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High Voltage Distribution EDWIN NORBECK, MICHAEL MILLER, YASAR ONEL, University of Iowa — For detector arrays that require 5 to 10 kV at a few microamps each for hundreds of detectors, using hundreds of HV power supplies is unreasonable. Bundles of hundreds of HV cables take up space that should be filled with detectors. A typical HV module can supply 1 ma, enough current for hundreds of detectors. It is better to use a single HV module and distribute the current as needed. We show a circuit that, for each detector, measures the current, cuts off the voltage if the current exceeds a set maximum, and allows the HV to be turned on or off from a control computer. The entire array requires a single HV cable and 2 or 3 control lines. This design provides the same voltage to all of the detectors, the voltage set by the single HV module. Some additional circuitry would allow a computer controlled voltage drop between the HV and each individual detector.

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