



Fermi National Accelerator Laboratory

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Engineering Note

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Project: SVX Sequencer Controller

Doc. No: U010124B

Subject: Current Capacity and Fusing

The SVX Sequencer cards obtain +5V and -5.2V from the Sequencer backplane. Both use multiple pins on a 3M 48-pin DIN 41612 Series connector with the same characteristics as those used on standard VME circuit boards.

Voltage rating: ≥ 1000 volts DC isolation pin to pin
Contact resistance: ≤ 15 milliohms, at rated current
Insulation resistance: ≥ 100 Megohms, pin to pin
Current rating: 3 Amp per pin

+5V Power

Current is carried from the backplane to the board using 2 pins of the DIN connector. Current then travels through a 1 oz. Copper plane 0.14" wide to a Raychem polymeric positive temperature coefficient (PPTC) resettable fuse P/N RUE400 rated at 4A nominal operating current. Expected maximum current draw is 2.6 A. Immediately downstream of the fuse is a 5V Transorb P/N ICTE-5, and a 10mH filter choke Tusonix P/N 4100-064-S, rated at 10A.

-5.2V Power

Current is carried from the backplane to the board using 2 pins of the DIN connector. Current then travels through a 1 oz. Copper plane 0.14" wide to a resettable fuse Raychem P/N RUE185 rated at 1.85A nominal operating current. Expected maximum current draw is 1.1 A. Immediately downstream of the fuse is a 5V Transorb P/N ICTE-5, and a 10mH filter choke Tusonix P/N 4100-064-S, rated at 10A.

Ground

There are two ground planes in the circuit board, each 1 oz. Copper. Ground is connected to the backplane using 12 pins of the DIN connector.

