



FP2027 QE20 Power Distribution Fuse Board Installation Instructions

1. General Description

This sheet describes installation of the FP2027 QE20 Power Distribution Fuse Board.

The QE20 Power Distribution Fuse Board provides 4 separately fused 24V DC outputs for wiring to other equipment inside the QE20 panel or to equipment outside of the cabinet that must be powered by the QE20. The Fuse Board is supplied with 1A (20 x 5) fuses on each output, but each fuse may be replaced with a fuse of up to 3A rating for higher current loads. Do not use a fuse rated at more than 3A.

The QE20 Power Distribution Fuse Board is usually mounted on the front of the 27A PSE that it derives its power from. It is necessary to cut out holes in the label to gain access to the mounting points [and early issue PSE metalwork will require the holes to be drilled].

As the load current is supplied by the PSE, and battery on mains failure, the load current must be included in the PSE and battery capacity calculations.

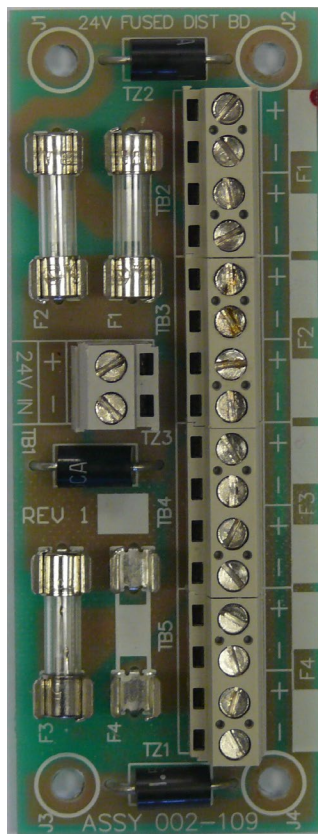


Figure 1 –Power Distribution Fuse Board

2. Kit Contents

Each FP2027 kit contains:

- 1 x PA0915 PCB ASSY 002-109 Fused Power Dist. Board
- 2 x 1m long 6.8mm QC terminated red and black power leads
- 1 x FA2016 M3 Barrel Nut
- 1 x FA2552 M3 Barrel Nut – Male/Female threads
- 3 x HW0052 Double Barb plastic PCB standoffs
- 1 x M3 x 6 Pan head screw and washer
- Various cable ties and clips
- 1 x LT0727, these installation instructions.

3. Mounting the Power Distribution Fuse Board

Figure 2 shows the mounting of the Power Distribution Fuse Board on the front of a 27A PSE.

It is necessary to cut out the four mounting holes in the label on the front of the PSE, as the label covers the holes. Use a cutting knife or suitably sized drill to cut the four holes in the label. [On early-issue PSE metalwork it will be necessary to actually drill the 4 mounting holes (1 x \varnothing 3.5mm and 3 x \varnothing 4.8mm) on a 89mm H x 25mm W pitch.]

Fit the barrel nut with the male thread and the M3 washer through the top left mounting hole and secure with the other barrel nut. Fit the 3 plastic double-barb standoffs to the other mounting holes.

Mount the Fuse Board as shown in Figure 2 and secure with the M3 screw in the top left corner. This is necessary to provide earthing of the PCB. Fit the cable tie holder to the hole in the metalwork as shown in Figure 2.

Cut the two 6.8mm QC-termination red and black leads to the correct length to run from the Fuse Board 24V IN +/- terminals to J2/3 and J8/9 on the PSE respectively. Connect the leads to these terminals and secure in place with the cable tie and holder.

If any of the fuses need to be changed for a higher rating (up to 3A max), replace the appropriate fuse.

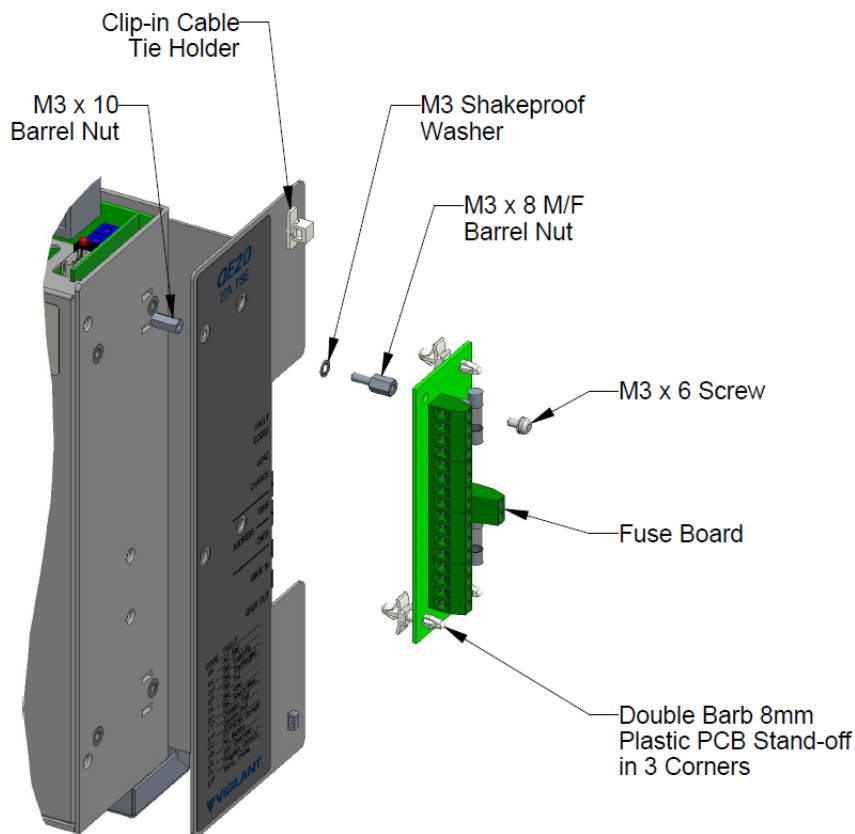


Figure 2 –Power Distribution Fuse Board Mounting on PSE

4. Replacing an Existing Fuse Board

The following steps are for replacing a Fuse Board.

Power down the QE20. Identify the field wiring connections on the Fuse Board so they can be reconnected to the correct outputs later.

Remove the field wiring and the 24V IN red and black leads. Undo the M3 screw and remove the Fuse Board from the plastic clips on the PSE.

Remove each fuse and check its rating. If it is not 1A, the fuse needs to be transferred to the same position on the replacement Fuse Board. If the fuse is blown, replace with a fuse of the same rating.

Fit the new Fuse Board on the plastic clips and secure with the M3 screw.

Reconnect the 24V IN wiring and the field wiring to the original outputs. Check all wiring is correct.

Power up the QE20 and check the equipment powered by the Fuse Board is operating correctly.

5. Adding a Fuse Board

Determine the current requirements for the loads to be powered by the Fuse Board. If there is more than 1A on an output, the appropriate fuse will need replacing with a higher rated fuse. Check the PSE has adequate current output to power the loads and recalculate the battery capacity.

Mount the Fuse Board as per Section 3.

Connect the output wiring as per Section 6.

6. Field Wiring

The Fuse Board provides 2 pairs of screw terminals for each fused output. These may be wired to equipment inside the QE20, and must be used if powering equipment external to the QE20, such as the Paging Console, Microphone Preamplifier Board, etc.

Each output has a 1A fuse as standard. This can be replaced with a fuse up to 3A rating, as long as the total load on the Fuse Board does not exceed the lower of 10A or the PSE current available.

Note: there is no monitoring for fuse removal or rupture on the Fuse Board. If a fault is required when a fuse blows or is removed, then the equipment being powered will need to create a fault on the QE20 when it is powered down. Otherwise, a 24V dc relay will need to be wired to and powered by the fused output, so the relay is normally energised. The contacts will need to be wired to a QE20 input so that a fault is generated when the fuse blows or is removed, and the relay turns off.

7. Power Distribution Fuse Board Specifications

Power Requirements	19.2V – 28.8Vdc, 10A Max across all outputs
Operating Temperature Range	-5°C to +45°C 10% to 93% RH non-condensing
Dimensions	101mm H x 38mm W x 25mm D
Fused Outputs (4 off)	2 pairs of 2.5mm ² screw terminals. Fused at 1A (20 x 5 clip-in fuse) Fuse can be replaced to maximum of 3A, subject to max current and PSE available current.
Suppression	36V bi-directional tranzorb across supply and to earth. PCB must be earthed via mounting hole.
Mounting holes	4 x 3.5mm dia, 89mm x 25.5mm

© 2023. Johnson Controls. All rights reserved. All specifications and other information shown were current as of document revision date and are subject to change without notice.