DDNS, ARP, RSTP, DHCP
Graphic LCD module	68 mm (2.69 in) with backlight capability
Operating temperature	0℃ - 85℃
Housing dimensions	L=147mm (5.78 in), H=41mm (1.61 in), W=100mm (3.94 in)
Configuration methods	Factory configured/Client configured
Lock requirements	12-30 VDC

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Relay Terminals

The Gatekeeper includes two relay terminals, each corresponding to one of the two reader ports. These terminals are **dry contact relays** used to control door locks.

For loads exceeding **2A**, a **secondary relay** must be installed to act as a buffer between the Gatekeeper and the locking mechanism.

Relay Terminal Definitions:

- **NO** – Normally Open contact
- **COM** – Common terminal
- **NC** – Normally Closed contact

Because most door locks are **inductive loads**, switching them off can produce a voltage spike along the wiring, potentially damaging the reader.
If the door lock requires a **diode**, refer to the lock's manual and install the supplied **IN4001 diode** as close to the lock as possible. Ensure correct **polarity** — reversing it will cause a short circuit and may damage the power supply.

The diode **MUST** be wired correctly according to the diagram, otherwise there may be cumulative electrical damage to the Gatekeeper board, the reader unit, or the device power supply.

Exit Button Terminals

The Gatekeeper requires a **low-level voltage trigger signal** at the **REX (Request to Exit)** terminal to activate the relay and unlock the door.

A **normally-open push button** (two terminals) can be connected between **Sensor** and **GND** on the **Door 1** or **Door 2** socket to provide this trigger.
Refer to the sample wiring diagrams on **page 10** for connection details.

RFID Reader Sockets

The Gatekeeper is equipped with **two RS485 sockets**, allowing connection of up to **two door readers**. Each reader socket includes **four terminals**, corresponding to the reader's four wires as shown below:

Terminal	Wire Colour	
B (RX)	Green	
A (TX)	White	
GND	Black	
VCC	Red	

Ensure that any unused wires are **insulated** and kept separate from the four main connection wires.

The **RFID reader** must be installed in an area with **minimal electrical noise**, as excessive interference can reduce read performance. Common sources of electrical noise include other readers, motors, variable speed drives (VSDs), switch-mode power supplies, CRT monitors, and fluorescent lighting. Properly installed modern equipment generally meets **EMC (Electromagnetic Compatibility)** requirements and should not cause interference.

When using **two door readers**, ensure they are **physically separated by at least 5 cm (2 inches)** to prevent cross-interference between devices.

Network Port

The Gatekeeper requires an **active internet connection** through its **network port** to operate normally.
Use a standard **network (ethernet) cable** to connect the **network port** on the Gatekeeper to a **router or network switch**.

Ensure that this connection has **non-firewalled internet access**. If your facility's network is managed by an IT team, you may need to request that they **whitelist the Gatekeeper**.

If the Gatekeeper cannot establish a valid network connection, **it will not complete the boot process**.

The Gatekeeper can operate in **Offline Mode** for short periods during network outages, as long as the Gatekeeper, door locks, and network components remain powered. To ensure continuous operation and security during power interruptions, it is **strongly recommended** to connect all related equipment—including the Gatekeeper, door readers, Internet router, and network components—to an **Uninterruptible Power Supply (UPS)**.

The **network port** features two indicator LEDs:

- **Left LED (Green/Amber):** Indicates a proper physical connection when solid.
- **Right LED (Amber):** Indicates network activity when flashing.

When powered and correctly connected to the router, you should see a **solid left LED** and a **flickering right LED**, confirming normal connection and communication activity.

USB Ports

Desktop readers and receipt printers are connected by USB cable to one of the USB ports at the front of the Gatekeeper.

The Gatekeeper USB ports must be used **exclusively for GymMaster devices**. Connecting or charging any other electronic device—such as a mobile phone, digital camera, or similar equipment—may cause **reader malfunctions or faults**.

Sample Wiring Diagrams

The provided wiring diagrams are intended **only as examples** of how the relay unit and RFID devices may be installed. Actual installation wiring may vary. The Gatekeeper is supplied with **short test wiring** to allow the system to be verified prior to full installation.

Typically, the Gatekeeper is positioned or mounted **at or near the facility reception desk**. This location allows connection of the desktop reader and facilitates longer cabling from the door readers along wall or floor edges. It also commonly permits the Gatekeeper to share a network connection to the Internet router with the reception computer.

Door Lock Types:

- **Fail-Secure: Locks** the door when power is lost; requires power to unlock.
- **Fail-Safe:** Leaves the door **unlocked** when power is lost; requires power to lock.

Local fire and government regulations should be consulted to determine which type is permitted, as **fail-secure systems may be illegal in some areas**.

Note: Door locks, door lock power supplies, and any Push-to-Exit buttons are **not supplied by GymMaster** and must be sourced separately by the installer.

Note: If you use **Fail-Secure door locks**, it is **STRONGLY recommended that you have alternative means by which you can physically unlock the door** in case of outage (loss of power, or no connection to Internet for a long period, etc).

Do **NOT** use the Gatekeeper or the Gatekeeper power supply to power any door locks.

If the door lock requires a diode (consult the door lock manual), install the provided diode 1N4001 as close to the lock as possible so the kick back voltage is localised on the lock.

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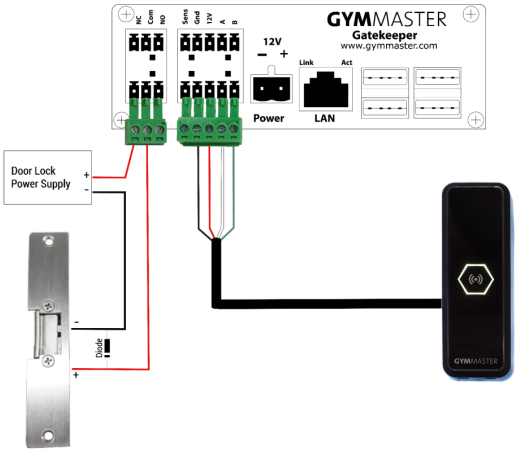
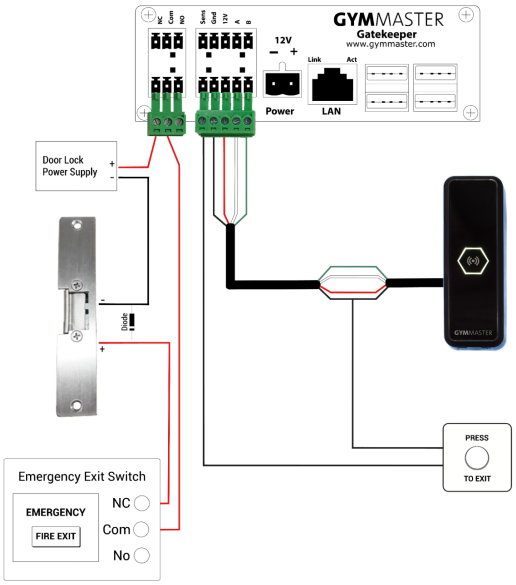
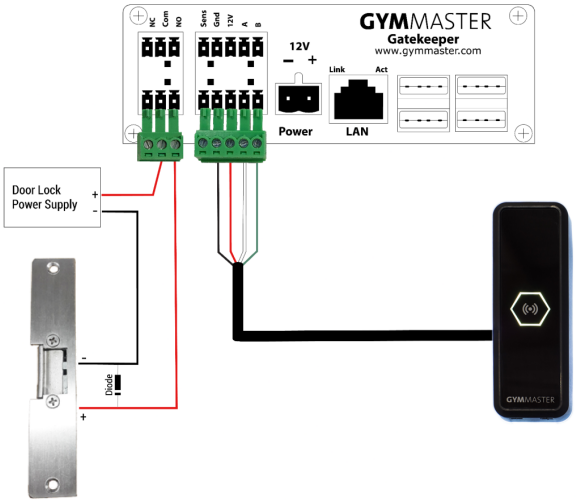
Fail-Safe



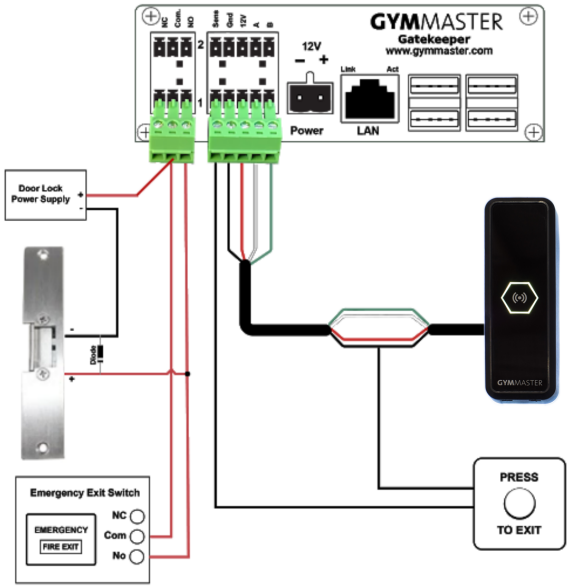
Fail-Safe with Emergency Exit



Fail-Secure



Fail-Secure with Emergency Exit



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Troubleshooting

Need Help?

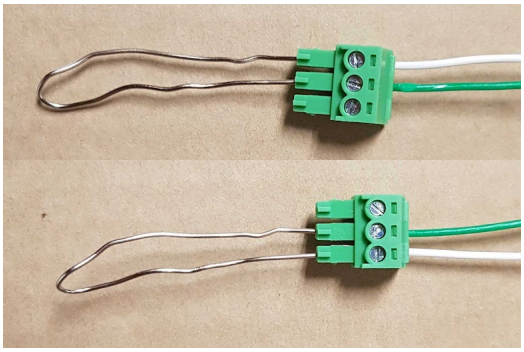
Go to gymmaster.com/troubleshooting

Or scan the QR code

Door Lock Wiring Test

After completing the door lock wiring, the installation can be **tested prior to connecting to the Gatekeeper**. This can be done using a paperclip or a short piece of wire.

1. **Bridge the two connected wires** at the lock mechanism using the paperclip.
2. Observe the lock mechanism: if it is **unengaged (unlocked)** before bridging, it should become **engaged (locked)** after bridging, and vice versa.



If the lock does not respond as expected, the wiring to the lock mechanism is likely incorrect. The installer should **verify the lock's power supply** and all related wiring before proceeding.

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Client ID _____

Contact Name _____

Contact Phone _____

Return Request Date _____

Item Name	Quantity	Reason for Return

_____ _____

Customer Signature Date

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