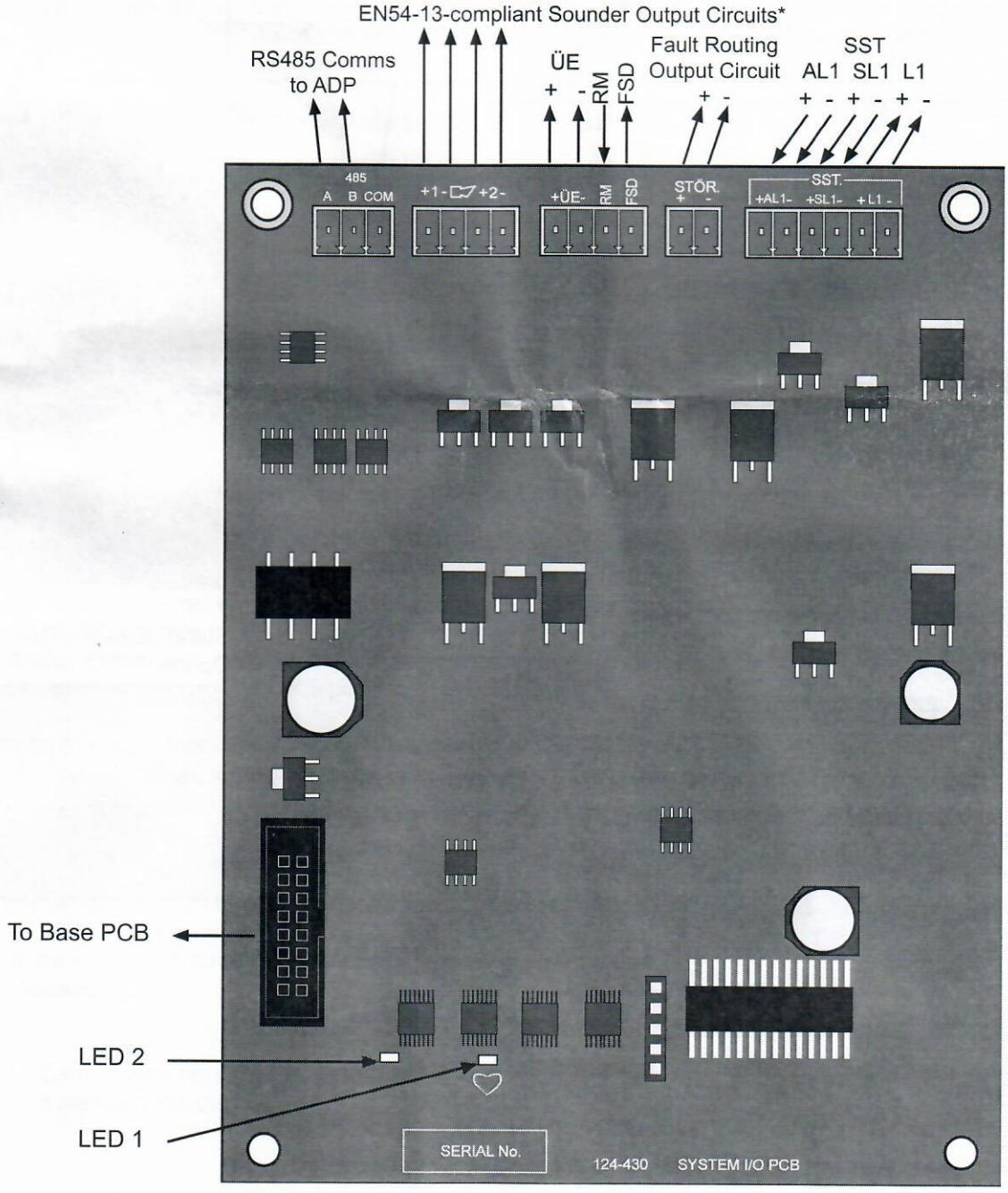
Installing the System I/O PCB

1 Introduction

A System I/O PCB must be fitted inside the FACP to allow it to communicate with the equipment required as part of a VdS-compliant fire detection and control system. An ADP PCB is required to provide the VdS-compliant connection to a FAT4000 repeater; the German fire industry regulations specifies that connection between the FACP and the FAT4000 repeater uses a redundant ring wiring arrangement. It is normal procedure to install the ADP PCB within the FACP enclosure. When this is not possible it may be installed inside a second, dedicated enclosure located alongside and in contact with the FACP to form an extended enclosure; this ensures that the enclosure inter-cabling is suitably protected.

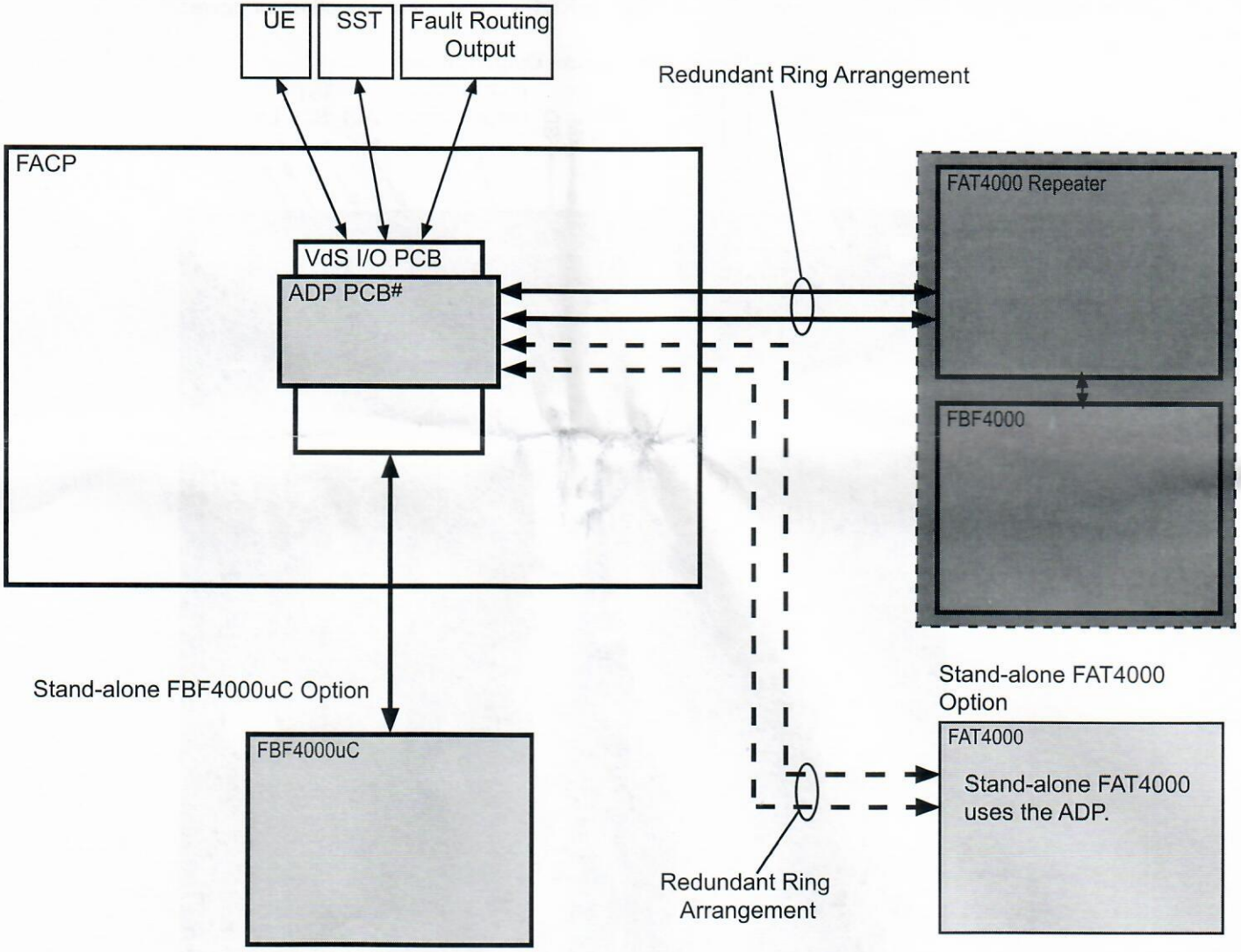
A FAT4000 repeater can function in stand-alone mode or co-located with an FBF4000 in a purpose-built, VdS-approved fire equipment enclosure. When used with the latter arrangement the FBF4000 is able to take full advantage of the redundant ring wiring connection to the FACP. The purpose of the redundant ring wiring arrangement is to ensure that, in the event of a short- or open-circuit fault on one of the paths, the FAT will continue to operate. The redundant ring wiring arrangement comprises two paths: one for the RS485 comms and the other for power.



* Sounder circuit 2 may be configured as an Auxiliary Power output (up to 500mA) supply.

The FACP, also when fitted with the System I/O PCB, supports connection to the following VdS-compliant equipment:

- ADP4000 PCB (provides the required redundant ring connection to FAT4000 plus FBF4000 combination or stand-alone FAT4000)
- FBF4000 (works with FAT4000, co-located in enclosure)
- FAT4000 repeater (using the redundant ring wiring arrangement)
- FBF4000uC (stand-alone, driven from VdS I/O PCB; can also be RS232-slaved from a FAT4000)
- ÜE (fire alarm routing)
- Fault routing equipment (EN54-2 Output Type J)
- FSD. Keysafe - return signal from ÜE triggers this output (if configured) to unlock an external keysafe cabinet to allow fire fighters a means of accessing the building.



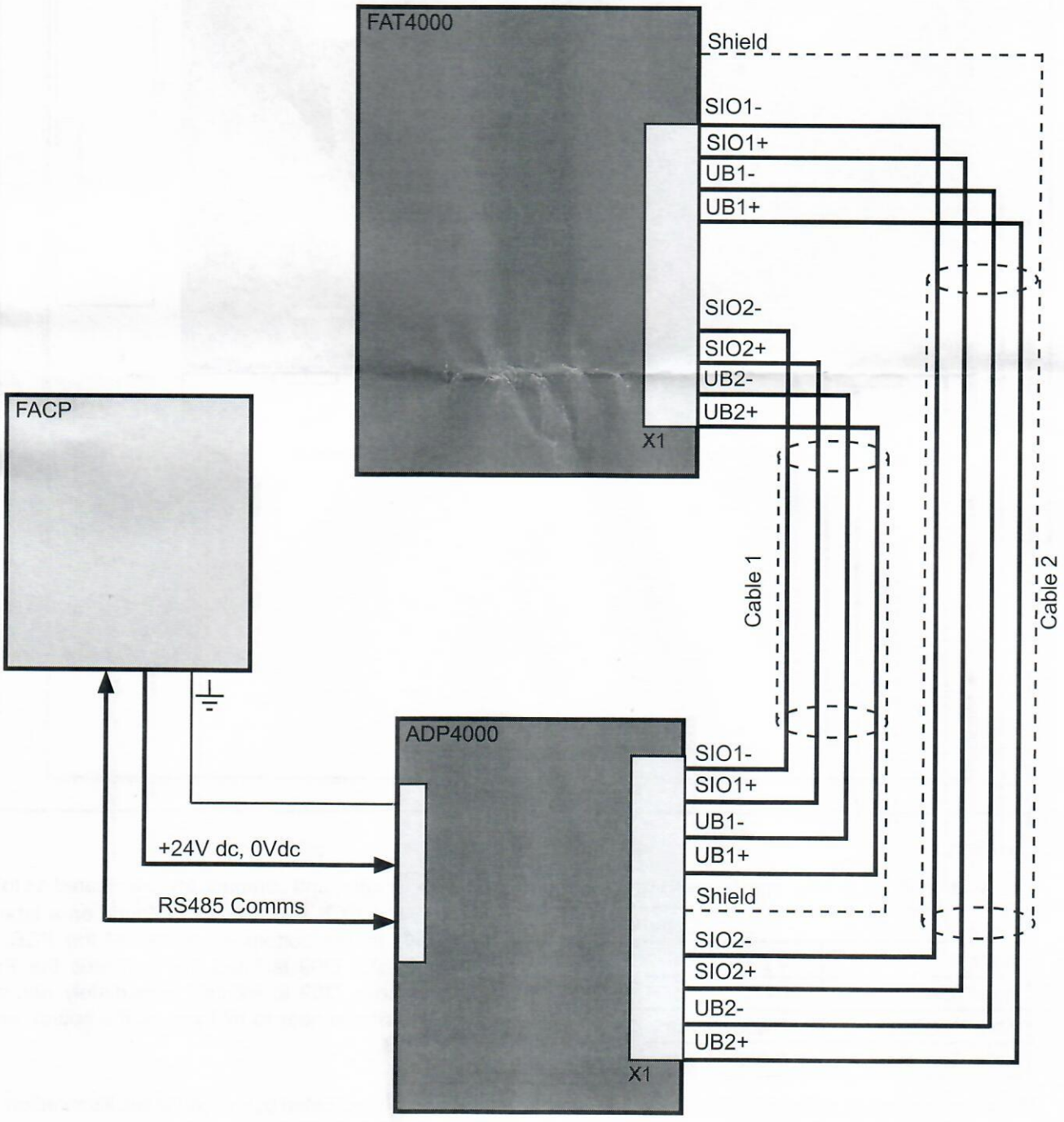
The ADP PCB can be mounted within the FACP Extended Enclosure using the specific adapter plate mounting.

Wiring Interconnection Between the FACP, FAT4000 and ADP4000 (redundant)

The diagram below shows the wiring connections between the FACP, ADP4000 and the FAT4000 equipment. The redundant wiring arrangement is clearly evident between the ADP PCB and the FAT4000 panel.

Ensure that the following wiring connections are observed between the ADP4000 and FAT4000:

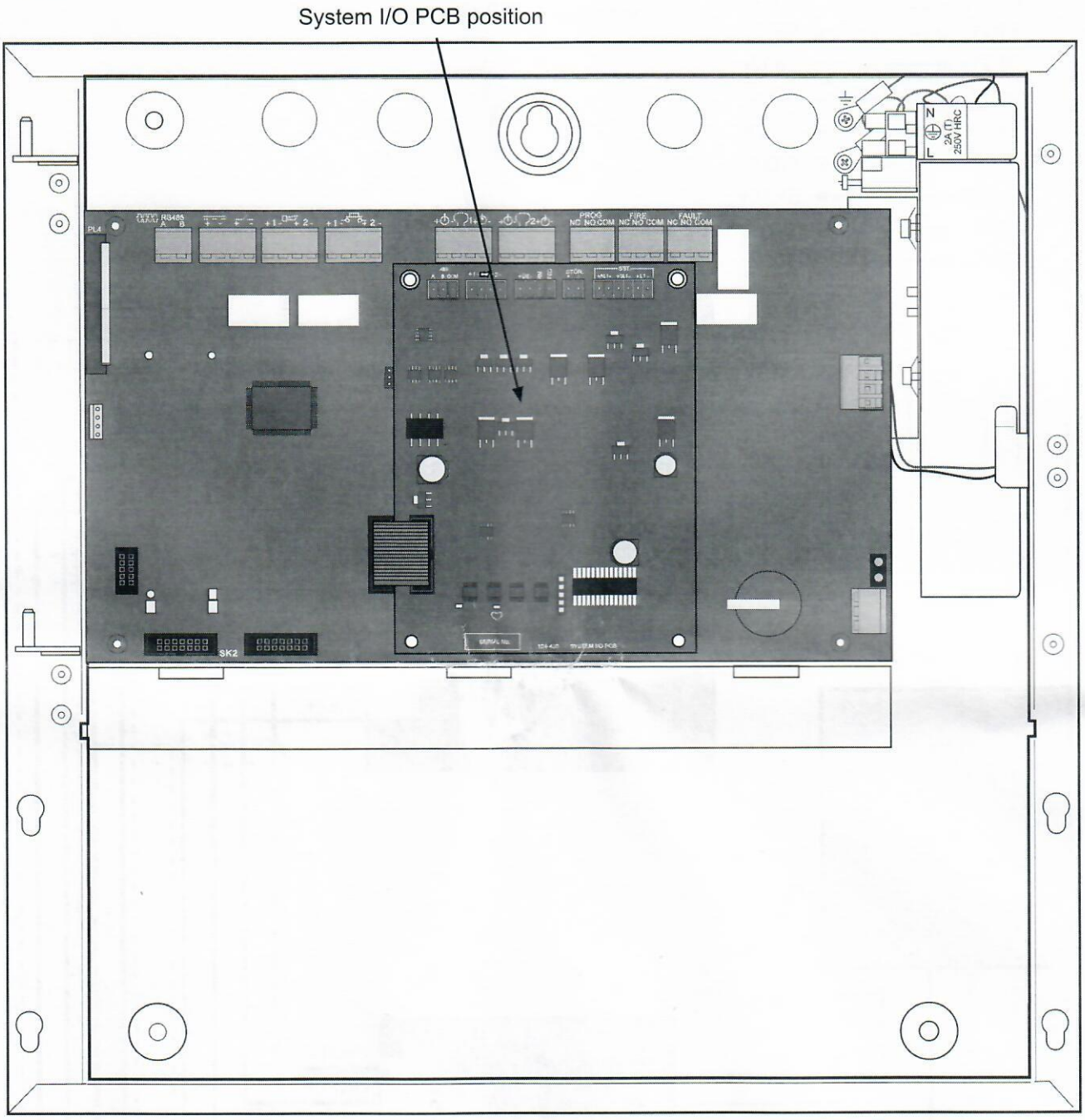
ADP4000		FAT4000
SIO1-	◄——►	SIO2-
SIO1+	◄——►	SIO2+
UB1-	◄——►	UB2-
UB1+	◄——►	UB2+
SIO2-	◄——►	SIO1-
SIO2+	◄——►	SIO1+
UB2-	◄——►	UB1-
UB2+	◄——►	UB1+



2 Installation Procedure

The System I/O PCB must be installed inside the FACP, above the Base PCB. The System I/O PCB communicates with the Base PCB via a 16-way ribbon cable.

All external wiring connection points, using two-part connectors, are provided in the top area of the System I/O PCB.



Caution!

The System IO PCB must only be used with a Base PCB issue 5, or later, and compatibility is indicated as follows:

Base PCB Version		Compatible?
Issue 4, or earlier	410	No
Issue 4, or earlier	410-001	No
Issue 5, or later	410-002	Yes
Issue 5, or later	410-003	Yes

The Base PCB version can be found on a label next to SK1 in the bottom-left corner of the PCB. Also, if transistor Q99 is fitted this indicates the PCB is compatible. Q99 is located immediately above L52 which is fitted near to mid-way of the bottom edge of the PCB.

Note: An incompatible Base PCB and System IO PCB combination is indicated by the continous illumination of the red LED 2, located in the bottom, left-hand corner of the System IO PCB.

With all FACP power turned off proceed as follows:

1 Fit the System I/O PCB in the position shown above, using the four M3 pillars and screws provided.
2 Connect the provided 16-way ribbon cable from PL1 on the System I/O PCB to PL6 on the Base PCB.
3 Make all wiring connections to the ADP PCB, ÜE and SST ouputs, etc. as required.
4 Re-apply power to the FACP.
5 Enter the access Level 3 Commissioning Menu and make the following configuration settings for the System I/O PCB (refer to the next section 3 **System I/O PCB Configuration Settings**). Select the PCB as 'Present' Make other configuration changes as necessary.
6 Save the changes and exit Commission Mode.

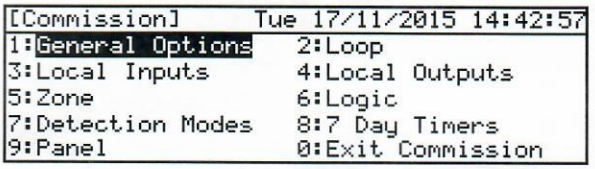
The System IO PCB is provided with two status LEDs as follows:

LED	Colour	Function
1	Green	Heart Beat. Flashes briefly approximately once a second. Every 10 seconds a slightly longer flash indicates when a test is being carried out.
2	Red	Flashes when communicating with control panel. If LED is continuously lit this indicates that a compatibility issue with the Base PCB exists.

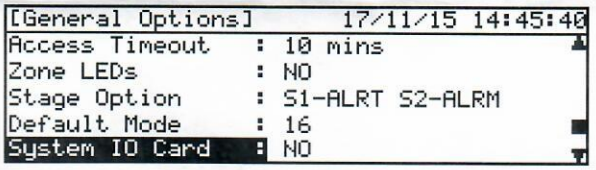
3 System I/O PCB Configuration Settings

Enter user access Level 3 and select the Commission Menu. From the Commission Menu select option.....

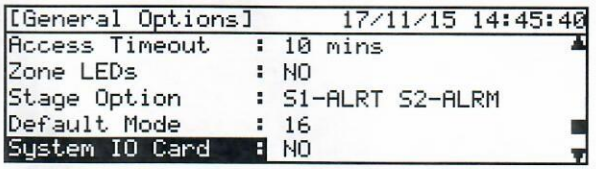
From the Commission menu, select option 1: General Options



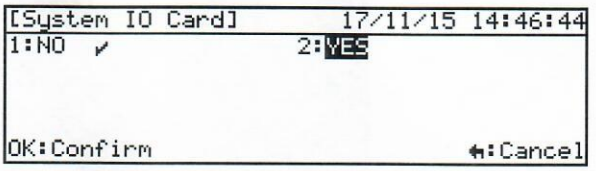
From the General Options menu use the down arrow keys to highlight the menu option **System IO Card**.



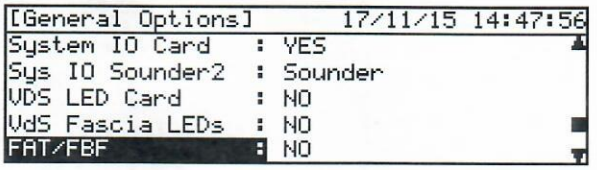
Press the 'OK' key to display the System IO Card edit status screen. Either using the numeric keypad or the Left/Right arrow keys move the highlight to option 2: YES and press the 'OK' key to confirm selection.



The LCD reverts to the General Options screen where the status change is confirmed.



Similarly, to configure the VDS LED Card and the FAT/FBF* options select it in the menu and change its status using the same procedure as described above.



* This option appears only after the System IO Card has been configured.