2.2.5 Option board 3

1. Remove the option board from its packaging. With reference to section 2.1, above, ensure that the board is suitable for position 3, and set any addressing switches as appropriate to position 3.
2. Fit the option board, as shown in figure 2.2.5, and secure it with four M3 x 8 screws (U) and shakeproof washers.

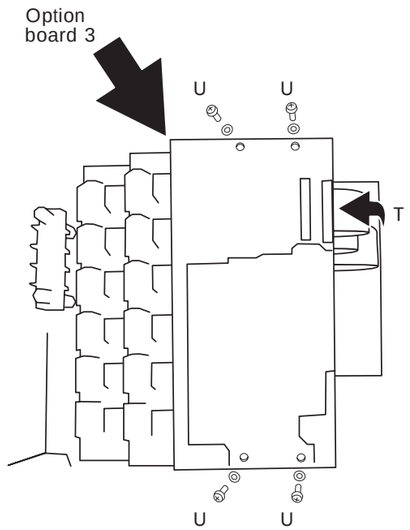

Figure 2.2.5 Fitting option board 3

3. Fold the board 2 flexi ('T') over, as shown, and fit it to the horizontal connector on the option board (blue side down).

3 COMPLETE ASSEMBLY

Figure 3 shows a side view of the options assembly, for all three boards.

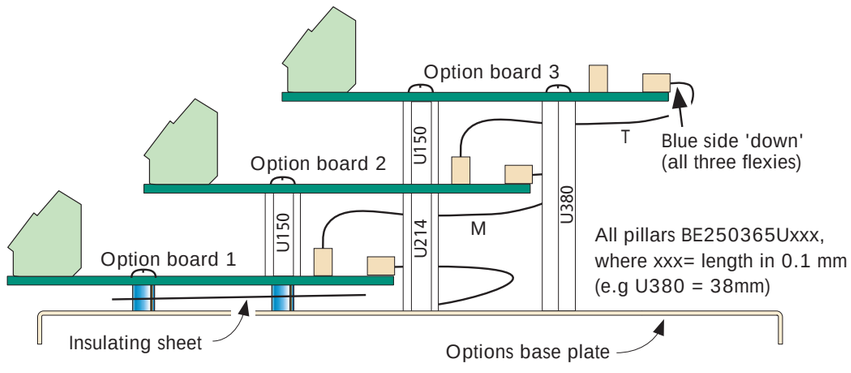

Figure 3 Side view of the options assembly

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Option board retrofit instructions
Multipoint Circular-chart recorders

These instructions are intended as an aid to service engineers and others who are required to retrofit option circuit boards (including transmitter power supplies) to a multipoint circular-chart recorder. The instructions do not show every possible permutation of option boards, but the details given should be sufficient to enable whatever combination of boards is required, to be fitted.

WARNING!

Isolate the recorder from all hazardous voltages (supply or signal) before opening the platen.

CAUTION

These procedures involve the handling of components which are sensitive to static electrical discharge. All relevant personnel must be aware of static handling procedures.

1 TRANSMITTER POWER SUPPLIES

Note: This procedure requires the removal of the power supply unit. The instructions show a recorder without option boards. All option boards and the option board base plate must be removed to gain access to the power supply unit. The instructions for fitting option boards give details.

1. Remove all option boards and place them in a suitable static-safe environment. Remove the option board base plate (if fitted).
2. For each transmitter power supply (TRS) being fitted, fit the associated insulating sheet and insulating washers (4 off), and secure the unit to the base using 4 off M3 x 8mm screws with shake-proof washers. Figure 1.1 shows the arrangement for TRS1; TRS2 is similar.
3. If not already in place, fit the relevant fuse (table 1), and fuse cover.

Supply voltage	120V	240V
TRS part no.	AH204680U115	AH204680U240
Fuse part no.	CH204504	CH050630
Current rating	100mA	63mA
Fuse type	20mm Type T	20mm Type T

Table 1 Fuse details

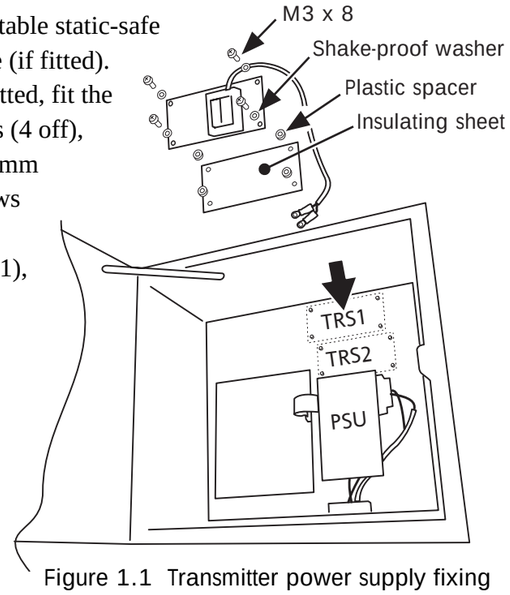


Figure 1.1 Transmitter power supply fixing

1 TRANSMITTER POWER SUPPLIES (Cont.)

4. Ensure that supply power is isolated.
5. Remove the flexi-cable ('A' in figure 1.2) from its control board connector.
6. Remove the four securing screws ('B' in figure 1.2), and associated shakeproof washers, which secure the power supply unit (PSU) to the recorder chassis. Remove the insulating sheet and put to one side for use in re-assembly.
7. Wire the transmitter power supply unit(s) to the power supply connector block as shown in figure 1.3. Ensure that all blue (Neutral) wires go to the terminal farthest from the earth terminal and that all brown wires (Line) go to the terminal next to the earth terminal.
8. If applicable, fit the option board flexi (figure 2.2.1) to the PSU.
9. Re-fit the PSU and associated insulating sheet, and secure with the four screws 'B' and shakeproof washers previously removed.
10. Re-connect the control board flexi 'A', previously disconnected.
11. Fit a self adhesive cable clip to the inside of the right hand wall, and use it to retain the power lead(s) to the transmitter power supply(ies).
12. Refit any option boards previously removed, or if new options are to be installed, refer to the relevant parts of section 2.

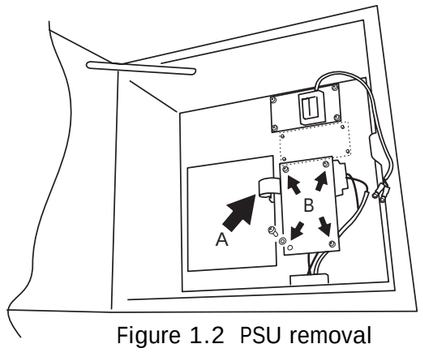


Figure 1.2 PSU removal

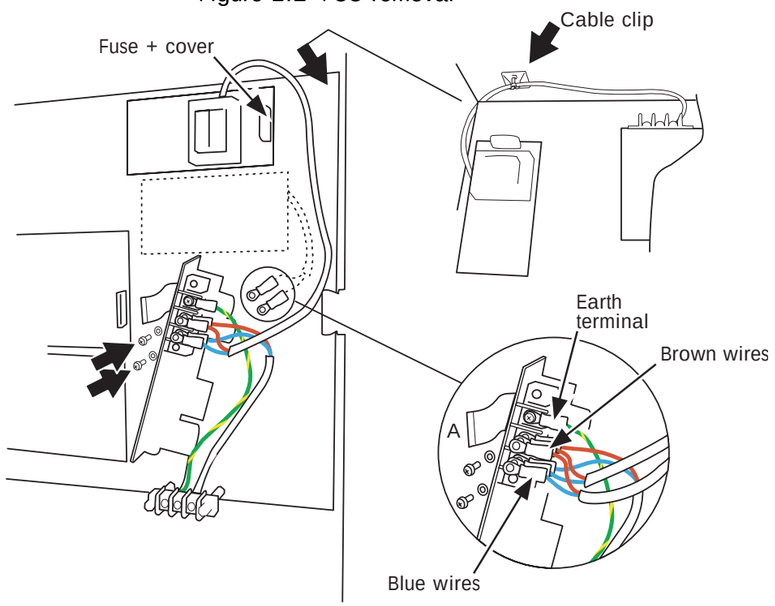


Figure 1.3 Transmitter power supply wiring details

2.2.4 Option board 2

1. Remove the option board from its packaging. With reference to section 2.1, above, ensure that the board is suitable for position 2, and set any addressing switches as appropriate to position 2.
2. Fit the option board, as shown in figure 2.2.4, and secure it with two M3 x 8 screws (N) and associated shakeproof washers.

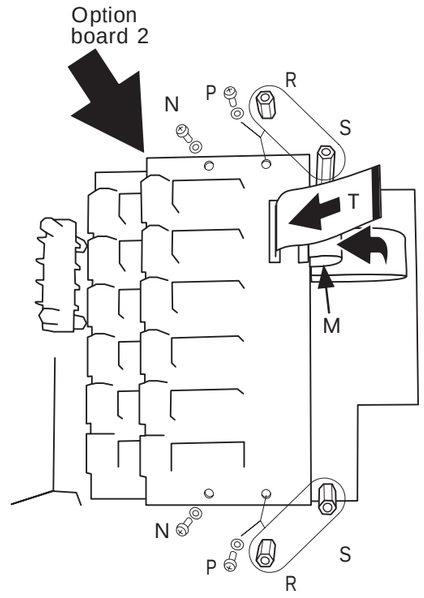


Figure 2.2.4 Fitting option board 2

3. If no further option boards are to be fitted, complete the fitting of option board 2 by using two further M3 x 8mm screws 'P' and shakeproof washers. If option board 3 is to be fitted use two 15 mm stand-off pillars (BE250365U150 - 'R' in figure 2.2.4) instead of screws 'P' and washers, and fit two 38 mm stand-off pillars (BE250365U380 - 'S' in the figure) to the options base plate, using a 4BA spanner or nut runner to tighten all pillars.
4. Fold the board 1 flexi ('M') over, as shown, and fit it to the horizontal connector on the option board (blue side down).
5. If option board 3 is to be fitted, fit a 75mm flexi cable (CM027818U075 - 'T' in figure 2.2.4) into the vertical connector on option board 2 (blue side of the flexi towards the front (terminal block) edge of the board.

2.2.3 Option board 1

1. Fit the insulating sheet (BT260451), as shown in figure 2.2.2b, above.
2. Remove the option board from its packaging. With reference to section 2.1, above, ensure that the board is suitable for position 1, and set any addressing switches as appropriate to position 1.
3. Fit the option board, as shown in figure 2.2.3, and secure it with two M3 x 8 screws (H) and associated shakeproof washers.

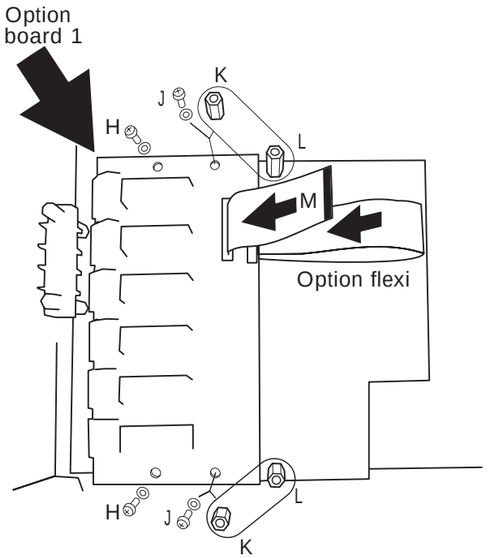


Figure 2.2.3 Fitting option board 1

4. If no further option boards are to be fitted, complete the fitting of the option board by using 2 further M3 x 8mm screws 'J' and shakeproof washers. If option board 2 is to be fitted use two 15 mm stand-off pillars (BE250365U150 - 'K' in the figure) instead of screws 'J' and washers, and fit two 21 mm stand-off pillars (BE250653U214 - 'L') to the options base plate, using a 4BA spanner or nut runner to tighten all pillars.
5. Fold the Option flexi over, as shown, and fit it to the horizontal connector on the option board (blue side down).
6. If option board 2 is to be fitted, fit a 75mm flexi cable (CM027818U075 - 'M' in figure 2.2.3) into the vertical connector on option board 1 (blue side of the flexi towards the front (terminal block) edge of the board.

2 OPTION BOARDS

This section describes how to fit up to three option boards to a unit which previously had none.

Note: The fitting of a new 'Controller' option is not included in this description, as not only does the controller board use a different 'base plate', and micro board, but the controllers themselves have to be fitted and configured, which is beyond the scope of this document. The manufacturer's local service agent should be contacted for advice.

The replacement of an existing controller option board, however, should be possible using the relevant parts of the procedure outlined below.

2.1 BOARD ORDER

Up to three option boards may be fitted, one above the other, above the Power Supply Unit (PSU). For the purposes of this document the lowest board position is called '1', the middle board position is called '2', and the top position is called '3'.

Bearing in mind that there can be a maximum of three option boards, the boards must be loaded in the following sequence, starting at position 1:
Controller board,
6-Relay board,
4-Relay board,
2-Relay board,
Serial comms,
Retransmission.

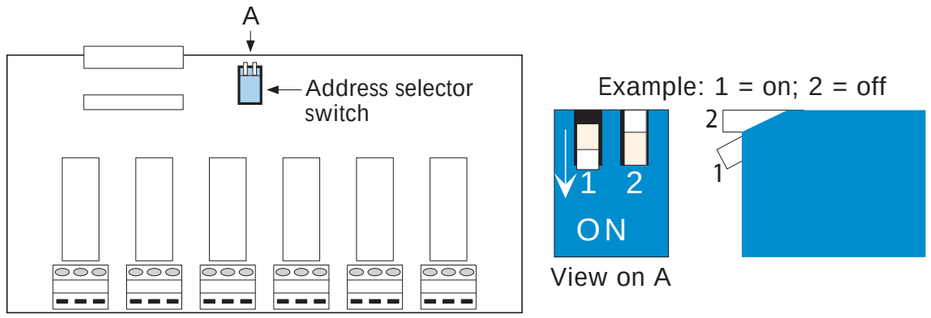
Example:
If an existing recorder is fitted with one relay board (position 1) and a serial comms board (position 2), then should a second relay board be retrofitted, it must be fitted in position 2, with the serial comms board removed and re-fitted at position 3.

2.1.1 Relay boards

Up to 18 relays can be fitted, in steps of two.
A two-relay board has the part number AH250349U200
A four relay board has the part number AH250349U400
A six-relay board has the part number AH250349U600
Any six-relay boards must be fitted below any two- or four- relay boards.
Any four-relay boards must be fitted below any two-relay board.

Relay boards must have their address switches set as in figure 2.2.1, below.

2.1.1 RELAY BOARDS (Cont.)



Board	Sw1	Sw2
1	Off	Off
2	On	Off
3	Off	On

Board 1 = lowest; Board 3 = highest
Off = up; On = Down

Figure 2.1.1 Relay board address switch details

2.2 FITTING PROCEDURE

2.2.1 Fitting the option board flexi

1. Ensure that supply power is isolated.
2. Remove the flexi-cable ('A' in figure 1.2) from its control board connector.
3. Remove the four securing screws ('B' in figure 1.2), and associated shakeproof washers, which secure the power supply unit (PSU) to the recorder chassis. Remove the insulating sheet and put to one side for use in re-assembly.
4 Fit the option board flexi (figure 2.2.1) to the PSU (shown inverted), with the blue (insulated) side of the flexi facing the circuit board.
5. Re-fit the PSU and associated insulating sheet, and secure with the four screws 'B' and shakeproof washers previously removed.
6. Re-connect the control board flexi 'A', previously disconnected.

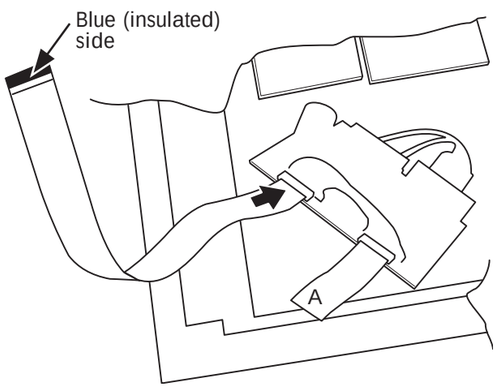


Figure 2.2.1 Fit the option board flexi to the PSU

2.2.2 Options base plate (LA250348)

1. Fit 4 off 43 mm stand-off pillars (BE250365U430 - 'C' in figure 2.2.2a), and tighten fully, using a 4BA spanner or nut runner. Fit a nylon washer ('D') to each of the stand off pillars, using a small piece of double sided tape to secure them temporarily.
2. Take the options base plate, and orient it as shown in figure 2.2.2b. Offer the baseplate up to the standoff/washers, at the same time, carefully passing the option flexi through the base plate aperture, as shown. Secure the base plate to the stand-off pillars, using 4 off M3 x 8mm screws ('E'), each with a shakeproof washer.
3. Fold the flexi cable through 90 degrees, as shown, ensuring that the insulated (blue) side remains uppermost.

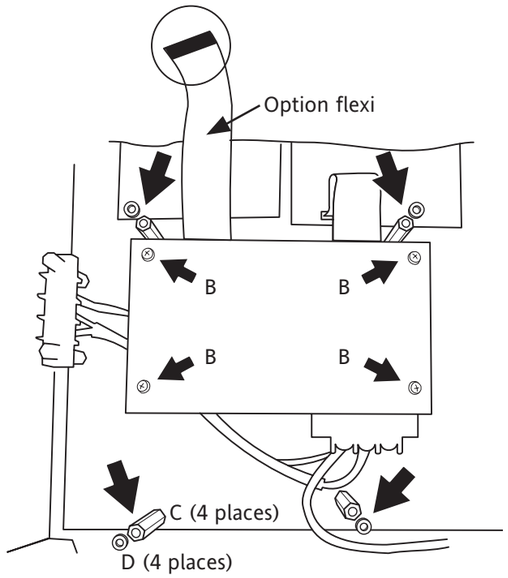


Figure 2.2.2a Fitting the stand-off pillars

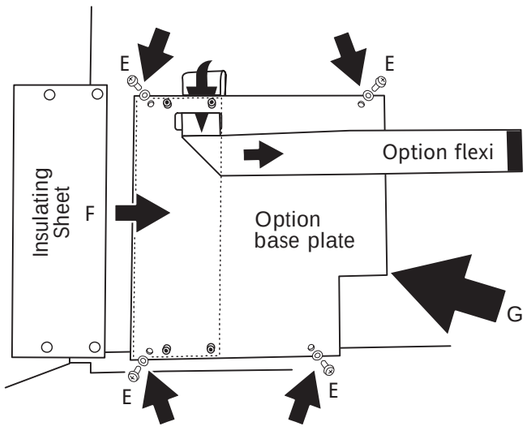


Figure 2.2.2b
Fitting the base plate and insulating sheet