

Installing the Fibre-optic PCB for the ID²net Intelligent Digital Delivery Network

The ID²net Intelligent Digital Delivery Network Fibre-optic PCB (PN: 124-319) locates inside the main chassis' enclosure and immediately to the left of the Network PCB (PN: 124-312). As with the Network PCB, the Fibre-optic PCB can be fitted above first- or second- layer PCBs. The PCB kit provides the parts for both options.



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ELECTROSTATIC SENSITIVE DEVICES

Check Your Equipment....

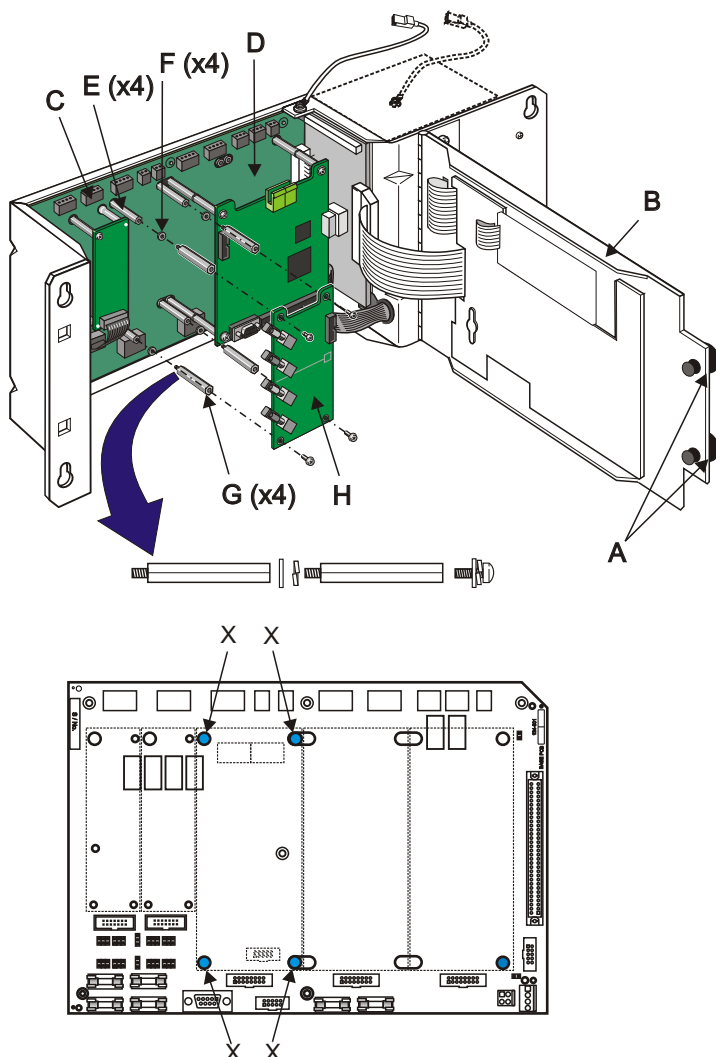
Taking suitable precautions, before proceeding with the installation, remove all packaging and inspect contents for any damage that may have occurred during transit. If no damage is evident, proceed using the instructions below. In the unlikely event that damage has occurred, or any items are missing, **DO NOT PROCEED**, contact your supplier and refer to the panel Installation & Commissioning Manual.

Making sure that the mains supply has been isolated, the batteries disconnected and observing all necessary precautions, fit the Fibre-optic PCB as follows:

Your Fibre-optic PCB kit, PN: 020-643, should contain:

Fibre-optic PCB Assembly	PN: 124-319
14-way ribbon cable	PN: 082-177
M3 x 10 SEM screws (4 off)	PN: 775-058
M3 Metal spacers (8 off)	PN: 423-269
M3 Metal spring washers (4 off)	PN: 791-034
M3 Metal plain washers (4 off)	PN: 790-005
Anti-Static Warning instructions	PN: 997-180
2-way Jumper Link (2 off)	PN: 542-074
PTFE washers (4 off)	PN: 791-055

Fitting the Fibre-optic PCB



- 1 Remove the front cover moulding, if fitted - use a 3mm hexagonal socket key if 1/4 turn fasteners are fitted, or a 4mm hexagonal socket key if M6 screw are fitted. Place the cover in a protective bag and store safely.
- 2 Using a suitable-sized coin, release the two quarter-turn fasteners (A) located on the left-hand side of the chassis' door (B). Open the door to gain access to the main chassis PCB enclosure (C), containing the Base PCB (D).
- 3 If second-layer PCBs are NOT fitted, fit the first four metal hexagonal spacers (E) in positions marked 'X' and tighten (the lower drawing shows the footprint of the second layer PCBs).
- 4 Using the four supplied plain and spring washers (F), fit the second set of four hexagonal spacers (G) into the ends of the first four spacers.
- 5 Remove the Fibre-optic PCB (H) from its packaging.
- 6 With the Fibre-optic PCB (H) correctly orientated, carefully offer it towards the four supporting pillars created in steps 3 and 4 above.
- 7 Fit one M3 x 8 SEM screw in each corner of the Fibre-optic PCB. Tighten with a suitable screwdriver.
- 8 See overleaf for the connection of wiring and cables.

To remove the Fibre-optic PCB, disconnect all fibre-optic cables and ribbon cable to the Network PCB (see **Cables and Wiring** overleaf) and remove the four retaining screws.

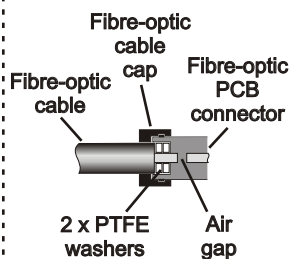
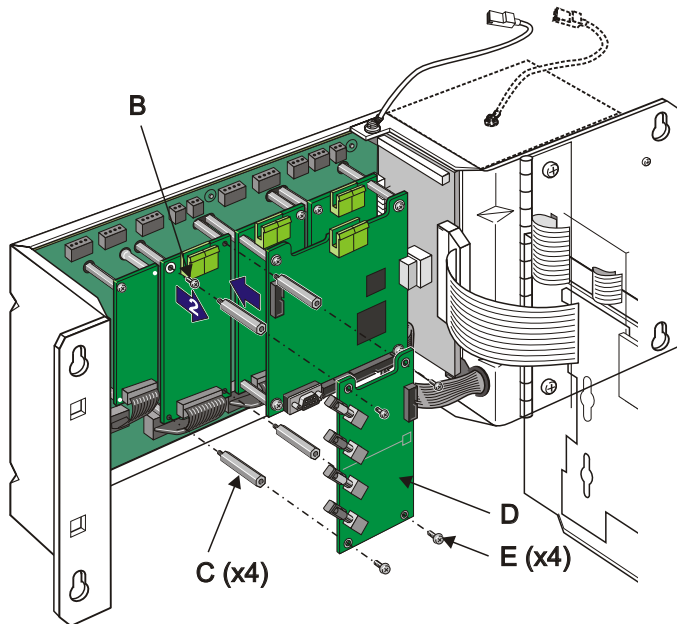


Replace the dust caps if fibre-optic cables are removed from transmitter/receiver heads.



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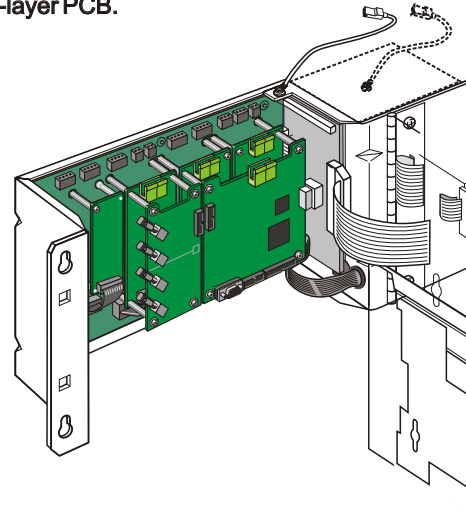


Short fibre-optic links (approx. <300m): to prevent communication errors caused by light reflections, it may be necessary to place two PTFE washers (supplied with the PCB) over the TX cable core so that an air gap is formed inside the PCB connector (see left); this gap attenuates the signal.

If Second-layer PCBs are Fitted...

- 1 Follow steps 1 and 2 overleaf to gain access to the main chassis PCB enclosure.
- 2 Remove all retaining screws (B), one at a time, from the second-layer PCB. In their place insert hexagonal spacers (C) and tighten with a 5.5mm hexagonal socket tool. Discard the unused spacers and packing washers.
- 3 Remove the Fibre-optic PCB (D) from its packaging.
- 4 With the PCB (D) correctly orientated, carefully offer it towards the four spacers (C) fitted in step 2 above.
- 5 Fit the four M3 x 8 SEM screws (E) supplied with the kit in the corners of the Fibre-optic PCB.

The drawing below shows the Fibre-optic PCB fitted correctly above the second-layer PCB.



To remove the Fibre-optic PCB, disconnect all fibre-optic cables and ribbon cable (see below) and remove the four retaining screws.

Cables and Wiring

Fit the supplied 14-way ribbon cable (F) between connector J3 on the Fibre-optic PCB and J3 on the Network PCB (G). Polarisation keys ensure correct fitting [the red line (H) should be at the bottom].

Connection of Fibre-optic Cables

The four Fibre-optic transmitter/receiver heads, J1, J2, J4 and J5 (I) fitted along the left-hand side of the PCB are used for the connection of fibre-optic network cables. The heads are inclined to assist the forming of fibre-optic cable minimum bend radii. Ensure that for each network link fibre-optic cable pair that the Transmit (Tx) head is connected to a Receive (Rx) head on the Fibre-optic PCB at the other end. **DO NOT split Tx and Rx connections between channel circuits A and B.**

Cables should be brought into the back box using 20mm knockouts and appropriate glands in accordance with local standards. Refer to the fibre-optic cable manufacturer's recommendations for correct cable termination practices.

Note: Each of the heads is fitted with a protective dust-cap (J) which **MUST ONLY** be removed immediately prior to terminating the fibre-optic cables. To remove a cap, turn it anti-clockwise and withdraw.

Jumper Link Setting

If fibre-optic cables are to be used the jumper links need to be fitted on the Network PCB as follows:

- FO1 - when fibre-optic link A is used
- FO2 - when fibre-optic link B is used

Note: It is not necessary to use BOTH fibre-optic links as a mixture of conventional and fibre-optic links can be used with any Network PCB. If either link (A or B) is NOT used, fit a jumper link (K) to JP1 or JP2 respectively, on the Fibre-optic PCB.

