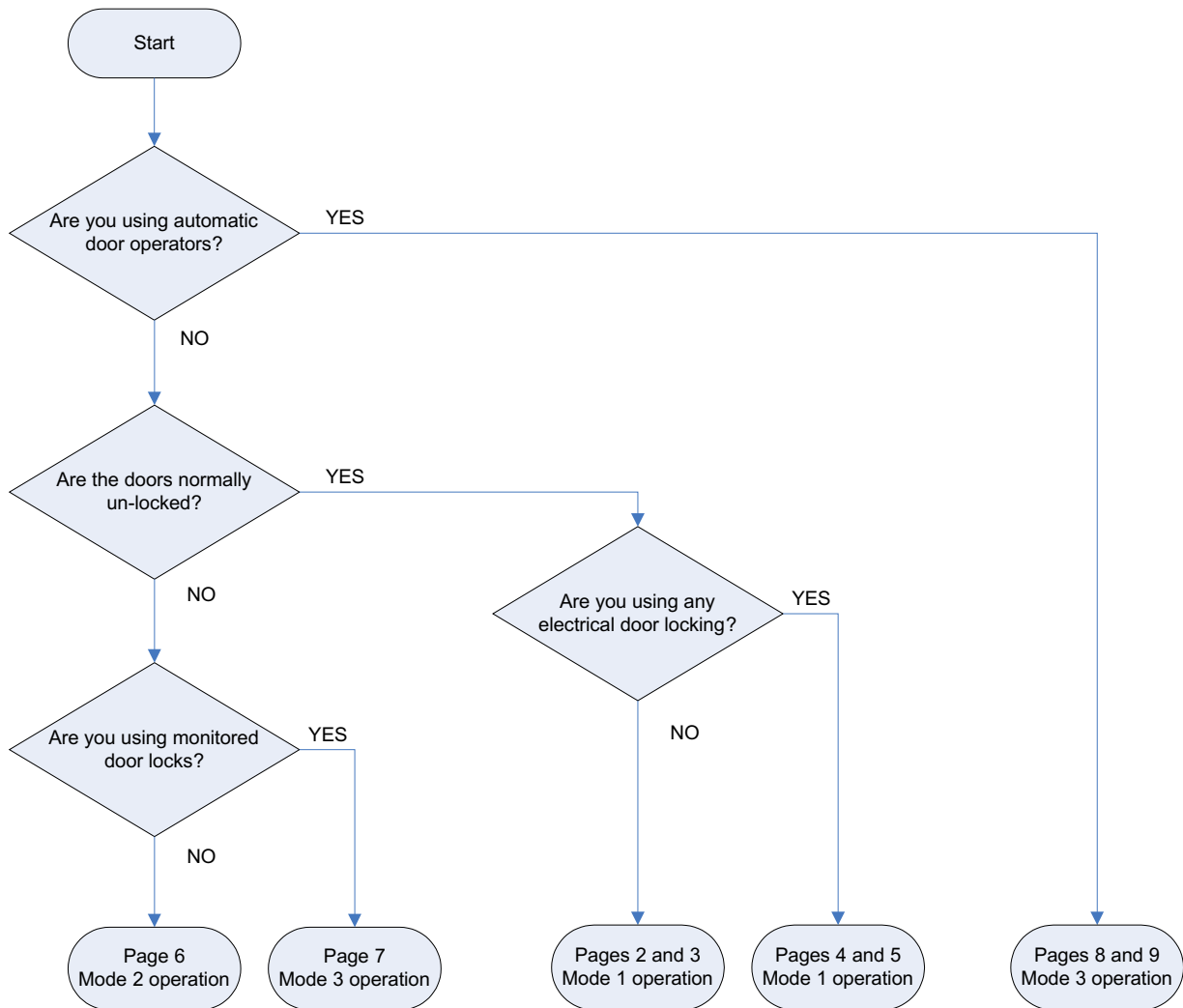


IG432 Mode Selection

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



Change settings and advanced interlocking pages 10, 11 and 12



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Interguard IG432 Installation Instructions

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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.

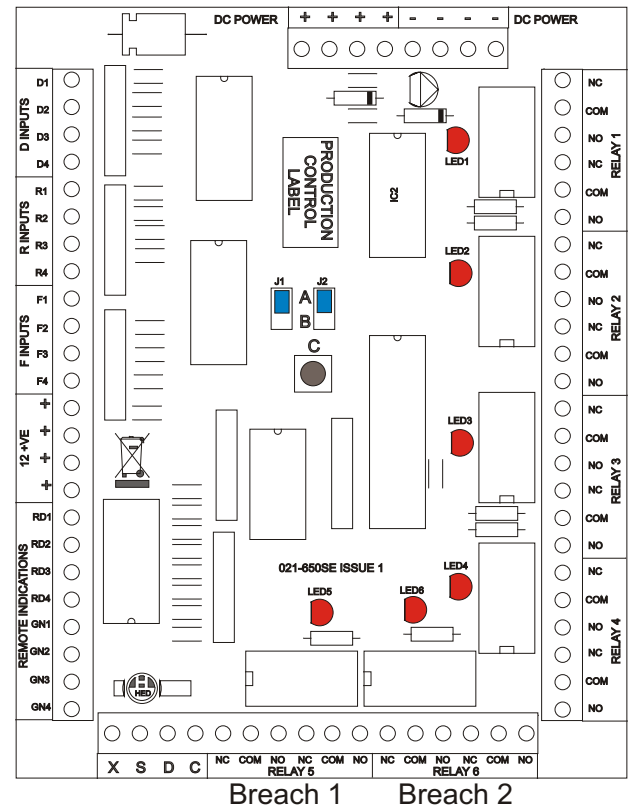
Relays 1,2,3 and 4 are for the 4 door locks.

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.



Interlocking Principals

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 and 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.

Breach relay conditions

There are 2 breach relays, (Relay 5) Breach 1 (normally energized, ie 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 ie. 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

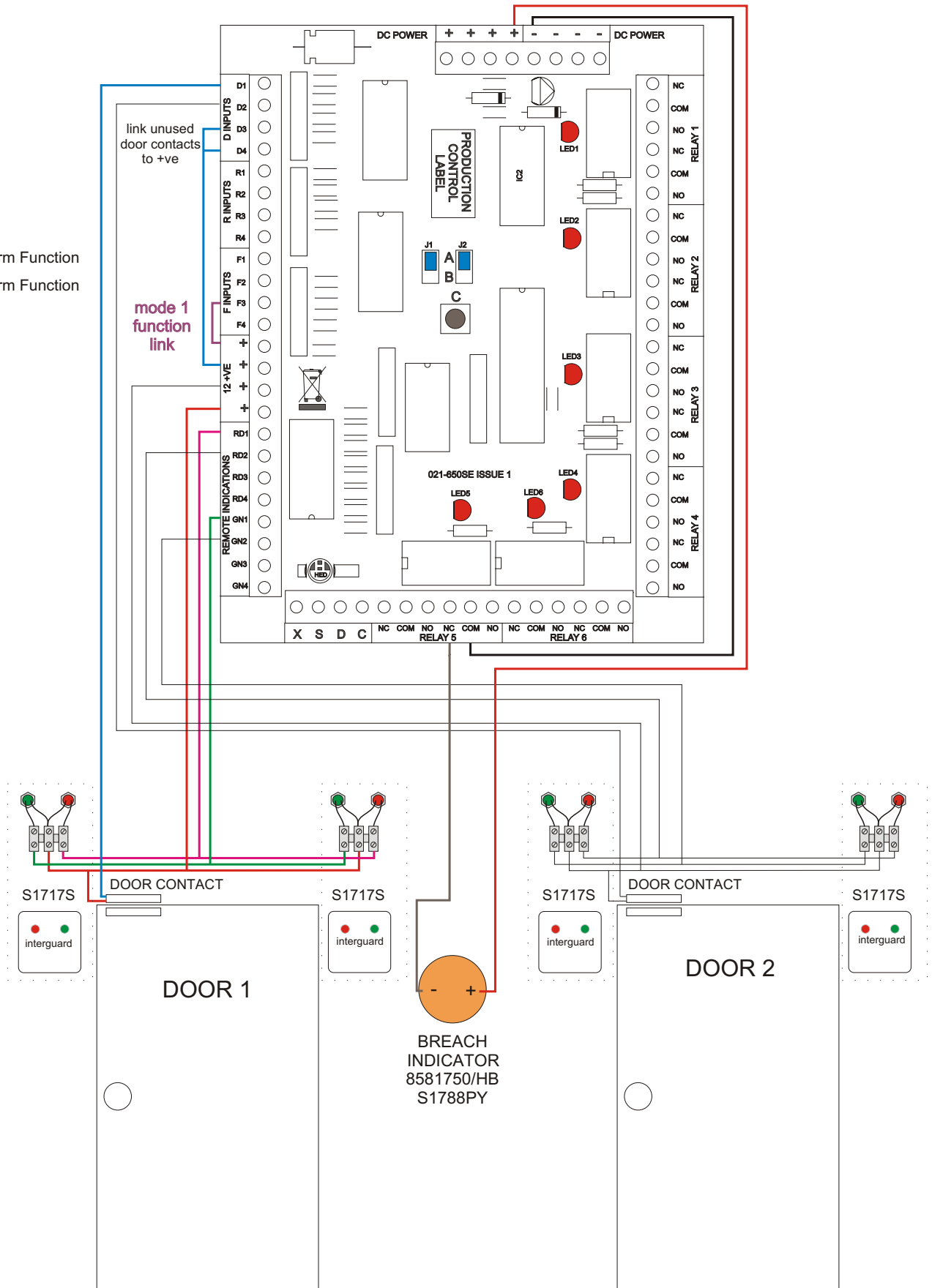
Both modes lock down all doors normally, or just the 2 door interlock if set as below. The doors indicate steady red. Momentarily apply +ve to X for privacy mode for max. 20 minutes then back to normal, or momentarily apply +ve again to exit. Apply the +ve to X for longer than 5 seconds for de-fog. The 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. ie. Request to Release are required.

Mode 1 operation without locks (Indication only).

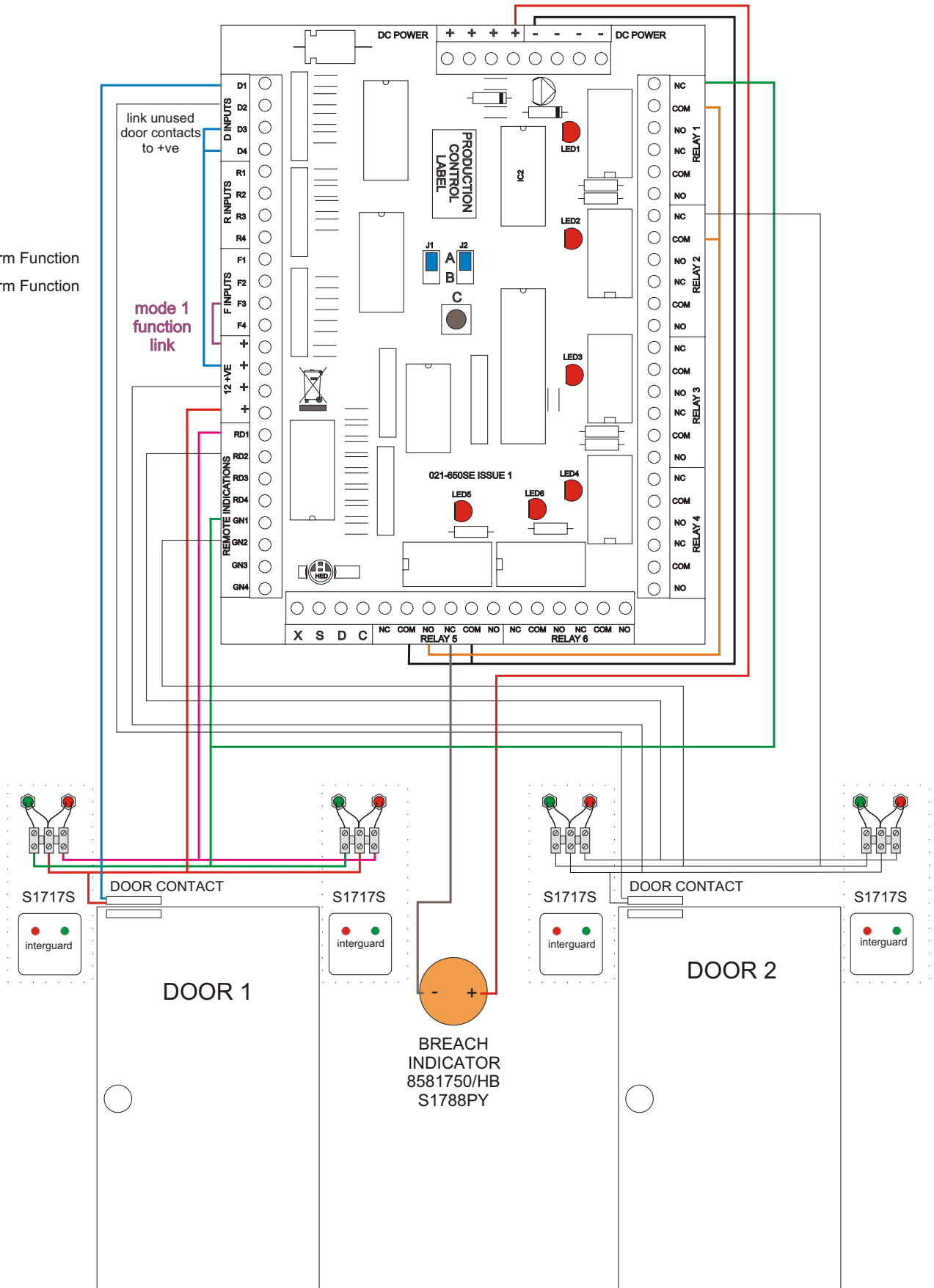
F1 Fire Alarm Function
F2 Fire Alarm Function



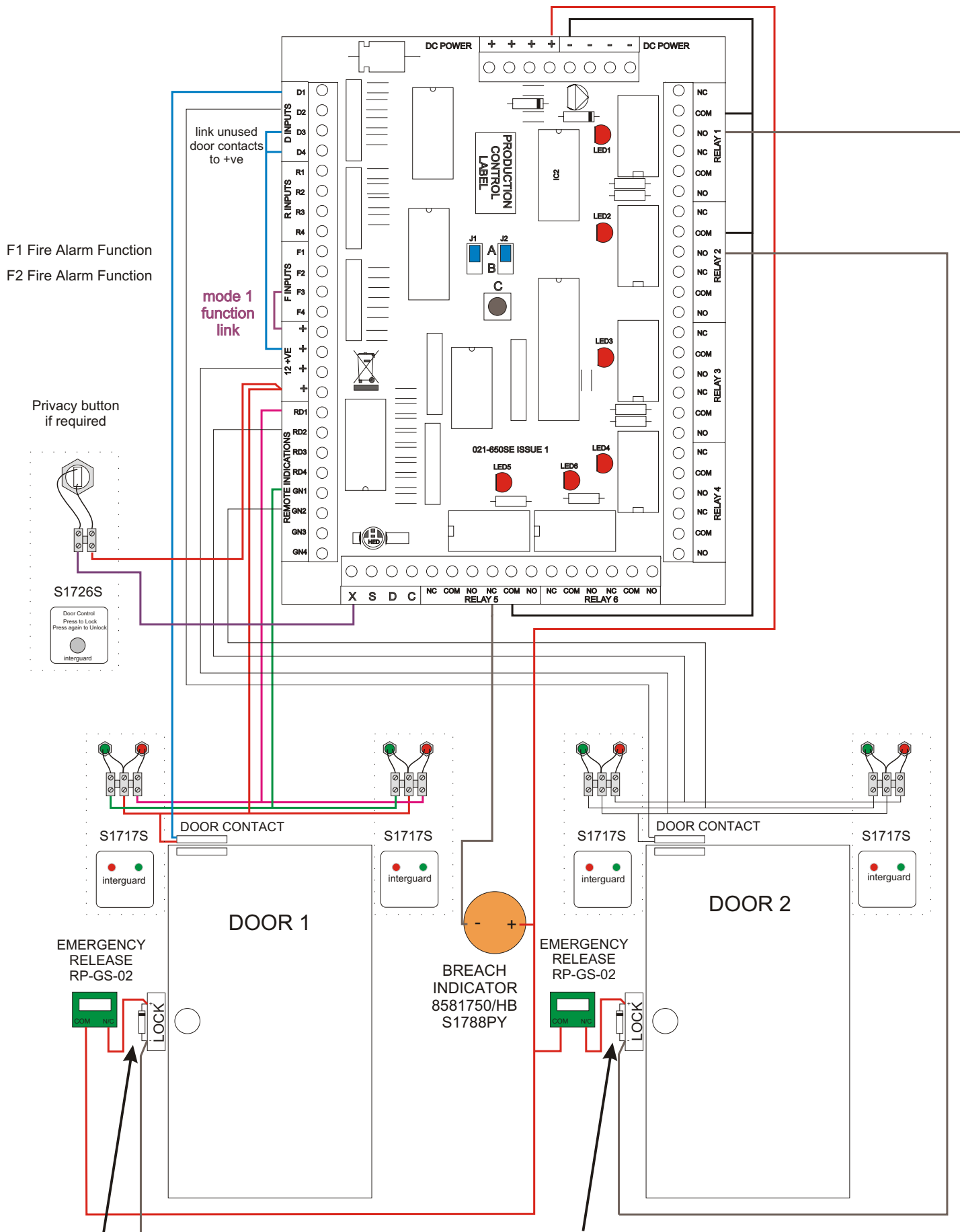
Mode 1 operation without locks (Alternative Indication only).

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

F1 Fire Alarm Function
F2 Fire Alarm Function



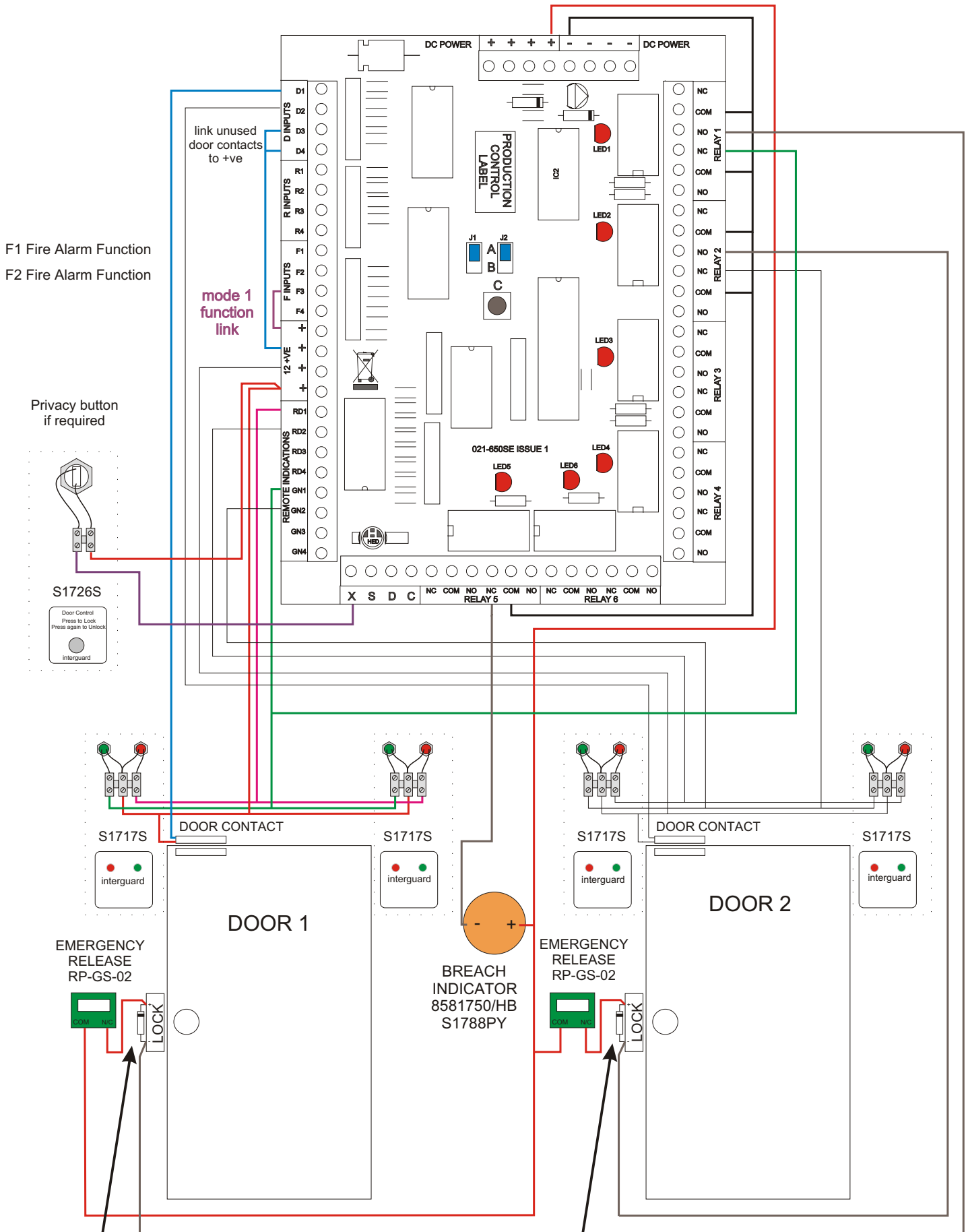
Mode 1 operation with locks and standard indications



NOTE. Fit back EMF protection diode to magnetic lock.

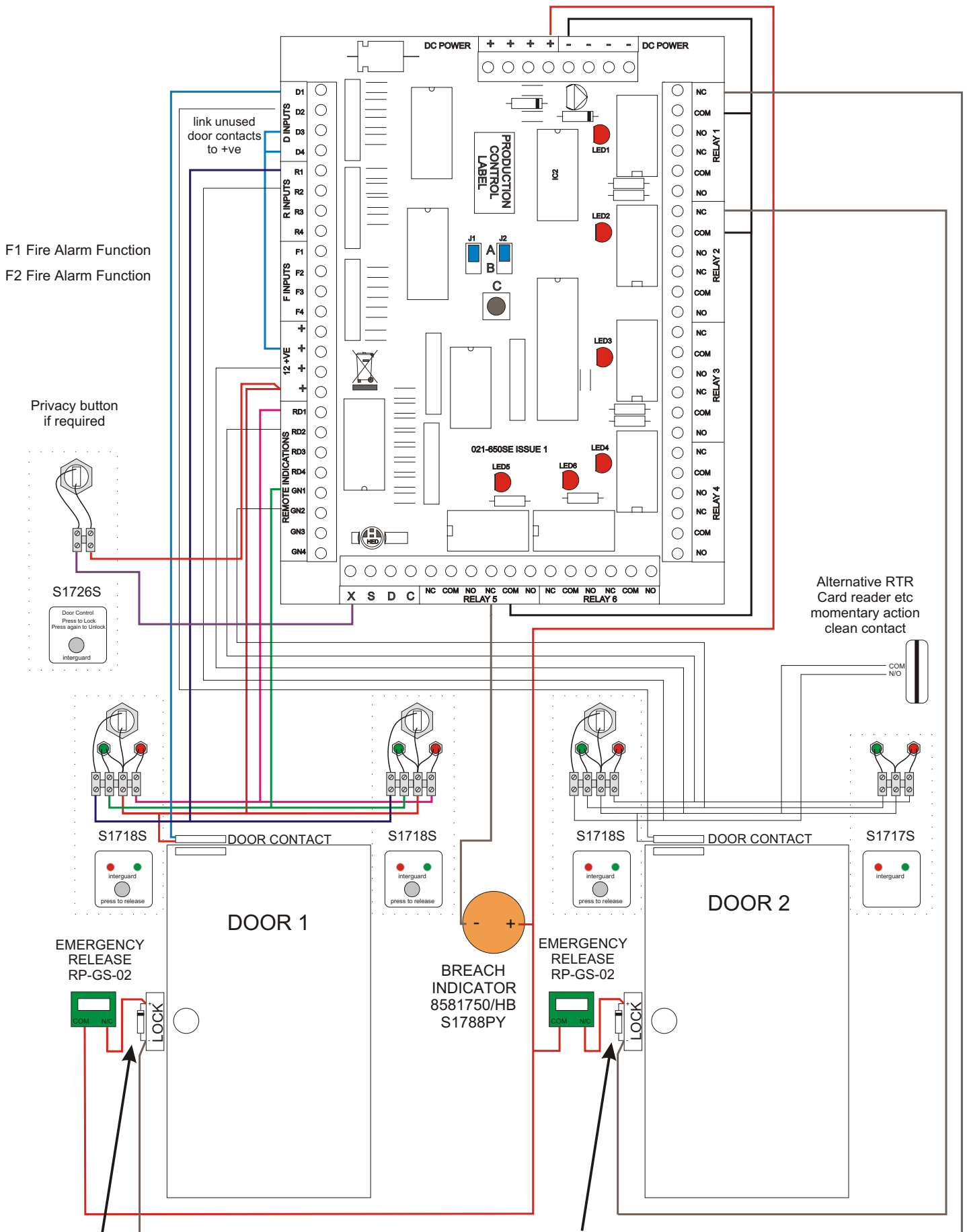
Mode 1 operation with locks and alternative indications.

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



NOTE. Fit back EMF protection diode to magnetic lock.

Mode 2 operation with locks and request to release

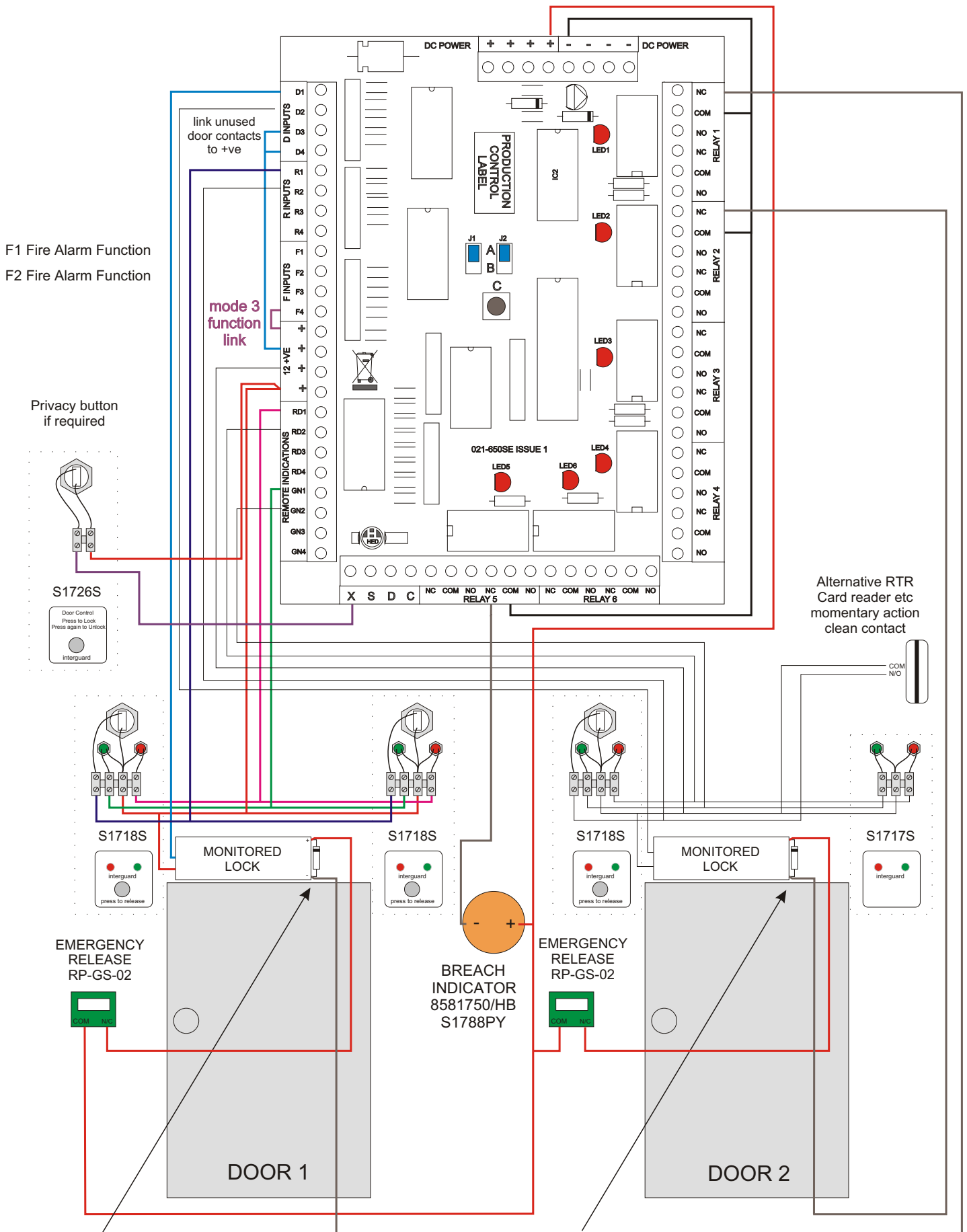


NOTE. Fit back EMF protection diode to magnetic lock.

Operational Note.

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

Mode 3 operation with monitored locks and request to release

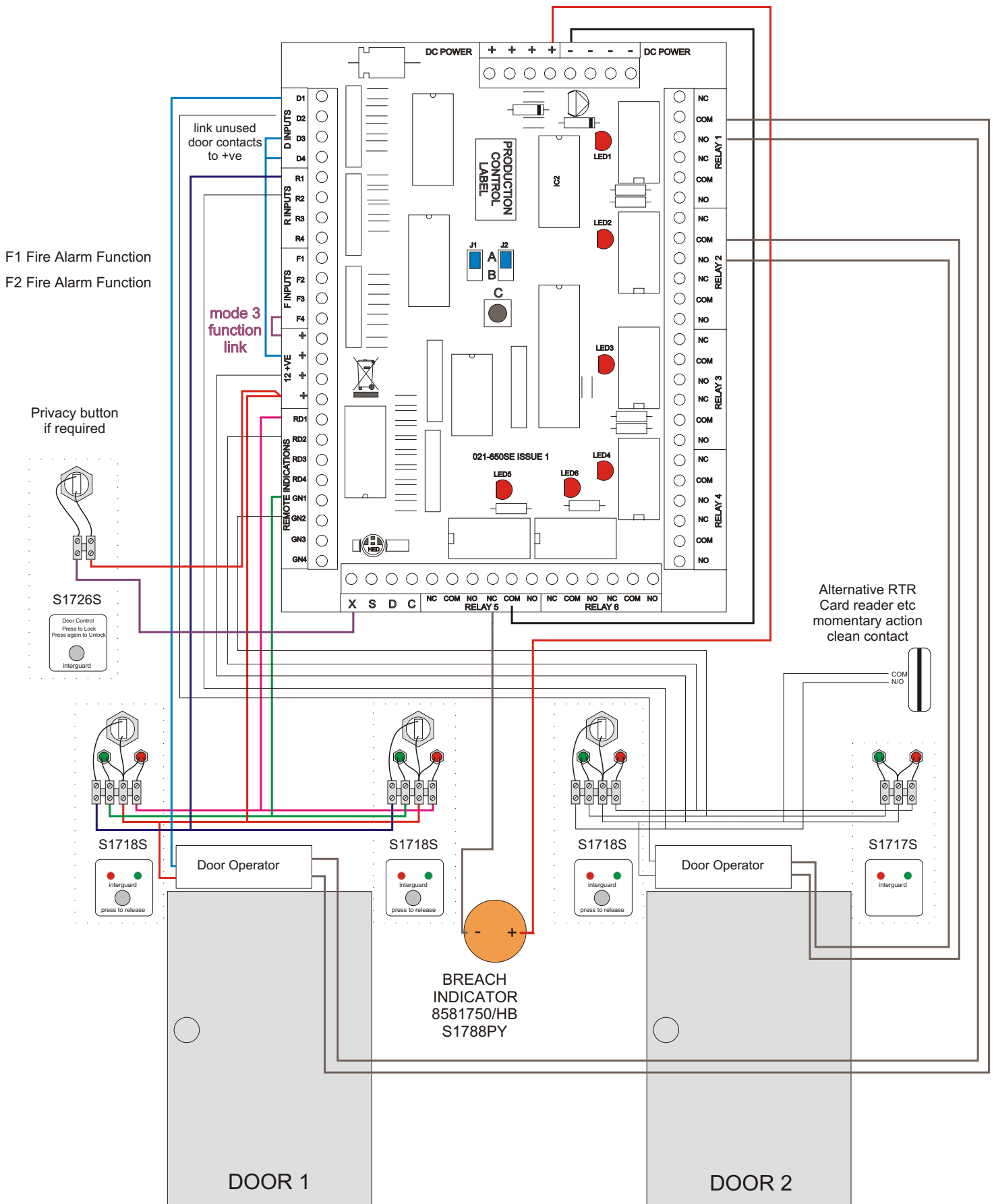


NOTE. Fit back EMF protection diode to magnetic lock.

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.

Mode 3 operation with door openers and request to release



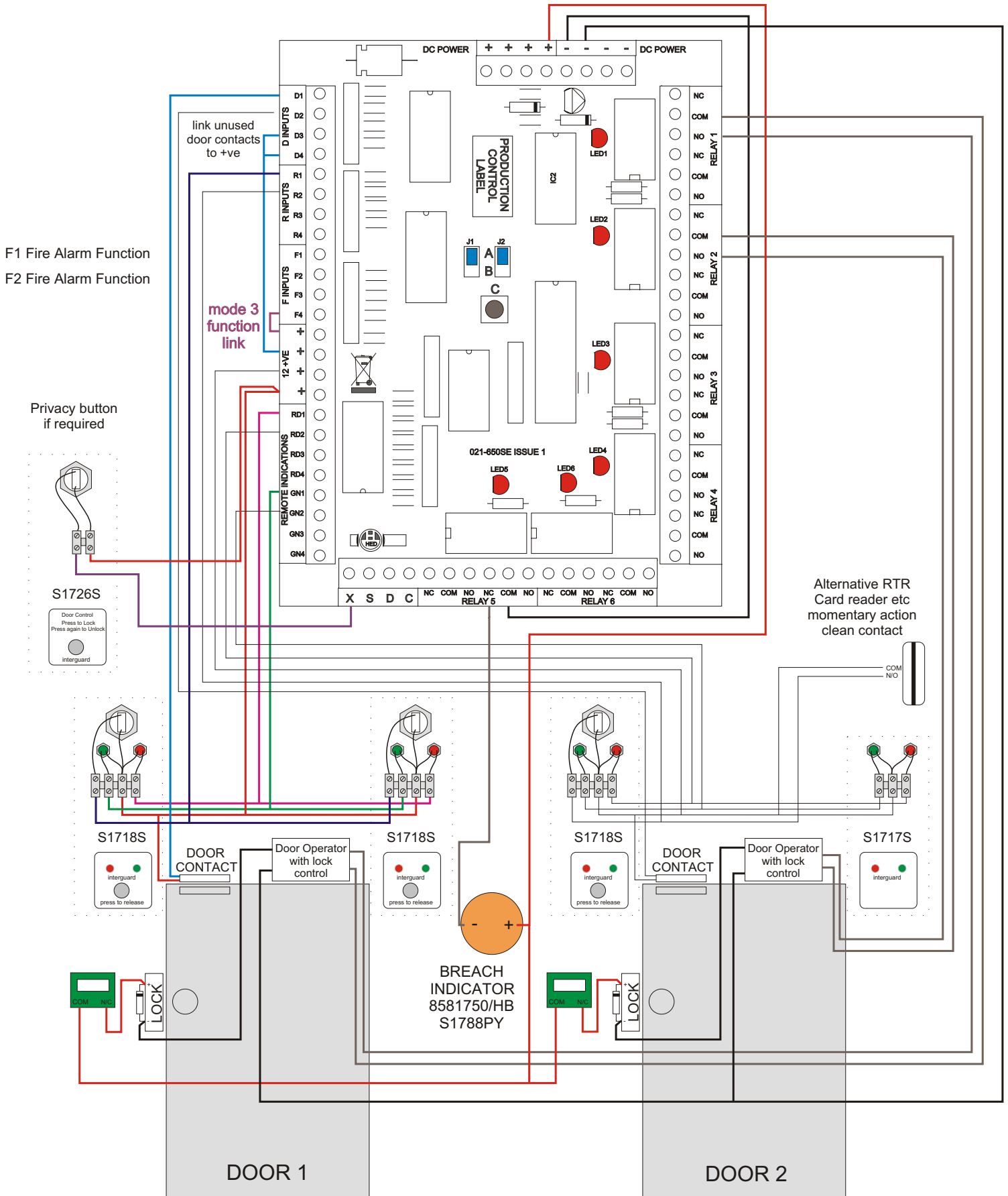
Door Operators.

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.

Mode 3 operation with door openers with lock controls



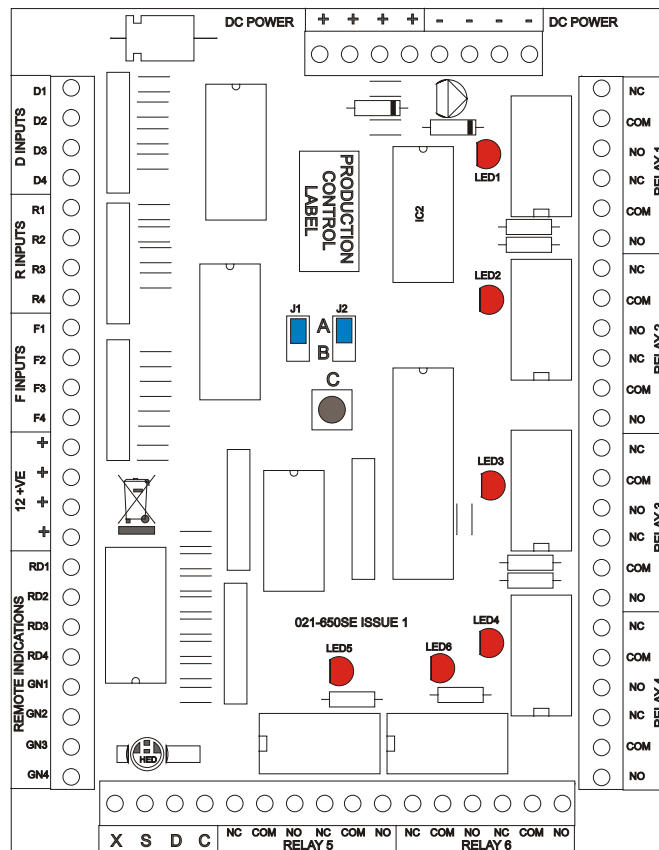
Door Operators.

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.

Setting up Dwell and DOTL (Door Open Too Long) times.



Breach 1 Breach 2

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

LED1 Follow the RTR (zero dwell time) Note this will not indicate breach if held on.

LED2 5 seconds (The default time)

LED3 10 seconds

LED4 20 seconds

To set up the DOTL time. Move J2 to the B position 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)

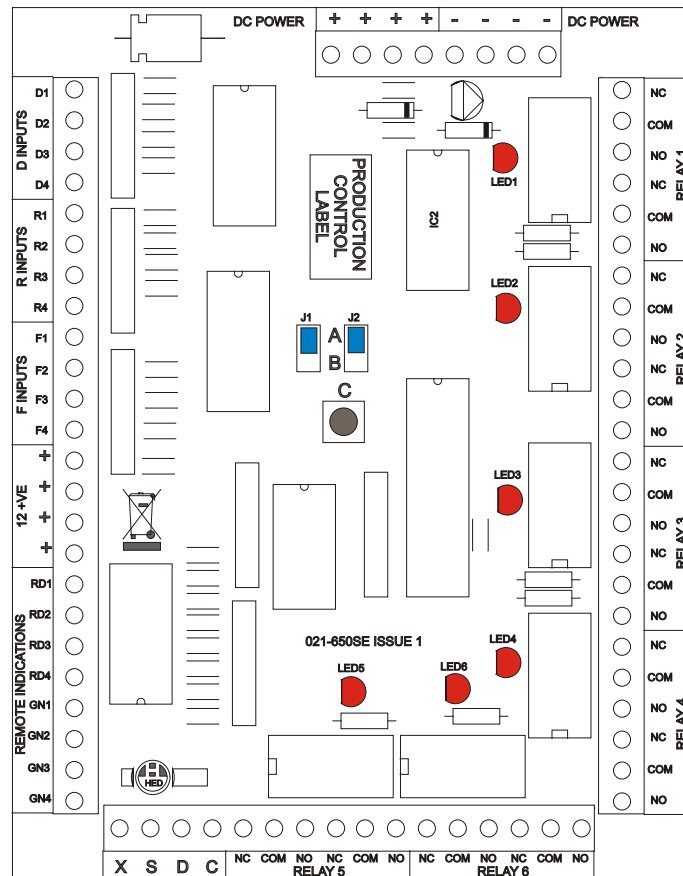
LED3 10 minutes

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.

Trouble shooting the control board



Remove power from the unit. Open all doors (Doors that have been linked out must be unlinked). Ensure that all of the function inputs are open. Move both jumpers to position B.

Put the power on and all 6 relays should switch (have their indicators on).

Momentarily press the unit C pushbutton. Relays 1 to 4 leds should extinguish.

Probe the 'X' terminal with +ve. Relays 5 and 6 leds should extinguish and Relays 3 and 4 leds should illuminate.

Remove the 'X' terminal probe. All of the relays should clear. (Indicators off).

Close each door in turn and the relay for that door should switch.

When all 4 doors have been closed, linked out if not in use, momentarily press the pushbutton C.

The 4 relays should clear and relay 5 should switch.

Press each Request To Release and while the request is made, the relay for that request should switch.

At the end of this test ensure that none of the 4 relays are switched.

Momentarily press the pushbutton C.

The relay 5 should clear and relay 6 should switch.

Close each function input in turn. While the function is closed, the relay for that function should switch.

At the end of this test ensure that none of the 4 relays are switched.

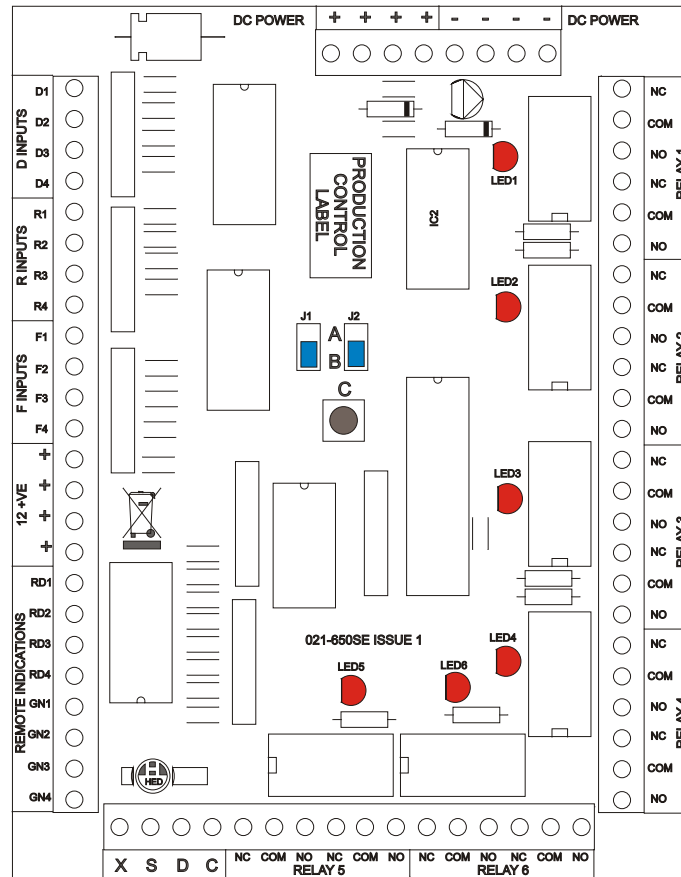
Momentarily press the pushbutton C.

All 6 of the relays should clear and the led indicators all flash red and then green.

The control unit is working. Remove power and move the jumpers back to position A. Put power back on and the unit should behave as an interlock.

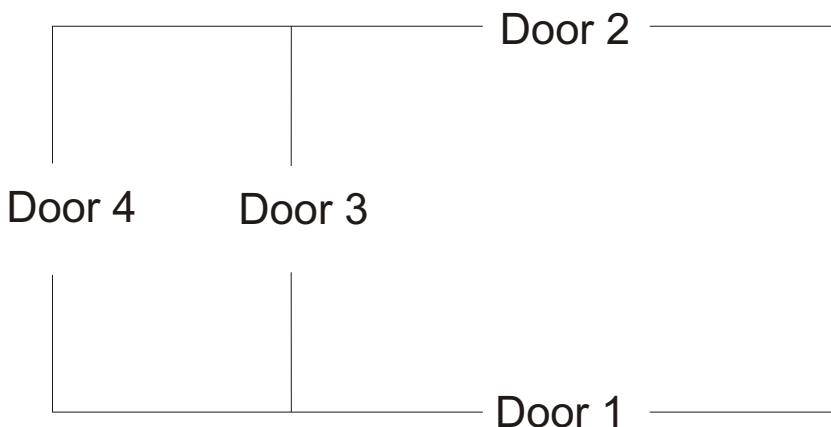
If you are not using Requests to Release, ignore that test, and momentarily press the pushbutton C again. The unit will move on to Relay 6 illuminated. Fit the permanent link to F3 Function, relay 3 should switch and leave this link in when you remove power. This will leave the unit in the MODE 1 operating state.

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