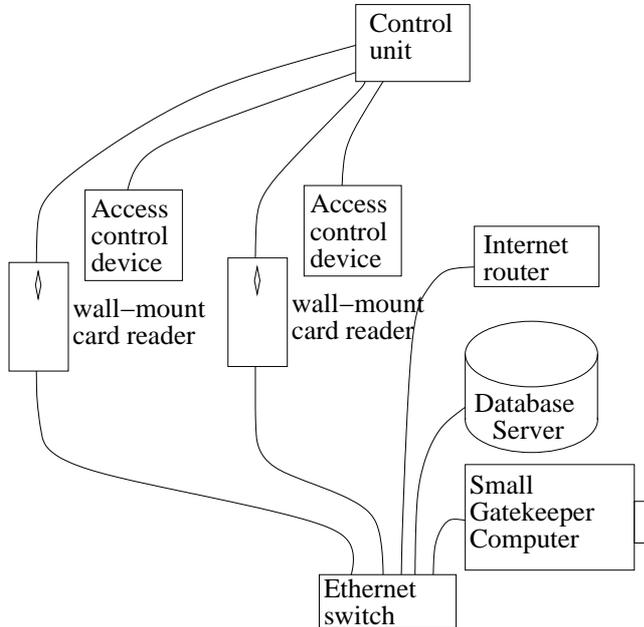


# Installation Instructions for Network Readers

## LAN Based Readers



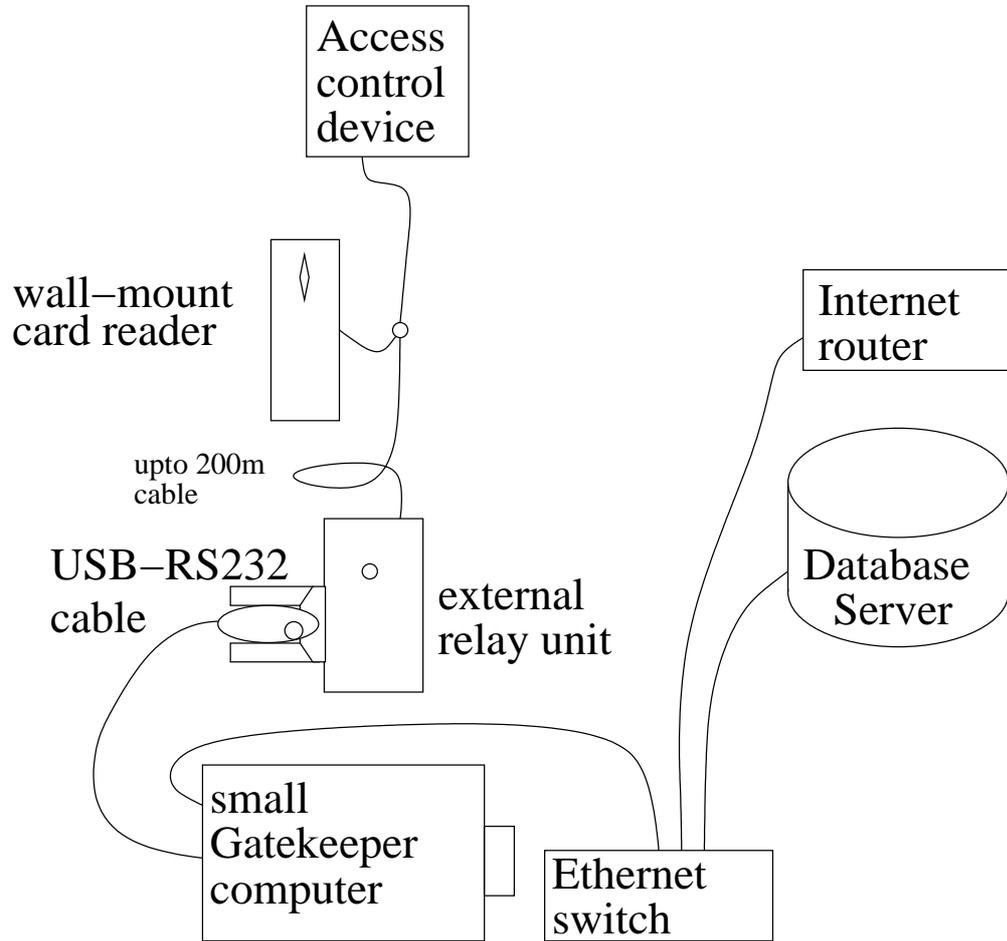
These RFID readers connect via ethernet LAN cables to a network switch instead of connecting directly to the server.

The readers contain a relay which is used to signal the door release circuit. Two readers are shown but we can support up to 10 per Gatekeeper. If more are needed, a dedicated database and access control server is recommended instead.

The Control unit in this picture provides power for the readers, switches the power for the the access control hardware. and handles exit delays etc.

Do not connect Access control hardware directly to the RFID reader relay contacts, always use a door controller, connecting readers directly to access hardware may lead to the reader shutting down or losing its configuration. the bare minimum is a external 12V relay switched by readers relay.

## RS232 Readers On Gatekeeper



These RFID readers do not contain a relay to activate the access control, or connect to the LAN. Instead an external relay unit is used which connects to the gatekeeper using a USB to RS232 cable and also passes the RS232 signals through to communicate with the reader. Only one reader is shown, but several can be connected, i.e. by using multi-end cables or USB hubs.

Wiring for this system is discussed in a different document.

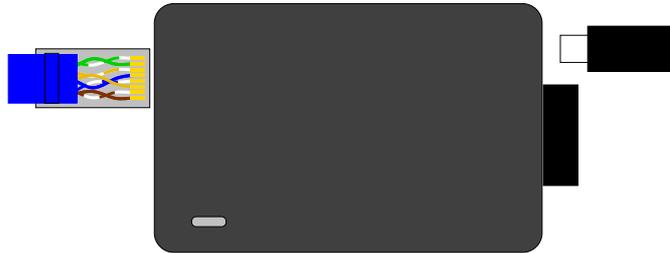
## The Gatekeeper Computer

This is a tiny computer that monitors the RFID readers and interfaces them with the GymMaster database. It remembers who it has let in so that during any database outage, it can still operate the doors.

We provide a battery backed supply that can operate it for short power cuts. Alternatively, the vehicle cigarette socket plug can be fitted and it can be powered from your door lock battery instead.

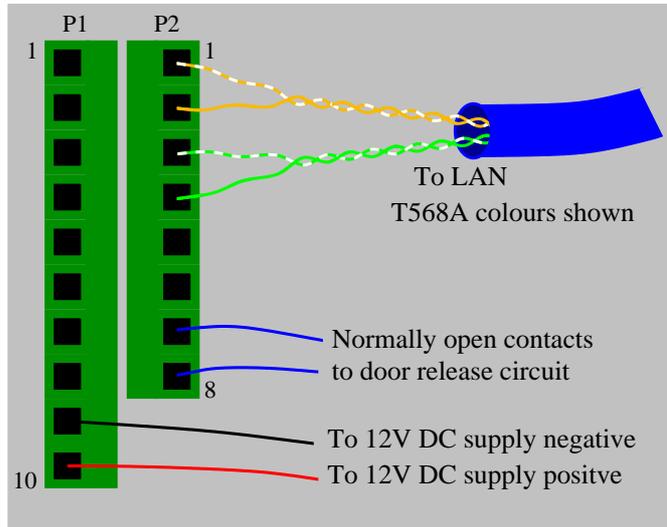
LAN connection

Power Connection



## The RFID Reader

The RFID reader connects to your ethernet LAN to communicate with the Gatekeeper and to the Lock the circuit for power and to unlock the door.

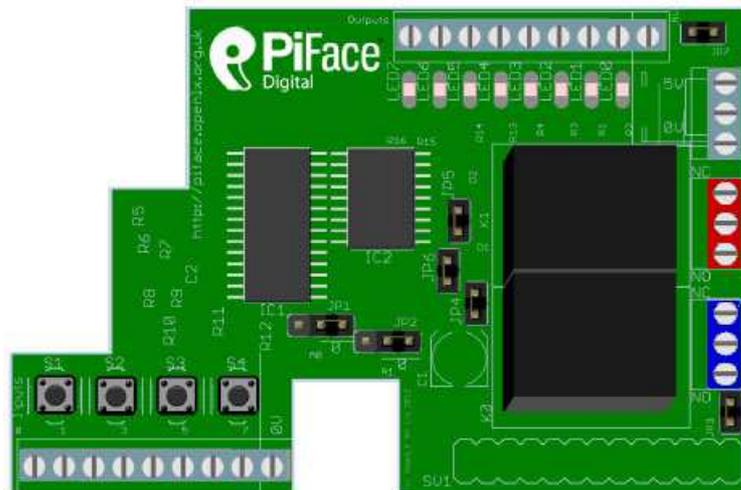


This image shows the connectors on the rear of the reader connect the LAN and the door circuit as shown. T568B transposes the orange and green pairs.

rfid reader		purpose	
P2	1	RJ45 pin 3	1
	2	RJ45 pin 6	
	3	RJ45 pin 1	
	4	RJ45 pin 2	
	5	(unused)	
	6	relay N.C.	
	7	relay Com	
	8	relay N.O	
P1	9	DC12V -ve	
	10	DC12V +ve	

## Gatekeeper Relay

Some gatekeeper units that are sent out have an onboard relay. When the gatekeeper casing is removed, the relay on top of the device should look like the following:



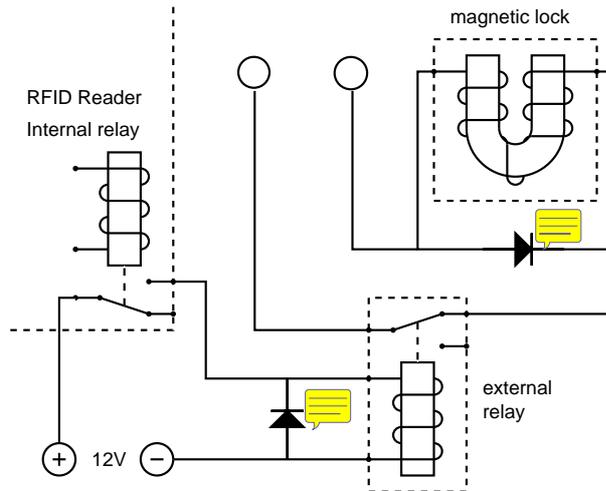
When wiring up the lock to the device, the default switch to use is the bottom one (blue in the diagram). Note that the top screw for the switch (relative to the orientation of the above image) is NC (normally closed), where as the bottom screw is NO (normally open).

If you're required to setup the configuration file, the "gatekeeper\_relay" variable to use is 200 for the bottom relay (blue), and 201 for the second relay (red).

## Recommended wiring

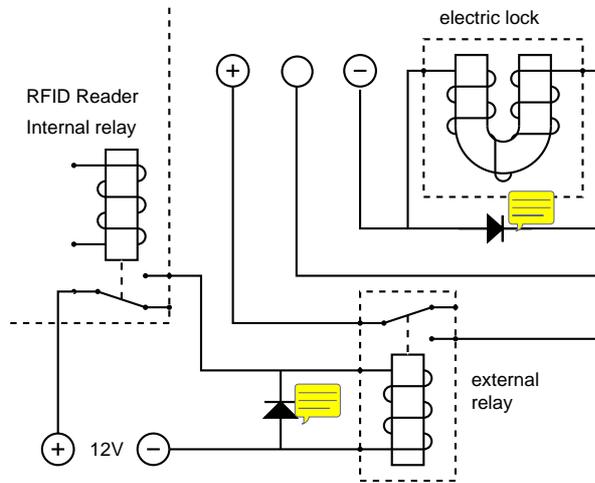
Correct connection to the door release circuit is critical to reliable operation of the reader. The readers internal relay is not suited to directly switching the current used to operate the lock. Instead an external relay should be used to boost the drive capability and offer some isolation. In addition diodes should be installed to redirect the voltage surge associated with opening the circuit,

### For “fail-safe”



For locks that require power to lock you can switch locking current by putting a relay in series with the lock. Remember to fit diodes, failure to do so may lead to the RFID reader quitting.

**For Fail secure**



For locks that require power to unlock the external relay contacts should be wired parallel to the other unlocking switches **Remember to fit diodes, failure to do so may lead to the RFID reader quitting.**

## Reccomended installation procedure

1. Read all the instructions.
2. Check you have all the necessary components.
3. Connect the Gatekeeper to LAN and power supply.
4. Call GymMaster Support to configure it to communicate with your GymMaster database. We can access it remotely. Before the Gatekeeper is configured to communicate with your database, it will only recognise the included RFID tag. Once the database connection is established, that tag will be rejected by the reader and only tags registered with GymMaster will be recognised.
5. Confirm that the door release is working correctly in isolation. Check request to exit (if present).
6. Connect the reader to a power supply and to a short LAN cable, connect to the LAN, confirm that the network switch is seeing the RFID reader, and confirm proper operation using a continuity tester on the relay terminals.
7. Re-locate the reader to the desired location and test as-above in-situ. before connecting it to the door release circuit.

Copyright 2013 Treshna Enterprises. All rights reserved.