XFP
32 ZONE
REPEATER
PANEL

installation manual

approved document no. DFU2200502 Rev 1

CONTENTS

Please refer to the Installation & Maintenance Manual and User Guide / Log Book supplied with the main XFP panel for details of the repeater's indicators, controls and programming options.

Disclaimer

CE This product has been manufactured in conformance with the requirements of all applicable EU Council Directives.

IMPORTANT NOTES

This equipment must only be installed and maintained by a suitably skilled and technically competent person.

This equipment is a piece of Class 1 equipment and MUST BE EARTHED.

ALWAYS isolate the panel's mains and battery backup supplies before making connections to its PCBs.

Items supplied with this panel

- Installation manual - document no. DFU2200502 (this manual)
- Hex key, for unfastening / securing the panel lid
- Electrical accessory pack, containing:-
  1 x 20mm 1ATH 250V HRC ceramic fuse (spare primary fuse)
  1 x battery jumper link wire

System design

Fire alarm system design is beyond the scope of this document. A basic understanding of general fire alarm system components and their use is assumed.

Contact the Fire Officer concerned with the property at an early stage in case he has any special requirements. We strongly recommend that a suitably qualified and competent person is consulted in connection with the design of the fire alarm system and that the system is commissioned and serviced in accordance with the laid down specification and national standards. If in doubt please consult your supplier.

We recommend you read BS 5839: Pt 1: 2002 "Fire Detection and Alarm Systems for Buildings (Code of Practice for System Design, Installation, Commissioning and Maintenance)" available at your local reference library or from the BSI. Other national standards of installation should be referenced where applicable.

Cable types and limitations

All system wiring should be installed to meet current national standards - in the United Kingdom these are BS 5839 pt 1 : 2002 and BS7671 (Wiring Regulations).

1.5mm^2 two-core fire resistant screened cable should be used throughout the repeater network installation. This not only shields the data moving up and down the cables from outside interference but is essential to ensure compliance with EMC regulations. Cables such as FP 200, Firetuff™, Firecel™ and MICC may be acceptable provided they are properly terminated at the fire panel and meet national standards / the system specification as applicable. Consult Clause 26 of BS 5839 pt 1 : 2002 for more detailed information on cables, wiring and other interconnections.

Equipment guarantee

This equipment is not guaranteed unless the complete installation is installed and commissioned in accordance with the laid down national standards (in the UK BS 5839: Pt 1: 2002) by an approved and competent person or organisation.

Anti-static handling guidelines

Always observe appropriate electro-static handling precautions prior to handling the panel's PCBs or any other static-sensitive components.

BASIC OVERVIEW & KEY FEATURES

A maximum of eight XFP Repeaters (any mix) can be connected to one non-networked XFP main panel (note that the main panel's Network Comms function must be set to Repeater mode).

Each Repeater requires its own dedicated mains power and battery back-up supply.

Communication between the main panel and repeaters is achieved using network communication cards - one per repeater (fitted as standard) and one per main (available as an optional extra), wired in 1.5mm^2 two-core screened fire resistant cable. The total network length for a repeater network must not exceed 500m.

Each repeater offers all the functions and controls of an XFP main panel (access levels 1, 2 and 3).

Repeaters do not include an RS232 PC programming connector. System programming must be carried out at the XFP main panel using the panel's upload/download programming tools and a Windows PC. Please refer to the XFP main panel instructions for details.

A fault relay is included in all repeaters.

INSTALLATION & WIRING

The fire panel enclosure

The panel is supplied with a hinged metal lid, metal back box and five separate PCBs (a Main Control PCB, a Power Supply PCB, a Network Communication Card, a Switch & Indicator PCB and an LCD PCB. Space is available inside the panel for the rated capacity of VRSLA backup batteries.

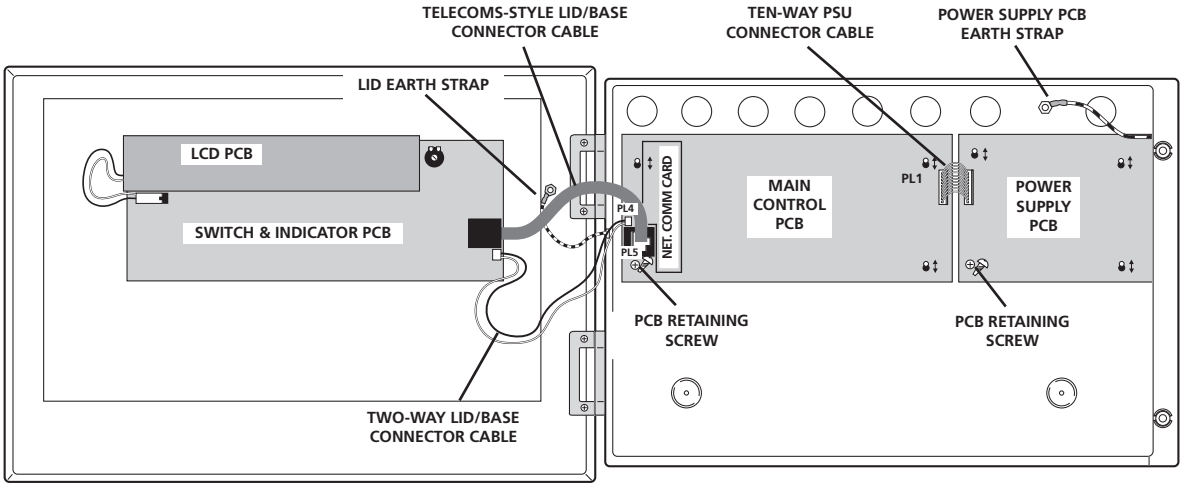
The panel must be sited internally in an area that is not subject to conditions that are likely to affect its performance, e.g. damp, salt-air, water ingress, extremes of temperature, physical abuse, etc. It should be sited at a height where it is easily accessible and in a prominent position within the building. Ideally, its front panel indicators should be at eye level.

Typical locations for the panel are in the entrance foyer/hallway at ground floor level (the first and most obvious point of contact for emergency services) or a permanently manned security office.

It is recommended that you remove the panel's lid and base PCBs prior to first fix installation to protect the electronics from damage.

Removing the lid and base PCBs

Fig. 1 : Location of the panel's base PCBs and removal details



To remove the lid: -

- Take the panel out of its box and undo the two lid screws using the hex key provided.
- Hinge the lid 180° to the left (do not overbend the hinges) and remove the lid earth strap's spade connector.
- Disconnect the telecoms-style lid/base connecting cable from PL5 on the Main Control PCB. Care should be taken when detaching the connector to depress the locking tab to prevent damage.

- Disconnect the two-way lid/base connecting cable from PL4 on the Main Control PCB.
- Carefully remove the four M4 retaining nuts that secure the hinges and lift off the lid.

To remove the base PCBs: -

- Ensure power has been removed from the panel and that the power supply PCB is safe to handle.
- Disconnect the Power Supply PCB connecting cable from PL1 on the Main Control PCB.
- Pull the Power Supply PCB's earth strap off the spade connector at the main base earth point.
- Carefully undo the PCB retaining screw located at the bottom left hand side of the relevant PCB using a crosshead screwdriver.
- Slide the PCBs up and over the mounting pillars taking care not to damage any of the components.
- Store the PCBs in a clean, dry place which is free from vibration, dust and excessive heat.

Retaining the PCBs in a suitable cardboard box will also guard them against mechanical damage.

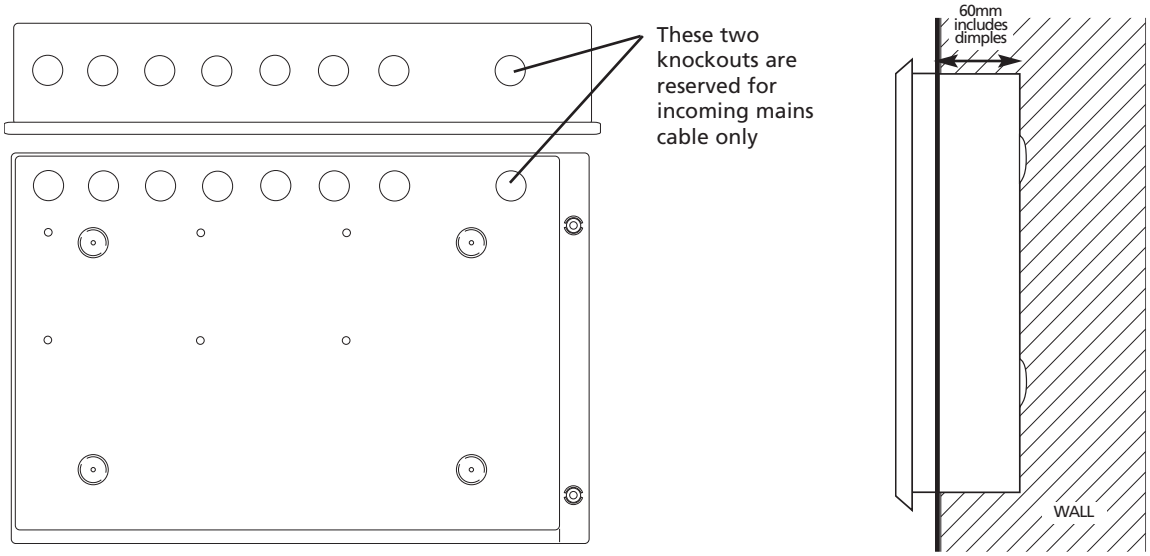
Mounting the base to the wall

The panel can be surface or semi-flush mounted using the five mounting holes provided (note that an optional bezel, part no. AFP735, is available for semi-flush mounting).

To expose the mounting holes you must first remove the panel's lid and base PCBs, as described on page 5. The mounting holes are suitable for use with No.8 roundhead or countersunk screws.

Always assess the condition and construction of the wall and use a suitable screw fixing. Any dust or swarf created during the fixing process must be kept out of base.

Fig. 2 : Location of mounting holes and knockouts / side view of panel for flush mounting



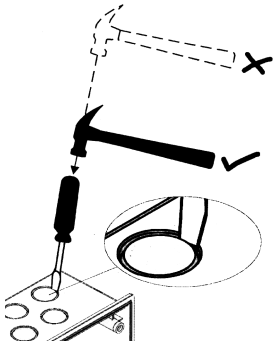
Planning the cable layout in the panel

All cables should be brought into the panel via the knockouts provided.

Note that the network cabling is classed as low voltage and must be segregated away from Mains voltages. Careful planning is needed to ensure this (see Fig. 2, above, for guidance).

Leave sufficient tails inside the panel to ensure straightforward connection of the field wiring to the panel's terminals. Knockouts should be removed with a sharp, light tap using a flat 6mm broad-bladed screwdriver as shown in the diagram (right).

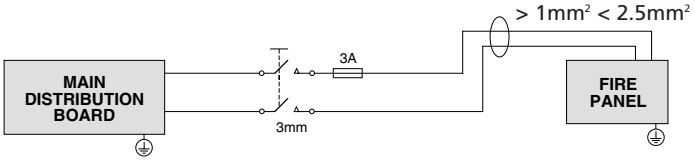
Always ensure if a knockout is removed, the hole is filled with a good quality 20mm cable gland. Any unused knockouts must be securely blanked off.



Mains wiring

The requirement for the mains supply to the fire panel is fixed wiring, using three core cable (no less than 1mm² and no more than 2.5mm²) or a suitable three conductor system, fed from an isolating switched fused spur, fused at 3A. This should be secure from unauthorised operation and be marked 'FIRE ALARM: DO NOT SWITCH OFF'. The mains supply must be exclusive to the fire panel.

(As an alternative to a switched fused spur, a double pole isolating device may be used (see diagram below) providing it meets the appropriate national wiring regulations).

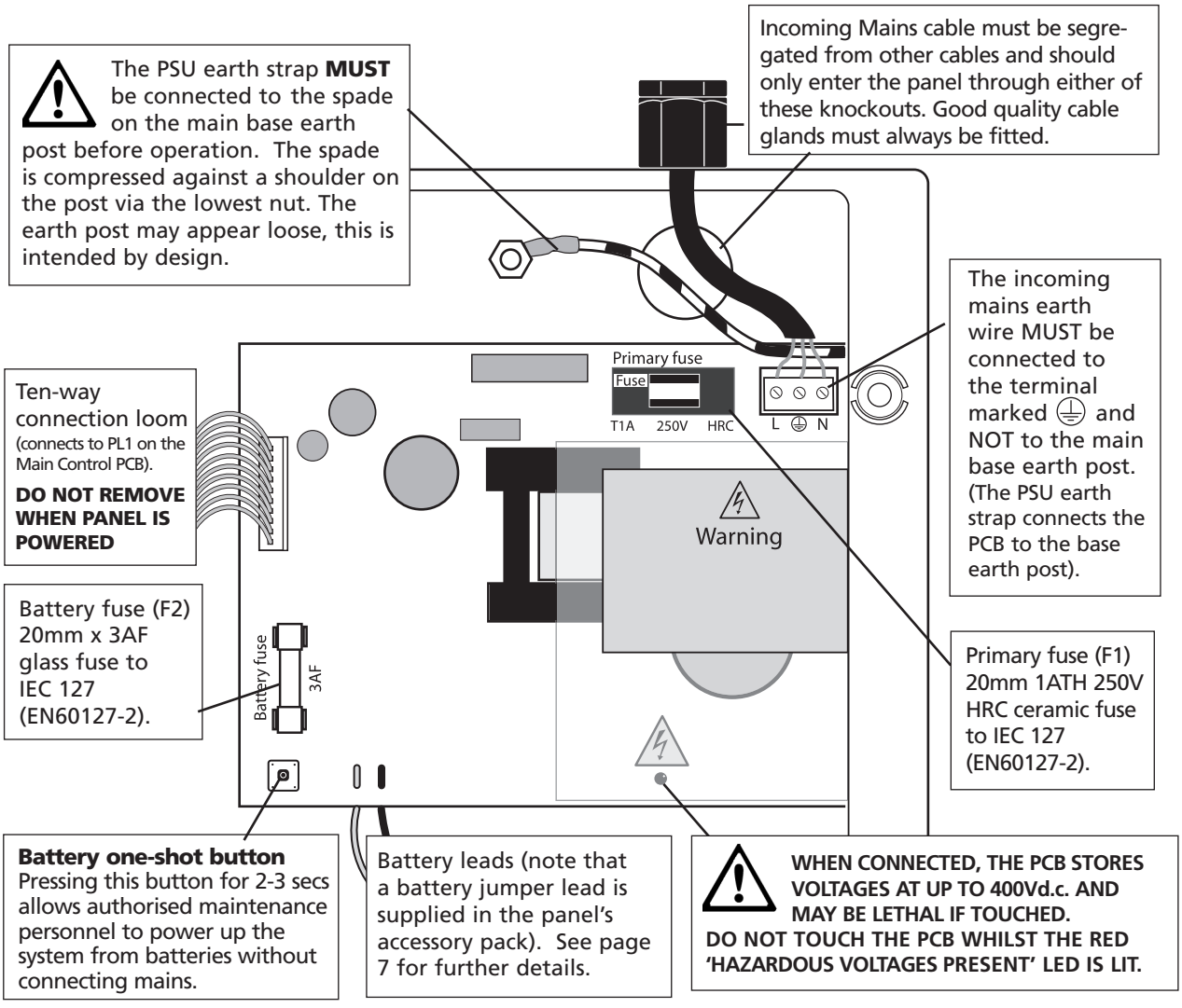


Connecting mains to the Power Supply PCB

The panel's PSU is a 185-265Va.c. 50-60Hz off line switched mode power supply that combines the functions of a power supply unit, battery charging unit, battery monitoring unit and earth fault monitoring unit. It should be positioned in the panel's enclosure as shown in Fig. 3 below. DO NOT operate the panel without the Power Supply PCB correctly mounted in the enclosure with its three PCB retaining screws securely tightened.

DO NOT *connect mains to the Power Supply PCB until the installation is complete and ALL relevant PCBs are correctly attached within the panel.*

Fig. 3 : Power Supply PCB layout and Mains connection details



Installing the standby battery supply

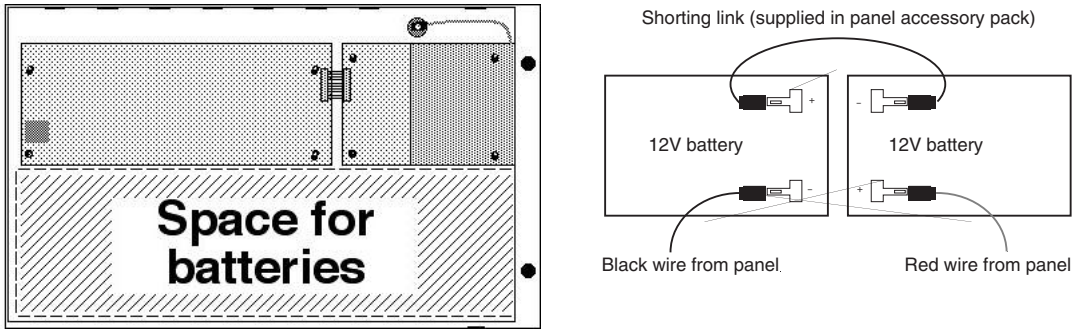
Two new, good quality and fully charged 12V 3.2A Hr valve regulated lead acid batteries are required as the emergency stand-by power supply for the panel. The batteries should be connected in series and located in the panel's enclosure as shown in Fig. 4 .

The battery leads, link wire and nylon cable ties are provided in the panel's accessory pack.

The panel's sophisticated battery monitoring unit protects the batteries against deep discharge by activating a cut off circuit when the stand-by supply voltage reaches 21V approx. If batteries are not fitted, are discharged or in poor condition, a PSU fault will show at the panel.

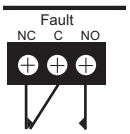
Always dispose of used batteries according to the battery manufacturer's instructions.

Fig. 4 : Battery location and connection details



Fault relay output wiring

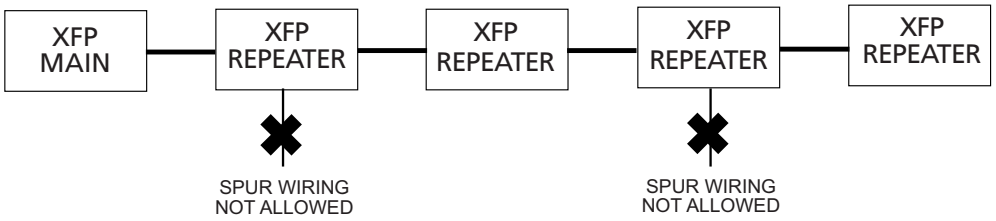
The repeater's failsafe fault relay output switches for any fault condition and is capable of switching 1A @ 30Vdc. It must NOT be used for switching mains voltages.



Repeater network wiring

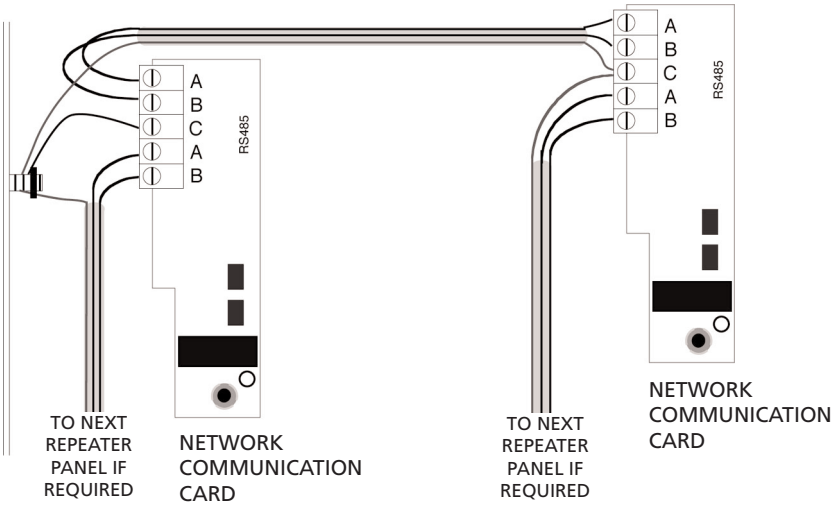
The repeater network should be wired in two-core 1.5mm² fire resistant screened cable.

Fig. 5: Typical repeater network wiring



At **ONE** panel only (repeater or main), connect A to A, B to B and terminate incoming and outgoing earth screens to the panel's side earth post. This earth post must also be connected to terminal C on the network communication card's connector block as shown.

IMPORTANT: At all other panels, connect A to A, B to B and terminate earth screens to terminal C only.



TECHNICAL SPECIFICATION

Mains supply voltage:	230V a.c. ± 10% 50/60Hz
Internal power supply:	27V d.c Nominal
Total output current limited to:	3A @ 230V a.c.
Supply and battery charger monitored for failure:	Yes
Batteries monitored for disconnection and failure:	Yes
Batteries protected against deep discharge:	Yes
Max. battery size and type:	3.2 AHr VRLA
Temperature compensated charging:	Yes
Mains fuse:	1A HRC Ceramic 20mm
Battery fuse:	3A F 20mm
Physical dimensions:	410 x 250 x 80mm (back box); 439 x 274 x 7mm (lid)
Approx weight:	4.5kg (without batteries)
Cabling requirements:	1.5mm^2 two core fire resistant, screened
Max. no. of repeaters:	8
Max. cable length per repeater network:	500m