



## AN1002 - How to install a Switch2 system

### What is a Switch2 system?

A Switch2 system is a step up in security and versatility from the compact range. Still operating as a standalone system it uses a control unit that is separate from the user interface; a simple data cable linking them together. This means that the control unit can be mounted on the 'safe' side of the door with only the keypad or reader outside.

A Switch2 control unit can be used with any of the readers in the Paxton range. It has inputs for a door contact and an exit button and has an output for an alarm sounder. Lock control is via a volt free relay which can be wired to operate fail closed and fail open locks.

### What are the benefits of a Switch2 system?

Switch2 is extremely simple to install and configure. It operates standalone, so each system is installed and programmed independently. Each controller can be configured to use the same site code so that all doors operate from a single set of user tokens. Switch2 is ideal for sites that require simple access control and where the recording of events is not required.

The Switch2 control unit provides high security due to the controller being installed on the secure side of the door. The controller can also be fitted with a door contact to monitor the position of the door in case it is forced, an alarm output is provided to give an audible warning. This makes Switch2 ideal for both internal and external doors. The controller is small enough to be fitted within a power supply enclosure resulting in a simple tidy installation.

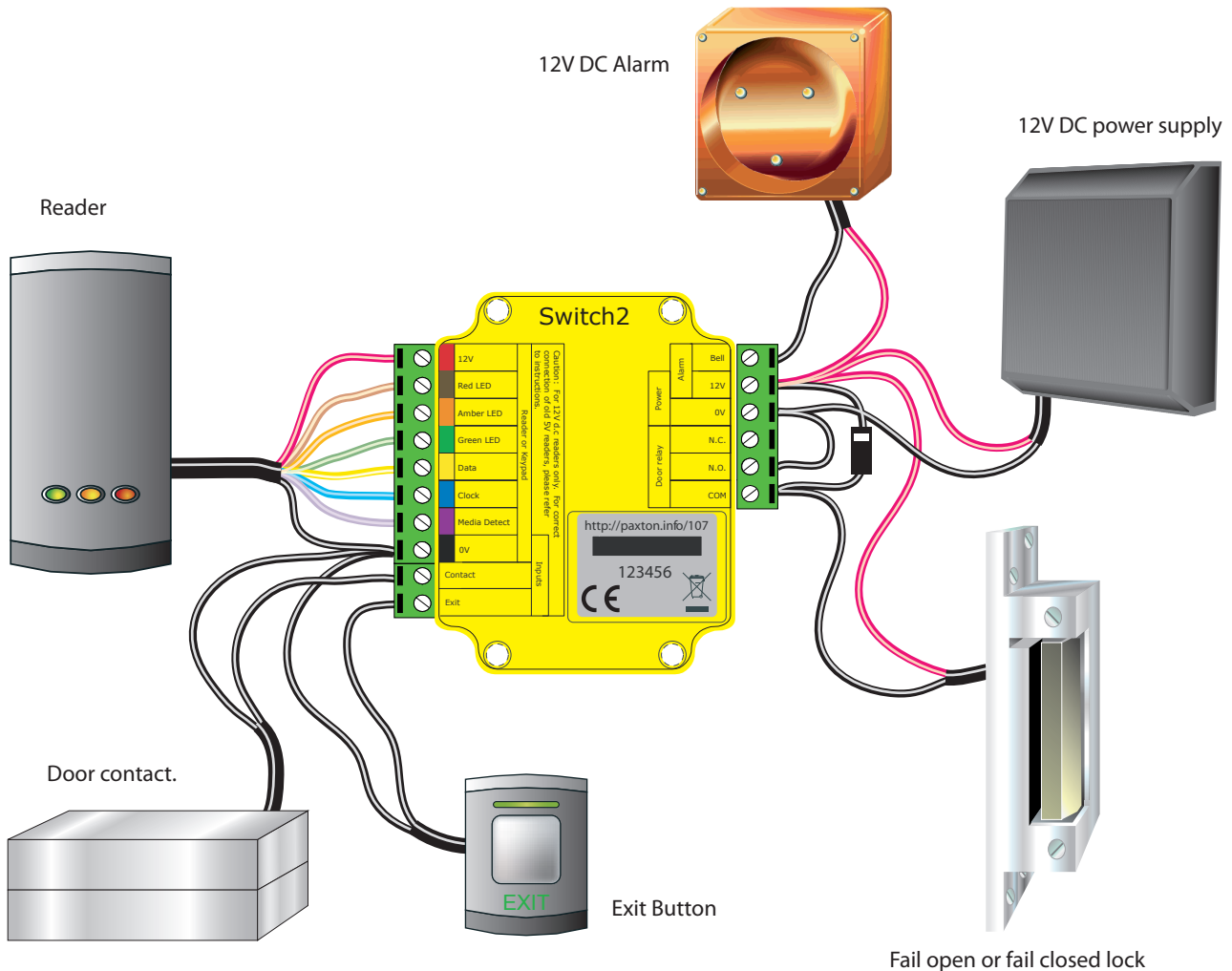
The lock output on the Switch2 is a changeover relay enabling simple connection of either fail open or fail closed electric locks.

The cards for PROXIMITY and CARDLOCK Switch2 systems are identical to those used with the equivalent compact systems, so the same card packs can be enrolled on both, enabling the cheaper compact units to be installed on doors that are low security while Switch2 controllers are used on doors that need to be high security.

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## Connections

**Installation** - The installation of the Switch2 controller is made easy by the colour-coded wiring label fixed to the front of the controller. This clearly identifies where each part of the system is to be connected. The diagram shows the general arrangement for wiring a Switch2 controller.



**Power connection** - the Switch2 control unit requires a 12V DC power supply connected to the "12V" and "0V" terminals. A simple 12V power supply with battery backup is recommended. The chosen supply must be capable of providing enough current to cope with the reader, the alarm sounder (if fitted) and whatever lock is connected to the system.

**Reader connection** - Any of the Paxton range of readers and keypads can be connected to a Switch2. All readers are colour coded in the same way to correspond to the labelled inputs on the control unit.

**A range of 5V readers and keypads were produced up until 2005. Later 12V control units with yellow wiring labels must have the red voltage jumper setting on the circuit board changed to the 5V setting prior to powering up the controller or the reader will be damaged.**

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**Lock connection** - 12V DC Power for the lock is taken directly from the 12V terminal of the Switch2. The lock is controlled by switching the 0V feed via the voltage free relay contacts. If a fail-open lock is used the 0V is linked to the 'N.C.' whilst with a fail-closed lock, it is connected to the 'N.O.' In either configuration, the 0V feed to the lock is then supplied via the 'Com' terminal.

**Exit button / Time zone control** - A 'push to make' exit button can be connected between the "Exit" terminal and the "Black" terminal (0V). Alternatively, a time clock with a voltage free changeover contact (e.g. central heating timer) can be used to hold a door unlocked during the programmed time periods. On swipe card and proximity systems a time clock can be used to change the validity of colour groups of users at different times of the day. To turn on this function, a "Time zones" card must first be shown to the reader. The Switch2 will now operate with two sets of access privileges. This is dependent on whether the exit wires are shorted together or not. Set up one set of colour zones with colour zone cards with the wires shorted and another with the wires apart. These two states can then be activated depending on the state of the time clock contacts wired across the 'exit' pair.

**Door contact** - A door contact is connected between the "Contact" terminal and the "Black" terminal (0V). A door contact should be of the type that gives a closed contact when the door is shut. This can be used in conjunction with an alarm sounder to give a 'Door forced' alarm. The Auto-lock feature is also active where the locking mechanism automatically locks as soon as the door shuts, even if the door open time has not yet elapsed.

**Alarm / Door Bell sounder** - An alarm sounder may be connected to the "Bell" and "12V" terminals. Only sounders up to 1A at 12VDC should be used. In the event of an alarm the "Bell" terminal is connected to 0V, sounding the alarm. When door contacts are not connected, the alarm output can be used as a door bell. When using a Paxton keypad the alarm will sound when the door bell button on the keypad is pressed.

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