

XFP  
16 ZONE  
REPEATER  
PANEL

**installation  
manual**

approved document no. DFU1200502 Rev 1



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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

© 2005-2007. No responsibility can be accepted by the manufacturer or distributors of this range of fire panels for any misinterpretation of an instruction or guidance note or for the compliance of the system as a whole. The manufacturer's policy is one of continuous improvement and we reserve the right to make changes to product specifications at our discretion and without prior notice. E&OE.



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. DFU1200502 (this manual)
- Torx key, for unfastening / securing the panel lid
- Electrical accessory pack, containing:-
  - 1 x 20mm 1ATH 250V HRC ceramic fuse (spare primary fuse)
  - 1 x set of battery connection leads (red wire, black wire, jumper link and 2 x nylon cable ties)

### 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<sup>2</sup> 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<sup>2</sup> 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

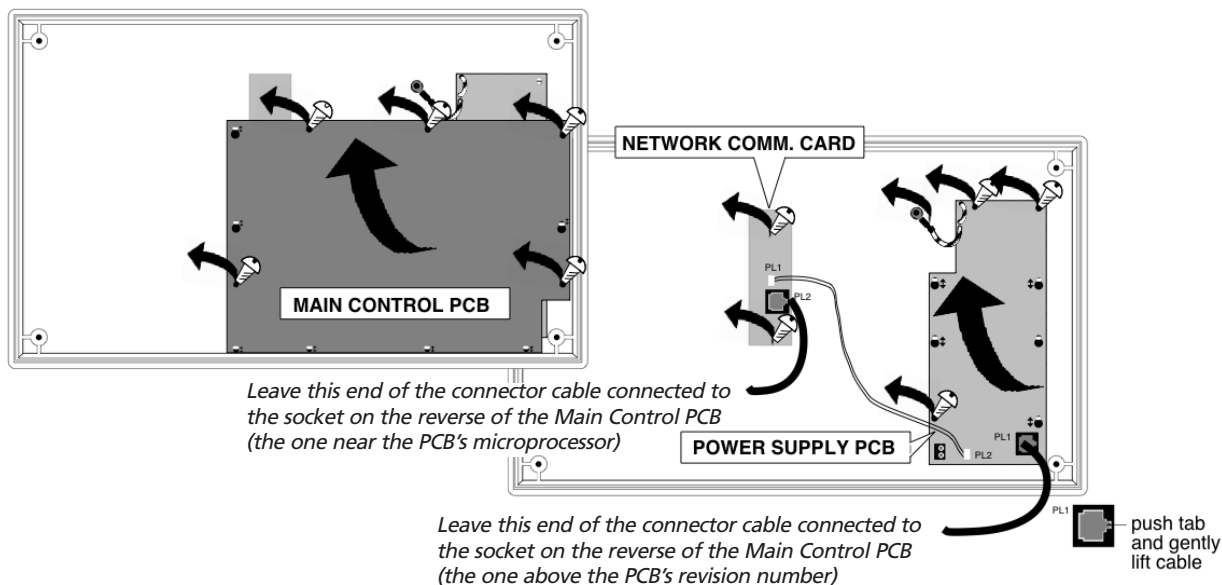
### The fire panel enclosure

The panel is supplied with a plastic detachable lid, a plastic back box, a Main Control PCB, a Power Supply PCB and a Network Communication Card. 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.

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



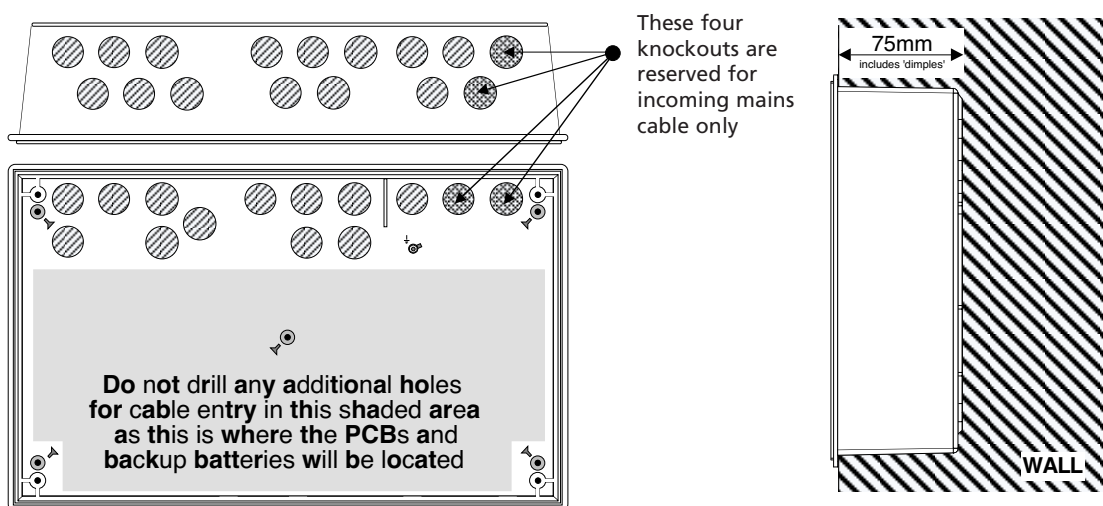
- 1 Take the panel out of its box and undo the four lid screws using the torx key provided. Remove the lid to expose the Main Control PCB (the Power Supply PCB and Network Communication Card are underneath).
- 2 Carefully remove the five retaining screws on the Main Control PCB and slide the PCB up and over the mounting pillars, taking care not to damage any of the components.
- 3 Disconnect the two telecoms-style connecting cables from PL1 on the Power Supply PCB and PL2 on the Network Communication Card but keep them connected to the reverse of the Main Control PCB to prevent them being misplaced.

- 4 Disconnect the two-way polarised loom from PL2 on the Power Supply PCB leaving it connected to PL1 on the Network Communication Card, again to prevent it being misplaced.
- 5 Pull the Power Supply's earth strap off the spade connector at the base earth point.
- 6 Carefully remove the retaining screws on the Power Supply PCB and the Network Communication Card
- 7 Slide the PCBs up and over the mounting pillars, taking care not to damage any of their components.
- 8 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. To expose the mounting holes you must first remove the panel's lid and base PCBs, as described on page 4. The mounting holes are suitable for use with No.8-10 or 4-5mm 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 the base. Note that the central mounting hole can be used to temporarily hang the back box so it can be levelled and its remaining fixing points marked for drilling.

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



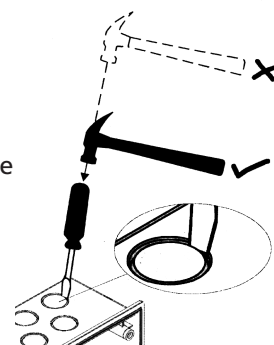
### Planning the cable layout in the panel

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).

We recommend tails of at least 20-30cm are left 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).

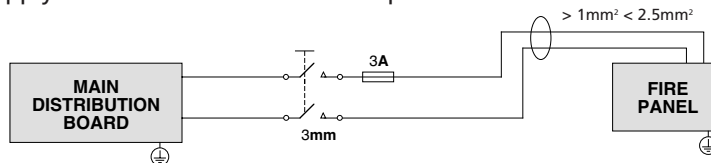
Always ensure if a knockout is removed, the hole is filled with a good quality 20mm cable gland. Any unused knockouts must be securely blanked off.



### Mains wiring

The requirement for the mains supply to the fire panel is fixed wiring, using three core cable (no less than 1mm<sup>2</sup> and no more than 2.5mm<sup>2</sup>) 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.

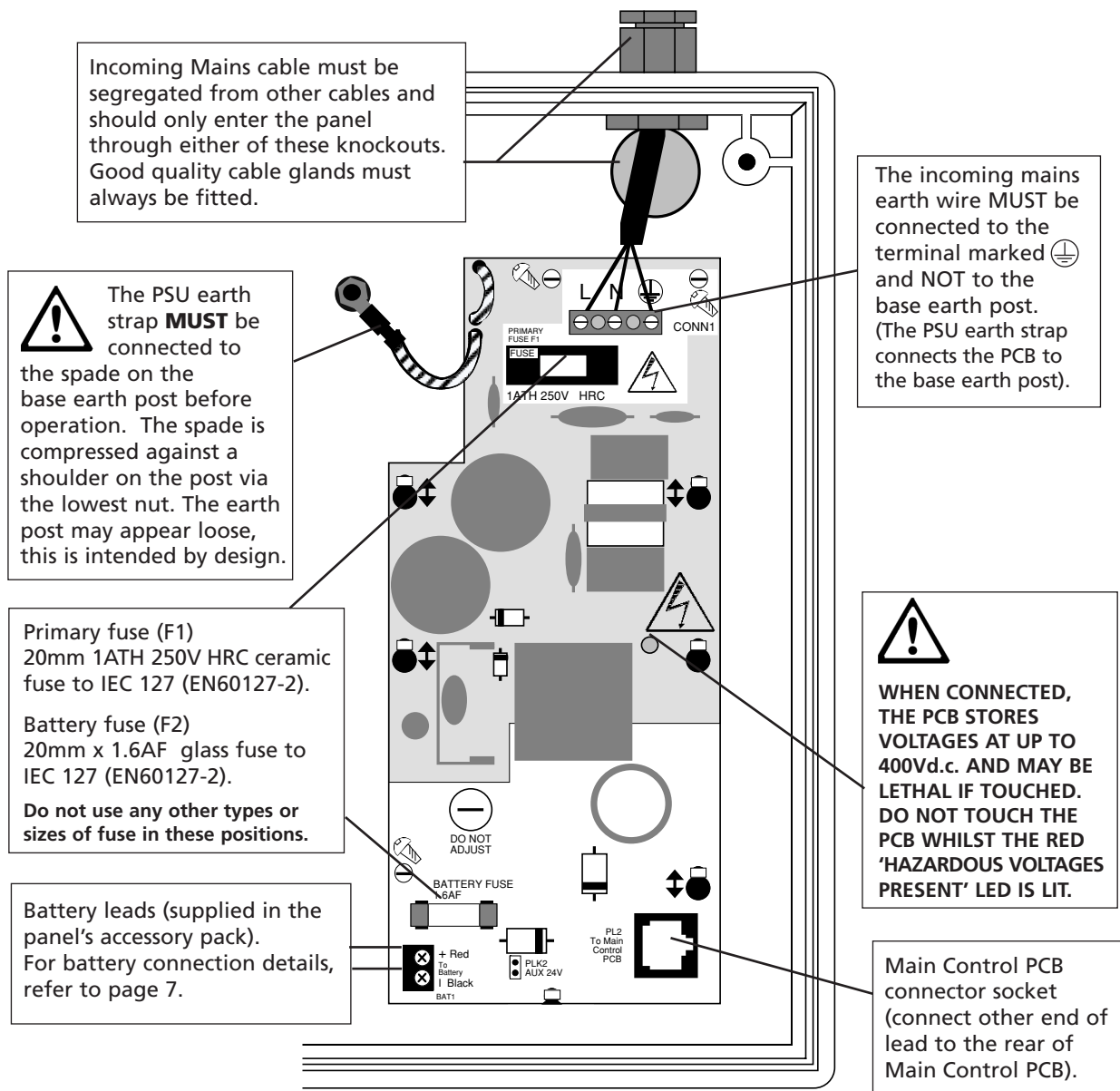
As an alternative to a switched fused spur, a double pole isolating device may be used (see diagram right) providing it meets the appropriate national wiring regulations).



### 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.



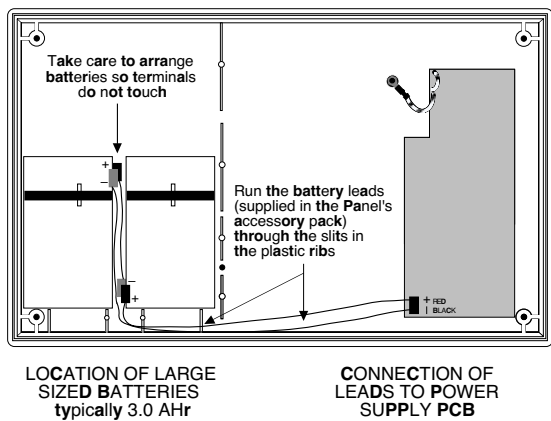
## Installing the standby battery supply

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 below. The battery leads, link wire and nylon cable ties are provided in the panel's accessory pack. Run the battery leads through the slits in the panel's lower plastic ribs and secure the batteries into position using the nylon cable ties as shown.

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.

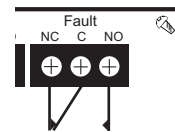
Always dispose of used batteries according to the battery manufacturer's instructions.

**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.

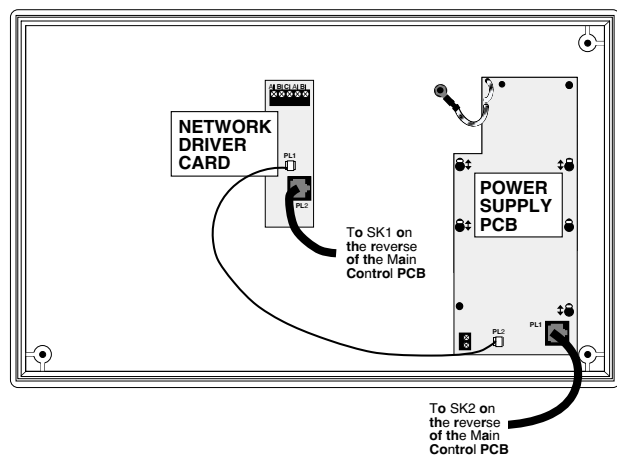


## Installing the repeater's network communication card

Before installing the network communication card, isolate the Mains supply and disconnect the panel's battery back-up supply. With reference to Figure 5 below:-

- Secure the card inside the panel using the two retaining screws provided.
- Connect the two-way polarised power supply loom between PL1 on the card and PL2 on the Power Supply PCB.
- Connect the 8-way telecoms-style connector cable between PL2 on the card and the socket on the reverse of the Main Control PCB (socket SK2 which is located alongside the PCB's microprocessor).

**Note the DIP switch (SW1) on the network communication card has no function when used with XFP repeaters.**



## Connecting the repeater wiring

Fig. 6: Typical repeater network wiring

The repeater network should be wired in two-core 1.5mm<sup>2</sup> fire resistant screened cable. Connect A to A, B to B and terminate incoming and outgoing earth screens to terminal C. **Note that earth screens should be terminated at the base earth post of one panel (repeater or main) ONLY, as illustrated below.**

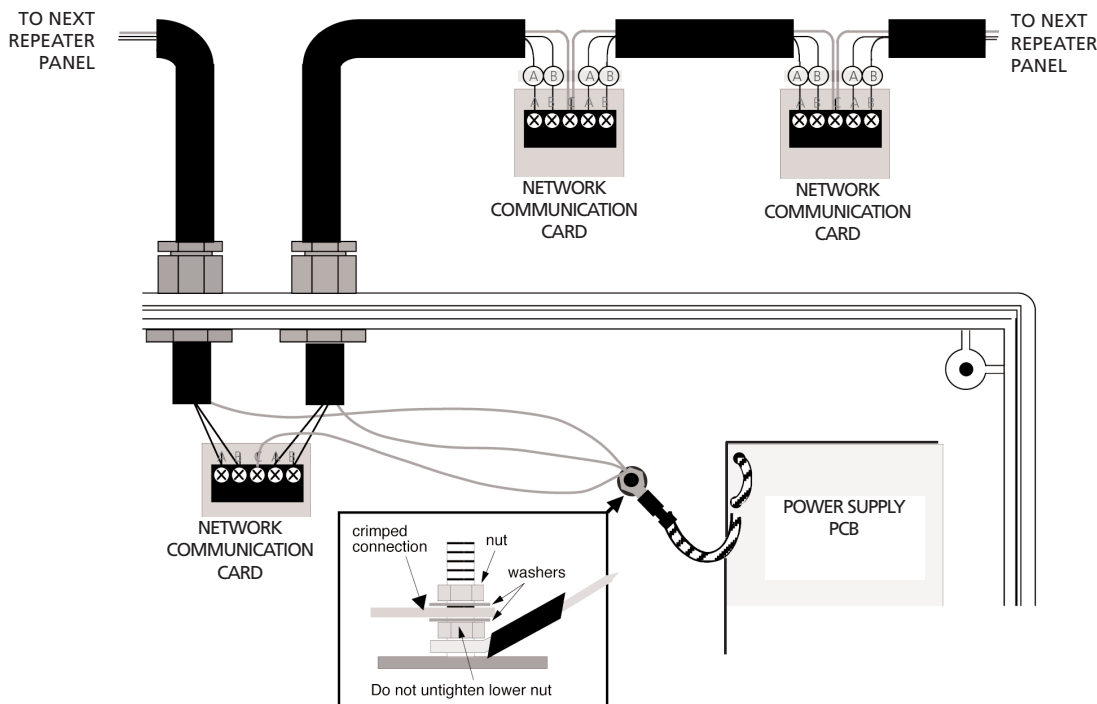
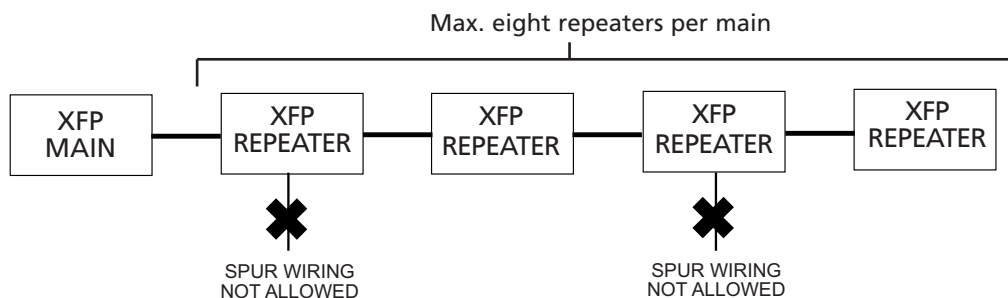


Fig. 7: A typical XFP repeater network



## TECHNICAL SPECIFICATIONS

Mains supply voltage:	230V a.c. ± 10% 50/60Hz
Internal power supply:	27V d.c Nominal
Total output current limited to:	1.4A @ 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:	1.6A F 20mm
Physical dimensions:	380 x 235 x 77mm (back box); 380 x 235 x 16m (lid)
Approx weight:	1.9kg (without batteries)
Cabling requirements:	1.5mm <sup>2</sup> two core fire resistant, screened
Max. no. of repeaters:	8
Max. cable length per repeater network:	500m