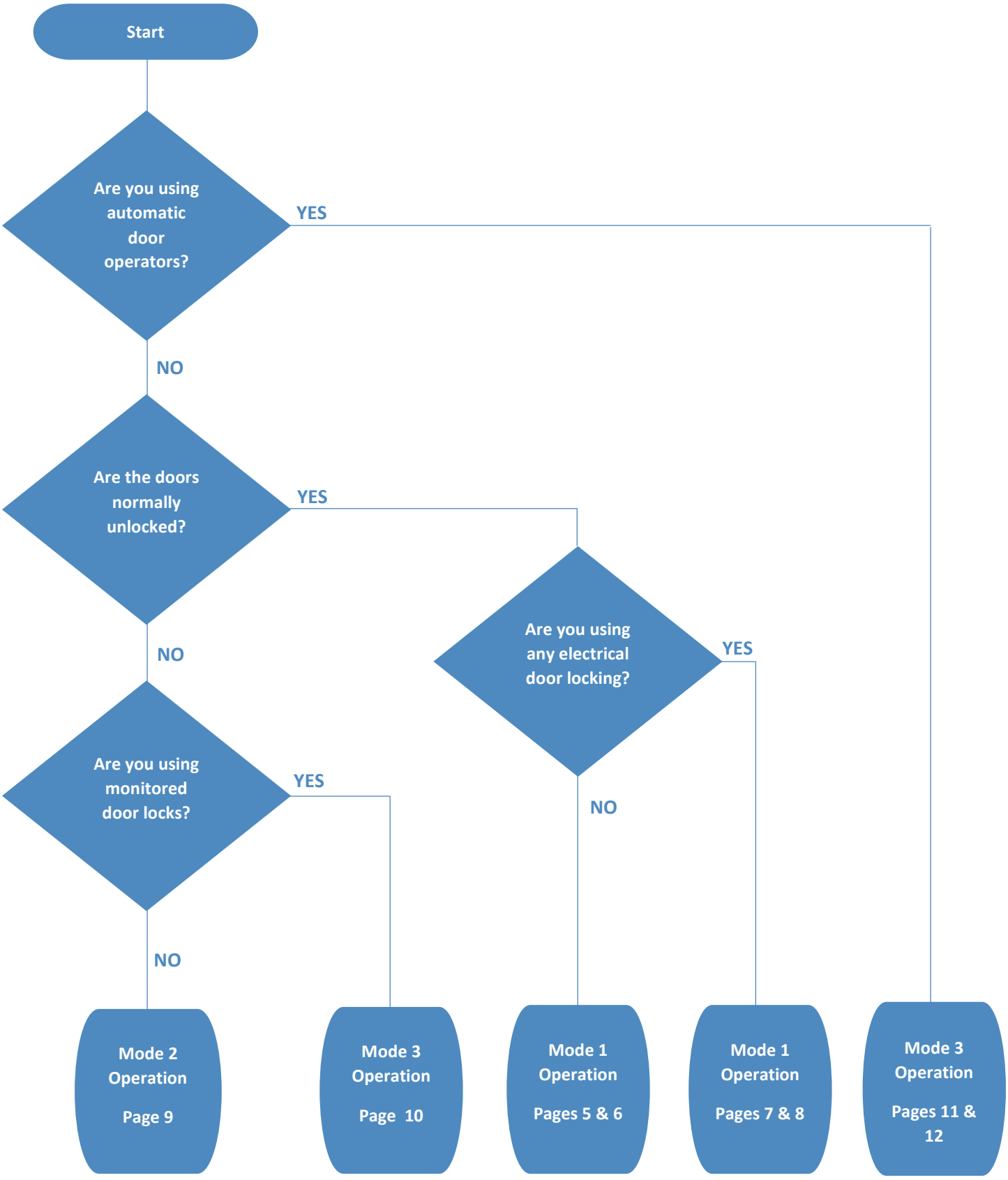
IG432 Mode Selection

This flowchart guides you to the operating mode that suits your application.



Hoyles Electronic Developments Ltd
Sandwash Close, Rainford, St Helens, WA11 8LY, UK
www.hoyles.com
sales@hoyles.com
+ 44 (0) 1744 886600

Interguard IG432 Installation Instructions

Hoyles Electronic Developments Ltd
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sales@hoyles.com
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The IG432 Interlock controller is a configurable 2, 3 or 4 door interlock controller also providing the user with good door / interlock status indication at the doors.

Specification

The unit requires 12v dc power, normally from the separate internal power supply.

The 4 x D inputs are for 4 normally closed door contacts (closed when the door is closed).

The 4 x R inputs are 4 normally open request to release inputs (close to request).

The 4 x F inputs are 4 x normally open function inputs (close to invoke the function).

The 4 +ve terminals are for the input references, e.g. R links to + to request to release. D links to + to show that the door is closed and F links to + to invoke the function. These are also the +ve feeds for the remote (at the door) led indications.

The remote indications are switched -ve for rd (red) and gn (green) indications at the doors.

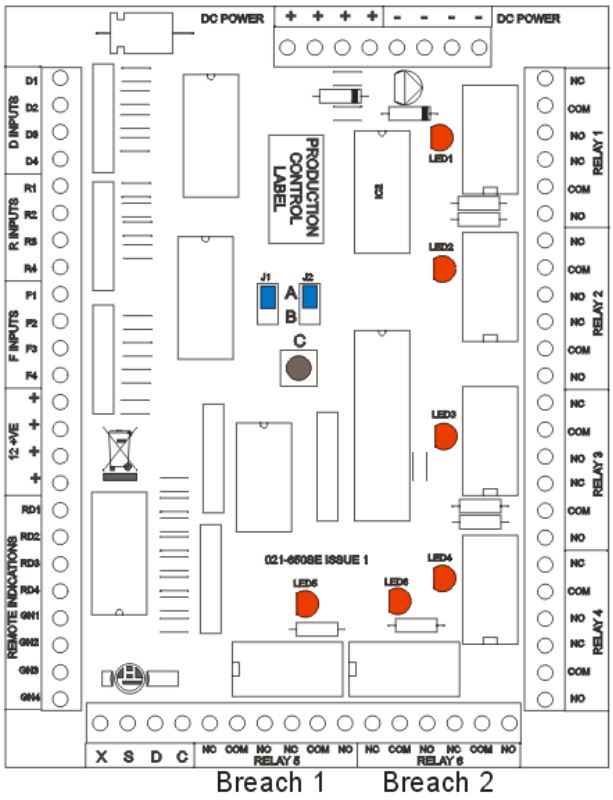
Each of the 6 relays has 2 sets of clean changeover contacts rated 2Amp at 12vdc.

Relays 1,2,3 and 4 are for the 4 door locks.

Relay 5 is the main breach relay. (Breach 1)

Relay 6 is the secondary breach relay. (Breach 2)

SDC is a serial output for future development.



X is a privacy/defog input to lock down doors 3 and 4 when privacy is required. +ve applied to invoke.

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Interlocking Principles

Interlocking in its simplest form is for 2 doors and in theory only one door can be open at once. There are three ways of achieving this:

Mode 1 without locks	Just trust the staff to look at the indications and close the doors.
Mode 1 with locks	Keep all doors closed but unlocked and lock the other doors if a door is opened. In this method door sensing is critical. If a door is ajar, it may not register as open on a magnetic reed door contact, but it may be too far open for a magnetic lock to pull the door closed. Other methods of door sensing can be used but the cost rises and the expansion / contraction of doors and frames can result in more than one door being open at the same time. (Interlock Breached).
Modes 2 & 3	Keep all doors closed and locked and release the relevant door on request only if available to be released i.e. all other doors are locked. The IG432 can be used in modes 1, 2 or 3 above. However, mode 2 or 3 are recommended for least breaches. For a standard 2, 3 or 4 door interlock set both jumpers in the 'A' position.

Operational indications

Red/Green indicators are provided at each door. Normally there are no indications, or with the alternative indication, the green indicates steadily when the door is available for use.
When a door is legitimately used, it will indicate a steady green, with the other doors indicating a steady red.
If the interlock is breached, all door indicators will flash red and the door that caused the breach will alternate with green.
If the doors are all released via the fire inputs, all door indicators will flash green.

Interlock Door Indications

○ ○	This door is locked but available to be released.	○ ●	This is locked as the interlock is in use.	☼ ☼	This door has breached the interlock.
● ○	This door is released.	☼ ○	This door is released for fire/maintenance	○ ☼	This door is locked, and the interlock is breached.

Breach Relay Conditions

There are 2 breach relays, (Relay 5) Breach 1 (normally energized, i.e. will operate if power is lost) and (Relay 6) Breach 2 (normally de-energised). If a door is forced, left open too long or a request button pressed for too long a period then Breach 1 relay operates. If there is a fire alarm input both breach relays will operate.

Fire Alarm Operations

Mode 1 F1 and F2 fire alarm all doors will remain unlocked even when other doors are open.
Modes 2 and 3 F1 fire alarm all doors release.
Modes 2 and 3 F2 fire alarm disables the interlocking i.e. all doors remain locked but all request to release are accepted and release the doors for the dwell time even if other doors are open.

Privacy and de-fog modes

Both modes lock down all doors normally, or just the 2-door interlock if set as below. The doors indicate steady red. Momentarily apply +ve to X for privacy mode for max. 20 minutes then back to normal, or momentarily apply +ve again to exit.

Apply the +ve to X for longer than 5 seconds for de-fog. The doors lock down until the signal is removed (no time limit).

3 door 2 door interlocks with a common door

Set both jumpers to the 'B' position for doors 1, 2 and 3 as a 3-door interlock and doors 3 and 4 as a 2 door interlock. This only operates in mode 2 or mode 3. i.e. Request to Release are required.

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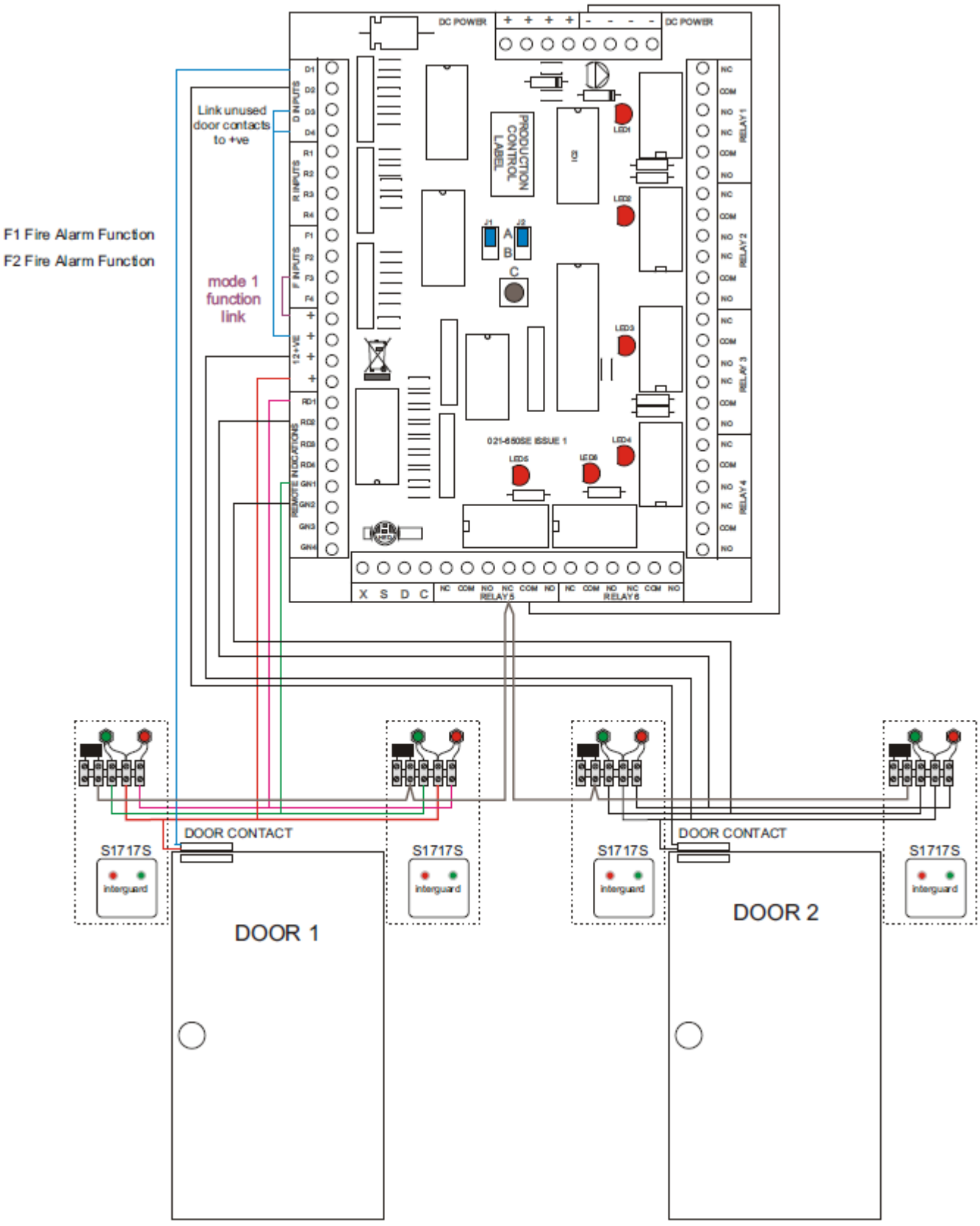
Mode 1 Operation without locks (indication only)



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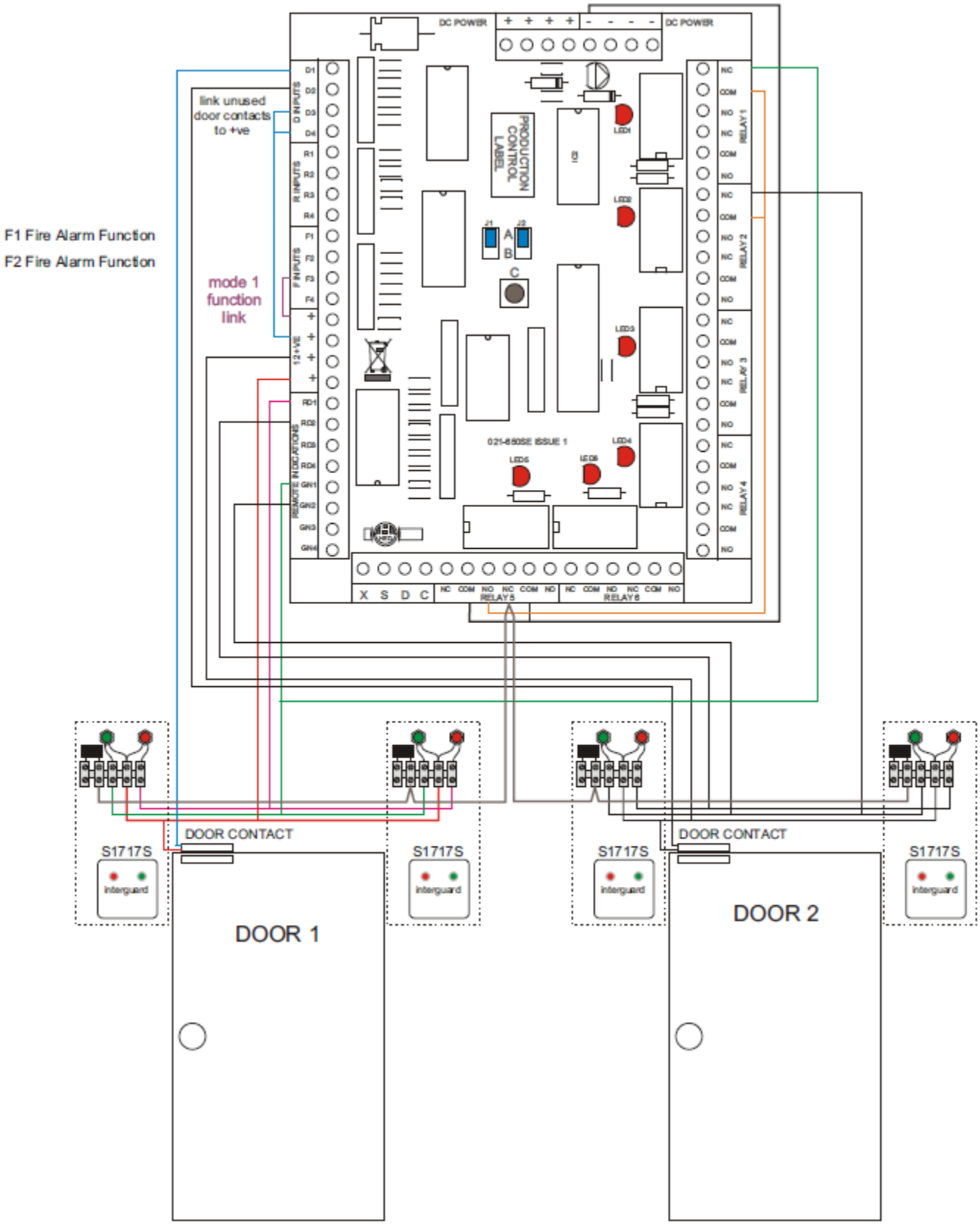
Mode 1 Operation without locks (alternative indication only)

The door status LEDs are green instead of not being illuminated. All other indications are as the standard indications.



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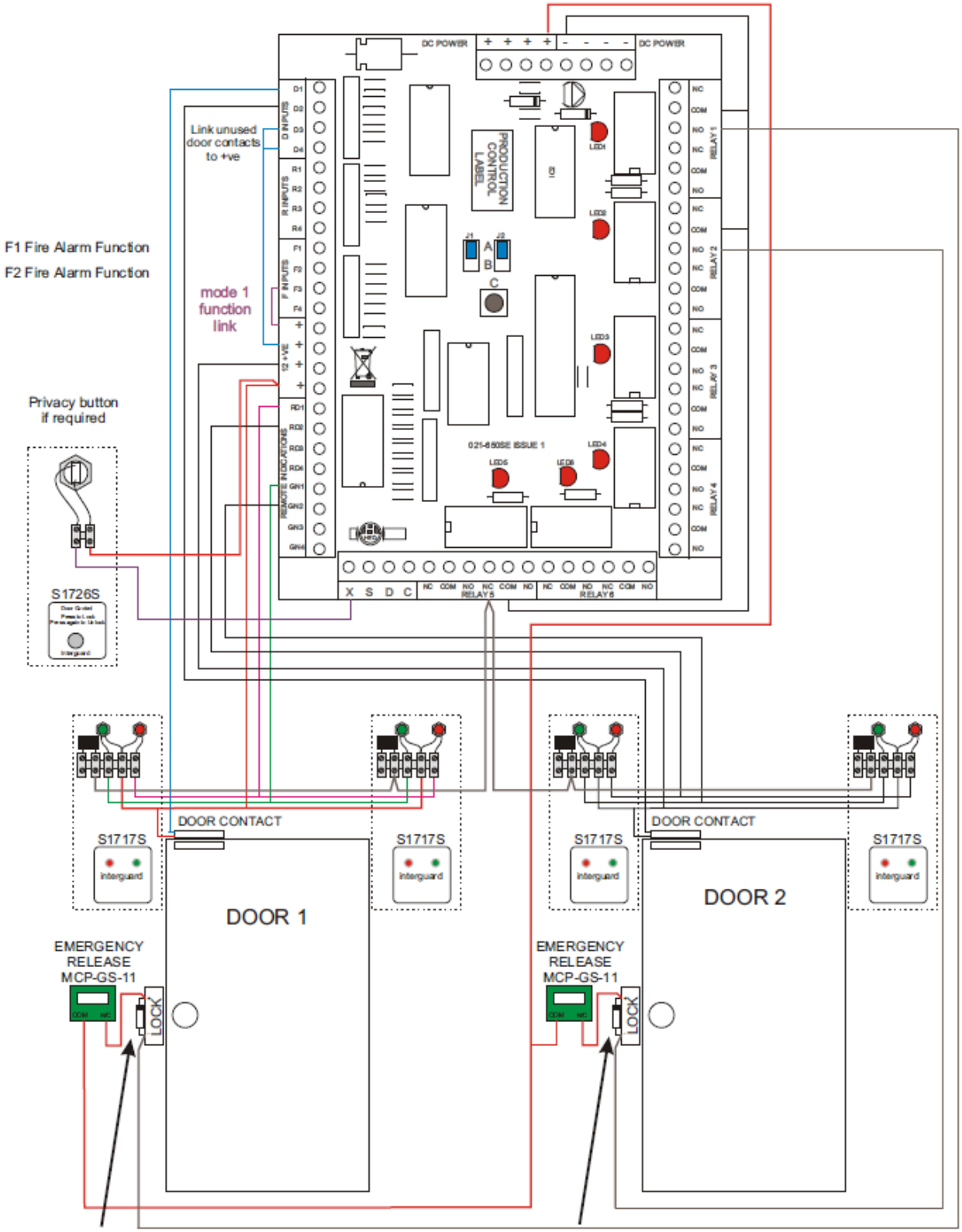
Mode 1 Operation with locks and standard indications



NOTE Fit back EMF protection diode to magnetic lock, if lock does not have its own protection

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Mode 1 Operation with locks and alternative indications

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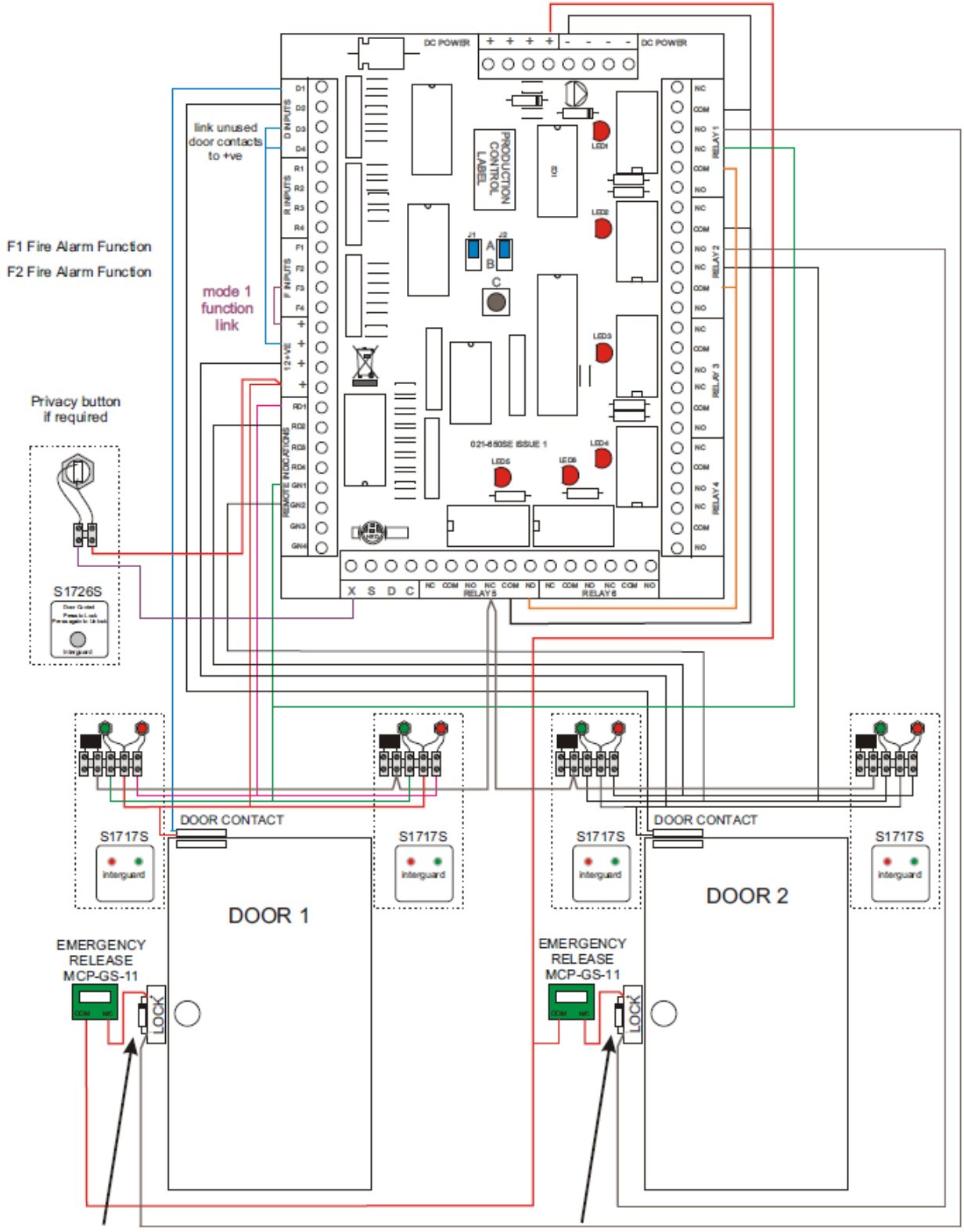

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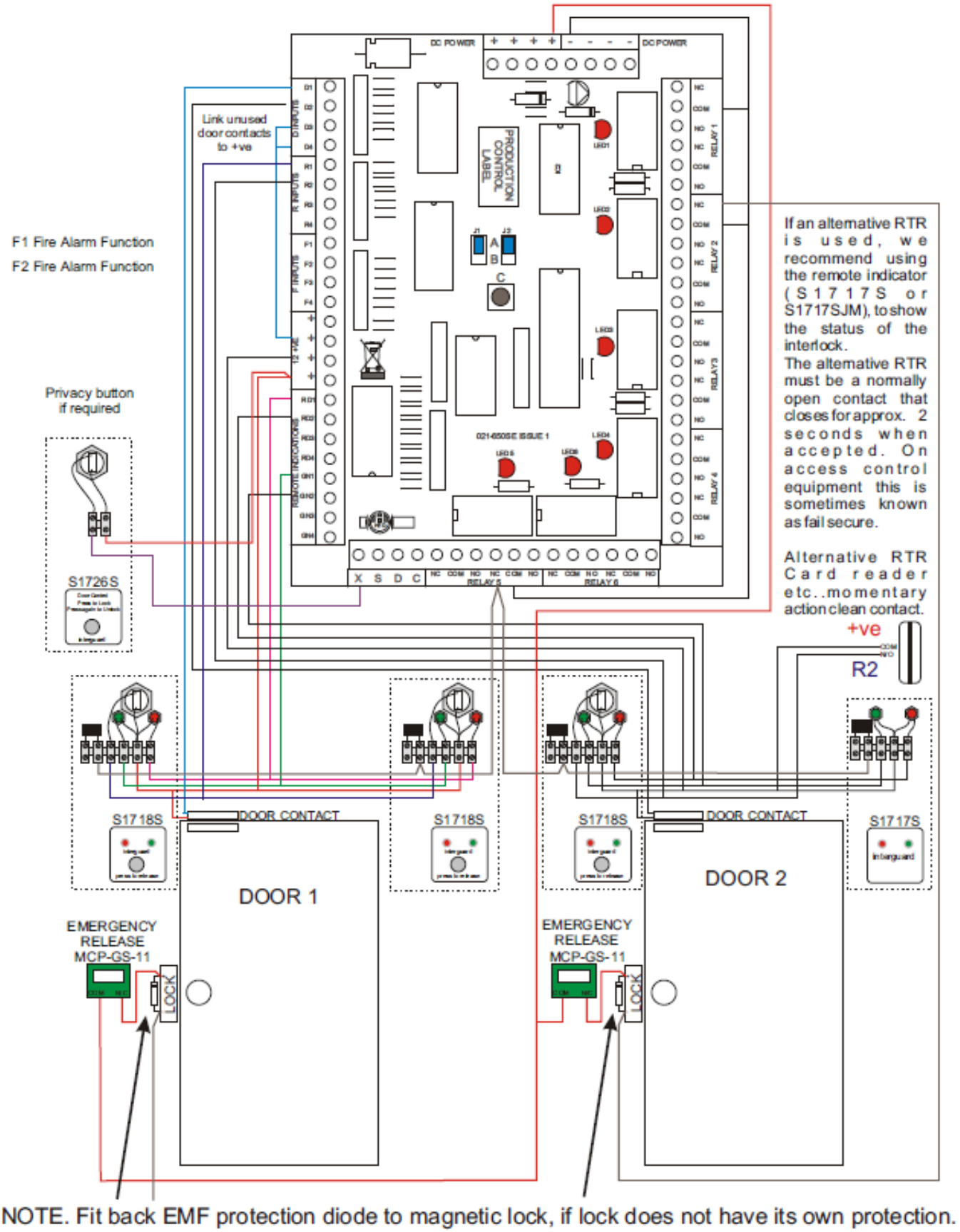
Mode 2 Operation with locks and request to release



Operational Note The lock relay switches when a request is accepted and then remains switched for the duration of the door contact being open.

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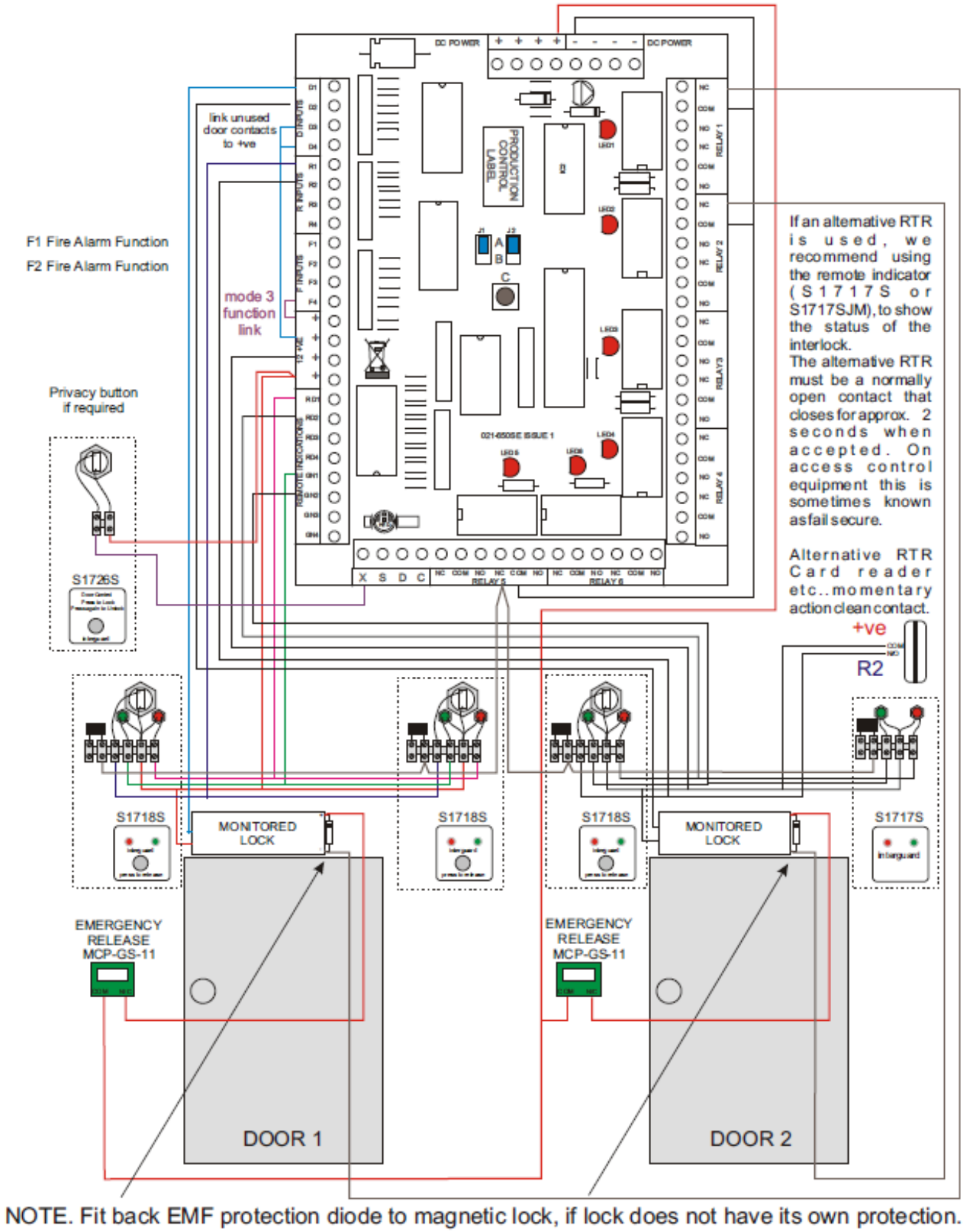
Mode 3 Operation with monitored locks and request to release



Operational Note The lock relay switches when a request is accepted and then remains switched for the entire dwell time. If the door is opened the relay will follow the request input after the dwell time has expired.

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Sandwash Close, Rainford, St Helens, WA11 8LY, UK
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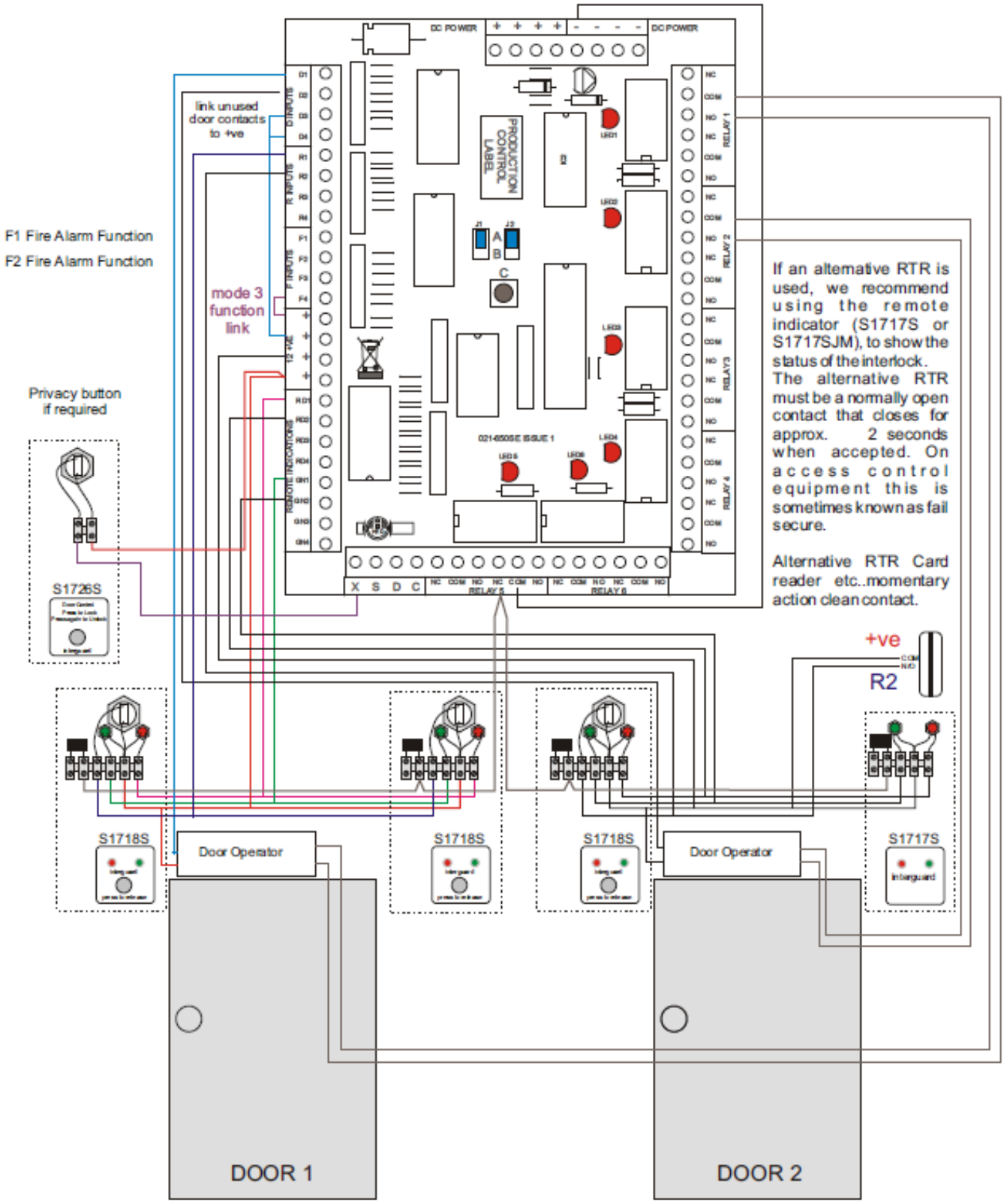
Mode 3 Operation with door openers and request to release



Door Operators.
The door operator requires a momentary closed input to open the door and then automatically closes it. The door operator may have a door status output. If not, a door contact must be used.

Operational Note.
The lock relay switches when a request is accepted and then remains switched for the entire dwell time. If the door is opened the relay will follow the request input after the dwell time has expired.

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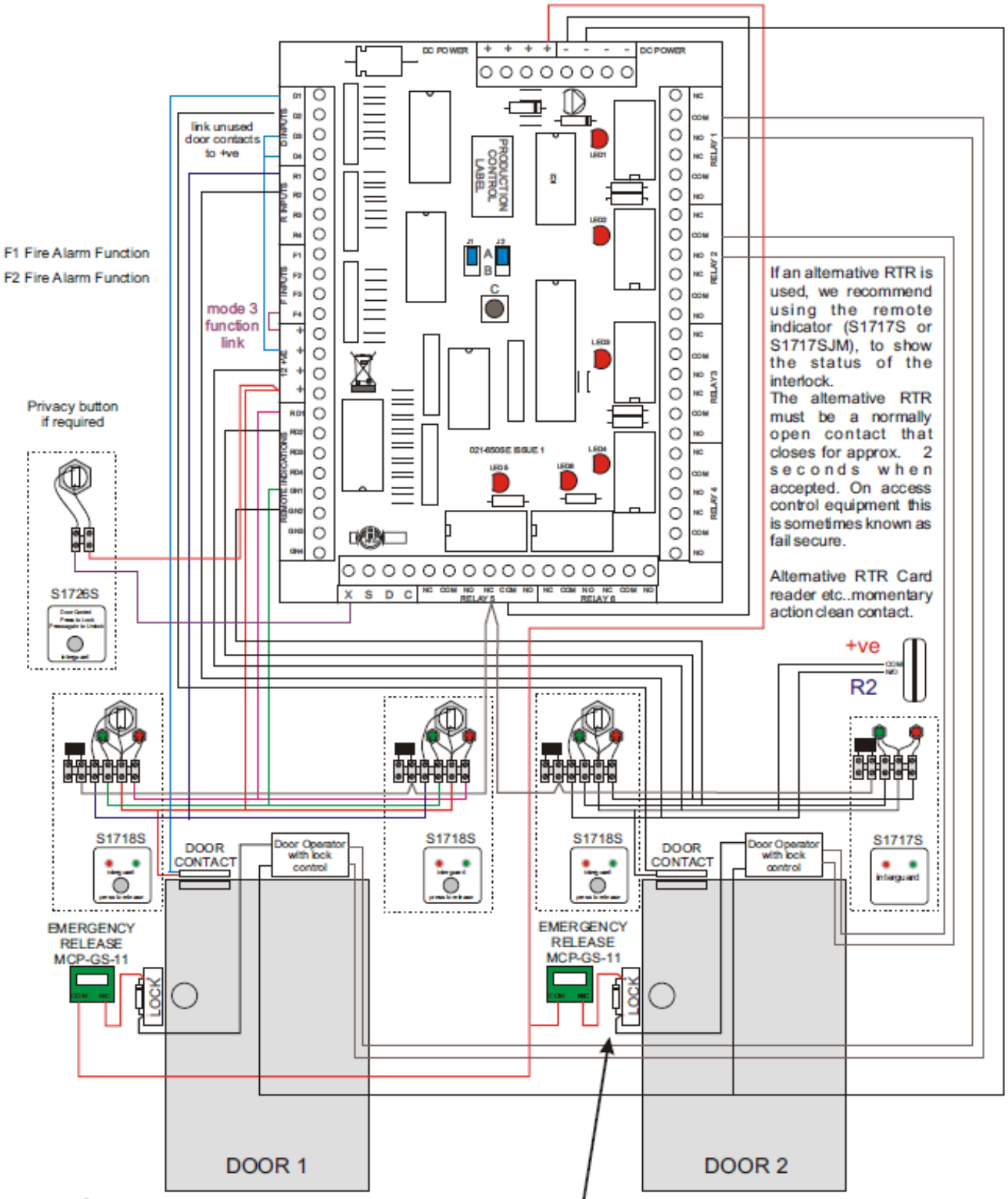
Mode 3 Operation with door openers and lock controls



Door Operators.
The door operator requires a momentary closed input to unlock then open the door. The door operator then closes and locks the door. A door contact must be used for door status.

Operational Note.
The lock relay switches when a request is accepted and then remains switched for the entire dwell time. If the door is opened the relay will follow the request input after the dwell time has expired.

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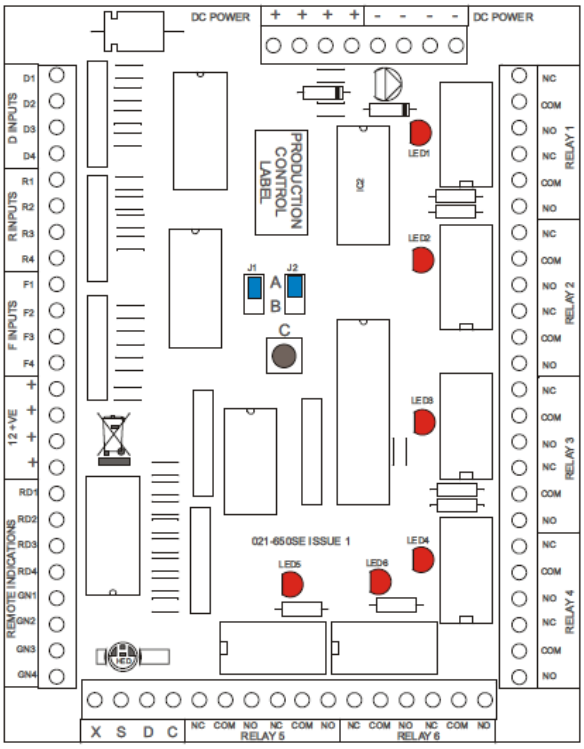
Setting up Dwell and DOTL (door open too long) Times



To set up the dwell time. Move J1 to the B position with J2 in position A and momentarily press button C to scroll through the options. Each press will illuminate 1 of the 4 LEDs, numbered LED1 to LED4.

LED1 2 seconds

LED2 5 seconds (The default time)

LED3 10 seconds

LED4 20 seconds

To set up the DOTL time. Move J2 to the B position with J1 in position A and momentarily press button C to scroll through the options. Each press will illuminate 1 of the 4 LEDs, numbered LED1 to LED4.

LED1 20 seconds

LED2 60 seconds (The default time)

LED3 10 minutes

LED4 DOTL switched off (no time restraint for leaving doors open)

The times indicated when the jumpers are returned to the same position (either A or B) will be the stored and used as the Dwell and DOTL times.

Note each jumper must be used independently.

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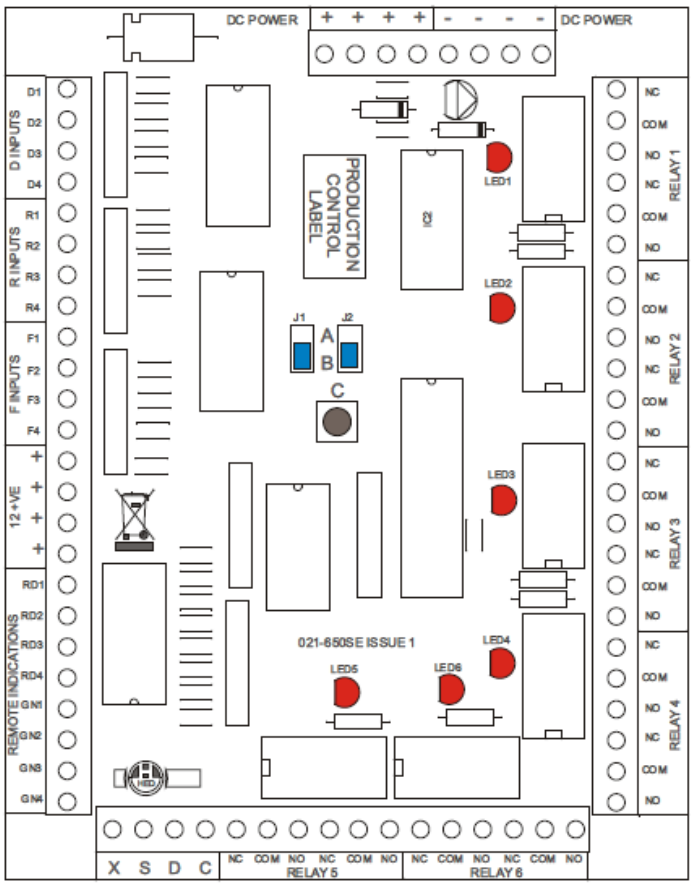
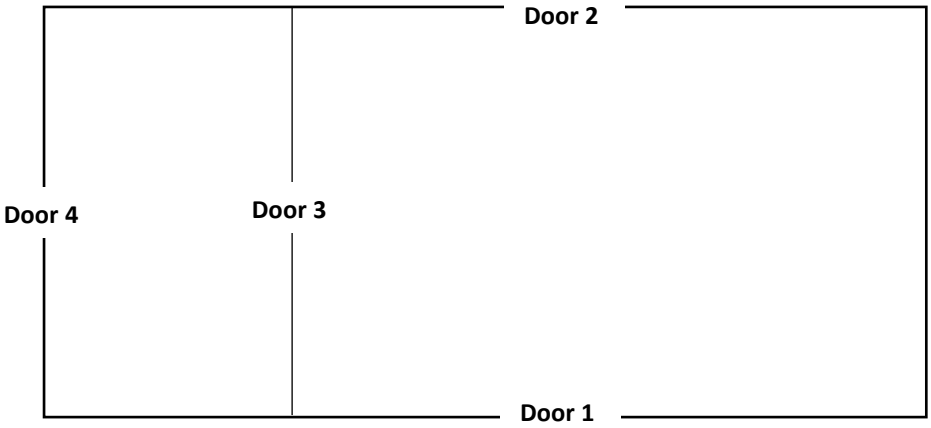
3 door 2 door interlocks with a common door



This setup allows for a common style of interlock, where 3 or 4 doors require interlocking as separate interlocks with a common door. This would normally involve cross wiring between interlocks, but simply changing both jumpers to position B allows an easy to connect 3 and 2 door combination interlock.

In the example, doors 1, 2 and 3 are interlocked, also door 3 is interlocked with door 4. However, doors 1 and 2 are not interlocked with door 4. All functions and indications are the same as the standard IG432. If the interlock is breached, all 4 doors are considered as part of the problem. If there are only 3 doors in total, it is probably best just to ignore door 1 and link D1 permanently to +ve to give the impression that the door is always closed. The standard features; fire alarm, privacy and de-fog are all allowed in this mode. From a reliability point of view, mode 1 operation is not permitted in this setup.



Three door two door interlock example with door 3 common to both interlocks.

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